

GUIDELINES FOR
CONSTRUCTION
AND EQUIPMENT OF

1992-93

**HOSPITAL
AND
MEDICAL
FACILITIES**

■ The American Institute of Architects Committee
on Architecture for Health with assistance from
the U.S. Department of Health and Human Services

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PREFACE

This is the latest in a 45-year series of guidelines to aid in the design and construction of hospital and medical facilities.

The original *General Standards* appeared in the *Federal Register* on February 14, 1947, as part of the implementing regulations for the Hill-Burton program. The standards were revised from time to time as needed. In 1973, the document was retitled *Minimum Requirements of Construction and Equipment for Hospital and Medical Facilities* to emphasize that the requirements were generally minimum, rather than recommendations of ideal, standards.

Sections 603(b) and 1620(2) of the Public Health Service Act require the secretary of the Department of Health and Human Services (HHS) to prescribe by regulation general standards of construction, renovation, and equipment for projects assisted under Title VI and Title XVI, respectively, of the act. Since Title VI and Title XVI grant and loan authorities have expired, there is no need to retain the standards in regulation.

In 1984, HHS removed from regulation the requirements relating to minimum standards of construction, renovation, and equipment of hospitals and other medical facilities, as cited in the *Minimum Requirements*, DHEW Publication No. (HRA) 81-14500. To reflect the nonregulatory status, the title was changed to *Guidelines for Construction and Equipment of Hospital and Medical Facilities*.

It is emphasized that projects with respect to which applications were approved or grants awarded under Titles VI and XVI, but for which full project reimbursement has not yet been made, may be subject to continuing compliance with the *Guidelines* as incorporated by reference in the Code of Federal Regulations, Title 42, Parts 53 and 124, at the time of the initial approval.

The *Guidelines* will be used by HHS to assess Department of Housing and Urban Development Section 242 applications for hospital mortgage insurance and the Indian Health Service construction projects. The *Guidelines* may also be used by other entities, such as state licensure agencies. For this reason,

regulatory language was retained. The 1992–93 edition of the *Guidelines* follows these principles. Explanatory and guide material is included in appendices A and B, neither of which is mandatory.

The Health Care Financing Administration, within the Department of Health and Human Services, is supporting the efforts of the 1992–93 *Guidelines* both financially and with support staff. HCFA has the responsibility for the reimbursement and operation of the Medicare and Medicaid Programs. Hospital construction and costs are directly related to the charge of HCFA's mission. Although HCFA is not adopting the *Guidelines* as regulations, the agency does concur with the construction recommendations.

This edition of the *Guidelines* reflects the work of advisory groups from private, state, and federal sectors, representing expertise in design, operation, and construction of health facilities. Advisory group members reviewed the 1987 edition of the *Guidelines* line by line, revising details as necessary to accommodate current health care procedures and to provide a desirable environment for patient care at a reasonable facility cost.

As in the past, the *Guidelines* standards are performance oriented for desired results. Prescriptive measurements, where given, have been carefully considered relative to generally recognized standards and do not require detail specification. For example, experience has shown that it would be extremely difficult to design a patient bedroom smaller than the size suggested and have space for functions and procedures that are normally expected.

Authorities adopting the *Guidelines* standards should encourage design innovations and grant exceptions where the intent of the standards is met. These standards assume that appropriate architectural and engineering practice and compliance with applicable codes will be observed as part of normal professional service and require no separate detailed instructions.

In some facility areas or sections, it may be desirable to exceed the *Guidelines* standards for optimum function. For example, door widths for inpatient hospital rooms are noted as 3 feet 8 inches, which satisfies most applicable codes, to permit passage of patient beds. However, wider widths of 3 feet 10 inches or even 4 feet may be desirable to reduce damage to doors and frames where frequent movement of beds and large equipment may occur. The decision to exceed the standards should be made by the individuals involved.

As in previous editions, details of plan preparation, specifications, engineering procedures, etc., are omitted. These may appear in other technical manuals. Instances where details are mentioned are for emphasis only.

This publication supersedes DHHS Publication No. (HRS-M-HF) 84-1, DHEW Publication No. (HRA) 79-14500, DHEW Publication No. (HRA) 76-4000, and the 1987 edition of the *Guidelines*.

Inquiries or questions on the *Guidelines* may be addressed to the following groups:

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MAJOR ADDITIONS AND REVISIONS

The general format and technical content follow the previous document, *Guidelines for Construction and Equipment of Hospital and Medical Facilities*, 1987 edition. An Appendix A was added to separate minimum standards from explanatory or educational material, so that this document may be adopted as requirements by authorities having jurisdiction or used as a basic guide for other standards. An asterisk (*) before a paragraph number indicates that explanatory or educational material related to this paragraph is found in Appendix A. Changes from the 1987 *Guidelines* are marked in this edition with beginning (▼) and ending (▲) arrows.

Many changes, too numerous to mention, were made to correct errors, clarify intent, and generally update the standards. Listed below, however, are major additions and revisions made in conformance with current, minimum needs and state-of-the-art medical and design procedures:

1. There are five entirely new sections: Section 7.3.E, Newborn Intensive Care Units; Section 9.7, Free-standing Birth Center; Section 9.8, Freestanding Outpatient Diagnostic and Treatment Facility; Section 11, Psychiatric Hospital; and Section 12, Mobile, Transportable, and Relocatable Units. These sections establish minimum standards for the designated type of facility. Additional guide material may be found in Appendix A.
2. Section 1.2. The title "Modernization" was changed to "Renovation." The section states that all new work shall comply, insofar as practicable, with these Guidelines and with appropriate parts of the Life Safety Code, NFPA 101, covering Health Care Occupancies.
3. Section 1.3, Design Standards for the Disabled, was changed to state that all public, private, and public service hospitals must comply with the Americans with Disabilities Act (ADA) and that United States government facilities must comply with the Uniform Federal Accessibility Standards (UFAS).
4. Section 7.2.A, Patient Rooms, was changed to permit a maximum of two patients per room and to require a minimum of 100 square feet per bed in multibed rooms and 120 square feet in single rooms in all new construction. Renovation projects may continue to use four-patient bedrooms, if they are existing, and to use 80 square feet per bed in multibed rooms and 100 square feet in singles.
5. Sections 7.2.C and 7.2.D have replaced the old requirements for Isolation Rooms with Infectious Isolation Rooms and Protective Isolation Rooms.
6. Section 7.3, Intensive Care, was changed to Critical Care, and the required area increased to 150 sq. ft. per bed in new construction. Renovation projects may use the old requirement of 120 sq. ft. in single rooms and 100 sq. ft. per bed in multibed critical care units.
7. Section 7.5, Pediatric and Adolescent Unit, maximum occupancy was reduced to four patients per room and the minimum size increased to 100 sq. ft. per bed in multibed rooms and 120 sq. ft. in single rooms in new construction. In renovation projects, the old requirements of 80 sq. ft. per bed in multibed rooms and 100 sq. ft. in single rooms are approvable.
8. Section 7.7.A, Surgery, increased the minimum areas of surgical procedure rooms in new construction as follows:
 - General operating rooms from 360 sq. ft. to 400 sq. ft.
 - Orthopedic operating rooms from 360 sq. ft. to 600 sq. ft.
 - Cardiovascular and neurological operating rooms from 400 sq. ft. to 600 sq. ft.
 - Surgical cystoscopy from 250 sq. ft. to 350 sq. ft.
 - Renovation projects may continue to use the old minimum area requirements.
9. Section 7.7.B, Recovery Room, was changed to Post-Anesthetic Care Unit, and a new minimum area requirement of 80 sq. ft. per bed was added.
10. Section 7.8, Obstetrical Facilities. Postpartum bedrooms have been moved to this section. The maximum number of patients per room and minimum area per bed requirements for all patient rooms in new construction apply as do the renovation exceptions. The minimum area per labor bed was increased from 100 sq. ft. per bed to 120 sq. ft. per bed. Renovation projects may use the old requirement.

The minimum area for LDR and LDRP facilities was increased from 200 sq. ft. to 250 sq. ft. in new construction. Renovation projects may continue to use 200 sq. ft.

11. Section 7.9.8, Definitive Emergency Care. The minimum size of the trauma/cardiac rooms was increased from 240 sq. ft. to 250 sq. ft. in new construction. In renovation projects, the old figure is approvable. Two new added requirements are for at least one infectious isolation room and one holding/seclusion room in each emergency department.
12. Table 2 (previously table 3). The format was changed to have categories grouped under headings, but the table is otherwise essentially unchanged. Table 5 has been revamped to eliminate the need for a key and is cross-referenced to the appropriate section containing basic requirements for the room or service.
13. Section 8 has been retitled Nursing Facilities and is now a complete section on its own, including Table 6, ventilation; Table 7, filter efficiencies; Table 8, hot water use; and Table 10, illuminance.

ACKNOWLEDGMENTS

The Committee on Architecture for Health (CAH) of the American Institute of Architects (AIA) was privileged to convene and work with an interdisciplinary committee to revise the *Guidelines for Construction and Equipment of Hospital and Medical Facilities*. This is the second revision cycle for which the CAH/AIA has been honored to serve in this capacity. They played a major role in the preparation of this edition.

These revised *Guidelines* are the result of many hours of concentrated work by dedicated professionals concerned with the health care industry from private practice, professional organizations, and state and federal agencies. More than 2,000 proposals for change and comments on proposed changes were received and processed by the CAH at three meetings held in Washington D.C., Chicago, and San Diego. Approximately 50 members attended each meeting and gave serious and full consideration to all written comments and proposals. The AIA wishes to express its sincere gratitude to all who sent comments and to those organizations whose representatives served on the Guidelines Revision Committee.

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1. INTRODUCTION

1.1 General

1.1.A.

This document contains information intended as model standards for constructing and equipping new medical facility projects. For brevity and convenience these standards are presented in “code language.” Use of words such as *shall* is mandatory only where applied by an adopting authority having jurisdiction. Insofar as practical, these standards relate to desired performance or results or both. Details of construction and engineering are assumed to be part of good design practice and

- ▼ local building regulations. Design and construction shall conform to the requirements of these Guidelines. Requirements set forth in these Guidelines shall be considered as minimum. For aspects of design and construction not included in these Guidelines, local governing building codes shall apply. Where there is no local governing building code, the prevailing model code used within the geographic area is hereby specified for all requirements not otherwise specified in these Guidelines. (See Section 1.4 for wind and seismic local requirements.)

Where ASCE 7-92 is referenced, similar provisions in the model building code are considered substantially

- ▲ equivalent.

1.1.B.

This document covers health facilities common to communities in this country. Facilities with unique services will require special consideration. However, sections herein may be applicable for parts of any facility and may be used where appropriate.

▼ 1.1.C.

The model standards are not intended to restrict innovations and improvements in design or construction techniques. Accordingly, authorities adopting these standards as codes may approve plans and specifications which contain deviations if it is determined that the respective intent or objective has been met. Final implementation may be subject to requirements of the authority having jurisdiction.

1.1.D.

Some projects may be subject to the regulations of several different programs, including those of state, local, and federal authorities. While every effort has been made for coordination, individual project requirements should be verified, as appropriate. Should requirements be conflicting or contradictory, the authority having primary responsibility for resolution should be consulted.

1.1.E.

The Health Care Financing Administration, which is responsible for Medicare and Medicaid reimbursement, has adopted the National Fire Protection Association 101 Life Safety Code (NFPA 101). Facilities participating in Medicare and Medicaid programs shall comply with that code.

1.1.F.

The health-care provider shall supply for each project a functional program for the facility that describes the purpose of the project, the projected demand or utilization, staffing patterns, departmental relationships, space requirements, and other basic information relating to fulfillment of the institution’s objectives. This program may include a description of each function or service; the operational space required for each function; the quantity of staff or other occupants of the various spaces; the numbers, types, and areas (in net square feet) of all spaces; the special design features; the systems of operation; and the interrelationships of various functions and spaces. The functional program should include a description of those services necessary for the complete operation of the facility. Those services available elsewhere in the institution or community need not be duplicated in the facility. The functional program should also address the potential future expansion of essential services which may be needed to accommodate increased demand. The approved functional program shall be made available for use in the development of project design and construction documents.

1.2 Renovation

1.2.A.

Where renovation or replacement work is done within an existing facility, all new work or additions, or both, shall comply, insofar as practical, with applicable sections of these Guidelines and with appropriate parts of NFPA 101, covering New Health Care Occupancies. Where major structural elements make total compliance impractical or impossible, exceptions should be considered. This does not guarantee that an exception will be granted, but does attempt to minimize restrictions on those improvements where total compliance would not substantially improve safety, but would create an unreasonable hardship. These standards should not be construed as prohibiting a single phase of improvement.

