

CLINICAL SERVICES

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## INPATIENT CARE

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## A. INTRODUCTION

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Inpatient units are a key component of the clinical care at a cancer centre. Patients may be admitted to an inpatient unit for treatment that cannot be provided in an outpatient setting, for the management of severe symptoms or infections, or due to medications that require 24-hour monitoring, the need for complex tests, or an inability to cope at home due to a diminished physical or mental capacity or a lack of support.

Many hospitals house cancer patients on general units. Inpatient units can be designed for a specific patient population (e.g., surgical, solid tumour, leukemia, or stem cell transplant units) to allow for the safe and efficient care of patients with specialized clinical service requirements. In larger hospitals and cancer centres that house a wide range of expertise and serve a substantial patient population, inpatient units may be organized according to disease site-specific cohorts. This model allows for clinical expertise to be specialized by unit and can result in a more effective and efficient use of human resources.

The following chapter outlines the resources, management and quality performance considerations required to deliver clinical services on inpatient units, and explores future trends in inpatient care.

## B. CLINICAL SERVICES

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### 1. SCOPE

The services provided for inpatients in a cancer centre include patient assessments, diagnostic tests, interventions and treatment, and monitoring, as well as intensive, step-down and specialized care. The inpatient record is an important tool to document all services requested and delivered for an individual patient. Documentation improves communication between members of the multidisciplinary/interprofessional healthcare team. Orders should be updated and documented in the inpatient record regularly and should include instructions for nutrition, ambulation, assessments and diagnostic tests, interventions and treatments, monitoring and medication required for the patient. All clinical activity relating to the patient should also be documented in the record, including the results of assessments and diagnostic tests, the patient's daily status, and the details of interventions and treatments, monitoring and consultations. Standards set by professional bodies and the organization are critical to supporting accurate, timely and complete documentation that reflects the patient's needs, interventions and outcomes; for example, the College of Nurses of Ontario *Practice Standard*.<sup>1</sup>

#### **Assessments and Diagnostic Tests**

The healthcare team is responsible for completing patient assessments, as determined by the care plan, the most responsible provider/physician (MRP) and inpatient care policies. Assessments typically include the patient's history of illness, performance status, symptoms, and psychological and social issues. Patients are also assessed to determine their risk for falls, pressure injuries, confusion and delirium. It is important that assessments are embedded into regular care and workflow on an inpatient unit, to ensure that risks are identified and mitigated early. One way to drive a high assessment completion rate is to provide continuous feedback on performance; for example, units may perform periodic inpatient record audits and display the per cent completion rate in an area that is visible to staff.

Depending on the clinical management of their disease, inpatients typically require access to medical imaging, laboratory tests and pathology. Other tests conducted on an inpatient basis include electrocardiograms, biopsies and bone marrow aspirates, to name a few. A variety of consultations may be conducted, based on patient need. These can involve a range of disciplines, including pharmacy, respiratory therapy, physical therapy, occupational therapy, nutrition, social work, speech language pathology, palliative care, pain management and psychosocial oncology. Disciplines external to direct cancer care also provide consultation services to cancer patients; for example, infectious diseases, cardiology, dermatology, respirology, neurology, endocrinology, urology, etc. All assessments and diagnostic tests should be documented in the inpatient record, along with orders outlining interventions and monitoring requirements.

## Interventions and Treatments

Cancer-related interventions and treatments delivered in an inpatient setting may include surgery, chemotherapy, radiotherapy, hematopoietic stem cell transplantation and other interventions. See other *Cancerpedia: Clinical Services* chapters for more information about specific clinical services. Symptoms and complications of treatment are also managed in inpatient settings. This may require the administration of medication, blood and blood products, procedures such as paracentesis, thoracentesis, respiratory therapy, or wound care management, to name a few. The findings of patient assessments may also result in interventions designed to mitigate the patient's degree of risk. For example, a patient at risk for falls may require mobility devices or equipment to minimize their risk of falling, whereas a patient with decreased mobility may require assistance in turning to prevent tissue injury or pressure ulcers over bony prominences, such as the sacrum and trochanter. Inpatients also receive assistance and physical care, depending on their requirements. This care can include support for bathing, physical activity, mobility and nutrition, physical and occupational therapy to maintain function and prepare for the resumption of daily activities upon discharge, and supportive care to help manage psychosocial issues.

All interventions and outcomes should be documented in the inpatient record to ensure effective communication between members of the healthcare team.

## Monitoring

The inpatient healthcare team must monitor the patient for physical signs and symptoms, as well as psychological wellness. Monitoring frequency is dependent on the patient's condition.

Monitoring should include standard vital signs (i.e., blood pressure, pulse, respiration and temperature) in addition to oxygen saturations or neurological vital signs. Point-of-care testing, such as capillary blood glucose monitoring and urine pH, may be required. Additional testing is dependent on the patient's needs, treatments, comorbidities and symptoms. Intensive monitoring for higher-acuity patients may include respiratory support, such as intubation and ventilator support, continuous cardiac monitoring and invasive blood pressure monitoring. This intensive monitoring requires specialized intensive care nursing knowledge and skills. Monitoring requirements for each patient should be outlined in orders and easily accessible in the inpatient record. All monitoring conducted should be documented in the inpatient record to ensure consistent communication between members of the healthcare team.

## Intensive, Step-Down and Specialized Care

When required, the healthcare team may provide more acute inpatient care through an intensive or step-down care unit. Intensive care units – also known as critical care units – house patients with life-threatening conditions who require immediate intensive monitoring and care. Step-down units provide an intermediate level of care to patients who no longer need the highly-specialized services of an intensive care unit, but are not ready for transfer to a regularly-staffed inpatient care unit. Intensive and step-down care beds should be available to inpatients as required. For more information about intensive and step-down care, see the *Cancerpedia: Surgery* chapter.

The cancer centre's emergency code system is used to summon a range of healthcare providers to provide acute care to patients. Each code indicates a specific type of emergency; for example, code blue indicates a cardiac arrest or other medical emergency, whereas code white indicates actual or potential violent behaviour on a unit. Code teams containing key professionals are formed to ensure that an appropriate mix of expertise is available to respond to emergencies. Typically, healthcare providers designated to a code are expected to provide patient care in a timely manner. For more information about the emergency code system, see the *Cancerpedia: Governance and Management* chapter.

In larger cancer centres and hospitals, specialized units may be formed to focus on a specific patient population or disease-site cohort. This model provides a locus of expertise and support for patients with specialized clinical service requirements.

## 2. PATHWAY

Figure 1 illustrates the typical patient pathway for inpatient care. Each step of this pathway is described in greater detail below.

### Request for Inpatient Care

Patients are generally referred for inpatient care through outpatient clinics at the cancer centre; however, patients can also be admitted through referral from their primary care provider, the emergency department or another healthcare facility. Requests for inpatient care are triaged and admitted based on pre-established criteria.

### Admission

Upon admission to an inpatient unit, the healthcare team reviews and executes the admitting orders and ensures that an MRP is identified. The inpatient unit provides an orientation to the patient with respect to meals and how to call for assistance, and reviews the care plan. The healthcare team answers patient and family questions and provides essential contact information to enable ongoing communication.

### Assessment

A multidisciplinary/interprofessional healthcare team conducts assessments, order tests and conducts consultations, as required to interpret results. Assessment and test results must be documented in the inpatient record.

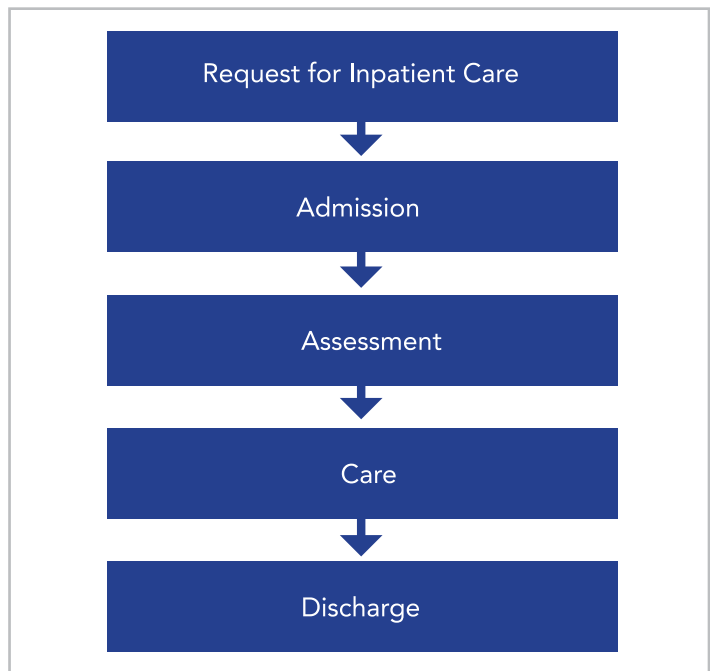
### Care

A treatment plan, or care plan, is created that meets the needs of the individual patient. Once the treatment plan is established, the healthcare team provides clinical services and executes the plan, while communicating with the patient and the patient's family, caregivers, consultants and primary care provider, as well as each other. Care may include a variety of interventions and treatments, monitoring, and intensive, step-down or specialized care. The treatment plan, information about any care provided and status updates must all be documented in the inpatient record.

### Discharge

Discharge planning begins early, with the goal of ensuring the patient has the supports in place to return home or to an alternate level of care, as appropriate. Upon discharge, patients are given instructions regarding follow-up appointments, self-care, and who to contact for questions, concerns or complications. The care of the patient may be transferred to another physician or the patient's primary care provider. It is important to foster relationships with primary care providers in order to ensure a smooth pathway for patients who are transitioning out of inpatient care at the cancer centre.

Figure 1: Inpatient Care Pathway



## C. RESOURCES

Core resource elements for inpatient care include facilities and equipment, human resources and an information management infrastructure. The elements are standard; however, various factors can impact the level and configuration of resources in a cancer centre, including patient volumes and the provision of specialized care.

### 3. FACILITIES AND EQUIPMENT

Inpatient units require: patient rooms; a work area for the healthcare team; a medication preparation area and medication storage; a clean equipment and supplies room, and a separate space for dirty equipment and dirty linens; storage space for large equipment; access to emergency equipment, medications and units; a patient pantry; space for family and visitors; and space for staff. Each of these elements is described below, along with associated equipment and supply requirements. In addition, bathroom facilities are required for staff and the public (e.g. families and visitors) beyond the bathroom facilities provided for patients. For additional information on specific priority devices for inpatient care, please see the World Health Organization's list of priority medical devices for cancer management.<sup>2</sup> For more information about facilities and equipment requirements in a cancer centre, see the *Cancerpedia: Physical Facilities and Support Services* and *Cancerpedia: Equipment and Technology* chapters.

#### Patient Rooms

Inpatient rooms may be private or shared between several patients, depending on the needs of each patient and the resources available. Patient privacy should be respected and curtains should be available for exams and procedures in rooms with multiple beds. The location of beds in relation to healthcare providers should be considered, specifically for higher-acuity patients. Private rooms with positive pressure are required to reduce the risk of infection in severely immunocompromised patients, such as those undergoing some form of stem cell transplantation. The requirement for isolation rooms and infection precaution protocols is also a consideration. See the *Cancerpedia: Infection Prevention and Control* chapter for more information. The number of beds on an inpatient unit should be based on the resources available, as well as capacity requirements or demands.

Beds should ideally be adjustable to allow patients to rest on an incline, or flat when necessary. Bed height should also be adjustable to prevent patient falls as well as healthcare provider injuries. Other bed-related considerations include safety railings that reduce the risk of falls and patient entrapment, as well as pressure-reducing mattresses that decrease the risk of pressure injuries. Call bells used to alert healthcare providers to the need for emergency assistance must be easily accessible to patients in bed, as well as in all high-risk areas.

Blood pressure cuffs, stethoscopes, thermometers and oxygen must be readily available, preferably in each room. Depending on the needs and acuity of a patient, additional monitoring equipment, such as cardiac monitoring equipment, may also be needed. Video monitoring is a consideration for patients in isolation, as well as for patients who require constant monitoring.

Toilet facilities, showers and/or bathtubs should be available, with safety equipment such as grab bars for patients with limited mobility and a call bell to alert staff if the patient needs assistance. Toilet height is an important consideration for comfort and for patients with joint, musculoskeletal or mobility concerns.

Televisions, phones and tablets may be available in rooms or common areas to provide distraction, entertainment or education.

Inpatient units should have adequate access to hallway sinks and hand sanitizers for all healthcare providers and visitors, to maintain appropriate hand hygiene. Hand hygiene compliance should be measured and posted on the inpatient unit to ensure optimal compliance and to minimize the spread of infection.

#### Intensive, Step-Down and Specialized Units

All inpatient units should have an easily accessible emergency cart for medical emergencies. Intensive care, step-down and specialized units include sophisticated monitoring and resuscitation equipment, provide multiple specialized medications, and have highly-trained, multi-professional staff, including physicians, nurses, pharmacists and respiratory therapists. These units must be large enough to house multiple pieces of specialized equipment as well as the care team. They must also be designed so that all patients can be easily observed from staff workstations and quickly accessed in case of emergencies. Specific facility standards and requirements for the design and layout of intensive care and step-down units are set by subnational and national regulatory bodies. For more information, see the *Cancerpedia: Surgery* chapter.

## Work Area for the Healthcare Team

The work area for the healthcare team should be located centrally and provide space for administrative activities, phones and computer equipment, monitoring equipment (e.g., call bell technology, vitals) and access to patient health records, including storage. All healthcare team members require access to a work area. Nurses, physicians, clerks and pharmacists may be assigned a designated workspace, while other members of the healthcare team – who tend to be responsible for providing care over a number of care areas – may use a space that is shared. For safety reasons, food and drink are typically not permitted in the work area; however, a designated staff room can be established for nutrition breaks.

## Medication Preparation Area and Medication Storage

An area free of distractions should be designated as a medication preparation area. Providing a space where healthcare providers can work without interruption helps to minimize human error. This “distraction-free” zone can be indicated by signage. Some organizations have moved to automated medication storage and dispensing systems that help manage the supply chain by automatically ordering new medications or supplies when required. There are also quality and safety checks built in to help prevent medication errors. Medications not dispensed should be stored in a secure place. See the *Cancerpedia: Pharmacy* chapter for more information.

## Clean and Dirty Supplies Storage

It is important to designate a clean supplies storage area. Supplies that are used for similar tasks can be grouped together to make finding items much easier and faster. For example, items required for dressings, intravenous (IV) therapy and respiratory interventions, syringes, personal protective equipment (e.g., gloves, masks and gowns) and specific care equipment, such as tracheostomies and urinary catheters, may be grouped and organized with signage. Clean linen supplies are often stored in this area as well, along with a blanket warmer for patients.

Inpatient units should have access to electronic IV infusion pumps, chest tubes, oxygen equipment, suction (i.e., continuous and intermittent) and weight scales. Ambulation devices, such as wheelchairs, stretchers, walkers, canes, transfer boards, mobile lifts and ceiling lifts, should also be available.

A separate room must be available for holding dirty supplies and equipment, including linen, prior to cleaning. This area should be clearly marked. Reusable supplies should only be placed into a clean utility area or used on a patient after they have been cleaned according to infection prevention and control standards. This includes reusable procedure trays and reusable equipment, which often requires sterilization before being reintroduced into circulation. Regular reviews of how unit staff perform waste management should be conducted. For more information, see the *Cancerpedia: Infection Prevention and Control* chapter.

## Large Equipment Storage

Large equipment (e.g., lifting devices, stretchers, weight scales) must be stored away from hallways and patient rooms. Clear hallways and space around patient beds is critical for emergency access. Some inpatient units include space to accommodate exercise equipment (e.g., stationary bikes) for patients who are admitted to the hospital for long periods of time, in order that they may maintain physical activity.

## Patient Pantry

Some inpatient units have a common patient pantry area with an ice/water machine, a refrigerator and a microwave oven. This area may also have cupboards to store snacks, such as healthy biscuits, cookies or crackers. Regular service and maintenance is required on all patient pantry equipment to prevent infection. For example, ice machines should be cleaned and serviced regularly, refrigerators must be cleaned and maintained at temperatures to ensure food safety, and all equipment must be approved by the facilities team to ensure it is not a fire risk.

## Family and Visitor Areas

Families should have access to quiet areas while waiting for and visiting patients. This may be in the patient room or in a common, shared area, depending on cultural and social customs.



## Staff Break Areas

All staff should have access to common, shared areas to store personal belongings and take nutrition breaks.

## 4. HUMAN RESOURCES

The team required to care for inpatients in a cancer centre includes a number of professions, responsible for clinical care, supportive care and other support services. Nursing, management and administrative staff are permanently assigned to an inpatient unit and must maintain a 24 hour a day, seven day a week presence. Physicians may be assigned to specific inpatient units. Other than in specialized intensive care units, physicians usually do not maintain a 24 hour a day, seven day a week presence. There is an increasing tendency to staff the inpatient units housing complex cancer patients with hospitalists, which are physicians who specialize in providing in-patient hospital care exclusively. Consultant physicians and allied health professionals act as the visiting healthcare team, who attend the unit based on patient needs. A variety of patient support services enable effective operations and patient safety. While generally accepted staffing principles will vary from region to region, certified professionals in each of the following disciplines are required to support the delivery of clinical services in an inpatient setting.

### Clinical Services

The inpatient clinical team is responsible for all aspects of inpatient care. Table 1 outlines the various roles and responsibilities of inpatient clinical team members. The broad functions that need to be fulfilled by inpatient clinical staff are standard; however, job titles and who performs specific functions may vary by jurisdiction and scope of practice. It is important to determine the target staffing levels for each role based on patient needs, and to match those targets appropriately with human resources.<sup>3</sup>

Table 1: The Inpatient Clinical Team

Role	General Responsibilities
Physicians	Surgeons, medical oncologists, radiation oncologists, psychiatrists and palliative care physicians oversee the patient care plan and are ultimately responsible for medical decision-making. Consultant physicians provide expert opinions on symptoms, comorbidities and treatment side-effects that impact other systems in the body. Some common consultants available in a cancer centre include representatives from cardiology, urology, respirology, infectious diseases, neurology and intensive care. Many organizations rely on hospitalists – physicians trained in internal medicine that provide day-to-day care for inpatients – or general practitioners, with the most responsible oncology-related doctor maintaining responsibility for cancer treatment.
Nursing and Allied Health Professions	Nursing and allied health professions are responsible for carrying out the patient care plan. The roles of nurses and allied health professionals vary depending on their education, the jurisdiction in which they work and the needs of patients. See the <i>Cancerpedia: The Healthcare Team</i> chapter for more information. Nursing and allied health professions include nursing, clinical nutrition (i.e., dietitians), respiratory therapy, physical therapy, occupational therapy, social work, speech language therapy, psychosocial oncology, and more.
Pharmacists	A healthcare facility's pharmacy service is responsible for safe and effective medication use and practices, including chemotherapy. See the <i>Cancerpedia: Pharmacy</i> chapter for more information.
Patient Support Workers	Patient support workers (PSWs, or similarly named individuals) are hired in some facilities and jurisdictions to support basic patient care needs, such as lifting, turning, feeding and bathing. PSWs are not members of a health profession and are not expected to carry out functions related to assessing, monitoring, implementing or evaluating any portion of the patient's plan of care.
Clinical Manager / Unit Manager	Clinical managers have ultimate accountability for the clinical care on an inpatient unit. They may oversee budgets, human resources and operations, and provide local governance to the unit. They may also mentor and coach staff, contribute to a culture of safety, and further research and education.
Administrative Staff	Reception staff and clerks manage all of the bookings and communication coming into and out of the unit. Patient flow co-ordinators are important to ensure optimal inpatient bed utilization and decrease the time patients wait for admission and discharge.

## Support Services

The inpatient support services team ensures a safe hospital environment and provides support that enables patients to receive clinical care. Table 2 outlines some of the roles and general responsibilities of inpatient support services team members.

Table 2: The Inpatient Support Services Team

Role	General Responsibilities
Hospital Administration	Hospital administration is responsible for the overall operational management of the organization, as well as strategy. See the <i>Cancerpedia: Governance and Management</i> for additional information.
Facilities Management	Facilities management is responsible for ensuring a safe, clean environment for the delivery of patient care. It includes housekeeping, portering and facilities and infrastructure planning. See the <i>Cancerpedia: Physical Facilities and Support Services</i> chapter for more information.
Food and Nutrition Services	Food and nutrition services are responsible for procuring, preparing and delivering healthy and nutritious meals for inpatients, including patients with special dietary requirements. See the <i>Cancerpedia: Supportive Care</i> chapter for more information.
Transportation Services	Patient transporters, or porters, facilitate the safe transportation of patients to and from the inpatient unit, most often via wheelchair or stretcher, to attend tests, treatments and procedures that can only be performed in designated areas in the hospital; for example, CT scans, radiotherapy, interventional radiology, etc.
Safety Staff	Safety staff include security, radiation and fire wardens responsible for creating a safe environment for patients and staff. See the <i>Cancerpedia: Physical Facilities and Support Services</i> chapter for more information.

For more information about clinical and support staff, see the *Cancerpedia: Healthcare Team* chapter.

## 5. INFORMATION MANAGEMENT

The ability to access and store patient information is essential to the management of patients in an inpatient setting. Whether paper-based or electronic health records are in use, it is important that the patient health record is complete and well organized so that information is easy to find and readily available. Many organizations have electronic health records, which allow healthcare providers to access patient information from a computer terminal or mobile device (e.g., phone, laptop or tablet). See the *Cancerpedia: Health Records* chapter for more information.

Beyond access to the patient record, healthcare providers need a venue for communication regarding patient care issues, such as changes in patient status, changes in the patient care plan, updates, bed capacity issues and discharge times. Some organizations use patient rounds or a shared manual or electronic communication tool to meet this need. All updates, orders and changes in the patient's status or care plan must be documented in the health record.

Many organizations are now using automated medication and supplies systems that makes supply chain management easier by automatically re-ordering supplies when they fall below a certain level. Using these systems, medication dispensing and tracking are completed without the use of paper and automatically logged into the electronic health record, if available. See the *Cancerpedia: Physical Facilities and Support Services* and the *Cancerpedia: Pharmacy* chapters for more information.

## D. MANAGEMENT

The services provided in inpatient settings are governed by individual health systems and organizational policies. In a cancer centre, services are usually provided by a multidisciplinary/interprofessional team, and all patients must have an identified MRP. The inpatient care leadership team should reflect both administrative and clinical expertise.

Inpatient units are typically managed by a unit manager, often a nurse, who has ultimate administrative accountability for the unit. A nurse manager is accountable for clinical operations and oversight of local clinical practice in the patient care area. In this person's absence, a delegate – usually a nurse in charge – is given responsibility for the functioning of the unit and its safe practice. If concerns arise, they are escalated back to the nurse manager or another senior administrator. The unit manager and nurse manager work as a team to provide local governance to the unit, oversee human resources and budgets, and manage operations, including the management of patient flow, materials and supplies, and bed utilization and closures. They may also mentor and coach staff in aspects of nursing practice standards, contribute to a culture of safety, and encourage and support staff in research and education opportunities. In addition, the unit manager and nurse manager are responsible for ensuring that the necessary standard operating procedures (SOPs) are created and adhered to. Common SOPs outline procedures for staff, supplies and maintenance. In some cases, there may be an assistant unit manager and/or nurse manager to assist with the functions of this role.

Inpatient unit leadership should report to the overall leadership of the cancer centre through a direct link to the senior management team and the committees responsible for ensuring the quality of care at the hospital. See the *Cancerpedia: Governance and Management* chapter for more information.

## E. QUALITY

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Quality is overseen by a quality committee, with initiatives implemented and managed at the local inpatient unit-level or identified at an organizational level. In some areas, the unit manager or nurse manager may perform audits to measure unit-level compliance with established quality initiatives; for example, staff compliance with the completion of patient risk assessments, in accordance with expected time frames (e.g., within 24 hours of admission). Often these audits are posted in an area visible to staff. This allows the entire healthcare team to see whether they are meeting targets.

There are a number of quality initiatives that can be implemented in a cancer centre. See the *Cancerpedia: Quality* chapter for more information.

## F. THE FUTURE

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Cancer care is shifting from the inpatient to the outpatient setting. Historically, many cancer treatments required a hospital admission. Today, the majority of cancer patients can receive treatment at a cancer centre while continuing to live at home; some even receive cancer care in the comfort of their own homes or communities. For example, some organizations now offer outpatient conditioning chemotherapy for patients requiring hematopoietic stem cell transplants. Cancer centres should consider building supports that enable outpatient, home and community care. The day hospital is one model for providing intensive treatments safely on an outpatient basis. For more information, see the *Cancerpedia: Outpatient/Ambulatory Care* chapter. Other supports include urgent and emergent care, nursing hotlines, telemedicine and patient education.

As preference is given to outpatient care, the remaining inpatient population has become more complex. Today, inpatient admissions are typically reserved for high-acuity patients with a mix of medical and social problems requiring subspecialty care. Many of these patients have limited at-home and community resources and support upon discharge. Inpatient units increasingly require the resources and skills to support specialized and intensive care for patients.

## G. REFERENCES

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1. Practice standard. Toronto, ON: College of Nurses of Ontario; [cited 2018 May 16]. Available from: [https://www.cno.org/globalassets/docs/prac/41001\\_documentation.pdf](https://www.cno.org/globalassets/docs/prac/41001_documentation.pdf).
2. WHO list of priority medical devices for cancer management Geneva: World Health Organization; 2017.
3. Needleman J et al. Nurse staffing and inpatient hospital mortality. *The New England Journal of Medicine*. 2011;364(11).



