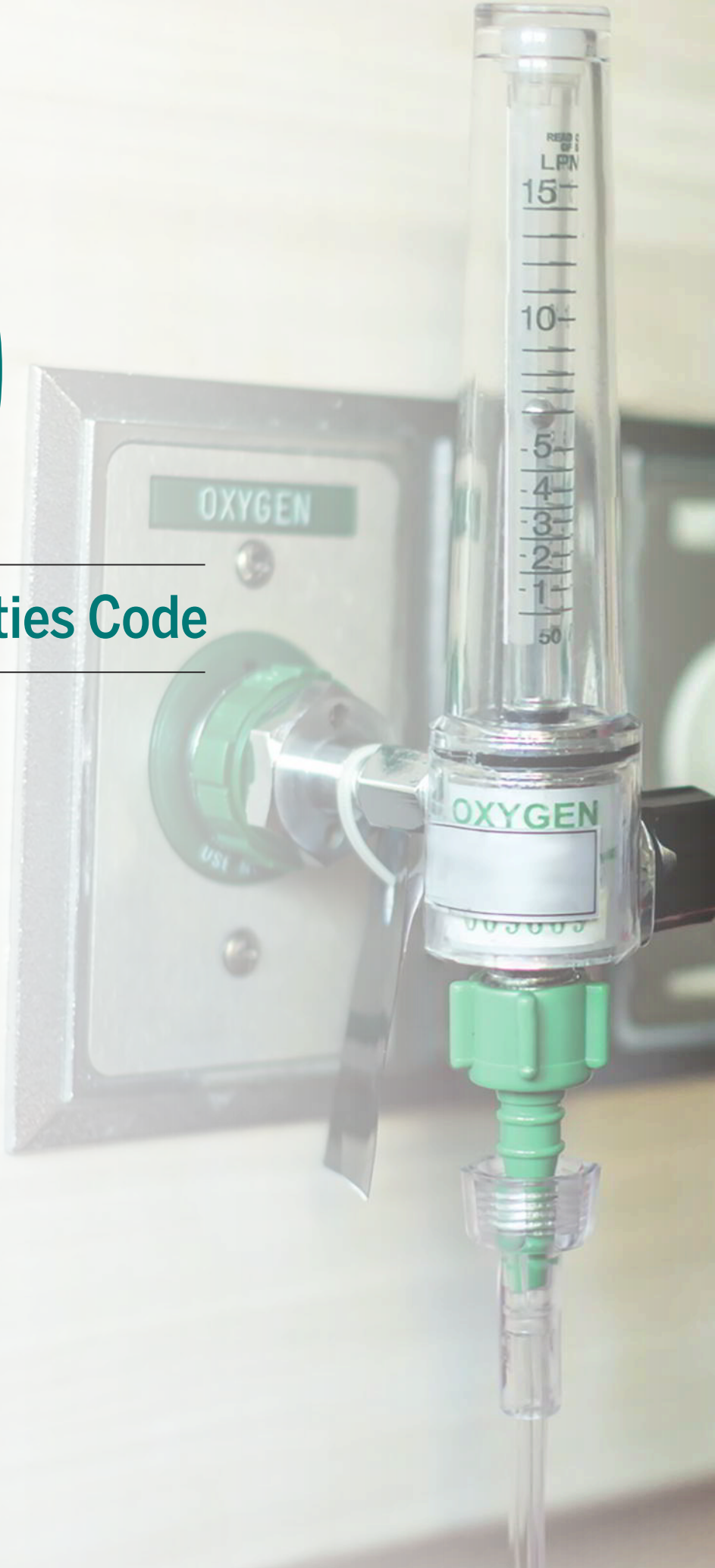
NFPA®

99

Health Care Facilities Code

2021



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NFPA® 99

Health Care Facilities Code

2021 Edition

This edition of NFPA 99, *Health Care Facilities Code*, was prepared by the Technical Committees on Electrical Systems, Fundamentals, Health Care Emergency Management and Security, Hyperbaric and Hypobaric Facilities, Mechanical Systems, Medical Equipment, and Piping Systems, released by the Correlating Committee on Health Care Facilities, and acted on by the NFPA membership during the 2020 NFPA Technical Meeting held June 8–29. It was issued by the Standards Council on August 11, 2020, with an effective date of August 31, 2020, and supersedes all previous editions.

This edition of NFPA 99 was approved as an American National Standard on August 31, 2020.

Origin and Development of NFPA 99

The idea for this document grew as the number of documents under the original NFPA Committee on Hospitals grew. By the end of 1980, there existed 12 documents on a variety of subjects, 11 directly addressing fire-related problems in and about health care facilities. These documents covered health care emergency preparedness, inhalation anesthetics, respiratory therapy, laboratories in health-related institutions, hyperbaric facilities, hypobaric facilities, inhalation anesthetics in ambulatory care facilities, home use of respiratory therapy, medical–surgical vacuum systems in hospitals, essential electrical systems (EES) for health care facilities, safe use of electricity in patient care areas of health care facilities, and safe use of high-frequency electricity in health care facilities.

A history on the documents that covered these topics are in the "Origin and Development of NFPA 99" in the 1984 edition of NFPA 99. What was then the Health Care Facilities Correlating Committee reviewed the matter beginning in late 1979 and concluded that combining all the documents under its jurisdiction would be beneficial to those who used those documents for the following reasons:

(1) The referenced documents were revised independently. Combining the documents into one would place them on the same revision cycle.
(2) It would place in one unit many documents that referenced each other.
(3) It would be an easier and more complete reference for the various users of the document (e.g., hospital engineers, medical personnel, designers and architects, and various enforcing authorities).

In January 1982, a compilation of the latest edition of each of the 12 documents under the jurisdiction of the correlating committee was published as NFPA 99, *Health Care Facilities Code*. The document was formally adopted at the 1983 Fall Meeting.

For the 1984 edition, technical, administrative, and organizational changes were made.

For the 1987 edition, the third and final step in the process of combining the previous individual documents took place — that of integrating the content of these individual documents into a cohesive document. Technical changes were made, and NFPA 56F, *Standard on Nonflammable Medical Piped Gas Systems*, was incorporated into the document.

For the 1990 edition, some structural changes were made and some modifiers were added to make it easier to determine where requirements apply. Technical changes included correlation with NFPA *101*®, *Life Safety Code*®, changes for compressed medical air systems on the use of gas-powered medical devices operating at a gauge pressure of 200 psi and piped gas systems in general, clarification that patient care areas and wet locations are mutually exclusive, and further guidance on the effects of a disaster on staff.

For the 1993 edition, further efforts made the document more user friendly (e.g., placing all "recommended" guidance either in notes or in the appendix). Significant technical changes included adding requirements and recommendations to further prevent or minimize fires in

operating rooms. There were also major changes to requirements for installing, testing, inspecting, verifying, and maintaining nonflammable medical piped gas systems. New sections on dental compressed air and dental vacuum requirements were added.

For the 1996 edition, further changes to make the document easier to use included restructuring Chapters 3 and 4 so that all requirements for a Type 1, Type 2, or Type 3 essential electrical system, or a Level 1, Level 2, Level 3, or Level 4 piped gas or vacuum system, were in one section. Other technical changes included moving requirements on flammable anesthetizing locations and the use of flammable inhalation anesthetics to a new Appendix 2. Guidance on emergency preparedness was moved to a new mandatory chapter. A new chapter on home health care was added. Requirements for storage rooms containing gas cylinders and containers totaling less than 3000 ft^3 were also added.

For the 1999 edition, some significant technical and structural changes were made. Chapters on ambulatory health care centers, clinics, and medical/dental offices were replaced completely by a new Chapter 13 covering health care facilities other than hospitals, nursing homes, and limited care facilities as defined in the document. A new chapter on freestanding birthing centers was added.

The 2002 edition included format and technical revisions in accordance with the 2000 edition of the *Manual of Style for NFPA Technical Committee Documents*. Occupancy Chapters 13–21 stated what was required, while Chapters 4–12 prescribed how those requirements were to be achieved.

The changes made to the 2005 edition were mainly for clarity and were editorial in nature. A centralized computer was allowed to be used in lieu of one of the master alarms for medical gas and vacuum systems. Stainless steel tubing was added as an approved material for vacuum systems.

The 2012 edition went through a major revision. NFPA 99 was changed from a standard to a code to reflect how the document was used and adopted and to indicate how health care is delivered. The risk to the patient does not change for a given procedure; if the procedure is performed in a doctor's office versus a hospital, the risk remains the same. Therefore, NFPA 99 eliminated the occupancy chapters and transitioned to a risk-based approach. The new Chapter 4 outlined the parameters for this approach. The code reflected the risk to the patient in defined categories of risk.

Chapter 5 went through editorial changes in the 2012 edition as well, with the addition of new material on the testing and maintenance of gas and vacuum systems. In addition, the administrative details for the care, maintenance, and handling of cylinders was moved to chapters under the responsibility of the new Technical Committee on Medical Equipment, formed by the combination of the Technical Committee on Gas Delivery Equipment and the Technical Committee on Electrical Equipment. Several new chapters were added for the 2012 edition on information technology and communications systems; plumbing; heating, ventilation, and air conditioning; security management; and features of fire protection. Many of these systems, not previously addressed by NFPA 99, are important systems and protection features in health care. The hyperbaric chapter also had minor changes for clarity.

The 2015 edition of NFPA 99 built on the major changes of the 2012 edition. The way risk categories were defined was revised to be more inclusive, and the categories could then be applied to equipment and activities rather than only to chapters that deal with systems. The requirements for Category 3 medical gas and vacuum systems, while originally aimed specifically for dental applications, were expanded to include the possibility that other gases might fall under Category 3, based on the facility's risk assessment.

The Technical Committee on Electrical Systems continued the task of correlating requirements with *NFPA 70®*, *National Electrical Code®*, and Chapter 6, and they removed the requirements for Level 3 EES, determining that if there was not a need for a Level 1 or Level 2 EES, then the requirements in *NFPA 70* that apply to all buildings would provide the necessary level of safety. Each of the technical committees made a concerted effort to specifically identify how each chapter was to apply to existing buildings or installations and to list the sections that applied.

The 2018 edition of the code featured numerous technical changes as well as provisions for new technologies and materials. Some major or noteworthy changes were as follows:

(1) The requirements addressing the risk assessment in Chapter 4 were revised to clarify the responsibility for conducting a risk assessment and determining risk categories. It further stressed, through annex language, that determining risk should be a collaborative effort.
(2) Chapter 5 included requirements that allow for the use of oxygen concentrators as central supply sources for piped systems.
(3) Corrugated medical tubing was made a permitted material for medical gas and vacuum systems.
(4) Chapter 6 was reorganized to be structured in a more logical manner. This better grouped related requirements and allowed for the deletion of duplicated requirements for different types of EES.
(5) Chapter 7 included requirements for wireless phone and paging integration and for clinical information systems.
(6) Chapter 14 compiled all of the requirements for inspection, testing, and maintenance for hyperbaric facilities into one section.

(7) A new Chapter 15 was added to the code. After several editions of trying to work the requirements for dental systems into Chapter 5, a decision was made to create a chapter dedicated to the application of piped gas and vacuum systems for these systems that do not always readily fall under the requirements for medical gas and vacuum as addressed in Chapter 5.

The 2021 edition of NFPA 99 introduces several substantial changes to the code. Some of the most notable changes are as follows:

(1) The scope has changed to include hyperbaric chambers for veterinary care.
(2) New guidance describes what to do when clinical spaces are converted to nonclinical spaces with regard to medical gas inlets and outlets.
(3) The term *responsible facility authority* has been introduced into the standard with requirements for responsibilities and qualifications.
(4) Existing language in Chapter 5 on cryogenic fluid central supply systems has been removed, and extracts from NFPA 55 have replaced it because NFPA 55 now covers this.
(5) A new section on health care microgrids has been added to Chapter 6.
(6) Requirements for electrical equipment site acceptance testing and electrical preventative maintenance have been added to Chapter 6.
(7) Procedures for removing flammable liquid–soaked materials from the operating room have been altered to require those materials to be removed only from the patient care vicinity.
(8) Requirements for the fire protection of heliports was added to Chapter 16 by referencing NFPA 418.

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Committee Scope: This Committee shall have primary responsibility for documents that contain criteria for safeguarding patients and health care personnel in the delivery of health care services within health care facilities: a) from fire, explosion, electrical, and related hazards resulting either from the use of anesthetic agents, medical gas equipment, electrical apparatus, and high frequency electricity, or from internal or external incidents that disrupt normal patient care; b) from fire and explosion hazards; c) in connection with the use of hyperbaric and hypobaric facilities for medical purposes; d) through performance, maintenance and testing criteria for electrical systems, both normal and essential; and e) through performance, maintenance and testing, and installation criteria: (1) for vacuum systems for medical or surgical purposes, and (2) for medical gas systems; and f) through performance, maintenance and testing of plumbing, heating, cooling, and ventilating in health care facilities.

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This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents or portions of documents covering the framework for emergency management and security of health care facilities proportionate to the risk of the patient and health care staff. This Committee shall have primary responsibility for the elements of planning over a continuum from minor incidences to catastrophic events, including: management controls, mitigation practices, incident response, continuity of services, recovery, stored capacity, staff training, and program evaluation based on established risk categories.