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Canadian health care facilities

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Ain Allas (1952–2009)

The Technical Committee on Health Care Facility Engineering and Physical Plant and the Subcommittee on the Design and Construction of Health Care Facilities wish to acknowledge the tremendous contribution of the late Ain Allas towards the development of this Standard. Ain was a strong and dedicated supporter from the very beginning of the project, and in his role as Subcommittee Chair was instrumental in recruiting facility designers, engineers, health care professionals, and provincial/territorial government representatives. His contributions continued over the next several years as he led the committee through the monumental task of creating a new HCF design and construction standard. The sudden loss of Ain Allas in January 2009 was a shock to everyone involved in this project. We greatly appreciate all that he did to make this Standard a reality.

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The Subcommittee also thanks N. Hallett of the Newfoundland Department of Health and Community Services for her contributions to the development of this Standard.

Preface

This is the first edition of CSA Z8000, *Canadian health care facilities*.

CSA acknowledges that the development of this Standard was made possible, in part, by the financial support of the governments of Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, and Yukon, as administered by the Canadian Agency for Drugs and Technologies in Health (CADTH).

This Standard was prepared by the Subcommittee on the Design and Construction of Health Care Facilities, under the jurisdiction of the Technical Committee on Health Care Facility Engineering and Physical Plant and the Strategic Steering Committee on Health Care Technology, and has been formally approved by the Technical Committee.

September 2011

Notes:

(1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

(2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

(3) *This publication was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.*

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(a) Standard designation (number);
(b) relevant clause, table, and/or figure number;
(c) wording of the proposed change; and
(d) rationale for the change.

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Canadian health care facilities

0 Introduction

0.1
This Standard provides requirements and guidance for the planning, design, and construction of Canadian health care facilities. It is intended to be used by all facilities providing health care services regardless of type, size, location, or range of services. This Standard was developed for use by architects, engineers, planning and project managers, contractors and builders, commissioning teams, facility managers, maintenance managers, infection prevention and control personnel, and other health care professionals.

0.2
This Standard was developed to provide a consistent methodology and practical requirements for health care facilities (HCFs) across the country, to achieve the following benefits:
(a) establish a common standard that Canadian authorities can adopt and enforce within their jurisdictions;
(b) share best practice between provinces and regions, and between larger and smaller facilities;
(c) promote consistency in the physical layout of Canadian facilities, thereby increasing operational efficiency and helping to reduce the risk of error by newly hired or visiting staff from other facilities;
(d) enhance facility operational efficiency, optimize quality of service delivery, and maintain high levels of worker and patient health and safety; and
(e) provide a common terminology and design approach, to improve communication between the organizations and individuals involved in HCF design and construction, to reduce construction errors, and to facilitate the movement of knowledge and skilled tradespeople between regions.

0.3
This Standard was developed to complement existing standards and codes by providing a set of overarching requirements for HCFs, and referencing out to specific standards and codes as appropriate. In this way, it can serve as a central resource for planners, architects, engineers, health care administrators, and contractors.

0.4
This Standard contains a comprehensive and coordinated set of requirements, references, and guidelines that apply to all aspects of the built environment for health care service delivery. Because of the complexity of HCFs, the requirements that apply to a particular element of the HCF can appear in different places within the document. Therefore this Standard is meant to be used in its entirety, and not as a step-by-step manual.

0.5
As a design and construction standard, this Standard does not specify requirements for operational models, policies, procedures, etc. Those elements are addressed in other standards, guidelines, and accreditation tools provided by CSA and other organizations such as Accreditation Canada, Provincial/Territorial governments, and the professional colleges and licensing bodies. This Standard complements these other standards, guidelines, and tools by providing an environment that supports the operational model and management structure that will be used in the HCF. The following principles and objectives were considered throughout the development of this Standard:
(a) alignment with Provincial, Federal, or Territorial Ministries of Health and their specific governmental policy directives;

(b) promotion of patient and family-centred care and the elements of respect, information sharing, participation, and collaboration;
(c) integration of guiding principles into the development of technical and functional programs;
(d) ensuring feasibility and flexibility to meet future trends and changes in services and technologies;
(e) promotion of environmentally responsible design including acoustics, lighting, air quality, bio-hazardous waste removal, and energy usage alterations that do not compromise patient care or needs;
(f) incorporation of ergonomics and human factors into all aspects of the HCF as it relates to the patient, clinical providers, other staff, and the general public at large (there is particular emphasis on privacy, confidentiality, safety, supportive workplace features, and effective operational requirements);
(g) inclusivity for people of different values, beliefs, and cultural backgrounds, as well as those who face physical, psychological, or other health-related challenges; and
(h) facilitation of long-term, sustainable service delivery for capital and operational expenditures using life cycle costing.

0.6

This Standard is structured to follow a consistent, modular approach to HCF design. It can apply to the development of an entire HCF or to components within an HCF that are undergoing renovation or new construction. This Standard is organized as follows:

(a) Clauses 1 to 3 — Scope, reference publications, and definitions.
(b) Clause 4 — Provides the overarching principles, general requirements, and guidance that apply to all areas of an HCF that is being developed or renovated, such as general program considerations, operations, environment of care, safety and security, infection prevention and control, and sustainability.
(c) Clause 5 — Planning process, outlines the key planning considerations early in the design/construction process recognizing the variability of factors that would impact the service delivery models. This Clause specifically addresses pre-design planning, design, construction, building commissioning, and operational commissioning.
(d) Clause 6 — Site and facility development, reviews the key generic external considerations for site development and building development. It also highlights the critical functional adjacencies within an HCF, both for clinical and support services.
(e) Clause 7 — General functional service requirements, outlines the generic design and construction considerations as they relate to the overall functioning of an HCF, including building services requirements, environmental considerations, infection prevention and control, materials and finishes, occupational health and safety, safety and security, technology considerations, furniture, fittings, and equipment.
(f) Clause 8 — Inpatient and related services, highlights the specific key requirements for inpatient areas, and in some cases for outpatient facilities that are part of a continuum of care. These areas include
    (i) critical care;
    (ii) maternal and newborn;
    (iii) medical surgical inpatient;
    (iv) mental health services;
    (v) pediatric and adolescent inpatient; and
    (vi) rehabilitation care.

    The list of functional service areas is not meant to be exhaustive.
(g) Clause 9 — Diagnostic and treatment functional service requirements, highlights specific key requirements for diagnostic/treatment functional services. These areas include
    (i) ambulatory care — general;
    (ii) ambulatory care — renal dialysis;
    (iii) ambulatory care — oncology;
    (iv) emergency care;
    (v) procedures;
    (vi) allied health;
    (vii) laboratory services;

(viii) electrodiagnostics;
(ix) respiratory services;
(x) medical imaging; and
(xi) pharmacy.

(h) Clause 10 — Support functional service requirements, highlights supporting services within an HCF including biomedical engineering, environmental services, nutrition and food services, materials management, plant maintenance, security and parking, and medical device reprocessing.
(i) Clause 11 — Common requirements, provides a table of common spaces across an HCF and, where appropriate, it provides minimum sizes for these areas.
(j) Clause 12 — Building services and environmental design, gives an overview of the engineering and architectural systems that are specific to HCFs.

0.7

This Standard includes notes for additional support and guidance to users, and to provide further detail or rationales on requirements where needed.

The goal of this Standard is to ensure that the outcomes of those under the care of an HCF are improved where design and construction can assist with these outcomes. To achieve this requires a focus not only on safety and efficiency, but also on the impacts of the physical environment and atmosphere on the care outcome. Using the available knowledge in evidence-based design as outlined in this Standard, HCFs can create a physical environment that promotes positive health outcomes, quicker recovery, a reduction in medical errors, and the recruitment and retention of valued caregivers.

1 Scope

1.1 General

1.1.1

This Standard describes essential elements and specific requirements for the planning, design, and construction of health care facilities (HCFs), both public and private. It applies to all facilities providing health care services regardless of type, size, location, or range of services, including

(a) acute care hospitals;
(b) inpatient continuing care hospitals;
(c) long-term care facilities;
(d) community-based providers;
(e) leased/rental suites in office buildings;
(f) ambulatory care clinics; and
(g) outpatient care (e.g., clinics, dentists' offices, and doctors' offices).

Notes:

(1) *See Clause 3 for the definition of HCF.*

(2) *The requirements specified in this Standard supplement the requirements of the* Canadian Electrical Code, Part I (CEC), National Building Code (NBC), National Plumbing Code (NPC), National Fire Code (NFC)*, and provincial/territorial or local regulatory authorities.*

1.1.2

This Standard applies to new facilities and to existing facilities undergoing addition or renovation.

1.1.3

This Standard includes requirements for

(a) planning and design principles, and the planning process;
(b) site and facility development;
(c) general functional service;
(d) inpatient functional service;