

Planning, Design, and Construction of Health Care Facilities



Addressing Joint Commission and
JCI Standards and Other Considerations—
from Planning to Commissioning

Fifth Edition

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Forewords

From The American Institute of Architects Academy of Architecture for Health

The American Institute of Architects Academy of Architecture for Health (AIA-AAH), in partnership with The Joint Commission and Joint Commission Resources (JCR), is proud to present a new edition of this comprehensive handbook. United by a common vision, our institutions are dedicated to improving the quality and safety of health care. We acknowledge the critical influence that thoughtful health care facility design has on this mission and strive to integrate it into our health care enhancement strategies.

This updated edition expands the scope of the previous edition, addressing the dynamic shifts in health care and subsequently health care environment design, as well as the transformative evolution of design and construction methodologies post-pandemic. It emphasizes the urgent need for equity, inclusion, and sustainability—integral elements in contemporary architectural practice. We are confident that this guide will be an indispensable asset to a diverse spectrum of individuals connected to the health care architecture field, including seasoned professionals, those at the outset of their careers, and the wider architecture, engineering, and construction (AEC) community. We also hope that this book will assist health care organization leadership as they interact with the AEC community in building and renovating their health care facilities.

AIA-AAH Updates to the New Edition

Chapter 1: Planning

The revisions to the strategic and master planning sections underscore the necessity of formulating a clear vision and well-defined objectives. This chapter introduces a renewed

focus on health equity, sustainability, and infection prevention and control, ensuring that they are central considerations in our planning processes. In addition, we have enhanced our approach to operational and functional programming, integrating it seamlessly with logistics to optimize performance and outcomes.

Chapter 2: The Design Process

This chapter delves deeper into the process from schematic design to construction administration, highlighting their significance. It introduces a comprehensive risk assessment during the predesign phase, explores viable design alternatives, and promotes interactive teamwork. The chapter also examines the positive impacts and advantages of standardization in space planning. The discussion extends to the practicality and effectiveness of creating mock-ups, as well as the importance of meticulous budgeting and schedule management to ensure project success.

Chapter 3: Considerations for Designing the Physical Environment of Care

Health care facilities have very specific design needs that are crucial to ensuring high-quality, safe health care for all. In this chapter, we spotlight the intricate array of mechanical, electrical, and plumbing (MEP) systems and their specialized designs as they relate to health care facilities. The MEP section provides an in-depth look at essential systems, emergency power, fuel storage, and microgrid systems, offering in-depth knowledge on these topics.

A new section in this chapter is design's role in environmentally sustainable health care, along with some illustrative case studies as well as information on The Joint Commission's new Sustainable Healthcare Certification program. Sustainability in design represents a necessary addition to this edition. The integration of sustainability

within health care is thoroughly explored through design principles that are essential for every building to consider. The operation of these structures, through their intentional design, is emphasized to align with the initiatives of Health Care Without Harm and Healthier Hospitals.

We then shift our focus to efficient, ergonomic, and equitable design for both patients and staff, emphasizing the importance of creating spaces that are flexible and adaptable and accommodating of all needs. As we look to the future, our goal is to move toward resilience. Finally, we underscore the diverse specialty areas within health care facilities, such as laboratories, hybrid operating rooms, and behavioral health spaces, which require a deep understanding of the patients, and the specific functions those diverse specialty areas serve.

Chapters 4–6: Construction, Commissioning, and Occupancy and Postoccupancy

The concluding chapters reemphasize the critical topic of construction and its associated risks within health care facilities. We delve into the essential life safety measures that must be observed during construction, both new and renovation. The narrative progresses from the meticulous planning commissioning stages to their practical implementation. Finally, we address occupancy and postoccupancy considerations, encompassing everything from staff training to evaluation. We aim to enhance understanding of staff well-being.

Case Studies

Throughout this book, there are numerous new case studies illustrating the various principles and concepts discussed in the text. The AIA-AAH was pleased to contribute suggestions for the various health care facilities featured in those case studies.

Furthering the AIA-AAH's Goals

The release of the fifth edition of *Planning, Design, and Construction of Health Care Facilities* marks a significant milestone in advancing the overarching objectives of the AIA-AAH. Education is the cornerstone of our mission, and we are dedicated to upholding our pledge to the community of design professionals, builders, and health care facility managers and directors. We achieve this by offering a diverse array of educational opportunities tailored to both

our members and the broader profession. Looking ahead, we acknowledge the imminent transition of leadership to the upcoming generation. It is with this foresight that we craft the essential tools and training programs today, equipping them to forge the health care environments of the future.

Special Thanks

We extend our heartfelt gratitude to the AAH editorial committee for their invaluable assistance and guidance. Their collaboration with JCR in crafting this edition of the book has been instrumental. We would like to acknowledge the following individuals for their contributions:

- Ellen Taylor, PhD, AIA, MBA, EDAC
- Bryan Langlands, AIA, FACHA, NCARB, EDAC, LEED GA
- Tina Duncan, AIA, CBO, ACHA

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2024 President, AIA-Academy of Architecture for Health

From The Joint Commission

The past five years have been transformative for The Joint Commission enterprise and the world of health care facility design, construction, and renovation. This fifth edition of *Planning, Design, and Construction of Health Care Facilities* reflects the health care sector's and The Joint Commission enterprise's evolving priorities.

Addressing New Challenges

Since the publication of the fourth edition of this book in 2019, the COVID-19 pandemic drove home the importance of effective health care facility design, including indoor air quality, infection prevention and control, and space adaptability, among other factors. For example, health care organizations (HCOs) need flexible space that can be repurposed easily to handle patient surges.

The pandemic also brought health disparities into sharp relief, with Black, Hispanic, and Native Americans; lower-income individuals of all races; and people with disabilities more likely to be hospitalized or die from SARS-CoV-2—in part because of limited access to care.¹

The design and configuration of the physical environment, including equipment and furnishings, have a major impact on health care access and equity. Adjustable-height examination tables, lift equipment to transfer individuals, and extra-wide chairs to accommodate people of size are as important for ambulatory care settings as for hospitals. The

aging of the population means more people with hearing, vision, mobility, and memory impairment need to navigate the health care environment and be treated with respect and dignity. Universal design principles, which address the evolving needs of diverse populations throughout their lifespans, must also consider neurodivergent individuals, who often have sensory issues and difficulty with face-to-face communication and wayfinding. Designers, architects, engineers, general contractors, and subcontractors must collaborate with HCOs to find physical environment solutions that maximize inclusivity.

In addition, the emotional toll that the pandemic, ongoing labor shortages, and widespread verbal and physical threats and acts of aggression have taken on health care staff cannot be overstated. Indeed, staff well-being is a priority of The Joint Commission, which has implemented workplace violence prevention requirements for accredited hospitals, critical access hospitals, and behavioral health care and human services organizations. Security measures to prevent and mitigate violence should be integrated into the design and construction or renovation of health care facilities. These can range from installing weapons detection systems at entry points (following manufacturer's instructions for use while maintaining compliance with *Life Safety Code*^{®*} means of egress requirements), to having a separate space within or near an emergency department to allow agitated individuals to calm down as they wait for care, to situating nurse stations to maximize nurses' ability to observe patients and signal for help if necessary.

Meeting Evolving Health Care Needs Through Design

In response to these challenges, the health care construction industry is growing, according to approximately 60% of respondents to *Modern Healthcare's 2024 Healthcare Construction and Design Survey*. Health care facilities are being renovated to meet evolving needs such as more emphasis on infection prevention and control, inclusion of diverse patient populations, and violence mitigation and prevention. Meanwhile, much of the new construction addresses the shift from inpatient to outpatient care, centering on ambulatory surgery centers, cancer treatment and other specialized centers, and medical office buildings.² Health care facilities are also looking to be better

suited to providing virtual care or telehealth, all of which is reflected in their design and construction.

Another key factor affecting health care facility planning, design, and construction is climate change and the need to be "more green." Climate change-related increases in the frequency and intensity of natural disasters³ have had a major effect on many HCOs, reinforcing the need for resilience in health care facility design and retrofit projects. Depending on the geographical region, the threat of tornadoes, extreme heat, severe snowstorms, wildfires, flooding, and other emergencies must inform the selection of building materials, structural components, and mitigation strategies.

Responding to Health Care Sustainability Issues

But it is not just about reacting to climate change; it is also about prevention and the need to provide health care in a more sustainable way. In recent years, the health care industry has been looking at its own role in increasing greenhouse gas emissions. Health care accounts for 8.5% of all greenhouse gas emissions in the United States and 4.6% of global emissions.⁴ In 2022, The Joint Commission joined the federal government's Health Sector Climate Pledge,⁵ vowing to reduce its corporate emissions by at least 50% by 2030 and achieve net zero emissions by 2050. Many HCOs have also signed this pledge and are making strides toward reducing their carbon footprint by conserving energy, using renewable energy sources, managing and reducing waste streams, and minimizing waste anesthetic gas emissions, among other measures. Several organizations with standout decarbonization policies, processes, and systems have already attained The Joint Commission's new Sustainable Healthcare Certification, which debuted on January 1, 2024.

For health care design and construction professionals, environmental sustainability should be considered when selecting building materials; situating the facility to take advantage of natural light and cooling; configuring heating, ventilating, and air-conditioning systems; using technologies such as fuel cells, solar panels, and combined heat and power systems; and much more. Accordingly, the fifth edition of *Planning, Design, and Construction of Health Care Facilities* has more robust information on designing for sustainable health care.

* *Life Safety Code*[®] is a registered trademark of the National Fire Protection Association, Quincy, MA.

In the pages ahead, you will find much new and updated content addressing the issues discussed above and more, including nine brand-new case studies that offer examples of health care equity, sustainability, resiliency, staff well-being, and more in health care design.

The Joint Commission is pleased to once again publish this book in collaboration with the American Institute of Architects–Academy of Architecture for Health. We hope that this book will provide valuable guidance in designing and building or renovating health care facilities to meet the challenges and opportunities of the future.

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The Joint Commission Standards Interpretation Group

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Introduction

Many changes have occurred in both health care design and The Joint Commission's and Joint Commission International's (JCI) standards since the publication of the fourth edition of *Planning, Design, and Construction of Health Care Facilities* in 2019—all of which necessitate publishing a new, updated edition of this book.

First and foremost, the COVID-19 pandemic had a major impact on health care facility design considerations by underscoring the following:

- **The importance of ventilation and indoor air quality** to infection prevention and control
- **The need for adaptable health care spaces** that can be repurposed easily and quickly during patient surges to meet evolving patient care and treatment needs
- **The advantages of and need for telehealth**, which has since become integral to health care delivery, requiring dedicated spaces and technologies to ensure patient privacy and enable successful communication between provider and patient. Responding to the rapid growth of telemedicine, The Joint Commission has launched a new Telehealth Accreditation Program (TEL), effective July 1, 2024.¹
- **The increase in workplace violence and the vulnerability of health care staff**—an ongoing problem, which can be mitigated through better layouts, workstations, security, and building envelopes, as well as staff education and training. Several Joint Commission standards and elements of performance (EPs) pertaining to workplace violence prevention took effect January 1, 2022. In addition, The Joint Commission provides a Compendium of Resources on workplace violence prevention on its website.²
- **The mental health crisis in the United States**, which has spurred solutions such as dedicated behavioral health spaces in emergency departments and

customized spaces for patients with behavioral health care needs.³ The Joint Commission has many resources on reducing the environmental risks for suicide on its online Suicide Prevention Portal.⁴

- **The recognition of the prevalence of health care disparities** and the urgent need for equity and inclusivity in health care delivery, which means optimizing care spaces for all ages, abilities, races and ethnicities, gender identities, and so on. The Joint Commission launched its Health Care Equity Certification on July 1, 2023.⁵

In the past few years, health care organizations (HCOs) have also faced the increased frequency, intensity, and unpredictability of natural disasters such as severe storms, tornadoes, wildfires, and extreme heat waves and cold snaps. Climate change has made designing for resilience a must in the health care sector; it has also forced HCOs to take stock of their own contributions to greenhouse gas emissions and strive for more environmentally sustainable facilities via new construction and renovation projects. The Joint Commission, which considers health care decarbonization a top priority, launched its new Sustainable Healthcare Certification on January 1, 2024.⁶

Although HCOs may have emerged from the pandemic and natural disasters that assailed or could beset them with long wish lists of building improvements, the enthusiasm for new construction and renovation has been tempered by high costs. Over the past three years, 49% of hospital construction projects experienced cost increases of up to 25% due to supply chain delays, rising prices for equipment and materials, and skilled labor shortages, according to the 2024 Hospital Construction Survey conducted by the American Society for Health Care Engineering (ASHE). In response to this, health care executives in some parts of the United States are delaying new projects, hoping for a market shift and better pricing on materials in the future.⁷

These challenges notwithstanding, the survey also revealed that more HCOs are building ambulatory care facilities this year—an increase from 7% of the respondents to ASHE’s 2023 Hospital Construction Survey to 12% of 2024 respondents (reflecting a 6% response rate to a random sample of 8,801 hospital and health system executives and third-party architecture, engineering, and construction professionals). Because ambulatory care facilities are generally less expensive to construct and to code than hospitals, health system leaders may see this as a viable alternative in the current industry market.⁷ Also, more health care is being delivered in outpatient settings and at home, so the investment in ambulatory care facilities may be a smart move.

In short, health care—and where it is delivered—is changing rapidly and significantly, hence, the need for a new edition of this book. Again, copublished by The Joint Commission and The American Institute of Architects (AIA)–Academy of Architecture for Health (AAH), this fifth edition of *Planning, Design, and Construction of Health Care Facilities* explores the trends mentioned above and others in depth. The goal is to ensure that those involved in planning, designing, and constructing and renovating health care facilities have the information they need to create the best spaces for safe, successful health care delivery. What follows is an outline of this edition’s content.

Audiences for This Book

This book is aimed at several audiences, including students and professionals in the fields of architecture, engineering, and construction (AEC), who want to learn more about not just health care design and construction but also project planning. In addition, a significant proportion of readers may hail from HCOs (for example, clinical and executive leaders, construction supervisors, accreditation and compliance professionals, facilities directors, safety officers, security officers). Such individuals may want to learn more about design trends and what The Joint Commission, the AIA-AAH, and the Facility Guidelines Institute (FGI) require or recommend for health care facility planning, design, and construction.

This book is also for readers in both US and international HCOs. Having a common understanding of the issues and processes involved in health care facility projects, as outlined in this book, will help ensure better outcomes for patients worldwide.

Purpose of This Book

The fifth edition of *Planning, Design, and Construction of Health Care Facilities* is an updated overview not just of the planning, design, and construction processes but also of commissioning and postoccupancy issues—historically given less than proper attention. The intent is to define and explore these processes, which today are largely integrated rather than distinct linear phases, examining them through the lens of The Joint Commission and JCI where applicable. With the AIA-AAH and The Joint Commission and Joint Commission Resources (JCR) partnering on this book project, we can ensure that this new edition meets the informational needs of architects and contractors in the field who are working with accredited HCOs to upgrade or build new facilities.

Most of the concepts discussed in this publication apply to health care facilities throughout the world, despite the many variations within countries and across regions. That helps make this one-of-a-kind book valuable on both a domestic and an international level for architects, designers, and planners, as well as for health care leaders, administrators, and facilities directors. It is a valuable guide for HCOs that seek to construct new buildings or renovate existing ones, giving an overview of the major issues and needs involved in such projects.

The fifth edition includes new and updated content, including nine brand-new case studies that offer examples of health care equity, resiliency, and sustainability in health care design. The book also has a new chapter, “Considerations for Designing the Physical Environment of Care,” that covers mechanical, electrical, and plumbing infrastructures; the role of design in environmentally sustainable health care; efficiency and ergonomics in design; and finally, specialty design for hybrid operating rooms, diagnostic imaging, and behavioral health care, to name a few. Specifically, readers can use this book to better understand the following:

- **Upfront issues for planning:** These issues should be identified and considered before building or renovating health care facilities to make an effective, efficient plan at the outset. This saves time and money by moving the construction process from concept to completion more quickly and economically. And as noted earlier in this introduction, new construction and renovation projects are increasingly costly, so all efficiencies and savings are welcome and needed.

- **Community needs via data analysis:** Comprehensive data collection and analysis are essential to ensure that the strategic plan, master facility plan, and architectural plan are all aligned with community needs. Any construction or renovation of health care space must consider and address the needs of the community and establish goals and tactics to meet those needs.
- **Continuous process improvement:** This edition emphasizes the critical early role of process improvement and its use as an iterative activity throughout the project—first for design, then for process alignment with the design.
- **Collaborative design:** This edition also discusses how to take building design from concept to reality, which requires the ability to adjust within the parameters of the overall plan and budget. This also means that all parties involved—leadership, staff, architects, construction workers, and others—must understand planning and implementation to avoid unnecessary distractions, delays, and regulatory barriers.
- **Specialty-area design:** Any health care construction or renovation should address any special needs for the design of laboratories, pharmacies, hybrid operating rooms, behavioral health care areas, and more. This ensures that patient and staff safety are paramount.
- **The critical role of commissioning:** Commissioning is key in both the systems of the building and clinical processes. Properly test-driving the equipment and simulating processes through realistic scenarios while modifications may be made has short-term and long-term benefits for the organization.

Content and Organization of This Book

This edition provides readers with information and strategies to help them succeed in their efforts to plan, design, construct or renovate, and ensure safe occupancy of new or renovated health care facilities. The scope of this book does not allow for detailed examination of every aspect of that lengthy and complex process or how to meet all local and national standards worldwide. However, the book does provide guidelines and strategic linkages that organizations can use to plan and implement safe health care design in accordance with Joint Commission and JCI standards.

The chapters in this book are organized to follow the typical major processes in health care facilities construction and renovation: planning, design, construction, commissioning, and occupancy and postoccupancy. These chapters also include sidebars on Joint Commission and JCI standards and other issues, case studies, and two “Focus” features that delve into specific aspects of health care design and construction in detail.

Foundations: Standards and Regulations

The beginning of this book explains the role and importance of Joint Commission and JCI standards in the construction and renovation of health care facilities. This section also introduces the FGI *Guidelines* and other applicable standards and regulations. In short, this section helps clarify “what is required” to ensure compliance with applicable regulations, standards, and the like.

Chapter 1: Planning

The first chapter covers the planning process, explaining the critical roles of strategic planning and master facility planning, as well as other important considerations such as team selection, data collection and analysis, and budgeting.

Chapter 2: The Design Process

This chapter explores design processes that go beyond initial planning to actual design development and implementation. It starts with creating a detailed, functional project plan, or a record of a project’s purpose and its requirements, and moves toward the key components that guide a successful construction or renovation project. This chapter explores risk assessments and process improvements to consider during design. It also highlights the role of the schematic design phase in capturing the overall scope of a project to help drive preliminary construction schedules, budgets, and transform preliminary ideas into highly detailed designs. The chapter concludes with an overview of the importance of construction documents, which guide the contractor or builder of a project. Accurately prepared construction documents are critical to a project’s success, minimizing costs and delays in schedule.

Chapter 3: Considerations for Designing the Physical Environment of Care

New in this edition, this chapter focuses specifically on issues related to designing the physical health care environment. The chapter builds on planning and design processes to highlight the range of systems and building features that directly affect patient and staff safety, comfort, and quality of care. This chapter takes an in-depth look at designing for mechanical, electrical, and plumbing infrastructures; designing for environmentally sustainable health care; and designing for efficiencies and ergonomics. Specialty design is discussed, with a focus on laboratories, pharmacies, hybrid operating rooms, diagnostic imaging, behavioral health care, and rehabilitation services.

Chapter 4: Construction

This chapter discusses the stages of the construction and renovation processes—in other words, the project is active, and the building is being constructed or renovated. The key here is how to manage the risks involved in the actual construction or renovation, and this chapter addresses various types of risk assessments, interim life safety measures, and other actions. The chapter includes a Focus feature on “Construction Risks and Measures.”

Chapter 5: Commissioning

This chapter addresses facility commissioning, a systematic process that involves documenting and verifying that all facility systems, structures, and components are present and performing interactively and according to the intent of the design and the goals and objectives of the organization. The chapter also provides information on process management and budgeting.

Chapter 6: Occupancy and Postoccupancy

As Chapter 5 outlines considerations for facility commissioning, this chapter focuses on clinical operations commissioning, which focuses on human activity in the new or renovated health care facility. In this final phase of design, the project is handed over to the HCO as staff members examine workflow processes and test whether they can work comfortably and efficiently in the new or renovated space. A Focus feature on move-in considerations is also included.

Key Terms

Like any professional field, health care, architecture, and construction are awash with terms and jargon. Understanding these terms and “talking the same language” are crucial for effective communication and collaboration. Key terms are highlighted in each chapter, shown in red, and defined at the point of use in the text. They are also included in the index.

Joint Commission and Joint Commission International Standards

The Joint Commission and JCI are not directly involved in the design or construction process of health care facilities. There are, for example, no standards that drive the building codes. However, there are standards associated with construction and renovation projects; these are included in both the domestic accreditation manuals and the international manuals (see “Foundations: Standards and Regulations”). Although most manual chapters address facility design in a broader sense but not in particulars, The Joint Commission and JCI understand that project planning, design, construction, and commissioning remain fundamental to ensuring safe, efficient health care facilities that meet accreditation standards and provide optimal care.

Manuals to Consult

Early in the planning process, the most current edition of any relevant accreditation manual should be obtained for use and reference during the project. See The Joint Commission and Joint Commission International websites for information (<https://www.jointcommission.org/> and <https://www.jointcommissioninternational.org/>).

Domestic Program Settings

Joint Commission standards for built environments in the United States appear in manuals for the following health care settings:

- **Ambulatory care:** Surgery centers, community health centers, group practices, imaging centers, telehealth providers, sleep labs, rehabilitation centers, student health centers, urgent care clinics, and other ambulatory care providers

- **Assisted living communities:** Organizations that assist residents with activities of daily living as well as provide services such as medication management, rehabilitation, palliative care, dementia-specific memory care, and skilled nursing care
- **Behavioral health care and human services facilities:** Organizations that provide mental health services, substance-use treatment services, foster care services, programs or services for children and youth, child welfare, services for individuals with eating disorders, services for individuals with intellectual/developmental disabilities of various ages and in various organized service or program settings, case management services, corrections-based services, and opioid treatment programs
- **Critical access hospitals:** Hospitals in the United States that offer limited services and are located more than 35 miles from a hospital or another critical access hospital or are certified by the state as being a necessary provider of health care services to residents in the area. A critical access hospital maintains no more than 25 beds that could be used for inpatient care. It provides acute inpatient care for a period that does not exceed, on an annual average basis, 96 hours per patient. A critical access hospital can also have a distinct psychiatric and/or rehabilitation unit; each unit can have up to 10 beds.
- **Hospitals (including academic medical centers):** General, acute psychiatric, pediatric, medical/surgical specialty, long-term acute care, and rehabilitation hospitals
- **Laboratories:** Clinical laboratories, point-of-care testing facilities, assisted reproductive technology labs, and reference labs
- **Nursing care centers:** Organizations that provide specialized services to patients or residents, which may include rehabilitative care, dementia-specific memory care, and long-term nursing care
- **Office-based surgery practices:** Surgeon-owned or -operated organizations (for example, a private physician's office or small group practice or an oral surgery practice) that provide invasive procedures and administer local anesthesia, minimal sedation, or conscious sedation in settings other than hospitals or ambulatory surgery centers
- **Rural health clinics:** In further support of equitable health care for all, The Joint Commission launched the new Rural Health Clinic Accreditation Program in the summer of 2024, intended to help HCOs in underserved, rural communities improve the quality of primary care and personal health services. This includes US clinics that meet all state and federal requirements for a designated shortage area, including location, staffing, and health care services requirements.
- **Telehealth:** HCOs that exclusively provide care, treatment, and services via telehealth and HCOs that provide services via telehealth to another organization's patients. This new accreditation program also launched in the summer of 2024 to help address the structures and processes necessary to provide safe, high-quality care, treatment, and services, using a telehealth platform.

International Program Settings

The international standards are available for the following JCI accreditation programs:

- **Ambulatory care facilities:** The standards apply to a variety of service models, but primarily to organizations in which the patient population consists of outpatients seeking services—general or specialty, urgent or planned. Examples of specialty services include outpatient surgical services, diagnostic testing, dental services, and palliative care. Patients stay in the facility for short periods; however, if patients need to stay overnight due to a prolonged recovery, they are expected to be released or transferred to an appropriate facility within 24 hours.
- **Clinical laboratories:** Facilities that perform laboratory testing on specimens obtained from humans to provide information for health assessment and/or for the prevention, diagnosis, and treatment of disease
- **Hospitals (including academic medical centers):** General, acute psychiatric, pediatric, medical/surgical specialty, and rehabilitation hospitals
- **Long-term care facilities:** Organizations that provide specialized services to patients or residents, which may include rehabilitative care, dementia-specific memory care, and long-term nursing care
- **Primary care centers:** Organizations that focus on community integration, health promotion and disease prevention, first-contact medical services, and linkages to other parts of the health care delivery system

Common Themes

Common themes among all the accreditation programs and standards that are pertinent to a health care facility construction or renovation project include those listed below. These themes will be discussed throughout the book as appropriate.

Leadership

- Leaders base project planning on the needs of the community and/or the population served. They rely on data collection and analysis to determine these needs.
- Project plans reflect current best practices and, if available, evidence-based design strategies.
- Project plans are made with input from those in the field with knowledge of the various clinical and environmental needs—for example, pharmacy, nursing, infection prevention and control, imaging, and so on—as appropriate to the care to be delivered in that health care facility.

Patient-Centered Care

- Facilities provide the support services necessary for specific patient populations, such as radiology, food service, and laboratory services.
- Design is centered on the well-being of the patients, both physical and psychological.
- Privacy is provided for patients in all care settings.
- Built environments reflect the needs of the disabled, age-related services, cultural needs, and other factors as appropriate.
- Families are integral to patient care, and their needs should be considered and addressed.
- Patient belongings are secure at all times.

Staff

- Staff are provided an appropriate and safe workspace.
- Staff training is essential, and space is identified for this purpose.

The Physical Environment

- Facilities are designed and built to provide a secure, safe, and healthful environment for patients, visitors, and staff.
- Systems are in place to effectively manage hazardous materials and waste.
- A secure environment is maintained for users, equipment, and supplies.
- A safe physical facility is maintained for users, equipment, and supplies.

- Facilities plan for and manage probable emergency situations.
- Adequate and reliable utility systems and controls are in place.
- Fire safety building features and protocols meet prescribed local and national requirements.
- Supplies of potable water and electricity are available 24 hours a day, 7 days a week.
- Interim life (fire) safety measures can be met.

Infection Prevention and Control

- Current evidence-based scientific practices, as well as local and national regulations, are followed to reduce the risk of infection.
- Appropriate heating, ventilating, and air-conditioning (HVAC) systems are installed to mitigate contamination potential.
- Proper hand hygiene infrastructure is available, visible, and accessible within the workflow of health care providers. *Infrastructure* refers to the physical components required to implement hand hygiene such as access to alcohol-based hand sanitizer (ABHS), hand-washing stations supplied with water, soap (plain or with an antiseptic), towels, gloves, and hand moisturizers that are compatible with antiseptics and gloves.⁸
- Proper equipment and processes are in place for storage and disposal of waste.
- Sterilization and/or disinfection of equipment reflect current standards.
- Safe, effective water management is implemented to help prevent the growth and spread of *Legionella* bacteria (which causes Legionnaires' disease) and other waterborne pathogens, and water quality guidelines are followed to protect patients receiving hemodialysis.
- Patients' food is prepared, stored, and distributed safely.
- Selected surfaces and materials facilitate a clean environment.
- Infection control risk assessments are conducted and solutions applied for both design and construction.

Information Management

- Patient records are protected and maintained so that they are secure.
- Confidentiality is maintained.

Medication Management

- Medications are safely received, processed, stored, dispensed, distributed, administered, and disposed of.

Surgical and Anesthesia Care

- The physical environment supports the customary requirements of patient monitoring and medical technologies for life support.
- HVAC systems are designed to provide appropriate pressure relationships, temperature, humidity, and air changes.

Tissues

- Appropriate and adequate technologies are adopted to protect and maintain tissues for testing, research, transplant, or other purposes.

Environmental Sustainability

- Whenever possible, building and construction materials are locally sourced.
- Greener energy is considered, including microgrid systems.
- Natural light and other elements of nature are incorporated into the design of the health care facility.
- Patients, staff, and visitors have access to outdoor spaces.
- Off-site, prefabricated or modular construction is considered for appropriate projects.
- Site selection and building orientation take advantage of sunlight and shade to reduce the energy needed for heating and cooling.

Health Care Equity

- Planning is done with the specific needs of the community in mind.
- Members of the community have an avenue for sharing their needs with the HCO.
- Diverse voices are included in the planning process.

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