

N. H. DYER, M.D., M.P.H.
STATE DIRECTOR OF HEALTH



State of West Virginia

DEPARTMENT OF HEALTH
CHARLESTON 25305

FEB 3 6 40 AM '76

OFFICE OF
SECRETARY OF STATE
WEST VIRGINIA

February 3, 1976

The Honorable James R. McCartney
Secretary of State
State Capitol
Charleston, West Virginia 25305

Dear Mr. McCartney:

In November, 1968, rules and regulations for licensing hospitals in West Virginia duly promulgated by the State Department of Health were submitted for filing in your office together with copies of referenced materials as required by law.

We are enclosing for your file two copies of updated Public Health Service requirements, HEW Publication Number (HRA) 74-4000, which supersedes Appendix "A" of the PHS Regulations, Part 53, Subpart N, General Standards of Construction and Equipment, incorporated in the licensing regulations, Part VI, Section C, 403.1.

Please do not hesitate to contact us if we can be of service.

Sincerely,


N. H. Dyer, M. D., M. P. H.
State Director of Health

Enclosures

NHD:PDB:LJB:vlb

FILED IN THE OFFICE OF
SECRETARY OF STATE OF
WEST VIRGINIA

THIS DATE FEB 6 1976

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STATE DIRECTOR OF HEALTH



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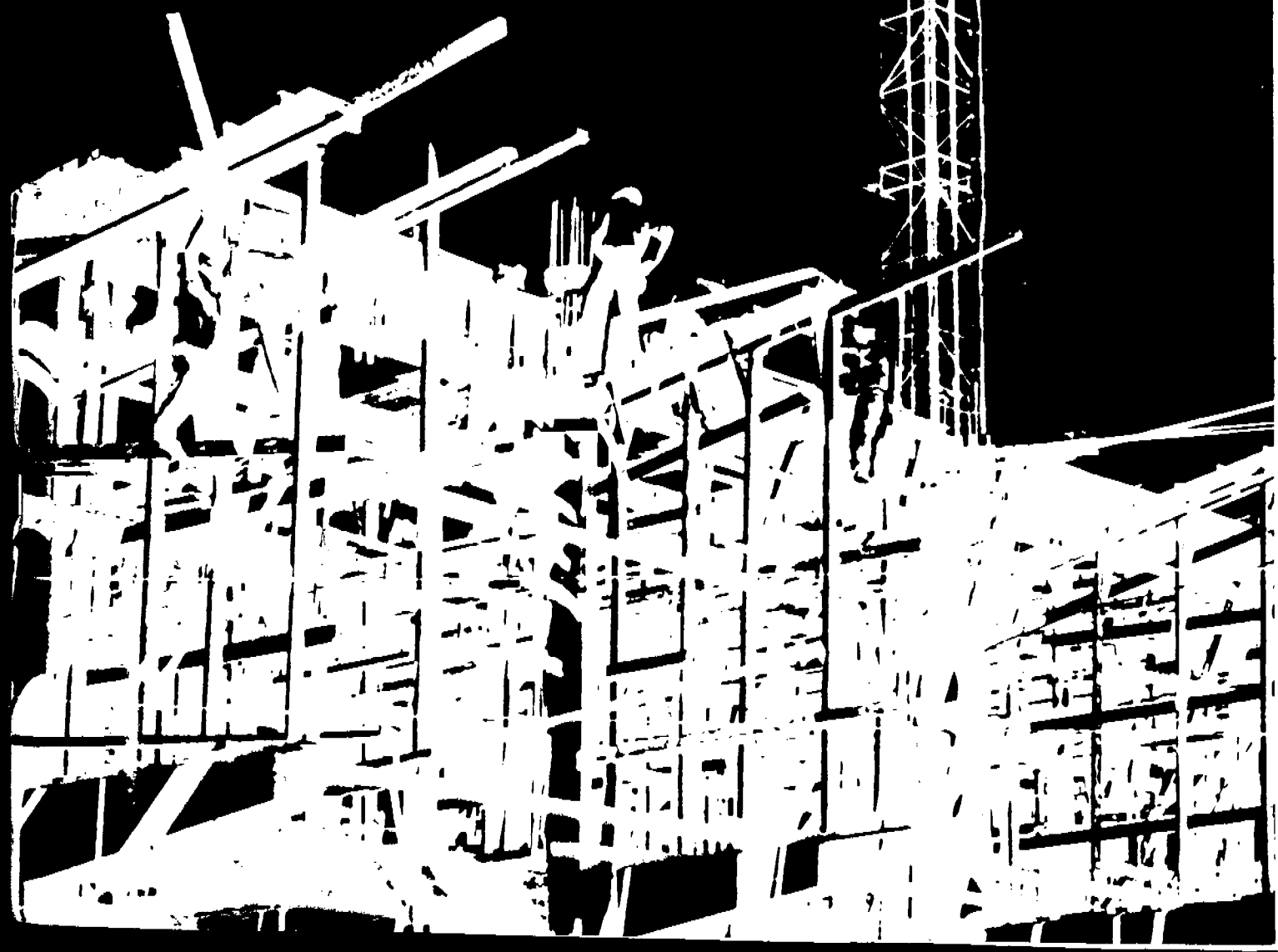
Enclosures

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THIS DATE FEB 6 1976

MINIMUM REQUIREMENTS
OF
CONSTRUCTION & EQUIPMENT
FOR
HOSPITAL & MEDICAL FACILITIES



ERRATA AND ADDENDA

for

Minimum Requirements of Construction and Equipment for Hospital
and Medical Facilities, HEW Publication No. (HRA) 74-4000

Page 1, second column, 1.2.A(2) -- add the following:

The audible signals may be muted or disconnected, if necessary,
if they are objectionable to patients in nearby bedrooms.

Page 5, first column --

National Fire Protection Association (NFPA) Standard No. 70, change
the reference to read: *(secs. 7.31.F(2); 9.12.F(1); 10.30.F(1))
instead of *(...; 9.11.F; 10.29.F(1)).

Page 27, table 3 --

The 22nd item should read "DARKROOM" instead of "Workroom."

The 23rd item should read "NONREFRIGERATED" instead of
"Warefrigerated."

Page 40, second column, 8.15.A(1) --

The second word should be "exits" instead of "exists."

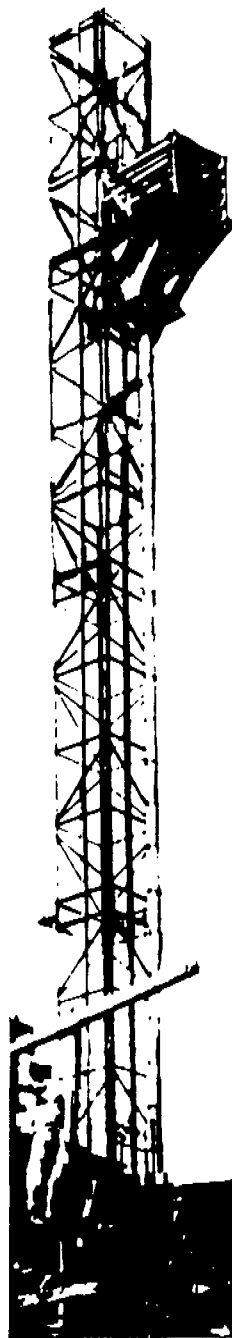
Page 57, second column, 9.11.D(j)(i) --

The phrase (0.51 meters per second) should follow "100 feet
per minute."

NOTE: The 1967 and 1973 editions of NFPA 101 Life Safety Code
vary in the methodology used to meet comparable safety
requirements. Facilities that will house Medicare and/or
Medicaid patients must meet the requirements of the 1967
NFPA 101 Life Safety Code or the subsequent code designated
by the Secretary.

MINIMUM REQUIREMENTS
OF
CONSTRUCTION & EQUIPMENT
FOR
HOSPITAL & MEDICAL FACILITIES

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Resources Administration
Division of Facilities Utilization
Rockville, Md. 20852



DISCRIMINATION PROHIBITED—Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Hill-Burton program, like every program or activity receiving financial assistance from the U.S. Department of Health, Education, and Welfare, must be operated in compliance with this law.

DHEW Publication No. (HRA) 74-4000
Supersedes
DHEW Publication No. (HSM) 73-4014
formerly known as
Public Health Service Publication No. 930-A-7
1974

For sale by the Superintendent of Documents,
U.S. Government Printing Office, Washington, D.C. 20402
Price

foreword

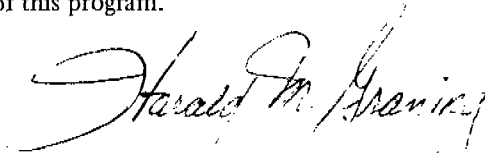
This publication, a revision of "General Standards of Construction and Equipment for Hospital and Medical Facilities" issued in 1969, has been streamlined to include only the minimum requirements. The new name reflects that change.

The original "General Standards" appeared in the *Federal Register* on February 14, 1947, as part of the regulations relating to the implementation of the Hill-Burton Program. Since that time, the standards have been revised as necessary to maintain relevancy to the functional and technological advances in health care and in construction as they affect the delivery of health care.

For more than two years, technical study groups, under Hill-Burton auspices, have been meeting regularly to prepare this document. These groups evaluated comments by various Federal and State agencies as well as medical, construction, and design authorities. Consideration was also given comments received as a result of notice which appeared in the *Federal Register* on June 28, 1973.

This document does not contain any requirements relating to the preparation of plans, specifications, and estimates, or to site survey or subsoil investigations, all of which appeared in previous editions. Those requirements now appear in the Technical Manual on Facility Design and Construction prepared by the DHEW Office of Facilities Engineering and Property Management (OFEPM). Anyone involved in the design of a federally sponsored project can obtain a copy of the OFEPM manual from DHEW Regional Offices. (See appendix.)

As in former years, it is hoped that this document will be useful not only to those involved in constructing Hill-Burton projects but also to those engaged in health care facility construction which does not come within the purview of this program.



Harald M. Graning, M.D.
Assistant Surgeon General
Director, Division of Facilities Utilization

MAJOR ADDITIONS AND REVISIONS

Listed below are the major additions and revisions to "General Standards of Construction and Equipment for Hospital and Medical Facilities" issued in 1969:

1. The title has been changed to "Minimum Requirements of Construction and Equipment for Hospital and Medical Facilities."
2. Requirements pertaining to the preparation of plans, specifications, site surveys, subsoil investigations, and cost estimates have been deleted, since these are covered in the technical manual issued by the Office of Facilities Engineering and Property Management of the Department of Health, Education, and Welfare.
3. Emphasis has been directed to functional and performance requirements which promote good medical practices. Provision has been made to permit a waiver by the Secretary of specific requirements to permit innovations and improvements in design or construction techniques.
4. Special design requirements for the handicapped have been highlighted, in accordance with Public Law 90-480, 42 U.S.C. §§ 4151 et seq., relating to access to public buildings by handicapped persons.
5. In keeping with the DHEW position on maintaining conformity in requirements of departmental programs, construction and sprinkler standards have been revised in accordance with the Life Safety Code, NFPA Standard 101.
6. Specific detailed requirements have been outlined for intensive care (medical, surgical, or coronary) units in general hospitals.
7. Acceptable limits of sharing (common use) of services by surgical and obstetrical suites have been indicated. (Sharing of services in other areas is permitted if this does not affect patient care.)
8. A separate section dealing with the requirements for freestanding outpatient facilities has been developed.
9. The requirements for rehabilitation facilities have been reorganized, simplified, and consolidated into one section.
10. Requirements for the use of safe glazing products have been added in order to minimize hazard due to accidental breakage by pedestrian traffic.
11. Requirements to minimize hazards to occupants as a result of natural disasters such as earthquakes, hurricanes, or floods have been added. This includes a need for a self-sufficient emergency communication system.
12. Ventilation requirements for various hospital areas have been changed.
13. Requirements for oxygen systems and vacuum systems have been expanded and clarified.
14. Electrical installation requirements have been added in order to provide safety for electrically sensitive patients.
15. Various editorial and minor technical changes have been made.
16. Requirements relating to the amount of smoke generated by building insulation and interior finishes during a fire situation have been added.

acknowledgments

A special committee comprised of the persons listed below provided leadership in the revised version of these minimum requirements:

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Facilities Engineering and Construction Agency,
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Mr. Grady R. Smith, Director

Office of Architecture and Engineering
Division of Facilities Utilization
(Committee Chairman)
Rockville, Md.

The following staff members of the Division of Facilities Utilization also participated in developing the details of these requirements: John W. Reese, Chief, Architectural Branch; McGhee B. Mantooth, Supervisory Electrical Engineer; J. Clyde Sell, Mechanical Engineer; Myron S. Hurwitz, Architect; Ruben J. King-Shaw, Architect; Richard Lopacki, Architect; George E. Simms, Architect; Anne C. Donovan, Dietary Consultant; George I. Freedman, Pharmacy Consultant; Marie M. Lech, Nursing Consultant; Mary K. Straub, formerly Nursing Consultant; and Bert P. Sherman, Acting Director, Office

of Equipment Consultation.

Preliminary drafts of these requirements were reviewed by various Federal and State agencies, private consultants, hospital administrators, and other individuals and groups interested in the development of improved health care facility standards. The comments and suggestions of all these sources are gratefully acknowledged. All comments were carefully considered and many were adopted. Some excellent recommendations were judged to be above a minimum national requirement and therefore could not be used.

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1.1. GENERAL

A. The requirements set forth herein have been established by the U.S. Department of Health, Education, and Welfare, in accordance with the provision of Title VI of the Public Health Service Act, and constitute minimum requirements for constructing and equipping projects for which Federal assistance is requested under the Act. These requirements are considered necessary to ensure properly planned and well constructed health care facilities which can be efficiently maintained and operated to furnish adequate services.

B. For specialty health care facilities, such as teaching hospitals, dental facilities, and outpatient surgeries not discussed herein, the provisions of the categorical requirements will apply with necessary modifications to meet the program needs.

C. In many instances, these DHEW minimum requirements will need to be exceeded for the facility to function as programmed. Guide materials and recommendations on planning various hospital departments are available from DHEW's Division of Facilities Utilization, Health Resources Administration.

D. Because of local conditions, States may have additional requirements, some of which may exceed those detailed herein. Neither these minimum requirements nor the guide materials mentioned above are intended in any way to restrict innovations and improvements in design or construction techniques. Accordingly, plans and specifications which contain deviations from the requirements prescribed herein may be approved if it is determined that the purposes of the minimum requirements have been fulfilled. Requests to waive any specific requirement shall be submitted to DHEW's Division of Facilities Utilization, Health Resources Administration, as early in the planning process as possible.

1.2. SPECIAL DESIGN CONSIDERATIONS FOR THE HANDICAPPED

A. In accordance with Public Law 90-480, special design features for the handicapped (patients, staff,

and visitors) shall be provided for all buildings which receive any part of their funding through Federal grants or loans. The following items are listed to augment, clarify, or emphasize some of these special design elements:

(1) Walkways and curbs shall be planned to facilitate travel by people in wheelchairs or on crutches.

(2) Signals, such as elevator calls, shall be both audible and visible. Elevator control buttons shall be accessible to wheelchair occupants.

(3) Not less than one percent of all parking spaces provided for the project (with a minimum of two spaces) shall be planned and set aside for the handicapped.

(4) Design shall consider the needs of the user having physical impairments with special attention given to the shielding of sharp projections, moving parts, and heated surfaces.

(5) Facilities such as drinking fountains, toilets, and handwashing shall be available on each public floor for physically handicapped patients, staff, and visitors.

(6) Minimum requirements not otherwise noted in these standards shall be those set forth in ANSI Publication No. A-117.1. (See sec. 6.2 for full title.)

1.3. SPECIAL DESIGN CONSIDERATIONS FOR NATURAL DISASTERS

A. Provisions to minimize the adverse effects of natural disasters, such as earthquakes and hurricanes, shall be incorporated into the planning and design of each facility.

B. Detailed requirements are described in the following sections:

(1) For hospitals, see section 7.28.H.

(2) For long-term care facilities, see section 8.16.H.

(3) For outpatient facilities, see section 9.9.D.

(4) For rehabilitation facilities, see section 10.27.D.

2.1. LOCATION

A. Accessibility.

The site of any medical facility shall be easily accessible to the community and to service vehicles such as fire protection apparatus.

B. Availability of Transportation.

Facilities shall be located with due regard to the accessibility by public transportation for patients, staff, and visitors, and availability of competent medical and surgical consultation.

C. Flood Protection.

In accordance with Executive Order No. 11296, to minimize flood damage to federally assisted construction, due consideration shall be given to possible flood effects when selecting and developing the site.

2.2. ROADS AND PARKING

A. Roads.

Paved roads shall be provided within the lot lines to provide access to the main entrance, emergency entrance, entrances serving community activities, and to service entrances, including loading and unloading docks for delivery trucks. Hospitals having an organ-

ized emergency services department shall have the emergency entrance well marked to facilitate entry from the public roads or streets serving the site. Access to the emergency entrance shall not conflict with other vehicular traffic or pedestrian traffic. Paved walkways shall be provided for necessary pedestrian traffic.

B. Parking.

Off-street parking shall be made available for patients, staff, and visitors, as indicated in sections 7.1.E, 8.1.E, 9.1.H, and 10.2.C.

(See sec. 1.2 for parking requirements for the handicapped.)

2.3. ENVIRONMENTAL POLLUTION CONTROL

In accordance with Public Law 91-190, National Environmental Policy Act, the site and project shall be developed to minimize any adverse environmental effects on the neighborhood and community. (Consult the DHEW Regional Office for the latest applicable Federal regulations pertaining to environmental pollution such as noise, air, and traffic.)

3.1. GENERAL

All equipment necessary for the operation of the facility as planned shall be shown on the drawings or equipment list.

3.2. CLASSIFICATION

Equipment items shall be classified in two main groups:

A. Fixed Equipment.

This is defined as equipment which is permanently affixed to the building or which must be connected to a service distribution system designed and installed during construction for the specific use of the equipment. It includes items such as laundry extractors, walk-in refrigerators, communication systems, and built-in casework.

B. Movable Equipment.

This is defined as all equipment items not considered to be fixed equipment. It includes wheeled equipment, X-ray equipment, surgical instruments, monitoring equipment, and relocatable items such as operating tables and obstetrical tables.

3.3. EQUIPMENT SHOWN ON DRAWINGS

Equipment which is not included in the construction contract but which requires mechanical or electrical service connections or construction modifications shall be so identified on the design development drawings to ensure its coordination with the architectural, mechanical, and electrical phases of construction.

4

MODERNIZATION PROJECTS

4.1. CONSTRUCTION PHASING

Projects involving alterations of and additions to existing buildings shall be programmed and phased so that on-site construction will minimize disruptions of existing hospital functions. Access, exitways, and fire protection shall be so maintained that the safety of the occupants will not be jeopardized during construction.

4.2. MINIMUM REQUIREMENTS

All requirements relating to new construction projects are applicable to modernization projects involving additions or alterations, except that when existing conditions make changes impractical to accomplish, minor deviations from functional requirements (not fire safety and other safety requirements) may be permitted if the intent of the requirements is met, and if

the care and safety of patients will not be jeopardized.

4.3. NONPARTICIPATING CONDITIONS

When because of financial considerations it is not feasible to modernize the entire existing structure in accordance with these requirements, approval may be given for renovations of less than the entire structure if the operation of the facility or the safety of the patients is not jeopardized by the remaining nonconforming sections. Federal participation in modernization shall be limited to those fire sections of the building which can be completely separated from nonconforming areas by fire walls or partitions of not less than 2-hour fire-resistance extending through the full height of the building and by approved labeled fire doors of class B 1-½-hour construction.

5

RECORD DRAWINGS AND MANUALS

5.1. AS-BUILT DRAWINGS

Upon completion of the contract, the owner shall be provided a complete set of legible drawings showing all construction, fixed equipment, and mechanical and electrical systems, as installed or built.

5.2. EQUIPMENT MANUALS

The owner shall be furnished a complete set of installation, operation, and maintenance manuals for the installed equipment.

6.1. GENERAL

Nothing stated herein shall relieve the sponsor from compliance with building codes, ordinances, and regulations which are enforced by city, county, or State jurisdictions. Where such codes, ordinances, and regulations are not in effect, the sponsor shall consult one of the national building codes generally used in the area for all components of the building type which are not specifically covered by these minimum requirements, provided that the requirements of the national code are consistent with the minimum requirements set forth herein.

6.2. LIST OF REFERENCED CODES AND STANDARDS

Current editions of publications containing codes and standards which have been used in whole or in part as references in various sections of these minimum requirements are listed below. Copies of these publications are available from the originating organizations at the addresses listed in section 6.3. Single copy prices, as of this publication date, are given.

American National Standards Institute (ANSI)

Standard No. A117.1

American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped. \$2.00

*(sec. 1.2A(6))

American Society for Testing and Materials (ASTM)

Standard No. E 84

Method of Test for Surface Burning Characteristics of Building Materials. \$1.00

*(secs. 7.28.F; 7.28.G; 7.30.B(4); 7.30.B(5); 8.16.F; 8.16.G; 8.18.B(4); 8.18.B(5); 9.9.B; 9.9.C; 9.11.B(4); 9.11.B(5); 10.27.B; 10.27.C; 10.29.B(4); 10.29.B(5))

American Society for Testing and Materials (ASTM)

Standard No. E 90

Recommended Practice for Laboratory Measurement of Airborne Sound Transmission Loss of Building Floors and Walls. \$1.00

*(secs. 7.27.A(27); 8.15.A(26); 10.26.A(27))

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

Handbook of Fundamentals. \$33.00

*(secs. 7.30.C(1); 7.30.D(2)(p); 7.31.H(4)(c)(i); 8.18.C(1); 8.18.D(2)(j); 8.19.H(3)(h); 10.29.C(1); 10.29.D(2)(j); 10.29.H(3)(h))

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

Standard No. 52-68

Methods of Testing Air Cleaning Devices Used in General Ventilation for Removing Particulate Matter. \$6.25

*(secs. 7.30.D(2)(g); 8.18.D(2)(f); 9.11.D(2)(d); 10.29.D(2)(e))

Compressed Gas Association (CGA)

Pamphlet P-2.1

Standard for Medical-Surgical Vacuum Systems in Hospitals. \$1.00

*(secs. 7.30.E(6); 8.18.E(6); 10.29.E(6))

DOP Penetration Test Method, MIL STD No. 282

Filter Units, Protective Clothing, Gas-Mask Components and Related Products: Performance Test Methods. No charge

*(secs. 7.30.D(2)(m)(i); 9.11.D(2)(j)(i))

International Conference of Building Officials (ICBO)

Uniform Building Code Vol. 1. \$12.00

*(secs. 7.28.H(2); 8.16.H(2); 9.9.D(1); 10.27.D(1))

National Association of Plumbing-Heating-Cooling Contractors (PHCC)

National Standard Plumbing Code. \$6.50

*(secs. 7.30.E; 8.18.E; 9.11.E; 10.29.E)

*The section numbers indicate where the subject code or standard is referenced in the minimum requirements.

*Ibid

National Bureau of Standards (NBS)
Technical Note 708—Appendix II
Test Method for Measuring the Smoke Generation Characteristics of Solid Materials. 75 cents
*(secs. 7.28.F; 8.16.F; 9.9.B; 10.27.B)

National Council on Radiation Protection (NCRP)
Report No. 33
Medical X-ray and Gamma Ray Protection for Energies Up to 10 MeV Equipment Design and Use. \$2.00
*(secs. 7.27.A(23); 9.8.A(15); 10.26.A(23))

National Council on Radiation Protection (NCRP)
Report No. 34
Medical X-ray and Gamma Ray Protection for Energies Up to 10 MeV Structural Shielding Design and Evaluation. \$3.00
*(secs. 7.27.A(23); 9.8.A(15); 10.26.A(23))

National Fire Protection Association (NFPA)
Standard No. 56A
Standard for the Use of Inhalation Anesthetics (Flammable and Nonflammable). \$2.00
*(secs. 7.27.B(3); 7.30.D(2)(o); 7.30.E(5); 7.31.E(1); 7.31.F(1); 8.18.E(5); 10.29.E(5))

National Fire Protection Association (NFPA)
Standard No. 56F
Standard for Nonflammable Medical Gas Systems. \$1.00
*(secs. 7.30.E(5); 8.18.E(5); 10.29.E(5))

National Fire Protection Association (NFPA)
Standard No. 70
National Electrical Code. \$3.50
*(secs. 7.31.F(2); 9.11.F; 10.29.F(1))

National Fire Protection Association (NFPA)
Standard No. 80
Standard for Fire Doors and Windows. \$2.25
*(secs. 7.27.A(12); 8.15.A(10); 9.8.A(12); 10.26.A(9))

National Fire Protection Association (NFPA)
Standard No. 82
Standard for Incinerators. \$1.25
*(secs. 7.26.B(2); 8.14.B(2); 9.7.C(2); 10.13.C(2))

National Fire Protection Association (NFPA)
Standard No. 90A
Installation of Air Conditioning and Ventilating Systems. \$1.00
*(secs. 7.30.D(2)(h); 7.30.D(2)(j); 8.18.D(2)(g); 8.18.D(2)(h); 9.11.D(2)(g); 10.29.D(2)(f); 10.29.D(2)(h))

National Fire Protection Association (NFPA)
Standard No. 101 (1973)
Life Safety Code. \$3.00
*(secs. 7.27.A(1); 7.28.C; 7.31.H(4)(a); 8.15.A(1); 8.16.C; 8.19.H(3)(a); 8.19.H(3)(b); 9.8.A(2); 10.26.A(1); 10.29.H(3)(a))

National Fire Protection Association (NFPA)
Standard No. 701
Flame Resistant Textiles and Films. 75 cents
*(secs. 7.27.B(1); 8.15.B(1); 9.8.B(1); 10.26.B(1))

Public Health Service Publication No. 934
Food Service Sanitation Manual. 70 cents
*(secs. 7.16.A; 8.7.A; 10.9)

Underwriters' Laboratories, Inc. (UL)
Publication No. 181
Air Ducts. No charge
*(secs. 7.30.B(5); 8.18.B(5); 9.11.B(5); 10.29.B(5))

6.3. AVAILABILITY OF CODES AND STANDARDS

The codes and standards referenced in various sections throughout these minimum requirements and listed in section 6.2 can be ordered, if they are Government publications, from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of non-Government

*Ibid

*Ibid

publications can be obtained from the various agencies at the addresses listed below.

American National Standards Institute
1430 Broadway
New York, N.Y. 10018

American Society for Testing and Materials
1916 Race Street
Philadelphia, Pa. 19103

American Society of Heating, Refrigerating, and
Air Conditioning
United Engineering Center
345 East 47th Street
New York, N.Y. 10017

Compressed Gas Association
500 Fifth Avenue
New York, N.Y. 10036

International Conference of Building Officials
5360 South Workman Road
Whittier, Calif. 90601

Naval Publications and Form Center
5801 Tabor Avenue
Philadelphia, Pa. 19120
(for DOP Penetration Test Method)

National Association of Plumbing-Heating-
Cooling Contractors
1016 20th Street, N.W.
Washington, D.C. 20036

National Council on Radiation Protection
and Measurement
P.O. Box 30175
Washington, D.C. 20014

National Fire Protection Association
470 Atlantic Avenue
Boston, Mass. 02210

Underwriters' Laboratories, Inc.
207 East Ohio Street
Chicago, Ill. 60611

7.1. GENERAL CONSIDERATIONS

A. Narrative Program.

The sponsor for each project shall provide a narrative program which describes the functional space requirements, staffing patterns, departmental relationships, and other basic information relating to the fulfillment of the institution's objectives.

B. Services.

General hospitals shall either contain the elements described herein or the narrative program shall indicate the manner in which the needed services are to be available to the public. Each element provided in the hospital must comply with the requirements outlined herein. Appropriate modifications or deletions in space requirements may be made to these requirements when services are permitted to be shared or purchased. When pediatric, psychiatric, obstetric, or other services are not included in the hospital, the narrative program shall indicate where such services are available to the community and how they are to be provided.

C. Sizes.

The sizes of the various departments will depend upon program requirements and organization of services within the hospital. Some functions requiring separate spaces or rooms in these minimum requirements may be combined provided that the resulting plan will not compromise the best standards of safety and of medical and nursing practices.

D. Provisions for Handicapped.

Facilities shall be available and accessible to the physically handicapped (public, staff, and patients). (See sec. 1.2.)

E. Parking.

Each facility shall have parking space to satisfy the minimum needs of patients, employees, staff, and visitors. In the absence of a formal parking study, each facility shall provide not less than one space for each day shift staff member and employee plus one space for each patient bed. This ratio may be reduced in an area convenient to a public transportation system or to public parking facilities if proper justification is included in the narrative program and provided that approval of any reduction is obtained from the appropriate State agency. Additional parking may be required to accommodate outpatient and other

services when they are specified in the narrative program. Space shall be provided for emergency and delivery vehicles.

7.2. NURSING UNIT (Adult Medical, Surgical, and Post-Partum Care)

(NOTE: These requirements do not apply to special care areas such as recovery rooms and intensive care units.)

Each nursing unit shall provide the following:

A. Patient Rooms.

Each patient room shall meet the following requirements:

- (1) Maximum room capacity shall be 4 patients.
- (2) Minimum room areas exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules shall be 100 square feet (9.29 square meters) in single-bed rooms and 80 square feet (7.43 square meters) per bed in multibed rooms. In multibed rooms, a clearance 3'8" (1.12 m) shall be available at the foot of each bed to permit the passage of beds.
- (3) Each room shall have a window which can be opened without the use of tools. The windowsill shall not be higher than 3'0" (91 cm) above the floor and shall be above grade.
- (4) Nurses' calling system shall be provided in accordance with section 7.31.G.
- (5) One lavatory shall be provided in each patient room except that it may be omitted from a single-bed room or a 2-bed room, other than post-partum rooms which are part of a rooming-in program, if a lavatory is located in an adjoining toilet room which serves that room only.
- (6) Each patient shall have access to a toilet room without entering the general corridor area. One toilet room shall serve no more than four beds and no more than two patient rooms. The toilet room shall contain a water closet and a lavatory. The lavatory may be omitted from a toilet room which serves not more than two single-bed rooms if each such single-bed room contains a lavatory.
- (7) Each patient shall have a wardrobe, locker, or closet that is suitable for hanging full length garments and for storing personal effects.
- (8) Visual privacy shall be provided each patient in multibed rooms.

B. Service Areas.

The service areas noted below shall be located in or readily available to each nursing unit. The size and disposition of each service area will depend upon the number and types of beds to be served. Although identifiable spaces are required to be provided for each of the indicated functions, consideration will be given to design solutions which would accommodate some functions without specific designation of areas or rooms. Details of such proposals shall be submitted for prior approval. Each service area may be arranged and located to serve more than one nursing unit but at least one such service area shall be provided on each nursing floor. The service areas follow:

- (1) Administrative center or nurses' station.
- (2) Nurses' office.
- (3) Storage for administrative supplies.
- (4) Handwashing facilities convenient to nurses' station and drug distribution station.
- (5) Charting facilities for nurses and doctors.
- (6) Lounge and toilet room(s) for staff.
- (7) Individual closets or compartments for the safekeeping of coats and personal effects of nursing personnel. These shall be located convenient to the duty station of personnel or in a central location.
- (8) Multipurpose room for conferences, demonstrations, and consultation.
- (9) Room for examination and treatment of patients. This room may be omitted if all patient rooms are single-bed rooms. It shall have a minimum floor area of 120 square feet (11.15 square meters) excluding space for vestibule, toilet, closets, and work counters (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). The room shall contain a lavatory or sink equipped for handwashing, work counter, storage facilities, and a desk, counter, or shelf space for writing. The emergency treatment room may be used for this purpose, if it is conveniently located on the same floor as the patient rooms.
- (10) Clean workroom or clean holding room. The clean workroom shall contain a work counter, handwashing, and storage facilities. The clean holding room shall be part of a system for storage and distribution of clean and sterile supply materials and shall be similar to the clean workroom except that the work counter and handwashing facilities may be omitted.

(11) Soiled workroom or soiled holding room. The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for handwashing, work counter, waste receptacle, and linen receptacle. A soiled holding room shall be part of a system for collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and work counter may be omitted.

(12) Drug distribution station. Provision shall be made for convenient and prompt 24-hour distribution of medicine to patients. This may be from a medicine preparation room or unit, a self-contained medicine dispensing unit, or by another approved system. If used, a medicine preparation room or unit shall be under the nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom, or in an alcove or other space under direct control of the nursing or pharmacy staff.

(13) Clean linen storage. Provide a separate closet or a designated area within the clean workroom. If a closed cart system is used, storage may be in an alcove.

(14) Nourishment station. This shall contain a sink equipped for handwashing, equipment for serving nourishment between scheduled meals, refrigerator, storage cabinets, and icemaker-dispenser units to provide ice for patients' service and treatment.

(15) Equipment storage room. This shall be for equipment such as I.V. stands, inhalators, air mattresses, and walkers.

(16) Parking for stretchers and wheelchairs. This shall be located out of path of normal traffic.

(17) Patients' bathing facilities. At least one shower shall be provided for each 12 beds in postpartum units. In other nursing units, bathtubs or showers shall be provided at the rate of one for each 12 beds which are not otherwise served by bathing facilities within patients' rooms. Each tub or shower shall be in an individual room or enclosure which provides space for the private use of the bathing fixture and for drying and dressing. At least one bathing fixture on a floor shall have space for a wheelchair and an attendant.

(18) Emergency equipment storage. Space for emergency equipment such as "crash cart" shall be provided and shall be under direct control of the nursing staff.

C. Isolation Room(s).

Rooms for patients requiring isolation because of infection shall be provided at the rate of one for each 30 beds or major fraction thereof. These may be located within each nursing unit or placed together in a separate unit. Each isolation room shall be a single-bed room and planned as required for a patient room (see sec. 7.2.A), except as follows:

(1) Entrance from the corridor shall be through a vestibule (a closed anteroom or an open passageway) which contains facilities to assist staff in maintaining aseptic conditions. The vestibule shall contain a lavatory or sink equipped for handwashing, storage spaces for clean and soiled materials, and gowning facilities.

(2) If a closed anteroom is used, a viewing panel shall be provided for nursing observation of the patient from the anteroom.

(3) A private toilet room containing a water closet and a bathtub or shower shall be provided for the exclusive use of the patient with direct entry from the patient bed area without passing through the vestibule.

(4) A lavatory shall be provided for the exclusive use of the patient. It shall be located in the patient room or in the private toilet room.

D. Room(s) for Disturbed Patients.

Each hospital shall provide one or more single-bed rooms for patients needing close supervision, if suitable psychiatric facilities are not available elsewhere in the community. Such rooms shall comply with the applicable requirements in the general note of section 7.6 and in section 7.6.A.

7.3. INTENSIVE CARE UNIT

(NOTE: Facilities for the intensive care of medical, surgical, or cardiac patients have critical space and staffing requirements. Since many of these patients are often acutely aware of the surrounding environment, they may be affected by it. Means of controlling unnecessary noise is important. At times each patient may require individual privacy, although each is required to be under constant staff observation. Windows shall be provided so that each patient is cognizant of the outdoor environment. Beds may be arranged so that one window may serve more than one patient. Windowsill height above the floor shall not exceed 5'0" (1.52 m).)

When intensive care units are planned, they shall provide the following:

A. Patient Rooms.

Cardiac intensive care patients shall be housed in single-bed rooms. Medical and surgical intensive care patients shall be housed in single-bed rooms or multi-bed rooms; however, at least one single-bed room shall be provided. All beds shall be arranged to permit direct visual observation by nursing staff. Patient rooms shall meet the following requirements:

(1) Clearance between beds in multibed rooms shall be not less than 7'0" (2.13 m). Single-bed rooms or cubicles shall have a minimum clear area of 120 square feet (11.15 square meters) and a minimum dimension of 10'0" (3.05 m).

(2) Viewing panels shall be provided in doors and walls for nursing staff observation of patients. Curtains or other means shall be provided to cover the viewing panels when the patient requires visual privacy. Glazing in viewing panels shall be safety glass, wire glass, or clear plastic to reduce the hazard from accidental breakage except that wire glass is required in glazed openings to corridors or passageways used as means of egress for fire safety purposes.

(3) An I.V. solution support shall be provided for each patient so that the solution is not suspended directly over the patient.

(4) A lavatory equipped for handwashing shall be provided in each private patient room. In multibed rooms, provide not less than one lavatory for each 6 beds.

(5) A nurses' calling system per section 7.31.G shall be provided.

(6) Each cardiac intensive care patient shall be provided a toilet facility which is directly accessible from the bed area. The water closet shall have sufficient clearance around it to facilitate its use by patients needing assistance. Portable water closet units are permitted within patient rooms. If portable units are used, facilities for servicing and storing them shall be conveniently located to the cardiac care unit.

B. Service Areas.

The following service areas shall be located in or readily available to each intensive care unit. One area may serve two or more adjacent intensive care units. The size and location of each service area will depend upon the number of beds to be served.

(1) Nurses' station. It shall be located to permit direct visual observation of each patient served.

(2) Handwashing facilities. These shall be convenient to nurses' station and drug distribution station.

(3) Charting facilities. These shall be separated from monitoring service.

(4) Staff's toilet room. This room shall contain a water closet and a lavatory equipped for handwashing.

(5) Individual closets or compartments for the safekeeping of coats and personal effects of nursing personnel. These shall be located at or near the nurses' station.

(6) Clean workroom (or a system for storage and distribution of clean and sterile supply materials). The clean workroom shall contain a work counter, handwashing facility, and storage facilities.

(7) Soiled workroom or soiled holding room. The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for handwashing, work counter, waste receptacle, and linen receptacle. A soiled holding room shall be part of a system for collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and work counter may be omitted.

(8) Facilities for washing or flushing bedpans. These shall be provided within the unit.

(9) Drug distribution station. Provision shall be made for convenient and prompt 24-hour distribution of medicine to patients. This may be from a medicine preparation room or unit, a self-contained medicine dispensing unit, or by another approved system. If used, a medicine preparation room or unit shall be under the nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom, or in an alcove or other space under direct control of the nursing or pharmacy staff.

(10) Clean linen storage. Provide a separate closet or a designated area within the clean workroom. If a closed cart system is used, storage may be in an alcove.

(11) Nourishment station. This shall contain a sink equipped for handwashing, equipment for serving nourishment between scheduled meals, refrigerator, storage cabinets, and icemaker-dispenser units to provide ice for patients' service and treatment.

(12) Emergency equipment storage. Space shall be provided for a "crash cart" and similar emergency equipment.

(13) Equipment storage room. Provide space for necessary equipment such as inhalators.

(14) Patients' storage facilities. Individual lockers shall be provided for the storage of patients' personal effects. These lockers may be located outside the intensive care unit.

C. Waiting Room.

A separate waiting room shall be provided for family members and others who may be permitted to visit the intensive care patients. A toilet room, public telephone, and seating accommodations for long waiting periods shall be provided.

7.4. NEWBORN NURSERY UNIT

(NOTE: Newborn infants shall be housed in nurseries, as described below, which are conveniently located to the post-partum nursing unit and obstetrical facilities. The nurseries shall be located and arranged to preclude unrelated traffic. No nursery shall open directly into another nursery.)

The unit shall meet the following requirements:

A. General.

Each nursery shall contain:

(1) Lavatory(ies) equipped for handwashing at the rate of one for each 8 bassinets.

(2) Nurses' emergency calling system per section 7.31.G.

(3) Glazed observation windows to permit viewing infants from public areas and from workrooms.

B. Full-Term Nursery.

It shall contain no more than 8 bassinets; however, this number may be increased to 16 if the extra bassinets are of the isolation type. The minimum floor area shall be 24 square feet (2.23 square meters) for each regular bassinet and 40 square feet (3.71 square meters) for each isolation type bassinet. When "rooming-in" program is used, the total number of bassinets provided in these units may be appropriately reduced, but the full-term nursery may not be omitted.

C. Special Care Nursery.

A nursery to provide intensive care for high-risk infants and infants in distress is required in hospitals having 25 or more maternity beds, unless equivalent facilities for such infants are conveniently available elsewhere. The minimum floor area per bassinet shall be 40 square feet (3.71 square meters). Additional area shall be provided to accommodate workroom functions if these are located within the nursery area. (See sec. 7.4.E.)

D. Charting Facilities.

E. Workroom(s).

Each nursery shall be served by a connecting workroom. It shall contain gowning facilities at the entrance for staff and housekeeping personnel, work space with counter, refrigerator, lavatory or sink equipped for handwashing, and storage. One workroom may serve more than one nursery. The workroom which serves the special care nursery may be omitted if equivalent work area and facilities are provided within the nursery in which case the gowning facilities shall be located near the entrance to the nursery and shall be separated from the work area.

F. Examination and Treatment Room or Space for Infants.

It shall contain a work counter, storage, and lavatory equipped for handwashing and shall be located so that doctors need not enter nurseries. It may serve more than one nursery and may be located in the workroom.

G. Infant Formula Facilities.

(1) On-site formula preparation. Where infant formula is prepared on the hospital site, the following shall be provided:

(a) Cleanup facilities for washing and sterilizing supplies. These shall consist of a lavatory or sink equipped for handwashing, a bottle washer, work counter space, and an equipment sterilizer.

(b) A separate room for preparing infant formula. It shall contain a lavatory or sink equipped for handwashing, hot plate, refrigerator, work counter, formula sterilizer, and storage facilities. It may be located near the nurseries or at another appropriate place within the hospital. No direct access from the formula room to a nursery or to a nursery workroom will be permitted.

(2) Commercially prepared formula. If a commercial infant formula is used, the storage and handling may be done in the nursery workroom, or in another appropriate room which has a work counter, sink equipped for handwashing, and storage facilities.

H. Janitors' Closet.

A closet for exclusive use of the housekeeping staff in maintaining the nurseries unit shall be provided. It shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies.

7.5. PEDIATRIC AND ADOLESCENT UNIT

(NOTE: Young children and adolescents shall be housed in a nursing unit separate from adults unless special arrangement has been made in the narrative program.)

This unit shall meet the following requirements:

A. Patient Rooms.

The requirements noted in section 7.2.A shall be applied to a pediatric and adolescent nursing unit containing hospital beds or youth beds.

B. Nursery.

Each nursery serving pediatric patients shall contain no more than 8 bassinets. The minimum clear floor area per bassinet shall be 40 square feet (3.71 square meters). Each room shall contain a lavatory equipped for handwashing, nurses' emergency calling system as per section 7.31.G, and glazed viewing windows for observing infants from public areas and workroom.

C. Nursery Workrooms.

Each nursery shall be served by a connecting workroom. It shall contain gowning facilities at the entrance for staff and housekeeping personnel, work space with counter, storage facilities, and lavatory or sink equipped for handwashing. One workroom may serve more than one nursery.

D. Examination and Treatment Room for Nursery(ies).

It shall contain a work counter, storage facilities, and lavatory equipped for handwashing.

E. Service Areas.

The service areas in the pediatric and adolescent nursing unit shall conform to the conditions listed in section 7.2.B and shall meet the following additional conditions:

(1) Multipurpose or individual room(s) shall be provided for dining, educational, and play purposes. Special provision shall be made to minimize the impact noise transmission through the floor of the multipurpose room(s) to occupied spaces below.

(2) Space for preparation and storage of infant formula shall be provided in the unit or in a convenient location nearby.

(3) Patients' toilet room(s) shall be provided convenient to multipurpose room(s) and central bathing facilities.

(4) Storage closets or cabinets for toys and for educational and recreational equipment shall be provided.

(5) Storage space shall be provided for replacement of youth and adult beds to provide flexibility for interchange of patient accommodations.

7.6. PSYCHIATRIC NURSING UNIT

(NOTE: Units intended for psychiatric nursing care shall provide a safe and secure facility for patients needing close supervision to minimize their hiding, escape, injury, or suicide. The unit shall be designed to facilitate care of ambulatory inpatients, to permit flexibility in arranging various types of psychiatric therapy, and to present as noninstitutional an atmosphere as possible.)

Each nursing unit shall provide the following:

A. Patient Rooms.

The requirements noted in section 7.2.A shall be applied to patient rooms in psychiatric nursing units except as follows:

- (1) A nurses' calling system is not required.
- (2) Suitable hardware shall be provided on patient toilet room doors so that access to patient toilets can be controlled by staff.

B. Service Areas.

The service areas noted in section 7.2.B shall be provided or made available to each psychiatric nursing unit except that the following elements shall be provided within and for the exclusive use of the unit:

- (1) Consultation room(s).
- (2) Examination and treatment room.
- (3) Space for dining, recreation, and occupational therapy. The total area for these purposes shall be not less than 40 square feet (3.71 square meters) per patient.
- (4) Storage closets or cabinets for recreational and occupational therapy equipment.
- (5) Storage for patients' clothing.

C. Additional Services.

If the psychiatric nursing unit is part of a program for outpatient or day care treatment, appropriate additional services shall be provided as determined by the narrative program.

7.7. SURGICAL FACILITIES

(NOTE: The number of operating rooms and recovery beds and the sizes of the service areas shall be based on the expected surgical workload. The surgical suite shall be located and arranged to preclude unrelated traffic through the suite.)

The suite shall provide the following elements:

A. General Operating Room(s).

Each room shall have a minimum clear area of 360 square feet (33.44 square meters) exclusive of fixed and movable cabinets and shelves. The minimum dimension shall be 18'0" (5.49 m). Provide an emergency communications system connecting with the surgical suite control station. Provide at least two X-ray film illuminators in each room. Storage space for splints and traction equipment shall be provided for rooms equipped for orthopedic surgery.

B. Room(s) for Surgical Cystoscopic and Other Endoscopic Procedures.

These rooms shall have a minimum clear area of 250 square feet (23.23 square meters) exclusive of fixed and movable cabinets and shelves. Additional clear space may be required by the narrative program to accommodate special functions in one or more of these rooms. Provide an emergency communications system connecting with the surgical suite control station. Facilities for the disposal of liquid wastes shall be provided.

C. Recovery Room(s).

Room(s) for post-anesthesia recovery of surgical patients shall be provided and shall contain a drug distribution station, handwashing facilities, charting facilities, clinical sink with a bedpan flushing device, and storage space for supplies and equipment. Additional recovery space may be necessary to accommodate surgical outpatients.

D. Service Areas.

Individual rooms shall be provided when so noted; otherwise alcoves or other open spaces which will not interfere with traffic may be used. Services, except the soiled workroom mentioned in item (6) and the janitors' closet in item (18), may be shared with and organized as part of the obstetrical facilities if the approved narrative program reflects this sharing concept. Service areas shall be arranged to avoid direct traffic between the operating and the delivery rooms. The following services shall be provided:

- (1) Control station located to permit visual surveillance of all traffic which enters the operating suite.
- (2) Supervisor's office or station.
- (3) Sterilizing facility(ies) with high speed autoclave(s) conveniently located to serve all operating rooms. When the narrative program indicates that adequate provisions have been made for replacement of sterile instruments during surgery, sterilizing facilities in the surgical suite will not be required.

(4) Drug distribution station. Provision shall be made for preparation of medication to be administered to patients.

(5) Scrub facilities. Two scrub stations shall be provided near entrance to each operating room; however, two scrub stations may serve two operating rooms if the scrub stations are located adjacent to the entrance of each operating room. Scrub facilities shall be arranged to minimize any incidental splatter on nearby personnel or supply carts. Provide viewing panels to permit observation of the operating room from the scrub area.

(6) Soiled workroom for the exclusive use of the surgical suite staff (or a soiled holding room that is part of a system for the collection and disposal of soiled materials). The soiled workroom shall contain a clinical sink or equivalent flushing type fixture, work counter, sink equipped for handwashing, waste receptacle, and linen receptacle. A soiled holding room shall be similar to the soiled workroom except that the clinical sink and work counter may be omitted.

(7) Fluid waste disposal facilities. These shall be conveniently located with respect to the general operating rooms. A clinical sink or equivalent equipment in a soiled workroom or in a soiled holding room would meet this requirement.

(8) Clean workroom or a clean supply room. A clean workroom is required when clean materials are assembled within the surgical suite prior to use. A clean workroom shall contain a work counter, sink equipped for handwashing, and space for clean and sterile supplies. A clean supply room shall be provided when the narrative program defines a system for the storage and distribution of clean and sterile supplies which would not require the use of a clean workroom.

(9) Anesthesia storage facilities. Unless the narrative program and the official hospital board action prohibits in writing the use of flammable anesthetics, a separate room shall be provided for storage of flammable gases in accordance with the requirements detailed in sections 7.30.D(2) (c) and 7.31.F(1).

(10) Anesthesia workroom for cleaning, testing, and storing anesthesia equipment. It shall contain a work counter and sink.

(11) Medical gas storage. Space for reserve storage of nitrous oxide and oxygen cylinders shall be provided.

(12) Equipment storage room(s) for equipment and supplies used in surgical suite.

(13) Staff clothing change areas. Appropriate areas shall be provided for male and female personnel (orderlies, technicians, nurses, and doctors) working within the surgical suite. The areas shall contain lockers, showers, toilets, lavatories equipped for handwashing, and space for donning scrub suits and boots. These areas shall be arranged to provide a one-way traffic pattern so that personnel entering from outside the surgical suite can change, shower, gown, and move directly into the surgical suite. Space for removal of scrub suits and boots shall be designed so that personnel using it will avoid physical contact with clean personnel.

(14) Outpatient surgery change areas. If the program defines an outpatient surgery load, a separate area shall be provided where outpatients change from street clothing into hospital gowns and are prepared for surgery. This would include a waiting room, lockers, toilets, and clothing change or gowning area with a traffic pattern similar to that of the staff clothing change area.

(15) Patients' holding area. In facilities with two or more operating rooms, a room or alcove shall be provided to accommodate stretcher patients waiting for surgery. This waiting area shall be under the visual control of the surgical suite control station.

(16) Stretcher storage area. This area shall be out of direct line of traffic.

(17) Lounge and toilet facilities for surgical staff. These facilities shall be provided in hospitals having three or more operating rooms and shall be located to permit use without leaving the surgical suite. A nurses' toilet room shall be provided near the recovery room(s).

(18) Janitors' closet. A closet containing a floor receptor or service sink and storage space for house-keeping supplies and equipment shall be provided exclusively for the surgical suite.

7.8. OBSTETRICAL FACILITIES

(NOTE: The number of delivery rooms, labor rooms, recovery beds, and the sizes of the service areas shall depend upon the estimated obstetrical workload. The obstetrical suite shall be located and arranged to preclude unrelated traffic through the suite.

The obstetrical suite shall provide the following elements:

A. Delivery Room(s).

Each room shall have a minimum clear area of 300 square feet (27.87 square meters) exclusive of fixed and movable cabinets and shelves. The minimum dimension shall be 16'0" (4.88 m). An emergency communications system shall be connected with the obstetrical suite control station. Separate resuscitation facilities (electrical outlets, oxygen, suction, and compressed air) shall be provided for newborn infants.

B. Labor Rooms.

These rooms shall be single-bed or 2-bed rooms with a minimum clear area of 80 square feet (7.43 square meters) per bed. Labor beds shall be provided at the rate of two for each delivery room. In facilities having only one delivery room, two labor rooms shall be provided, one of which shall be large enough to function as an emergency delivery room. Each labor room shall contain a lavatory equipped for handwashing. Each labor room shall have access to a toilet room. One toilet room may serve two labor rooms. Labor rooms shall be arranged so that doors are visible from a nurses' work station and shall also be directly accessible to facilities for medication, handwashing, charting, and storage for supplies and equipment. Provide at least one shower for use of labor room patients. Shower controls shall be outside the wet area for use by nursing staff. A water closet shall be accessible to the shower facility.

C. Recovery Room.

It shall contain not less than two beds, charting facilities located to permit staff to have visual control of all beds, facilities for medicine dispensing, handwashing facilities, clinical sink with bedpan flushing device, and storage for supplies and equipment. The recovery room may be omitted in hospitals with fewer than 1500 annual births.

D. Service Areas.

Individual rooms shall be provided when so noted; otherwise, alcoves or other open spaces which will not interfere with traffic may be used. Services, except the soiled workroom mentioned in item (6) and the janitors' closet in item (15), may be shared with and organized as part of the surgical facilities if the approved narrative program reflects this sharing concept. Service areas shall be arranged to avoid direct traffic between the delivery and operating rooms. The following services shall be provided:

(1) Control station located to permit visual sur-

veillance of all traffic which enters the obstetrical suite.

(2) Supervisor's office or station.

(3) Sterilizing facility(ies) with high speed autoclave(s) conveniently located to serve all delivery rooms. When the narrative program indicates that adequate provisions have been made for replacement of sterile instruments during a delivery, sterilizing facilities in the obstetrical suite will not be required.

(4) Drug distribution station. Provision shall be made for dispensing medication to patients.

(5) Scrub facilities. Two scrub stations shall be provided near entrance to each delivery room; however, two scrub stations may serve two delivery rooms if the scrub stations are located adjacent to the entrance of each delivery room. Scrub facilities shall be arranged to minimize any incidental splatter on nearby personnel or supply carts. Provide viewing panels to permit observation of delivery rooms from the scrub area.

(6) A soiled workroom for the exclusive use of the obstetrical suite staff (or a soiled holding room that is part of a system for the collection and disposal of soiled materials). The soiled workroom shall contain a clinical sink or equivalent flushing type fixture, work counter, sink equipped for handwashing, waste receptacle, and linen receptacle. A soiled holding room shall be similar to the soiled workroom except that the clinical sink and work counter may be omitted.

(7) Fluid waste disposal facilities conveniently located with respect to the delivery rooms. A clinical sink or equivalent equipment in a soiled workroom or soiled holding room would meet this requirement.

(8) Clean workroom or a clean supply room. A clean workroom is required when clean materials are assembled within the obstetrical suite prior to use. A clean workroom shall contain a work counter, sink equipped for handwashing, and space for clean and sterile supplies. A clean supply room shall be provided when the narrative program defines a system for the storage and distribution of clean and sterile supplies which would not require the use of a clean workroom.

(9) Anesthesia storage facilities. Unless the narrative program and official hospital board action in writing prohibit use of flammable anesthetics, a separate room shall be provided for storage of flammable gases in accordance with the requirements detailed in sections 7.30.D(2)(c) and 7.31.F(1).

(10) Anesthesia workroom for cleaning, testing, and storing anesthesia equipment. It shall contain a work counter and sink.

(11) Medical gas storage. Space for reserve storage of nitrous oxide and oxygen cylinders shall be provided.

(12) Equipment storage room(s) for equipment and supplies used in obstetrical suite.

(13) Staff's clothing change areas. Appropriate areas shall be provided for male and female personnel (technicians, nurses, aides, and doctors) working within the obstetrical suite. The areas shall contain lockers, showers, toilets, lavatories equipped for handwashing, and space for donning scrub suits and boots. These areas shall be arranged to provide a one-way traffic pattern so that personnel entering from outside the obstetrical suite can change, shower, gown and move directly into the obstetrical suite. The space for removal of scrub suits and boots shall be designed so that personnel using it will avoid physical contact with clean personnel.

(14) Lounge and toilet facilities for obstetrical staff. A nurses' toilet room shall be provided near the labor rooms and recovery room(s).

(15) Janitors' closet. A closet containing a floor receptor or service sink and storage space for house-keeping supplies and equipment shall be provided exclusively for the obstetrical suite.

(16) Stretcher storage area. This area shall be out of direct line of traffic.

7.9. OUTPATIENT AND EMERGENCY SUITE

A. General.

(1) Facilities for emergency care shall be provided in each hospital. Section 7.9.B indicates the extent of services to be provided.

(2) Facilities for outpatient clinic care shall be provided as required by the narrative program and may be either within or apart from the hospital. Requirements for an outpatient facility located apart from the hospital are described in section 9.

(3) Outpatient facilities within the hospital shall contain, but need not be limited to, all the elements described in section 7.9.C, or the narrative program describing the facility shall indicate the manner in which the needed services are to be conveniently available to the outpatient. When services are to be shared or purchased, appropriate modifications or deletions in space and equipment requirements

should be made to avoid duplication. Each element provided in the outpatient facility must meet the requirements outlined herein as a minimum, with the understanding that the elements will be expanded where needed to fulfill the program requirements.

B. Emergency Patient Care Services.

The extent of the emergency services to be provided in the hospital will depend upon community needs and availability of other organized programs for emergency care within the community. Hospitals having a narrative program calling for a minimum level of emergency services shall provide at least the facilities indicated in items (1), (4), and (9) below. Other hospitals shall provide all of the following to the degree called for in the narrative program:

(1) An entrance at grade level, sheltered from the weather, and with provision for ambulance and pedestrian access.

(2) A reception and control area conveniently located near the entrance, waiting area(s), and treatment room(s).

(3) Public waiting space with toilet facilities, public telephone, and drinking fountain.

(4) Treatment room(s). Handwashing facilities shall be provided in each room or shall be conveniently adjacent to each room. The rooms shall contain cabinets, medication storage, work counter, medical suction outlets, X-ray film illuminators, and space for storage of emergency equipment such as emergency treatment trays, defibrillator, cardiac monitor, and resuscitator.

(5) Storage area out of line of traffic for stretchers and wheelchairs.

(6) Staff's work and charting area(s). This may be combined with reception and control area or located within the treatment room.

(7) Clean supply storage. This may be a separate room or located within the treatment room.

(8) Soiled workroom or area containing clinical sink, work counter and sink equipped for handwashing, waste receptacle, and linen receptacle.

(9) Patients' toilet room convenient to treatment room(s).

C. Outpatient Clinic Services.

The extent (number and types) of the administrative, clinical, and diagnostic facilities to be provided will be determined by the services contemplated and the estimated patient load as described in the approved narrative program. The planning of outpatient facil-

ities should provide for the privacy and dignity of the patient during interview, examination, and treatment. The facilities shall be located so that outpatients do not traverse inpatient areas. The following shall be provided or made available to the outpatient clinic:

- (1) Administration and public areas.
 - (a) Entrance. Located at grade level, sheltered from weather, and able to accommodate wheelchairs.
 - (b) Lobby. It shall include:
 - (i) Wheelchair storage space(s).
 - (ii) Reception and information counter or desk.
 - (iii) Waiting space(s).
 - (iv) Public toilet facilities.
 - (v) Public telephone(s).
 - (vi) Drinking fountain(s).
 - (c) Interview space(s). For private interviews relating to social service, credit, and admissions.
 - (d) General or individual office(s). For business transactions, records, and administrative and professional staffs.
 - (e) Multipurpose room(s). For conferences, meetings, and health education purposes and shall be equipped for showing visual aids.
 - (f) Storage space. For employees' personal effects.
 - (g) Storage facilities. For office supplies, sterile supplies, pharmaceutical supplies, splints and other orthopedic supplies, and housekeeping supplies and equipment.
- (2) Clinical facilities.
 - (a) General purpose examination room(s). For medical, obstetrical, and similar examinations. Shall have a minimum floor area of 80 square feet (7.43 square meters), excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). Arrangement shall permit at least 2'6" (76 cm) clearance at each side and at the foot of the examination table. A lavatory or sink equipped for handwashing and a counter or shelf space for writing shall be provided.
 - (b) Special purpose examination rooms. Room sizes for special clinics such as eye, dental, and ear, nose and throat examinations shall be determined by types of equipment used but shall be not less than 80 square feet (7.43 square meters), excluding such spaces as

vestibule, toilet, closet, and work counter (whether fixed or movable). A lavatory or sink equipped for handwashing and a counter or shelf space for writing shall be provided.

(c) Treatment room(s). For minor surgical procedures and cast procedures. Shall have a minimum floor area of 120 square feet (11.15 square meters), excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). A work counter, storage cabinets, and lavatory or sink equipped for handwashing shall be provided.

(d) Observation room(s). For handling isolation, suspect, or disturbed patients. Shall be conveniently located to nurses' station or other control station to permit close observation of patients and to minimize their hiding, escape, injury, or suicide. Patients shall have access to a toilet room without entering the general corridor area. In facilities having an annual patient visit load of 15,000 or less, a separate room is not required if an examination room is modified to accommodate this function.

(e) Facilities for charting and for clinical records (nurses' station(s)). Work counter, communication system, and space for supplies shall be provided. A separate space may be omitted if these functions are accommodated in each examination room and each treatment room.

(f) Drug distribution station. This may be a medicine preparation room or unit, a self-contained medicine dispensing unit, or another approved system. If used, a medicine preparation room or unit shall be under the nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom, or in an alcove or other space under direct control of the nursing or pharmacy staff.

(g) Clean workroom or clean holding room. The clean workroom shall contain a work counter and handwashing and storage facilities. A clean holding room shall be part of a system for storage and distribution of clean supply materials and shall be similar to the

clean workroom except that the work counter and handwashing facilities may be omitted.

(h) Soiled workroom or soiled holding room. The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for hand washing, work counter, waste receptacle, and linen receptacle. A soiled holding room shall be part of a system for collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and the work counter may be omitted.

(i) Stretcher storage space out of direct line of traffic.

(3) Diagnostic facilities.

(a) Radiological facilities for diagnostic services shall be made available to the outpatient and emergency suite. If a separate radiological unit is installed within the outpatient and emergency suite, it shall comply with the requirements in section 7.10.

(b) Laboratory services shall be made available to the outpatient and emergency suite. If a separate laboratory unit is installed within the outpatient and emergency suite, it shall comply with the requirements in section 7.11.

7.10. RADIOLOGY SUITE

(NOTE: Equipment shall be provided for diagnostic purposes as required by the narrative program.)
The suite shall contain the following elements:

A. Radiographic Room(s).

(See secs. 7.27.A(23), 7.31.F(2), and 7.31.F(3) for special requirements.)

B. Film Processing Facilities.

C. Viewing and Administration Area(s).

D. Film Storage Facilities.

E. Toilet Room.

With handwashing facilities. Directly accessible from each fluoroscopy room without entering the general corridor area.

F. Dressing Area(s).

With convenient access to toilets.

G. Waiting Room or Alcove.

For ambulatory patients.

H. Holding Area for Stretcher Patients.

Out of the direct line of normal traffic.

7.11. LABORATORY SUITE

(NOTE: Laboratory facilities shall be provided for hematology, clinical chemistry, urinalysis, cytology, pathology, and bacteriology to meet the workload described in the narrative program. These may be provided within the hospital or through an effective contract arrangement with a nearby laboratory service.)

If laboratory services are provided by contractual arrangement, then at least the following minimum services shall be available within the hospital:

A. Laboratory Work Counter(s).

With sink, vacuum, gas, and electric services.

B. Lavatory(ies) or Counter Sink(s).

Equipped for handwashing.

C. Storage Cabinet(s) or Closet(s).

D. Blood Storage Facilities.

E. Specimen Collection Facilities.

Urine collection rooms shall be equipped with a water closet and lavatory. Blood collection facilities shall have space for a chair and work counter.

7.12. PHYSICAL THERAPY SUITE

(NOTE: Appropriate elements may be planned and arranged for shared use by occupational therapy patients and staff.)

If a physical therapy suite is required by the narrative program, the following elements shall be provided:

A. Office Space.

B. Waiting Space.

C. Treatment Area(s).

For thermotherapy, diathermy, ultrasonics, hydrotherapy, etc. Provide cubicle curtains around each individual treatment area. Provide handwashing facility(ies). One lavatory or sink may serve more than one cubicle. Facilities for collection of wet and soiled linen and other material shall be provided.

D. Exercise Area.

E. Storage for Clean Linen, Supplies, and Equipment.

F. Patients' Dressing Areas, Showers, Lockers, and Toilet Rooms.

G. Service Sink.

H. Wheelchair and Stretcher Storage.

7.13. OCCUPATIONAL THERAPY SUITE

(NOTE: Appropriate elements may be planned and arranged for shared use by physical therapy patients and staff.)

If an occupational therapy suite is required by the narrative program, the following elements shall be provided:

- A. Office Space.
- B. Activities Area.
A sink or lavatory shall be provided. Facilities for collection of waste products prior to disposal shall be provided.
- C. Storage for Supplies and Equipment.
- D. Patients' Toilet Rooms.

7.14. MORGUE AND AUTOPSY

(NOTE: These facilities shall be directly accessible to an outside entrance and shall be located to avoid movement of bodies through public areas.)

The following elements shall be provided when autopsies are performed within the hospital:

A. Refrigerated Facilities for Body-Holding.

B. Autopsy Room.

This room shall contain:

- (1) Work counter with sink equipped for handwashing.
- (2) Storage space for supplies, equipment, and specimens.
- (3) Autopsy table.
- (4) Clothing change area with shower, toilet, and lockers.

If autopsies are performed outside the facility, only a well-ventilated body-holding room need be provided.

7.15. PHARMACY SUITE

The size and type of services to be provided in the pharmacy will depend upon the type of drug distribution system to be used in the hospital and whether the hospital proposes to provide, purchase, or share pharmacy services with other hospitals or other medical facilities. This shall be explained in the narrative program.

Provision shall be made for the following:

A. Administrative Functions.

These include requisitioning, recording and reporting, receiving, storage (including refrigeration), and accounting.

B. Quality Control Area.

(If bulk compounding and/or packaging functions are performed).

C. Locked Storage for Drugs and Biologicals.

D. Dispensing Area.

E. Handwashing Facilities.

F. Drug Information Area.

For reference materials and personnel.

G. Sterile Products Area.

For compounding of I.V. admixtures and other sterile dosage forms.

7.16. DIETARY FACILITIES

A. General.

Construction, equipment, and installation shall comply with the standards specified in PHS Publication No. 934, "Food Service Sanitation Manual." Food service facilities shall be designed and equipped to meet the requirements of the narrative program. These may consist of an on-site conventional food preparing system, a convenience food service system, or an appropriate combination of the two.

B. Functional Elements.

The following facilities shall be provided in the size required to implement the type of food service selected:

- (1) Control station. For receiving food supplies.
- (2) Storage space. For four days' supply including food requiring cold storage.
- (3) Food preparation facilities. Conventional food preparation systems require space and equipment for preparing, cooking, and baking. Convenience food service systems such as frozen prepared meals, bulk packaged entrees, and individual packaged portions, or systems using contractual commissary services require space and equipment for thawing, portioning, cooking, and/or baking.
- (4) Handwashing facility(ies). Located in the food preparation area.
- (5) Patients' meal service facilities. Examples are those required for tray assembly and distribution.
- (6) Dining space. For ambulatory patients, staff, and visitors.
- (7) Warewashing space. Located in a room or an alcove separate from food preparation and serving areas. Commercial-type dishwashing equipment shall be provided. Space shall also be provided for re-

ceiving, scraping, sorting, and stacking soiled tableware and for transferring clean tableware to the using areas. A lavatory shall be conveniently available.

(8) Potwashing facilities.

(9) Storage areas. For cans, carts, and mobile tray conveyors. (See sec. 7.22 for sanitizing facilities.)

(10) Waste storage facilities. Located in a separate room easily accessible to the outside for direct pickup or disposal.

(11) Office(s) or desk spaces. For dietitian(s) or the dietary service manager.

(12) Toilets. For dietary staff. Handwashing facilities shall be immediately available.

(13) Janitors' closet. Located within the dietary department. It shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies.

(14) Self-dispensing icemaking facilities.

7.17. ADMINISTRATION AND PUBLIC AREAS

The following areas shall be provided:

A. Entrance.

At grade level, sheltered from the weather, and able to accommodate wheelchairs.

B. Lobby.

It shall include:

- (1) Storage space for Wheelchairs.
- (2) Reception and information counter or desk.
- (3) Waiting space(s).
- (4) Public toilet facilities.
- (5) Public telephones.
- (6) Drinking fountain(s)

C. Interview Space(s).

For private interviews relating to social service, credit, and admissions.

D. General or Individual Office(s).

For business transactions, medical and financial records, and administrative and professional staffs.

E. Multipurpose Room(s).

For conferences, meetings, and health education purposes including provisions for showing visual aids.

F. Medical Library Facilities.

G. Storage for Office Equipment and Supplies.

7.18. MEDICAL RECORDS UNIT

The following rooms and areas shall be provided:

A. Medical Records Librarian's Office or Space.

B. Review and Dictating Room(s) or Spaces.

C. Work Area for Sorting, Recording, or Micro-filming Records.

D. Storage Area for Records.

7.19. CENTRAL MEDICAL AND SURGICAL SUPPLY DEPARTMENT

The following shall be provided:

A. Receiving and Cleanup Room.

It shall contain work space and equipment for cleaning medical and surgical equipment and for disposal of or processing unclean materiel. Handwashing facilities shall be provided.

B. Clean Workroom.

It shall contain work space and equipment for sterilizing medical and surgical equipment and supplies.

C. Storage Areas for Clean Supplies and for Sterile Supplies. (May be in clean workroom.)

D. Unsterile Supplies Storage Room.

This may be located in another department.

E. Cart Storage. (See sec. 7.22 for cart sanitizing facilities.)

7.20. CENTRAL STORES

The following shall be provided:

A. Offstreet Unloading Facilities.

B. Receiving Area.

C. General Storage Rooms.

They shall have a total area of not less than 20 square feet (1.85 square meters) per inpatient bed. They shall generally be concentrated in one area, but, in a multiple building complex, they may be in separate concentrated areas in one or more individual buildings.

D. Additional Storage Area for Outpatient Facilities.

This shall be at the rate of 5 percent of the total area of the outpatient facilities. This may be combined with the general stores or located within the outpatient department.

7.21. LINEN SERVICES

A. On-Site Processing.

If linen is to be processed on the hospital site, the following shall be provided:

(1) Laundry processing room with commercial-type equipment which can process seven days' needs within a regularly scheduled work week. Hand-washing facilities shall be provided.

(2) Soiled linen receiving, holding, and sorting room with handwashing facilities.

(3) Storage for laundry supplies.

(4) Clean linen inspection and mending room or area.

(5) Clean linen storage, issuing, and holding room or area.

(6) Janitors' closet containing a floor receptor or service sink and storage space for housekeeping equipment and supplies.

(7) Cart storage. (See sec. 7.22 for cart sanitizing facilities.)

B. Off-Site Processing.

If linen is processed off the hospital site, the following shall be provided:

(1) Soiled linen holding room.

(2) Clean linen receiving, holding, inspection, and storage room(s).

(3) Cart storage. (See sec. 7.22 for cart sanitizing facilities.)

7.22. FACILITIES FOR CLEANING AND SANITIZING CARTS

Facilities shall be provided to clean and sanitize carts serving the central medical and surgical supply department, dietary facilities, and linen services. These may be centralized or departmentalized.

7.23. EMPLOYEES' FACILITIES

In addition to the employees' facilities such as locker rooms, lounges, toilets, or shower facilities called for in certain departments (see secs. 7.2.B(6), 7.3.B(4), 7.7.D(13) and (17), 7.8.D(13) and (14), 7.14.B(4), and 7.16.B(12)), a sufficient number of such facilities as required to accommodate the needs of all personnel and volunteers shall be provided.

7.24. JANITORS' CLOSETS

In addition to the janitors' closets called for in certain departments (see secs. 7.4.H, 7.7.D(18), 7.8.D(15),

7.16.B(13), and 7.21.A(6)) sufficient janitors' closets shall be provided throughout the facility as required to maintain a clean and sanitary environment. Each shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies.

7.25. ENGINEERING SERVICE AND EQUIPMENT AREAS

The following shall be provided:

A. Room(s) or Separate Building(s) for Boilers, Mechanical Equipment, and Electrical Equipment.

B. Engineer's Office.

C. Maintenance Shop(s).

D. Storage Room for Building Maintenance Supplies.

E. Yard Equipment Storage.

A separate room or building for yard maintenance equipment and supplies.

7.26. WASTE PROCESSING SERVICES

A. Storage and Disposal.

Space and facilities shall be provided for the sanitary storage and disposal of waste by incineration, mechanical destruction, compaction, containerization, removal, or by a combination of these techniques.

B. Incinerator.

A gas, electric, or oil-fired incinerator shall be provided for the complete destruction of pathological and infectious waste. Infectious waste shall include, but shall not be limited to, dressings and material from open wounds, laboratory specimens, and all waste material from isolation rooms.

(1) The incinerator shall be in a separate room or placed outdoors.

(2) Design and construction of incinerators and trash chutes shall be in accordance with NFPA Standard 82.

(3) Incinerators shall be designed and equipped to conform to requirements prescribed by air pollution regulations in the area.

7.27. DETAILS AND FINISHES

All details and finishes for modernization projects as well as for new construction shall comply with the following:

A. Details.

(1) Compartmentation, exits, automatic extinguishing systems, and other details relating to fire pre-

vention and fire protection shall comply with requirements listed in sections 10-1, 17-415, and 17-416 of the NFPA Standard 101.

(2) Items such as drinking fountains, telephone booths, vending machines, and portable equipment shall be located so as not to restrict corridor traffic or reduce the corridor width below the required minimum.

(3) Rooms containing bathtubs, sitz baths, showers, and water closets, subject to occupancy by patients, shall be equipped with doors and hardware which will permit access from the outside in any emergency. When such rooms have only one opening or are small, the doors shall be capable of opening outwards or be otherwise designed to be opened without need to push against a patient who may have collapsed within the room.

(4) Suitable hardware shall be provided on doors to patient toilet rooms in psychiatric nursing units so that access to these rooms can be controlled by staff.

(5) Doors to patient rooms in psychiatric nursing units shall not be lockable from inside the room.

(6) The minimum width of all doors to rooms needing access for beds or stretchers shall be 3'8" (111.7 cm). Doors to patients' toilet rooms and other rooms needing access for wheelchairs shall have a minimum width of 2'10" (86.3 cm).

(7) Doors on all openings between corridors and rooms or spaces subject to occupancy, except elevator doors, shall be swing type. Openings to showers, baths, patient toilets, and other small wet-type areas not subject to fire hazard are exempt from this requirement.

(8) Doors, except those to spaces such as small closets which are not subject to occupancy, shall not swing into corridors in a manner that might obstruct traffic flow or reduce the required corridor width. (Large walk-in type closets are considered as occupiable spaces.)

(9) Windows and outer doors which may be frequently left in an open position shall be provided with insect screens.

(10) Windows shall be designed so that persons cannot accidentally fall out of them when they are open, or shall be provided with security screens.

(11) Doors sidelights, borrowed lights, and windows in which the glazing extends down to within 18 inches (46 cm) of the floor (thereby creating possibility of accidental breakage by pedestrian traffic) shall

be glazed with safety glass, wire glass, or plastic glazing material that will resist breaking and will not create dangerous cutting edges when broken. Similar materials shall be used in wall openings of recreation rooms and exercise rooms unless required otherwise for fire safety. Safety glass or plastic glazing materials shall be used for shower doors and bath enclosures.

Safety glass or plastic glazing materials as noted above shall be used in windows and doors in patient areas of psychiatric facilities.

(12) Where labeled fire doors are required, these shall be certified by an independent testing laboratory as meeting the construction requirements equal to those for fire doors in NFPA Standard 80. Reference to a labeled door shall be construed to include labeled frame and hardware.

(13) Elevator shaft openings shall have class B 1½ hour labeled fire doors.

(14) Linen and refuse chutes shall meet or exceed the following requirements (also see sec. 7.26.B(2)):

(a) Service openings to chutes shall not be located in corridors or passageways but shall be located in a room of construction having a fire-resistance of not less than 1 hour. Doors to such rooms shall be not less than class C ¾-hour labeled doors.

(b) Service openings to chutes shall have approved self-closing class B 1½ hour labeled fire doors.

(c) Minimum cross-sectional dimension of gravity chutes shall be not less than 2'0" (61 cm).

(d) Chutes shall discharge directly into collection rooms separate from incinerator, laundry, or other services. Separate collection rooms shall be provided for trash and for linen. The enclosure construction for such rooms shall have a fire-resistance of not less than 2 hours, and the doors thereto shall be not less than class B 1½ hour labeled fire doors.

(e) Gravity chutes shall extend through the roof with provisions for continuous ventilation as well as for fire and smoke ventilation. Openings for fire and smoke ventilation shall have an effective area of not less than that of the chute cross-section and shall be not less than 4'0" (1.22 m) above the roof and not less than 6'0" (1.83

m) clear of other vertical surfaces. Fire and smoke ventilating openings may be covered with single strength sheet glass.

(15) Dumbwaiters, conveyors, and material handling systems shall not open directly into a corridor or exitway but shall open into a room enclosed by construction having a fire-resistance of not less than 1 hour and provided with class C ¾-hour labeled fire doors. Service entrance doors to vertical shafts containing dumbwaiters, conveyors, and material handling systems shall be not less than class B 1 ½-hour labeled fire doors. Where horizontal conveyors and material handling systems penetrate fire-rated walls or smoke partitions, such openings must be provided with class B 1 ½-hour labeled fire doors for 2-hour walls and class C ¾-hour labeled fire doors for 1-hour walls or partitions.

(16) Thresholds and expansion joint covers shall be made flush with the floor surface to facilitate use of wheelchairs and carts.

(17) Grab bars shall be provided at all patients' toilets, showers, tubs, and sitz baths. The bars shall have 1½-inch (3.8 cm) clearance to walls and shall have sufficient strength and anchorage to sustain a concentrated load of 250 pounds (113.4 kilograms).

(18) Recessed soap dishes shall be provided at showers and bath tubs.

(19) Location and arrangement of handwashing facilities shall permit their proper use and operation. Particular care should be given to the clearances required for blade-type operating handles. (See sec. 7.30.E(1).)

(20) Mirrors shall not be installed at handwashing fixtures in food preparation areas or in sensitive areas such as nurseries, clean and sterile supplies, and scrub sinks.

(21) Paper towel dispensers and waste receptacles shall be provided at all handwashing facilities except scrub sinks.

(22) Laboratories and handwashing facilities shall be securely anchored to withstand an applied vertical load of not less than 250 pounds (113.4 kilograms) on the front of the fixture.

(23) Radiation protection requirements of X-ray and gamma ray installations shall conform with NCRP Reports Nos. 33 and 34. Provision shall be made for testing the completed installation before use and all defects must be corrected before acceptance.

(24) Ceiling heights shall be as follows:

(a) Boiler rooms shall have ceiling clear-

ances not less than 2'6" (76 cm) above the main boiler header and connecting piping.

(b) Radiographic, operating and delivery rooms, and other rooms containing ceiling-mounted equipment or ceiling-mounted surgical light fixtures shall have height required to accommodate the equipment or fixtures.

(c) All other rooms shall have not less than 8'0" (2.44 m) ceilings except that corridors, storage rooms, toilet rooms, and other minor rooms shall be not less than 7'8" (2.34 m). Suspended tracks, rails, and pipes located in the path of normal traffic shall be not less than 6'8" (2.03 m) above the floor.

(25) Recreation rooms, exercise rooms, and similar spaces where impact noises may be generated shall not be located directly over patient bed area, delivery or operating suites, unless special provisions are made to minimize such noise.

(26) Rooms containing heat-producing equipment (such as boiler or heater rooms and laundries) shall be insulated and ventilated to prevent any floor surface above from exceeding a temperature of 10°F (6°C) above the ambient room temperature.

(27) Noise reduction criteria shown in table 1 shall apply to partition, floor, and ceiling construction in patient areas.

B. Finishes.

(1) Cubicle curtains and draperies shall be non-combustible or rendered flame retardant and shall pass both the large and small scale tests of NFPA Standard 701.

(2) Flame spread and smoke developed ratings of finishes are covered under section 7.28.F.

(3) Floors in areas and rooms in which flammable anesthetic agents are stored or administered to patients shall comply with NFPA Standard 56A. Conductive flooring may be omitted from emergency treatment, operating, and delivery rooms provided that a written resolution is signed by the hospital board stating that no flammable anesthetic agents will be used in these areas and provided that appropriate notices are permanently and conspicuously affixed to the wall in each such area and room.

(4) Floor materials shall be easily cleanable and have wear resistance appropriate for the location involved. Floors in areas used for food preparation or food assembly shall be water-resistant and grease-

Table 1. SOUND TRANSMISSION LIMITATIONS IN GENERAL HOSPITALS

	AIRBORNE SOUND TRANSMISSIONS CLASS (STC) ^{a/}		IMPACT INSULATION CLASS (IIC) ^{b/}
	Partitions	Floors	Floors
Patients' room to patients' room	45	45	45
Public space to patients' room ^{c/}	50	50	50 ^{d/}
Service areas to patients' room ^{e/}	55	55	55 ^{d/}

^{a/}Sound transmission class (STC) shall be determined by tests in accordance with methods set forth in ASTM Standard E 90 and ASTM Standard E 413.

^{b/}Impact insulation class (IIC) shall be determined in accordance with criteria set forth in HUD FT/TS-24, "A Guide to Airborne, Impact and Structure Borne Noise - Control in Multi-Family Dwellings."

^{c/}Public space includes lobbies, dining rooms, recreation rooms, treatment rooms, and similar spaces.

^{d/}Impact noise limitation applicable only when corridor, public space, service area, or play or recreation area is over patients' room.

^{e/}Service areas include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patients' rooms, offices, nurses' stations, and similar occupied spaces shall be effectively isolated from the floor.

NOTE: The requirements set forth in this table assume installation methods which will not appreciably reduce the efficiency of the assembly as tested.

proof. Joints in tile and similar material in such areas shall be resistant to food acids. In all areas frequently subject to wet cleaning methods, floor materials shall not be physically affected by germicidal and cleaning solutions. Floors that are subject to traffic while wet (such as shower and bath areas, kitchens, and similar work areas) shall have a nonslip surface.

(5) Wall bases in kitchens, operating and delivery rooms, soiled workrooms, and other areas which are frequently subject to wet cleaning methods shall be made integral and coved with the floor, tightly sealed within the wall, and constructed without voids that can harbor insects.

(6) Wall finishes shall be washable and, in the immediate area of plumbing fixtures, shall be smooth and moisture resistant. Finish, trim, and floor and wall construction in dietary and food preparation areas shall be free from spaces that can harbor rodents and insects.

(7) Floor and wall penetrations by pipes, ducts, and conduits shall be tightly sealed to minimize entry of rodents and insects. Joints of structural elements shall be similarly sealed.

(8) Ceilings shall be cleanable and those in sensitive areas such as surgical, delivery, and nursery rooms shall be readily washable and without crevices that can retain dirt particles. These sensitive areas

along with the dietary and food preparation areas shall have a finished ceiling covering all overhead ductwork and piping. Finished ceilings may be omitted in mechanical and equipment spaces, shops, general storage areas, and similar spaces, unless required for fire-resistive purposes.

(9) Acoustical ceilings shall be provided for corridors in patient areas, nurses' stations, labor rooms, dayrooms, recreation rooms, dining areas, and waiting areas.

(10) Ceilings of patient rooms in psychiatric nursing units shall be of monolithic or bonded construction of not less than 3/4-inch (1.9 cm) thickness.

7.28. CONSTRUCTION, INCLUDING FIRE-RESISTIVE REQUIREMENTS

A. Design.

Every building and every portion thereof shall be designed and constructed to sustain all dead and live loads in accordance with accepted engineering practices and standards, including seismic forces where they apply.

B. Foundations.

Foundations shall rest on natural solid bearing if a satisfactory bearing is available at reasonable depths. Proper soil-bearing values shall be established in ac-

cordance with recognized standards. If solid bearing is not encountered at practical depths, the structure shall be supported on driven piles or drilled piers designed to support the intended load without detrimental settlement, except that one-story buildings may rest on a fill designed by a soils engineer. When engineered fill is used, site preparation and placement of fill shall be done under the direct full-time supervision of the soils engineer. The soils engineer shall issue a final report on the compacted fill operation and certification of compliance with the job specifications. All footings shall extend to a depth not less than 1'0" (30.5 cm) below the estimated maximum frost line.

C. Construction.

Construction shall be in accordance with the requirements of section 10-132 of NFPA Standard 101 and the minimum requirements contained herein.

D. Freestanding Buildings.

Separate freestanding buildings housing the boiler plant, laundry, shops, or general storage may be of unprotected noncombustible construction, protected noncombustible construction, or fire-resistive construction.

E. Enclosures.

Enclosures for stairways, elevator shafts, chutes and other vertical shafts, boiler rooms, and storage rooms of 100 square feet (9.29 square meters) or greater area shall be of construction having a fire-resistance rating of not less than 2 hours.

F. Interior Finishes.

Interior finish materials shall comply with the flame spread limitations and the smoke production limitations shown in table 2. If a separate underlayment is used with any floor finish materials, the underlayment and the finish material shall be tested as a unit or equivalent provisions made to determine the effect of the underlayment on the flammability characteristics of the floor finish material. Tests shall be performed by an independent testing laboratory.

G. Insulation Materials.

Building insulation materials, unless sealed on all sides and edges, shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less when tested in accordance with ASTM Standard E 84.

H. Provision for Natural Disasters.

(1) General requirements. An emergency radio communication system shall be provided in each facility. This system shall be self-sufficient in time of emergency and capable of operation without reliance on the building's service or emergency power supply. (See sec. 7.31.H(4)(a)(iv).) It shall also be linked with the available community or State emergency communication network, including connections with police and fire systems.

(2) Earthquakes. In regions where local experience shows that earthquakes have caused loss of life or extensive property damage, buildings and structures shall be designed to withstand the force assump-

Table 2. FLAME SPREAD AND SMOKE PRODUCTION LIMITATIONS ON INTERIOR FINISHES IN GENERAL HOSPITALS

		Flame Spread Rating	Smoke Production Rating
Walls and Ceilings	Exitways, storage rooms, and areas of unusual fire hazard	ASTM Standard E 84 25 or less	Appendix II NBS Technical Notes 708 450 or less†
	All other areas	ASTM Standard E 84 75 or less	
Floors*		ASTM Standard E 84 75 or less	

*Required conductive floors are exempt from the smoke production limitations.

†Average of flaming and nonflaming values.

tions specified in the latest issue of the ICBO Uniform Building Code.

In buildings which are subdivided into separate structural units by seismic joints, each unit shall be provided with an exit stairway to permit evacuation from the building without traversing the seismic joints.

Special care shall be taken to anchor fixed equipment, suspended ceilings, light fixtures, and similar items to minimize hazard to occupants and damage to the equipment and building during an earthquake. Storage shelves and racks holding breakable or fragile supplies shall be designed to retain their contents when subjected to the lateral forces of an earthquake.

(3) Hurricanes, tornadoes, and floods. Special provisions shall be made in the design of buildings in regions where local experience shows loss of life or damage to buildings resulting from hurricanes, tornadoes, or floods.

7.29. ELEVATORS

A. General.

All hospitals having patients' facilities (such as bedrooms, dining rooms, or recreation areas) or critical services (such as operating, delivery, diagnostic, or therapy) located on other than the main entrance floor shall have electric or electrohydraulic elevators.

(1) Number of elevators.

(a) At least one hospital-type elevator shall be installed where 1 to 59 patient beds are located on any floor other than the main entrance floor.

(b) At least two hospital-type elevators shall be installed where 60 to 200 patient beds are located on floors other than the main entrance floor, or where the major inpatient services are located on a floor other than those containing patient beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(c) At least three hospital-type elevators shall be installed where 201 to 350 patient beds are located on floors other than the main entrance floor, or where the major inpatient services are located on a floor other than those containing patient beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(d) For hospitals with more than 350 beds, the number of elevators shall be determined from a study of the hospital plan and the estimated vertical transportation requirements.

(2) Cars and platforms. Cars of hospital-type elevators shall have inside dimensions that will accommodate a patient bed and attendants and shall be at least 5'0" (1.52 m) wide by 7'6" (2.29 m) deep. The car door shall have a clear opening of not less than 3'8" (1.12 m).

(3) Leveling. Elevators shall be equipped with an automatic leveling device of the two-way automatic maintaining type with an accuracy of $\pm\frac{1}{2}$ inch (± 1.3 cm).

(4) Operation. Elevators, except freight elevators, shall be equipped with a two-way special service switch to permit cars to bypass all landing button calls and be dispatched directly to any floor.

(5) Elevator controls, alarm buttons, and telephones shall be accessible to wheelchair occupants.

(6) Elevator call buttons, controls, and door safety stops shall be of a type that will not be activated by heat or smoke.

B. Field Inspection and Tests.

Inspections and tests shall be made and the owner shall be furnished written certification that the installation meets the requirements set forth in this section and all applicable safety regulations and codes.

7.30. MECHANICAL REQUIREMENTS

A. General.

(1) Prior to completion and acceptance of the facility, all mechanical systems shall be tested, balanced, and operated to demonstrate to the owner or his representative that the installation and performance of these systems conform to the requirements of the plans and specifications.

(2) Upon completion of the contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions, and parts list with numbers and description for each piece of equipment. He shall also be provided with instruction in the operational use of systems and equipment as required.

B. Thermal and Acoustical Insulation.

(1) Insulation shall be provided for the following within the building:

- (a) Boilers, smoke breeching, and stacks.
- (b) Steam supply and condensate return piping.
- (c) Hot water piping above 180°F (82°C) and all hot water heaters, generators, and convertors.
- (d) Hot water piping above 125°F (52°C) which is exposed to contact by patients.
- (e) Chilled water, refrigerant, other process piping and equipment operating with fluid temperatures below ambient dew point.
- (f) Water supply and drainage piping on which condensation may occur.
- (g) Air ducts and casings with outside surface temperature below ambient dew point.
- (h) Other piping, ducts, and equipment as necessary to maintain the efficiency of the system.

(2) Insulation may be omitted from hot water and steam condensate piping not subject to contact by patients when such insulation is unnecessary for preventing excessive system heat loss or excessive heat gain.

(3) Insulation on cold surfaces shall include an exterior vapor barrier.

(4) Insulation, including finishes and adhesives on the exterior surfaces of ducts, pipes, and equipment, shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84. (See sec. 7.30.B(5) for exceptions.)

(5) Linings in air ducts and equipment shall meet the Erosion Test Method described in Underwriters' Laboratories, Inc., Publication No. 181. These linings, including coatings and adhesives, and insulation on exterior surfaces of pipes and ducts in building spaces used as air supply plenums, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84.

(6) Duct linings shall not be used in systems supplying operating rooms, delivery rooms, recovery rooms, nurseries, and intensive care units unless terminal filters of at least 90 percent efficiency are installed downstream of linings.

C. Steam and Hot Water Systems.

- (1) Boilers. Boilers shall have the capacity,

based upon the net ratings published by the Hydronics Institute, to supply the normal requirements of all systems and equipment. The number and arrangement of boilers shall be such that, when one boiler breaks down or routine maintenance requires that one boiler be temporarily taken out of service, the capacity of the remaining boiler(s) shall be sufficient to provide hot water service for clinical, dietary, and patient use; steam for sterilization and dietary purposes; and heating for operating, delivery, labor, recovery, intensive care, nursery, and general patient rooms except that heating of general patient rooms is not required in areas with a design temperature of 20°F (-7°C) or more, based on the Median of Extremes in the ASHRAE Handbook of Fundamentals.

(2) Boiler accessories. Boiler feed pumps, heating circulating pumps, condensate return pumps, and fuel oil pumps shall be connected and installed to provide normal and standby service.

(3) Valves. Supply and return mains and risers of cooling, heating, and process steam systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends.

D. Air Conditioning, Heating, and Ventilating Systems.

- (1) Temperatures and humidities.

(a) The systems shall be designed to provide the following temperatures and humidities in the areas noted:

Area Designation	Temperature		Relative Humidity (%)	
	°F	°C	Min.	Max.
Operating Rooms	70-76*	21-24*	50	60
Delivery Rooms	70-76*	21-24*	50	60
Recovery Rooms	75	24	50	60
Intensive Care Rooms	75-80*	24-27*	30	60
Nurseries Unit	75	24	30	60
Special Care Nursery Unit	75-80*	24-27*	30	60

*Variable Range Required

Table 3. GENERAL PRESSURE RELATIONSHIPS AND VENTILATION
OF CERTAIN HOSPITAL AREAS

Area Designation	Pressure Relationship to Adjacent Areas	Minimum Air Changes of Outdoor Air per Hour Supplied to Room	Minimum Total Air Changes per Hour Supplied to Room	All Air Exhausted Directly to Outdoors	Recirculated within Room Units
Operating Room	P	5	25	Optional	No ⁴
Emergency Operating Room	P	5	25	Optional	No ⁴
Emergency Examination and Treatment Room	E	2	6	Optional	Optional
Delivery Room	P	5	12	Optional	No ⁴
Nursery Unit	P	5	12	Optional	No ⁴
Recovery Room	P	2	6	Optional	No ⁴
Intensive Care	P	2	6	Optional	No ^{4,5}
Patient Room	E	2	2	Optional	Optional
Patient Room Corridor	E	2	4	Optional	Optional
Isolation Room	E	2	6	Yes	No ⁵
Isolation Room-Alcove or Anteroom	E	2	10	Yes	No ⁵
Examination Room	E	2	6	Optional	Optional
Medication Room	P	2	4	Optional	Optional
Pharmacy	P	2	4	Optional	Optional
Treatment Room	E	2	6	Optional	No ⁴
X-ray, Fluoroscopy Room	N	2	6	Yes	No
X-ray, Treatment Room	E	2	6	Optional	Optional
Physical Therapy and Hydrotherapy	N	2	6	Optional	Optional
Soiled Workroom or Soiled Holding	N	2	10	Yes	No
Clean Workroom or Clean Holding	P	2	4	Optional	Optional
Autopsy	N	2	12	Yes	No
Workroom	N	2	10	Yes	No
Warefrigerated Body Holding Room	N	Optional	10	Yes	No
Toilet Room	N	Optional	10	Yes	No
Bedpan Room	N	Optional	10	Yes	No
Bathroom	N	Optional	10	Yes	No
Jantiors' Closet	N	Optional	10	Yes	No
Sterilizer Equipment Room	N	Optional	10	Yes	No
Linen and Trash Chute Rooms	N	Optional	10	Yes	No
Laboratory, General ¹	N	2	6	Optional	Optional
Laboratory, Media Transfer ²	P	2	4	Optional	No ⁴
Food Preparation Centers	E	2	10	Yes	No
Warewashing	N	Optional	10	Yes	No
Dietary Day Storage	E	Optional	2	Optional	No
Laundry, General	E	2	10	Yes	No
Soiled Linen Sorting and Storage	N	Optional	10	Yes	No
Clean Linen Storage	P	2	2	Optional	Optional
Anesthesia Storage ³	E	Optional	8	Yes	No
Central Medical and Surgical Supply					
Soiled or Decontamination Room	N	2	6	Yes	No
Clean Workroom	P	2	4	Optional	Optional
Unsterile Supply Storage	E	2	2	Optional	Optional

P = Positive N = Negative E = Equal

¹See sections 7.30.D (2)(k), 7.30.D (2)(l), and 7.30.D (2)(m) for additional requirements.

²See section 7.30.D (2)(k) for additional requirements.

³See section 7.30.D (2)(o) for additional requirements.

⁴Recirculating room units meeting the filtering requirement for sensitive areas in section 7.30.D (2)(g) may be used.

⁵See section 7.30.D (2)(f).

(b) For all other occupied areas a minimum design temperature of 75°F (24°C) at winter design conditions shall be assumed.

(2) Ventilation system details. All air-supply and air-exhaust systems shall be mechanically operated. All fans serving exhaust systems shall be located at the discharge end of the system. The ventilation rates shown in table 3 shall be considered as minimum acceptable rates and shall not be construed as precluding the use of higher ventilation rates.

(a) Outdoor intakes shall be located as far as practical but not less than 25'0" (7.62 m) from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vents stacks, or from areas which may collect vehicular exhaust and other noxious fumes. The bottom of outdoor air intakes serving central systems shall be located as high as practical but not less than 6'0" (1.83 m) above ground level, or if installed above the roof, 3'0" (91 cm) above the roof level.

(b) The ventilation systems shall be designed and balanced to provide the pressure relationship as shown in table 3.

(c) All air supplied to operating rooms, delivery rooms, and nurseries shall be de-

livered at or near the ceiling of the area served, and all exhaust air from the area shall be removed near floor level. At least two exhaust outlets shall be used in all operating and delivery rooms.

(d) The bottoms of ventilation openings shall be not less than 3 inches (7.6 cm) above the floor of any room.

(e) Corridors shall not be used to supply air to or exhaust air from any room, except that air from corridors may be used to ventilate bathrooms, toilet rooms, janitors' closets, and small electrical or telephone closets opening directly on corridors.

(f) Isolation rooms and intensive care rooms may be ventilated by induction units if the induction units contain only a reheat coil and if only the primary air supplied from a central system passes through the reheat coil.

(g) All central ventilation or air conditioning systems shall be equipped with filters having efficiencies no less than those specified in table 4. Where two filter beds are required, filter bed No. 1 shall be located upstream of the air conditioning equipment and filter bed No. 2 shall be downstream of the supply fan, any recirculating spray water systems, and water

Table 4. FILTER EFFICIENCIES FOR CENTRAL VENTILATION AND AIR CONDITIONING SYSTEMS IN GENERAL HOSPITALS

AREA DESIGNATION	MINIMUM NUMBER OF FILTER BEDS	FILTER EFFICIENCIES (Percent)	
		FILTER BED NO. 1	FILTER BED NO. 2
Sensitive Areas*	2	25	90
Patient Care, Treatment, Diagnostic, and Related Areas	2	25	90†
Food Preparation Areas and Laundries	1	80	---
Administrative, Bulk Storage and Soiled Holding Areas	1	25	---

*Includes operating rooms, delivery rooms, nurseries, recovery rooms, and intensive care units.
†May be reduced to 80 percent for systems using all-outdoor air.

reservoir type humidifiers.

Where only one filter bed is required, it shall be located upstream of the air conditioning equipment unless an additional prefilter is employed. In this case, the prefilter shall be upstream of the equipment and the main filter may be located further downstream.

All filter efficiencies shall be average atmospheric dust spot efficiencies tested in accordance with ASHRAE Standard 52-68 except as noted in section 7.30.D(2)(m)(i).

Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing ductwork. All joints between filter segments and the enclosing ductwork shall be gasketed or sealed to provide a positive seal against air leakage.

A manometer shall be installed across each filter bed serving sensitive areas or central air systems.

(h) Air handling duct systems shall meet the requirements of NFPA Standard 90A, except that sensitive area duct systems shall comply with section 7.30.B(6).

(i) Ducts which penetrate construction intended for X-ray or other ray protection shall not impair the effectiveness of the protection.

(j) Fire and smoke dampers shall be constructed, located, and installed in accordance with the requirements of NFPA Standard 90A, except that all systems, regardless of size, which serve more than one smoke or fire zone, shall be equipped with smoke detectors to shut down fans automatically as delineated in paragraph 1003 of that Standard. Access for maintenance shall be provided at all dampers.

Supply and exhaust ducts which pass through a required smoke barrier and through which smoke can be transferred to another area shall be provided with dampers at the barrier controlled to close automatically to prevent flow of air or smoke in either direction when the fan, which moves the air through the duct, stops. Dampers shall be equipped with remote control reset devices except that

manual reopening will be permitted if dampers are conveniently located.

Return air ducts which pass through a required smoke barrier shall be provided with a damper at the barrier actuated by smoke or products of combustion (other than heat) detectors. These dampers shall be operated by the detectors used to actuate door closing devices in the smoke partition or by the detectors located to sense smoke in the return air duct from the smoke zone.

(k) If the air changes required in table 3 do not provide sufficient air for use by fume hoods and safety cabinets, the required make-up air shall be provided.

(l) Laboratory hoods shall meet the following general requirements:

(i) Have an average face velocity of not less than 75 feet per minute (0.38 meters per second).

(ii) Be connected to an exhaust system which is separate from the building exhaust system.

(iii) Have an exhaust fan located at the discharge end of the system.

(iv) Have an exhaust duct system of noncombustible corrosion-resistant material as needed to meet the planned usage of the hood.

(m) Laboratory hoods shall meet the following special requirements:

(i) Each hood which processes infectious or radioactive materials shall have a minimum face velocity of 100 feet per minute (0.51 meters per second), shall be connected to an independent exhaust system, shall have filters with a 99.97 percent efficiency, (based on the DOP, dioctyl-phthalate, test method) in the exhaust stream, and shall be designed and equipped to permit the safe removal, disposal, and replacement of contaminated filters.

(ii) Duct systems serving hoods in which radioactive and strong oxidizing agents (e.g. perchloric acid) are used shall be constructed of stainless steel for a minimum distance of 10'0" (3.05 m) from the hood and shall be equipped with washdown facilities.

(n) Exhaust hoods in food preparation centers shall have an exhaust rate of not less than 50 cfm per square foot (0.25 cubic meters per second per square meter) of face area. Face area is defined for this purpose as the open area from the exposed perimeter of the hood to the average perimeter of the cooking surfaces. All hoods over cooking ranges shall be equipped with grease filters, fire extinguishing systems, and heat-actuated fan controls. Cleanout openings shall be provided every 20'0" (6.10 m) in horizontal exhaust duct systems serving these hoods.

(o) The ventilation system for anesthesia storage rooms shall conform to the requirements of NFPA Standard 56A, including the gravity option. The mechanically operated air systems required of section 7.30.D(2) is optional in this room only.

(p) Boiler rooms shall be provided with sufficient outdoor air to maintain combustion rates of equipment and to limit temperatures in working stations to 97°F (36°C) Effective Temperature (ET*) as defined by ASHRAE Handbook of Fundamentals.

(q) See section 7.27.A(26) for additional boiler room, food preparation center, and laundry ventilation requirements.

E. Plumbing and Other Piping Systems.

All plumbing systems shall be designed and installed in accordance with the requirements of PHCC National Standard Plumbing Code, chapter 14, "Medical Care Facility Plumbing Equipment."

(1) Plumbing fixtures.

(a) The material used for plumbing fixtures shall be of nonabsorptive acid-resistant material.

(b) The water supply spout for lavatories and sinks required in patient care areas shall be mounted so that its discharge point is a minimum distance of 5 inches (12.7 cm) above the rim of the fixture. All fixtures used by medical and nursing staff and all lavatories used by patients and food handlers shall be trimmed with valves which can be operated without the use of hands. Where blade handles are used for this purpose, they shall not exceed 4½-

inches (11.4 cm) in length, except that handles on scrub sinks and clinical sinks shall be not less than 6 inches (15.2 cm) long.

(c) Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface.

(d) Shower bases and tubs shall provide nonslip surfaces for standing patients.

(2) Water supply systems.

(a) Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand periods.

(b) Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture.

(c) Backflow preventers (vacuum breakers) shall be installed on hose bibbs, laboratory sinks, janitors' sinks, bedpan flushing attachments, autopsy tables, and on all other fixtures to which hoses or tubing can be attached.

(d) Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

(e) Bedpan flushing devices shall be provided in each patient toilet room.

(f) Water distribution systems shall be arranged to provide hot water at each hot water outlet at all times. Hot water at shower, bathing, and handwashing facilities shall not exceed 110 °F (43° C).

(3) Hot water heaters and tanks.

(a) The hot water heating equipment shall have sufficient capacity to supply water at the temperatures and amounts indicated below. Water temperatures to be taken at hot water point of use or inlet to processing equipment.

	USE		
	Clinical	Dietary	Laundry
Gallons (per hour per bed)	6 ½	4	4 ½
Liters (per second per bed)	.007	.004	.005
Temperature (°F)	110	180	180
Temperature (°C)	43	82	82

- (b) Storage tank(s) shall be fabricated of corrosion-resistant metal or lined with non-corrosive material.
- (4) Drainage systems.
- (a) Drain lines from sinks in which acid wastes may be poured shall be fabricated from an acid-resistant material.
- (b) Insofar as possible, drainage piping shall not be installed within the ceiling nor installed in an exposed location in operating and delivery rooms, nurseries, food preparation centers, food serving facilities, food storage areas, and other critical areas. Special precautions shall be taken to protect these areas from possible leakage or condensation from necessary overhead piping systems.
- (c) Floor drains shall not be installed in operating and delivery rooms. Flushing rim

type floor drains may be installed in cystoscopic operating rooms.

(d) Building sewers shall discharge into a community sewerage system. Where such a system is not available, a facility providing sewage treatment must conform to applicable local and State regulations.

(5) Nonflammable medical gas systems. Nonflammable medical gas system installations shall be in accordance with the requirements of NFPA 56A and 56F. (See table 5 for rooms which require stations outlets.)

(6) Clinical vacuum (suction) systems. Clinical vacuum system installations shall be in accordance with the requirements of Compressed Gas Association Pamphlet No. P-2.1. (See table 5 for rooms which require station outlets.)

(7) Central housekeeping vacuum systems. Service outlets for central housekeeping vacuum systems, if used, shall not be located within operating rooms.

Table 5. STATION OUTLETS FOR OXYGEN AND VACUUM (SUCTION) SYSTEMS

LOCATION	OXYGEN	VACUUM
Patient room for adult medical, surgical, and post-partum care, and for pediatrics	A	A
Examination and treatment room for nursing unit	B	B
Patient room for intensive care	C	C
Nursery and pediatric nursery	A	A
General operating room	F	F
Cystoscopy and special procedure room	D	D
Recovery room for surgical and obstetrical patients	E	E
Delivery room	F	G
Labor room	A	A
Treatment room for emergency care	D	D
Autopsy room	—	D
Anesthesia workroom	—	D

- A - One outlet accessible to each bed. One outlet may serve two beds.
- B - One outlet. Portable equipment for the administration of oxygen and suction may be considered acceptable in lieu of fixed outlets.
- C - Two outlets for each bed or provide one outlet with Y-fitting.
- D - One outlet.
- E - One outlet for each bed.
- F - Two outlets.
- G - Three outlets.

7.31. ELECTRICAL REQUIREMENTS

A. General.

(1) All material including equipment, conductors, controls, and signaling devices shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facilities shown in the specifications or indicated on the plans. All materials shall be listed as complying with available standards of Underwriters' Laboratories, Inc., or other similarly established standards.

(2) All electrical installations and systems shall be tested to show that the equipment is installed and operates as planned or specified. A written record of performance tests on special electrical systems and equipment shall be supplied to the owner. Such tests shall show compliance with the governing codes and shall include conductive floors, isolated power systems, grounding continuity, and alarm systems.

B. Switchboards and Power Panels.

Circuit breakers or fusible switches that provide disconnecting means and overcurrent protection for conductors connected to switchboards and panelboards shall be enclosed or guarded to provide a dead-front type of assembly. The main switchboard shall be located in a separate enclosure accessible only to authorized persons. The switchboards shall be convenient for use, readily accessible for maintenance, clear of traffic lanes, and in a dry ventilated space free of corrosive fumes or gases. Overload protective devices shall be suitable for operating properly in the ambient temperature conditions.

C. Panelboards.

Panelboards serving lighting and appliance circuits shall be located on the same floor as the circuits they serve. This requirement does not apply to emergency system circuits.

D. Lighting.

(1) All spaces occupied by people, machinery, and equipment within buildings, approaches to buildings, and parking lots shall have lighting.

(2) Patients' rooms shall have general lighting and night lighting. A reading light shall be provided for each patient. At least one light fixture for night lighting shall be switched at the entrance to each patient room. All switches for control of lighting in patient areas shall be of the quiet operating type.

(3) Operating and delivery rooms shall have general lighting in addition to local lighting provided by

special lighting units at the surgical and obstetrical tables. Each fixed special lighting unit at the tables, except for portable units, shall be connected to an independent circuit.

E. Receptacles (Convenience Outlets).

(1) Anesthetizing locations. Each operating and delivery room shall have at least three receptacles of the types described in NFPA Standard 56A. In locations where mobile X-ray is used, an additional receptacle, distinctively marked for X-ray use, shall be provided. (See sec. 7.31.E(3) for receptacle requirements when capacitive discharge mobile X-ray units are used.)

(2) Patients' rooms. Each patient room shall have duplex grounding type receptacles as follows: one located on each side of the head of each bed; one for television, if used; and one on another wall. Nurseries shall have not less than one receptacle for each bassinet. Receptacles in pediatric and psychiatric units shall be of the safety type or shall be protected by 5 milliamperes ground fault interrupters.

(3) Corridors. Duplex receptacles for general use shall be installed approximately 50'0" (15.24 m) apart in all corridors and within 25'0" (7.62 m) of ends of corridors. Receptacles in corridors of pediatric units shall be of the safety type or shall be protected by 5 milliamperes ground fault interrupters or shall be controlled by switches located at a nurses' station or other supervised location. Single polarized receptacles marked for use of X-ray only shall be located in corridors of patient areas so that mobile equipment may be used in any location within a patient room without exceeding a cord length of 50'0" (15.24 m) attached to the equipment. If the same mobile X-ray unit is used in operating rooms and in nursing areas, all receptacles for X-ray use shall be of a configuration that one plug will fit the receptacles in all locations. Where capacitive discharge or battery-powered X-ray units are used, these polarized receptacles are not required.

F. Equipment Installation in Special Areas.

(1) Installation in anesthetizing locations. All electrical equipment and devices, receptacles, wiring and conductive flooring shall comply with NFPA Standard 56A, except that a static type line isolation monitor will be permitted.

(2) X-ray installations. Fixed and mobile X-ray equipment installations shall conform to Article 660 of NFPA Standard 70.

(3) X-ray film illuminator units. At least two units shall be installed in each operating room, emergency treatment room, and in the X-ray viewing room of the radiology department.

(4) Ground fault interrupters. The electrical circuit(s) to fixed or portable equipment in hydrotherapy units, and to dialysis facilities, shall be provided with 5 milliamperere ground fault interrupters.

(5) Special grounding system. In areas such as intensive care units (and special care nurseries, when indicated by the program) where a patient may be treated with an internal probe or catheter connected to the heart, the patient room ground system shall comply with the following:

(a) A patient ground point shall be provided within 10'0" (3.05 m) of each bed. The patient ground is intended to assure that under normal conditions all electrically conductive surfaces of equipment and furnishings within reach of the patient will be at the same electrical potential or not exceeding 10 millivolts differential. This requirement is not intended to apply to devices and utensils such as bedpans and other small portable nonelectrical devices.

(b) One patient ground point may serve more than one patient, but one patient shall not be served by more than one patient ground point.

(c) The grounding conductor connecting any receptacle serving a patient and the patient ground point shall not exceed the equivalent resistance of 15'0" (4.57 m) of No. 12 AWG (20 metric ga) copper conductor.

(d) Exposed metal building surfaces or utility piping within reach of the patient or others who may touch him shall be grounded to the patient ground point or to a separately established room ground point.

(e) A reference ground point shall be established in the electrical supply panel.

(f) The patient ground point and the room ground point where separated shall be interconnected by a continuous, insulated, copper conductor not smaller than No. 10 AWG (25 metric ga) and similarly connected to the reference ground or may be individually connected to the reference ground point provided that the ground conductor resistance does not exceed that of 15'0" (4.57 m) of No. 12 AWG (20 metric ga) copper conductor.

(g) Receptacle ground terminals shall be connected to the patient ground point or to the reference ground point provided that grounding conductor resistance to the reference ground point does not exceed that of 15'0" (4.57 m) of No. 12 AWG (20 metric ga) copper conductor.

(h) Grounding of all metallic raceways shall be assured by means of grounding bushings on all conduit terminations at the panelboard and by means of an insulated, continuous, stranded, copper grounding conductor, not smaller than No. 12 AWG (20 metric ga) extended from the grounding bus in the panelboard to the conduit grounding bushings.

(i) Grounding of metallic switch and receptacle plates shall be provided by means of the mounting-screw connections to the device mounting yokes.

G. Nurses' Calling System.

(1) General. In general patient areas, each room shall be served by at least one calling station and each bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station. Calls shall register with floor staff and shall actuate a visible signal in the corridor at the patients' door, in the clean workroom, the soiled workroom, and the nourishment station of the nursing unit. In multicorridor nursing units, additional visible signals shall be installed at corridor intersections. In rooms containing two or more calling stations, indicating lights shall be provided at each station. Nurses' calling systems which provide two-way voice communication shall be equipped with an indicating light at each calling station which lights and remains lighted as long as the voice circuit is operating.

(2) Patients' emergency. A nurses' call emergency button shall be provided for patients' use at each patient's toilet, bath, sitz bath, and shower room.

(3) Intensive care. In areas such as intensive care where patients are under constant surveillance, the nurses' calling system may be limited to a bedside station that will actuate a signal that can be readily seen by the nurse.

(4) Nurses' emergency. An emergency calling station which may be used by nurses to summon assistance shall be provided in each operating, delivery, recovery, emergency treatment, and intensive care room, in nurseries, and in supervised nursing units for mental patients.

H. Emergency Electric Service.

(1) General. To provide electricity during an interruption of the normal electric supply, an emergency source of electricity shall be provided and connected to certain circuits for lighting and power.

(2) Sources. The source of this emergency electric service shall be as follows:

(a) An emergency generating set when the normal service is supplied by one or more central station transmission lines.

(b) An emergency generating set or a central station transmission line when the normal electric supply is generated on the premises.

(3) Emergency generating set. The required emergency generating set, including the prime mover and generator, shall be located on the premises and shall be reserved exclusively for supplying the emergency electrical system. *Exception:* A system of prime movers which are ordinarily used to operate other equipment and alternately used to operate the emergency generator(s) will be permitted provided that the number and arrangement of the prime movers are such that when one of them is out of service (due to breakdown or for routine maintenance) the prime mover(s) can operate the required emergency generator(s), and provided that the connection time requirements described in section 7.31.H(5) are met.

(4) Emergency electrical connections. Emergency electric service shall be provided to the distribution systems as follows:

(a) Circuits for the safety of patients and personnel.

(i) Illumination of means of egress as required in NFPA Standard 101.

(ii) Illumination for exit signs and exit directional signs as required in NFPA Standard 101.

(iii) Alarm systems including fire alarms activated at manual stations, water flow alarm devices of sprinkler system if electrically operated, fire and smoke detecting systems, and alarms required for nonflammable medical gas systems if installed.

(iv) Paging or speaker systems if intended for communication during emergency. Radio transceivers where installed for emergency use shall be capable of operating for at least one hour upon total failure of both normal and emergency power.

(v) General illumination and selected receptacles in the vicinity of the generator set.

(b) Circuits essential to care, treatment, and protection of patients.

(i) Task illumination and selected receptacles in infant nurseries; medicine dispensing areas; cardiac catheterization laboratories; angiographic laboratories; labor, operating, delivery, and recovery rooms; dialysis units; intensive care areas; emergency treatment rooms; and nurses' stations.

(ii) Corridor duplex receptacles in patient areas.

(iii) Nurses' calling system.

(iv) Blood bank refrigeration.

(v) Equipment necessary for maintaining telephone service.

(vi) Fire pump if installed.

(c) Circuits which serve necessary equipment. The connection to the following emergency electric services shall be delayed automatic except for heating, ventilation, and elevators which may be either delayed automatic or manual:

(i) Equipment for heating operating, delivery, labor, recovery, intensive care, nursery, and general patient rooms except that service for heating of general patient rooms will not be required under either of the following conditions: (aa) if the design temperature is higher than 20°F (-7°C) based on the Median of Extremes as shown in the ASHRAE Handbook of Fundamentals, or (bb) if the hospital is served by two or more electrical services supplied from separate generators or a utility distribution network having multiple power input sources and arranged to provide mechanical and electrical separation so that a fault between the hospital and the generating sources will not likely cause an interruption of the hospital service feeders.

(ii) Elevator service that will reach every patient floor. Throwover facilities shall be provided to allow temporary operation of any elevator for the

release of persons who may be trapped between floors.

(iii) Ventilation of unfenestrated operating and delivery rooms.

(iv) Central suction systems serving medical and surgical functions.

(v) Equipment which must be kept in operation to prevent damage to the building or its contents.

(5) Details. The emergency electrical system shall be so controlled that after interruption of the normal electric power supply the generator is brought to full voltage and frequency. It must be connected within 10 seconds through one or more primary automatic transfer switches to emergency lighting systems; alarm systems; blood banks; nurses' calling systems; equipment necessary for maintaining telephone service; and task illumination and receptacles in operating, delivery, emergency, recovery, and car-

diac catherization rooms, intensive care nursing areas, nurseries, and other critical patient areas. All other lighting and equipment required to be connected to the emergency system shall either be connected through the above described primary automatic transfer switches or through other automatic or manual transfer switches. Receptacles connected to the emergency system shall be distinctively marked. Storage-battery-powered lights, provided to augment the emergency lighting or for continuity of lighting during the interim of transfer switching immediately following an interruption of the normal service supply, shall not be used as a substitute for the requirement of a generator. Where stored fuel is required for emergency generator operation, the storage capacity shall be sufficient for not less than 24-hour continuous operation. When the generator is operated by fuel which is normally piped underground to the site from a utility distribution system, fuel storage facilities on the site will not be required.

(Nursing Homes, Chronic Disease Hospitals, and Extended Care Facilities)

8.1. GENERAL CONSIDERATIONS

A. Narrative Program.

The sponsor for each project shall provide a narrative program which describes the functional space requirements, staffing patterns, departmental relationships, and other basic information relating to the fulfillment of the institution's objectives.

B. Services.

Facilities for long-term care shall either contain the elements described herein or the narrative program shall indicate the manner in which the needed services are to be made available. Each element provided in the facility must comply with the requirements outlined herein. Appropriate modifications or deletions in space requirements may be made to these requirements when services are permitted to be shared or purchased.

The requirements contained herein are directed specifically to nursing homes and extended care facilities. Chronic disease hospitals shall comply with the requirements for general hospitals as listed in section 7, except that the functional requirements shall be modified as required to satisfy the specific needs of the chronic disease program.

C. Sizes.

The sizes of the various departments will depend upon program requirements and organization of services within the facility. Some functions requiring separate spaces or rooms in these minimum requirements may be combined provided that the resulting plan will not compromise the best standards of safety and of medical and nursing practices.

D. Provisions for Handicapped.

Facilities shall be available and accessible to the physically handicapped (public, staff, and patients). (See sec. 1.2.)

E. Parking.

Each facility shall have parking space to satisfy the minimum needs of patients, employees, staff, and visitors. In the absence of a formal parking study, each facility shall provide not less than one space for each day shift staff member and employee plus one space

for each five patient beds. This ratio may be reduced in areas convenient to the public transportation system or to public parking facilities if proper justification is included in the narrative program and provided that approval of any reduction is obtained from the appropriate State agency. Space shall be provided for emergency and delivery vehicles.

8.2. NURSING UNIT

(NOTE: The number of beds in a nursing unit shall not exceed 60. At least 60 percent of the beds shall be located in rooms designed for one or two beds. At least five percent of the total bed complement shall be located in single-bed rooms, each equipped with a private bath and toilet.)

Each nursing unit shall provide the following:

A. Patient Rooms.

Each patient room shall meet the following requirements:

(1) Maximum room capacity shall be four patients.

(2) Minimum room areas exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules shall be 100 square feet (9.29 square meters) in single-bed rooms and 80 square feet (7.43 square meters) per bed in multibed rooms.

(3) Each room shall have a window which can be opened without the use of tools. The windowsill shall not be higher than 3'0" (91 cm) above the floor and shall be above grade.

(4) Nurses' calling system shall be provided in accordance with section 8.19.G.

(5) One lavatory shall be provided in each patient room. The lavatory may be omitted from a single-bed or a 2-bed room when a lavatory is located in an adjoining toilet room which serves that room only.

(6) Each patient shall have access to a toilet room without entering the general corridor area. One toilet room shall serve no more than four beds and no more than two patient rooms. The toilet room shall contain a water closet and a lavatory. The lavatory may be omitted from a toilet room which serves not more

than two single-bed rooms if each such single-bed room contains a lavatory. (See sec. 8.2.C for additional toilet room requirements.)

(7) Each patient shall have a wardrobe, locker, or closet with minimum clear dimensions of 1'10" (55.9 cm) by 1'8" (50.8 cm). An adjustable clothes rod and adjustable shelf shall be provided.

(8) Visual privacy shall be provided each patient in multibed rooms.

(9) No patient room shall be located more than 120 feet (36.6 m) from the soiled workroom or the soiled holding room.

B. Service Areas.

The service areas noted below shall be located in or readily available to each nursing unit. The size and disposition of each service area will depend upon the number and types of beds to be served. Although identifiable spaces are required to be provided for each of the indicated functions, consideration will be given to design solutions which would accommodate some functions without specific designation of areas or rooms. Details of such proposals shall be submitted for prior approval. Each service area may be arranged and located to serve more than one nursing unit, but at least one such service area shall be provided on each nursing floor.

(1) Nurses' station with space for nurses' charting, doctors' charting, and storage for administrative supplies.

(2) Lounge and toilet room(s) for nursing staff.

(3) Individual closets or compartments for the safekeeping of coats and personal effects of nursing personnel. These shall be located convenient to the duty station of personnel or in a central location.

(4) Room for examination and treatment of patients. This room may be omitted if all patient rooms are single-bed rooms. This room shall have a minimum floor area of 120 square feet (11.15 square meters), excluding space for vestibule, toilet, closets, and work counters (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). The room shall contain a lavatory or sink equipped for handwashing; a work counter; storage facilities; and a desk, counter, or shelf space for writing.

(5) Clean workroom or clean holding room. The clean workroom shall contain a work counter, handwashing, and storage facilities. The clean holding room shall be part of a system for storage and distribution of clean and sterile supply materials and shall be similar to the clean workroom except that the

work counter and handwashing facilities may be omitted.

(6) Soiled workroom or soiled holding room. The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for handwashing, work counter, waste receptacle, and linen receptacle. A soiled holding room shall be part of a system for collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and work counter may be omitted.

(7) Drug distribution station. Provision shall be made for convenient and prompt 24-hour distribution of medicine to patients. This may be a medicine preparation room or unit, a self-contained medicine dispensing unit, or by another approved system. If used, a medicine preparation room or unit shall be under the nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom, or in an alcove or other space under direct control of the nursing or pharmacy staff.

(8) Clean linen storage. Provide a separate closet or a designated area within the clean workroom. If a closed cart system is used, storage may be in an alcove.

(9) Nourishment station. This shall contain a sink equipped for handwashing, equipment for serving nourishment between scheduled meals, refrigerator, and storage cabinets. Ice for patients' service and treatment shall be provided only by icemaker-dispenser units.

(10) Equipment storage room. This shall be for equipment such as I.V. stands, inhalators, air mattresses, and walkers.

(11) Parking for stretchers and wheelchairs. This shall be located out of path of normal traffic.

(12) Patients' bathing facilities. Bathtubs or showers shall be provided at the rate of one for each 12 beds which are not otherwise served by bathing facilities within patients' rooms. At least one bathtub shall be provided in each nursing unit. Each tub or shower shall be in an individual room or enclosure which provides space for the private use of the bathing fixture, for drying and dressing, and for a wheelchair and an attendant. Showers in central bathing facilities shall be at least 4'0" (1.22 m) square, without curbs, and designed to permit use by a wheelchair patient.

C. Patients' Toilet Facilities.

(1) The minimum dimensions of a room containing only a water closet shall be 3'0" (91 cm) by 6'0" (1.83 m); additional space shall be provided if a lavatory is located within the same room. Water closets must be located to be usable by wheelchair patients.

(2) At least one room on each nursing floor shall be provided for toilet training. It shall be accessible from the nursing corridor. A clearance of 3'0" (91 cm) shall be provided at the front and at each side of the water closet. This room shall also contain a lavatory.

(3) A toilet room shall be accessible to each central bathing area without going through the general corridor. This may be arranged to serve as the required toilet training facility.

D. Sterilizing Facilities.

A system for the sterilization of equipment and supplies shall be provided.

8.3. PATIENTS' DINING AND RECREATION AREAS

A. Area Requirement.

The total areas set aside for these purposes shall be not less than 30 square feet (2.79 square meters) per bed for the first 100 beds and 27 square feet (2.51 square meters) per bed for all beds in excess of 100. Additional space shall be provided for outpatients if they participate in a day care program.

B. Storage.

Storage space shall be provided for recreational equipment and supplies.

8.4. PHYSICAL THERAPY FACILITIES

The following elements shall be provided:

A. Treatment Area(s).

It shall have space and equipment for thermotherapy, diathermy, ultrasonics, and hydrotherapy. Provision shall be made for cubicle curtains around each individual treatment area, handwashing facility(ies) (one lavatory or sink may serve more than one cubicle), and facilities for the collection of soiled linen and other material.

B. Exercise Area.

C. Storage for Clean Linen, Supplies, and Equipment.

D. Patients' Dressing Areas, Showers, Lockers, and Toilet Rooms.

E. Service Sink.

F. Wheelchair and Stretcher Storage.

(Items C, D, E, and F may be planned and arranged for shared use by occupational therapy patients and staff if the approved narrative program reflects this sharing concept.)

8.5. OCCUPATIONAL THERAPY FACILITIES

The following elements shall be provided:

A. Activities Area.

Provision shall be made for sink or lavatory and facilities for collection of waste products prior to disposal.

B. Storage for Supplies and Equipment.

C. Patients' Dressing Areas, Showers, Lockers, and Toilet Rooms.

(Items B and C may be planned and arranged for shared use by physical therapy patients and staff if the approved narrative program reflects this sharing concept.)

8.6. PERSONAL CARE UNIT

Separate room shall be provided for hair care and grooming needs of patients.

8.7. DIETARY FACILITIES

A. General.

Construction, equipment, and installation shall comply with the standards specified in PHS Publication No. 934, "Food Service Sanitation Manual." Food service facilities shall be designed and equipped to meet the requirements of the narrative program. These may consist of an on-site conventional food preparation system, a convenience food service system, or an appropriate combination thereof.

B. Functional Elements.

The following facilities shall be provided in such size as required to implement the type of food service system selected:

(1) Control station for receiving food supplies.

(2) Storage space for four days' supply including cold storage.

(3) Food preparation facilities as required by the program. Conventional food preparation systems require space and equipment for preparing, cooking, and baking. Convenience food service systems such as frozen prepared meals, bulk packaged entrees, individual packaged portions, or systems using contractual commissary services will require space and equip-

ment for thawing, portioning, cooking, and/or baking.

(4) Handwashing facility(ies) in the food preparation area.

(5) Patient meal service space including facilities for tray assembly and distribution.

(6) Dining area for ambulatory patients, staff, and visitors.

(7) Warewashing in a room or an alcove separate from food preparation and serving areas. This shall include commercial-type diswashing equipment. Space also shall be provided for receiving, scraping, sorting, and stacking soiled tableware and for transferring clean tableware to the using areas. A lavatory shall be conveniently available.

(8) Potwashing facilities.

(9) Sanitizing facilities and storage areas for cans, carts, and mobile tray conveyors. The sanitizing facilities may be combined with those required for linen services noted in section 8.9.

(10) Waste storage facilities in a separate room which is easily accessible to the outside for direct pickup or disposal.

(11) Office or suitable work space for the dietitian or the dietary service manager.

(12) Toilets for dietary staff with handwashing facility immediately available.

(13) Janitors' closet located within the dietary department. It shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies.

(14) Self-dispensing icemaking facilities.

8.8. ADMINISTRATION AND PUBLIC AREAS

The following elements shall be provided:

A. Entrance.

At grade level, sheltered from the weather and able to accommodate wheelchairs.

B. Lobby.

It shall include:

- (1) Storage space for wheelchairs.
- (2) Reception and information counter or desk.
- (3) Waiting space(s).
- (4) Public toilet facilities.
- (5) Public telephone(s).
- (6) Drinking fountain(s).

C. Interview Space(s).

For private interviews relating to social service, credit, and admissions.

D. General or Individual Office(s).

For business transactions, medical and financial records, and administrative and professional staff.

E. Multipurpose Room.

For conferences, meetings, and health education purposes including facilities for showing visual aids.

F. Storage for Office Equipment and Supplies.

8.9. LINEN SERVICES

A. On-Site Processing.

If linen is to be processed on the site, the following shall be provided:

(1) Laundry processing room with commercial-type equipment which can process seven days' needs within a regularly scheduled work week. Handwashing facilities shall be provided.

(2) Soiled linen receiving, holding, and sorting room with handwashing facilities.

(3) Storage for laundry supplies.

(4) Clean linen inspection and mending room or area.

(5) Clean linen storage, issuing, and holding room or area.

(6) Janitors' closet containing a floor receptor or service sink and storage space for housekeeping equipment and supplies.

(7) Sanitizing facilities and storage area for carts. The sanitizing facilities may be combined with those required for dietary facilities noted in section 8.7.B(9).

B. Off-Site Processing.

If linen is processed off the site, the following shall be provided:

(1) Soiled linen holding room.

(2) Clean linen receiving, holding, inspection, and storage room(s).

(3) Sanitizing facilities and storage area for carts. The sanitizing facilities may be combined with those required for dietary facilities noted in section 8.7.B(9).

8.10. CENTRAL STORES

General storage room(s) shall have a total area of not less than 10 square feet (0.93 square meters) per bed and shall generally be concentrated in one area.

8.11. EMPLOYEES' FACILITIES

In addition to employees' facilities such as locker rooms, lounges, toilets, or shower facilities called for in certain departments (see secs. 8.2.B(2) and 8.7.B(12)), a sufficient number of such facilities as required to accommodate the needs of all personnel and volunteers shall be provided.

8.12. JANITORS' CLOSETS

In addition to the janitors' closet called for in certain departments (see secs. 8.7.B(13) and 8.9.A(6)), sufficient janitors' closets shall be provided throughout the facility to maintain a clean and sanitary environment. These shall contain a floor receptor or service sink and storage space for housekeeping equipment and supplies.

8.13. ENGINEERING SERVICE AND EQUIPMENT AREAS

The following shall be provided:

- A. Equipment Room(s).**
Room(s) or separate building(s) for boilers, mechanical equipment, and electrical equipment.
- B. Engineer's Quarters.**
Office or suitable desk space for engineer.
- C. Maintenance Shop(s).**
- D. Storage Room(s).**
For building maintenance supplies (may be part of maintenance shop in nursing homes of less than 100 beds).
- E. Yard Equipment Storage.**
A separate room or building for yard maintenance equipment and supplies.

8.14. WASTE PROCESSING SERVICES

- A. Storage and Disposal.**
Space and facilities shall be provided for the sanitary storage and disposal of waste by incineration, mechanical destruction, compaction, containerization, removal, or by a combination of these techniques.
- B. Incinerator.**
A gas, electric, or oil-fired incinerator shall be provided on site or by off-site shared services for the complete destruction of infectious waste. Infectious waste shall include, but shall not be limited to, dress-

ings from open wounds, laboratory specimens, and all waste material from isolation rooms.

(1) The incinerator shall be in a separate room or placed outdoors.

(2) Design and construction of incinerators and trash chutes shall be in accordance with NFPA Standard 82.

(3) Incinerators shall be designed and equipped to conform to requirements prescribed by air pollution regulations in the area.

8.15. DETAILS AND FINISHES

A high degree of safety for the occupants shall be provided to minimize the incidence of accidents with special consideration for patients who will be ambulatory to assist them in self care. Hazards such as sharp corners shall be avoided. All details and finishes for modernization projects as well as for new construction shall comply with the following requirements:

A. Details.

(1) Compartmentation, exists, automatic extinguishment systems, and other details relating to fire prevention and fire protection shall comply with the requirements listed in sections 10-1, 17-415, and 17-416 of the NFPA Standard 101.

(2) Items such as drinking fountains, telephone booths, vending machines, and portable equipment shall be located so as not to restrict corridor traffic or reduce the corridor width below the required minimum.

(3) All rooms containing bathtubs, sitz baths, showers, and water closets, subject to occupancy by patients, shall be equipped with doors and hardware which will permit access from the outside in any emergency. When such rooms have only one opening or are small, the doors shall be capable of opening outwards or be otherwise designed to be opened without need to push against a patient who may have collapsed within the room.

(4) The minimum width of all doors to rooms needing access for beds or stretchers shall be 3'8" (111.7 cm). Doors to patient toilet rooms and other rooms needing access for wheelchairs shall have a minimum width of 2'10" (86.3 cm).

(5) Doors on all openings between corridors and rooms or spaces subject to occupancy, except elevator doors, shall be swing type. Openings to showers, baths, patients' toilets, and other small wet-type areas not subject to fire hazard are exempt from this requirement.

(6) Windows and outer doors which may be frequently left in an open position shall be provided with insect screens.

(7) Windows shall be designed to prevent accidental falls when open, or shall be provided with security screens.

(8) Doors, except doors to spaces such as small closets which are not subject to occupancy, shall not swing into corridors in a manner that might obstruct traffic flow or reduce the required corridor width. (Large walk-in type closets are considered as occupiable spaces.)

(9) Doors, sidelights, borrowed lights, and windows in which the glazing extends down to within 18 inches (46 cm) of the floor (thereby creating possibility of accidental breakage by pedestrian traffic) shall be glazed with safety glass, wire glass, or plastic glazing material that will resist breaking and will not create dangerous cutting edges when broken. Similar materials shall be used in wall openings of recreation rooms and exercise rooms unless required otherwise for fire safety. Safety glass or plastic glazing materials as noted above shall be used for shower doors and bath enclosures.

(10) Where labeled fire doors are required, these shall be certified by an independent testing laboratory as meeting the construction requirements equal to those for fire doors in NFPA Standard 80. Reference to a labeled door shall be construed to include labeled frame and hardware.

(11) Elevator shaft openings shall have class B 1½-hour labeled fire doors.

(12) Linen and refuse chutes shall meet or exceed the following requirements (also see sec. 8.14.C):

(a) Service openings to chutes shall not be located in corridors or passageways but shall be located in a room of construction having a fire resistance of not less than one hour. Doors to such rooms shall be not less than class C ¾-hour labeled fire doors.

(b) Service openings to chutes shall have approved self-closing class B 1½-hour labeled fire doors.

(c) Minimum cross-sectional dimension of gravity chutes shall be not less than 2'0" (61 cm).

(d) Chutes shall discharge directly into collection rooms separate from incinerators, laundry, or other services. Separate

collection rooms shall be provided for trash and for linen. The enclosure construction for such rooms shall have a fire resistance of not less than 2 hours, and the doors thereto shall be not less than class B 1½-hour labeled fire doors.

(e) Gravity chutes shall extend through the roof with provisions for continuous ventilation as well as for fire and smoke ventilation. Openings for fire and smoke ventilation shall have an effective area of not less than that of the chute cross-section and shall be not less than 4'0" (1.22 m) above the roof and not less than 6'0" (1.83 m) clear of other vertical surfaces. Fire and smoke ventilating openings may be covered with single strength sheet glass.

(13) Dumbwaiters, conveyors, and material handling systems shall not open directly into a corridor or exitway but shall open into a room enclosed by construction having a fire resistance of not less than 1 hour and provided with class C ¾-hour labeled fire doors. Service entrance doors to vertical shafts containing dumbwaiters, conveyors, and material handling systems shall be not less than class B 1½-hour labeled fire doors. Where horizontal conveyors and material handling systems penetrate fire-rated walls or smoke partitions, such openings must be provided with class B 1½-hour labeled fire doors for 2-hour walls and class C ¾-hour labeled fire doors for 1-hour walls or partitions.

(14) Thresholds and expansion joint covers shall be made flush with the floor surface to facilitate use of wheelchairs and carts.

(15) Grab bars shall be provided at all patients' toilets, showers, tubs, and sitz baths. The bars shall have 1½-inch (3.8 cm) clearance to walls and shall have sufficient strength and anchorage to sustain a concentrated load of 250 pounds (113.4 kilograms).

(16) Recessed soap dishes shall be provided in showers and bathrooms.

(17) Handrails shall be provided on both sides of corridors used by patients. A clear distance of 1½-inches (3.8 cm) shall be provided between the handrail and the wall.

(18) Ends of handrails and grab bars shall be constructed to prevent snagging the clothes of patients.

(19) Location and arrangement of handwashing facilities shall permit their proper use and operation. Particular care should be given to the clearances re-

Table 6. SOUND TRANSMISSION LIMITATIONS IN
LONG-TERM CARE FACILITIES

	AIRBORNE SOUND TRANSMISSIONS CLASS (STC) ^{a/}		IMPACT INSULATION CLASS (IIC) ^{b/}
	Partitions	Floors	Floors
Patients' room to patients' room	45	45	45
Public space to patients' room ^{c/}	50	50	50 ^{d/}
Service areas to patients' room ^{e/}	55	55	55 ^{d/}

^{a/}Sound transmission class (STC) shall be determined by tests in accordance with methods set forth in ASTM Standard E 90 and ASTM Standard E 413.

^{b/}Impact insulation class (IIC) shall be determined in accordance with criteria set forth in HUD FT/TS-24, "A Guide to Airborne, Impact and Structure Borne Noise - Control in Multi-Family Dwellings."

^{c/}Public space includes lobbies, dining rooms, recreation rooms, treatment rooms, and similar spaces.

^{d/}Impact noise limitation applicable only when corridor, public space, or service area is over patients' room.

^{e/}Service areas include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patients' rooms, offices, nurses' stations, and similar occupied spaces shall be effectively isolated from the floor.

NOTE: The requirements set forth in this table assume installation methods which will not appreciably reduce the efficiency of the assembly as tested.

quired for blade-type operating handles (see sec. 8.18.E(1)(b)). Lavatories intended for use by patients shall be installed to permit use by patients in wheelchairs.

(20) Lavatories and handwashing facilities shall be securely anchored to withstand an applied vertical load of not less than 250 pounds (113.4 kilograms) on the front of the fixture.

(21) Mirrors shall be arranged for convenient use by patients in wheelchairs as well as by patients in a standing position.

(22) Paper towel dispensers and waste receptacles shall be provided at all handwashing fixtures.

(23) Ceiling heights shall be as follows:

(a) Boiler rooms shall have ceiling clearances not less than 2'6" (76 cm) above the main boiler header and connecting piping.

(b) Rooms containing ceiling-mounted equipment shall have height required to accommodate the equipment.

(c) All other rooms shall have not less than 8'0" (2.44 m) ceilings except that corridors, storage rooms, toilet rooms, and other minor rooms may be not less than 7'8" (2.34 m). Suspended tracks, rails, and pipes located in path of normal traffic shall

be not less than 6'8" (2.03 m) above the floor.

(24) Recreation rooms, exercise rooms, and similar spaces where impact noises may be generated shall not be located directly over patient bed areas unless special provisions are made to minimize such noise.

(25) Rooms containing heat producing equipment (such as boiler or heater rooms, and laundries) shall be insulated and ventilated to prevent any floor surface above from exceeding a temperature 10°F (6°C) above the ambient room temperature.

(26) Noise reduction criteria shown in table 6 shall apply to partition, floor, and ceiling construction in patient areas.

B. Finishes.

(1) Cubicle curtains and draperies shall be non-combustible or rendered flame retardant and shall pass both the large and small scale test of NFPA Standard 701.

(2) Flame spread and smoke developed ratings of finishes are covered under section 8.16.F.

(3) Floor materials shall be easily cleanable and have wear resistance appropriate for the location involved. Floors in areas used for food preparation or food assembly shall be water-resistant and grease-proof. Joints in tile and similar material in such areas

shall be resistant to food acids. In all areas frequently subject to wet cleaning methods, floor materials shall not be physically affected by germicidal and cleaning solutions. Floors that are subject to traffic while wet (such as shower and bath areas, kitchens, and similar work areas) shall have a nonslip surface.

(4) Wall bases in kitchens, soiled workrooms, and other areas which are frequently subject to wet cleaning methods shall be made integral and covered with the floor, tightly sealed within the wall, and constructed without voids that can harbor insects.

(5) Wall finishes shall be washable and, in the immediate area of plumbing fixtures, shall be smooth and moisture resistant. Finish, trim, and wall and floor constructions in dietary and food preparation areas shall be free from spaces that can harbor rodents and insects.

(6) Floor and wall penetrations by pipes, ducts, and conduits shall be tightly sealed to minimize entry of rodents and insects. Joints of structural elements shall be similarly sealed.

(7) Ceilings throughout shall be easily cleanable. Ceilings in the dietary and food preparation areas shall have a finished ceiling covering all overhead piping and duct work. Finished ceilings may be omitted in mechanical and equipment spaces, shops, general storage areas, and similar spaces, unless required for fire-resistive purposes.

(8) Acoustical ceilings shall be provided for corridors in patient areas, nurses' stations, dayrooms, recreation rooms, dining areas, and waiting areas.

8.16. CONSTRUCTION, INCLUDING FIRE-RESISTIVE REQUIREMENTS

A. Design.

Every building and every portion thereof shall be designed and constructed to sustain all dead and live loads in accordance with accepted engineering practices and standards, including seismic forces where they apply.

B. Foundations.

Foundations shall rest on natural solid bearing if a satisfactory bearing is available at reasonable depths. Proper soil-bearing values shall be established in accordance with recognized standards. If solid bearing is not encountered at practical depths, the structure shall be supported on driven piles or drilled piers designed to support the intended load without detrimental settlement, except that one-story buildings

may rest on a fill designed by a soils engineer. When engineered fill is used, site preparation and placement of fill shall be done under the direct full-time supervision of the soils engineer. The soils engineer shall issue a final report on the compacted fill operation and certification of compliance with the job specifications. All footings shall extend to a depth not less than 1'0" (30.5 cm) below the estimated maximum frost line.

C. Construction.

Construction shall be in accordance with the requirements of section 10-132 of NFPA Standard 101 and the minimum requirements contained herein.

D. Freestanding Buildings.

Separate freestanding buildings housing the boiler plant, laundry, shops, or general storage may be of unprotected noncombustible construction, protected noncombustible construction, or fire-resistive construction.

E. Enclosures.

Enclosures for stairways, elevator shafts, chutes, and other vertical shafts, boiler rooms, and storage rooms of 100 square feet (9.29 square meters) or greater area shall be of construction having a fire-resistance rating of not less than 2 hours.

F. Interior Finishes.

Interior finish materials shall comply with the flame spread limitations and the smoke production limitations shown in table 7. If a separate underlayment is used with any floor finish materials, the underlayment and the finish material shall be tested as a unit or equivalent provisions made to determine the effect of the underlayment on the flammability characteristics of the floor finish material. Tests shall be performed by an independent testing laboratory.

G. Insulation Materials.

Building insulation materials, unless sealed on all sides and edges, shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less when tested in accordance with ASTM Standard E 84.

H. Provision for Natural Disasters.

(1) General Requirements. An emergency radio communication system shall be provided in each facility. This system shall be self-sufficient in time of emergency and capable of operation without reliance on the building service or emergency electric power supply. It shall also be linked with the available community or State emergency communication network, including connections with police and fire systems.

Table 7. FLAME SPREAD AND SMOKE PRODUCTION LIMITATIONS
ON INTERIOR FINISHES IN LONG-TERM CARE FACILITIES

		Flame Spread Rating	Smoke Production Rating
Walls and Ceilings	Exitways, storage rooms, and areas of unusual fire hazard	ASTM Standard E 84 25 or less	Appendix II NBS Technical Notes 708 450 or less *
	All other areas	ASTM Standard E 84 75 or less	
Floors		ASTM Standard E 84 75 or less	

*Average of flaming and nonflaming values.

(2) Earthquakes. In regions where local experience shows that earthquakes have caused loss of life or extensive property damage, buildings and structures shall be designed to withstand the force assumptions specified in the latest issue of the ICBO Uniform Building Code.

In buildings which are subdivided into separate structural units by seismic joints, each unit shall be provided with an exit stairway to permit evacuation from the building without traversing the seismic joints.

Special care shall be taken to anchor fixed equipment, suspended ceilings, light fixtures, and similar items to minimize hazard to occupants and damage to the equipment and building during an earthquake. Storage shelves and racks holding breakable or fragile supplies shall be designed to retain their contents when subjected to the lateral forces of an earthquake.

(3) Hurricanes, tornadoes, and floods. Special provisions shall be made in the design of buildings in regions where local experience shows loss of life or damage to buildings resulting from hurricanes, tornadoes, or floods.

8.17. ELEVATORS

A. General.

All buildings have patients' facilities (such as bedrooms, dining rooms, or recreation areas) or critical services (such as diagnostic or therapy) located on

other than the main entrance floor shall have electric or electrohydraulic elevators.

(1) Number of elevators.

(a) At least one hospital-type elevator shall be installed where 1 to 59 patient beds are located on any floor other than the main entrance floor.

(b) At least two (one of which shall be hospital-type) shall be installed where 60 to 200 patient beds are located on floors other than the main entrance floor, or where the major inpatient services are located on a floor other than those containing patient beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(c) At least three (one of which shall be hospital-type) shall be installed where 201 to 350 patient beds are located on floors other than the main entrance floor, or where the major inpatient services are located on a floor other than those containing patient beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(d) For facilities with more than 350 patient beds, the number of elevators shall be determined from a study of the facility plan and the estimated vertical transportation requirements.

(2) Cars and platforms. Cars of hospital-type elevators shall have inside dimensions that will accom-

modate a patient bed and attendants, and shall be at least 5'0" (1.52 m) wide by 7'6" (2.29 m) deep. The car door shall have a clear opening of not less than 3'8" (1.12 m).

(3) Leveling. Elevators shall be equipped with an automatic leveling device of the two-way automatic maintaining type with an accuracy of ½ inch (1.3 cm).

(4) Operation. Elevators, except freight elevators, shall be equipped with a two-way special service switch to permit cars to bypass all landing button calls and be dispatched directly to any floor.

(5) Elevator controls, alarm buttons, and telephones shall be accessible to wheelchair occupants.

(6) Elevator call buttons, controls, and door safety stops shall be of a type that will not be activated by heat or smoke.

B. Field Inspection and Tests.

Inspections and tests shall be made and the owner shall be furnished written certification that the installation meets the requirements set forth in this section and all applicable safety regulations and codes.

8.18. MECHANICAL REQUIREMENTS

A. General.

(1) Prior to completion and acceptance of the facility, all mechanical systems shall be tested, balanced, and operated to demonstrate to the owner or his representative that the installation and performance of these systems conform to the requirements of the plans and specifications.

(2) Upon completion of the contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions, and parts list with numbers and description for each piece of equipment. He shall also be provided with instruction in the operational use of systems and equipment as required.

B. Thermal and Acoustical Insulation.

(1) Insulation shall be provided for the following within the building:

- (a) Boilers, smoke breeching, and stacks.
- (b) Steam supply and condensate return piping.
- (c) Hot water piping above 180°F (82°C) and all hot water heaters, generators, and convertors.
- (d) Hot water piping above 125°F (52°C) which is exposed to contact by patients.

(e) Chilled water, refrigerant, other process piping and equipment operating with fluid temperatures below ambient dew point.

(f) Water supply and drainage piping on which condensation may occur.

(g) Air ducts and casings with outside surface temperatures below ambient dew point.

(h) Other piping, ducts, and equipment as necessary to maintain the efficiency of the system.

(2) Insulation may be omitted from hot water and steam condensate piping not subject to contact by patients when such insulation is unnecessary for preventing excessive system heat loss or excessive heat gain.

(3) Insulation on cold surfaces shall include an exterior vapor barrier.

(4) Insulation including finishes and adhesives on the exterior surfaces of ducts, pipes, and equipment shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84 (see sec. 8.18.B(5) for exceptions).

(5) Linings in air ducts and equipment shall meet the Erosion Test Method described in Underwriters' Laboratories Publication No. 181. These linings, including coatings and adhesives, and insulation on exterior surfaces of pipes and ducts in building spaces used as air supply plenums, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84.

C. Steam and Hot Water Systems.

(1) Boilers. Boilers shall have the capacity, based upon the net ratings published by the Hydronics Institute, to supply the normal requirements of all systems and equipment. The number and arrangement of boilers shall be such that when one boiler breaks down or routine maintenance requires that one boiler be temporarily taken out of service, the capacity of the remaining boiler(s) shall be at least 70 percent of the total required capacity, except that in areas with a design temperature of 20°F (-7°C) or more, based on the Median of Extremes in the ASHRAE Handbook of Fundamentals, the remaining boiler(s) do not have to include boiler capacity for space heating.

(2) Boiler accessories. Boiler feed pumps, heating circulating pumps, condensate return pumps, and fuel

oil pumps shall be connected and installed to provide normal and standby service.

(3) Valves. Supply and return mains and risers of cooling, heating and process steam systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends.

D. Heating and Ventilating Systems.

(1) Temperatures. A minimum design temperature of 75°F (24°C) at winter design conditions shall be provided for all occupied areas.

(2) Ventilation system details. All air-supply and air-exhaust systems shall be mechanically operated. All fans serving exhaust systems shall be located at the discharge end of the system. The ventilation rates shown in table 8 shall be considered as minimum acceptable rates and shall not be construed as precluding the use of higher ventilation rates.

(a) Outdoor air intakes shall be located as far as practical but not less than 25'0" (7.62 m) from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vent stacks, or from areas which may collect vehicular exhaust and other noxious fumes. The bottom of outdoor air intakes serving central systems shall be located as high as practical but not less than 6'0" (1.83 m) above ground level, or if installed above the roof, 3'0" (91 cm) above roof level.

(b) The ventilation systems shall be designed and balanced to provide the pressure relationship as shown in table 8.

(c) The bottoms of ventilation openings shall be not less than 3 inches (7.6 cm) above the floor of any room.

(d) Corridors shall not be used to supply air to or exhaust air from any room, except that air from corridors may be used to ventilate bathrooms, toilet rooms, janitors' closets, and small electrical or telephone closets opening directly on corridors.

(e) All central ventilation or air conditioning systems shall be equipped with filters having efficiencies no less than those specified in table 9. The filter bed shall be located upstream of the air conditioning equipment, unless a prefilter is employed. In this case, the prefilter shall be upstream of the equipment and the main filter bed may be located further downstream.

(f) All filter(s) efficiencies shall be average atmospheric dust spot efficiencies tested in accordance with ASHRAE Standard 52-68.

Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing duct work. All joints between filter segments and the enclosing duct work shall be gasketed or sealed to provide a positive seal against air leakage.

A manometer shall be installed across each filter bed serving central air systems.

Table 8. PRESSURE RELATIONSHIPS AND VENTILATION OF CERTAIN AREAS OF LONG-TERM CARE FACILITIES OTHER THAN CHRONIC DISEASE HOSPITALS

AREA DESIGNATION	PRESSURE RELATIONSHIP TO ADJACENT AREAS	MINIMUM AIR CHANGES OF OUTDOOR AIR PER HOUR SUPPLIED TO ROOM	MINIMUM TOTAL AIR CHANGES PER HOUR SUPPLIED TO ROOM	ALL AIR EXHAUSTED DIRECTLY TO OUTDOORS	RECIRCULATED WITHIN ROOM UNITS
Patient Room	E	2	2	Optional	Optional
Patient Area Corridor	E	2	4	Optional	Optional
Examination and Treatment Room	E	2	6	Optional	Optional
Physical Therapy	N	2	6	Optional	Optional
Occupational Therapy	N	2	6	Optional	Optional
Soiled Workroom or Soiled Holding	N	2	6	Optional	Optional
Clean Workroom or Clean Holding	P	2	10	Yes	No
Toilet Room	N	2	4	Optional	Optional
Bathroom	N	Optional	10	Yes	No
Janitors' Closet(s)	N	Optional	10	Yes	No
Sterilizer Equipment Room	N	Optional	10	Yes	No
Linen and Trash Chute Rooms	N	Optional	10	Yes	No
Food Preparation Center	E	2	10	Yes	No
Warewashing Room	N	Optional	10	Yes	No
Dietary Day Storage	E	Optional	2	Yes	No
Laundry, General	E	2	10	Yes	No
Soiled Linen Sorting and Storage	N	Optional	10	Yes	No
Clean Linen Storage	P	2	2	Optional	Optional

P = Positive N = Negative E = Equal

Table 9. FILTER EFFICIENCIES FOR CENTRAL VENTILATION AND AIR
CONDITIONING SYSTEMS IN LONG-TERM CARE FACILITIES
OTHER THAN CHRONIC DISEASE HOSPITALS

AREA DESIGNATION	MINIMUM NUMBER OF FILTER BEDS	FILTER EFFICIENCIES (Percent) MAIN FILTER BED
Patient Care, Treatment, Diagnostic, and Related Areas	1	80*
Food Preparation Areas and Laundries	1	80
Administrative, Bulk Storage and Soiled Holding Areas	1	25

*May be reduced to 35 percent for all-outdoor air systems

(g) Air handling duct systems shall meet the requirements of NFPA Standard 90A.

(h) Fire and smoke dampers shall be constructed, located, and installed in accordance with the requirements of NFPA Standard 90A except that all systems, regardless of size, which serve more than one smoke or fire zone, shall be equipped with smoke detectors to shut down fans automatically as delineated in Paragraph 1003 of that Standard. Access for maintenance shall be provided at all dampers.

Supply and exhaust ducts which pass through a required smoke barrier and through which smoke can be transferred to another area shall be provided with dampers at the barrier, controlled to close automatically to prevent flow of air or smoke in either direction when the fan, which moves the air through the duct, stops. Dampers shall be equipped with remote control reset devices except that manual reopening will be permitted if dampers are conveniently located.

Return air ducts which pass through a required smoke barrier shall be provided with a damper at the barrier actuated by smoke or products of combustion (other than heat) detectors. These dampers shall be operated by the detectors used to actuate door closing devices in the smoke partition or by detectors located to sense smoke in the return air duct from the smoke zone.

(i) Exhaust hoods in food preparation centers shall have an exhaust rate of not less than 50 cfm per square foot (0.25 cu. meters per second per square meter) of face area. Face area is defined for this purpose as the open area from the exposed perimeter of the hood to the average perimeter of the cooking surfaces. All hoods over cooking ranges shall be equipped with grease filters, fire extinguishing systems, and heat actuated fan controls. Cleanout openings shall be provided every 20'0" (6.10 m) in horizontal exhaust duct systems serving these hoods.

(j) Boiler rooms shall be provided with sufficient outdoor air to maintain combustion rates of equipment and to limit temperatures in working stations to 97°F (36°C) Effective Temperature (ET*) as defined by ASHRAE Handbook of Fundamentals.

(k) See section 8.15.A(25) for additional boiler room, food preparation center, and laundry ventilation requirements.

E. Plumbing and Other Piping Systems.

All plumbing systems shall be designed and installed in accordance with the requirements of PHCC National Standard Plumbing Code, chapter 14, "Medical Care Facility Plumbing Equipment."

(1) Plumbing fixtures.

(a) The material used for plumbing fixtures shall be of nonabsorptive acid-resistant material.

(b) The water supply spout for lavatories and sinks required in patient care areas shall be mounted so that its discharge point is a minimum distance of 5 inches (12.7 cm) above the rim of the fixture. All fixtures used by medical and nursing staff, and all lavatories used by patients and food handlers shall be trimmed with valves which can be operated without the use of hands. Where blade handles are used for this purpose, they shall not exceed 4½ inches (11.4 cm) in length, except that handles on clinical sinks shall be not less than 6 inches (15.2 cm) long.

(c) Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface.

(d) Shower bases and tubs shall provide non-slip surfaces for standing patients.

(2) Water supply systems.

(a) Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand periods.

(b) Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture.

(c) Backflow preventers (vacuum breakers) shall be installed on hose bibbs, janitors' sinks, bedpan flushing attachments, and on all other fixtures to which hoses or tubing can be attached.

(d) Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

(e) Bedpan flushing devices shall be provided in each patient toilet room.

(f) Water distribution systems shall be arranged to provide hot water at each hot water outlet at all times. Hot water at shower, bathing, and handwashing facilities shall not exceed 110°F (43°C).

(3) Hot water heaters and tanks.

(a) The hot water heating equipment shall have sufficient capacity to supply water at the temperatures and amounts indicated below. Water temperatures to be taken at hot water point of use or inlet to processing equipment.

(b) Storage tank(s) shall be fabricated of corrosion-resistant metal or lined with non-corrosive material.

	USE		
	Clinical	Dietary	Laundry
Gallons (per hour per bed)	6 ½	4	4 ½
Liters (per second per bed)	.007	.004	.005
Temperature (°F)	110	180	180
Temperature (°C)	43	82	82

(4) Drainage systems.

(a) Insofar as possible drainage piping shall not be installed within the ceiling nor installed in an exposed location in food preparation centers, food serving facilities, food storage areas, and other critical areas. Special precautions shall be taken to protect these areas from possible leakage or condensation from necessary overhead piping systems.

(b) Building sewers shall discharge into a community sewerage system. Where such a system is not available, a facility providing sewage treatment must conform to applicable local and State regulations.

(5) Nonflammable medical gas systems. If used, nonflammable medical gas system installations shall be in accordance with the requirements of NFPA Standards 56A and 56F.

(6) Clinical vacuum (suction) systems. If used, clinical vacuum system installations shall be in accordance with the requirements of Compressed Gas Association Pamphlet P-2.1.

8.19. ELECTRICAL REQUIREMENTS

A. General.

(1) All material including equipment, conductors, controls, and signaling devices shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facilities shown in the specifications or indicated on the plans. All materials shall be listed as complying with available standards of Underwriters' Laboratories, Inc., or other similarly established standards.

(2) All electrical installations and systems shall be tested to show that the equipment is installed and operates as planned or specified.

B. Switchboards and Power Panels.

Circuit breakers or fusible switches that provide disconnecting means and overcurrent protection for conductors connected to switchboards and panel-

boards shall be enclosed or guarded to provide a dead-front type of assembly. The main switchboard shall be located in a separate enclosure accessible only to authorized persons. The switchboard shall be convenient for use, readily accessible for maintenance, clear of traffic lanes, and in a dry ventilated space free of corrosive fumes or gases. Overload protective devices shall be suitable for operating properly in ambient temperature conditions.

C. Panelboards.

Panelboards serving lighting and appliance circuits shall be located on the same floor as the circuits they serve. This requirement does not apply to emergency system circuits.

D. Lighting.

(1) All spaces occupied by people, machinery, equipment within buildings, approaches to buildings, and parking lots shall have lighting.

(2) Patients' rooms shall have general lighting and night lighting. A reading light shall be provided for each patient. At least one light fixture for night lighting shall be switched at the entrance to each patient room. All switches for control of lighting in patient areas shall be of the quiet operating type.

E. Receptacles (Convenience Outlets).

(1) Patient room. Each patient room shall have duplex grounding type receptacles as follows: One location each side of the head of each bed; one for television if used; and one on another wall.

(2) Corridors. Duplex receptacles for general use shall be installed approximately 50'0" (15.24 m) apart in all corridors and within 25'0" (7.62 m) of ends of corridors.

F. Equipment Installation in Special Areas.

The electrical circuit(s) to fixed or portable equipment in hydrotherapy units shall be provided with 5 milliamperes ground fault interrupters.

G. Nurses' Calling System.

(1) General. In general patient areas, each room shall be served by at least one calling station and each bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station. Calls shall register with the floor staff and shall activate a visible signal in the corridor at the patient's door, in the clean workroom, in the soiled workroom, and in the nourishment station of the nursing unit. In multicorridor nursing units, additional visible signals shall be installed at corridor intersections. In rooms containing two or more calling sta-

tions, indicating lights shall be provided at each station. Nurses' calling systems which provide two-way voice communication shall be equipped with an indicating light at each calling station which lights and remains lighted as long as the voice circuit is operating.

(2) Patients' Emergency. A nurses' call emergency button shall be provided for patients' use at each patient's toilet, bath, and shower room.

H. Emergency Electric Service.

(1) General. To provide electricity during an interruption of the normal electric supply, an emergency source of electricity shall be provided and connected to certain circuits for lighting and power.

(2) Sources. The source of this emergency electric service shall be as follows:

(a) An emergency generating set when the normal service is supplied by one or more central station transmission lines.

(b) An emergency generating set or a central station transmission line when the normal electric supply is generated on the premises.

(3) Emergency Electrical Connections. Emergency electric service shall be provided to the distribution systems as follows:

(a) Illumination for means of egress as required in NFPA Standard 101.

(b) Illumination for exit signs and exit directional signs as required in NFPA Standard 101.

(c) Corridor duplex receptacles in patient areas.

(d) Nurses' calling systems.

(e) Equipment necessary for maintaining telephone service.

(f) Elevator service that will reach every patient floor when patient rooms are located on other than ground floor. Throwover facilities shall be provided to allow temporary operation of any elevator for release of persons who may be trapped between floors.

(g) Fire pump, if installed.

(h) Equipment for heating patient rooms, except (i) where the design temperature is higher than 20°F (-7°C), based on the Median of Extremes as shown in the ASHRAE Handbook of Fundamentals, or (ii) where the facility is served by two or more electrical services supplied from separate generators or a utility distribution network having multiple power input sources and arranged to provide mechani-

cal and electrical separation so that a fault between the facility and the generating sources will not likely cause an interruption of its service feeders.

(i) General illumination and selected receptacles in the vicinity of the generator set.

(j) Paging or speaker systems if intended for communication during emergency. Radio transceivers where installed for emergency use shall be capable of operating for at least one hour upon total failure of both normal and emergency power.

(k) Alarm systems including fire alarms activated at manual stations, water flow alarm de-

vices of sprinkler system if electrically operated, fire and smoke detecting systems, and alarms required for nonflammable medical gas systems if installed.

(4) Details. The emergency lighting shall be in operation within 10 seconds after the interruption of normal electric power supply. Emergency service to receptacles and equipment may be delayed automatic or manually connected. Receptacles connected to emergency power shall be distinctively marked. When the generator is operated by fuel which is normally piped underground to the site from a utility distribution system, fuel storage facilities on the site will not be required.



OUTPATIENT FACILITIES

9.1. GENERAL CONSIDERATIONS

A. Narrative Program.

The sponsor for each project shall provide a narrative program which describes the functional space requirements, staffing patterns, departmental relationships, and other basic information relating to the fulfillment of the institution's objectives.

B. Services.

Outpatient facilities shall contain but not be limited to all the elements described herein, or the narrative program shall indicate the manner in which the services are to be made available to the outpatient. When services are to be shared or purchased, appropriate modifications or deletions in space and equipment requirements should be made to avoid duplication. Each element provided in the outpatient facility must meet the requirements outlined herein as a minimum, with the understanding that in many instances the elements will need to be expanded to fulfill the program requirements.

C. Location.

An outpatient facility is generally located within a hospital setting, but it may be located apart from a hospital if it provides a full range of services of physicians and allied health services personnel as required by the narrative program and if it provides a full range of general and special diagnostic, preventive, and treatment services directly in its own facility or through convenient affiliation, referral, or consultation.

D. Size.

The extent (number and types) of the diagnostic, clinical, and administrative facilities to be provided will be determined by the services contemplated and the estimated patient load as described in the narrative program.

E. Applicable Requirements.

If the facility is an integral part of the hospital and is intended to accommodate hospital inpatients as well as outpatients, the applicable requirements relating to general hospital facilities shall apply. If an outpatient facility is not part of a hospital building, the facilities listed herein shall be provided unless they are available for convenient use by the patients in an associated health facility.

F. Provisions for Handicapped.

Facilities shall be available and accessible to the physically handicapped (public, staff, and patients). (See sec. 1.2.)

G. Privacy for Patient.

The planning of outpatient facilities shall provide for the privacy and dignity of the patient during interview, examination, and treatment. The facilities shall be located so that outpatients do not traverse in-patient areas.

H. Parking.

In the absence of a formal parking study, vehicle parking for outpatient facilities shall be provided at the ratio of two spaces for each treatment room and each examination room plus sufficient parking spaces to accommodate the maximum number of staff on duty at one time. Exceptions may be made with approval of the appropriate State agency for facilities located in areas with a high population density if adequate public parking is available or if the facility is accessible to a public transportation system. On-street parking, if available, may be considered as meeting part of this requirement.

9.2. ADMINISTRATION AND PUBLIC AREAS

A. Entrance.

Located at grade level, sheltered from the weather, and able to accommodate wheelchairs.

B. Lobby.

It shall include:

- (1) Wheelchair storage space(s).
- (2) Reception and information counter or desk.
- (3) Waiting space(s).
- (4) Public toilet facilities.
- (5) Public telephone(s).
- (6) Drinking fountain(s).

C. Interview Space(s).

For private interviews relating to social service, credit, and admissions.

D. General or Individual Office(s).

For business transactions, records, and administrative and professional staffs.

E. Multipurpose Room(s).

For conferences, meetings, and health education purposes, and shall be equipped for showing visual aids.

F. Special Storage.

For employees' personal effects.

G. General Storage Facilities.

For office supplies, sterile supplies, pharmaceutical supplies, splints and other orthopedic supplies, and housekeeping supplies and equipment.

9.3. CLINICAL FACILITIES

A. General Purpose Examination Room(s).

For medical, obstetrical, and similar examinations. Shall have a minimum floor area of 80 square feet (7.43 square meters), excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). Arrangement shall permit at least 2'6" (76 cm) clearance at each side and at the foot of the examination table. A lavatory or sink equipped for handwashing and a counter or shelf space for writing shall be provided.

B. Special Purpose Examination Rooms.

Room sizes for special clinics such as eye, dental, and ear, nose, and throat examinations shall be determined by types of equipment used but shall be not less than 80 square feet (7.43 square meters) excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). A lavatory or sink equipped for handwashing and a counter or shelf space for writing shall be provided.

C. Treatment Room(s) for Minor Surgical Procedures and Cast Procedures.

Shall have a minimum floor area of 120 square feet (11.15 square meters), excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). A lavatory or sink equipped for handwashing and a counter or shelf space for writing shall be provided.

D. Observation Room(s).

For handling isolation, suspect, or disturbed patients. Shall be conveniently located to nurses' station or other control station to permit close observation of patients and to minimize their hiding, escape, injury, or suicide. Patients shall have access to a toilet room without entering the general corridor area. In facilities having an annual patient visit load of 15,000 or less, a separate room is not required if an examination room is modified to accommodate this function.

E. Facilities for Charting and for Clinical Records or Nurses' Station(s).

Work counter, communication system, and space for supplies shall be provided. A separate space may be omitted if these functions are accommodated in each examination room and each treatment room.

F. Drug Distribution Station.

This may be a medicine preparation room or unit, a self-contained medicine dispensing unit, or another approved system. If used, a medicine preparation room or unit shall be under nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom, or in an alcove or other space under direct control of nursing or pharmacy staff.

G. Clean Workroom or Clean Holding Room.

The clean workroom shall contain a work counter, handwashing, and storage facilities. The clean holding room shall be part of a system for storage and distribution of clean and sterile supply materials and shall be similar to the clean workroom except that the work counter and handwashing facilities may be omitted.

H. Soiled Workroom or Soiled Holding Room.

The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for handwashing, work counter, waste receptacle, and linen receptacle. A soiled holding room shall be part of a system for the collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and the work counter may be omitted.

I. Sterilizing Facilities.

A system for the sterilization of equipment and supplies shall be provided.

J. Stretcher Storage Space.

9.4. DIAGNOSTIC FACILITIES

A. Radiology Suite.

Equipment shall be provided for diagnostic purposes. Therapeutic equipment may also be included. The suite shall contain:

- (1) Radiographic room(s). (See sec. 9.8.A (15) for special requirements.)
- (2) Film processing facilities.
- (3) Viewing and administration area(s).
- (4) Film storage facilities.

(5) Toilet room. With handwashing facilities. Directly accessible from each fluoroscopy room without entering the general corridor area.

(6) Dressing area(s). With convenient access to public toilets.

B. Laboratory Suite.

Facilities shall be provided directly within the outpatient department or through an effective contract arrangement with a nearby hospital or laboratory service for hematology, clinical chemistry, urinalysis, cytology, pathology, and bacteriology. If these are provided through such a contract, then at least the following minimum laboratory facilities shall be provided in the outpatient facility:

(1) Laboratory work counter(s). With sink and vacuum, gas, and electric services.

(2) Lavatory(ies) or counter sink(s). Equipped for handwashing.

(3) Storage cabinet(s) or closet(s).

(4) Specimen collection facilities. Urine collection rooms shall be equipped with a water closet and lavatory. Blood collection facilities shall have space for a chair and work counter.

9.5. JANITORS' CLOSET(S)

This room shall contain a floor receptor or service sink and storage for housekeeping supplies and equipment. Provide at least one janitors' closet per floor.

9.6. EMPLOYEES' FACILITIES

Locker rooms, lounges, toilets, or shower facilities, as required, shall be provided to accommodate the needs of all personnel and volunteers.

9.7. ENGINEERING SERVICE AND EQUIPMENT AREAS

The following shall be provided:

A. Equipment Room (s).

For boilers, mechanical equipment, and electrical equipment.

B. Storage Room(s).

For building maintenance supplies and yard equipment.

C. Waste Processing Services.

(1) Space and facilities shall be provided for the sanitary storage and disposal of waste by incineration,

mechanical destruction, compaction, containerization, or removal, or by a combination of these techniques.

(2) If provided, design and construction of incinerators and trash chutes shall be in accordance with NFPA Standard 82.

(3) If provided, the incinerator shall be in a separate room or placed outdoors.

(4) Incinerators shall be designed and equipped to conform to the requirements prescribed by air pollution regulations in the area.

9.8. DETAILS AND FINISHES

All details and finishes shall meet the following requirements:

A. Details.

(1) Minimum public corridor width shall be 5'0" (1.52 m).

(2) Each building shall have at least two exits remote from each other. Other details relating to exits and fire safety shall be in accordance with section 13 of NFPA Standard 101 and the requirements outlined herein.

(3) Items such as drinking fountains, telephone booths, vending machines, and portable equipment shall be located so as not to restrict corridor traffic or reduce the corridor width below the required minimum.

(4) Toilet rooms which may be used by patients shall be equipped with doors and hardware which will permit access from the outside in any emergency. When such rooms have only one opening, or are small, the doors shall be capable of opening outwards, or be otherwise designed to be opened without need to push against a patient who may have collapsed within the room.

(5) The minimum width of doors for patient access to examination and treatment rooms shall be 2'10" (86.3 cm).

(6) Doors on all openings between corridors and rooms or spaces subject to occupancy, except elevator doors, shall be swing type.

(7) Doors, except doors to spaces such as small closets which are not subject to occupancy, shall not swing into corridors in a manner that might obstruct traffic flow or reduce the required corridor width. (Large walk-in type closets are considered as occupiable spaces.)

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(8) Doors, sidelights, borrowed lights, and windows in which the glazing extends down to within 18 inches (46 cm) of the floor (thereby creating possibility of accidental breakage by pedestrian traffic) shall be glazed with safety glass, wire glass, or plastic glazing material that will resist breaking and will not create dangerous cutting edges when broken. Similar materials shall be used in wall openings of playrooms and exercise rooms unless required otherwise for fire safety. Safety glass or plastic glazing materials shall be used for shower doors and bath enclosures.

(9) Thresholds and expansion joint covers shall be made flush with the floor surface to facilitate use of wheelchairs and carts.

(10) The location and arrangement of handwashing facilities shall permit their proper use and operation. Particular care shall be given to the clearances required for blade-type operating handles. (See sec. 9.11.E(1)(b).)

(11) Paper towel dispensers and waste receptacles shall be provided at all handwashing fixtures.

(12) Where labeled fire doors are required, these shall be certified by an independent testing laboratory as meeting the construction requirements equal to those for fire doors in NFPA Standard 80. Reference to a labeled fire door shall be construed to include labeled frame and hardware.

(13) Dumbwaiters, conveyors, and material handling systems shall not open into a corridor or exit-way but shall open into a room enclosed by construction having a fire resistance of not less than 1 hour and provided with class C ¾-hour labeled fire doors. Service entrance doors to vertical shafts containing dumbwaiters, conveyors, and material handling systems shall be not less than class B 1½-hour labeled fire doors. Where horizontal conveyors and material handling systems penetrate fire-rated walls or smoke partitions, the opening thereto must be provided with class B 1½-hour labeled fire door for 2-hour walls and class C ¾-hour labeled fire door for 1-hour walls or partitions.

(14) Elevator shaft openings shall have class B 1½-hour labeled fire doors.

(15) Radiation protection requirements of X-ray and gamma ray installations shall conform with NCRP Reports Nos. 33 and 34. Provisions shall be made for testing the completed installation before use and all defects must be corrected before acceptance.

(16) Ceiling heights shall be as follows:

(a) Boiler rooms shall have ceiling clearances not less than 2'6" (76 cm) above the main boiler header and connecting piping.

(b) Radiographic and other rooms containing ceiling mounted equipment and those having ceiling mounted surgical light fixtures shall have height required to accommodate the equipment or fixtures.

(c) All other rooms shall have not less than 8'0" (2.44 m) ceilings except that corridors, storage rooms, toilet rooms, and other minor rooms may be not less than 7'8" (2.34 m). Suspended tracks, rails, and pipes located in the path of normal traffic shall be not less than 6'8" (2.03 m) above the floor.

(17) Rooms containing heat producing equipment (such as boiler or heater rooms) shall be insulated and ventilated to prevent any floor surface above from exceeding a temperature 10°F (6°C) above the ambient room temperature.

B. Finishes.

(1) Cubicle curtains and draperies shall be non-combustible or rendered flame retardant and shall pass both the large and small scale tests of NFPA Standard 701.

(2) Flame spread and smoke developed ratings of finishes are covered under section 9.9.B.

(3) Floor materials shall be easily cleanable and have wear resistance appropriate for the location involved. In all areas frequently subject to wet cleaning methods, floor materials shall not be physically affected by germicidal and cleaning solutions. Floors that are subject to traffic while wet, such as shower and bath areas and certain work areas, shall have a nonslip surface.

(4) Wall finishes shall be washable and, in the immediate area of plumbing fixtures, shall be smooth and moisture resistant.

(5) Wall bases in soiled workrooms and other areas which are frequently subject to wet cleaning methods shall be made integral and coved with the floor, tightly sealed within the wall, and constructed without voids that can harbor insects.

(6) Floor and wall penetrations by pipes, ducts, and conduits shall be tightly sealed to minimize entry of rodents and insects. Joints of structural elements shall be similarly sealed.

(7) Acoustical ceilings shall be provided in corridors, multipurpose rooms, and waiting areas.

9.9. CONSTRUCTION, INCLUDING FIRE-RESISTIVE REQUIREMENTS

A. Construction.

Construction of freestanding outpatient facilities shall generally be similar to recognized national model building code requirements applicable to office occupancies and to the minimum requirements contained herein. Outpatient facilities which are an integral part of a hospital or connected to a hospital and which accommodate hospital outpatients shall comply with the construction requirements for general hospitals as shown in section 7.28.

B. Interior Finishes.

Interior finish materials shall comply with the flame spread limitations and the smoke production limitations shown in table 10. If a separate underlayment is used with any floor finish materials, the underlayment and the finish material shall be tested as a unit or equivalent provisions made to determine the effect of the underlayment on the flammability characteristics of the floor finish material. Tests shall be performed by an independent testing laboratory.

C. Insulation Materials.

Building insulation materials, unless sealed on all sides and edges, shall have a flame spread rating of 25 or

less and a smoke developed rating of 150 or less when tested in accordance with ASTM Standard E 84.

D. Provision for Natural Disasters.

(1) Earthquakes. In regions where local experience shows that earthquakes have caused loss of life or extensive property damage, buildings and structures shall be designed to withstand the force assumptions specified in the latest issue of the ICBO Uniform Building Code.

In buildings which are subdivided into separate structural units by seismic joints, each unit shall be provided with an exit stairway to permit evacuation from the building without traversing the seismic joints.

Special care shall be taken to anchor fixed equipment, suspended ceilings, light fixtures, and similar items to minimize hazard to occupants and damage to equipment and building during an earthquake. Storage shelves and racks holding breakable or fragile supplies shall be designed to retain their contents when subjected to the lateral forces of an earthquake.

(2) Hurricanes, tornadoes, and floods. Special provisions shall be made in the design of buildings in regions where local experience shows loss of life or damage to buildings resulting from hurricanes, tornadoes, or floods.

Table 10. FLAME SPREAD AND SMOKE PRODUCTION LIMITATIONS ON INTERIOR FINISHES IN OUTPATIENT FACILITIES

		Flame Spread Rating	Smoke Production Rating
Walls and Ceilings	Exitways, storage rooms, and areas of unusual fire hazard	ASTM Standard E 84 25 or less	Appendix II NBS Technical Notes 708 450 or less*
	All other areas	ASTM Standard E 84 75 or less	
Floors		ASTM Standard E 84 75 or less	

*Average of flaming and nonflaming values.

9.10. ELEVATORS

A. General.

All buildings having examination rooms, treatment rooms, or diagnostic services located on other than the main entrance floor shall have electric or electro-hydraulic elevators. The elevators shall be installed in sufficient quantity, capacity, and speed that the average interval of dispatch time will not exceed one minute, and average peak loading can be accommodated.

(1) Cars and platforms. Cars shall have a minimum inside floor dimension of not less than 5' 0" (1.52 m). The car door shall have a clear opening of not less than 3' 0" (91 cm).

(2) Leveling. Elevators shall be equipped with an automatic leveling device of the two-way automatic maintaining type with an accuracy of $\pm \frac{1}{2}$ inch (± 1.3 cm).

(3) Operation. Elevators, except freight elevators, shall be equipped with a two-way special service switch to permit cars to bypass all landing button calls and be dispatched directly to any floor.

(4) Elevator controls, alarm buttons, and telephones shall be accessible to wheelchair occupants.

(5) Elevator call buttons, controls, and door safety stops shall be of a type that will not be activated by heat or smoke.

B. Field Inspection and Tests.

Inspections and tests shall be made and the owner shall be furnished written certification that the installation meets the requirements set forth in this section and all applicable safety regulations and codes.

9.11. MECHANICAL REQUIREMENTS

A. General.

(1) Prior to completion and acceptance of the facility, all mechanical systems shall be tested, balanced, and operated to demonstrate to the owner or his representative that the installation and performance of these systems conform to the requirements of the plans and specifications.

(2) Upon completion of the contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive

maintenance instructions, and parts list with numbers and description for each piece of equipment. He shall also be provided with instruction in the operational use of systems and equipment as required.

B. Thermal and Acoustical Insulation.

(1) Insulation shall be provided for the following within the building:

(a) Boilers, smoke breeching, and stacks.

(b) Steam supply and condensate return piping.

(c) Hot water piping above 180°F (82°C) and all hot water heaters, generators, and convertors.

(d) Hot water piping above 125°F (52°C) which is exposed to contact by patients.

(e) Chilled water, refrigerant, other process piping and equipment operating with fluid temperatures below ambient dew point.

(f) Water supply and drainage piping on which condensation may occur.

(g) Air ducts and casings with outside surface temperature below ambient dew point.

(h) Other piping, ducts, and equipment as necessary to maintain the efficiency of the systems.

(2) Insulation may be omitted from hot water and steam condensate piping not subject to contact by patients when such insulation is unnecessary for preventing excessive system heat loss or excessive heat gain.

(3) Insulation on cold surfaces shall include an exterior vapor barrier.

(4) Insulation, including finishes and adhesives on the exterior surfaces of ducts, pipes, and equipment shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84. (See sec. 9.11.B(5) for exception.)

(5) Linings in air ducts and equipment shall meet the Erosion Test Method described in Underwriters' Laboratories, Inc., Publication No. 181. These linings, including coatings and adhesives, and insulation on exterior surfaces of pipes and ducts in building spaces used as air supply plenums, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84.

C. Steam and Hot Water Systems.

(1) Boilers. Boilers shall have the capacity, based upon the net ratings published by the Hydronics Institute, to supply the normal requirements of all systems and equipment.

(2) Valves. Supply and return mains and risers of space heating and process steam systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends.

D. Heating and Ventilating Systems.

(1) Temperatures. A minimum design temperature of 75°F (24°C) at winter design conditions shall be provided for all occupied areas.

(2) Ventilation system details. All air supply and air exhaust systems shall be mechanically operated. All fans serving exhaust systems shall be located at the discharge end of the system. The ventilation rates shown in table 11 shall be considered as minimum acceptable rates and shall not be construed as precluding higher ventilation rates.

(a) Outdoor air intakes, other than for individual room units, shall be located as far as practical but not less than 25'0" (7.62 m) from exhaust outlets of ventilating systems, combustion equipment stacks, plumbing vent stacks, or from areas that may collect vehicular exhaust and other noxious fumes. The bottom of outdoor air intakes serving central systems shall be located as high as practical but not less than 6'0" (1.83 m) above the ground level or, if installed above the roof, 3'0" (91 cm) above roof level.

(b) The ventilating systems shall be designed and balanced to provide the pressure relationships shown in table 11.

(c) The bottoms of ventilation openings shall be not less than 3 inches (7.6 cm) above the floor of any room.

(d) Central systems shall be equipped with filter(s) having not less than 25 percent efficiency. All filter efficiencies shall be average atmospheric dust spot efficiencies tested in accordance with ASHRAE Standard 52-68, except as noted in section 9.11.D(2)(j).

(e) Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing duct work. All joints between the filter segments and the enclosing duct work shall be gasketed or

sealed to provide a positive seal against air leakage.

(f) A manometer shall be installed across each filter bed serving central air systems.

(g) Air handling duct systems shall meet the requirements of NFPA Standard 90A.

(h) Ducts which penetrate construction intended for X-ray and other ray protection shall not impair the effectiveness of the protection.

(i) Laboratory hoods shall meet the following general requirements:

(i) Have an average face velocity of not less than 75 feet per minute (0.38 meters per second).

(ii) Be connected to an exhaust system which is separate from the building exhaust system.

(iii) Have an exhaust fan located at the discharge end of the system.

(iv) Have an exhaust duct system of noncombustible corrosion-resistant material as needed to meet the planned usage of the hood.

(j) Laboratory hoods shall meet the following special requirements:

(i) Each hood which processes infectious or radioactive materials shall have a minimum face velocity of 100 feet per minute, shall be connected to an independent exhaust system, shall have filters with a 99.97 percent efficiency (0.51 meters per second), based on the DOP, dioctylphthalate, test method in the exhaust stream, and shall be designed and equipped to permit the safe removal, disposal, and replacement of contaminated filters.

(ii) Duct systems serving hoods in which radioactive and strong oxidizing agents (e.g. perchloric acid) are used shall be constructed of stainless steel for a minimum distance of 10'0" (3.05 m) from the hood and shall be equipped with wash down facilities.

E. Plumbing and Other Piping Systems.

All plumbing systems shall be designed and installed in accordance with the requirements of PHCC Na-

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Table 11. PRESSURE RELATIONSHIPS AND VENTILATION OF CERTAIN AREAS OF OUTPATIENT FACILITIES

AREA DESIGNATION	PRESSURE RELATIONSHIP TO ADJACENT AREAS	MINIMUM AIR CHANGES OF OUTDOOR AIR PER HOUR SUPPLIED TO ROOM	MINIMUM TOTAL AIR CHANGES PER HOUR SUPPLIED TO ROOM	ALL AIR EXHAUSTED DIRECTLY TO OUTDOORS
Dental Room	N	2	6	Yes
Treatment Room	E	2	6	Optional
Laboratory, General*	N	2	6	Optional
X-ray and Film Processing	N	2	6	Yes
Clean Workroom or Clean Holding	P	2	4	Optional
Soiled Workroom or Soiled Holding	N	2	10	Yes
Waiting Room	E	2	6	Optional
Corridors	E	2	6	Optional
Examination Room	E	2	6	Optional
Observation	N	2	6	Yes
Janitors' Closet	N	Optional	10	Yes
Soiled Storage	N	Optional	10	Yes
Toilet Room	N	Optional	10	Yes

P = Positive N = Negative E = Equal
*See sections 9.11.D(2)(i) and 9.11.D(2)(j) for additional requirements.

tional Standard Plumbing Code, chapter 14, "Medical Care Facility Plumbing Equipment."

(1) Plumbing fixtures.

(a) The material used for plumbing fixtures shall be nonabsorptive and acid-resistant.

(b) The water supply spout for lavatories and sinks required in patient care areas shall be mounted so that its discharge point is a minimum distance of 5 inches (12.7 cm) above the rim of the fixture. All fixtures used by medical and nursing staff and all lavatories used by patients shall be trimmed with valves which can be operated without the use of hands. Where blade handles are used for this purpose, they shall not exceed 4½ inches (11.4 cm) in length, except that handles on clinical sinks shall be not less than 6 inches (15.2 cm) long.

(c) Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface.

(2) Water system.

(a) Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand periods.

(b) Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture.

(c) Backflow preventers (vacuum breakers) shall be installed on hose bibbs, laboratory sinks, janitors' sinks, and on all other fixtures to which hoses or tubing can be attached.

(d) Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

(e) Water distribution systems shall be arranged to provide hot water at each hot water outlet at all times. Hot water to hand-washing facilities and showers shall not exceed 110°F (43°C).

(3) Drainage systems. Building sewers shall discharge into a community sewage system. Where such a system is not available, a facility providing sewage treatment must conform to applicable local and State regulations.

(4) Fire extinguishing systems. Automatic fire extinguishing systems shall be installed in trash rooms, bulk storage rooms, attic spaces and crawl spaces used for storage, and any other hazardous area. Storage rooms of less than 100 square feet (9.29 square meters) are excluded from this requirement.

9.12. ELECTRICAL REQUIREMENTS

A. General.

(1) All material including equipment, conductors, controls, and signaling devices shall be installed to

provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facilities shown in the specifications or indicated on the plans. All materials shall be listed as complying with available standards of Underwriters' Laboratories, Inc., or other similarly established standards.

(2) All electrical installations and systems shall be tested to show that the equipment is installed and operates as planned or specified.

B. Switchboards and Power Panels.

Circuit breakers or fusible switches that provide disconnecting means and overcurrent protection for conductors connected to switchboards and panelboards shall be enclosed or guarded to provide a dead-front type of assembly. The main switchboard shall be convenient for use, readily accessible for maintenance, clear of traffic lanes, and in a dry ventilated space free of corrosive fumes or gases. Overload protective devices shall be suitable for operating properly in ambient temperature conditions.

C. Panelboards.

Panelboards serving lighting and appliance circuits shall be located on the same floor as the circuits they serve.

D. Lighting.

(1) All spaces occupied by people, machinery, equipment within buildings, approaches to the buildings, and parking lots shall have lighting.

(2) A portable or fixed examination light shall be provided in each examination and treatment room.

E. Receptacles (Convenience Outlets).

(1) Rooms. Duplex grounding type receptacles shall be installed in all areas in sufficient quantities for the tasks to be performed. A minimum of one duplex receptacle for each wall shall be installed in each work area or room other than storage or lockers. Each examination and work table shall have access to a minimum of two duplex receptacles.

(2) Corridors. Duplex receptacles for cleaning equipment and general use shall be installed approximately 50'0" (15.24 m) apart in all corridors and within 25'0" (7.62 m) of ends of corridors.

F. Equipment Installation in Special Areas.

(1) X-ray Installations. Fixed and mobile X-ray equipment installations shall conform to article 660 of NFPA Standard 70.

(2) X-ray Film Illuminator Units. At least two units shall be installed in the X-ray viewing room of the radiology department.

G. Emergency Lighting.

Automatic emergency lighting shall be provided to make egress from the building safer in the event of power failure.

H. Fire Alarm Systems.

A manually operated electrically supervised fire alarm system shall be installed in each facility that has a total floor area of more than 5000 square feet (464.52 square meters).

10.1. SPECIAL CONSIDERATIONS

A. Flexibility in Planning.

Various kinds of special rehabilitation facilities are needed to meet the ever increasing needs generated by the tremendous growth and development in rehabilitation techniques in recent years. Ample provision has been built into these requirements to allow sufficient flexibility to meet these complex needs and to foster imaginative and dynamic planning for new and more creative rehabilitation facilities. For example, to meet the unique needs of disabled patients, more spacious areas are required than are usually provided in acute care facilities. It may be helpful for persons using this document to refer to the Social and Rehabilitation Service Publication No. IS 21, "Rehabilitation Services Administration Programs" (available from DHEW Regional Offices—see appendix), for general information relating to rehabilitation programs and activities.

B. Location.

Rehabilitation facilities may be organized under several auspices. These may include hospitals (organized departments of rehabilitation), outpatient clinics, rehabilitation centers, and other facilities designed to serve either single or multiple disability categories.

10.2. GENERAL CONSIDERATIONS

A. Sizes.

The sizes of the various departments will depend upon the program requirements and the organization of services within the facility. Some functions allotted separate spaces or rooms in these minimum requirements may be combined if the best standards of safety and patient care are not compromised. Some of the areas may be omitted from the facility if the necessary services are conveniently available elsewhere.

B. Provisions for Handicapped.

Facilities shall be available and accessible to the physically handicapped (public, staff, and patients). (See sec. 1.2.)

C. Parking.

Each facility shall have parking space to satisfy the minimum needs of patients, staff, and visitors. In the absence of a formal parking study, parking capacity

shall be provided at the ratio of three spaces for each professional staff member. Exceptions may be made with approval of the appropriate State Agency for facilities located in areas with a high population density if adequate public parking is available or if the facility is accessible to a public transportation system. On-street parking, if available, may be considered as meeting part of this requirement. Space shall be provided for emergency and delivery vehicles.

10.3. FUNCTIONAL UNITS AND SERVICE AREAS

A. Required Units.

Each rehabilitation facility shall contain a Medical Evaluation Unit (see sec. 10.4) and one or more of the following units:

- Psychological Services Unit (see sec. 10.5).
- Social Services Unit (see sec. 10.6).
- Vocational Services Unit (see sec. 10.7).

B. Required Service Areas.

Each rehabilitation facility shall provide the following service areas if they are not otherwise conveniently available to the facility:

- Patients' Dining, Recreation, and Day Spaces (see sec. 10.8).
- Dietary Unit (see sec. 10.9).
- Personal Care Facilities (see sec. 10.10).
- Unit for Teaching Activities of Daily Living (see sec. 10.11).
- Administration Department (see sec. 10.12).
- Engineering Service and Equipment Areas (see sec. 10.13).
- Linen Services (see sec. 10.14).
- Janitors' Closet (see sec. 10.15).
- Employees' Facilities (see sec. 10.16).

C. Optional Units.

The following special service areas, if required by the narrative program, shall be provided as outlined in these sections. The sizes of the various departments will depend upon the requirements of the facility.

- Nursing Unit (see sec. 10.17).
- Sterilizing Facilities (see sec. 10.18).

- Physical Therapy Unit (see sec. 10.19).
- Occupational Therapy Unit (see sec. 10.20).
- Prosthetics and Orthotics Unit (see sec. 10.21).
- Speech and Hearing Unit (see sec. 10.22).
- Dental Unit (see sec. 10.23).
- Radiology Unit (see sec. 10.24).
- Pharmacy Unit (see sec. 10.25).

10.4. MEDICAL EVALUATION UNIT

A. Office(s) for Medical Personnel.

B. Examination Room(s).

Examination rooms shall have a minimum floor area of 120 square feet (11.15 square meters), excluding such spaces as vestibule, toilet, closet, and work counter (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). The room shall contain a lavatory or sink equipped for handwashing, a work counter, storage facilities, and a desk, counter, or shelf space for writing.

C. Laboratory Facilities.

Facilities shall be provided directly within the rehabilitation department or through an effective contract arrangement with a nearby hospital or laboratory service for hematology, clinical chemistry, urinalysis, cytology, pathology, and bacteriology. If these facilities are provided through such a contract, then at least the following minimum laboratory services shall be provided in the rehabilitation facility:

- (1) Laboratory work counter(s). With sink, gas and electric service.
- (2) Lavatory(ies) or counter sink(s). Equipped for handwashing.
- (3) Storage cabinet(s) or closet(s).
- (4) Specimen collection facilities. Urine collection rooms shall be equipped with a water closet and lavatory. Blood collection facilities shall have space for a chair and work counter.

D. Electromyographic room.

This is only required in multidisability facilities.

10.5. PSYCHOLOGICAL SERVICES UNIT

Office(s) and workspace for testing, evaluation, and counseling.

10.6. SOCIAL SERVICES UNIT

Office space(s) for private interviewing and counseling.

10.7. VOCATIONAL SERVICES UNIT

Office(s) and workspace for vocational services activities such as evaluation (prevocational and vocational), training, counseling, and placement.

10.8. PATIENTS' DINING, RECREATION, AND DAY SPACES

The following areas shall be provided and may be in separate or adjoining spaces:

A. Inpatients and Residents.

A total of 30 square feet (2.79 square meters) per bed for the first 100 beds and 27 square feet (2.51 square meters) per bed for all beds in excess of 100.

B. Outpatients.

A total of 20 square feet (1.85 square meters) per person when dining is a part of their day care program. (If dining is not part of the program, provide at least 10 square feet (0.93 square meters) per person for recreation and day spaces.)

C. Storage.

Storage spaces shall be provided for recreational equipment and supplies.

10.9. DIETARY DEPARTMENT

Construction, equipment, and installation shall comply with the standards specified in PHS Publication No. 934, "Food Service Sanitation Manual." Food service facilities shall be designed and equipped to meet the requirements of the narrative program. These may consist of an on-site conventional food preparation system, a convenience food service system, or an appropriate combination thereof.

10.10. PERSONAL CARE UNIT FOR INPATIENTS

Separate space shall be provided for hair care and grooming needs of patients.

10.11. ACTIVITIES FOR DAILY LIVING UNIT

A unit for teaching activities for daily living shall be provided. It shall include a bedroom, bath, kitchen, and space for stairs.

10.12. ADMINISTRATION AND PUBLIC AREAS

A. Entrance.

Located at grade level, sheltered from the weather, and able to accommodate wheelchairs.

B. Lobby.

It shall include:

- (1) Wheelchair storage space(s).
- (2) Reception and information counter or desk.
- (3) Waiting space(s).
- (4) Public toilet facilities.
- (5) Public telephone(s).
- (6) Drinking fountain(s).

C. Interview Space(s).

For private interviews relating to social service, credit, and admissions.

D. General or Individual Office(s).

For business transactions, records, and administrative and professional staffs.

E. Multipurpose Room(s).

For conferences, meetings, health education purposes, and library, and shall be equipped for showing visual aids.

F. Special Storage.

For employees' personal effects.

G. General Storage.

For office supplies, sterile supplies, pharmaceutical supplies, splints and other orthopedic supplies, and housekeeping supplies and equipment.

10.13. ENGINEERING SERVICE AND EQUIPMENT AREAS

The following shall be provided:

A. Equipment Rooms.

For boilers, mechanical equipment, and electrical equipment.

B. Storage Room(s).

For building maintenance supplies and yard equipment.

C. Waste Processing Services.

(1) Space and facilities shall be provided for the sanitary storage and disposal of waste by incineration, mechanical destruction, compaction, container-

ization, or removal, or by a combination of these techniques.

(2) If provided, design and construction of incinerators and trash chutes shall be in accordance with NFPA Standard 82.

(3) If provided, the incinerator shall be in a separate room or placed outdoors.

(4) Incinerators shall be designed and equipped to conform to the requirements prescribed by air pollution regulations in the area.

10.14. LINEN SERVICES

A. On-Site Processing.

If linen is to be processed on the site, the following shall be provided:

(1) Laundry processing room with commercial-type equipment which can process seven days' needs within a regularly scheduled workweek. Handwashing facilities shall be provided.

(2) Soiled linen receiving, holding, and sorting room with handwashing facilities.

(3) Storage for laundry supplies.

(4) Clean linen inspection and mending room or area.

(5) Clean linen storage, issuing and holding room or area.

(6) Janitors' closet containing a floor receptor or service sink and storage space for housekeeping equipment and supplies.

(7) Sanitizing facilities and storage area for carts.

B. Off-Site Processing.

If linen is processed off the rehabilitation facility site, the following shall be provided:

(1) Soiled linen holding room.

(2) Clean linen receiving, holding, inspection, and storage room(s).

(3) Sanitizing facilities and storage area for carts.

10.15. JANITORS' CLOSET(S)

In addition to the janitors' closets called for in certain departments (see sec. 10.14.A(6)), sufficient janitors' closets shall be provided throughout the facility as required to maintain a clean and sanitary environment. These shall contain a floor receptor or service sink and storage space for housekeeping supplies and equipment.

10.16. EMPLOYEES' FACILITIES

In addition to the employees' facilities such as locker rooms, lounges, toilets, or shower facilities called for in certain departments (see sec. 10.17.C(6)), a sufficient number of such facilities as required to accommodate the needs of all personnel and volunteers shall be provided.

10.17. NURSING UNIT

Each nursing unit shall provide the following:

A. Patient Rooms.

Each patient room shall meet the following requirements:

(1) Maximum room capacity shall be four patients. Larger units may be provided if justified by the narrative program. At least two single-bed rooms with private toilet rooms shall be provided for each nursing unit.

(2) Minimum room areas exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules shall be 125 square feet (11.61 square meters) in single-bed rooms and 100 square feet (9.29 square meters) per bed in multibed rooms.

(3) Each room shall have a window which can be opened without the use of tools. The windowsill shall be not higher than 3'0" (91 cm) above the floor and shall be above grade.

(4) Nurses' calling system shall be provided in accordance with section 10.30.G.

(5) One lavatory shall be provided in each patient room except that it may be omitted from a single-bed room or a 2-bed room if a lavatory is located in an adjoining toilet room which serves that room only.

(6) Each patient shall have access to a toilet room without entering the general corridor area. One toilet room shall serve no more than four beds and no more than two patient rooms. The toilet room shall contain a water closet and a lavatory. The lavatory may be omitted from a toilet room which serves not more than two single-bed rooms if each such single-bed room contains a lavatory. (See sec. 10.17.E for additional toilet room requirements.)

(7) Each patient shall have a wardrobe, closet, or locker with minimum clear dimensions of 1'10" (55.9 cm) by 1'8" (50.8 cm), suitable for hanging full length garments. Adjustable clothes rod and adjustable shelf shall be provided.

(8) Visual privacy shall be provided each patient in multibed rooms.

B. Service Areas.

The service areas noted below shall be located in or readily available to each nursing unit. The size and disposition of each service area will depend upon the number and types of disabilities for which care will be provided. Although identifiable spaces are required to be provided for each of the indicated functions, consideration will be given to alternative designs which would accommodate some functions without specific designation of areas or rooms. Details of such proposals shall be submitted for prior approval. Each service area may be arranged and located to serve more than one nursing unit but at least one such service area shall be provided on each nursing floor.

(1) Administrative center or nurses' station.

(2) Nurses' office.

(3) Storage for administrative supplies.

(4) Handwashing facilities convenient to nurses' station and drug distribution station.

(5) Charting facilities for nurses and doctors.

(6) Lounge and toilet room(s) for staff.

(7) Individual closets or compartments for safe-keeping of coats and personal effects of nursing personnel. These shall be located convenient to the duty station of personnel or in a central location.

(8) Multipurpose room for conferences, demonstrations, and consultation.

(9) Room for examination and treatment of patients. This room may be omitted if all patient rooms are single-bed rooms. It shall have a minimum floor area of 120 square feet (11.15 square meters), excluding space for vestibule, toilet, closets, and work counters (whether fixed or movable). The minimum room dimension shall be 10'0" (3.05 m). The room shall contain a lavatory or sink equipped for handwashing, work counter, storage facilities, and a desk, counter, or shelf space for writing. The examination room in the medical evaluation unit may be used for this purpose if it is conveniently located on the same floor as the patient rooms.

(10) Clean workroom or clean holding room. The clean workroom shall contain a work counter, handwashing, and storage facilities. The clean holding room shall be part of a system for storage and distribution of clean and sterile supply materials and shall be similar to the clean workroom except that

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the work counter and handwashing facilities may be omitted.

(11) Soiled workroom or soiled holding room. The soiled workroom shall contain a clinical sink or equivalent flushing rim fixture, sink equipped for handwashing, work counter, waste receptacle, and linen receptacle. The soiled holding room shall be part of a system for the collection and disposal of soiled materials and shall be similar to the soiled workroom except that the clinical sink and the work counter may be omitted.

(12) Drug distribution station. Provision shall be made for convenient and prompt 24-hour distribution of medicine to patients. This may be from a medicine preparation room or unit, a self-contained medicine dispensing unit, or by another approved system. If used, a medicine preparation room or unit shall be under the nursing staff's visual control and contain a work counter, refrigerator, and locked storage for biologicals and drugs. A medicine dispensing unit may be located at the nurses' station, in the clean workroom or in an alcove or other space under direct control of nursing or pharmacy staff.

(13) Clean linen storage. Provide a separate closet or a designated area within the clean workroom. If a closed cart system is used, storage may be in an alcove.

(14) Nourishment station. This shall contain a sink equipped for handwashing, equipment for serving nourishment between scheduled meals, refrigerator, storage cabinets, and icemaker-dispenser units to provide for patients' service and treatment.

(15) Equipment storage room. This shall be for equipment such as I.V. stands, inhalators, air mattresses, and walkers.

(16) Parking for stretchers and wheelchairs. This shall be located out of path of normal traffic.

C. Patients' Bathing Facilities.

Bathtubs or showers shall be provided at the rate of one for each 8 beds which are not otherwise served by bathing facilities within patients' rooms. At least one island-type bathtub shall be provided in each nursing unit. Each tub or shower shall be in an individual room or privacy enclosure which provides space for the private use of the bathing fixture, for drying and dressing, and for a wheelchair and an attendant. Showers in central bathing facilities shall be at least 4'0" (1.22 m) square, without curbs, and designed to permit use by a wheelchair patient.

D. Patients' Toilet Facilities.

(1) The minimum dimensions of a room containing only a water closet shall be 3'0" (91.4 cm) by 6'0" (1.83 m); additional space shall be provided if a lavatory is located within the same room. Water closets must be located to be usable by wheelchair patients.

(2) At least one room on each nursing floor shall be provided for toilet training. It shall be accessible from the nursing corridor. A clearance of 3'0" (91.4 cm) shall be provided at the front and at each side of the water closet. This room shall also contain a lavatory.

(3) A toilet room shall be accessible to each central bathing area without going through the general corridor. This may be arranged to serve as the required toilet training facility.

(4) Doors to toilet rooms shall have a minimum width of 2'10" (86.3 cm) to admit a wheelchair.

(5) A lavatory shall be provided for each water closet in each multifixture toilet room.

10.18. STERILIZING FACILITIES

A system for the sterilization of equipment and supplies shall be provided.

10.19. PHYSICAL THERAPY UNIT

The following elements shall be provided:

A. Office Space.

B. Waiting Space.

C. Treatment Area(s).

For thermotherapy, diathermy, ultrasonics, hydrotherapy, etc. Provide cubicle curtains around each individual treatment area. Provide handwashing facility(ies). One lavatory or sink may serve more than one cubicle. Facilities for collection of wet and soiled linen and other material shall be provided.

D. Exercise Area.

E. Storage for Clean Linen, Supplies, and Equipment.

F. Patients' Dressing Areas, Showers, Lockers, and Toilet Rooms.

G. Service Sink.

H. Wheelchair and Stretcher Storage.

(Items A, B, E, F, G, and H may be planned and arranged for shared use by occupational therapy patients and staff if the approved narrative program reflects this sharing concept.)

10.20. OCCUPATIONAL THERAPY UNIT

The following elements shall be provided:

- A. Office Space.**
- B. Waiting Space.**
- C. Activities Areas.**
Provision shall be made for a sink or lavatory and for the collection of waste products prior to disposal.
- D. Storage for Supplies and Equipment.**
- E. Patients' Dressing Areas, Showers, Lockers, and Toilet Rooms.**

(Items A, B, D, and E may be planned and arranged for shared use by physical therapy patients and staff if the narrative program reflects this sharing concept.)

10.21. PROSTHETICS AND ORTHOTICS UNIT

- A. Work Space for Technician(s).**
- B. Space for Evaluation and Fitting.**
With provision for privacy.
- C. Space for Equipment, Supplies and Storage.**

10.22. SPEECH AND HEARING UNIT

- A. Office(s).**
For therapists.
- B. Space for Evaluation and Treatment.**
- C. Space for Equipment and Storage.**

10.23. DENTAL UNIT

- A. Operatory.**
With lavatory.
- B. Laboratory and Film Processing Facilities.**

10.24. RADIOLOGY UNIT

The unit shall contain the following elements:

- A. Radiographic Rooms(s).**
(See sec. 10.26.A(23) for special requirements.)

B. Film Processing Facilities.

C. Viewing and Administration Area(s).

D. Film Storage Facilities.

E. Toilet Room.

With handwashing facility. Directly accessible from each fluoroscopy room without entering the general corridor area.

F. Dressing Area(s).

With convenient access to public toilets.

G. Waiting Room or Alcove.

For ambulatory patients.

H. Holding Area for Stretcher Patients.

Out of direct line of normal traffic.

10.25. PHARMACY UNIT

The size and type of services to be provided in the pharmacy will depend upon the type of drug distribution system to be used in the rehabilitation facility and whether the rehabilitation facility proposes to provide, purchase, or share pharmacy services with other facilities. This shall be explained in the narrative program. Provision shall be made for the following:

A. Administrative Functions.

These include requisitioning, recording and reporting, receiving, storage including refrigeration, and counting.

B. Quality Control Area (if bulk compounding and/or packaging functions are performed).

C. Locked Storage for Drugs and Biologicals.

D. Dispensing Area.

E. Handwashing Facilities.

F. Drug Information Area.

For reference materials and personnel.

G. Sterile Products Area.

For compounding of I.V. admixtures and other sterile dosage forms.

10.26. DETAILS AND FINISHES

A high degree of safety for the occupants shall be provided to minimize the incidence of accidents. All details and finishes for modernization projects as well as for new construction shall comply with the following requirements:

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A. Details.

(1) Compartmentation, exits, automatic extinguishment systems, and other details relating to fire prevention and fire protection in rehabilitation facilities housing inpatients shall comply with requirements listed in sections 10-1, 17-415, and 17-416 of NFPA Standard 101. In freestanding outpatient rehabilitation facilities, details relating to exits and fire safety shall be in accordance with section 13 of NFPA Standard 101 and the requirements outlined herein.

(2) Items such as drinking fountains, telephone booths, vending machines, and portable equipment shall be located so as not to restrict corridor traffic or reduce the corridor width below the required minimum.

(3) Rooms containing bath tubs, sitz baths, showers, and water closets, subject to occupancy by patients, shall be equipped with doors and hardware which will permit access from the outside in an emergency. When such rooms have only one opening or are small, the doors shall be capable of opening outwards or be otherwise designed to be opened without need to push against a patient who may have collapsed within the room.

(4) Minimum width of all doors to rooms needing access for beds or stretchers shall be 3'8" (111.7 cm). Doors to patients' toilet rooms and other rooms needing access for wheelchairs shall have a minimum width of 2'10" (86.3 cm).

(5) Doors on all openings between corridors and rooms or spaces subject to occupancy, except elevator doors, shall be swing type. Openings to showers, baths, patients' toilets, and other small wet-type areas not subject to fire hazard are exempt from this requirement.

(6) Doors, except doors to spaces such as small closets which are not subject to occupancy, shall not swing into corridors in a manner that might obstruct traffic flow or reduce the required corridor width. (Large walk-in type closets are considered as occupiable spaces.)

(7) Windows shall be designed to prevent accidental falls when open, or shall be provided with security screens.

(8) Doors, sidelights, borrowed lights, and windows in which the glazing extends down to within 18 inches (46 cm) of the floor (thereby creating possibility of accidental breakage by pedestrian traffic)

shall be glazed with safety glass, wire glass, or plastic glazing material that will resist breaking or will not create dangerous cutting edges when broken. Similar materials shall be used in wall openings of playrooms and exercise rooms unless required otherwise for fire safety. Safety glass or plastic glazing material shall be used for shower doors and bath enclosures.

(9) Where labeled fire doors are required, they shall be certified by an independent testing laboratory as meeting the construction requirements equal to those for fire doors in NFPA Standard 80. Reference to a labeled door shall be construed to include labeled frames and hardware.

(10) Elevator shaft openings shall have class B 1½ hour labeled fire doors.

(11) Linen and refuse chutes shall meet or exceed the following requirements (also see sec. 10.13.C(2):

(a) Service openings to chutes shall not be located in corridors or passageways but shall be located in a room of construction having a fire resistance of not less than one hour. Doors to such rooms shall be of not less than class C ¾-hour labeled fire doors.

(b) Service openings to chutes shall have approved self-closing class B 1½ hour labeled fire doors.

(c) Minimum cross-sectional dimension of gravity chutes shall be not less than 2'0" (61 cm).

(d) Chutes shall discharge directly into collection rooms separate from incinerator, laundry, or other services. Separate collection rooms shall be provided for trash and for linen. The enclosure construction for such rooms shall have a fire resistance of not less than 2 hours, and the doors thereto shall be not less than class B 1½ hour labeled fire doors.

(e) Gravity chutes shall extend through the roof with provisions for continuous ventilation as well as for fire and smoke ventilation. Openings for fire and smoke ventilation shall have an effective area of not less than that of the chute cross-section and shall be not less than 4'0" (1.22 m) above the roof and not less than 6'0" (1.83 m) clear of other vertical surfaces. Fire and smoke ventilating openings may be covered with single strength sheet glass.

(12) Dumbwaiters, conveyors, and material handling systems shall not open into a corridor or exitway but shall open into a room enclosed by construction having a fire resistance of not less than one hour and provided with class C $\frac{3}{4}$ -hour labeled fire doors. Service entrance doors to vertical shafts containing dumbwaiters, conveyors, and material handling systems shall be not less than class B $\frac{1}{2}$ hour labeled fire doors. Where horizontal conveyors and material handling systems penetrate fire-rated walls or smoke partitions, the opening thereto must be provided with class B $\frac{1}{2}$ hour labeled fire doors for two-hour fire-rated walls and class C $\frac{3}{4}$ -hour labeled fire doors for one-hour fire-rated walls or partitions.

(13) Thresholds and expansion joint covers shall be made flush with the floor surface to facilitate use of wheelchairs and carts.

(14) Grab bars shall be provided at all patients' toilets, tubs, showers, and sitz baths. The bars shall have $\frac{1}{2}$ inch (3.8 cm) clearance to walls and shall have sufficient strength and anchorage to sustain a concentrated load of 250 pounds (113.4 kilograms).

(15) Recessed soap dishes shall be provided in showers and bathrooms.

(16) Only top supported curtains will be permitted on bathtub enclosures.

(17) Handrails shall be provided on both sides of corridors used by patients. A clear distance of $\frac{1}{2}$ inches (3.8 cm) shall be provided between the handrail and the wall, and the top of the rail shall be about 32 inches (81 cm) above the floor, except for special care areas such as those serving children.

(18) Ends of handrails and grab bars shall be constructed to prevent snagging the clothes of patients.

(19) Location and arrangement of handwashing facilities shall permit their proper use and operation. Particular care should be given to the clearance required for blade-type operating handles. (See sec. 10.29.E(1)(b).) Laboratories intended for use by handicapped patients shall be installed to permit wheelchairs to slide under them.

(20) Mirrors shall be arranged for convenient use by patients in wheelchairs as well as by patients in a standing position.

(21) Paper towel dispensers and waste receptacles shall be provided at all handwashing fixtures.

(22) Lavatories and handwashing facilities shall be securely anchored to withstand an applied vertical

load of not less than 250 pounds (113.4 kilograms) on the front of the fixture.

(23) Radiation protection requirements of X-ray and gamma ray installations shall conform with NCRP Reports Nos. 33 and 34. Provision shall be made for testing the completed installation before use and all defects must be corrected before acceptance.

(24) Ceiling heights shall be as follows:

(a) Boiler rooms shall have ceiling clearance not less than 2'6" (76 cm) above the main boiler header and connecting piping.

(b) Radiographic and other rooms containing ceiling-mounted equipment and including those with ceiling-mounted surgical light fixtures shall have height required to accommodate the equipment and/or fixtures.

(c) All other rooms shall have not less than 8'0" (2.44 m) ceilings except that corridors, storage rooms, toilet rooms, and other minor rooms may be not less than 7'8" (2.34 m). Suspended tracks, rails, and pipes located in path of normal traffic shall be not less than 6'8" (2.03 m) above the floor.

(25) Recreation rooms, exercise rooms, and similar spaces where impact noises may be generated shall not be located directly over patient bed areas unless special provisions are made to minimize such noise.

(26) Rooms containing heat producing equipment (such as boiler or heater rooms and laundries) shall be insulated and ventilated to prevent any floor surface above from exceeding a temperature of 10°F (6°C) above the ambient room temperature.

(27) Noise reduction criteria shown in table 12 shall apply to partition, floor, and ceiling construction in patient areas.

B. Finishes.

(1) Cubicle curtains and draperies shall be non-combustible or rendered flame retardant and shall pass both the large and small scale tests of NFPA Standard 701.

(2) Flame spread and smoke developed ratings of finishes are covered under section 10.27.B.

(3) Floor materials shall be easily cleanable and have wear resistance appropriate for the location involved. Floors in areas used for food preparation or food assembly shall be water resistant and grease-proof. Joints in tile and similar material in such areas shall be resistant to food acids. In all areas frequently

Table 12. SOUND TRANSMISSION LIMITATIONS FOR
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	AIRBORNE SOUND TRANSMISSIONS CLASS (STC) ^{a/}		IMPACT INSULATION CLASS (IIC) ^{b/}
	Partitions	Floors	Floors
Patients' room to patients' room	45	45	45
Public space to patients' room ^{d/}	50	50	50 ^{e/}
Service areas to patients' room ^{e/}	55	55	55 ^{e/}

^{a/}Sound transmission class (STC) shall be determined by tests in accordance with methods set forth in ASTM Standard E 90 and ASTM Standard E 413.

^{b/}Impact insulation class (IIC) shall be determined in accordance with criteria set forth in HUD FT/TS-24, "A Guide to Airborne, Impact and Structure Borne Noise—Control in Multi-Family Dwellings."

^{c/}Impact noise limitation applicable only when corridor, public space, or service area is over patients' room.

^{d/}Public space includes lobbies, dining rooms, recreation rooms, treatment rooms, and similar spaces.

^{e/}Service areas include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patients' rooms, offices, nurses' stations, and similar occupied spaces shall be effectively isolated from the floor.

NOTE: The requirements set forth in this table assume installation methods which will not appreciably reduce the efficiency of the assembly as tested.

subject to wet cleaning methods, floor materials shall not be physically affected by germicidal and cleaning solutions. Floors that are subject to traffic while wet such as shower and bath areas, kitchens, and similar work areas shall have a nonslip surface.

(4) Wall bases in kitchens, soiled workrooms, and other areas which are frequently subject to wet cleaning methods shall be made integral and covered with the floor, tightly sealed within the wall, and constructed without voids that can harbor insects.

(5) Wall finishes shall be washable and, in the immediate area of plumbing fixtures, shall be smooth and moisture resistant. Finish, trim, and floor and wall construction in dietary and food preparation areas shall be free from spaces that can harbor rodents and insects.

(6) Floor and wall penetrations by pipes, ducts, and conduits shall be tightly sealed to minimize entry by rodents and insects. Joints of structural elements shall be similarly sealed.

(7) Ceilings throughout shall be easily cleanable. Ceilings in the dietary and food preparation area shall have a finished ceiling covering all overhead piping and ductwork. Finished ceilings may be omitted in mechanical and equipment spaces, shops, general

storage areas, and similar spaces, unless required for fire-resistive purposes.

(8) Acoustical ceilings shall be provided for corridors in patient areas, nurses' stations, dayrooms, recreation rooms, dining areas, and waiting areas.

10.27. CONSTRUCTION, INCLUDING FIRE-RESISTIVE REQUIREMENTS

A. Design.

Except as noted below, construction of freestanding outpatient rehabilitation facilities shall generally be similar to recognized national model building codes applicable to office occupancies and the minimum requirements contained herein. Rehabilitation facilities which are an integral part of a hospital or connected to a hospital and which accommodate hospital inpatients shall comply with the construction requirements for general hospitals as shown in section 7.28.

B. Interior Finishes.

Interior finish materials shall comply with the flame spread limitations and the smoke production limitations shown in table 13. If a separate underlayment is used with any floor finish material, the underlayment and the finish material shall be tested as a unit or

equivalent provisions made to determine the effect of the underlayment on the flammability characteristics of the floor finish material. Test shall be performed by an independent testing laboratory.

C. Insulation Materials.

Building insulation materials, unless sealed on all sides and edges, shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less when tested in accordance with ASTM Standard E 84.

D. Provisions for Natural Disasters.

(1) Earthquakes. In regions where local experience shows that earthquakes have caused loss of life or expensive property damage, buildings and structures shall be designed to withstand the force assumptions specified in the latest issue of the Uniform Building Code.

In buildings which are subdivided into separate structural units by seismic joints, each unit shall be provided with an exit stairway to permit evacuation from the building without need for traversing the seismic joints.

Special care shall be taken to anchor fixed equipment, suspended ceilings, light fixtures, and similar items to minimize hazard to occupants and damage to the equipment and building during an earthquake. Storage shelves and racks holding breakable or fragile supplies shall be designed to retain their contents when subjected to the lateral forces of an earthquake.

(2) Hurricanes, tornadoes, and floods. Special provisions shall be made in the design of buildings in regions where local experience shows loss of life or damage to buildings resulting from hurricanes, tornadoes, or floods.

10.28. ELEVATORS

A. General.

All buildings having patients' facilities (such as bedrooms, dining rooms, or recreation areas) or critical services (such as diagnostic or therapy) located on other than the main entrance floor shall have electric or electrohydraulic elevators.

(1) Number of elevators.

(a) Facilities which serve outpatients only shall have at least one elevator. The need for additional elevators shall be determined from a study of the facility plan and the estimated vertical transportation requirements.

(b) At least one hospital-type elevator shall be installed where 1 to 59 patient beds are located on any floor other than the main entrance floor.

(c) At least two elevators (one of which shall be of the hospital type) shall be installed where 60 to 200 patient beds are located on floors other than the main entrance floor, or when major inpatient services are located on a floor other than those containing patient

Table 13. FLAME SPREAD AND SMOKE PRODUCTION LIMITATIONS ON INTERIOR FINISHES IN REHABILITATION FACILITIES

		Flame Spread Rating	Smoke Production Rating
Walls and Ceilings	Exitways, storage rooms, and areas of unusual fire hazard	ASTM Standard E 84 25 or less	Appendix II NBS Technical Notes.708 450 or less*
	All other areas	ASTM Standard E 84 75 or less	
Floors		ASTM Standard E 84 75 or less	

*Average of flaming and nonflaming values.

beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(d) At least three elevators (two of which shall be of the hospital type) shall be installed where 201 to 350 patient beds are located on floors other than the main entrance floor, or when major inpatient services are located on a floor other than those containing patient beds. (Elevator service may be reduced for those floors which provide only partial inpatient services.)

(e) For facilities with more than 350 beds, the number of elevators shall be determined from a study of the facility plan and the estimated vertical transportation requirements.

(2) Cars and platforms. Cars of hospital-type elevators shall have inside dimensions that will accommodate a patient bed and attendants, and shall be at least 5'0" (1.52 m) wide by 7'6" (2.29 m) deep. Car doors shall have a clear opening of not less than 3'8" (1.12 m). Cars of all other required elevators shall have a minimum inside floor dimension of not less than 5'0" (1.52 m). Car doors shall have a clear opening of not less than 3'0" (91 cm).

(3) Leveling. Elevators shall be equipped with an automatic leveling device of the two-way automatic maintaining type with an accuracy of $\pm\frac{1}{2}$ inch (± 1.3 cm).

(4) Operation. Elevators, except freight elevators, shall be equipped with a two-way special service switch to permit cars to bypass all landing button calls and be dispatched directly to any floor.

(5) Elevator controls, alarm buttons, and telephones shall be accessible to wheelchair occupants.

(6) Elevator call buttons, controls, and door safety stops shall be of a type that will not be activated by heat or smoke.

B. Field Inspection and Tests.

Inspections and tests shall be made and the owner shall be furnished written certification that the installation meets the requirements set forth in this section and all applicable safety regulations and codes.

10.29. MECHANICAL REQUIREMENTS

The requirements noted below shall apply to rehabilitation facilities which serve inpatients. Rehabilitation

facilities which serve outpatients only shall comply with the mechanical requirements for outpatient facilities as shown in section 9.11.

A. General.

(1) Prior to completion and acceptance of the facility, all mechanical systems shall be tested, balanced, and operated to demonstrate to the owner or his representative that the installation and performance of these systems conform to the requirements of the plans and specifications.

(2) Upon completion of the contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions, and parts list with numbers and description for each piece of equipment. He shall also be provided with instruction in the operational use of systems and equipment as required.

B. Thermal and Acoustical Insulation.

(1) Insulation shall be provided for the following within the building:

(a) Boilers, smoke breeching, and stacks.

(b) Steam supply and condensate return piping.

(c) Hot water piping above 180°F (82°C) and all hot water heaters, generators, and converters.

(d) Hot water piping above 125°F (52°C) which is exposed to contact by patients.

(e) Chilled water, refrigerant, other process piping and equipment operating with fluid temperatures below ambient dew point.

(f) Water supply and drainage piping on which condensation may occur.

(g) Air ducts and casings with outside surface temperature below ambient dew point.

(h) Other piping, ducts, and equipment as necessary to maintain the efficiency of the system.

(2) Insulation may be omitted from hot water and steam condensate piping not subject to contact by patients when such insulation is unnecessary for preventing excessive system heat loss or excessive heat gain.

(3) Insulation on cold surfaces shall include an exterior vapor barrier.

(4) Insulation, including finishes and adhesives on the exterior surfaces of ducts, pipes, and equipment, shall have a flame spread rating of 25 or less and a smoke developed rating of 150 or less as determined

by an independent testing laboratory in accordance with ASTM Standard E 84. (See sec. 10.29.B(5) for exceptions.)

(5) Linings in air ducts and equipment shall meet the Erosion Test Method described in Underwriters' Laboratories, Inc., Publication No. 181. These linings, including coatings and adhesives, and insulation in building spaces used as air supply plenums, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less as determined by an independent testing laboratory in accordance with ASTM Standard E 84.

C. Steam and Hot Water Systems.

(1) Boilers shall have the capacity, based upon the net ratings published by the Hydronics Institute, to supply the normal requirements of all systems and equipment. The number and the arrangement of boilers in facilities having inpatient units shall be such that when one boiler breaks down or routine maintenance requires that one boiler be temporarily taken out of service, the capacity of the remaining boiler(s) shall be at least 70 percent of the total required capacity, except that in areas with a design temperature of 20°F (-7°C) or more, based on the Median of Extremes in the ASHRAE Handbook of Fundamentals, the remaining boiler(s) do not have to include boiler capacity for space heating.

(2) Boiler accessories. Boiler feed pumps, heating circulating pumps, condensate return pumps, and fuel oil pumps shall be connected and installed to provide normal and standby service.

(3) Valves. Supply and return mains and risers of cooling, heating, and process steam systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends.

D. Heating and Ventilating Systems.

(1) Temperatures. A minimum design temperature of 75°F (24°C) at winter design conditions shall be provided for all occupied areas.

(2) Ventilation system details. All air-supply and air-exhaust systems shall be mechanically operated. All fans serving exhaust systems shall be located at the discharge end of the system. The ventilation rates shown in table 14 shall be considered as minimum acceptable rates and shall not be construed as precluding the use of higher ventilation rates.

(a) Outdoor air intakes shall be located as far as practical but not less than 25'0" (7.62 m) from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum systems, plumbing vent stacks, or from areas which may collect vehicular exhaust and other noxious fumes. The bottom of outdoor air intakes serving central systems shall be located as high as practical but not less than 6'0" (1.83 m) above ground level, or if installed above the roof 3'0" (91 cm) above roof level.

(b) The ventilation systems shall be designed and balanced to provide the pressure relationship as shown in table 14.

Table 14. PRESSURE RELATIONSHIPS AND VENTILATION OF CERTAIN REHABILITATION AREAS

AREA DESIGNATION	PRESSURE RELATIONSHIP TO ADJACENT AREAS	MINIMUM AIR CHANGES OF OUTDOOR AIR PER HOUR SUPPLIED TO ROOM	MINIMUM TOTAL AIR CHANGES PER HOUR SUPPLIED TO ROOM	ALL AIR EXHAUSTED DIRECTLY TO OUTDOORS	RECIRCULATED WITHIN AREA
Dental Operatory	N	2	6	Optional	No*
Patient Room	E	2	2	Optional	Optional
Patient Area Corridor	E	2	4	Optional	Optional
Occupational Therapy	N	2	6	Optional	Optional
Physical Therapy and Hydrotherapy	N	2	6	Optional	Optional
Speech and Hearing Unit	E	2	2	Optional	Optional
Soiled Workroom and Soiled Holding	N	2	10	Yes	No
Clean Workroom and Clean Holding	P	2	4	Optional	Optional
Activities of Daily Living	E	2	4	Optional	Optional
X-ray Diagnostic	N	2	6	Optional	Optional
Treatment Room	E	2	6	Optional	No*
Laboratory	N	2	6	Optional	Optional
Dark Room	N	2	10	Yes	No
Toilet Room and Locker Rooms	N	Optional	10	Yes	No
Bedpan Room	N	Optional	10	Yes	No
Bathroom	N	Optional	10	Yes	No
Janitor's Closet	N	Optional	10	Yes	No
Sterilizer Equipment Room	N	Optional	10	Yes	No
Linen and Trash Chute Rooms	E	2	10	Yes	No
Food Preparation Center	N	Optional	10	Yes	No
Warewashing Room	N	Optional	10	Yes	No
Personal Care Room	N	2	8	Optional	Yes
Dietary Day Storage	E	Optional	2	Optional	No
Laundry, General	E	2	10	Yes	No
Soiled Linen Sorting and Storage	N	Optional	10	Yes	No
Clean Linen Storage	P	2	2	Optional	Optional

P = Positive N = Negative E = Equal
*Recirculating room units meeting the filtering requirements for recirculated central air systems (see sec. 10.29.1(2)(c)) may be used.

Table 15. FILTER EFFICIENCIES FOR CENTRAL VENTILATION AND AIR CONDITIONING SYSTEMS IN REHABILITATION FACILITIES

AREA DESIGNATION	MINIMUM NUMBER OF FILTER BEDS	FILTER EFFICIENCIES (Percent) MAIN FILTER BED
Patient Care, Treatment, Diagnostic, and Related Areas	1	80*
Food Preparation Areas and Laundries	1	80
Administrative, Bulk Storage, and Soiled Holding Areas	1	25

*May be reduced to 35 percent for all-outdoor air systems.

(c) The bottoms of ventilation openings shall be not less than 3 inches (7.6 cm) above the floor of any room.

(d) Corridors shall not be used to supply air to or exhaust air from any room, except that exhaust from corridors may be used to ventilate bathrooms, toilet rooms, janitors' closets, and small electrical or telephone closets opening directly on corridors.

(e) All central ventilation or air conditioning systems shall be equipped with filters having efficiencies no less than those specified in table 15. The filter bed shall be located upstream of the air conditioning equipment, unless a prefilter is employed. In this case, the prefilter shall be upstream of the equipment and the main filter bed may be located further downstream.

All filter(s) efficiencies shall be average atmospheric dust spot efficiencies tested in accordance with ASHRAE Standard 52-68.

Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing ductwork. All joints between filter segments and the enclosing ductwork shall be gasketed or sealed to provide a positive seal against air leakage.

A manometer shall be installed across each filter bed serving central air systems.

(f) Air handling duct systems shall meet the requirements of NFPA Standard 90A.

(g) Ducts which penetrate construction intended for X-ray or other ray protection shall not impair the effectiveness of the protection.

(h) Fire and smoke dampers shall be located and installed in accordance with the requirements of NFPA Standard 90A, except that all systems, regardless of size, which serve more than one smoke or fire zone, shall be equipped with smoke detectors to shut down fans automatically as delineated in Paragraph 1003 of the Standard. Access for maintenance shall be provided at all dampers.

Supply and exhaust ducts which pass through a required smoke barrier and through which smoke can be transferred to another area shall be provided with dampers at the barrier, controlled to close automatically to prevent flow of air or smoke in either direction when the fan, which moves the air through the duct, stops. Dampers shall be equipped with remote control reset devices except that manual reopening will be permitted if dampers are conveniently located.

Return air ducts which pass through a required smoke barrier shall be provided with a damper at the barrier actuated by smoke or products of combustion (other than heat) detectors. These dampers shall be operated by the detectors used to actuate door closing devices in the smoke partition or by detectors located to sense smoke in the return air duct from the smoke zone.

(i) Exhaust hoods in food preparation centers shall have an exhaust rate of not less than 50 cfm per square foot (0.25 cubic meters per second per square meter) of face area. Face area is defined for this purpose as the open area from the exposed perimeter of the hood to the average perimeter of the cooking surfaces. All hoods over cooking ranges shall be equipped with grease filters, fire extinguishing systems and heat actuated fan controls. Clean-out openings shall be provided every 20'0" (6.10 m) in horizontal exhaust duct systems serving these hoods.

(j) Boiler rooms shall be provided with sufficient outdoor air to maintain combustion rates of equipment and to limit temperatures in working stations to 97°F (36°C) Effective Temperature (ET*) as defined by ASHRAE Handbook of Fundamentals.

(k) See section 10.26.A(26) for additional boiler room, food preparation center, and laundry ventilation requirements.

E. Plumbing and Other Piping Systems.

All plumbing systems shall be designed and installed in accordance with the requirements of PHCC National Standard Plumbing Code, chapter 14, "Medical Care Facility Plumbing Equipment."

(1) Plumbing fixtures.

(a) The material used for plumbing fixtures shall be nonabsorptive and acid-resistant.

(b) The water supply spout for lavatories and sinks required in patient care areas shall be mounted so that its discharge point is a minimum distance of 5 inches (12.7 cm) above the rim of the fixture. All fixtures used by medical and nursing staff, and all lavatories used by patients and food handlers shall be trimmed with valves which can be operated without the use of hands. Where blade handles are used for this purpose, they shall not exceed 4½ inches (11.4 cm) in length, except that handles on clinical sinks shall be not less than 6 inches (15.2 cm) long.

(c) Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface.

(d) Shower bases and tubs shall provide non-slip surfaces for standing patients.

(2) Water supply systems.

(a) Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand periods.

(b) Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture.

(c) Backflow preventers (vacuum breakers) shall be installed on hose bibbs, janitors' sinks, bedpan flushing attachments, and on all other fixtures to which hoses or tubing can be attached.

(d) Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

(e) Bedpan flushing devices shall be provided in each patient toilet room.

(f) Water distribution systems shall be arranged to provide hot water at each hot water outlet at all times. Hot water at shower, bathing, and handwashing facilities shall not exceed 110°F (43°C).

(3) Hot water heaters and tanks.

(a) The hot water heating equipment shall have sufficient capacity to supply water at the temperatures and amounts indicated below. Water temperatures to be taken at hot water point of use or inlet to processing equipment.

	USE		
	Clinical	Dietary	Laundry
Gallons (per hour per bed)	6 ½	4	4 ½
Liters (per second per bed)	.007	.004	.005
Temperature (°F)	110	180	180
Temperature (°C)	43	82	82

(b) Storage tank(s) shall be fabricated of corrosion-resistant metal or lined with non-corrosive material.

(4) Drainage systems.

(a) Insofar as possible drainage piping shall not be installed within the ceiling nor installed in an exposed location in food preparation centers, food serving facilities, food storage areas, and other critical areas. Special

precautions shall be taken to protect these areas from possible leakage or condensation from necessary overhead piping systems.

(b) Building sewers shall discharge into a community sewerage system. Where such a system is not available, a facility providing sewage treatment must conform to applicable local and State regulations.

(5) Nonflammable medical gas systems. If used, nonflammable medical gas systems installations shall be in accordance with the requirements of NFPA Standard 56A and 56F.

(6) Clinical vacuum (suction) systems. If used, clinical vacuum systems installations shall be in accordance with the requirements of Compressed Gas Association Pamphlet No. P-2.1.

10.30. ELECTRICAL REQUIREMENTS

The following requirements shall be applied to rehabilitation facilities which house inpatients. Rehabilitation facilities which serve outpatients only shall comply with the electrical requirements for outpatient facilities as indicated in section 9.12.

A. General.

(1) All material including equipment, conductors, controls, and signaling devices shall be installed to provide a complete electrical system with the necessary characteristics and capacity to supply the electrical facilities shown in the specifications or indicated on the plans. All materials shall be listed as complying with available standards of Underwriters' Laboratories, Inc., or other similarly established standards.

(2) All electrical installations and systems shall be tested to show that the equipment is installed and operates as planned or specified.

B. Switchboard and Power Panels.

Circuit breakers or fusible switches that provide disconnecting means and overcurrent protection for conductors connected to switchboards and panelboards shall be enclosed or guarded to provide a dead-front type of assembly. The main switchboard shall be located in a separate enclosure accessible only to authorized persons. The switchboard shall be convenient for use, readily accessible for maintenance, clear of traffic lanes, and in a dry ventilated space free of corrosive fumes or gases. Overload protective devices shall be suitable for operating properly in ambient temperature conditions.

C. Panelboards.

Panelboards serving lighting and appliance circuits shall be located on the same floor as the circuits they serve. This requirement does not apply to emergency system circuits.

D. Lighting.

(1) All spaces occupied by people, machinery, and equipment within buildings, approaches to the buildings, and parking lots shall have lighting.

(2) Patients' rooms shall have general lighting and night lighting. A reading light shall be provided for each patient. At least one light fixture for night lighting shall be switched at the entrance to each patient room. Patients' reading lights and other fixed lights not switched at the door shall have switch controls convenient for use at the light fixture. All switches for control of lighting in patient areas shall be of the quiet operating type. Switches in patient rooms shall be installed low enough (about 3'6" (1.07 m) above the floor) to be reached from a wheelchair.

E. Receptacles (Convenience Outlets).

(1) Patient rooms. Each patient room shall have duplex grounding type receptacles as follows: One located on each side of the head of each bed; one for television if used; and one on another wall. Receptacles for general use shall be located convenient for use from a wheelchair.

(2) Corridors. Duplex receptacles for general use shall be installed approximately 50'0" (15.24 m) apart in all corridors and within 25'0" (7.62 m) of ends of corridors. Single polarized receptacles marked for use of X-ray only shall be located in corridors of patient areas, so that mobile equipment may be used in any location within a patient room without exceeding a cord length of 50'0" (15.24 m) attached to the equipment. All receptacles for X-ray use shall be of a configuration that one plug will fit the receptacles in all locations. Where capacitive discharge or battery powered X-ray units are used, these receptacles will not be required.

F. Equipment Installation in Special Areas.

(1) X-ray installations. Fixed and mobile X-ray equipment installations shall conform to Article 660 of NFPA Standard 70.

(2) X-ray film illuminator units. At least 2 units shall be installed in the X-ray viewing room.

(3) The electrical circuit(s) to fixed or portable equipment in hydrotherapy units shall be provided with 5 milliamperes ground fault interrupters.

G. Nurses' Calling System.

(1) General. In general patient areas, each room shall be served by at least one calling station and each bed shall be provided with a call button. Two call buttons serving adjacent beds may be served by one calling station. Calls shall register with the floor staff and shall activate a visible signal in the corridor at the patient's door, in the clean workroom, in the soiled workroom, and in the nourishment station of the nursing unit. In multicorridor nursing units, additional visible signals shall be installed at corridor intersections. In rooms containing two or more calling stations, indicating lights shall be provided at each station. Nurses' calling systems which provide two-way voice communication shall be equipped with an indicating light at each calling station which lights and remains lighted as long as the voice circuit is operating.

(2) Patients' emergency. A nurses' call emergency button shall be provided for patients' use at each patient's toilet, bath, and shower room.

H. Emergency Electric Service.

(1) General. To provide electricity during an interruption of the normal electric supply, an emergency source of electricity shall be provided and connected to certain circuits for lighting and power.

(2) Sources. The source of this emergency electric service shall be as follows:

(a) An emergency generating set when the normal service is supplied by one or more central station transmission lines.

(b) An emergency generating set or a central station transmission line when the normal electric supply is generated on the premises.

(3) Emergency electrical connections. Emergency electric service shall be provided to the distribution systems as follows:

(a) Illumination of means of egress as required in NFPA Standard 101.

(b) Illumination for exit signs and exit directional signs as required in NFPA Standard 101.

(c) Corridor duplex receptacles in patient areas.

(d) Nurses' calling systems.

(e) Equipment necessary for maintaining telephone service.

(f) Elevator service that will reach every patient floor when patient rooms are located on other than ground floor. Throwover facilities shall be provided to allow temporary operation of any elevator for the release of persons who may be trapped between floors.

(g) Fire pump, if installed.

(h) Equipment for heating patient rooms, except (i) where the design temperature is higher than 20°F (-7°C), based on the median of extremes as shown in the ASHRAE Handbook of Fundamentals, or (ii) where the facility is served by two or more electrical services supplied from separate generators or a utility distribution network having multiple power input sources and arranged to provide mechanical and electrical separation so that a fault between the facility and the generating sources will not likely cause an interruption of its service feeders.

(i) General illumination and selected receptacles in the vicinity of the generator set.

(j) Paging or speaker systems if intended for communications during an emergency.

(k) Alarm systems including fire alarms activated at manual stations, water flow alarm devices of sprinkler system if electrically operated, fire and smoke detecting systems, and alarms required for nonflammable medical gas systems, if installed.

(4) Details. The emergency lighting shall be in operation within 10 seconds after the interruption of normal electric power supply. Emergency service to receptacles and equipment may be delayed automatic or manually connected. Receptacles connected to emergency power shall be distinctively marked.

11

PUBLIC HEALTH CENTER

THE SPONSOR shall provide for each project a narrative program which describes the functional space requirements, staffing patterns, departmental relationships, and other basic information relating to the fulfillment of the objectives of the facility.

The public health center shall contain the elements described in the narrative program or the narrative program shall indicate the manner in which the needed services are to be conveniently available to the public. When services are to be shared or purchased, appropriate modifications or deletions in space and equipment requirements shall be made to avoid unnecessary duplication.

Appropriate space and equipment shall be provided to accommodate the following functions:

- Administration.
- Clinical and Demonstration Services.
- Diagnostic Services.
- Supplies.
- Housekeeping and Engineering Services.

Each element provided in the public health center must meet as a minimum the requirements outlined in section 9, Outpatient Facilities, with the understanding that in many instances the elements will need to be expanded to fulfill the program requirements.

12

STATE PUBLIC HEALTH LABORATORY

THE SPONSOR shall provide for each project a narrative program which describes the functional space requirements, staffing patterns, departmental relationships, and other basic information relating to the fulfillment of the objectives of the facility.

The State public health laboratory shall contain the elements described in the narrative program or the narrative program shall indicate the manner in which the needed services are to be conveniently available to the public. When services are to be shared or purchased, appropriate modifications or deletions in space and equipment requirements shall be made to avoid unnecessary duplication.

Appropriate space and equipment shall be provided to accommodate the following functions:

- Administration.
- Diagnostic and Research Services.
- Biological Services.
- Central Services and Supplies.
- Housekeeping and Engineering Services.

Each element provided in the State public health laboratory must meet as a minimum the requirements outlined in section 9, Outpatient Facilities, with the understanding that in many instances the elements will need to be expanded to fulfill the program requirements.

13

OTHER FACILITIES

THE MINIMUM DESIGN and construction requirements for other eligible facilities shall be based on generally acceptable national standards dealing with occupancies similar to those under considera-

tion. If there is no national standard applicable to the facility under consideration, the requirements of sections 7 to 11 may be modified and made applicable in a reasonable manner.

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THE ANNOTATED BIBLIOGRAPHY, "Publications of the Health Care Facilities Service," HEW Publication No. (HSM)72-4019 (Revised 1972), will be provided upon request. For a free single copy, write to:

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7

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THIS DATE 11/28/67

PUBLIC HEALTH SERVICE REGULATIONS— PART 53

Pertaining to
the CONSTRUCTION and MODERNIZATION
of HOSPITAL and MEDICAL FACILITIES

These regulations implement the provisions of
the Hospital and Medical Facilities Amendments
of 1964 (Title VI of the Public Health Service
Act, as amended).

*Reprinted from the Federal Register,
December 29, 1964.*

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Hospital and Medical Facilities
Washington, D.C. 20201

This document supersedes Public Health Service Publication 930-A-1 (Revised July 1963). It was published previously under the title: "Public Health Service Regulations--Part 53...Pertaining to Hospital and Medical Facilities Survey and Construction Legislation."

SUPPLEMENT to the

PUBLIC HEALTH SERVICE REGULATIONS — PART 53

Pertaining to the CONSTRUCTION and MODERNIZATION
of HOSPITAL and MEDICAL FACILITIES

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Division of Hospital and Medical Facilities
Washington, D.C. 20201

The following provisions, reprinted from the Federal Register, August 11, 1965, amend the indicated sections of the Public Health Service Regulations--Part 53. In all cases except section 53.128, the entire revised section supersedes the corresponding section of the regulations published December 29, 1964. Only paragraph (c) of section 53.128 is amended--the remaining paragraphs are still in effect as previously published.

Title 42—PUBLIC HEALTH

Chapter I—Public Health Service, Department of Health, Education, and Welfare

SUBCHAPTER D—GRANTS

PART 53—GRANTS FOR CONSTRUCTION AND MODERNIZATION OF HOSPITALS AND MEDICAL FACILITIES

Miscellaneous Amendments

The purpose of these amendments is to clarify and correct or modify certain provisions of the regulations relating primarily to determinations of need and distribution of beds and facilities.

Notice of proposed rule making, public rule making procedures, and postponement of effective date have been omitted in the issuance of the following amendments of this part, which relate solely to grants to public or other non-profit agencies for the construction and modernization of public and other non-profit hospitals and medical facilities.

These amendments will become effective on the date of publication in the FEDERAL REGISTER.

1. Sections 53.11 and 53.12 of Subpart B are amended to read as follows:

§ 53.11 State need (standards of adequacy).

The total number of beds for acute and long-term illness required to provide adequate service to the people re-

siding in any State shall be the total of such beds required for individual service areas within the State. The number of beds required for each service area shall be determined by the State agency as follows:

(a) For general hospitals,

(1) Step (i) Multiply the current area use rate (area patient days per 1000 current area population per year) by the projected area population (in thousands) and divide by 365 to obtain a projected area average daily census;

Step (ii) Divide the projected area average daily census by 0.80 (occupancy factor) and add 10 to obtain the number of beds needed in the area, or

(2) By a different method which shall (i) incorporate, as a minimum, area

utilization experience, projected area population and a desirable occupancy factor, and (ii) be submitted to the Surgeon General for approval prior to its use in the State plan.

(3) State agencies may adjust the bed need, as determined by one of the above methods, for specific areas with unusual circumstances or conditions; any such adjustment must be fully explained and justified in the State plan.

(b) For facilities for long-term care,

(1) Step (i) Multiply the current area use rate (area patient days per 1000 current area population per year) by the projected area population (in thousands) and divide by 365 to obtain a projected area average daily census;

Step (ii) Divide the projected area average daily census by 0.90 (occupancy factor) and add 10 to obtain the number of beds needed in the area, or

(2) By a different method which shall (i) incorporate, as a minimum, area utilization experience, projected area population and a desirable occupancy factor, and (ii) be submitted to the Surgeon General for approval prior to its use in the State plan.

(3) State agencies shall take into consideration (i) adjustment of bed need, as determined by one of the above methods, for areas in which a change in use rate is anticipated, and (ii) the use of area population age 65 and over, where appropriate, in place of total area population in determining bed need for long-term care.

§ 53.12 Service areas.

(a) The same service areas shall be used for planning general hospital facilities, facilities for long-term care, and diagnostic or diagnostic and treatment center facilities, except that State agencies may use different areas for planning facilities for long-term care when this is consistent with effective relationships between the location of facilities and the need for services.

(b) Each service area shall have sufficient population that it may have general hospital or long-term care services appropriately planned in one or more facilities.

(c) The State agency shall describe in the State plan the population characteristics of each service area and outline a program for the distribution of beds and facilities for general hospital and long-term care and diagnostic or diagnostic and treatment center facilities.

2. Sections 53.21 and 53.22 of Subpart C are amended to read as follows:

§ 53.21 State need (standards of adequacy).

The number of beds required to provide adequate hospital services for tuberculosis patients in any State or service area shall be determined by the following method: Divide the current average daily census of each hospital by 0.80 (occupancy factor).

§ 53.22 Distribution.

Tuberculosis hospitals receiving grants under the Federal Act shall be built in centers of population, in proximity to general hospitals, with a view to developing community based inpatient and outpatient programs rather than isolated inpatient programs.

3. Section 53.32 of Subpart D is amended, and §§ 53.33 and 53.34 are added, to read as follows:

§ 53.32 State need (standards of adequacy).

Until such time as the State plan under Title II of Public Law 88-164 is approved by the Surgeon General, the number of beds required to provide adequate hospital services for mentally ill patients in any State or service area shall be determined by the following method: Divide the current average daily census of each hospital by 0.80 (occupancy factor)

§ 53.33 Distribution.

Mental hospitals receiving grants under the Federal Act shall be built in centers of population, as a part of or in proximity to general hospitals, with a view to developing community based inpatient and outpatient programs rather than isolated inpatient programs.

§ 53.34 Existing mental hospital beds.

(a) The count of existing mental hospital beds shall include the beds in mental hospitals, which are not included in the count of beds in any other category, and also beds in any general hospital which are specifically assigned for the comprehensive inpatient care of patients with mental illness.

(b) Existing mental hospital beds shall be classified as conforming or non-conforming according to plant evaluation standards as set forth in Subpart B of this part.

4. Section 53.87 of Subpart I is amended to read as follows:

§ 53.87 Modernization.

Special consideration for modernization shall be given to facilities serving areas of high population density. For each category, relative need shall be expressed for inpatient facilities in terms of the ratio of existing conforming beds in each area to (a) total existing beds in such area, or (b) total beds needed in such area, whichever is less, and for ambulatory (outpatient) facilities the ratio of existing conforming outpatient facilities in each area to (c) total existing outpatient facilities in such area or (d) total outpatient facilities needed in such area, whichever is less.

5. Section 53.128 (c) of Subpart M is amended by inserting the word "pharmacy" after the word "laundry" so that the paragraph will read as follows:

§ 53.128 Assurances from applicant.

(c) That applicant will perform actual construction work by the lump sum (fixed price) contract method; employ adequate methods of obtaining competitive bidding prior to awarding the construction contract, either by public advertising or circularizing three or more bidders; and award the contract to the responsible bidder submitting the lowest acceptable bid: *Provided, however,* That the purchase and installation of equipment which is unique to the facility, as well as kitchen, laundry, pharmacy, and laboratory equipment, need not be considered construction work for the purpose of this section except that if open competitive bidding is employed to obtain any or all of such equipment, the award shall be made to the responsible bidder submitting the lowest acceptable bid.

Dated: July 21, 1965.

[SEAL] LUTHER L. TERRY,
Surgeon General.

Approved: August 4, 1965.

LUTHER L. TERRY,
Chairman, Federal Hospital
Council.

WILBUR J. COHEN,
Acting Secretary.

[F.R. Doc. 65-8486; Filed, Aug. 10, 1965;
8:47 a.m.]

DISCRIMINATION PROHIBITED—Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Hospital and Medical Facilities (Hill-Burton) program, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

Title 42—PUBLIC HEALTH

Chapter I—Public Health Service, Department of Health, Education, and Welfare

SUBCHAPTER D—GRANTS

PART 53—GRANTS FOR CONSTRUCTION AND MODERNIZATION OF HOSPITALS AND MEDICAL FACILITIES

Notice of proposed rule making, public rule making procedures and postponement of effective date have been omitted in the issuance of the following revised Part 53—Grants for Construction and Modernization of Hospitals and Medical Facilities, which relates solely to grants for construction and modernization of public and other nonprofit hospitals and medical facilities.

The following regulations shall become effective on the date of publication in the FEDERAL REGISTER except that (1) Subparts B through F (relating to distribution of beds and facilities) of the regulations in effect prior to this revision (42 CFR 53.11-53.52) shall be applicable to any State until such State has received approval of the State plan conforming to Subparts B through G of these revised regulations, but in any event the State plan must conform to the revised Subparts B through G not later than July 1, 1965; and (2) Section 53.112 (nondiscrimination) of the regulations (42 CFR) in effect prior to this revision shall be applicable until the regulations of the Secretary of Health, Education, and Welfare under the Civil Rights Act (Public Law 88-352) become effective.

1. The table of contents of Part 53—Grants for Construction and Modernization of Hospitals and Medical Facilities, and Subparts A through M of that Part, are revised to read as follows:

2. Subpart M of Part 53 is amended as follows:

"Subpart M (Appendix A) General Standards of Construction and Equipment" is redesignated "Subpart N (Appendix A) General Standards of Construction and Equipment", and §§ 53.131-53.155 are redesignated §§ 53.141-53.165, respectively. As amended, Subpart N will read as set forth below.

The prior section heading "§ 53.136 Mental hospital" is redesignated "§ 53.146 Mental hospital—Long-term care"

The prior section heading "§ 53.137 Psychiatric hospital" is redesignated "§ 53.147 Mental hospital—Intensive care"

The prior section heading "§ 53.138 Chronic disease hospital" is redesignated "§ 53.148 Facility for long-term care—Chronic disease hospital"

The prior section heading "§ 53.149 Nursing homes" is redesignated "§ 53.159

Facility for long-term care—Nursing home".

Paragraph (b) of prior section 53.155 is deleted and paragraphs "(c)" and "(d)" are redesignated "(b)" and "(c)", respectively.

Revised Part 53 reads as set forth below.

This amendment was approved by the Federal Hospital Council on November 4, 1964.

Dated: December 8, 1964.

[SEAL] LUTHER L. TERRY,
Surgeon General.

Approved: December 18, 1964.

LUTHER L. TERRY,
Chairman, Federal Hospital
Council.

Approved: December 18, 1964.

ANTHONY J. CELEBREZZE,
Secretary.

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AUTHORITY: The provisions of this Part 53 issued under sec. 215, 58 Stat. 690, as amended, sec. 603, 78 Stat. 451; 42 U.S.C. 216, 291c. Interpret or apply secs. 600-625, 78 Stat. 447-462; 42 U.S.C. 291-291o.

Subpart A—Definitions

§ 53.1 Definitions.

All terms shall have the same meaning as given them in Title VI of the PHS Act, as amended (42 U.S.C. 291 et seq.) hereinafter termed the "Federal Act". In addition the following terms shall have the following meanings when used in the regulations in this part:

(a) *Area*. The geographic territory from which patients come or are expected to come to existing or proposed hospitals, or existing or proposed public health centers, or existing or proposed medical facilities (i.e., facilities for long-term care, diagnostic or treatment centers, rehabilitation facilities), the delineation of which is based on such factors as population distribution, natural geographic boundaries, and transportation and trade patterns, and all parts of which are reasonably accessible to existing or proposed hospitals, public health centers, or medical facilities. When appropriate, interstate areas may be formed with the mutual agreement of the States concerned.

(b) *Hospital*. General, tuberculosis, mental, and other types of hospitals, and related facilities, such as intensive, intermediate, and self-care nursing units, laboratories, outpatient departments, nurses' home facilities (and prior to July 1, 1965, nurses' training facilities), and central service facilities operated in connection with hospitals, but not institutions furnishing primarily domiciliary care. The term "hospital" shall be restricted to institutions providing community service for inpatient medical or surgical care of the sick or injured; this includes obstetrics.

(c) *General hospital*. Any hospital for short-term inpatient medical or surgical care of illness or injury including obstetrics.

(d) *Mental hospital*. A hospital for the comprehensive diagnosis and treatment of patients with mental illness.

(e) *Tuberculosis hospital*. A hospital for the diagnosis and treatment of tuberculosis.

(f) *Facility for long-term care*. A facility providing community service for inpatient care for convalescent or chronic disease patients who require skilled nursing care and related medical services.

(1) Which is a hospital (other than a hospital primarily for the care and treatment of mentally ill or tuberculosis patients) or is operated in connection with a hospital, or

(2) In which such nursing care and medical services are prescribed by, or are performed under the general direction

of, persons licensed to practice medicine or surgery in the State. Institutions furnishing primarily domiciliary care are not included.

"Chronic disease hospitals" and "nursing homes" as used in Subpart N (Appendix A) constitute "facilities for long-term care"

(g) *Diagnostic or treatment center*. A facility providing community service for the diagnosis or diagnosis and treatment of ambulatory patients (outpatients) which is operated in connection with a hospital, or in which patient care is under the professional supervision of persons licensed to practice medicine or surgery in the State, or, in the case of dental diagnosis or treatment, under the professional supervision of persons licensed to practice dentistry in the State. This includes outpatient departments and clinics of public or nonprofit hospitals. The applicant must be either (1) a State, political subdivision, or public agency, or (2) a corporation or an association which owns and operates a nonprofit hospital.

(h) *Rehabilitation facility*. (1) A facility providing community service which is operated for the primary purpose of assisting in the rehabilitation of disabled persons through an integrated program under competent professional supervision of (i) medical evaluation and services, and (ii) psychological, social, or vocational evaluation and services. The major portion of the required evaluation and services must be furnished within the facility; and the facility must be operated either in connection with a hospital or as a facility in which all medical and related health services are prescribed by, or are under the general direction of, persons licensed to practice medicine or surgery in the State.

(2) For the purpose of this paragraph:

(i) An integrated program brings together as a team specialized personnel from the (a) medical, and (b) psychological, social, or vocational areas for the purpose of pooling information, interpretations and opinions for the development of a rehabilitation plan of services in which the disabled individual is viewed as a whole. When members of the team contribute to the diagnosis and treatment of illness, their contributions must be coordinated under medical responsibility. These integrated services may be provided in a facility to care for many types of disabilities or a single type of disability.

(ii) A disabled person is an individual who has a physical or mental condition which, to a material degree, limits, contributes to limiting, or if not corrected, will probably result in limiting, the individual's performance or activities to the extent of constituting a substantial physical, mental, or vocational handicap.

(iii) Medical service, in the case of a rehabilitation facility operated in connection with a hospital, means a service under the direct personal supervision of a medical director, varied and extensive availability of specialized consultants, physical and occupational therapy department and occupational therapy services, and medical evaluation.

(iv) Medical service, in the case of a rehabilitation facility not operated in connection with a hospital, means medical supervision, availability by agreement of medical consultants, and evaluation and services suitable to the needs of the disabled persons to be served.

(v) Social service means evaluation and services by a qualified social worker in amounts and variety appropriate to the rehabilitation needs of the disabled persons to be served.

(vi) Psychological service means evaluation and services by a qualified psychologist in amounts and variety appropriate to the rehabilitation needs of the disabled persons to be served.

(vii) Vocational service, in the case of a rehabilitation facility operated in connection with a hospital, means evaluation and services by a qualified vocational rehabilitation counselor in amounts and variety appropriate to the rehabilitation needs of the disabled persons to be served.

(viii) Vocational service, in the case of a rehabilitation facility not operated in connection with a hospital, means those vocational services required in hospitals plus a variety of vocational services appropriate to the program and the persons to be served, such as prevocational exploration, work evaluation and vocational training.

(i) *Public health center*. A publicly owned facility utilized by a local health unit for the provision of public health services, including related publicly owned facilities such as laboratories, clinics, and administrative offices operated in connection with public health centers.

(j) *Local health unit*. A single county, city, county-city, or local district health unit, as well as a State health district unit where the primary function of the State district unit is the direct provision of public health services to the population under its jurisdiction.

(k) *Public health services*. Services provided through organized community effort in the endeavor to prevent disease, prolong life, and maintain a high degree of physical and mental efficiency.

(l) *Hospital bed*. A bed for an adult or child patient. Bassinets for the newborn in a maternity unit nursery, beds in labor rooms, recovery rooms, and other beds used exclusively for emergency purposes are not included in this definition.

(m) *Population*. In computing the population of the States or any area thereof, for planning purposes, the State agency shall use the latest figures of civilian population certified by the Federal Department of Commerce and distribute such population among the various areas. The sum of the populations distributed among the various areas shall not exceed the figures certified by the Department of Commerce.

(n) *Projected population*. The State agency shall use the projected State population estimates obtained from the Federal Department of Commerce and provided to the State agency by the Surgeon General, and shall distribute such population among the various areas. The sum of the projected populations distributed among the various areas shall

not exceed the figures provided by the Surgeon General.

(o) *Nonprofit hospital, nonprofit diagnostic or treatment center, nonprofit rehabilitation facility, and nonprofit facility for long-term care.* Any hospital, diagnostic or treatment center, rehabilitation facility, or facility for long-term care, as the case may be, owned and operated by one or more nonprofit corporations or associations, no part of the net earnings of which inures, or may lawfully inure, to the benefit of any private shareholder or individual.

(p) *Community service.* A facility provides a community service when (1) the services furnished are available to the general public, or (2) admission is limited only on the basis of age, medical indigency, or type or kind of medical or mental disability, or (3) the facility constitutes a medical or nursing care unit of a home or other institution which home or other institution is available in accordance with subparagraph (1) or (2) of this paragraph.

(q) *Modernization.* Modernization includes alteration, major repair, remodeling, replacement, and renovation of existing buildings (including initial equipment thereof), and replacement of obsolete, built-in equipment of existing buildings. It does not include the replacement of a facility or a portion of a facility to an inpatient capacity greater than the capacity of the existing facility.

(r) *Equipment.* This term includes those items which are necessary for the functioning of the facility but does not include items of current operating expense such as food, fuel, drugs, dressings, paper, printed forms, and soap.

(s) *Built-in equipment.* Built-in equipment is that equipment which is affixed to the facility, and usually included in the construction contract.

(t) *Major repair.* The term "major repair" consists of those repairs to an existing building excluding routine maintenance which restore the building to a sound state, the cost of which is no less than \$100,000.

(u) *State.* The 50 States, Puerto Rico, Guam, Virgin Islands, American Samoa, and the District of Columbia.

(v) *State agency.* The State agency designated by the State pursuant to section 604(a)(1) of the Federal Act.

(w) *Surgeon General.* The Surgeon General of the Public Health Service.

(x) *Secretary.* The Secretary of Health, Education, and Welfare.

Subpart B—Distribution of Beds for Acute and Long-Term Illness (Excluding Mental and Tuberculosis)

§ 53.11 State need (standards of adequacy).

(a) The number of beds for acute and long-term illness required to provide adequate service to the people residing in any State shall be the total of such beds required for individual service areas within the State. The number of beds required for each service area shall be calculated by the State agency, using a formula as follows:

(1) For general hospitals,

Step (i) Multiply the current area use rate (patient days per 1000 population

per year) by the projected area population (in thousands) and divide by 365 to obtain a projected area average daily census.

Step (ii) Divide the projected area average daily census by .80 (occupancy factor) and add 10 to obtain the number of beds needed in the area.

State agencies wishing to use a different formula may do so, provided:

(a) The formula used shall incorporate area use rate, projected area population and an occupancy or other factor or factors, and

(b) The formula is submitted to and approved by the Surgeon General before it is used in the State plan.

(2) For facilities for long-term care, where data on long-term patient days are available and valid, a similar formula shall be used, with .90 occupancy factor, subject to the provisions set forth in subparagraph (1) (a) and (b) of this paragraph.

§ 53.12 Service areas.

(a) The same service areas shall be used for planning general hospital and long-term care beds and facilities in order that the relationship of these two categories of facilities may be indicated.

(b) Each service area shall have sufficient population that it may have both general hospital and long-term care services appropriately planned in one or more facilities.

(c) The State agency shall describe in the State plan the population characteristics of each service area and outline a program for the distribution of beds and facilities for general hospital and long-term care.

§ 53.13 Existing general hospital beds and long-term care beds.

(a) The count of existing general hospital beds shall include the beds in the hospitals of this category as defined in Subpart A, which are not included in the count of beds for any other category under this part, and beds in any mental hospital, tuberculosis hospital or facility for long-term care which are specifically assigned for general hospital care, provided the beds so assigned in any such facility number 10 or more.

(b) The count of existing beds in facilities for long-term care shall include the beds in the facilities of this category as defined in Subpart A, which are not included in the count of beds in any other category under this part, and beds in any general, mental or tuberculosis hospital which are specifically assigned to long-term care other than mental or tuberculosis, provided the beds so assigned to any such facility number 10 or more.

(c) The count of existing beds described in paragraphs (a) and (b) of this section shall: (1) Include beds in all nursing units, including those currently closed or assigned to easily convertible nonpatient use, and bed space under construction, and (2) exclude beds in labor rooms, recovery rooms, emergency rooms, beds used intermittently for diagnosis or treatment, beds set up for temporary use, bassinets in newborn nurseries in maternity units, and unfinished bed space not under construction.

(d) The number of existing facilities in each category referred to in this subpart shall be counted.

(e) Existing beds described in paragraphs (a) and (b) of this section shall be classified as conforming or nonconforming according to specific standards of plant evaluation. Such standards shall include:

(1) Fire-resistivity of each building;

(2) Fire and other safety factors of each building;

(3) Design and structural factors affecting the function of nursing units;

(4) Design and structural factors affecting the function of service departments.

Subpart C—Distribution of Tuberculosis Hospital Beds

§ 53.21 State need (standards of adequacy).

The number of beds required to provide adequate hospital services for tuberculosis patients in any State or service area shall be determined:

(a) In relation to the development of outpatient and community based programs and not as isolated inpatients programs; and

(b) On an estimated average occupancy rate of at least 80 percent of the current year's existing beds, except where a lower rate is justified by the State agency.

§ 53.22 Distribution.

Tuberculosis hospitals receiving grants under the Federal Act shall be built in centers of population and shall be a part of or in proximity to general hospitals.

§ 53.23 Existing tuberculosis hospital beds.

(a) The count of existing tuberculosis hospital beds shall include the beds in tuberculosis hospitals, which are not included in the count of beds for any other category, and also beds in any general hospital which are specifically assigned for the care of patients with tuberculosis, provided the beds so assigned in any such general hospital number 10 or more.

(b) Existing tuberculosis hospital beds shall be classified as conforming or nonconforming according to plant evaluation standards as set forth in Subpart B of this part.

Subpart D—Distribution of Mental Hospital Beds

§ 53.31 Community mental health centers plan.

Except as provided in section 53.32 the State plan developed under the Community Mental Health Centers Act, Public Law 88-164, and regulations thereunder (§ 54.201 et seq. of this chapter) shall constitute that portion of the plan for mental health services, beds and facilities required under the Federal Act (Title VI of the Public Health Service Act, as amended).

§ 53.32 State need (standards of adequacy).

Until such time as the State plan under Public Law 88-164 is approved by the Surgeon General, and with respect to

facilities not programmed under Public Law 88-164, the beds and facilities required to provide adequate services for the care of the mentally ill in the State or service area shall be:

(a) Determined in relation to the development of outpatient and community based programs and not as isolated inpatient programs;

(b) Determined on an average estimated occupancy rate of at least 80 percent of the current year's existing beds, except where a lower rate is justified by the State agency;

(c) Distributed in centers of population and as a part of or in proximity to general hospitals;

(d) Determined in relation to existing beds, services and facilities for the care of the mentally ill. (The count of existing mental hospital beds shall include the beds in mental hospitals, which are not included in the count of beds in any other category, and also beds in any general hospital which are specifically assigned for the comprehensive inpatient care of patients with mental illness. Existing mental hospital beds shall be classified as conforming or nonconforming according to plant evaluation standards as set forth in Subpart B of this part.

Subpart E—Distribution of Public Health Centers

§ 53.41 State need (standards of adequacy).

(a) The number of public health centers to be planned in a State shall be adequate to meet the needs of the people of that State.

(b) The need shall be determined after consultation with the State health authority (where the State Health Department is not the State agency), and with local health departments where such departments are operating independent units.

§ 53.42 Distribution.

The general method of distribution of public health centers throughout the State shall conform to the plan of organization of local health units within the State. In instances where the State Health Department is not the State agency, the method of distribution shall be determined after consultation with the State health authority.

§ 53.43 Existing public health centers.

(a) Where the State Health Department is not the State agency, the number of existing public health centers shall be determined after consultation with the State health authority.

(b) Existing public health centers shall be classified as conforming or nonconforming according to plant evaluation standards, which shall include:

- (1) Fire-resistivity of each building;
- (2) Fire and other safety factors of each building;
- (3) Design and structural factors affecting the function of the center.

Subpart F—Distribution of Diagnostic or Treatment Centers

§ 53.51 State need (standards of adequacy).

Diagnostic or treatment centers shall be planned in sufficient number to make at least the basic minimum services readily available to all persons in the State. Provision of the basic minimum services requires facilities for examination of patients by a physician or a dentist, and the provision of clinical laboratory and diagnostic X-ray services.

§ 53.52 Distribution (service areas).

(a) To facilitate the necessary relationship between hospitals and diagnostic or treatment centers, distribution of diagnostic or treatment centers shall be planned in the same areas used for distribution of general hospitals and facilities for long-term care.

(b) In determining the need for additional facilities for diagnostic or treatment services in an area as a basis for distribution of such facilities, special consideration shall be given to areas in which there is a shortage of services provided by private physicians and dentists.

§ 53.53 Existing diagnostic or treatment centers.

(a) The count of existing diagnostic or treatment centers shall exclude:

(1) Offices of private physicians and dentists, whether for individual or group practice;

(2) Industrial clinics for employees only, first aid clinics, and similar facilities not furnishing a community service.

(b) Existing diagnostic or treatment centers shall be classified as conforming or nonconforming according to plant evaluation standards as set forth in Subpart E of this part.

Subpart G—Distribution of Rehabilitation Facilities

§ 53.61 State need (standards of adequacy).

(a) Rehabilitation facilities shall be planned by each State so that all persons in the State shall have access to integrated rehabilitation services for all types of disabilities. The facility or facilities may be programed in the State or by joint planning with one or more other States to serve the residents of such States. In determining the number of rehabilitation facilities and services needed, the State shall consider such factors as the particular needs of the population to be served and the scope and nature of service of the existing and proposed facilities.

§ 53.62 Distribution.

In determining the need for additional rehabilitation services as a basis for distribution of rehabilitation facilities, consideration shall be given to (a) rehabilitation services provided in existing facilities, avoiding duplication and overlapping of services; and (b) availability of rehabilitation services to people in all geographical areas.

§ 53.63 Existing rehabilitation facilities.

The count of existing rehabilitation facilities shall include existing beds in such facilities. Such beds shall be classified in accordance with the procedures set forth in Subpart B of this part.

Subpart H—Distribution of Modernization Projects for all Categories of Facilities

§ 53.71 Determination of need.

(a) Not later than January 1, 1966, the need for modernization shall be determined for each category of facilities by evaluation of existing facilities and with initial consideration being given to the most densely populated areas of the State. The evaluation shall be based on specific standards of plant evaluation, which shall include:

- (1) Fire-resistivity of each building;
- (2) Fire and other safety factors of each building;
- (3) Design and structural factors affecting the function of the facility.

(b) Based on the evaluation, beds or facilities shall be classified as conforming or nonconforming. Those beds or facilities which are classified as nonconforming shall represent the beds and facilities in need of modernization.

(c) In the event that an area has a total of existing conforming beds or facilities and existing nonconforming beds or facilities needing modernization which exceeds the total need for the area, the number of beds or facilities to be modernized shall be reduced accordingly. At no time shall the beds or facilities to be modernized, when added to the existing conforming beds or facilities, be greater than the total beds or facilities needed in any one category.

§ 53.72 Distribution.

Modernization shall be planned for general hospitals, facilities for long-term care, and diagnostic or treatment centers in the service areas used for planning new construction. For other categories of facilities, modernization may be planned on a Statewide basis.

Subpart I—Priority of Projects

§ 53.81 General.

The general manner in which the State agency shall determine the priority of projects included in the State construction program shall be based on the relative need of different areas lacking adequate facilities and shall conform to the principles set out in this subpart.

§ 53.82 Hospitals (new construction).

Special consideration shall be given to hospitals which will serve rural communities and areas with relatively small financial resources; and prior to July 1, 1965 (and to the extent deemed feasible by the State agency), to hospital facilities which will include new or expanded facilities for nurse training. Relative need for new construction shall be expressed in terms of the ratio of existing conforming beds to total beds needed in each area.

§ 53.83 Facilities for long-term care (new construction).

Priority shall be determined on the basis of the relative need for beds in facilities for long-term care in the area to be served by the project taking into account the utilization of existing beds and giving special consideration to projects operated by or affiliated with hospitals. Relative need for new construction shall be expressed in terms of the ratio of existing conforming beds to total beds needed in each area.

§ 53.84 Diagnostic or treatment centers (new construction).

The priority of diagnostic or treatment center projects shall be determined on the basis of the relative need for additional diagnostic or treatment services in the area to be served by the project taking into account existing available services and their utilization.

§ 53.85 Rehabilitation facilities (new construction).

Priority shall be given to rehabilitation facility projects in the order of importance as given below taking into consideration existing rehabilitation services in the community and the need for additional services in the community.

(a) Facilities operated in connection with a university teaching hospital which will provide an integrated program of medical, psychological, social, and vocational evaluation and services under competent supervision.

(b) Facilities offering rehabilitation services for multiple disabilities in hospitals and medical facilities capable of sustaining an organized department of physical medicine and rehabilitation.

(c) All other rehabilitation facilities.

§ 53.86 Public health centers (new construction).

Highest priority in this category shall be given to the provision of facilities for local health units serving rural communities and communities with relatively small financial resources. Where the agency designated to administer the State plan is not the State health authority, the State agency shall determine the relative priorities to be established after consultation with the State health authority.

§ 53.87 Modernization.

Special consideration for modernization shall be given to areas of high population density. For each category, relative need shall be expressed for inpatient facilities in terms of the ratio of existing conforming beds in each area to total existing beds in such area, and for ambulatory (outpatient) facilities the ratio of existing conforming outpatient facilities in each area to total existing outpatient facilities in such area.

Subpart J—Allotments for Modernization and Transfer of State Allotments

§ 53.91 Allotments for modernization.

The allotment to the several States under section 602(a)(2) of the Act for modernization shall be, for the period

July 1, 1965 to June 30, 1966, computed as follows:

(a) One-half will be allotted to each State in the same proportion as the product of—

(1) The population of each State; and
(2) The square of its allotment percentage bears to the sum of the corresponding products for all of the States.

(b) One-half will be allotted to each State on the basis of need, determined by giving a weight of—

(1) 40 percent to the State's proportion of all hospital beds in existence in the United States in 1948; and

(2) 60 percent to the State's share of all Hill-Burton allotments made for the years 1949 through 1953.

§ 53.92 Transfer of allotments to another State.

A State may submit a request in writing to the Surgeon General that a specified portion of its allotment for the construction of hospitals and public health centers, facilities for long-term care, diagnostic or treatment centers, rehabilitation facilities, or for modernization, be added to the corresponding allotment of another State for the purpose of meeting a portion of the Federal share of the cost of a project for the construction or modernization of a facility of the type authorized under the allotments in such other State. In determining whether the facility with respect to which the request is made will meet needs of the State making the request and that use of the specified portion of such State's allotment as requested by it will assist in carrying out the purposes of the Federal Act, the Surgeon General (or, in the case of a rehabilitation facility, the Surgeon General and the Secretary) shall consider the accessibility of the facility and the extent to which services will be made available to the residents of the State making the request for the transfer.

§ 53.93 Transfer of allotments for modernization to another category within a State.

(a) For the purpose of transfer of allotments as authorized by section 602(e)(1) of the Federal Act, a reasonable opportunity for applicants to submit approvable applications for modernization projects shall include a period of time during which applications may be submitted which is not less than 12 months from the date an application for such a project could first have been approved in accordance with the Act and these regulations.

(b) A determination under section 602(c)(2) of the Federal Act that there is a greater need for facilities other than modernization projects shall be made only after completion of the determination of the State's needs for modernization projects pursuant to Subpart H of this part and in accordance with the approved State plan.

Subpart K—General Standards of Construction and Equipment

§ 53.101 General.

(a) Plans and specifications for each project submitted to the Surgeon Gen-

eral for approval, and in the case of rehabilitation facilities, the approval of the Secretary, under the Federal Act shall be prepared in accordance with "General Standards of Construction and Equipment" for facilities of different classes and in different types of locations as set forth in Subpart N (Appendix A) of this part. The Surgeon General may approve, subject also in the case of rehabilitation facilities to the approval of the Secretary, plans and specifications which contain deviations from the requirements prescribed, if he is satisfied that the purposes of such requirements have been fulfilled.

(b) The design and construction covered by the plans and specifications must conform with the applicable State and local laws, codes, and ordinances and with the approved State plan. The plans and specifications must be complete and adequate for contract purposes and have the approval and recommendation of the State agency.

(c) Equipment shall be provided in the kind and to the extent necessary for the proper functioning of the facility as planned.

§ 53.102 Size of mental hospitals.

No application for construction of a mental hospital for intensive care with a capacity of more than 500 beds or of a mental hospital for long-term care with a capacity of more than 3,000 beds shall be approved. This requirement shall not be construed to prevent approval of applications for improvements of mental hospitals with bed capacities equal to or greater than those specified above, if such improvements are designed to provide more intensive treatment facilities within such hospitals.

§ 53.103 Size of tuberculosis hospitals.

No application for construction of a tuberculosis hospital with a capacity of less than 100 beds shall be approved, except that an application for construction of a tuberculosis hospital with a capacity from 50 to 100 beds may be approved where necessary (a) to provide facilities for an isolated area too small to support a larger hospital, or (b) to expand, remodel, or alter existing hospital facilities.

§ 53.104 Size of facilities for long-term care.

No application shall be approved for construction of a facility for long-term care, not an addition to a hospital, with a capacity of less than 10 beds.

Subpart L—Community Service; Services for Persons Unable To Pay; Nondiscrimination

§ 53.111 Community service; services for persons unable to pay; nondiscrimination on account of creed.

Before an application for the construction of a hospital or medical facility is recommended by a State agency for approval, the State agency shall obtain assurances from the applicant that:

(a) The facility will furnish a community service;

(b) The facility will furnish below cost or without charge a reasonable vol-

services to persons unable to pay for. As used in this paragraph, "persons unable to pay therefor" includes persons who are otherwise self-supporting but are unable to pay the full cost of needed services. Such services may be paid for wholly or partly out of public funds or contributions of individuals and private and charitable organizations such as community chest or may be contributed at the expense of the facility itself. In determining what constitutes a reasonable volume of services to persons unable to pay therefor, there shall be considered conditions in the area to be served by the applicant, including the amount of such services that may be available otherwise than through the applicant. The requirements of assurance from the applicant may be waived if the applicant demonstrates to the satisfaction of the State agency, subject to subsequent approval by the Surgeon General, that to furnish such services is not feasible financially; and

(c) All portions and services of the entire facility for the construction of which, or in connection with which, aid under the Federal Act is sought, will be made available without discrimination on account of creed; and no professionally qualified person will be discriminated against on account of creed with respect to the privilege of professional practice in the facility.

§ 53.112 Nondiscrimination on account of race, color, or national origin.

Attention is called to the requirements of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; P.L. 88-352) which provides that no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance (sec. 601). A regulation implementing such Title VI, applicable to grants for construction and modernization of hospitals and medical facilities, has been issued by the Secretary of Health, Education, and Welfare with the approval of the President (45 CFR Part 80). This regulation, published in the FEDERAL REGISTER of December 4, 1964 (29 F.R. 16298-16305), will become effective on the 20th day after such publication.

§ 53.113 Nondiscrimination in construction contracts.

Each construction contract is subject to the condition that the grantee shall comply with the requirements of, and give the assurances required in Executive Order 11114, June 22, 1963 (28 F.R. 6485), and the applicable rules, regulations and procedures prescribed pursuant thereto by the President's Committee on Equal Employment Opportunity (28 F.R. 9812).

Subpart M—Methods of Administration of the State Plan

§ 53.121 General.

The State plan shall provide for general methods of administration which are in accord with the principles set out in this subpart.

§ 53.122 Construction program.

The State programs for hospitals, facilities for long-term care, diagnostic or treatment centers, rehabilitation facilities, public health centers, and modernization shall be developed in the following manner:

(a) The State agency shall determine the need for additional hospital facilities of all types, facilities for long-term care, diagnostic or treatment centers, rehabilitation facilities, public health centers and for modernization of such facilities in accordance with the provisions of Subpart B through Subpart H.

(b) The State agency shall determine through field investigation, and otherwise, the approximate locations in each area in which the various types of health facilities identified in paragraph (a) of this section should most appropriately be built and the locations at which modernization projects are needed.

(c) After having determined the hospital, long-term care facilities, diagnostic or treatment center, rehabilitation facilities, public health center and modernization needs, the State agency shall establish an overall construction program. This program shall set forth all such needs in accordance with the standards specified in Subpart B through Subpart H and shall show the relative need for each project included, irrespective of the availability of funds for construction and for maintenance and operation of such project.

(d) The State agency shall from time to time as necessary, but not less often than annually, review the State plan, including the overall program for the construction of hospitals, long-term care facilities, diagnostic or treatment centers, rehabilitation facilities, public health centers and for modernization, and shall submit to the Surgeon General any modifications of the plan and the construction program as the State agency considers necessary to administer the plan and the annual allotment.

(e) At least thirty days prior to the submission of the State plan or any modification thereof to the Surgeon General, the State agency shall publish in newspapers having general circulation throughout the State a general description of the proposed plan or any such modification, and the State plan shall be available for examination and comment by interested persons prior to submission to the Surgeon General.

(f) The State agency shall establish a separate construction schedule on such forms and for such periods as the Surgeon General may prescribe. Insofar as funds are available for construction and for maintenance and operation, construction shall be scheduled in the order of relative need.

§ 53.123 Personnel administration.

(a) *Merit system.* A system of personnel administration on a merit basis shall be established and maintained with respect to the personnel employed in the administration of the State plan. Such a system shall include provision for:

(1) Impartial administration of the merit system;

(2) Operation on the basis of published rules or regulations;

(3) Classification of all positions on the basis of duties and responsibilities and establishment of qualifications necessary for the satisfactory performance of such duties and responsibilities;

(4) Establishment of compensation schedules adjusted to the responsibility and difficulty of the work;

(5) Selection of permanent appointees on the basis of examinations so constructed as to provide a genuine test of qualifications and so conducted as to afford all qualified applicants opportunity to compete;

(6) Advancement on the basis of capacity and meritorious service; and

(7) Tenure of permanent employees.

Substantial compliance with the Standards for a Merit System of Personnel Administration, issued by the Secretary of Health, Education, and Welfare, the Secretary of Labor, and the Secretary of Defense on January 26, 1963, 28 F.R. 734, including any subsequent amendments thereof, will be deemed to meet the requirements of the regulations in this part.

(b) *Conflict of interest.* No full-time officer or employee of the State agency, or any firm, organization, corporation, or partnership which such officer or employee owns, controls, or directs, shall receive funds from the applicant, directly or indirectly, in payment for services provided in connection with the planning, design, construction or equipping of the project.

§ 53.124 Fair hearings.

The State agency shall establish such rules and regulations as will provide an opportunity for an appeal to and a fair hearing before the State agency to every applicant for a construction project who is dissatisfied with any action of the State agency regarding its application.

§ 53.125 Construction standards.

The State agency shall adopt general standards of construction and equipment for the various types of hospitals, facilities for long-term care, diagnostic or treatment centers, rehabilitation facilities, and public health centers assisted under this program. The standards adopted shall not be less than the general standards prescribed by the Surgeon General and set forth in Subpart N (Appendix A) of this part.

§ 53.126 Minimum standards of maintenance and operation.

The State plan shall provide for minimum standards of maintenance and operation of facilities providing inpatient care which receive aid under the Federal Act, and effective not later than July 1, 1966, shall provide for enforcement of such standards.

§ 53.127 Application; submittal; amendment; processing.

(a) *Submittal of application.* Construction applications, including both a detailed narrative description and a detailed estimate of the cost of the project, shall be submitted to the Surgeon General through the State agency on forms prescribed by the Surgeon General.

(b) *Amendment to application.* An amendment to any application approved by the Surgeon General shall be processed in the same manner as an original application, except that the original application's conformity with the priority regulations shall suffice for an amendment which does not modify the factors on which the priority was granted.

(c) *Processing of application.* The State agency shall approve, recommend, and forward applications received in the order of priority, except that the State agency may approve, recommend and forward to the Surgeon General applications out of the order of priority if:

(1) The State agency has afforded reasonable opportunity for development and presentation of projects in the order of priority; and

(2) The State agency certifies to the Surgeon General that financial resources for the construction, maintenance and operation of projects of higher priority are not then available.

§ 53.128 Assurances from applicant.

In addition to any other requirements imposed by law, each construction grant shall be subject to the condition that the applicant will furnish and comply with the following assurances. The Surgeon General may, at any time, approve exceptions to those conditions and assurances where he finds that such exceptions are not inconsistent with the Federal Act and the purposes of the Program:

(a) That the applicant (or other public or nonprofit agency which is to operate the facility) has or will have a fee simple or such other estate or interest in the site, including necessary easements and rights-of-way, sufficient to assure for a period of not less than 50 years undisturbed use and possession for the purpose of the construction and operation of the facility;

(b) That the Surgeon General's approval of the final working drawings and specifications, which conform to the general standards of construction and equipment, will be obtained before the project is advertised or placed on the market for bidding;

(c) That applicant will perform actual construction work by the lump sum (fixed price) contract method; employ adequate methods of obtaining competitive bidding prior to awarding the construction contract, either by public advertising or circularizing three or more bidders; and award the contract to the responsible bidder submitting the lowest acceptable bid; provided, however, that the purchase and installation of equipment which is unique to the facility, as well as kitchen, laundry and laboratory equipment, need not be considered construction work for the purpose of this section, except that if open competitive bidding is employed to obtain any or all of such equipment, the award shall be made to the responsible bidder submitting the lowest acceptable bid;

(d) That applicant will enter into no construction contract or contracts for the project or a part thereof, the cost of which is in excess of the estimated cost approved in the application for that portion of the work covered by the plans

and specifications, without the prior approval of the Surgeon General;

(e) That applicant will submit to the Surgeon General for prior approval changes that substantially alter the scope of work, function, utilities or safety of the facility.

(f) That applicant will construct the project, or cause it to be constructed, to final completion in accordance with the application and approved plans and specifications;

(g) That applicant will maintain adequate and separate accounting and fiscal records and accounts for all funds provided from any source to pay the cost of the project, and permit audit of such records and accounts at any reasonable times;

(h) That applicant will furnish progress reports and such other information as the Surgeon General may require;

(i) That applicant will provide and maintain competent and adequate architectural or engineering supervision and inspection at the construction site to insure that the completed work conforms with the approved plans and specifications;

(j) That sufficient funds will be available to meet the non-Federal share of the cost of constructing the facility;

(k) That sufficient funds will be available when construction is completed for effective use of the facility for the purposes for which it is being constructed:

(1) (i) That any laborer or mechanic employed by any contractor or subcontractor in the performance of work on the construction of the facility will be paid wages at rates not less than those prevailing on similar construction in the locality as determined under the Davis-Bacon Act (40 U.S.C. 27 et seq.) and will receive compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in any workweek in excess of eight hours in any calendar day or forty hours in the workweek (40 U.S.C. 327-332); and

(2) That the following conditions and provisions will be included in all construction contracts:

(i) The provisions of Labor Standards for U.S. Public Health Service Construction Grant Programs (PHS 930-A-5) pertaining to the Copeland Act (Anti-Kickback) Regulations and Labor Standards (prevailing rates of pay and overtime requirements) except in the case of contracts in the amount of \$2,000.00 or less;

(ii) The contractor shall furnish performance and payment bonds, each of which shall be in the full amount of the contract price, and shall maintain, during the life of the contract, adequate fire, workmen's compensation, public liability and property damage insurance;

(iii) Representatives of the Surgeon General and State agency will have access at all reasonable times to work wherever it is in preparation or progress, and the contractor shall provide proper facilities for such access and inspection;

(m) That a facility providing inpatient care will be operated and maintained in accordance with minimum standards prescribed by the State agency for the maintenance and operation of such facilities;

(n) That the applicant will conform to all the applicable requirements of the State plan and the regulations of this part.

§ 53.129 Certification to the Surgeon General.

After the State agency has approved a construction application, it shall recommend it to the Surgeon General for approval and shall certify:

(a) That the application contains reasonable assurance as to the availability of funds for the cost of construction and the entire cost of maintenance and operation when completed:

(1) Availability of funds for the non-Federal share of construction costs shall mean (i) funds immediately available, placed in escrow, or acceptably pledged, or (ii) funds or fund sources specifically earmarked in a sum sufficient for that purpose, or (iii) other assurances acceptable to the Surgeon General;

(2) To assure the availability of funds for maintenance and operation, the application for the construction of a new project must include a proposed operating budget, on a form prescribed by the Surgeon General, for the two-year period immediately following its completion. In the case of an addition to an existing facility, the application must include a statement showing that funds are or will be available to meet any excess of proposed expenditures over anticipated income from the operation of the constructed addition for the two-year period immediately following its completion.

(b) That the application is in conformity with and contains the assurances required by the State plan and these regulations.

§ 53.130 Requests for construction payments.

(a) *Certification by State agency.* The State agency shall certify to the Surgeon General the amount of payments due to an applicant for the cost of work performed and materials and equipment furnished.

(1) Except as provided in subparagraph (2) of this paragraph, payments shall be made as follows:

(i) The first installment when not less than 25 percent of the construction of the project has been completed;

(ii) A second installment when not less than 50 percent of the construction of the project has been completed;

(iii) A third installment when not less than 75 percent of the project has been completed;

(iv) A fourth installment when the project is 95 percent completed; and

(v) The final payment when the project is completed and final inspection by a representative of the Surgeon General is made and the amount certified as due and payable as determined by the audit.

(2) Upon a written request and a showing of necessity by the applicant, the Surgeon General may adopt a different schedule of payments.

(b) *Inspection by State agency.* As a basis for certification by the State agency that payment of an installment is due an applicant, the State agency shall make adequate inspections to determine that the work has been performed upon a

project, or purchases have been made, in accordance with the approved plans and specifications.

§ 53.131 Fiscal and accounting requirements.

(a) *Construction allotments.* (1) The State agency shall be responsible for establishing and maintaining accounts and fiscal controls of all Federal and State funds allotted for construction projects. Federal and State funds shall be separately identified by maintaining separate fund accounts for this purpose.

(2) The fiscal records shall be so designed as to show at any given time the Federal funds allotted, encumbered, and unencumbered balances. If State contributions are made for construction, separate accounts, reflecting similar information, shall be maintained for State funds.

(b) *Construction payments.* (1) Where the State may receive Federal funds for applicants for construction project grants, or the State itself is an applicant, adequate records of account and fiscal controls shall be established and maintained by the State to assure proper accounting of all funds received and disbursed. Similar suitable accounts shall be maintained to show the receipt and disbursement of State, local or other funds used for matching purposes.

(2) The State agency shall require that applicants receiving Federal funds establish and maintain adequate accounting and fiscal records to reflect the receipt and expenditure of funds allotted and paid for construction projects.

(3) The States which by law are authorized to make payments to applicants shall promptly pay such applicants funds certified for payment by the Surgeon General for approved construction projects.

§ 53.132 Access by Comptroller General.

The State plan shall provide that the Comptroller General of the United States or his duly authorized representatives will have access for purposes of audit and examination to such records of the State agency as are required to be maintained by the Surgeon General.

§ 53.133 Notice of change of status of facility.

The State agency shall promptly notify the Surgeon General in writing, if at any time within 20 years after completion of construction, any facility which received funds under the Federal Act, as amended, is transferred to any person, agency, or organization, not qualified to file an application under the Federal Act or not approved as a transferee by the State agency; or ceases to be a public health center or a public or other nonprofit hospital, diagnostic or treatment center, facility for long-term care or rehabilitation facility, as defined in the Federal Act.

§ 53.134 Good cause for other use of facility.

If within twenty years after completion of any construction for which a construction grant has been made the facility shall cease to be a public health

center or a public or other nonprofit hospital, diagnostic or treatment center, facility for long-term care, or rehabilitation facility the Surgeon General, in determining whether there is good cause for releasing the applicant or other owner of the facility from its obligation shall take into consideration the extent to which:

(a) The facility will be devoted by the applicant or other owner to use for another public or nonprofit purpose which will promote the purpose of the Federal Act; or

(b) There are reasonable assurances that for the remainder of the twenty year period other public or nonprofit facilities not previously utilized for the purpose for which the facility was constructed will be so utilized and are substantially equivalent in nature and extent for such purposes.

Subpart N—(Appendix A) General Standards of Construction and Equipment

§ 53.141 Introduction.

(a) The standards set forth in this subpart have been established by the Surgeon General of the U.S. Public Health Service as required by Title VI of the Public Health Service Act. These standards constitute minimum requirements for construction and equipment and shall apply to all projects for which Federal assistance is requested under the act. They are considered necessary to insure properly planned and well constructed hospitals and public health centers which can be maintained and efficiently operated to furnish adequate services.

(b) Throughout these general standards reference is made to certain sizes of hospitals such as, "up to and including 100 beds," "over 100 beds," etc. These references are not meant to be applied strictly. They indicate the approximate sizes at which certain changes in requirements will occur.

(c) It should be particularly noted that the small hospital of 50 beds or under presents a special problem. The size of the various departments will be generally smaller and will depend upon the requirements of the particular hospital. Some of the functions allotted separate spaces or rooms in these general standards may be combined provided that the resulting plan will not compromise the best standards of medical and nursing practice. In other respects the general standards set forth in this subpart, including the area requirements, will apply.

(d) In the case of types of hospitals not specifically treated herein the standards for general hospitals will apply. Due allowance will be made for the specialized or unusual requirements of the particular hospital involved.

(e) Since these are minimum requirements it is desirable only that they form a basis for development of higher standards. In the interest of promoting the development of higher standards it is the intention of the Public Health Service to make suggestions and disseminate the latest information as to current good

practice in planning and design of health facilities. This information will be distributed from time to time to State agencies and other interested persons.

(f) No attempt has been made in establishing these standards to comply with all the various State and local codes and regulations which, of course, must be observed. The standards set forth in this subpart must be followed where they exceed any State and local codes and regulations. Likewise, compliance is required with minimum standards of construction and equipment promulgated by the State Agency where such requirements provide a higher standard than the standards set forth in this subpart.

§ 53.142 Site survey and soil investigation.

(a) The applicant shall provide for a survey and soil investigation of the site and furnish a plat of the site. The purpose of this survey and soil investigation is to obtain all information necessary for the design of the building foundations and mechanical service connections and development of the site. It is suggested that this matter be deferred until the architect has been selected in order that he may cooperate with the engineer who obtains the data.

(b) If any existing structures or improvements on the site are to be removed by the owners or others, the buildings or improvements must be so designated on the plat.

(c) Any discrepancies between the survey and the recorded legal description shall be reconciled or explained.

(d) The plat shall indicate:

(1) The courses and distances of property lines.

(2) Dimensions and location of any buildings, structures, easements, rights-of-way or encroachments on the site.

(3) Details of party walls, or walls and foundations adjacent to the lot lines.

(4) The position, dimensions and elevations of all cellars, excavations, wells, back-filled areas, etc., and the elevation of any water therein.

(5) All trees which may be affected by the building operations.

(6) Detailed information relative to established curb and building lines and street, alley, sidewalk and curb grades at or adjacent to the site and the materials of which they are constructed.

(7) All utility services and the size, characteristics, etc., of these services.

(8) The location of all piping, mains, sewers, poles, wires, hydrants, manholes, etc., upon, over or under the site or adjacent to the site if within the limits of the survey.

(9) Complete information as to the disposal of sanitary, storm water and subsoil drainage and suitability of subsoil for rainwater or sanitary disposal purposes if dry wells are used.

(10) Official datum upon which elevations are based and a bench mark established on or adjacent to the site.

(11) Elevations on a grid system of not more than 20-foot intervals to indicate changes of slope, etc., over that portion of the site to be developed.

(12) Elevations of contours, bottoms of excavations, etc.

(13) Contemplated date and description of any proposed improvements to approaches or utilities adjacent to the site.

(e) The plat shall bear a certification by the city engineer or other qualified official, that the true street lines and the officially established grades of curbs, sidewalks and sewers are correctly given.

(f) Adequate investigation shall be made to determine the subsoil conditions. The investigations shall include a sufficient number of test pits or test borings as will determine, in the judgment of the architect, the true conditions.

(g) Samples of strata of soil or rock taken in each pit or boring shall be retained in suitable containers. Each sample container shall be identified as to the boring and elevations at which taken and the labels initialed by the engineer making the soil investigation.

(h) The following information shall be noted on the plat:

(1) Thickness, consistency, character, and estimated safe bearing value of the various strata encountered in each pit or boring.

(2) Amount and elevation of ground water encountered in each pit or boring, its probable variation with the seasons and effect on the subsoil.

(3) The elevation of rock, if known, and the probability of encountering quicksand.

(4) Average depth of frost effect below surface of ground.

(5) High and low water levels of nearby bodies of water affecting the ground water level.

(6) The probability of freshets over-running the site.

(7) Whether the soil contains alkali in sufficient quantities to affect concrete foundations.

(8) The elevation and location of the top of workings relative to the site, if the site is underlaid with mines, or old workings are located in the vicinity.

(9) Whether the site is subject to mineral rights which have not been developed.

§ 53.143 Site.

(a) The site of any hospital should be reasonably accessible to the center of community activities. Public transportation should be available within a reasonable distance, especially if an outpatient service is to be maintained.

(b) Hospitals should be located in relation to the center of population, close to where patients live and where competent special medical and surgical consultation is readily available and where employees can be recruited and retained.

(c) The site should not be near insect breeding areas, noise or other nuisance producing industrial developments; airports, railways or highways producing noise or air pollution, or near penal or other objectionable institutions or near a cemetery.

(d) Adequate roads and walks shall be provided within the lot lines to the main entrance, ambulance entrance and community activities.

(e) The site for a public health center should be convenient to the center of community activities.

§ 53.144 General hospital.

Units required in the general hospital
(a) *Administration department.*

Up to and including 100 beds:
Business office with information counter.
PBX Board and night information.¹
Administrator's office.
Director of nurses' office.¹
Medical record room.
Staff lounge.
Lobby.
Public toilets.

Over 100 beds:
Business office.
Information counter.
PBX Board and night information.¹
Administrator's office.
Director of nurses' office.
Admitting office.
Medical social service room.¹
Medical record room (should be easily available to O.P.D.).
Staff lounge.
Library, conference and board room.
Lobby.
Retiring room.¹
Public toilets.

(b) *Adjunct diagnostic and treatment facilities.* Except for the morgue and autopsy, this department preferably should be located convenient to both in- and out-patients.

Laboratory:
Adequate facilities for chemical, bacteriological, serological, pathological and hematological services.

Basal metabolism and electrocardiography:
Up to and including 100 beds: No special provisions required. Can be done in bed rooms.

Over 100 beds: One room near the laboratory.

Morgue and autopsy: ¹ May not be required in hospitals under 50 beds if other facilities such as undertaker or coroner are available. Where provided: Combination morgue and autopsy with mortuary refrigerator.

Radiology: Each hospital to have at least 1 radiographic room with adjoining dark-room, toilet, and office. Hospitals of 150 beds and over should have at least 1 additional radiographic room. The radiology department shall have ray protection as required.

Physical therapy: ¹ In hospitals of 100 beds and over: Space should be provided for electrotherapy, hydrotherapy, massage, and exercise. Equipment to be furnished when competent technician is acquired.

Pharmacy:
Up to and including 100 beds: Drug room with minimum facilities for compounding.

Over 100 beds: Complete pharmacy and may include space for manufacturing and solution preparation depending on policy of hospital.

(c) *Nursing department.*

General:
No room should have more than 4 beds. Each room shall have a lavatory. Nursing units composed of multi-bed rooms shall have a quiet room. No patients' bed rooms shall be located on any floor which is below grade.

Size of nursing unit: Not more than 35 beds.¹
Larger units permissible, if additional facilities are provided.

Minimum room areas: 80 sq. ft. per bed in two- and four-bed rooms. 100 minimum sq. ft. in one-bed rooms.

Service rooms in each nursing unit:

Nurses' station.
Utility room.
Floor pantry (one per floor).²
Toilet facilities.
Bedpan facilities.
One bathroom.
Stretcher alcove.
Linen and supply storage.
Janitors' closet.

Treatment room: One for each two nursing units per floor.¹

Solarium: One for each nursing floor.¹

Nurses' toilet room: One for each nursing floor. In hospitals of 100 beds and over the maternity department shall be housed in a separate wing or floor.

(d) *Nursery department.*

Full term nursery:

Area required: Not less than 24 square feet per bassinet, 30 square feet recommended.

Number of bassinets: No more than 12 bassinets in each full term nursery, 8 recommended.

Examination and work room: One examination and work room between each two full term nurseries.

Premature nursery: Recommended in hospitals of 16 or more maternity beds and required in hospitals of 25 or more maternity beds.

Area required: 30 square feet per bassinet. Number of bassinets: Not more than six in each premature nursery.

Workroom: Work area may be within premature nursery but the area so provided shall be in addition to the required bassinet area.

Observation nursery:

Area required: 40 square feet per bassinet. Number of bassinets: Approximately 10% of full term bassinets. Not more than 6 bassinets in each observation nursery.

Workroom: One workroom for each two observation nurseries.

Formula room: Location in obstetrical nursery area or near kitchen optional.

(e) *Surgical department.* (Shall be located to prevent traffic through it to any other part of the hospital.)

Operating rooms:

Major: One operating room for each 50 beds or major fraction thereof up to and including 200 beds. Above 200 beds the number of operating rooms will be based on the expected average of daily operations.

Cystoscopy: One in each hospital over 100 beds highly desirable. Should have an adjoining toilet room. Location in hospital optional.

Fracture room: ¹ One in each hospital over 100 beds. Shall have an adjoining splint room. Location in hospital optional.

Auxiliary rooms:

Sub-sterilizing facilities.
Scrub-up facilities.
Nurses' locker room with toilet.
Janitors' closet.

Instrument storage.

Clean-up room.

Anesthesia equipment storage.

Surgical Supervisor station.

Doctor's locker room with toilet.

Storage closet.

Stretcher alcove.

Storage room for sterile supplies beginning at 100 beds.

Dark room beginning at 100 beds.¹

¹ Desirable but not mandatory.

² As required by program.

Central sterilizing and supply room:
Divided into work space, sterilizing space and sterile storage space.
Adjacent room for storage of unsterile supplies.
Location in hospital optional.

(f) *Obstetrics department.* (Shall be located to prevent traffic through it to any other part of the hospital. Shall be completely separated from surgical department.)

Delivery rooms: One for each 20 maternity beds.

Labor beds: One for each 10 maternity beds.

Auxiliary rooms:

Sub-sterilizing facilities.

Scrub-up facilities.

Clean-up room or utility room.

Supervisors' station.

Nurses' locker room with toilet starting at 50 beds.¹

Sterile storage closet.

Stretcher alcove.

Janitors' closet.

Doctors' locker room with toilet starting at 50 beds.

(g) *Emergency department.*

Accident room:

With separate ambulance entrance.¹

Shall be separated from operating suite and obstetrical suite.

Additional facilities will depend on amount of accident work expected.

(h) *Service department.*

Dietary facilities:

Main kitchen and bakery.

Dietitian's office.

Dishwashing room.

Adequate refrigeration.

Garbage refrigerator.¹

Can washing facilities.

Day storage room.

Personnel dining space.

Provide 12 square feet per person; may be designed for multiple seatings.

Cafeteria or table service optional.

Housekeeping facilities:

Laundry; unless commercial or other laundry facilities are available, each hospital shall have a laundry of sufficient capacity to process full 7 days' laundry in work week and contain the following areas:

Sorting area—completely enclosed.

Processing area.

Clean linen and sewing room separate from laundry.

Sewing room may be included in clean linen room in hospitals up to and including 100 beds.

Where no laundry is provided in the hospital, a soiled linen room and a clean linen and sewing room shall be provided.

Housekeeper's office: May be combined with clean linen room in hospitals up to 100 beds.

Mechanical facilities:

Boiler and pump room.

Shower and locker facilities.¹

Engineers' space.

Maintenance shops: In hospitals up to and including 100 beds at least one room shall be provided.¹ In larger hospitals separation of carpentry, painting and plumbing should be provided.

For minimum requirements for mechanical and electrical work see the respective sections.

Employees' facilities:

Nurses' locker room:

Lockers as required.

Rest room.

Toilet room.

Female help lockers:

Locker room.

Rest room.

Toilet and shower room.¹

Male help lockers:

Locker room.

Toilet and shower room.¹

Ratio of male and female help will vary and size of locker rooms must be adjusted accordingly.

Storage:

Inactive record storage.

General storage: 20 square feet per bed and to be concentrated in one area insofar as possible. Mechanical maintenance storage may be in a separate area.

(i) *Out-patient department.* (If survey indicated that the out-patient department is unnecessary it may be omitted.)

General:

Out-patient department should be located on the most easily accessible floor. It should have convenient access to radiology, pharmacy, laboratory, and physical therapy.

The size will vary in different locations and is not necessarily proportional to the size of the hospital. The patient load must be estimated to determine the number of rooms required.

An out-patient department may be combined with the public health center clinics if the health center is a part of the hospital.

Administrative:

Waiting space with public toilets.

Appointment and cashiers' office.

Social service office.

Clinical:

History or screening room.

Examination and treatment rooms:

Eye, ear, nose, and throat room.¹

Dental facilities (2 chairs desirable).¹

Utility room.

(j) *Contagious disease nursing unit.*¹

Where 10 or more beds are contemplated for nursing contagious diseases, they should be housed in a separate contagious disease nursing unit.

Patient rooms:

A maximum of 2 beds in each room.

Glazed partition between beds.¹

Patient rooms shall have a view window from corridor.

Each patient room shall have a separate toilet and a lavatory in the room.

Each nursing unit shall contain:

Nurses' station.

Utility room.

Nurses' work room.

Treatment room.

Scrub sinks strategically located in the corridor.

Serving pantry with separated dishwashing room adjacent.

Doctors' locker space and gown room.

Nurses' locker space and gown room.

Janitors' closet.

Storage closet.

Stretcher alcove.

(k) *Pediatric nursing service.*¹

Where 16 or more pediatric beds are contemplated, a separate pediatric nursing unit shall be provided and contain the following items:

General:

Each bed in a multi-bedroom shall be in a clear glazed cubicle.¹

Each room shall have a lavatory.

Patients' rooms wherever possible should have clear glazing between them and in the corridor partitions.

Minimum area:

80 square feet per bed in two-bed rooms and over.

100 square feet in single rooms.

40 square feet per bassinet in nurseries.

Each nursing unit shall contain:

Nursery with bassinets in cubicles.

Observation suite.

Treatment room.

Nurses' station.

Nurses' toilet room.

Utility room.

Floor pantry.²

Play room or solarium.

Bath room.

Toilet room for each sex.

Bed pan facilities.

Wheelchair and stretcher alcove.

Janitors' closet.

Storage closet.

(l) *Psychiatric nursing unit in the general hospital.*¹

General: Layout and design of details to be such that the patient will be under close observation and will not be afforded opportunity for escape, suicide, hiding, etc. Care must be taken to avoid sharp projections of corners of structure, exposed pipes, heating elements, fixtures, etc., to prevent injury by accident.

Minimum room areas:

80 square feet per bed in 4-bed rooms.

100 square feet in single rooms.

40 to 50 square feet per patient in day rooms.

Each nursing unit shall contain:

Doctors' office.

Examination room.

Nurses' station.

Day room.

Utility room.

Bedpan facilities.

Pantry.

Dining room.

Toilet room.

Shower and bathroom.

Continuous tub room (for disturbed patients).²

Patients' laundry (personal) for women's wards only.

Patients' locker room.

Storage closet (for recreational and occupational therapy).

Stretcher closet.

Linen closet.

Supply closet.

Janitors' closet.

§ 53.145 Tuberculosis hospital.

(a) *Administration department.*

From 50 up to and including 200 beds:

Business office with information counter.⁵

Medical social service office.⁵

Medical director's office.

Secretary's office.⁵

Supervisor's office.

Medical record and film filing room.⁵

Viewing room, library⁶ and conference room. Singly or in combination.

Lobby and waiting room.

Retiring room.¹

Toilets.

Over 200 and up to 500 beds:

Business office and information counter.⁵

Business manager's office.⁵

Secretary.⁵

Admitting office.⁵

Two medical social service offices.⁵

Medical director's office.

Secretary.

Assistant medical director's office.

Supervisor's office.

Secretary.

Assistant director of nurses' office.

¹ If required by program.

² As required by program.

⁵ These facilities need not be provided if the Tuberculosis Hospital is in connection with a general hospital in which such facilities exist.

¹ Desirable but not mandatory.

Medical record room.⁵
 Library⁵ and conference room.
 Staff lounge and locker room.
 Lobby and waiting room.
 Retiring room.¹
 Toilets.

(b) *Adjunct diagnostic and treatment facilities.*

Except for the morgue and autopsy this department should be preferably located convenient to both in- and out-patients.

Laboratory:

Adequate facilities for chemical, bacteriological, serological, pathological and hematological services.

Basal metabolism and electrocardiography: One room near the laboratory.

Morgue and autopsy:

From 50 up to and including 200 beds: combination morgue and autopsy room with mortuary refrigerator.⁵

Over 200 and up to 500 beds: Morgue with mortuary refrigerator. Autopsy room.

Shower and toilet room.
 Separate exit.

Radiology:

From 50 up to and including 200 beds:

Radiographic room.⁵
 Dark room.⁵
 Dressing booths.¹
 Must be convenient to out-patient department as well as in-patients.

Over 200 and up to 500 beds:

Radiographic room.
 Dark room.
 Dressing booths.
 Viewing room.
 Roentgenologist's office.
 Film file room.

Must be convenient to out-patient department as well as in-patients.

Pharmacy:

From 50 up to and including 200 beds: Drug room with minimum facilities for mixing.⁵

Over 200 and up to 500 beds: Complete pharmacy and may include space for manufacturing and solution preparation depending on policy of hospital.

Dental and eye, ear, nose, and throat:

From 50 up to and including 200 beds: Dental facilities (2 chairs desirable).⁵ One eye, ear, nose, and throat room.⁵

Over 200 and up to 500 beds: Dental facilities (2 chairs desirable). Eye, ear, nose, and throat room. Waiting room.

Occupational therapy:

Library.
 Barber shop.
 Canteen.
 Assembly room.

Flexible space for learning and working in crafts and classroom for patient instruction shall be provided.

(c) *Nursing department.*

General: At least 30 percent of the hospital beds should be in single rooms.¹ No room should have more than four beds.¹ Each room shall have a lavatory. No patients' bedrooms shall be located on any floor which is below grade.

Size of nursing unit: No nursing unit shall be larger than 50 beds.

Minimum room areas:

80 square feet per bed in two- and four-bed rooms.
 100 square feet in one-bed rooms.

Service rooms in each nursing unit:

Nurses' station.
 Utility room.
 Floor pantry (one per floor).⁵
 Toilet and washroom:
 Water closets—1 to each 8 patients.
 Lavatories.
 Dental basins.¹
 Storage closet for supplies.
 Bath and shower room: Bath tubs and/or showers—1 to 14 patients.
 Gowning space.
 Bed pan facilities.
 Linen closet.
 Janitors' closet.
 Space for wheel chairs and stretchers.
 Storage closet for equipment.
 Doctors' office and treatment room—one for each nursing unit.
 Solarium: One for each nursing unit.
 Sputum technique facilities.
 Nurses' toilet room: One for each nursing floor.
 Nurses' cloak closet—one for each nursing floor.

(d) *Surgical department.* (Shall be located to prevent traffic through it to any other part of the hospital.)

From 50 up to and including 200 beds:

Major operating room.⁵
 Sterilizing room.⁵
 Central supply and work room.⁵
 Scrub-up facilities.⁵
 Clean-up room.⁵
 Storage closet.⁵
 Janitors' closet.⁵
 Doctors' locker room with toilet and showers.⁵
 Nurses' locker room with toilet and showers.⁵

Over 200 and up to 500 beds:

Major operating room: One for each 200 beds or major fraction thereof.
 Minor operating and fracture room.
 Sub-sterilizing facilities.
 Clean-up room.
 Scrub-up facilities.
 Janitors' closet.
 Storage room for sterile supplies.
 Anesthesia storage.
 Surgical supervisor office.
 Doctor's locker room with toilet and shower.
 Nurses' locker room with toilet and shower.
 Storage closet.
 Stretcher alcove.
 Central sterilizing and supply room divided into work space, sterilizing space, and sterile storage space.
 Adjacent room for storage of unsterile supplies.

Pneumothorax suite:

Pneumothorax room with dressing booths.
 Fluoroscopy room.
 Waiting space.
 From 50 up to and including 200 beds: One pneumothorax suite for 100 beds or major fraction thereof.
 Over 200 and up to 500 beds: One pneumothorax suite for 100 beds or major fraction thereof.

(e) *Service department.*

Dietary facilities:

Main kitchen and bakery.⁵
 Dietitian's office.⁵
 Patients' dishwashing room.
 Staff and help dishwashing room.⁵
 Adequate refrigeration.⁵
 Garbage refrigerator.¹
 Can washing room.
 Day storage room.⁵
 Help dining room.⁵
 Staff dining room.⁵
 Patients' dining space—to serve 40 percent of the patients.¹
 Provide 12 square feet per person in dining rooms. May be designed for two seatings. Cafeteria or table service optional.

Housekeeping facilities:

Laundry:⁵
 Sorting area.
 Processing area.
 Clean linen room.
 Sewing room.
 Laundry capacity shall be adequate to process full 7 days' laundry in workweek.
 Housekeeper's office.
 Inclinator.

Mechanical facilities:⁵

Boiler and pump room.
 Engineers' office.
 Shower and locker facilities.
 Maintenance shops:
 Carpentry.
 Painting.
 Plumbing.
 For minimum requirements for mechanical and electrical work, see the respective sections.

Employees' facilities:⁵

Nurses' locker room without nurses' residence:
 Locker room with lockers as required
 Rest room.
 Toilet and shower room.
 Where nurses' residence is adjacent provide only rest room and toilet.
 Female help locker room:
 Locker room.
 Rest room.
 Toilet and shower room.
 Male help locker room:
 Locker room.
 Rest room.
 Toilet and shower room.
 Storage:⁵
 General storage. Provide 20 square feet per bed, preferably concentrated in one area.
 Record storage.

Out-patient department:⁵

Out-patient department should be located on most easily accessible floor. Must be convenient to radiology, pharmacy, and laboratory departments.
 Size will vary in different locations and with the availability of other examination and diagnostic facilities, and is not necessarily proportionate to the size of the hospital. The estimated patient load will determine the number, size, and scope of individual facilities in out-patient department.

Facilities required:

Administrative:
 Waiting room with public toilets.
 Information, appointment and records office.
 Medical social service office.
 Janitor's closet.
 Clinical:
 History or screening room.
 Examination rooms.
 Dressing booths.
 Pneumothorax room.
 Fluoroscopy room.
 Utility room.
 Storage room.

§ 53.146 Mental hospital (long-term care).

(a) *General.* (1) A mental hospital should be on a large acreage with ample space around all buildings for recreation, attractive landscaping and the proper segregation of the various patient classification groups and building functions; and should be readily accessible to the community which it is to serve. It is strongly urged that mental hospitals be not greater than 1,500 beds.

(2) The mental hospital presents a special problem of patient classification, treatment and supervisory function. In the following minimum requirements an over-all organization is designated with certain supervisory or organizational

¹ Desirable but not mandatory.

⁵ As required by program.

⁵ These facilities need not be provided if the Tuberculosis Hospital is in connection with a general hospital in which such facilities exist.

functions mentioned in their most desirable, but not mandatory, locations and these may, therefore, be changed to other locations.

(3) Patients have been classified and grouped according to behavior, and requirements vary somewhat for each classification. Minimum room area requirements are grouped into the following main categories, as follows:

(i) Medical and surgical and chronic disease classification: 70 square feet per bed in alcoves and four-bed rooms; 100 square feet in single rooms.

(ii) Tuberculosis classification: 70 square feet per bed in alcoves and four-bed rooms; 100 square feet in single rooms.

(iii) Reception, convalescent, chronic disturbed, industrial classifications: 70 square feet per bed in alcoves and four- (or more) bed rooms; 80 square feet in single rooms.

(iv) Infirm and inactive: 60 square feet per bed in four- (or more) bed rooms; 80 square feet in single rooms.

(4) No patient bedrooms shall be located on any floor which is below grade.

(b) *Administration.* This area includes the administrative, business and public contact functions of the institution.

Location: Near main entrance to institution and close to reception area.

General:

- Entrance lobby.
- Public toilets (male and female).
- Information and telephones (main switchboard).
- Post office.
- Personnel toilets (male and female).
- Mechanical room.

Offices:

- Director.
- Assistant director.
- Conference room.
- Business administrator.
- Business.
- Public relations and services.
- Secretaries.
- Janitors' closet.

Medical:

- Central records office.
- Central records room.
- Inactive records storage.

(c) *Reception.* (1) This area includes the reception and treatment of new patients, most of whom will be entering a mental hospital for the first time. Since they are new patients, and in need of very careful treatment, it is necessary to separate and prohibit contact between patients in the following classifications of behavior:

- Quiet.
- Depressed.
- Disturbed.

(2) In addition, each of the above classifications should be separated by sexes, and each classification should have its own complete nursing units with all nursing facilities available, and each should be readily accessible to an outdoor area. All safety and security measures should be observed in this group. Intensive care and treatment will be

given these new patients in an effort to cure them in the first few weeks of treatment. Should the patient fail to recover in this comparatively short period of time he will be sent to other nursing areas for continued treatment. Three other nursing areas will be classified according to the behavior of the patients which they are to house.

(3) The reception area should be set well apart from the other areas of the hospital, and should contain sufficient diagnostic, treatment, recreational and occupational facilities, to furnish complete treatment in order that these new patients may recover without having been transferred to the other areas of the mental hospital.

(4) The number of beds required in this reception area must be determined by study of the total receiving and intensive treatment facilities in the community which is served. The total number of beds in this and the convalescent area should be in accord with the admissions within a three- to six-month period.

Location: Near administration area.

General:

- Lobby.
- Visitors' toilets (male and female).
- Main visitors room with alcoves.
- Janitors' closets.
- Mechanical room.

Administration:

- Medical records office.
- Information.
- Chief psychiatrist's office and conference room.

Secretaries' offices.

- Clinical psychologist's office.
- Chief of nursing service and staff.
- Chief of social service and offices.
- Personnel toilets (male and female).

Staff facilities:

- Doctors' toilet room.
- Nurses' lounge and toilet room.

Admission:

- Ambulance entrance.
- Patients' bath and toilet.¹
- Utility room.¹
- Examination and consultation rooms.

Adjunct diagnostic and treatment facilities:

- Minor surgery and treatment room.
- Portable X-ray storage room.¹
- Dark room.¹
- Small laboratory.¹
- Patients' toilet and shower.
- Small treatment room (for shock therapy, etc.).
- Patients' exercise room (directly accessible to outdoor exercise yard).

Occupational therapy:

- Occupational therapy room (to be located near quiet patient units).
- Storage closets.
- Occupational therapists' office.¹
- Barber and beauty shop.

Nursing units: The following classifications of nursing units of not more than 25 beds will be required:

- Quiet nursing units (male and female).
- Depressed nursing units (male and female).
- Disturbed nursing units (male and female).

For small reception facilities a combination of patient classifications may be provided in one nursing unit of not more than 25 beds provided that contact between the patients of each classification may be prohibited or limited.

Suggested bed distribution of nursing units:

Each disturbed nursing unit:

	<i>Patients</i>
Two 4-bed wards.....	8
Three 2-bed or 3-bed wards.....	6 or 9
Four or six 1-bed rooms.....	4 or 6
Two 1-bed rooms (isolation unit) ¹	2

Total..... 20 to 25

Each depressed nursing unit:

	<i>Patients</i>
Two 4-bed wards.....	8
Two 3-bed alcoves.....	6
Four 1-bed rooms.....	4
(Isolation unit) ¹	2

Total..... 20

Quiet unit: Same bed distribution as disturbed nursing units.

Facilities in each nursing unit:

Doctor's consultation room (for each two units).

Examination room.

Nurses' station.

Utility room.

Bed pan facilities.

Small dining room and pantry:

Essential for disturbed.

Convenient for depressed.

Unnecessary for quiet.

Patients' locker room.

Linen closet.

Patients' shower and bath room.

Patients' dressing room.

Patients' toilets.

Patients' wash room.

Continuous tub room (for disturbed units).²

Day room (40 to 50 square feet per patient and preferably divided into one small and one large room).

Occupational therapy storage closet.

Janitors' closet.

Dietary:

Patients' dining room cafeteria service: this dining room will be used by patients from convalescent houses as well as from reception area (two seatings may be used).

Janitor's closet.

Coat room and toilets (male and female).¹

Kitchen (serving).

Dishwashing room (enclosed).

Employees' toilet.

Patients' toilet (male and female).

Refrigerated garbage storage.

Can washing room.

(d) *Convalescent.* (1) This area is considered a part of the reception area and will house new patients who have been sent from the reception building, and who are expected to recover within six months to a year. Most of these patients will have the same classification as those in the reception area. Small complete nursing units, separate for each sex, should be provided. Special treatment, such as mechanical fever, electric shock, special electro and hydro therapy, and insulin, etc., can be given in the reception building.

(2) These patients will also use the dining room facilities of the reception area.

(3) In general, while most of these patients are continuing to receive intensive treatment, they are well enough and manageable enough to go freely or be escorted to their activities.

(4) The same security and safety measures are required as those for the reception area.

(5) Location: Grouped by sexes near reception area.

¹ Desirable but not mandatory.

² If required by program.

General:

- Entrance lobby.
- Visitors' room with alcoves.
- Visitors' toilets (male and female).
- Attendants' locker and toilet room.
- Mechanical room.
- Nursing units (to contain not more than 50 beds).
- Suggested bed distribution of each nursing unit:

	Patients
One 8-bed ward.....	8
Four 4-bed wards.....	16
Eleven 1-bed wards.....	11
Total.....	35

Facilities in each nursing unit:

- Doctors' consultation room (for each two units).
- Examination room.
- Nurses' station.
- Utility room.
- Bed pan facilities.
- Pantry (one for each two nursing units).
- Patients' locker.
- Patients' toilet room.
- Patients' shower or bath room.
- Day room (40 to 50 square feet per patient—preferably divided into one large and one small room).
- Storage closet (occupational and recreational therapy equipment).
- Linen closet.
- Janitors' closet.
- Patients' wash room.
- One-third of the nursing units, for both men and women should have one continuous tub room.²

(e) *Chronic disturbed.* This area should be separate from the main group of mental hospital facilities and set apart from the nursing areas of other patient classifications because of possible noise or other disturbance. It will be used to treat restless, noisy, assaultive or suicidal patients and must be designed to provide the greatest security and observation. Since these patients are very active it is necessary to have an outdoor area or exercise yard, and due to the amount of equipment and care these patients require, and the resulting necessary space for treatment, not less than two nursing units to a building are recommended.

Location: These buildings to be located away from the other nursing buildings.

General:

- Entrance lobby.
- Visitors' room.
- Visitors' toilets (male and female).
- Beauty shop (female buildings).
- Barber shop (male buildings).
- Attendants' locker and toilet room.
- Pantry (for two nursing units).
- Mechanical room.
- Enclosed exercise yard (100 square feet per patient).

Treatment facilities:

- Hydrotherapist's office and toilet.²
- Continuous tub room.²
- Linen storage facilities.²
- Patients' dressing room.
- Janitors' closet.
- Exercise room (near outdoor exercise yard).
- Storage closet (for small gymnasium equipment).

Nursing units (to contain not more than 30 beds):

Suggested bed distribution of each unit:

	Patients
One 8-bed ward.....	8
Two 4-bed wards.....	8
Ten 1-bed rooms.....	10
Total.....	26

² If required by program.

Facilities in each nursing unit:

- Doctors' office with toilet (for each two units).
 - Examination room.
 - Nurses' station.
 - Utility room.
 - Patients' locker room.
 - Patients' toilet room.
 - Patients' wash room.
 - Patients' shower and dressing room.
 - Day room (40 to 50 square feet per patient). Preferably divided into (1) small room and (1) large room.
 - Storage closet (recreational equipment).
 - Occupational therapy room (one for each two units).
 - Linen closet.
 - Janitors' closet.
- Dietary:
- Dining room—cafeteria service.
 - Serving kitchen.
 - Dishwashing room.
 - Employees' toilet.
 - Janitors' closet.

(f) *Infirm.* This area will house patients who are in need of considerable medical care and who may be infirm. The very sick will be transferred to the medical and surgical or chronic disease building, but these infirm patients will need constant and careful nursing. Minimum security and all safety measures will be required, and the nursing units should be complete with all facilities available and readily accessible to an out-door yard or area.

Location: Close to medical and surgical building.

General:

- Entrance lobby.
- Visitors' room.
- Visitors' toilets (male and female).
- Barber shop (male buildings).¹
- Beauty shop (female buildings).¹
- Attendants' locker and toilet room (male and female).
- Mechanical room.
- Enclosed yard (40 square feet per patient).¹
- Nursing units (to contain not more than 60 beds). Suggested bed distribution for each unit:

	Patients
Two 10-bed wards.....	20
Four 4-bed wards.....	16
Four 1-bed rooms.....	4
Total.....	40

Facilities in each nursing unit:

- Doctors' office (for each 3 units).
- Examination room.
- Nurses' station.
- Utility room.
- Bed pan facilities.
- Pantry and dining room (one for each two units).
- Patients' locker room.
- Patients' wash room.
- Patients' toilet room.
- Patients' dressing room.
- Patients' shower or bath room.
- Day room (30 square feet per patient).
- Storage closet (for recreational and occupational therapy equipment).
- Linen closet.
- Wheel chair and stretcher closet.
- Janitors' closet.

Dietary:

- Serving kitchen.
- Dishwashing room.
- Employees' toilet.
- Janitors' closet.

(g) *Inactive.* This area will house patients who are lethargic. They need a considerable amount of attention, most

¹ Desirable but not mandatory.

of which will be furnished by the physical therapist and occupational therapist. They will be urged into activities furnished in the occupational and recreational therapy buildings, but some of the lighter occupational and physical therapy should be provided in this area. All security and safety measures will be required.

Location: In main group of nursing buildings and near gymnasium and recreation buildings.

General:

- Entrance lobby.
- Visitors' room.
- Visitors' toilets (male and female).
- Occupational therapy room.
- Attendants' locker and toilet room.
- Mechanical room.
- Enclosed yard (100 square feet per patient).¹
- Nursing units (to contain not more than 50 beds) suggested bed distribution (of each unit):

	Patients
Three 10-bed wards.....	30
Two 4-bed wards.....	8
Four 1-bed rooms.....	4
Total.....	42

Facilities in each nursing unit:

- Doctors' office (for each 3 units).
 - Examination room.
 - Nurses' station.
 - Utility room.
 - Bedpan facilities.
 - Pantry (for each 2 units).
 - Patients' locker room.
 - Patients' wash room.
 - Patients' toilet room.
 - Patients' shower or bath room.
 - Patients' dressing room.
 - Day room (40 to 50 square feet per patient and preferably divided into one small and one large room).
 - Storage closet (for recreational and occupational therapy equipment).
 - Linen closet.
 - Janitors' closet.
- Dietary:
- Dining room.
 - Serving kitchen.
 - Dishwashing room.
 - Employees' toilet.
 - Janitors' closet.

(h) *Industrial.* This area will house patients who are well enough to be occupied on the grounds, farm, industrial buildings, shops, kitchens, laundry, etc. Less supervision and care is necessary than in the other groups, and these patients can go to the out-patient department of the medical and surgical building for examination and treatment.

Location: In main group of nursing buildings near service buildings.

General:

- Entrance lobby.
- Visitors' room.
- Visitors' toilets (male and female).
- Attendants' locker and toilet room.
- Mechanical room.
- Nursing units (to contain not more than 60 beds) suggested bed distribution:

	Patients
Two 16-bed wards.....	32
Two 8-bed wards.....	16
Four 1-bed rooms.....	4
Total.....	52

Facilities in each nursing unit:

- Doctors' office and examination room—one for each 3 units.
- Nurses' station.
- Patients' toilet.
- Patients' dressing room.

Patients' shower room.
 Patients' locker room.
 Patients' wash room.
 Day room (40 to 50 square feet per patient) preferably divided into one small and one large room.
 Storage closet (for recreation equipment)
 Linen closet.
 Janitors' closet.

(i) *Medical and surgical.* This area will house patients who have been hospitalized from nursing units of other classifications for short periods of illnesses, and should be housed in a modern general hospital complete with all facilities to serve the entire mental hospital community. Nursing units should be arranged for easy segregation of patients and the adjunct diagnostic and treatment facilities are recommended to be on the first or ground floor for easy access to the out-patient department. All security and safety measures should be incorporated in this building. The number of beds shall be approximately 4 percent of the total patients which this building serves.

Location: Between main group of nursing area and reception area.

General:

Entrance lobby.
 Information counter.
 Visitors' toilets (male and female).
 Mechanical room.
 Administration:
 Chief physician's office.
 Medical record room.
 Head nurse's office.
 Secretaries' offices.
 Personnel toilets (male and female).

Staff facilities:

Doctors' locker and shower room.
 Nurses' locker and shower room.

Adjunct diagnostic and treatment facilities:

Laboratory: Separate spaces for office, clinical pathology, bacteriology and serology, washing and sterilizing
 Basal metabolism and electrocardiography:
 Near laboratory and convenient to out-patient department.
 Morgue and autopsy room:¹ Combination morgue and autopsy with mortuary refrigerator.

Radiology:

Radiographic room with an adjoining dark room and office.
 X-ray therapy suite.¹
 Physical therapy: Suite for electro-therapy, hydro-therapy, and exercise room with adjoining office.

Pharmacy: Drug room with minimum facilities for mixing. (May be in service area.)

Nursing units (to contain not more than 30 beds) suggested bed distributions:

	Patients
Medical wards (25 beds each):	
Two 4-bed wards.....	8
Three 2-bed rooms.....	6
Nine 1-bed rooms.....	9
Isolation suite ¹	2

Total 25

Surgical wards (25 beds each) same as medical wards.

Employees' wards:¹ Maximum size, 25 to 30 beds.

NOTE: Where isolation suite or contagious disease nursing unit is available the small units in each nursing unit are not required.

Facilities in each nursing unit:

Doctors' examination room (one for each two nursing units).
 Nurses' station.

¹ Desirable but not mandatory.

Utility room.
 Bed pan facilities.
 Pantry (one for each two nursing units).
 Patients' bath and shower room.
 Supply closet.
 Patients' toilet room (male and female).
 Day room (approximately 25 square feet per patient). Omit for employees' wards.
 Storage closet (recreational and occupational therapy equipment).
 Stretcher and wheel chair closet.
 Linen closet.
 Janitors' closet.

Surgical department: Should be located to prevent traffic through it to any other part of hospital.

Operating rooms:

Major: One for each 50 beds up to and including 200 beds. Above 200 beds the number of operating rooms will be based on the expected average of daily operations.

Minor: One in each hospital over 50 beds.
 Cystoscopy¹ One in each hospital over 100 beds. Shall have an adjoining toilet room.

Fracture room: One in each hospital over 100 beds. Shall have an adjoining splint room.

Auxiliary rooms:

Substerilizing facilities.
 Scrub-up facilities.
 Nurses' locker room with toilet and shower.
 Instrument room beginning at 100 beds.
 Clean-up room.
 Anesthesia equipment storage.
 Surgical supervisor's station.
 Doctor's locker room with toilet and shower.

Storage closet.
 Stretcher closet.
 Storage room for sterile supplies beginning at 100 beds.
 Janitors' closet.

Dark room beginning at 100 beds.
 Central sterilizing and supply room:
 Divided into work space, sterilizing space, and sterile storage space.
 Adjacent room for storage of unsterile supplies.

Emergency department:

Ambulance entrance.
 Receiving bath and toilet.
 Utility room.
 Supply and stretcher storage.
 Emergency operating room, near out-patient department.

Service department:

Kitchen (serving).
 Dishwashing room.
 Refrigerated garbage room.
 Can washing room.
 Dining rooms (for 1/2 of patients).
 Storage.
 General storage (20 square feet per bed).
 Housekeepers' office.
 Linen storage room.
 Sewing room.
 Linen sorting room.

Personnel facilities:

Locker and toilet rooms (male and female).
 Attendants' locker and toilet rooms (male and female).
 Out-patient department:

Waiting room.
 Examination and treatment rooms (including eye, ear, nose and throat rooms and gynecology room¹).

Record room.

Dental facilities (2 chairs desirable).
 Electroencephalographic unit.

NOTE: Out-patient department should be convenient to radiology, laboratory, therapy, emergency, etc.

(j) *Chronic disease.* (1) This area will house patients who have chronic illness, or who are in need of intensive treatment and nursing care or those who,

because of infectious diseases, need to be isolated.

(2) Nursing units of this classification should be attached to the medical and surgical building for easy access to the diagnostic and treatment facilities.

(3) Not all of these nursing units need have maximum safety and security measures.

(4) The number of beds shall be approximately 7.5 percent of the total number of patients which these buildings serve.

Location: Attached to medical and surgical building.

General: Corridors to service department and adjunct facilities.

Nursing units (to contain not more than 30 beds) suggested bed distribution (of each nursing unit):

	Patients
Two 4-bed wards.....	8
Three 2-bed wards.....	6
Eight 1-bed rooms.....	8
Total	22

Facilities in each nursing unit:

Doctors' office (for each 2 units).
 Examination room.
 Nurses' station.
 Utility room.
 Bed pan facilities.
 Pantry (for each 2 nursing units).
 Dining room (for 1/2 of patients in nursing unit).
 Patients' locker room.
 Patients' wash room.
 Patients' toilet.
 Patients' dressing room.
 Patients' shower or bath room.
 Day room (30 square feet per patient).
 Closet (recreational and occupational therapy equipment).
 Stretcher and wheel chair closet.
 Linen closet.
 Janitors' closet.

(k) *Tuberculosis.* (1) For patients of this classification, it is recommended to use the requirements of the tuberculosis hospital. In addition, patients will be grouped according to behavior as Quiet or Disturbed. Security and safety measures comparable to those of the reception area are required.

(2) The number of beds shall be determined as approximately 5 percent of the total patients which this building serves.

(1) *Gymnasium, theater, recreation, library and chapel.* (Combination or separate buildings acceptable.)

Location: Adjacent to main group of nursing and reception areas.

General:

Entrance lobby.
 Coat rooms and toilets (male and female).
 Personnel toilets (male and female).
 Mechanical room.

Theater facilities:

Office.
 Hall (seating capacity based on 7 square feet per person with 40 percent attendance of patients and personnel).
 Projection booth.

Stage.

Dressing rooms with toilets (two for each sex).
 Work shop.

Chapel facilities:

Three offices for ecclesiastics.
 Toilets.
 Three small prayer rooms.
 Portable altars (where chapel is not separate).

Storage rooms.

Gymnasium facilities:

Recreational therapists' office.

Personnel locker and toilet rooms (male and female).
 Patients' locker and toilet rooms (male and female).
 Basketball court (standard college size plus space for collapsible seating).
 Small gymnasium (for exercise equipment).
 Storage rooms.
 Recreational facilities:
 Chief recreational therapist's office.
 Bowling alleys (with space for spectators).
 Billiard room.
 Ping pong room.
 Patients' barber shop.
 Patients' beauty shop.
 Canteen (for light lunch, drinks, etc.):
 Office and table areas.
 Cooking and fountain areas.
 Dishwashing and sterilizing.
 Storage.
 Garbage refrigeration.¹
 Can washing facilities.
 Sales rooms.
 Storage room.
 Library:
 Librarians' office.
 Reading room (current and request matter).
 Stock room.
 Work room and storage space.
 Music rooms:
 Music therapists' office.
 Music room (approximately 500 square feet with portable stage).
 Store rooms.
 Music rooms (approximately 250 square feet).

(m) *Occupational therapy.*

Location: Adjacent to main group of nursing areas and reception area.

General:
 Entrance lobby.
 Patient coat room and toilets (male and female).
 Personnel coat room and toilets (male and female).
 Mechanical room.
 Administration: Office for occupational therapist.
 Facilities:
 Open floor space (for occupational equipment).
 One or more special purpose rooms.
 Storage rooms (for materials and equipment).
 Industrial therapy occupations should be located near the service group of buildings.

(n) *Central kitchen and dining rooms.*

Location: In main group of nursing buildings.

General: Load on dining rooms, kitchens and preparation will vary; see requirements of each.

Men patients' coat room and toilet.¹
 Women patients' coat room and toilet.¹
 Men attendants' coat room and toilet.
 Women attendants' coat room and toilet.
 Dining rooms: Patients' and personnel (capacity 15 square feet per person).

Kitchen:
 Dietitians' office and toilet.
 Complete cooking and baking facilities.
 Dishwashing room.
 Preparation (meat and vegetables).
 Adequate refrigeration.
 Day storage.
 Garbage refrigeration.¹
 Can washing facilities.
 Janitors' closet.
 Personnel lockers and toilets.

(o) *Storage buildings.*

Location: In service groups of buildings.
 General: Area (20 square feet per patient).

(p) *Laundry.* Adequate to process seven full days of laundry per work week.

Location: In service group of buildings.

Facilities:
 Manager's office and toilet.
 Receiving room.
 Sorting area.
 Contaminated receiving room.
 Sterilizing room.
 Processing room.
 Clean linen storage.
 Sewing room.
 Personnel locker and toilet room.

(q) *Heating plant.*

Location: In service group of buildings.

General:
 Heating plant (to be determined by engineering studies).
 Emergency generating facility.
 Office.
 Personnel toilets.
 General repair shop.
 Carpenter shop.
 Electrical shop.
 Plumbing shop.
 Paint shop.

(r) *Incinerator.* As required. See § 53.163(a) (13).

§ 53.147 *Mental Hospital (intensive care).*

(a) *General.* (1) The principles of psychiatric safety shall be followed throughout. Materials and details of construction shall be such that patients will not be afforded opportunity for escape, suicide, etc. Care must be taken to avoid sharp projections of corners of structure, exposed piping, heating elements, fixtures, hardware, etc.

(2) For requirements of sizes of doors, widths of corridors, sizes of elevators, provisions for ventilation, fire protection, etc., see sections on Details, Finishes, etc.

(b) *Administration department.*

Up to and including 100 beds:
 Business office with information counter.
 Chief psychiatrist's office.
 Chief psychologist's office (if there is no out-patient department).
 Record office.
 Director of nurses' office.¹
 Social service offices (if there is no out-patient department to be near receiving).
 Staff lounge.
 Lobby.
 Public toilets.
 From 100 to 500 beds:
 Business office.
 Chief psychiatrist's office.
 Chief psychologist's office (if there is no out-patient department).
 Social service offices (if there is no out-patient department).
 Director of nursing.
 Record room.
 Staff lounge.
 Library and conference room.
 Lobby.
 Public toilets.
 Toilets for administrative personnel.

(c) *Receiving department.*

Facilities for male and female receiving:
 Entrance hall.
 Dressing room.
 Bath and toilet room.
 Medical examination room.
 Waiting room.
 Stretcher closet.
 Clerks' offices.
 Doctors' offices.

(d) *Adjunct diagnostic and treatment facilities.*

Laboratory:
 Up to and including 100 beds:
 Office.
 Laboratory.
 Over 100 beds: Separate spaces for office, clinical pathology, bacteriology, washing and sterilizing.
 Basal metabolism and electrocardiography:
 Up to and including 100 beds: No special provision necessary.
 Over 100 beds: Room near laboratory and convenient to out-patient department.
 Morgue and autopsy: Combination morgue and autopsy with mortuary refrigerator. (Is not required in hospital of less than 100 beds if similar facilities are available nearby.)
 Dental facilities (2 chairs desirable).
 Eye, ear, nose and throat suite.
 Electro-encephalographic suite.
 Radiology:
 Up to and including 100 beds: One radiographic room and dark room and convenient to out-patient department.
 Over 100 beds: At least one additional radiographic room.
 Physical therapy:
 Electro-therapy.
 Hydro-therapy with exercise space.
 Continuous tub and pack room.²
 Small gymnasium, convenient to outdoor area, and to disturbed patients.
 Pharmacy: One room with minimum facilities for compounding.
 Occupational therapy:
 Space for small woodworking tools and benches for carpentry, metal work, leatherwork, printing, weaving, rug making, etc.
 Office.
 Storage room.

(e) *Surgical department.*

Operating rooms:
 Major: One.
 Minor: One, with adjoining splint room.
 Auxiliary rooms:
 Sub-sterilizing facilities.
 Scrub-up facilities.
 Clean-up room.
 Anesthesia room.¹
 Anesthesia storage.
 Doctors' locker room with toilet.
 Nurses' locker room with toilet.
 Storage closet.
 Stretcher closet.
 Janitors' closet.
 Storage room for sterile supplies and instruments.
 Surgical department to be located to prevent traffic through it from other parts of the hospital.
 Central sterilizing and supply room—divided into work space, sterilizing space, and sterile storage—adjacent room for storage of unsterile supplies.

(f) *Nursing department.*

General: The layout and the design of details to be such that the patient will be under close observation and will not be afforded opportunity for escape, suicide, hiding, etc. No patients' bedrooms shall be located on any floor which is below grade. Provisions shall be made for the following classifications:

New admissions (male).
 New admissions (female).
 Quiet ambulant (male).
 Quiet ambulant (female).
 Medical and surgical.
 Disturbed (male).
 Disturbed (female).
 Alcoholic (male).
 Alcoholic (female).

² If required by program.

¹ Desirable but not mandatory.

Criminalistic (male).
Criminalistic (female).
Children.

Minimum room areas:

80 square feet per bed in alcoves and four-bed rooms.

100 square feet in single rooms.

40 to 50 square feet per patient in day rooms and preferably divided into one large and one small room.

Facilities for each nursing unit:

Doctors' office and examination room.

Nurses' station and toilet.

Day room.

Utility room.

Pantry.

Dining room.

Wash room and toilets.

Patients' locker.

Shower and bath room.

Storage closet (for recreational and occupational therapy).

Supply closet.

Linen closet.

Janitors' closet.

Stretcher closet (medical and surgical unit).

Bedpan facilities (medical and surgical unit).

Isolation suite: In medical and surgical unit

(g) Service department.

Dietary facilities:

Main kitchen and bakery.

Dietitians' office.

Dishwashing room.

Adequate refrigerators.

Garbage refrigerator.¹

Can washing room.

Day storage room.

Staff dining room (12 square feet per person).

Housekeeping facilities:

Laundry (if provided): Capacity shall be adequate to process full 7 days' laundry in work week.

Sorting area.

Processing room.

Clean linen and sewing room separate from laundry.

Housekeeper's office: Near linen storage.

Mechanical facilities:

Boiler room and pump room (if provided).

Engineers' office.

Shower and locker room.

Maintenance shops—carpentry, painting, mechanical repair rooms.

Employees' facilities:

Nurses' locker rooms. If no nurses' residence:

Locker room.

Rest room.

Toilet and shower room.

Attendants' locker rooms. If no attendants' residence (male and female):

Locker room.

Toilet and shower rooms.

Other female help lockers:

Locker room.

Rest room.

Toilet and shower room.

Other male help lockers:

Locker room.

Toilet and shower room.

Storage:

Record space.

General storage: 20 square feet per bed and to be concentrated in one area.

(h) Out-patient department. (If provided.)

General:

Located on the ground floor. Entrance separate from main entrance of hospital.¹ It must be convenient to radiology, laboratory and physical therapy.

The patient load must be estimated in order to determine the number of consultation and examining rooms.

Facilities required:

Administrative:

Waiting room with public toilets.

Cashiers' and appointment office.

Social service offices.

Psychological examination rooms.

Medical examination rooms.

Utility rooms.

Children's rooms.

§ 53.148 Facility for long-term care—chronic disease hospital.

The facilities listed below need not be provided if functionally available in an adjoining hospital.

(a) Administration department.

Business office with information counter, telephone switchboard, and cashier's window.

Administrator's office.

Director of nurses' office.

Medical Director's office.

Medical record room.

Medical social service office.

Combination conference room, doctors' lounge, and staff library.

Lobby and waiting room.

Public telephone.

Public toilets.

Personnel toilets.¹

(b) Adjunct diagnostic and treatment facilities.

Except for the morgue and autopsy room, these facilities should be located convenient to both inpatients and outpatients.

Laboratory:

Adequate facilities for chemical, bacteriological, pathological and hematological services.

Basal metabolism and electrocardiography facilities.

Morgue and autopsy room: In Chronic Disease Hospitals of 100 beds or more. Desirable but not mandatory in Chronic Disease Hospitals of under 100 beds if such services are available locally.

Radiology:

Each Chronic Disease Hospital to have at least one radiographic room with toilet, adjoining dark room, film filing space and dressing facilities.

Pharmacy:

Drug room with minimum facilities for compounding and dispensing. Complete pharmacy may include facilities for bulk compounding and solution preparation depending on policy of hospital.

Physical therapy:

Examination room.

Office and work space for physical therapy staff.

Rehabilitation gymnasium for adults.²

Rehabilitation gymnasium for children if children are included in program.²

Hydrotherapy area.²

Thermotherapy and massage area.²

Storage for supplies and equipment.

Outdoor exercise area.²

Occupational therapy:

Office and work space for occupational therapy staff.

Therapy area:

In large units space should be divided for diversified work. (Separate room for children is desirable.)

Storage for supplies and equipment.

Toilet facilities for physical therapy and occupational therapy departments.

Facilities for teaching activities of daily living.

Speech and hearing facilities:¹

Offices for therapists and space for examination and treatment.

Artificial appliance facilities:²

Space for fitting and adjustment service.

(c) Out-patient department.

Should be provided only if survey indicates that an out-patient department is needed. Should be located on the most easily accessible floor and have convenient access to radiology, pharmacy, laboratory and rehabilitation facilities.

The size will vary in different locations and is not necessarily proportional to the size of the hospital. The patient load must be estimated to determine the number and type of rooms required.

Administration:

Waiting space with public toilets.

Appointment and cashier's desk.

Medical social service office.

Clinical:

Examination and treatment rooms: Number and specialties to be determined by the character of the patient load.

Utility room.

(d) Nursing department.

General:

No patients' room shall have more than 4 beds. Six beds, not more than 3 beds deep from outside wall, will be permitted in chronic disease hospitals of 100 beds or more.

Not more than 2 beds per patients' room is desirable. Each patients' room shall have a lavatory. A toilet room with lavatory accessible from adjoining patients' room is recommended. Each nursing unit shall have a separation room.

No patients' room shall be located on any floor which is below grade.

Size of nursing unit:

Should not be more than 40 beds. Larger units will be permitted if additional service facilities are provided as required.

Minimum patients' room areas:

80 square feet per bed (100 square feet desirable) in multi-bed patients' rooms; 100 square feet per bed (125 square feet desirable) in one-bed patients' rooms.

Service facilities in each nursing unit:

Nurses' station.

Nurses' toilet.

Utility room.

Treatment room.

Floor pantry.

Solarium:

Provide 25 square feet per bed for 75 percent of beds on nursing unit.

Dining room:

Provide 25 square feet per bed for 75 percent of beds on nursing unit.

The percentage of the beds for which solarium and dining area must be provided may be reduced depending on the type of patient to be cared for.

It is recommended that the dining and solarium areas be adjacent so that they can be combined into one room for recreational and other group activity purposes.

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 8 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough, a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

1 bathtub.

1 shower. (A separate bath room for each sex, containing at least one bathtub and one shower, is recommended. A ratio of one bathtub or one shower for each 10 beds is desirable.)

Stretcher and wheelchair parking space.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

Patient's laundry.¹

NOTE: It is recommended that a specially designed nursing unit, similar to that required in the section on rehabilitation fa-

¹ Desirable but not mandatory.

² If required by program.

cilities in a hospital, be provided for rehabilitation patients in the chronic disease hospital.

(e) *Surgical department.*²

Shall be located to prevent traffic through it to any other part of the hospital.
Major operating room.
Scrub-up facilities.
Anesthesia equipment storage.
Clean-up room.
Storage closet.
Janitor's closet.
Central sterilizing and supply room.

If a surgical department is not included the central sterilizing and supply room must be provided elsewhere in the hospital.
Doctors' locker room with toilet. (Shower desirable but not mandatory.)
Nurses' locker room with toilet. (Shower desirable but not mandatory.)

(f) *Dental department.*

Facilities for dental diagnosis, treatment and laboratory procedures.

(g) *Service department.*

Dietary facilities:

Main kitchen and dieto-therapy facilities.
Dietitians' space.
Appropriate food service facilities.
Dishwashing room.
Adequate refrigeration.
Garbage disposal facilities.
Day storage room.
Personnel dining room: Provide 12 square feet per person. May be designed for multiple seating.
Janitor's closet.

Housekeeping facilities:

Laundry; unless commercial or other laundry facilities are available, each chronic disease hospital shall have a laundry of sufficient capacity to process full 7 days' laundry in work week and contain the following areas:

Sorting area.
Processing area.
Clean linen and sewing room separate from laundry.

Where no laundry is provided in the hospital, a soiled linen room and a clean linen and sewing room shall be provided.

Housekeeper's office.

Mechanical facilities:

Boiler and pump room.
Desk space for engineer.
Shower and locker facilities.¹

Maintenance shops: In hospitals up to and including 100 beds at least one room shall be provided. In larger hospitals separation of carpentry, painting, and plumbing should be provided.

Employees' facilities:

Nurses' lockers:⁴
Locker room: one locker for each 2 hospital beds.
Rest room.
Toilet room. (Shower desirable but not mandatory.)
Female help lockers:⁴
Locker room.
Rest room.
Toilet room. (Shower desirable but not mandatory.)
Male help lockers:
Locker room.
Toilet room. (Shower desirable but not mandatory.)
Ratio of male and female help will vary and size of locker rooms must be adjusted accordingly.

Storage:

Inactive record storage.
Patients' clothes storage room.
General storage: 20 square feet per bed and to be concentrated in one area.
Storage of outdoor equipment.³

§ 53.149 *Nurses' residence.*

Rooms:

One nurse per room:¹
100 square feet in single rooms.
150 square feet in double rooms.
Laboratory in each room.²
Closet or wardrobe for each nurse.
No nurses' rooms shall be located on any floor which is below grade.

Common floor facilities:
Lounge with kitchenette to serve 30 to 60 nurses.

Laundry room with 2 trays and 2 ironing boards to serve each 60 nurses.¹ If not provided on each floor, a centrally located laundry room containing the same proportion of trays and ironing boards shall be provided.
Bath room: One shower or tub for each 6 beds.

Toilet room: With lavatories in bedrooms—1 water closet for each 6 beds and 1 lavatory for each 3 water closets. Without lavatories in bedrooms—1 water closet for each 6 beds and 1 lavatory for each 5 beds.

Linen closet.

Janitors' closet.

Telephone facilities.³

General facilities:

Lobby.

Office.

Main lounge (with alcoves¹).

Men's toilet (off lobby).

Storage room for trunks.

Laundry distribution room.¹

Employees' toilet room.¹

Boiler room (if facilities not available elsewhere).

§ 53.150 *School of nursing.*

(a) *Teaching facilities.*

One science laboratory room.
One dietetics laboratory room.
One nursing arts laboratory with adequate facilities.
One classroom to accommodate approximately twice the number of students as the nursing arts laboratory.
One lecture room to accommodate total student body.
One library.

(b) *Offices.* Offices for instructors.

(c) *General.*

Storage room convenient to class rooms.
Toilet room.
Janitors' closet.

§ 53.151 *Public health centers.*

(a) *Administration.*

Where health department administration personnel has no offices in health center:
Waiting room.
Public toilets.
Office for public health nurses.
Staff toilets.
Assembly space: Waiting room may be used for this purpose where health centers serve under 30,000 population.
Where health department administration offices are provided in health centers add:
Health officer's office.
Office for sanitary engineers.
Health education office.
Staff room and library: In health center for over 30,000 population.

(b) *Clinical.* The clinical services, and extent of such services, provided in

the health center will depend on the program contemplated by the health department to take care adequately of the particular needs of the population served by the health center.

For populations up to 30,000:

Two examination rooms for maternal and child health, V.D. and TB clinics.

Consultation room.

Utility room.

Dental room.¹

For population over 30,000, if the following services are provided, they shall include areas noted as follows:

Maternal and child health:

Demonstration room.

Examining room.

Toilet.

Tuberculosis and X-ray:

X-ray room with dressing booths.

Dark room.

Consultation and viewing room.

Venereal disease:

Examination room.

Treatment room.

Consultation room.

Toilet.

Dental:

Dental facilities (2 chairs desirable).

Small dental laboratory.

Pharmacy: Dispensing room.

(c) *Laboratory.* The volume and type of laboratory tests in the health center will vary with local conditions and will determine the size of the laboratory. Such factors as density of population, area to be served, type of center, municipal, county, or rural, its use as a branch of the State laboratory and availability of other laboratory facilities must be considered.

One room is required for urinalysis, hematology, and dark field examinations for syphilis and storage of biologicals furnished by the State Health Department. Where food control, sanitation and communicable disease work is contemplated another room shall be furnished for this purpose.

(d) *Service.*

General storage areas:
Bulk office and janitors' supplies.
Bulk clinical supplies.
Educational material.

Storage closets:

Office supplies.

Medical supplies.

Educational material.

Janitors' closet: Centrally located.

Heating plant.

§ 53.152 *State public health laboratory.*

(a) *Administration department.*

Director's office.
Secretary's office.
Assistant Director's office.
Information desk and switchboard.
Clerical office.
Office supply room.
Library.
Staff meeting room.
Records and filing room.
Mailing and receiving room for incoming specimens, distribution of containers and of biologicals.
Specimen and emergency treatment room.

(b) *Bacteriology department.*

Office.
Water, food and milk laboratory.
Enteric disease and agglutination laboratory.
Tuberculosis laboratory.

¹ Desirable but not mandatory.

² If required by program.

⁴ May be combined.

Diagnostic laboratory.
Incubator room.
Sterile room.
Rabies room.
Adequate refrigeration.

(c) *Syphilis serology department.*

Office.
Laboratory: Section of room separated by partitions for centrifuges and preparation of specimens.

(d) *Chemistry department.*

Office.
Laboratory: Facilities for water, food, drug, toxicology, and/or industrial hygiene analyses.
Instrument room: Facilities for darkening.

(e) *Research and investigation.*

Laboratory: Complete laboratory facilities within unit.

(f) *Biologicals department.*

Adequate refrigeration.
Deep freeze unit.
Room temperature storage.

(g) *Central services.*

Culture media and reagent preparation room.
Glassware cleaning room.
Acid cleaning unit.
Sterilizing room for culture media and clean glassware only.
Supply room for storage and issue of sterile supplies, general supplies, chemicals, and glassware. Adjacent to sterilizing and glassware cleaning room.
Bulk storage room.
Janitor service room.
Maintenance and utilities unit: Provisions for metal and woodwork, and glassblowing.
Incinerator (animal).
Animal quarters:
Animal rooms.
Room for cleaning and sterilizing cages.
Preparation room for food and bedding.
Operating and animal inoculation rooms.

(h) *Facilities for personnel.*

Men's locker room with washroom and shower.
Women's locker room with washroom and shower.
Rest room.
Lunch room.
Staff toilets.

(i) *Additional facilities.* If the following activities are included, minimum requirements will be as follows:

Consultation and evaluation service to local laboratories:

Office.
Laboratory.
Manufacture of biologicals: This department, including Blood and Blood Products, shall be adequately isolated from the other laboratories. In the case of smallpox and tetanus vaccine preparation separation may be satisfactory in the same building if a separate entrance is provided and no interior connection exists to this department. A separate mechanical ventilating system must be provided.

Office.
Laboratory: Cubicles for isolation work.
Culture media room.
Sterile room.
Sterilizing room.
Glasswashing room.
Adequate refrigeration.
Deep freeze unit.
Storage room, controlled temperature.
Packaging room.

Blood and blood products:
Laboratory: Space and equipment for processing.
Sterile room.
Office (may be shared with biologicals department).
Adequate refrigeration (may be shared with biologicals department).
Storage room (may be shared with biologicals department).
Pathology department: Laboratory.
Clinical laboratory department: Laboratory.
Virology department: This department shall be efficiently isolated from other laboratories including a separate mechanical ventilating system:

Office.
Laboratory: Cubicles for isolation work.
Sterile room.
Sterilizing room.
Inoculation and operating room.
Animal quarters:
Facilities for storage of food and bedding.
Cleaning and sterilizing of cages.
Locker room with washroom and shower.

§ 53.153 *Diagnostic or treatment centers.*

(a) *General.* (1) The extent of the diagnostic, treatment, and ancillary facilities will be determined by the services contemplated and the estimated patient load.

(2) Where the facility is to be an integral part of a hospital, the requirements of adjunct diagnostic and treatment facilities and outpatient department of general hospital, § 53.144(b) shall apply.

(3) Where a diagnostic or treatment center is not to be an integral part of a hospital, then the facilities listed below must be provided unless available for convenient use in an associated health facility.

(4) The planning of diagnostic or treatment centers should provide for the privacy of the patient during interview, examination, and treatment.

(b) *Administration facilities.*

Administrative, business, and receptionist space.
Medical records space.
Waiting space.
Public telephone.

(c) *Diagnostic facilities.* (In certain types of specialized projects, such as mental health clinics, the need for radiological and laboratory facilities will be determined by the services contemplated.)

Radiographic room with adjoining dark room.
Utility and sterilizing facilities.
Laboratory.

(d) *Diagnostic and treatment facilities.* If medical examination and/or treatment are to be included the following shall be added:

Consultation, examination and treatment space is required by the services contemplated.

(e) *Service facilities.*

Storage.
Janitor's closet.
Employees' locker facilities.
Toilet facilities.
Boiler room.

Incinerator.
Accessible parking space.¹

§ 53.154 *Rehabilitation facilities (general).*

(a) Wherever possible rehabilitation facilities should be located on the ground floor. The evaluation and treatment facilities should be grouped to facilitate integration of the program and located for convenient access by inpatients and outpatients.

(b) In determining the size of facilities for inpatient and outpatient services, it should be considered that the outpatient load is usually much larger than the inpatient load.

§ 53.155 *Rehabilitation facilities (multiple disability) in a hospital.*

The facilities listed in this section which are in an existing hospital and which are conveniently located and available for use need not be provided.

(a) *Administration.*

Appointment and cashier's space.
Office for volunteer services coordinator.¹
Lobby and waiting room.
Public telephone booth.
Public toilets.
Personnel toilets.¹

(b) *Evaluation and treatment facilities.* Evaluation and treatment facilities shall include medical facilities and, depending upon the program, one or more of the following: psychological, social or vocational, as listed below.

Conference and library room.

Medical facilities:

Offices, examination rooms and work space for medical personnel such as physicians and nurses.

Dental facilities:

Office and work space for provision of appropriate dental treatment.

Physical therapy:

Office and work space for physical therapy staff.

Rehabilitation gymnasium for adults.

Rehabilitation gymnasium for children if children are included in program.¹

Hydrotherapy area.

Thermotherapy and massage area.

Storage for supplies and equipment.

Outdoor exercise area.¹

Occupational therapy:

Office and work space for occupational therapy staff.

Therapy area:

In large units space should be divided for diversified work (separate room for children is desirable).

Storage space for supplies and equipment.

Facilities for teaching activities of daily living.

Speech and hearing facilities:²

Offices for therapists and space for examination and treatment.

Artificial appliance facilities:

Space for fitting and adjustment service.

Psychological facilities:

Office and work for psychological testing evaluation and counseling.

Social service facilities:

Office space for private interview and counseling.

Vocational facilities:

Office and work space for counseling, evaluation, prevocational programs and placement. A prevocational area is not required for facilities exclusively serving children under the age of 12.

¹ Desirable but not mandatory.

² If required by program.

Special education:

Schoolroom for children if children are included in program.

General facilities:

Locker, toilet and shower facilities for patients.

Clean and soiled linen facilities.

Locker and toilet facilities for female volunteers.¹

Locker and toilet facilities for male volunteers.¹

(c) *Nursing unit for adults.*¹

General: It is recommended that this unit be located on the ground floor near the treatment area. Approximately one-fifth of the beds should be in two-bed rooms, the remainder in four-bed rooms. Each patient's room shall have a lavatory. Generous wardrobe space for each patient should be provided in the patients' rooms. A toilet room, with lavatory, accessible from adjoining patients' rooms, is recommended. No patients' room shall be located on any floor which is below grade.

Size of nursing unit:

Not more than 50 beds, 35 to 40 beds recommended.

Minimum patients' room areas:

100 square feet per bed in multi-bed patients' rooms.

Service facilities in each nursing unit for adults:

Nurses' station.

Nurses' toilet.

Utility room.

Examination and treatment room.

Floor pantry.

Solarium: Provides 25 square feet per bed for 75 percent of beds on nursing unit.

Dining room: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

It is recommended that the dining and solarium area be adjacent so that they can be combined into one room for recreational and other group activity purposes.

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 5 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough, a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

1 bathroom for each sex.

1 shower to each 8 beds.

1 bathtub.

Stretcher and wheelchair parking space.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

Telephone alcove (one per floor).

Patients' laundry.¹

(d) *Nursing unit for children.*¹

General: It is recommended that this unit be located on the ground floor near the treatment area. No patients' room should have more than 4 beds. Provide 2 two-bed rooms in each nursing unit. Each patients' room shall have a lavatory. Generous wardrobe space for each patient should be provided in the patients' room. A toilet room, with lavatory, accessible from adjoining patient's room is recommended. No patients' room shall be located on any floor which is below grade.

Size of nursing unit:

Not more than 30 beds.

Minimum room areas:

100 square feet per bed in two-bed and four-bed rooms. 80 square feet per bed recommended for crib room if provided.

Service facilities in each nursing unit for children:

Nurses' station.

Nurses' toilet.

Utility room.

Examination and treatment room.

Floor pantry.

Solarium: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

Dining room: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

It is recommended that the dining and solarium area be adjacent so that they can be combined into one room for recreational and other group activity purposes.

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 5 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

1 bathroom for each sex.

1 shower to each 8 beds.

1 bathtub.

Stretcher and wheelchair parking space.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

Telephone alcove (one per floor).

(e) *Service department.* In general the same service facilities will be required as those noted under separate rehabilitation facility (multiple disability) for inpatients and outpatients, § 53.146, except that those service facilities which are available in the adjoining hospital need not be duplicated.

§ 53.156 *Separate rehabilitation facility (multiple disability) for inpatients and outpatients.*

(a) *Administration.*

Business office with information counter, telephone switchboard and cashier's window.

Administrator's office.

Director of nurses' office.

Office for volunteer services coordinator.¹

Case records room.

Library for staff and patients.

Lobby and waiting room.

Public telephone booth.

Public toilets.

Personnel toilets.

(b) *Evaluation and treatment facilities.*

Evaluation and treatment facilities shall include medical facilities and, depending upon the program, one or more of the following: psychological, social, or vocational, as listed below.

Clinical laboratory.²

Radiology: Radiographic room with adjoining dark room, toilet and office.²

Pharmacy: Drug room with minimum facilities for compounding.²

Conference and library room.

Medical facilities:

Offices, examination rooms and work space for medical personnel such as physicians and nurses.

Dental facilities:² Office and work space for provision of appropriate dental treatment.

Physical therapy:

Office and work space for physical therapy staff.

Rehabilitation gymnasium for adults.

Rehabilitation gymnasium for children if children are included in program.¹

Hydrotherapy area.

Thermotherapy and massage area.

Storage for supplies and equipment.

Outdoor exercise area.¹

Occupational therapy:

Office and work space for occupational therapy staff.

Therapy area.

In large units space should be divided for diversified work (separate room for children is desirable).

Storage space for supplies and equipment.

Facilities for teaching activities of daily living.

Speech and hearing facilities: Offices for therapists and space for examination and treatment.²

Artificial appliance facilities: Space for fitting and adjustment service.

Psychological facilities: Office and work space for psychological testing evaluation and counseling.

Social service facilities: Office space for private interview and counseling.

Vocational facilities:

Office and work space for counseling, evaluation, prevocational programs and placement. A prevocational area is not required for facilities serving children under the age of 12.

Special education: Schoolroom for children if children are included in program.

General facilities:

Locker, toilet, and shower facilities for patients.

Clean and soiled linen facilities.

(c) *Nursing unit for adults.*

General: It is recommended that this unit be located on the ground floor near the treatment area. Approximately one-fifth of the beds should be in two-bed rooms, the remainder in four-bed rooms. Each patients' room shall have a lavatory. Generous wardrobe space for each patient should be provided in the patients' rooms. A toilet room, with lavatory, accessible from adjoining patients' rooms, is recommended. No patients' rooms shall be located on any floor which is below grade.

Size of nursing unit: Not more than 50 beds, 35 to 40 beds recommended.

Minimum patients' room areas: 100 square feet per bed in multi-bed patients' rooms.

Service facilities in each nursing unit for adults:

Nurses' station.

Nurses' toilet.

Utility room.

Examination and treatment room.

Floor pantry.

Solarium: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

Dining room: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

It is recommended that the dining and solarium area be adjacent so that they can be combined into one room for recreational and other group activity purposes.

¹ Desirable but not mandatory.

² If required by program.

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 5 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough, a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

- 1 bathroom for each sex.
- 1 shower to each 8 beds.
- 1 bathtub.

Stretcher and wheelchair parking space.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

Telephone alcove (one per floor).

Patients' laundry.¹

(d) Nursing unit for children.²

General: It is recommended that this unit be located on the ground floor near the treatment area. No patients' room should have more than 4 beds. Provide 2 two-bed rooms in each nursing unit. Each patients' room shall have a lavatory. Generous wardrobe space for each patient should be provided in the patients' rooms. A toilet room, with lavatory, accessible from adjoining patients' room is recommended. No patients' room shall be located on any floor which is below grade.

Sizes of nursing unit: Not more than 30 beds.

Minimum patients' room areas: 100 square feet per bed in 2-bed and 4-bed room. 80 square feet per bed recommended for crib room if provided.

Service facilities in each nursing unit for children:

- Nurses' station.
- Nurses' toilet.
- Utility room.
- Examination and treatment room.
- Floor pantry.

Solarium: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

Dining room: Provide 25 square feet per bed for 75 percent of beds on nursing unit.

It is recommended that the dining and solarium area be adjacent so that they can be combined into one room for recreational and other group activity purposes.

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 5 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough, a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

- 1 bathroom for each sex.
- 1 shower to each 8 beds.
- 1 bathtub.

Stretcher and wheelchair parking space.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

Telephone alcove (one per floor).

(e) Service department.

Central sterilizing and supply room.

Dietary facilities:

Main kitchen.

Dietitians' space.

Dishwashing room.

Adequate refrigeration.

Garbage disposal facilities.

Day storage room.

Personnel dining space. Provide 12 square feet per person; may be designed for multiple seatings.

Outpatients' dining facilities as required.

Janitor's closet.

Housekeeping facilities:

Laundry; unless commercial or other laundry facilities are available, each rehabilitation facility shall have a laundry of sufficient capacity to process full 7 days' laundry in work week and contain the following areas:

Sorting area.

Processing area.

Clean linen and sewing room separate from laundry.

Where no laundry is provided in the hospital, a soiled linen room and a clean linen and sewing room shall be provided.

Housekeeper's office.

Mechanical facilities:

Boiler and pump room.

Shower and locker facilities.²

Engineers' space.

Maintenance shops: At least one room shall be provided. In large rehabilitation facilities, separation of carpentry, painting and plumbing is recommended.

Employees' facilities:

Female staff and volunteers lockers:

Locker room.

Rest room.

Toilet and shower room.

Female help lockers:

Locker room.

Rest room.

Toilet and shower room.

Male staff and volunteers lockers:

Locker room.

Toilet and shower room.

Male help lockers:

Locker room.

Toilet and shower room.

Storage:

General storage. 20 square feet per bed and to be concentrated in one area.

Storage of out-door equipment.¹

§ 53.157 Separate rehabilitation facility (multiple disability) for outpatients only.

(a) Administration.

Business office with information counter, telephone switchboard and cashier's window.

Administrator's office.

Director of nurses' office.

Office for volunteer services coordinator.¹

Case records room.

Library for staff and patients.

Lobby and waiting room.

Public telephone booth.

Public toilets.

Personnel toilets.²

(b) Evaluation and treatment facilities.

Evaluation and treatment facilities shall include medical facilities and, depending upon the program, one or more of the following: psychological, social or vocational, as listed below.

Conference and library room.

Medical facilities:

Offices, examination rooms and work space for medical personnel such as physicians and nurses.

Dental facilities: ² Office and work space for provision of appropriate dental treatment.

Physical therapy:

Office and work space for physical therapy staff.

Rehabilitation gymnasium for adults.
Rehabilitation gymnasium for children if children are included in program.¹

Hydrotherapy area.

Thermotherapy and massage area.

Storage for supplies and equipment.

Outdoor exercise area.¹

Occupational therapy:

Office and work space for occupational therapy staff.

Therapy area: In large units space should be divided for diversified work (separate room for children is desirable).

Storage space for supplies and equipment.

Facilities for teaching activities of daily living.

Speech and hearing facilities: ² Offices for therapists and space for examination and treatment.

Artificial appliance facilities: Space for fitting and adjustment service.

Psychological facilities: Office and work space for psychological testing evaluation and counseling.

Social service facilities: Office space for private interview and counseling.

Vocational facilities:

Office and work space for counseling, evaluation, prevocational programs and placement. A prevocational area is not required for facilities exclusively serving children under the age of 12.

Special Education:

Schoolroom for children if children are included in program.

General facilities:

Locker, toilet and shower facilities for patients.

Clean and soiled linen facilities.

(c) Service facilities.

Dietary facilities:²

Housekeeping facilities: Clean and soiled linen storage.

Janitors' closet(s).

Mechanical facilities:

Boiler room.

Maintenance shop.

Employees' facilities:

Female staff and volunteers lockers:

Locker room.

Rest room.

Toilet and shower room.

Female help lockers:

Locker room.

Rest room.

Toilet and shower room.

Male staff and volunteers lockers:

Locker room.

Toilet and shower room.

Male help lockers:

Locker room.

Toilet and shower room.

Storage:

General storage.

§ 53.158 Single disability rehabilitation facility.

The requirements for a single disability rehabilitation facility will be dependent upon the specific project program, which shall include, however, services in the four basic areas—medical, psychological, social and vocational. In general the single disability rehabilitation facility will follow the pattern established for the multiple disability rehabilitation facility. In other respects the general standards set forth herein shall apply.

¹ Desirable but not mandatory.

² If required by program

§ 53.159 Facility for long-term care—nursing home.

(a) *General.* (1) The facilities listed in this section need not be provided if functionally available in an adjoining hospital.

(2) Nursing homes should be planned to approximate the home atmosphere as closely as possible. It is desirable that larger bedrooms be provided than are generally provided in general hospitals, that each bed be equitably placed in relation to the windows, that wardrobe and closet space in patients' rooms be more generous. The use of more open, informal planning, the provision of inviting recreational spaces both indoors and out, the use of decoration, color, furnishings, etc., to minimize institutional effect is recommended.

(b) *Administration department.*

Business office.¹
Administrator's office.¹
Consultation room.¹
Lobby and waiting room.
Public toilet facilities.
Public telephone.

(c) *Ancillary facilities.*

Recreation room.
Occupational activities room.
Patients' dining room.
Provide at least 50 square feet per bed for 75 percent of the total beds in the nursing home for recreation, occupational activities and patients' dining.
It is recommended that the recreation, occupational activities and patients' dining areas be adjacent so that they can be combined into one room for recreational and other group activity purposes.
Physical therapy services as required.
Patients' laundry.¹
Storage for occupational and recreational equipment.
Outdoor recreation area.²

(d) *Nursing department.*

General: No patients' room shall have more than 4 beds. Six beds, not more than three beds deep from outside wall, will be permitted in nursing homes of over 100 beds. Not more than 2 beds per patients' room is desirable. Each patients' room shall have a lavatory. A toilet room, with lavatory, accessible from adjoining patients' room is recommended. At least one single room with private toilet shall be provided in each nursing unit for each sex for purposes of medical isolation, incompatibility, personality conflict, etc. No patients' room shall be located on any floor which is below grade.

Size of nursing unit: Should not have more than 40 beds. Larger units will be permitted if additional service facilities are provided as required.

Minimum patients' room areas: 80 square feet per bed (100 square feet desirable) in multiple bed patients' rooms; 100 square feet per bed (125 square feet desirable) in one-bed patients' rooms.

Service facilities for each nursing unit:
Nurses' station.
Nurses' toilet.
Utility room.
Treatment room.

Floor pantry: one for each nursing floor in multi-story buildings.³

Toilet facilities:

If centralized toilets are provided, a toilet room for each sex at a ratio of 1 water closet to each 8 beds will be required. One of the water closet enclosures in each toilet room should be at least 5 feet by 6 feet to permit toilet training.

If toilets provided adjacent to patients' rooms are not large enough, a separate training toilet, at least 5 feet by 6 feet, should be provided.

Bedpan facilities.

Bathing facilities:

1 bathtub.
1 shower. (A separate bath room for each sex, containing at least one bathtub and one shower, is recommended. A ratio of one bathtub or one shower for each 10 beds is desirable.)

Stretcher and wheelchair parking area.

Clean linen storage.

Equipment and supply storage.

Janitor's closet.

(e) *Service department.*

Dietary facilities:

Kitchen.
Dishwashing room.
Adequate refrigeration.
Garbage disposal facilities.
Personnel dining facilities.
Janitors' closet.

Housekeeping facilities:

Clean linen facilities.
Soiled linen facilities.
If commercial laundry is not available, laundry facilities shall be provided.

Mechanical facilities:

Boiler room.
Maintenance facilities—at least a bench in boiler room. In larger Nursing Homes, separate maintenance facilities should be provided.
Incinerator.¹

Employees' facilities:

Male locker room and toilet.
Female locker room and toilet.

Storage:

General storage—15 square feet per bed and to be concentrated in one area.
Patients' clothes storage room.
Storage for outdoor equipment.¹

§ 53.160 Details.

The following general requirements apply to all hospitals. Conditions in special hospitals, not covered in the general requirements, are specifically noted.

(a) *General requirements for hospitals.*

Door widths: 3 feet 8 inches (3 feet 10 inches preferable) at all:

Bedrooms.
Treatment rooms.
Operating rooms.
X-ray therapy rooms.
Delivery rooms.
Solariums.
X-ray rooms.
Physical therapy rooms.
Labor rooms.

Door swings: No doors shall swing into the corridor except closet doors.

Corridor widths: 7 feet (8 feet preferred). A greater width should be provided at elevator entrances.

Stair widths: The width of stairways shall be not less than 3 feet 8 inches. The width shall be measured between handrails where handrails project more than 3½ inches.

Elevators: Platform size—5 feet 4 inches x 8 feet. Door opening—3 feet 10 inches. See also mechanical section.

Laundry chutes: Use optional. Where used 2'0" minimum diameter.

Nurses' call system: (Does not apply to mental and psychiatric hospitals and mental units in general hospitals.) Call station between each two beds in two-bed rooms and four-bed rooms and one in each one-bed room.

Corridor dome light over each nursing room.

Dome light and buzzer at nurses' station, utility room and floor pantry.

Fire safety:

Exit facilities:

All exit facilities shall follow the recommendations of the Building Exits Code of the National Fire Protection Association.

Fire protection facilities:

Other fire protection requirements such as standpipes, sprinklers, chemical fire extinguishers and fire alarm systems shall conform to the requirements of any one of the codes listed in § 53.152 (a) (Structural Requirements).

Fire-resistive construction:

See § 53.162(c) for fire-resistive requirements affecting the structural members and connections.

Ray protection: X-ray rooms, surgeries, cystoscopic rooms and other areas containing X-ray producing equipment, other than mobile equipment, shall have ray protection as recommended in applicable handbooks of the National Bureau of Standards.

Radiol isotopes: Rooms or areas where radiol isotopes are used or stored, including teletherapy apparatus utilizing Radium, Cobalt-60, or Cesium-137 or other radiol isotopes, shall have the ray protection necessary to limit the radiation in occupied areas to those levels required by the Atomic Energy Commission. The methods for determining radiation barriers shall be those established in the applicable handbooks of the National Bureau of Standards.

X-ray equipment: X-ray equipment and installation shall comply with recommendations contained in the National Electrical Code and applicable handbooks of the National Bureau of Standards.

Ceiling heights:

Boiler room:

Not less than 12'0" except that a lesser height may be used for these small buildings which may use a domestic type packaged heating unit. When a boiler is set in a depressed pit area, the height shall be measured from the pit floor.

Laundry:

Not less than 11'0" (a higher ceiling is desirable).

Kitchen:

Not less than 10'0" (a higher ceiling is desirable).

*Operating rooms, delivery rooms, Cystoscopic rooms, emergency rooms and similar rooms having ceiling-mounted light fixtures—*not less than 9'0" (a higher clearance may be necessary for some surgical lights).

All other rooms except those containing special equipment which may require a greater height (X-ray, etc.)—not less than 8'0" except that ceiling heights for corridors, storage rooms, patients' room toilets and other minor auxiliary rooms may be lower.

Insulation in ceilings: Ceilings of boiler rooms, kitchens and laundries shall be insulated where the floor directly above them is to be used for hospital purposes.

Parking space: Adequate parking space should be available for all health facilities.

(b) *Chronic disease hospitals, rehabilitation facilities and nursing homes.*

Space allowances: Space allowances shall be consistent with the need in areas used by patients using crutches, wheelchairs or wheel stretchers.

¹ Desirable but not mandatory.

² If required by program.

³ May be combined.

Doors: All doors through which patients will pass shall be at least 3 feet 8 inches wide. Doors at least 3 feet wide will be permitted at individual toilets adjacent to patients' bedrooms.

Corridors: Corridors used by patients shall be at least 8 feet wide. A greater width should be provided at elevator entrances.

Handrails: Handrails will be required on both sides of corridors used by patients in chronic disease hospitals and nursing homes. Handrails are not required in corridors of rehabilitation facilities.

Thresholds: Thresholds at doorways shall be flush.

Telephone alcoves: Telephone alcoves shall be a minimum of 4 feet square. Phone shall be located on a shelf convenient for patients in wheelchairs. Doors to telephone booths are not recommended.

Drinking fountains: Drinking fountains shall be located in corridors of nursing units and treatment areas and lobby. The fountain shall be accessible to patients in wheelchairs.

Brackets: In rehabilitation facilities brackets should be provided adjacent to patients' beds for braces and crutches.

Water closet stalls: Water closet stalls for patient use shall have handrails on both sides. Curtains are recommended in lieu of doors to stalls.

Toilet rooms: Toilet rooms adjacent to patients' rooms shall permit movement of wheelchairs and shall have handrails on both sides.

Hardware: Hardware on water closet enclosures shall be operable from outside.

Lavatories: The front edge of the lavatory for patient use shall be set not less than 22 inches from the wall to which it is attached.¹ They shall be supported on brackets to allow wheelchairs to slide under.

Mirrors: Mirrors shall be arranged for the convenience of patients in wheelchairs as well as patients in a standing position.

Bathtubs: Bathtubs shall not be elevated in rehabilitation facilities. It is recommended that bathtubs shall not be elevated in chronic disease hospitals and nursing homes. Handrails shall be provided at all bathtubs.

Showers: Showers should be approximately 4 feet square and should have handrails and curtains. Curbs shall be omitted.

(c) *Mental hospitals, psychiatric hospitals and psychiatric units in general hospitals.* The principals of psychiatric security and safety shall be followed throughout. Materials and details of construction shall be such that patients will not be afforded opportunity for escape, suicide, hiding, etc. Care must be taken to avoid projecting sharp corners, exposed piping, heating elements, fixtures, hardware, etc.

(d) *Public health centers and diagnostic or treatment centers.* Width of corridors shall be not less than 5'0". Greater width preferred. Windows of examination and treatment rooms shall be glazed with obscure glass to insure privacy.¹

(e) *State public health laboratories.* Provide separate air conditioning or ventilation system for bacteriological and virus laboratories with ample supply and exhaust to function properly with closed windows. Emergency showers shall be provided in chemical laboratories. Each chemical laboratory room shall have a minimum of two exits. All windows must be screened.

§ 53.161 Finishes.

(a) General.

Floors:

The floors of the following areas shall have smooth, waterproof surfaces which are wear resistant:

Toilets:

Baths.
Bedpan rooms.
Floor pantries.
Utility rooms.
Treatment rooms.
Sterilizing rooms.
Janitors' closets.

The floors of the following areas shall be smooth and easily cleaned:

Pharmacies.
Laboratories.
Patient rooms.

The floors of the following areas shall be waterproof, greaseproof, smooth and resistant to heavy wear:

Kitchens.
Butcher shops.
Food preparation.
Formula rooms.

Floors in anesthetizing areas and in rooms used for storage of flammable anesthetic agents in surgical suites shall be conductive as required by the NFPA No. 56—Code for Use of Flammable Anesthetics.

Walls:

The walls of the following areas shall have a smooth surface with painted or equal washable finish in light color. At the base, they shall be waterproof and free from spaces which may harbor ants and roaches:

All rooms where food and drink are prepared, served or stored.

The walls of the following areas shall have waterproof painted, glazed or similar finishes to a point above the splash or spray line:

Kitchens.
Sculleries.
Utility rooms.
Baths.
Showers.
Dishwashing rooms.
Janitors' closets.
Sterilizing rooms.
Spaces with sinks.

The walls of the following areas shall have waterproof glazed, painted or similar surface which will withstand washing to a distance of not less than 5'0":

Operating rooms.
Delivery rooms.

Ceilings:

The ceilings of the following areas shall be painted with a waterproof paint:

Operating rooms.
Delivery rooms.

All sculleries, kitchens and other rooms where food and drink are prepared.

The ceilings of the following areas shall be acoustically treated:

Corridors in patient areas.
Nurses' stations.
Labor rooms.
Utility rooms.
Floor pantries.
Kitchens.¹

(b) State public health laboratory.

Floors:

Resilient, smooth and stain resistant: All laboratories other than chemistry laboratory.

Resilient, smooth and acid resistant: Chemistry laboratories.

Smooth, waterproof, grease-proof, easily cleaned, non-slip, resistant to heavy traffic:

Culture media rooms.
Glasswashing rooms.
Sterilization rooms.
Acid cleaning rooms.
Animal rooms.

Walls:

Waterproof, painted, glazed or similar finishes to a point above the splash or spray line. They shall be without cracks, and in conjunction with floors shall be waterproof and free of cracks and spaces which may harbor ants and roaches:

Laboratories.
Incubator rooms.
Sterilizing rooms.
Culture media rooms.
Glasswashing rooms.
Acid cleaning rooms.
Inoculation and operating rooms.
Animal rooms.

Same as above, but finish to reach to ceiling:

Sterile rooms.

Ceilings: Waterproof painted: Sterile rooms. Shelves and cabinets: Shelves and cabinets which are used for the storage of food, dishes and cooking utensils shall be so constructed and mounted that there shall be no openings or spaces which cannot be cleaned and which might harbor vermin or insects. Cabinets which are used for the storage of open food containers and dishes shall be dust tight.

(c) Chronic disease hospitals, rehabilitation facilities and nursing homes.

Wainscot: A wainscot of durable material should be provided in all rooms used by patients for protection of walls against damage caused by wheelchairs, stretchers and carts. Such a wainscot is desirable but not mandatory in chronic disease hospitals and nursing homes.

§ 53.162 Structural.

(a) *Codes.* In addition to compliance with the standards set forth in this subpart, all applicable local and State building codes and regulations must be observed. In areas which are not subject to local or State building codes, the recommendations of any one of the following national codes shall apply insofar as such recommendations are not in conflict with the standards set forth in this subpart.

1. National Building Code: National Board of Fire Underwriters, 35 John Street, New York 38, N.Y.

2. Basic Building Code: Building Officials Conference of America, 1525 East 58d Street, Chicago 15, Ill.

3. Southern Building Code: Southern Building Code Congress, Brown-Marx Building, Birmingham, Ala.

4. Uniform Building Code: International Conference of Building Officials, 610 South Broadway, Los Angeles 14, Calif.

(b) *Design data.*—(1) *General.* The buildings and all parts thereof shall be of sufficient strength to support all dead, live and lateral loads without exceeding the working stresses permitted for the materials of their construction in the applicable code.

(2) *Special.* Special provisions shall be made for machine or apparatus loads which would cause a greater stress than that produced by the specified minimum live load, with due consideration of vibration or impact resulting from operation of such equipment (e.g., some portable X-ray machines weigh as much as 1,000 pounds). Consideration shall be given to structural members and connections of structures which may be subject to hurricanes, tornadoes and earthquakes. Suitable allowance shall be made for future partition changes.

¹ Desirable but not mandatory.

(3) *Live loads.* The following unit live loads shall be taken as the minimum uniformly distributed live loads for the occupancies listed:

Hospital wards, bedrooms, and all adjoining service rooms which comprise a typical nursing unit (except solaria and corridors)—40 p.s.f. Solaria, corridors in nursing units and all corridors above the first floor, operating suites, examination and treatment rooms, laboratories, toilets and locker rooms—60 p.s.f.

Corridors on first floor, waiting rooms and similar public areas, offices, conference room, library, kitchen and radiographic room—80 p.s.f.

Salways, laundry, large rooms used for dining, recreation or assembly purposes, work shops—100 p.s.f.

Records file room, storage, supply—125 p.s.f.

Mechanical equipment room (unless actual equipment loads are accurately determined)—150 p.s.f.

Roofs (except use increased value where snow and ice may occur)—20 p.s.f.

Wind—as required by local conditions, but not less than—15 p.s.f.

(c) *Construction including fire-resistive requirements.* (1) Foundations shall rest on natural solid ground and shall be carried to a depth of not less than one foot below the estimated frost line or shall rest on leveled rock or load-bearing piles when solid ground is not encountered. Footings, piers, and foundation walls shall be adequately protected against deterioration from the action of ground water. Proper bearing values for the soil shall be established in accordance with recognized standards.

(2) One-story buildings shall be constructed of not less than one-hour fire-resistive construction throughout except as follows:

(i) Boiler rooms and rooms used for the storage of combustible materials shall be of two-hour fire-resistive non-combustible construction.

(ii) Interior non-load-bearing partitions, other than those enclosing corridors and vertical shafts, may be of non-combustible construction without a fire-resistive rating.

(3) Structures built of other than noncombustible materials shall adhere to the floor area restrictions set forth in any one of the national codes listed in paragraph (a) of this section. For purposes of evacuation, the window sills of one-story buildings constructed of other than noncombustible materials shall be not more than six feet above the adjacent ground level.

(4) Buildings more than one story in height shall be constructed of noncombustible materials, using a structural framework of reinforced concrete or structural steel except that load-bearing masonry walls and piers may be utilized for buildings up to and including three stories in height. The fire-resistive requirements of the various building elements shall follow the requirements of any one of the four national codes listed in paragraph (a) of this section except for the modifications listed below:

(i) Corridor partitions shall be of one-hour fire-resistive construction.

(ii) Walls enclosing stairways, elevators, laundry and trash chutes, and other vertical shafts, boiler rooms and

rooms used for storage of combustible materials shall be of two-hour fire-resistive construction.

(5) Interior finish of all exit ways, storage rooms and all areas of unusual fire hazard shall have a flame spread rating of less than 20.

(6) Interior finish of patient rooms, patient day rooms and other areas occupied by patients shall have a flame spread rating of less than 75.

(7) Interior finish of other areas shall have a flame spread rating of less than 75, except that ten percent of the aggregate wall and ceiling areas of any space may have a flame spread rating up to 200.

(8) Interior finish materials shall be classified in accordance with their average flame spread rating on the basis of tests conducted in accordance with ASTM Standard No. E 84.

§ 53.163 Mechanical and electrical.

(a) *Heating; steam systems and ventilation.* (1) *Codes.* The heating system, steam system, boilers, ventilation system, and air conditioning system shall be furnished and installed to meet all requirements of the local and State codes and regulations, and the regulations of the National Board of Fire Underwriters and the minimum general standards as set forth in this section. Where there is no local or State boiler code, the recommendations of the A.S.M.E. shall apply. Gas fired equipment shall comply with the regulations of the American Gas Association.

(2) *Boilers.* Boilers shall have the necessary capacity when operating at normal rating to supply the heating system, hot water, and steam operated equipment, such as sterilizers, laundry and kitchen equipment. Spare boiler capacity shall also be provided in a separate unit to replace any boiler which might break down, except that spare boiler capacity for heating will not be required in design temperature zone +20° F. or higher as shown by the current edition of the ASHRAE Guide. Boilers which supply high pressure steam to sterilizers, kitchens, laundry, etc., shall meet the requirements of the city and State boiler codes for 125 pounds working pressure. It is desirable to operate boilers, supplying steam for laundries, at not less than 105 pounds pressure while boilers for sterilizers and kitchen may operate at 50 pounds pressure.

(3) *Heating system.* The building shall be heated by a hot water, steam, or equal type heating system.

(4) *Steam system.* A system of steam and return mains and appurtenances shall be provided to supply all equipment which requires steam heat.

(5) *Boiler accessories.* Boiler feed pumps, return pumps and circulating pumps shall be furnished in duplicate, each of which has a capacity to carry the full load. Blow off valves, relief valves, non-return valves, injectors and fittings shall be provided to meet the requirements of the city and state codes. Where no city or state codes are in force the recommendations of the ASME shall apply.

(6) *Temperatures.* It shall be possible to maintain a temperature of 70°

F. in each room and occupied space except that in operating and delivery rooms and nurseries it shall be 75° F. In spaces where radiant heat is used, the minimum temperatures specified may be reduced to maintain an equivalent comfort level. Radiators and convectors, if used, shall be provided with hand control valve except where individual room automatic control is provided.

(7) *Piping.* Steam and hot water piping may be copper pipe and fittings, standard weight steel or iron pipe and cast iron fittings. Pipe used in heating and steam systems shall not be smaller sizes than prescribed by the latest edition of the ASHRAE Guide. The ends of all steam mains and low points in steam mains shall be dripped.

(8) *Valves.* Steam, return and heating risers, steam, return and heating mains shall be controlled separately by a valve. Each steam and return main shall be valved. Each piece of equipment supplied with steam shall be valved on the supply and return ends.

(9) *Thermostatic control.* The heating system shall be thermostatically controlled in one or more zones.

(10) *Auxiliary heat.* The heating system serving operating rooms, delivery rooms, recovery rooms, and nurseries shall be designed so that heat is available on a year round basis.

(11) *Coverings.* Boilers and smoke breeching shall be insulated with covering not less than 1-inch magnesia blocks and ½-inch plastic asbestos finish. All high pressure steam and high pressure return piping shall be insulated with covering not less than the equivalent of 1-inch four ply asbestos covering. Heating mains in the boiler room, in unheated spaces, unexcavated spaces, and where concealed, shall be insulated with covering not less than 1-inch asbestos air cell.

(12) *Ventilation.* (i) Rooms which do not have outside windows and which are used by patients or hospital personnel, such as utility rooms, toilets, bed pan rooms, baths, sterilizer rooms, sterilizer equipment chambers and food storage rooms shall be provided with forced or suitable ventilation to change the air at least once every six minutes.

(ii) *Kitchens, morgues and laundries* which are located inside the hospital building shall be ventilated by exhaust systems which will discharge the air above the main roof or 50'0" from any window. The ventilation of these spaces shall comply with the State or local codes but if no code governs, the air in the work spaces shall be exhausted at least once every six minutes with the greater part of the air being taken from the flat work ironer and ranges. Air from the laundry sorting area shall be discharged with no recirculation. Rooms used for the storage of combustible anesthetic agents, paints and other highly flammable materials shall be ventilated to the outside air with intake and discharge ducts. Oxygen storage and oxygen manifold rooms shall comply with the regulations set forth in the latest edition of the NFPA-56.

(iii) The operating and delivery rooms shall be provided with a supply ventilating system with heaters and humid-

fers which will change the air at least eight times per hour by supplying fresh filtered air humidified to prevent static. No recirculation will be permitted. The air shall be removed from these rooms by forced system of exhaust. The adjoining sterilizing rooms and sterilizing equipment chambers shall be provided with exhaust ventilation.

(13) *Incinerators*: (i) An incinerator shall be installed in each hospital. The incinerator shall be designed to burn completely 60 percent wet garbage without objectionable smoke or odor. Where garbage is removed from the premises or disposed of by other means, incinerators will be required for the disposal of dressings, contagious and infectious materials, amputations and general rubbish. Rubbish incinerators shall be designed to completely burn 50 percent wet rubbish without objectionable smoke or odor. Gas- or oil-fired incinerators are desirable. Incinerators with capacities up to 500 pounds shall have the enclosing walls of combustion chambers lined with fire brick not less than $4\frac{1}{2}$ inches thick. Incinerators of greater capacity shall have not less than 8-inch fire brick lining. The gases shall be carried to a point above the roof of the hospital. Flue fed type incinerators which have an identical refuse chute and smoke flue shall not be installed in hospitals or medical facilities.

(ii) Incinerators for diagnostic or treatment facilities need not conform in all respects to the above requirements but shall be of good design, construction and capacity to fulfill the needs of such facilities.

(14) *Tests*. The systems shall be tested to demonstrate to the satisfaction of the State agencies having jurisdiction that: The boiler will carry the full load with one boiler in reserve, that the steam supply to all steam heated equipment is ample, that the ventilating equipment meets the minimum requirements and that all systems circulate satisfactorily without leaks or noise.

(15) *Health centers, nurses' residences, laboratories, diagnostic or treatment centers, rehabilitation facilities and nursing homes*. (i) A spare boiler may not be required for health centers, nurses' residences, laboratories, diagnostic or treatment centers, rehabilitation facilities and nursing homes. Incinerators are recommended in health centers, nurses' residences, laboratories, rehabilitation facilities and nursing homes.

(ii) Separate special ventilation or air conditioning systems are required for the bacteriological and virus laboratories.

(16) *Mental hospitals*. Radiators, grilles, pipes, valves and equipment shall be so located that they are not accessible to patients. Hot air heating may be used for spaces occupied by mental patients.

(b) *Plumbing and drainage*. All parts of the plumbing systems shall comply with all applicable local and State codes and the requirements of the State Department of Health and the minimum general standards as set forth in this paragraph. Where no State or local codes are in force or where such codes do not cover special hospital equipment,

appliances, and water piping, the National Plumbing Code ASA-A40.8-1955 shall apply.

(1) *Water service*. (i) The water supply available for the hospital shall be tested and approved by the State Department of Health.

(ii) The water service shall be brought into the building to comply with the requirements of the local water department and shall be free of cross connections.

(2) *Hot water heaters and tanks*.

(i) The hot water heating equipment shall have sufficient capacity to supply $6\frac{1}{2}$ gallons of water at 125° F. per hour per bed for hospital fixtures, 4 gallons of water at 180° F. per hour per bed for kitchen and $4\frac{1}{2}$ gallons of water at 180° F. per hour per bed for laundry.

(ii) The hot water storage tank or tanks shall have a capacity equal to 80 percent of the heater capacity.

(iii) Where direct fired hot water heaters are used they shall be of an approved high pressure type. Submerged steam heating coils shall be of copper. Storage tanks shall be of non-corrosive metal or be lined with non-corrosive material to comply with the A.S.M.E. Code for pressure vessels. Tanks and heaters shall be fitted with vacuum and relief valves, and where the water is heated by coal or gas they shall have thermostatic relief valves. Heaters shall be thermostatically controlled.

(3) *Water supply systems*. (i) From the cold water service and hot water tanks, cold water and hot water mains and branches shall be run to supply all plumbing fixtures and equipment which require hot or cold water or both for their operation. Pipes shall be sized to supply water to all fixtures with a minimum pressure of 15 pounds at the top floor fixtures during maximum demand periods. All plumbing fixtures except water closets, urinals, bedpan washers and drinking fountains shall have both hot and cold water supplies. Every supply outlet or connection to a fixture or appliance shall be protected against back flow in accordance with the provisions of standards for air gaps and back-flow preventers as provided by National Plumbing Code ASA-A40.8-1955. Wherever the usage of fixture or appliance will permit, water supplied to all fixtures, open tanks and equipment, shall be introduced through a suitable air gap between the water supply and the flood level of the fixture. No connections shall be made which will permit backflow.

(ii) Hot water circulating mains and risers shall be run from the hot water storage tank to a point directly below the highest fixture at the end of each branch main. Where the building is higher than 3 stories, each riser shall be circulated. Water pipe sizes shall be equal to those prescribed by the National Plumbing Code ASA-A40.8-1955.

(4) *Drainage system*. All fixtures and equipment shall be connected through traps to soil and waste piping and to the sewer. Indirect waste connections shall be provided for devices or fixtures in which food, drink, water and ice are processed or stored, dishwashing machines, sterilizers, stills and equipment

requiring cooling water. All shall conform to the requirements of the National Plumbing Code ASA-A40.8-1955.

(5) *Rain water drains*. Leaders shall be provided to drain the water from roof areas to a point from which it cannot flow into the basement or areas around the building. Courts, yards, and drives which do not have natural drainage from the building shall have catch basins and drains to low ground, storm water system, or dry wells. Where dry wells are used they shall be located at least 20' 0" from the building.

(6) *Gas piping*. Gas appliances shall be approved by the American Gas Association and shall be connected in accordance with the requirements of the company furnishing the gas. Gas outlets shall not be provided in patients' bedrooms.

(7) *Oxygen systems*. Where oxygen systems are installed the oxygen piping, outlets, manifolds, manifold rooms and storage rooms shall be installed in accordance with the requirements of N.F.P.A. Bulletins No. 56 and No. 565.

(8) *Pipe*. The building drain, to a point 5' 0" from the building, shall be of cast iron. Soil stacks, drains, vents, waste lines, and leaders shall be of copper, cast iron or steel except drain lines in back-fill or soil shall be of cast iron. Oxygen lines shall be of copper tubing not lighter than type "K" or I.P.S. red brass with fittings of brass or copper. Drains from sinks which use chemicals shall be of approved acid resistant material. Gas piping shall be of black iron with malleable fittings or copper tubing.

(9) *Valves*. Each main, branch main, riser and branch to a group of fixtures of the water systems shall be valved.

(10) *Insulation*. (i) Tanks and heaters shall be insulated with covering equal to 1" 4-ply air cell.

(ii) Hot water and circulating pipes shall be insulated with covering equal to canvas jacketed 3-ply asbestos air cell.

(iii) Cold water mains in occupied spaces and in store rooms shall be insulated with canvas jacketed felt covering to prevent condensation. All pipes in outside walls shall also be insulated to prevent freezing.

(11) *Stand pipe system*. The stand pipe system shall be installed as required by the local and State departments having jurisdiction. Where no local or State codes are in force, the stand pipe system shall comply with the requirements of the National Board of Fire Underwriters.

(12) *Sprinkler system*. To reduce the danger from fire, it is desirable to provide automatic sprinkler systems in those areas which are considered hazardous from a fire safety point of view. Such hazardous areas may include the soiled linen rooms, basement corridors, paint shops, wood working shops, trash rooms, storage rooms, accessible attics, laundry and trash chutes, and entire nonfire-proofed buildings.

(13) *Plumbing fixtures*. (i) The material used for plumbing fixtures shall be of an approved non-absorptive acid resisting material.

(ii) Water closets in and adjoining patients' areas shall be of a quiet operating type.

(iii) Flush valves shall be designed for quiet operation with non-return stops, back flow preventers and silencers.

(iv) Patient lavatories, service lavatories, and sinks which may be used for filling pitchers shall have the spout mounted so that it is a minimum distance of 5 inches above the flood rim of the fixture. All lavatories and sinks used by patients, doctors, nurses, and food handlers shall be trimmed with valves which can be operated without the use of the hands. Wrist, knee and foot action valves meet this requirement. If wrist action valves are used on patient lavatories the blade handles shall not exceed 4½ inches in length.

(14) *Drinking fountains.* Drinking fountains shall comply with the A.S.A. Z4.2-1942.

(15) *Tests.* (i) All soil, waste, vent, and drain lines shall be tested by water or air test before they are built in.

(ii) A smoke or chemical test shall be applied after fixtures have been set. Water pipe shall be hydraulically tested to a pressure equal to twice the working pressure. The tests shall demonstrate to the satisfaction of the State Agency that there are no leaks, that hot water is circulating satisfactorily, that all traps are properly vented, that there is ample supply of hot and cold water to all fixtures, that no fixture or equipment can be back syphoned and that there are no backflow connections.

(16) *Sterilizers.* Sterilizers and autoclaves shall be provided of the required types and necessary capacity to adequately sterilize instruments, utensils, dressings, water, operating room material, such as gloves, sutures, etc., and as required for laboratories. The sterilizers shall be of recognized hospital types with approved controls and safety features.

(17) *Mental, psychiatric, tuberculosis and chronic disease hospitals, rehabilitation facilities and nursing homes.* (i) Plumbing fixtures which require hot water and which are accessible to patients shall be supplied with water which is thermostatically controlled to provide a maximum water temperature of 110° F. at the fixture.

(ii) Special consideration shall be given to piping, controls, and fittings of plumbing fixtures as required by the types of mental patient and the doctor in charge of planning. No pipes or traps shall be exposed and fixtures shall be substantially bolted through walls. Generally, for disturbed patients, prison type water closets without seats shall be used and shower and bath controls shall not be accessible to patients.

(iii) The hot water heat and tank capacities for laundries in T.B. and mental hospitals may be reduced to 40 percent of that required for general hospitals.

(18) *Laboratories, nurses' residences and health centers.* (i) Emergency quick acting cold water showers are required at convenient points in chemical laboratories.

(ii) Only one system of hot water will be required in laboratories, nurses' residences and health centers and the elbow or knee action lavatory and sink faucet handles will be required only in clinical rooms of health centers.

(c) *Electrical installations—*(1) *Codes and regulations.* The installation of electrical work and equipment shall comply with all local and State codes and laws applicable to electrical installations and the minimum general standards as set forth in this paragraph. Where such codes and laws are not in effect or where they do not cover special installations the National Electrical Code and standards referenced therein which are applicable shall apply. The regulations of the local utility company shall govern service connections. All materials shall be new and shall equal standards established by the Underwriters Laboratories, Inc. Certificates of approval shall be issued by these departments having jurisdiction before the work will be approved for final payment.

(2) *Service.* Connections from the service mains, with meter connections and service switches shall be installed as required by the Public Service Company.

(3) *Feeders and circuits.* Separate power and light feeders shall be run from the service to a main switchboard and from there sub-feeders shall be provided to the motors and power and light distributing panels. Where there is only one service feeder, separate power and light feeders from the service entrance to the switchboard will not be required. From the power panels feeders shall be provided for large motors, and circuits from the light panels shall be run to the lighting outlets. Large heating elements shall be supplied by separate feeders from the power or light service as directed by the local public service company. Independent feeders shall be furnished for X-ray equipment.

(4) *Switchboard and power panels.* Circuit breakers or dead front type fused switches shall be installed to protect all feeders and sub-feeders. Motor shall be connected with breakers or fused switches.

(5) *Light panels.* Light panels shall be provided on each floor for the lighting circuits on that floor. Light panels shall be located near the load centers not more than 100' 0" from the farthest outlet.

(6) *Lighting outlets and switches.* All occupied areas shall be adequately lighted as required by duties performed in the space. Patients' bedrooms shall have as a minimum general illumination a night light and a patient's reading light. The outlets for general illumination and night lights shall be switched at the door. Switches in patients' rooms shall be of an approved mercury or equal, quiet operating type, or shall be placed in the corridor. Operating and delivery rooms shall have general illumination and special lights for the tables each on an independent circuit.

(7) *Equipment and installation in hazardous areas.* All electrical equipment and installation in operating, delivery, emergency, anesthesia storage and anesthesia induction rooms shall comply with National Fire Protection Association Code NFPA No. 56.

(8) *X-ray film illuminator.* Each operating room shall have a film illuminator.

(9) *Receptacles (convenience outlets).* Receptacles suitable for the service shall

be located where plug-in service is required. Each bedroom shall not have less than two duplex receptacles, with at least one receptacle near the head of each bed. Polarized receptacles for special equipment shall be installed where required. Grounding type receptacles shall be installed not more than 50 feet apart in all nursing unit corridors. At least three three-pole grounded receptacles shall be installed in each operating, delivery, and emergency room.

(10) *Emergency lighting.* Emergency lighting shall be provided for exits, stairs, and patient corridors which shall be supplied by an emergency service, an automatic emergency generator or battery with automatic switch. Operating and delivery room lights shall be connected with an automatic transfer switch which will throw the circuits to the emergency service in case of current failure. Should an emergency service from the street be used, it shall be from a generating plant independent of that used for the main electric service.

(11) *Nurses call.* Each patient shall be furnished with a nurses' call station which will register a call from the patient; at the corridor door, at the nurses' station, and in each pantry and utility room of the nursing unit. A duplex unit may be used for 2 patients. Indicating lights shall be provided at each station where there are more than two beds in a room. Nurses' call stations will not be required for beds which are used only for children. Operating, delivery and recovery rooms, rooms used for children and nurseries shall have one emergency call each for use of the nurse. Wiring for nurses' call systems shall be installed in conduit.

(12) *Lighting fixtures.* Lighting fixtures shall be furnished for all lighting outlets. They shall be of a type suitable for the space. Should ceiling lights be used in patients' rooms, they shall be of a type which does not shine in the patients' eyes.

(13) *Fire alarms.* A manually operated fire alarm system shall be installed in each hospital, rehabilitation facility, and nursing home. It is recommended that this system be coded and electrically supervised. The alarm system shall comply with applicable local codes, or in the absence of such codes the NFPA 101—"Building Exits Code" and NFPA 72—"Standard for Proprietary Protective Signalling Systems" shall apply.

(14) *Clocks.* A clock system is desirable but not mandatory. Where provided, it should be complete with master clock and time indicator clocks in administrative offices, main lobby, and work areas as required.

(15) *Tests.* Lighting fixtures, all wiring and equipment shall be tested to show that it is free from grounds, shorts, or open circuits, that motors rotate correctly and that all equipment operates as specified.

(16) *Health centers, nurses' residences, laboratories, diagnostic or treatment facilities, and separate rehabilitation facilities for outpatients only.* Emergency lighting and call systems will not be required in health centers, nurses' residences, laboratories, diagnostic or treatment facilities and separate rehabil-

itation facilities for outpatients only except as provided for by local and State codes.

(17) *Mental hospitals.* (i) No lighting fixtures, switches, receptacles or electrical equipment shall be accessible to mental patients.

(ii) Nurses' call systems will not be required in areas occupied by mental patients.

(d) *Elevators and dumbwaiters—(1) Codes.* Elevators and dumbwaiters shall comply with all local and State codes, American Standard Safety Code for Elevators, Dumbwaiters, and Escalators (A17.1—1960), The National Board of Fire Underwriters, the National Electrical Code, and the minimum general standards as set forth herein.

(2) *Number of elevators.* (i) Any hospital, rehabilitation facility, or nursing home with patients on one or more floors above the first or where the operating or delivery rooms are above the first floor shall have at least one electric motor driven hospital-type elevator with car inside dimensions of at least 5'0" wide by 7'6" deep and door clear opening of not less than 3'8". Hospitals, rehabilitation facilities, or nursing homes with a bed capacity of from 60 to 200 above the first floor shall have not less than two such elevators. Hospitals with a bed capacity of from 201 to 350 above the first floor shall have not less than three such elevators. Elevators provided in addition to these minimums may be of any type considered suitable.

(ii) Elevator cars shall be constructed of all noncombustible material.

(3) *Controls.* Elevators shall have either generator field control or multi-voltage control where speed is greater than 150 feet per minute. Elevators with speeds of more than 350 feet per minute shall be the gearless type. Elevators shall have automatic leveling of the two-way automatic maintaining type with accuracy within plus or minus $\frac{1}{2}$ ".

(4) *Operation.* Elevators for which operators will not be regularly employed shall be equipped for automatic operation and shall have car switch to permit operation by an attendant during special occasions, or to bypass registered calls in emergencies.

(5) *Dumbwaiters.* Cars of electrically operated dumbwaiters shall be of steel. When travel does not exceed 50 feet, the minimum speed shall be 50 feet per minute; for travel of more than 50 feet, the minimum speed shall be 100 feet per minute. When speed exceeds 100 feet per minute, provision shall be made for a reduced stopping speed of not more than 50 feet per minute. Operation shall be by momentary contact push-button.

(6) *Tests.* Elevator and dumbwaiter machines shall be tested for speed and load with and without loads in both directions. Elevators shall be tested for leveling and shall be given overspeed tests as specified in A17.1—1960 American Standard Safety Code for Elevators, Dumbwaiters, and Escalators.

(e) *Refrigeration — (1) Codes.* (i) The refrigerators and refrigerating systems shall be furnished and installed to meet all requirements of the local and State codes and regulations, the National

Board of Fire Underwriters, and the minimum general standards as set forth in this paragraph.

(ii) This section shall include portable refrigerators, built-in refrigerators, garage refrigeration, ice-making and refrigerator equipment, morgue boxes.

(2) *Box construction.* (i) Boxes shall be insulated with waterproof, non-absorbent, verminproof insulation. For the portable boxes, the insulation in the doors and walls shall be equal to 2-inch cork. Outer walls and doors of the walk-in boxes shall have insulation equal to 4-inch cork. Boxes shall be lined with non-absorbent sanitary material which will withstand the heavy use to which it will be subjected and constructed so as to be easily cleaned.

(ii) Refrigerators of adequate capacity shall be provided in all kitchens and other preparation centers, where perishable foods will be stored.

(iii) In the main kitchen, a minimum of two separate sections or boxes shall be provided, one for meats and dairy products, and one for general storage.

(3) *Refrigerator machines.* (i) Toxic, "irritant", or inflammable refrigerants shall not be used in refrigerator machines located in buildings occupied by patients.

(ii) The compressors and evaporators shall have sufficient capacity to maintain temperatures of 35° F. in the meat and dairy boxes, and 40° F. in the general storage boxes when the boxes are being used normally. Compressors shall be automatically controlled.

(4) *Tests.* Compressors, piping, and evaporators shall be tested for leaks and capacity.

(f) *Kitchen equipment—(1) Codes.* The kitchen equipment shall be so constructed and installed as to comply with the applicable local and State laws, codes, regulations and requirements, and with the applicable sanitation standards of Public Health Bulletin No. 37, entitled "Ordinance and Code Regulating Eating and Drinking Establishments, recommended by the U.S. Public Health Service," and with the minimum general standards set forth in this section.

(2) *Equipment.* (i) The equipment shall be adequate and so arranged as to enable the storage, preparation, cooking, and serving of food and drink to patients, staff and employees to be done in an efficient and sanitary manner. The equipment shall be selected and arranged in accordance with the types of food service adopted for the hospital.

(ii) Adequate cabinets or other facilities shall be provided for the storage or display of food, drink, and utensils, and shall be designed so as to protect them from contamination by insects, rodents, other vermin, splash, dust, and overhead leakage.

(iii) Adequate facilities shall be provided for the washing and bactericidal treatment of utensils used for eating, drinking, and food preparation. Where utensils are to be washed by hand, there shall be provided an adequate sink equipped with heating facilities to maintain a water temperature of at least 170° F. in the bactericidal treatment compartment throughout the dishwashing period. Where utensils are to be washed

by machine, there shall be provided facilities for supplying to the dishwashing machine an adequate supply of rinse water at 170° F., measured at the rinse sprays, throughout the dishwashing period. All tables, shelves, counters, display cases, stoves, hoods, and similar equipment shall be so constructed as to be easily cleaned and shall be free of inaccessible spaces providing harborage for vermin. Where there is not sufficient space between equipment and the walls or floor to permit easy cleaning, the equipment shall be set tight against the walls or floor and the joint properly sealed. All utensils and equipment surfaces with which food or drink comes in contact shall be of smooth, not readily corrodible material free of breaks, corrosion, open seams or cracks, chipped places, and V-type threads. All surfaces with which food or drink comes in contact shall be easily accessible for inspection and cleaning and shall be self-draining, and shall not contain or be plated with cadmium or lead. All water supply and waste line connections to kitchen equipment shall be installed in compliance with the plumbing requirements of these standards.

(g) *Laundry—(1) Codes.* (i) The laundry equipment shall be designed and installed to comply with all local and State codes and laws, and the requirements of the State Department of Health and the minimum general standards as set forth in this section.

(ii) Where laundries are provided they shall be complete with washers, extractors, tumblers, ironer and presses which shall be provided with all safety appliances and sanitary requirements.

(2) *Washers.* There shall be at least two washers which shall have a combined rated capacity of not less than 12 pounds of dry laundry per day per patient bed, when operating not more than 40 hours per week.

(3) *Ironer.* Provide one flat work ironer with a capacity equal to 70 percent of the washer capacity when operating 40 hours per week.

(4) *Extractor.* There shall be not less than one extractor with a daily capacity equal to that given above for the washers and for hospitals with more than 100 beds there shall be two extractors.

(5) *Tumbler.* Provide a minimum of one tumbler with a rated capacity equal to 25 percent of the washers, when operating 40 hours per week.

(6) *Presses.* For finished work provide not less than 1 nurses uniform unit consisting of 3 presses or one utility unit with 2 presses which shall be increased for the larger hospitals.

(7) *Wash tubs.* Provide 2 wash tubs.

(8) *Mental and tuberculosis hospitals.* The capacity per bed of laundry equipment for tuberculosis and mental hospitals shall be 40 percent of that required for general hospitals.

§ 53.164 Preparation of plans, specifications and estimates.

(a) *General.* (1) The requirements contained in this section have been established for the guidance of the applicant and the architect to provide a standard method of preparation of drawings, specifications and estimates.

(2) It is expected that the applicant will find it advantageous to submit the material through the State Agency in three stages for its recommendation and approval. However, the applicant may, if he so elects, combine the first two stages.

(3) If the data required under stage 3 is available, it may be submitted without the drawings required under stages one and two.

(4) Copies of the final working drawings and specifications previously submitted under stage three will be submitted for approval with the formal application for the project. The requirements for the material submitted at each of the three stages are as follows:

(b) *Drawings and specifications*—(1) (First stage) program and schematic plans—(i) Program.

(a) List in outline form the rooms or spaces to be included in each department, explaining the functions or services to be provided in each, indicating the approximate size, the number of personnel and the kind of equipment or furniture it will contain. Note any special or unusual services or equipment to be included in the facility

(b) If a hospital project, submit a schedule showing the total number of beds, their distribution in room and in the services, such as medicine, surgery, obstetrics, etc.

(ii) Schematic plans: Single line drawings of each floor showing the relationship of the various departments or services to each other and the room arrangement in each department. The name of each room should be noted. The proposed roads and walks, service and entrance courts, parking and orientation may be shown on either a small plot plan or the 1st floor plan. Simple vertical space diagram should be submitted at this stage.

(iii) Construction outline: A brief description of the type of construction.

(iv) Description of site: If a survey has been made, a plat shall be submitted at this time, if not, it should be submitted with the Preliminary Plans (Second Stage). In lieu of a plat of the survey, a description of the site may be submitted at this time. This shall note the general characteristics of the site, easement, availability of electricity, water and sewer lines, main roadway approaches, direction of prevailing breezes, orientation, etc. A map indicating location of the hospital in its geographic area with particular reference to recommendation given under § 53.143 should be submitted.

(v) Preliminary cost estimates.

(2) (Second stage) preliminary plans, elevations, and outline specifications.

(i) (a) Development of the preliminary sketch plans indicating in more detail the assignment of all spaces, size of areas and rooms, and including single line layouts of air conditioning and ventilation ducts, heating and steam mains, hot and cold water systems, and soil and waste lines. Indicate in outline the fixed and movable equipment and furniture.

(b) The plans shall be drawn at a scale sufficiently large to clearly present the proposed design.

(c) The total floor area shall be computed and shown on the drawings.

(d) The drawings shall include a plan for each floor, including the basement or ground floor, roof plan, approach plan showing roads, parking areas, sidewalks, etc., elevations of all facades, and sections through the building. Mechanical drawings shall show (1) single line layouts of all air conditioning and ventilation duct systems, (2) layout of heating, chilled water and steam mains, (3) location of heating, ventilation and cooling units, (4) layout of cold and hot water supply and soil and waste systems, (5) layouts of oxygen, nitrous oxide, suction and special piping systems, (6) scale layout of boiler and other equipment rooms, including main pieces of equipment, (7) riser diagrams for the enumerated systems shall be shown for multistory construction.

(ii) Outline specifications shall provide a general description of the construction, including interior finishes; acoustical material, its extent and type; extent of conductive floor covering. Description of the type of pipe and fittings for all plumbing, heating, ventilation and air conditioning systems. Description of the air conditioning, heating and ventilation systems and their controls. Description of the steam heated equipment such as sterilizers, kitchen and laundry equipment, and the type of elevators.

(iii) Revised cost estimates.

(3) (Third stage) working drawings and specifications. (i) All working drawings shall be well prepared so that clear and distinct prints may be obtained; accurately dimensioned and include all necessary explanatory notes, schedules and legends. Working drawings shall be complete and adequate for contract purposes. Separate drawings shall be prepared for each of the following branches of work:

Architectural, structural, mechanical, electrical. They shall include or contain the following:

(a) *Architectural drawings*. (1) Approach plan showing all new topography, newly established levels and grades, existing structures on the site (if any), new buildings and structures, roadways, walks, and the extent of the areas to be seeded. All structures and improvements which are to be removed under the construction contract shall be shown. A print of the survey shall be included with the working drawings for the information of bidders only. The survey shall not be made a contract drawing.

(2) Plan of each floor and roof.

(3) Elevations of each facade.

(4) Sections through building.

(5) Scale and full size details as necessary; scale details at one and one-half (1½) inches to the foot may be necessary to properly indicate portions of the work. Full size details may be prepared after award of construction contract.

(6) Schedule of finishes.

(b) *Equipment drawings*. Large scale drawings of typical and special rooms indicating all fixed equipment and major items of furniture and movable equipment. The furniture and movable equipment will not be included in the con-

struction contract but should be indicated by dotted lines.

(c) *Structural drawings*. (1) Plans for foundations, floors, roofs and all intermediate levels shall show a complete design with sizes, sections, and the relative location of the various members. Schedule of beams, girders and columns.

(2) Floor levels, column centers, and offsets shall be dimensioned.

(3) Special openings and pipe sleeves shall be dimensioned or otherwise noted for easy reference.

(4) Details of all special connections, assemblies and expansion joints shall be given.

(5) Notes on design data shall include the name of the governing building code, values of allowable unit stresses, assumed live loads, wind loads, earthquake load, and soil-bearing pressures.

(6) For special structures, a stress sheet shall be incorporated in the drawings showing:

(i) Outline of the structure.

(ii) All load assumptions used.

(iii) Stresses and bending moments separately for each kind of loading.

(iv) Maximum stress and/or bending moment for which each member is designed, when not readily apparent from (iii).

(v) Horizontal and vertical reactions at column bases.

(d) *Mechanical drawings*. These drawings with specifications shall show the complete heating, steam piping and ventilation systems; plumbing, drainage and stand pipe systems; and laundry.

(1) *Heating, steam piping and ventilation*.

(i) Radiators and steam heated equipment, such as sterilizers, warmers and steam tables.

(ii) Heating and steam mains and branches with pipe sizes.

(iii) Diagram of heating and steam risers with pipe sizes.

(iv) Sizes, types and heating surfaces of boilers, furnaces, with stokers and oil burners, if any.

(v) Pumps, tanks, boiler breeching and piping and boiler room accessories.

(vi) Air conditioning systems with refrigerators, water and refrigerant piping, and ducts.

(vii) Exhaust and supply ventilating systems with steam connections and piping.

(2) *Plumbing, drainage and stand pipe systems*. (i) Size and elevation of: Street sewer, house sewer, house drains, street water main and water service into the building.

(ii) Location and size of soil, waste, and vent stacks with connections to house drains, fixtures and equipment.

(iii) Size and location of hot, cold and circulating mains, branches and risers from the service entrance and tanks.

(iv) Riser diagram to show all plumbing stacks with vents, water risers and fixture connections.

(v) Gas, oxygen and special connections.

(vi) Standpipe system.

(vii) Plumbing fixtures and fixtures which require water and drain connections.

(3) *Elevators and dumbwaiters.* Shaft details and dimensions, size car platform and doors; travel, pit and machine room.

(4) *Kitchens, laundry, refrigeration and laboratories* shall be detailed at a satisfactory scale to show the location, size and connection of all fixed and movable equipment.

(e) *Electrical drawings.* Drawings shall show all electrical wirings, outlets, and equipment which require electrical connections.

(1) *Electrical service entrance* with service switches, service feeders to the public service feeders and characteristics of the light and power current. Transformers and their connections if located in the building, shall be shown.

(2) *Plan and diagram showing main switchboard, power panels, light panels and equipment.* Feeder and conduit sizes shall be shown with schedule of feeder breakers or switches.

(3) *Light outlets, receptacles, switches, power outlets and circuits.*

(4) *Telephone layout showing service entrance, telephone switchboard, strip boxes, telephone outlets and branch conduits* as approved by the Telephone Co. Where public telephones are used for inter-communication, provide separate room and conduits for racks and automatic switching equipment as required by the Telephone Company.

(5) *Nurses' call systems with outlets for beds, duty stations, door signal lights, annunciators and wiring diagrams.*

(6) *Doctors' call and doctors' in-and-out systems with all equipment wiring, if provided.*

(7) *Fire alarm system with stations, gongs, control board and wiring diagrams.*

(8) *Emergency lighting system with outlets, transfer switch, source of supply, feeders and circuits.*

(f) *Additions to existing projects.* (1) Procedures and requirements for working drawings and specifications to be followed and in addition the following information shall be submitted:

(i) Type of activities within the existing building and distribution of existing beds, etc.

(ii) Type of construction of existing building and number of stories high.

(iii) Plans and details showing attachment of new construction to the existing structure and mechanical systems.

(2) Specifications shall supplement the drawings and shall comply with the following:

(i) The specifications shall fully describe, except where fully indicated and described on the drawings, the materials, workmanship, the kind, sizes, capacities, finishes and other characteristics of all materials, products, articles and devices.

(ii) The specifications shall include:

(i) Cover or title sheet.

(ii) Index.

(iii) Invitation for bids.

(iv) General conditions.

(v) Wage schedule, section 2, Labor Standards and Kickback Regulations.

(vi) General requirements.

(vii) Sections describing materials and workmanship in detail for each class of work.

(viii) Form of bid bond.

(ix) Bid form.

(x) Form of agreement.

(xi) Performance and payment bond forms.

(iii) In order to obtain a standard procedure Standard Specification Forms will be furnished to the State Agency as a guide to the Architect.

(3) Estimates shall show in convenient form and detail the probable total cost of the work to be performed under the contract for construction of new buildings, expansion, remodeling and alteration of existing buildings including provision of fixed equipment contemplated by plans and specifications.

§ 53.165 Equipment.

(a) *General.* Equipment necessary for the functioning of the facility as planned shall be provided in the kind and to the extent required to perform the desired service. The necessary equipment shall be included in the cost of the project and is considered an essential part of the project.

(b) *Classification of equipment.* All equipment shall be classified in three groups as indicated below; the basis of classification being the usual methods of purchasing the equipment and suggested accounting practices in regard to depreciation.

(1) *Group I: Built-in equipment usually included in construction contracts.* Hospital cabinets and counters, laboratory and pharmacy cabinets, X-ray dark-room equipment, cubicle curtain equip-

ment, shades and venetian blinds and any other built-in equipment, including items which have been included previously under §§ 53.144 through 53.164, such as: Kitchen equipment, laundry chutes, elevators, dumbwaiters, boilers, incinerators, refrigerating equipment, sterilizing equipment, surgical lighting, dental units and chairs, autopsy tables and the like.

(2) *Group II: Depreciable equipment of five years' life or more normally purchased through other than construction contracts.* Large items of furniture and equipment having a reasonably fixed location in the building but capable of being moved. Examples: Bedroom and office furniture, anesthesia apparatus, operating and obstetrical tables, radiographic and fluoroscopic units, basal metabolism apparatus and oxygen tents, dental amalgamators and casting machines, centrifuges, microscopes and balances, wheeled equipment and the like.

(3) *Group III: Non-depreciable equipment of less than five years' life normally purchased through other than construction contract.* Small items of low unit cost and suited to storeroom control. Examples: Chinaware, silverware, kitchen utensils, waste baskets, bedpans, dressing jars, catheters, surgical instruments, bed linens, blankets, and the like.

(c) *Responsibility of applicant.* (1) It shall be the responsibility of the applicant to select and purchase all necessary equipment for the complete functioning of all services included in the project in accordance with these standards and any further standards prescribed by the State Agency.

(2) It is essential that the equipment shall be properly apportioned and budgeted to the various services of the facility so that unduly expensive or elaborate equipment is not provided for some services of the project, necessitating the use of cheap and inadequate equipment for other services.

(3) As soon as possible after the award of the construction contract, the applicant shall submit to the Surgeon General through the State Agency for approval a complete list in triplicate of all proposed Groups II and III equipment, including itemized estimate of cost.

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DISCRIMINATION PROHIBITED—Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Hospital and Medical Facilities (Hill-Burton) program, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.