Ministry of Health and Long-Term Care

Large Community Hospital Operations

1.0 Summary

Ontario's network of 147 public hospitals includes 57 large community hospitals, along with small community hospitals, teaching hospitals, chronic-care and rehabilitation hospitals, and speciality psychiatric hospitals.

Large community hospitals are distinguished from the others by the high number of patients they treat. The Ministry of Health and Long-Term Care (Ministry) defines large community hospitals as those with 2,700 or more acute and day-surgery weighted cases in any two of the prior three years.

The 57 large community hospitals account for about 14,990 of Ontario's 31,000 hospital beds—or 48%.

This audit examines operations at three large community hospitals, each governed by a different regional authority (called a Local Health Integration Network, or LHIN).

Each of the three hospitals treats acute patients at two different sites and, together, the three hospitals accounted for $1.3 billion in Ministry funding, or 16% of the $7.89 billion total funding to large community hospitals in 2015/16.

Our audit was primarily based on data we collected at the hospitals we visited. However, to better understand all large community hospitals, we also did a survey of the 54 other hospitals in this category, and reviewed available aggregated data for all 57 large community hospitals.

In certain areas—those related to surgical-safety performance and infection rate, for example—we reviewed provincial data that covers all 147 public hospitals, because the data was not broken down by hospital type (such as large versus small community hospitals).

Typically, nine out of every 10 patients who go to a hospital leave the hospital after being diagnosed and treated in the emergency room. At the three large community hospitals we visited, we found that half of these patients are treated and are able to leave the hospital within three hours. However, we also found that the one in 10 patients whose conditions were serious enough to warrant admission to hospital for further treatment waited too long in the emergency room.

Our audit also found various key factors that are hindering patient care in hospitals. These include scheduling operating rooms and surgeon time in a way that makes it difficult for hospitals to respond to unexpected emergency surgical cases in a timely manner; letting surgeons book elective surgeries when they have on-call emergency duties; the lack of a centralized system to book patients on long wait lists for surgeries within the same region; rigid scheduling practices that limit the availability

of physicians, operating rooms and beds; funding uncertainties; and certain faulty quality-of-care practices that can lead to health problems and risks in hospitalized patients.

Among our findings:

- **Patients waiting too long in emergency rooms**: Many patients with conditions serious enough to require hospital admission wait excessive periods in emergency rooms—much longer than the Ministry-set target of no more than eight hours from triage (prioritizing patients according to the urgency of their conditions) to being transferred to intensive-care units or other acute-care wards. (The Ministry target is set for the 90th percentile. This means that 90% of patients should be transferred within eight hours, and no more than 10% should wait any longer.) In 2014/15, at the three hospitals we visited, only 52% of patients were transferred to intensive care in eight hours, not 90%; the 90th percentile wait time (after the 10% of patients with the longest wait times are removed) was 23 hours, not eight hours. The same year, only 30% of patients at the three hospitals we visited were transferred to other acute-care wards in eight hours, not 90%; the 90th percentile wait time was 37 hours, not eight hours.
- **Operating rooms not fully utilized**: Although most hospital sites we visited have nine to 12 operating rooms, only one at each site remained open evenings, weekends and statutory holidays for emergency surgery only. Our survey also found that most hospitals have planned operating-room closures over March break and for two to 10 weeks during the summer. This was despite the fact that many patients had been waiting a long time for elective surgery.
- **Long surgical wait times put patients at risk**: At the three hospitals we visited, one in four patients with critical or life-threatening conditions had to wait four hours on average for surgeries that should have started within two hours. We also noted that 47% of patients who should have undergone emergency surgery within two to eight hours had to wait on average more than 10 hours longer. For example, we noted that one patient who had suffered a traumatic brain injury waited 21.5 hours to receive a surgery. This patient had been assessed by a surgeon upon arrival at the emergency room and subsequently reassessed, by the same surgeon and another surgeon, to be clinically stable. However, two elective surgeries were prioritized to be completed before this case. During the waiting period, the patient's condition deteriorated rapidly and they went into a coma. The patient did not recover from the emergency surgery and died four days later.
- **Emergency surgical patients not always given priority**: Emergency surgeries have to compete with elective surgeries for operating-room time, resulting in long wait times for patients requiring emergency surgeries. All three hospitals we visited have policies that allow the most critical emergency surgeries to bump all others. However, other types of emergency surgeries typically have to wait until after hours, when that day's elective surgeries have been completed, or for a weekend slot. For example, a patient suffering from abdominal pain waited 25 hours before receiving surgery. The patient was diagnosed with acute appendicitis after a 7.5-hour investigation in the emergency room and waited another 17.5 hours from the time a decision was made that surgery was necessary to the time a surgery was performed. The patient's appendix ruptured during the waiting period, and had to stay in the hospital twice as long as expected due to a surgical complication.
- **Patients waiting too long for some urgent elective surgeries**: We reviewed wait times for elective surgeries at all 57 large community hospitals, and noted that they had not improved in the five years leading up

to 2015/16. We also noted that some large community hospitals are struggling to meet the Ministry's wait-time targets for the most urgent elective surgeries—for example, only 33%, not 90%, of urgent neurosurgeries were completed within the Ministry's 28-day target. In addition, patients in a certain part of the province waited almost a year for cataract surgery without being given the option of having it done earlier elsewhere, because there is no centralized referral and assessment system for each type of surgery in each region.

- **Year-end funding confirmation for cancer surgeries not timely**: The Ministry provides funding for cancer surgeries based on projections submitted by hospitals. At one hospital we visited, the hospital spent over $3.7 million on cancer surgeries, which was about $321,000 more than its mid-year projection. However, the Ministry did not confirm with this hospital that it would receive additional funding for the shortfall until six months after the March 31, 2016, year end due to the timing of the hospital data reporting and reconciliation process. This delay has created funding uncertainty and made it difficult for the hospital to plan and forecast in the current fiscal year and in the development of the future year's operating budget.

Another area of concern in our audit was patients developing new health problems as a result of their hospital stay. For example:

- **Patients discharged from Ontario hospitals had a relatively high incidence of sepsis**: Sepsis occurs when the body's fight against infection actually harms the patient, and can result in death. Canadian Institute for Health Information data for March 2015 shows Ontario hospital patients had the second-highest rate of sepsis in Canada (after the Yukon): 4.6 cases per 1,000 patients discharged, compared to an average of 4.1 for the rest of Canada. Bed occupancy rates of 85% or higher contribute to the likelihood of infection while in hospital. During 2015/16, 60% of all medicine wards in Ontario's large community hospitals has occupancy rates higher than 85%.
- **Alternate-level-of-care patients suffer from relatively high incidences of falls and overmedication**: At one of the hospitals we audited, senior alternate-level-of-care patients (that is, patients who no longer require hospital care but must remain there until a bed becomes available in another care setting) fell 2½ times more often than residents of long-term-care homes in the same LHIN area between January 2014 and March 2016. We also found that 37% of these patients were given anti-psychotic drugs in 2014/15, compared to 31% at the long-term-care homes in the area and 27% at long-term-care homes province-wide. (The other two hospitals did not track, on an aggregate level, falls and anti-psychotic drug therapy for their alternate-level-of-care patients.)
- **Ontario patients have relatively high incidences of health problems and risks that could be better managed with better quality-of-care practices**: We identified three health problems that Ontario hospitals do not manage or prevent as well as hospitals outside Ontario:
  - *Post-operative pulmonary embolism:* A pulmonary embolism is a blockage in the lung, often caused by a blood clot, that can damage the lung and other organs, and even lead to death. Leg or hip surgery is one of the risk factors for blood-clot blockage, as is having to stay in bed after surgery. There are ways to predict its likelihood and prevent clots after surgery, including medication and making the patient active as soon as possible after surgery. Ontario hospital patients aged 15 or over have a relatively high incidence of post-operative pulmonary embolism after hip- and knee-replacement surgeries: 679 cases per 100,000 patients

discharged, compared with 660 Canada-wide and 362 for the 34 other Organisation for Economic Co-operation and Development (OECD) countries.

- *Objects left inside surgical patients:* Objects such as sponges or pieces of other medical tools that are inadvertently left in a patient after surgery can cause internal bleeding, infections, other complications or death. Ontario surgical patients aged 15 or over experienced a higher rate of errors: 7.5 per 100,000 discharges, compared with 4 for the 34 other OECD countries (the Canada-wide rate is 8.6).
- *Vital life-saving medical equipment not adequately maintained:* Medical equipment such as ventilators, anesthesia units and defibrillators are used to keep patients alive. Like any complex machinery, they need to be regularly maintained or serviced to work properly; otherwise, they can fail, putting patients at risk. We found that at one hospital we visited, 20% of the equipment was not being maintained according to schedule; for some equipment, the last required maintenance was two years overdue. At another, only 53% of the equipment was being maintained according to schedule; 30% of the equipment received maintenance late, and 17% had received no maintenance.

Among our other findings:

- Hospital decision-making on patient care has been negatively impacted by the physician appointment and appeal process. We noted some instances where hospitals were not able to resolve human resources issues with physicians quickly because of the comprehensive legal process that the hospitals are required to follow under the *Public Hospital Act*. In some cases, longstanding disputes over physicians' hospital privileges have consumed considerable hospital administration and board time that could be better spent on patient care issues.
- As of March 2016, about 4,110 alternate-level-of-care patients were occupying hospital beds even though they no longer needed them. About half are waiting for long-term-care-home beds because there are not enough available in the community. We calculated that hospitals could have treated about 37,550 more patients if these alternate-level-of-care patients were not waiting in the hospital. Hospital beds are also more expensive than long-term-care beds. We estimated the additional cost to be $376 million in 2015/16.
- The three hospitals we audited do not have adequate access controls over private patient information. We found computer accounts still active for people no longer employed, computers without automatic logout function and unencrypted portable devices.
- None of the hospitals we visited had a centralized scheduling system to efficiently track and manage scheduling for all nursing units. As a result, nurses worked significant amounts of overtime, with a correspondingly significant number of sick days. We found that two of three hospitals do not conduct a thorough analysis to evaluate the costs and benefits of using agency nurses versus hiring additional full and/or part-time nursing staff. Although the third hospital has conducted a cost-benefit analysis on the use of agency nurses, the agency costs at this hospital had more than tripled in the last four years.

This report contains 17 recommendations, consisting of 33 actions, to address our audit findings.

OVERALL MINISTRY RESPONSE

The Ministry of Health and Long-Term Care (Ministry) appreciates the comprehensive audit conducted by the Auditor General and welcomes the recommendations contained in the report. These recommendations will support improvements to strengthen accountability and improve access to health care services.

The Ministry is committed to a strong and stable publicly funded hospital system that delivers quality patient services efficiently. Since 2007, hospitals have been funded through the Local Health Integration Networks (LHINs). The LHINs and agencies, in partnership with government, are helping to improve the patient's experience in our health care system by reducing service gaps, addressing performance issues, increasing efficiencies and ensuring greater health system accountability.

Hospital funding in Ontario has risen from $11.3 billion in 2003/04 to $17.4 billion in 2016/17, which represents a 54% increase. In the 2016 Ontario Budget, Ontario invested more than $345 million to all publicly funded hospitals to provide better patient access to high-quality health care services. In addition, the Province is investing up to $140 million to support hospitals in responding to growth in demand and reducing wait times for patient care. This funding will support priority services such as organ and tissue transplants; additional procedures such as cataract surgeries, and hip and knee replacements; and funding for small and specialty pediatric and psychiatric hospitals.

As part of Patients First: Action Plan for Health Care, the Ministry has reformed the way hospitals are funded, to provide equitable support for efficient, high-quality care and to help ensure that hospital funding is focused on the needs of the patient. By covering all the steps in the patient's journey, funding reform is improving the co-ordination of health care and making the patient's experience more seamless.

The Ministry will continue to support LHINs and hospitals to work together and balance budgets in a manner that sustains quality health services for the future.

OVERALL RESPONSE FROM HOSPITALS

Like all public hospitals in the Province of Ontario, we strive to deliver high quality care and the efficient use of public funds while continuously seeking opportunities to improve our ability to respond in a fiscally responsible way to the growing and changing needs of the patients we serve. We welcomed the opportunity to engage with the Office of the Auditor General and staff and to reflect on the challenges faced in our sector. Many of these challenges are larger than any one hospital but rather require the ongoing commitment of all stakeholders to the system—hospitals, government, LHINs, clinicians, physicians, to name a few. Recognition of this challenging environment, the need for a greater focus on system challenges like wait times, Alternative-Level-of-Care reform, stable and predictable funding, capacity planning and greater flexibility in physician hospital practices are all key in ongoing improvements.

We accept in principle the recommendations contained in the report, have made progress in many areas already and are moving to implement where more work needs to be done and as resources permit. The Office of the Auditor General recognized some best practices that can be utilized to assist in this work. These recommendations allow us an opportunity to continue to reflect on ways to improve the system.

Hospitals will continue to work in partnership with the Ministry of Health and Long-Term Care, the Ontario Hospital Association, Local Health Integration Networks, physicians, community agencies and service-provider organizations to support integration efforts for seamless care and the right care in the right place for patients.

2.0 Background

2.1 Overview of Ontario Hospitals

Of Ontario's 147 public hospitals, 57 are large community hospitals. The Ministry of Health and Long-Term Care (Ministry) defines large community hospitals as those that have had 2,700 or more acute and day-surgery cases in any two of the prior three years.

The rest are smaller community hospitals (defined as having fewer than 2,700 acute and day-surgery cases in any two of the prior three years), teaching hospitals, chronic-care or rehabilitation hospitals, and psychiatric hospitals. **Appendix 1** lists all public hospitals in Ontario, by types, Local Health Integration Networks (LHINs), and funding for the fiscal year ending March 31, 2016.

Ministry spending totalled about $51 billion in the fiscal year ending March 31, 2016. Of that, $17 billion (33%) went to Ontario's 147 public hospitals. Funding to large community hospitals accounted for about $7.89 billion of the $17 billion spent on hospitals. **Figure 1** shows the number of public hospitals by hospital type, descriptions and their funding trend over the past five years up to March 31, 2016.

2.2 Hospital Governance

The *Local Health System Integration Act, 2006* sets out the mandate of the province's 14 Local Health Integration Networks (LHINs), which administer health-care services in each region of the province.

Figure 1: The Number of Public Hospitals in Ontario, by Types and Descriptions, and Funding Trend for the Five Years Up to the End of March 31, 2016

Source of data: Ministry of Health and Long-Term Care

Hospital Type	Description	Number	Ministry Funding 2011/12 ($ million)	Ministry Funding 2015/16 ($ million)	5-Year Change in Ministry Funding to March 31, 2016 (%)
Large community	Hospitals that have had 2,700 or more acute and day-surgery cases in any two of the prior three years	57	7,620	7,893	3.6
Small community	Hospitals that have had fewer than 2,700 acute and day-surgery cases in any two of the prior three years	56	750	816	8.8
Teaching	Hospitals that provide acute and complex patient care. They are members of the Council of Academic Hospitals of Ontario and are connected to a medical or health sciences school, doing research and providing education and training for people who are, or are studying to be, health-care professionals (e.g., medical interns and residents, nurses, physiotherapists)	17	7,038	7,036	0.0
Chronic-care/ rehabilitation	Stand-alone hospitals that provide complex continuing care or rehabilitation services	13	743	626	(15.7)
Specialty psychiatric/mental health	Public hospitals that provide specialized assessment and treatment services for people with complex mental illnesses	4	571	602	5.4
Total		**147**	**16,722**	**16,973**	**1.5**

LHINs must enter into Service Accountability Agreements with each hospital in their area that outline performance and accountability expectations between LHINs and hospitals. The agreements also require hospitals to balance their budgets each year, meaning that a hospital's actual expenditures should not exceed its pre-approved budget.

The *Public Hospitals Act* (Act) governs the operations of public hospitals in Ontario. Hospitals are required to comply with provisions of the Act governing patient admission and discharge, communicable disease protocols, and reporting and safeguarding of health records. Regulations under the Act also set out governance requirements, including a stipulation that every hospital be governed and managed by a board of directors.

By law, Ontario hospitals are independent corporations accountable to their own boards, and directly responsible for their own day-to-day management. However, the Minister of Health and Long-Term Care may appoint inspectors, and the government may appoint hospital investigators and supervisors on the recommendation of the Minister. Ministry approvals are also required in relation to amalgamations and other integrations, use of premises for hospital purposes, and dispositions of hospital land or buildings.

2.3 Hospital Human Resources

Typically, a hospital's board of directors appoints a Chief Executive Officer and a Chief of Staff to manage day-to-day operations. Although the two work closely together, each has separate responsibilities, and each reports directly to the board.

The Chief Executive Officer typically oversees nursing, patient care, equipment and facility management, human resources, and other administrative matters, while the Chief of Staff, who is always a physician, primarily oversees the quality of medical diagnosis, care and treatment provided to all patients in the hospital. **Figure 2** illustrates the typical governance and reporting structure of a large community hospital in Ontario.

Professional Staff

Professional staff include surgeons, other physicians, dentists and midwives who work in hospitals. Although professional staff are appointed directly by the hospital's board, they are typically not salaried employees. Instead, the Ontario Health Insurance Plan (OHIP) compensates them for the services they perform in hospitals.

Most hospitals divide their professional staff into clinical departments, each of which has a Department Chief and a Medical Director. Professional staff report to the Chief of Staff through their Department Chiefs on professional practice matters—everything relating to the treatment and care of patients—and report to their Medical Directors on administrative, operational and budgetary matters.

Hospitals consider professional staff to be independent contractors, and award them hospital privileges that give them the right to use hospital facilities and equipment to treat patients without being hospital employees. Professional staff are appointed by a hospital's board for a maximum term of one year, and are required to apply annually for reappointment. The board is also responsible for hiring, disciplining and terminating professional staff.

Each hospital establishes its own bylaws, policies, rules and regulations setting out the rights and responsibilities of professional staff. As part of the reappointment process, hospital department chiefs and/or medical directors review and evaluate professional staff performance annually based on the hospital's bylaws, policies, rules and regulations.

Nurses

As **Figure 2** shows, the Chief Nursing Executive oversees and manages the professional practice of nursing staff and other health professionals such as dieticians, occupational/physical therapists and diagnostic medical technicians, who are generally employees of a hospital.

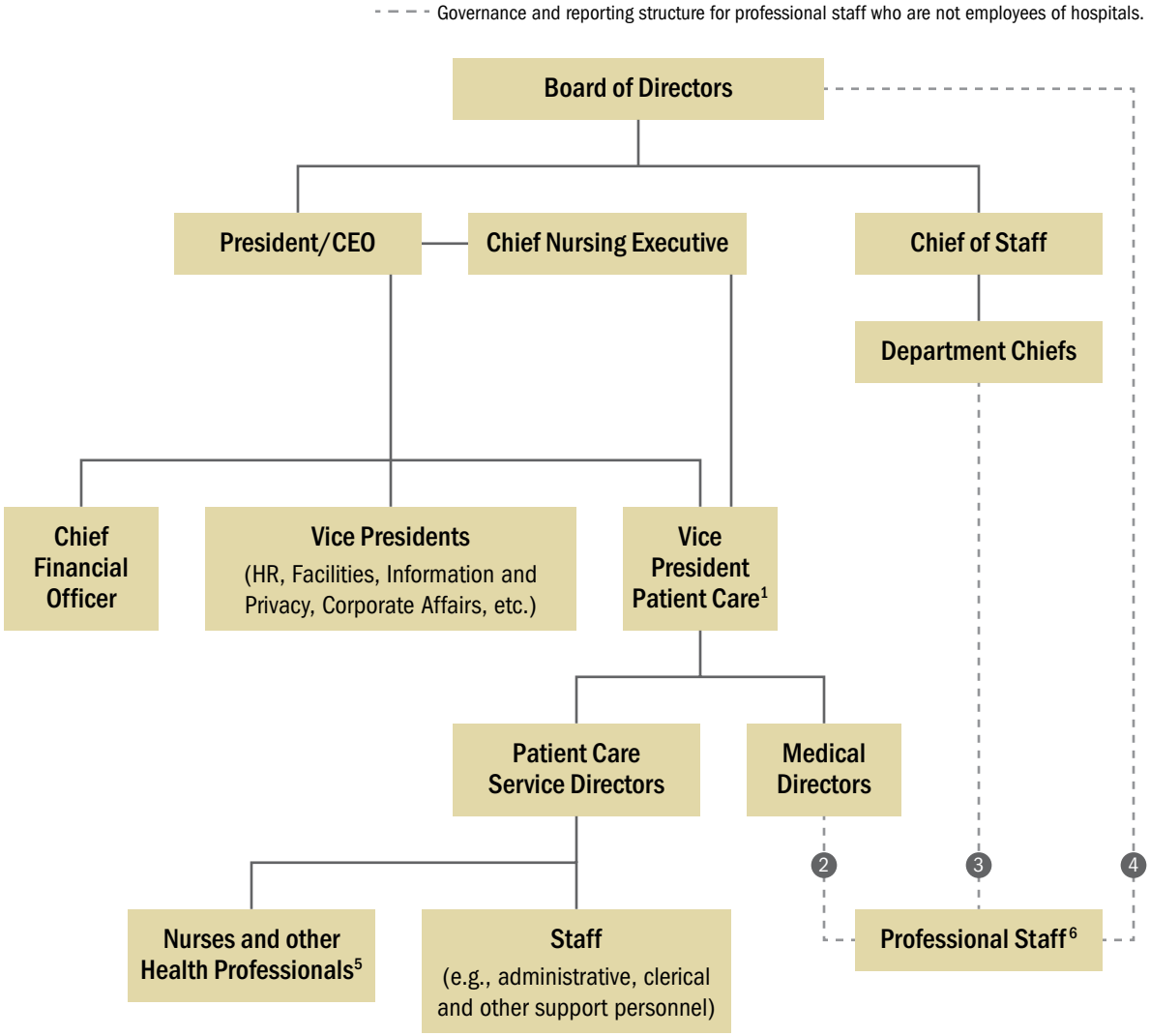
There are three categories of nurses in Ontario: Registered Practical Nurse (RPN), Registered Nurse

(RN) and Nurse Practitioner (NP). **Figure 3** shows the education of each type of nurse, along with their typical duties and the level of care each can provide.

All nurses are required to be graduates of a program recognized by the College of Nurses of Ontario (College), and to be registered with the College. Registered Practical Nurses have a two- or three-year diploma in nursing. Since 2005, entry to practice for new Registered Nurses has required a four-year baccalaureate in nursing. Both can perform the same types of duties, but Registered Nurses can provide a higher level of care and can look after patients with more acute or complex needs.

Figure 2: Typical Governance and Reporting Structure in a Large Community Hospital

Prepared by the Office of the Auditor General of Ontario



1. The Vice President of Patient Care Services is responsible for the planning, development and implementation of programs and initiatives to enhance patient experience.
2. Professional staff report administrative, operational and budgeting issues to their medical directors. Medical directors' responsibilities focus on strategic planning, budget management and human resource planning.
3. Professional staff report clinical issues to their department chiefs, who report to the chief of staff, who in turn reports to the Board of Directors. Department chiefs' responsibilities are focused on monitoring and supervision of the patient care provided by professional staff, including physicians.
4. The hospital board is responsible for hiring, disciplining and terminating professional staff.
5. Other health professionals are clinical staff such as dieticians, occupational/physical therapists and diagnostic medical technicians, who are generally employees of a hospital.
6. Professional staff, such as physicians, midwives and dentists, are typically not employees of the hospital. They are independent professionals working in the hospital and are given certain privileges, such as the right to use hospital facilities and equipment to treat patients. They are compensated by the Ontario Health Insurance Plan for the services they provide.

Figure 3: Types of Nurses in Ontario
Prepared by the Office of the Auditor General of Ontario

Type of Nurse	Education	Duties	Level of Care
Registered Practical Nurse (RPN)	Two- or three-year nursing diploma	Both RPNs and RNs can provide the same typical duties, as follows: • monitoring patients; • recording patient information and maintaining patient records; • assisting physicians with patient examinations and treatments	Generally care for patients who are less complex, more predictable and at low risk for negative outcomes; need to consult with RNs as patient complexity increases.
Registered Nurse (RN)	Since 2005, all new RN graduates are from a four-year bachelor's degree in nursing		Generally care for patients who are highly complex; unpredictable and at high risk for negative outcomes.
Nurse Practitioner (NP)	Master's or doctoral degree in nursing	NPs can perform duties outside the realm of an RN, such as diagnosing and treating acute illnesses, creating individualized treatment plans and prescribing medications. They may also specialize in a particular area of care or focus on health promotion and disease prevention.	NPs build and expand on RN competencies; NPs have, and demonstrate in practice, the competencies to use their legislated authority to diagnose, order and interpret diagnostic tests, prescribe pharmaceuticals and perform certain procedures such as catheterization and chest tube insertion.

Nurse Practitioners have master's or doctoral degrees in nursing and can provide the highest level of nursing care; some of their duties overlap with those of physicians, including the ability to assess and diagnose, order tests, prescribe medication, and determine patient treatment plans.

Almost all Ontario nurses are unionized, working under collective agreements negotiated between unions such as the Ontario Nurses Association or the Canadian Union of Public Employees and the Ontario Hospital Association.

The Ontario Hospital Association, founded in 1924, establishes best practices and facilitates information-sharing among hospitals, and represents hospitals in discussions and reviews of health-care policy with the Ontario government.

At times of nursing shortages arising from absences and/or higher-than-expected patient volumes, some hospitals get additional temporary nurses from external agencies. These nurses are not employees of the hospital, and are not covered by the collective agreements; the hospital pays the agencies for the hours worked by the agency nurses.

Other Hospital Employees

In addition to physicians and nurses, hospitals hire other professionals for both clinical and non-clinical jobs. Many clinical personnel (for example, pharmacists, lab technicians, dieticians and therapists) work alongside physicians and nurses, providing direct care to patients. Non-clinical employees work in administration, food services, housekeeping, security and equipment maintenance.

2.4 How Hospitals Are Funded

Before 2012, the amount of annual funding each hospital received from the Ministry was mainly based on historical spending and inflation. Under this system, each hospital was given a lump-sum payment.

In 2012, the Ministry began implementing its Health System Funding Reform, a model intended to allocate health-care dollars equitably, promote best clinical practices, and keep spending growth to

sustainable levels. The reform introduced two key funding components:

- The **health-based allocation** model estimates health-care expenses based on demographics and actual use of health services, taking into account the types and complexity of patient care that hospitals provide. Under this model, the Ministry is to adjust funding to hospitals based on patient demand and population growth.
- The **quality-based procedures** component funds hospitals for the types and number of patients they treat. The Ministry established specific procedures for hospitals to follow, based on best practices and efficiency measures, in treating their patients, and determined the amount each hospital would receive under this component. The Ministry's goal in setting quality-based procedures is to standardize care and minimize variations, and ensure that hospitals provide care according to best practices.

The Ministry provides about 80% of hospital funding, both directly and indirectly through the LHINs. Hospitals generate the remaining 20% themselves from other sources, including fundraising, semi-private and private accommodation charges, parking fees, food services, gift shops and retail outlets. While hospitals may fundraise directly, the most common fundraising model is the hospital foundation, which is an independent charitable corporation.

2.5 Key Hospital Services

In 2015/16, Ontario's 57 large community hospitals recorded 4.3 million visits to emergency rooms and performed 1.07 million surgical procedures. As of March 31, 2016, large community hospitals managed about 14,990 beds, or 48% of the 31,000 hospital beds in the province.

Figure 4 compares the volumes of selected services at the three hospitals we visited with those of all large community hospitals during fiscal 2015/16. The number of emergency visits, for example, at the three hospitals in that year represent 12% of the total number of emergency visits at all large community hospitals.

The two main hospital-service areas are categorized as "out-patient" and "in-patient" services. Out-patient services are typically delivered to patients who require only short hospital visits (to undergo a simple surgery, for example) and who return home the same day. In-patient services are delivered to patients requiring admission to hospital for a stay of at least one night for further treatment or monitoring.

"Patient flow" refers to the movement of patients through the different areas of the hospital, from the time they enter until they are discharged. **Figure 5** outlines key out-patient and in-patient services and patient flow.

Out-patient services are delivered in the following departments:

- **Emergency room**—Physicians assess the medical needs of patients and provide urgent

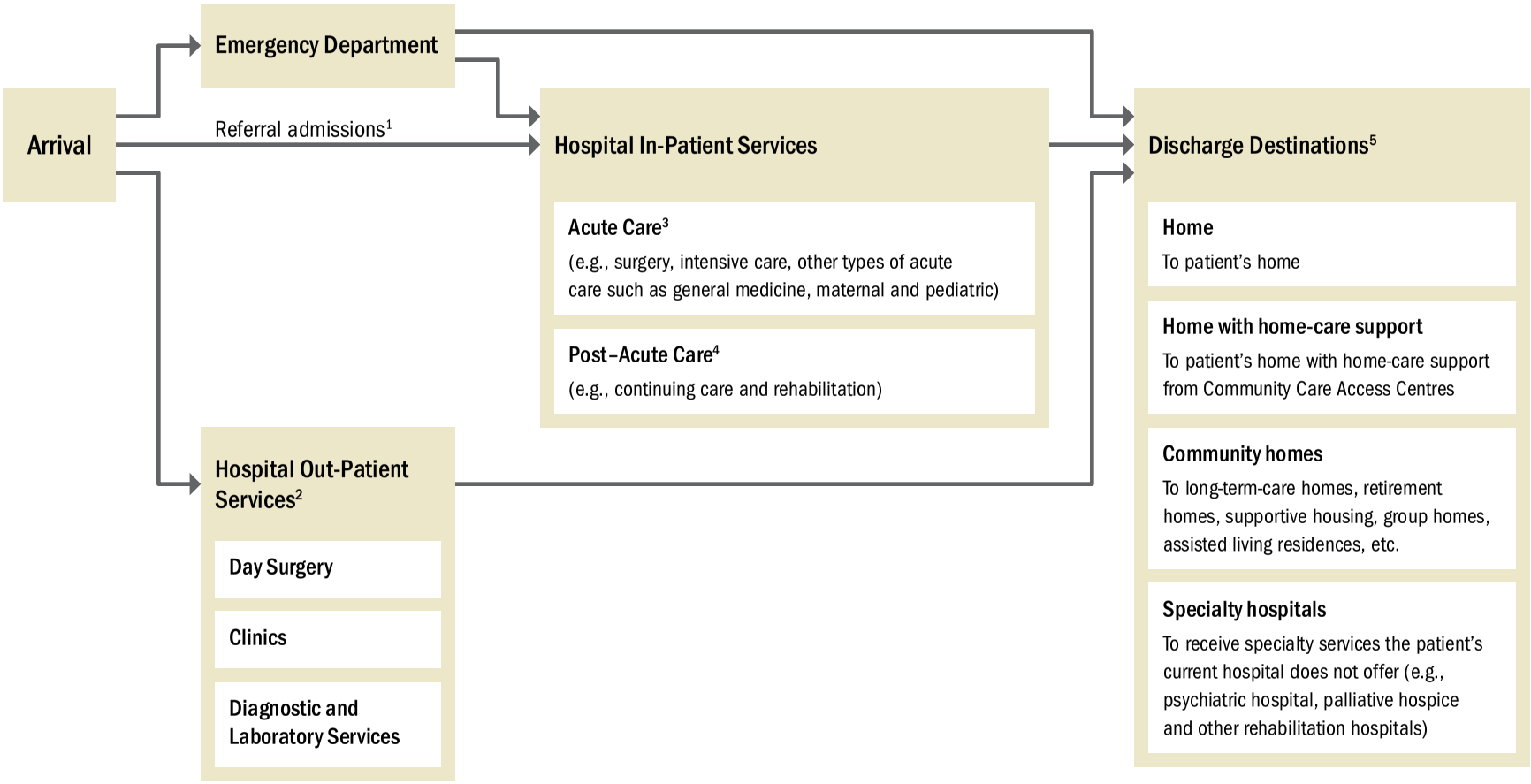
Figure 4: Comparison of Large Community Hospitals with the Three Hospitals We Visited on Selected Service Volumes, 2015/16

Source of data: Ministry of Health and Long-Term Care

Service Volumes	57 Large Community Hospitals	Three Hospitals Visited	Total Volume Managed by the Three Hospitals as % of Total Volume at All Large Community Hospitals
# of emergency-room visits	4,304,700	520,200	**12**
# of surgical procedures	1,070,800	139,900	**13**
# of in-patient admissions	684,900	104,500	**15**
# of in-patient discharges	685,900	105,400	**15**
# of Ministry-funded beds	14,990	1,800	**12**

Figure 5: Key Hospital Services and How Patients Move through Them

Prepared by the Office of the Auditor General of Ontario



→ **Patient Flow** refers to movement of patients through the different areas of the hospital from the time they enter until they are discharged.

1. Physician referrals from out-patient clinics, family doctors, specialists or other community physicians, and/or other hospitals.
2. Out-patient services are typically delivered to patients who only require short hospital visits and typically return home the same day. Some of these patients are referred by their out-patient clinic physician to be admitted to the hospital for further treatment.
3. Patients who receive out-patient services from day surgery and clinics may be admitted to acute care if their health condition deteriorates during the visit.
4. The majority of admitted in-patients are moved to an acute-care ward. Depending on their condition, some patients who require continued care after being treated in the acute-care ward will be transferred to the post-acute-care ward for further treatment.
5. Patients whose health conditions have improved enough to allow them to safely leave the hospital are discharged. If the destination for a patient's next phase of care is not ready to receive the patient when the patient is ready to be discharged, that patient must remain in hospital until the discharge destination becomes available. These patients are referred to as "alternate-level-of-care patients."

care to those with serious illness or injury. Some will need to be admitted as in-patients for further treatment. In 2015/16, of the overall 6.3 million emergency-room visits to Ontario hospitals (excluding visits to the Centre for Addiction and Mental Health), approximately 4% were made by patients diagnosed with mental-health-related illness. Between 2011/12 and 2015/16, emergency-room usage for mental health reasons increased by 21%, from 209,250 visits to 254,161 visits.

- **Day-surgery department**—Surgeons perform out-patient surgeries—shorter procedures with few complications that do not require overnight monitoring of patients afterwards. Patients can usually go home the day of the surgery.
- **Clinics**—Multidisciplinary teams assess, treat and/or provide education to patients about, for example, diabetes, breastfeeding and mental health through various day clinics.
- **Diagnostic and laboratory departments**—Diagnostic and laboratory departments provide different types of diagnostic imaging and medical tests.

In-patient services are delivered in both acute-care wards and post–acute-care wards. The length of hospital stay will depend on a patient's condition and rate of recovery.

- **Acute-care wards** include:
  - **Surgery wards**—Patients undergoing in-patient surgery stay in hospital overnight so they can be monitored. After their surgery, patients are transferred to the post-surgical ward to recover.
  - **Intensive-care units**—Critically ill patients who require very close observation and monitoring are placed in the intensive-care unit.
  - **Other acute-care wards**—These wards treat patients for severe episodes of illness for a short time, with the goal of discharging them as soon as they are stable. They are generally classified as general medicine, cancer, cardio-respiratory, maternal and pediatric.
- **Post–acute-care wards**—Patients who no longer require acute care, but who are still recovering from an illness or treatment, are placed in one of these wards for specialized follow-up care before they can be discharged.

2.6 How Patients Are Admitted to and Discharged from Hospital

Patients are admitted to hospital following a referral from a physician working either in or outside the hospital. For example, about 10% of emergency-room patients are admitted after being diagnosed and treated by an emergency-room physician. The majority of admitted patients are moved to an acute-care ward. Depending on their condition, some patients who require continued care after being treated in the acute-care ward will be transferred to the post-acute-care ward for further treatment.

Patients can also be admitted to hospital following a referral by a physician from the hospital's out-patient clinic or by their family doctor, specialists, physicians from walk-in or other community clinics, or from other hospitals. These are called "referral admissions," and are usually arranged ahead of time to allow hospital staff to prepare for the patient's arrival.

Patients whose conditions have improved enough to allow them to safely leave the hospital are discharged. As with admission, a physician decides when a patient can be discharged.

Some patients go home without needing continuing care. Others may be discharged with some level of supportive services from the local Community Care Access Centre, or to another destination such as a long-term-care home, supportive housing, a retirement home, a rehabilitation hospital or a hospice.

Even if patients are ready to be discharged they must remain in hospital until the destination for the next phase of care is ready to accept them. Such patients are referred to as "alternate-level-of-care" patients.

Patients with certain types of mental health issues are transferred to a specialty psychiatric hospital for further treatment if they require specialized psychiatric services or if their condition cannot be stabilized within two weeks of being admitted (for example, if their resistance to medication prevents them from reaching a stable condition).

2.7 Scheduling of Surgeries

In Ontario, 13% of all surgical cases are emergency surgeries, while the remaining 87% are elective surgeries.

Emergency surgery is required almost immediately in cases of trauma or critical or life-threatening conditions. People who need surgery but who are medically stable and can wait at least seven days for it without significant impact on their health are categorized as elective-surgery patients. Surgeons are responsible for prioritizing each patient based on the urgency of their condition.

Hospitals allocate operating-room time to each surgical department, such as cardiovascular or orthopedics, and, in turn, the head of each surgical department allocates operating-room time to each surgeon within the department. Typically, weekday daytime slots go to elective surgeries while weeknights and weekends are for emergency surgeries.

All three hospitals we visited have policies that allow the most urgent emergency surgeries to bump all others for the next available operating room. Other, less urgent emergency surgeries may be slotted into operating rooms after hours, when the day's elective surgeries have been completed, or on weekends.

Elective surgeries are usually scheduled ahead of time, based on how urgent they are, the surgeon's schedule, and what operating-room time slots are available.

2.8 Emergency-Room Length of Stay

Emergency-room length of stay measures the total time that a patient spends in the emergency room, from the time the patient is triaged (prioritized according to the urgency of the patient's condition) to the time the patient is either discharged or transferred to a bed elsewhere in the hospital such as ICU or other acute-care wards for further treatment. During a patient's emergency-room stay, emergency-room physicians and nurses may be diagnosing or treating the patient's condition, ordering tests and waiting for results in order to determine the best course of treatment.

Bed-wait time, usually a portion of the emergency-room length of stay, measures the time a patient spends in the emergency room, starting from a physician's decision to admit the patient to the hospital to the time the patient actually gets a bed elsewhere in the hospital.

This transfer can take place only after the hospital has determined which ward to send the patient to, based on the patient's illness or injury, the severity of his or her condition, the patient's age and sex, the availability of electronic monitoring units such as electrocardiogram or life-sign measuring units, and the type of infection-control measures required.

The hospital must then determine whether the right type of bed is available and ready, and may need to dispatch housekeeping staff to clean it. A delay in any step of the transfer process can mean longer bed-wait times for patients.

2.9 Personal Health Information

Hospitals keep highly confidential personal health information about patients that can be accessed at computer terminals and workstations throughout a hospital, some of them in high-traffic hallways.

Generally, hospital staff require one account to log into the computer terminal or workstation, and a second, separate account to access the system. Sometimes, other access-control measures are in place to ensure that patient privacy is safeguarded.

2.10 Maintenance of Medical Equipment

Hospitals rely on many types of equipment designed to aid in the diagnosis, monitoring or treatment of medical conditions. Some of this equipment is vital, and its failure can be a matter of life or death. Periodic inspection, calibration and maintenance is necessary to ensure that medical equipment is safe to use, and that it operates properly.

Technicians are generally responsible for maintaining medical equipment and performing regular preventive maintenance according to established specifications. Although a hospital may outsource this work or have it done in-house, it remains ultimately responsible for maintenance of its equipment.

3.0 Audit Objective and Scope

The objective of our audit was to access whether large community hospitals, in working with the Ministry of Health and Long-Term Care (Ministry), have effective systems and procedures in place to ensure that:

- patients receive timely, high-quality, safe, reliable and equitable health-care services;
- resources are used efficiently; and
- operational effectiveness is measured, assessed and reported on.

This audit focuses primarily on the three large community hospitals we visited. These three hospitals, which represent different regions and are governed by different Local Health Integration Networks (LHINs), are a geographically diverse sample of the 57 large community hospitals in the province. The three hospitals accounted for $1.3 billion in Ministry funding, or 16% of the $7.89 billion total funding given to large community hospitals in 2015/16.

We conducted our audit at the three hospitals, which each operate two sites to serve their areas. See **Figure 6** for the hospitals we visited, the LHINs they belong to, and their total number of beds, professional staff and nurses as well as the annual funding they received from the Ministry for the 2015/16 fiscal year.

To obtain a better understanding of the 57 large community hospitals, we extended our review to cover the remaining 54 large community hospitals in the province by:

- conducting a survey of the 54 that we did not visit during this audit (we received a response rate of 61%); and
- reviewing data where aggregated information was available for all large community hospitals in the province.

Figure 6: Number of Hospital Beds, Professional Staff and Nurses, and Annual Ministry Funding at the Three Large Community Hospitals We Visited, 2015/16

Source of data: Ministry of Health and Long-Term Care, Rouge Valley Health System, Trillium Health Partners and Windsor Regional Hospital

Hospital	Local Health Integrated Network	Number of Hospital Beds Funded by the Ministry	Number of Professional Staff[1]	Number of Nurses[2]	Annual Funding Received from the Ministry ($ million)
Trillium Health Partners	Mississauga Halton	945	855	3,245	714
Windsor Regional Hospital	Erie St. Clair	525	495	1,365	320
Rouge Valley Health System[3]	Central East	340	325	1,010	269

1. Includes physicians, Nurse Practitioners, midwives and dentists.
2. Full-time employee equivalent for Registered Nurses and Registered Practical Nurses.
3. On April 28, 2016, the Ministry of Health and Long-Term Care announced its decision to split the operations of the two Rouge Valley sites. The split will be effective December 1, 2016. At that time, the Centenary site will be amalgamated with the Scarborough Hospital under a new governance structure. The Ajax/Pickering site will be integrated into Lakeridge Health. All three hospitals are in the Central East LHIN.

We also asked a selected number of physicians, chosen on a random basis, to complete our survey on their opinion regarding, among other things, the scheduling and use of operating rooms. About 35% of them responded to our survey.

In certain areas—those relating to surgical-safety performance and infection rate, for example—we used provincial data covering all 147 public hospitals in Ontario, because such data is not kept separately for large community hospitals.

Our audit covered wait times at emergency rooms; wait times for hospital beds; wait times for surgeries; physicians' hospital privileges; management of nursing and housekeeping staff; movement of patients through hospitals; maintenance of medical equipment; and protection of personal health information.

We also reviewed the Ministry's funding process for large community hospitals and the related information reported from hospitals to LHINs and the Ministry.

We conducted our audit work between November 2015 and June 2016. Most of our file reviews went back three years, although we did some trend analyses going back five years. This audit did not examine hospital clinics, or diagnostic and laboratory services delivered by hospitals.

In conducting our audit, we reviewed and analyzed relevant Ministry and hospital data and files, administrative policies and procedures, and conducted interviews with hospital and ministry staff.

We also reviewed relevant research, including best practices for hospital operations in Ontario and other jurisdictions. In addition, we met with representatives from the U.S. firm Kaiser Permanente to examine some of the best practices they have adopted to deliver patient care. See **Appendix 2** for a list of best practices, including those used by Kaiser Permanente. As well, we engaged as an adviser an independent consultant with expert knowledge in hospital operations.

In addition, we met with representatives from various stakeholder groups, including the Ontario Hospital Association, the College of Physicians and Surgeons of Ontario, the College of Nurses of Ontario, the Ontario Nurses' Association, and the Registered Practical Nurses Association of Ontario. We also met with the Ontario Long-Term Care Association, the Ontario Association of Non-Profit Homes & Services for Seniors, and the Advocacy Centre for the Elderly, to obtain their views on senior care. We met with the Information and Privacy Commissioner of Ontario to discuss areas related to protection of patient records. We also met with the board of directors of two of the three large community hospitals we visited and board representatives of the third hospital.

Finally, we reviewed and followed up on the relevant audit issues raised by our Office in previous reports, including Hospitals—Administration of Medical Equipment (2006); Hospitals—Management and Use of Surgical Facilities (2007); Hospital Emergency Departments (2010); Discharge of Hospital Patients (2010); and Long-Term-Care Home Placement Process (2012). **Appendix 3** summarizes the relevant recommendations that had not been fully addressed since the completion of our earlier audits.

4.0 Detailed Audit Observations

4.1 Year-End Funding Confirmation for Cancer Surgeries Not Timely

The Ministry of Health and Long-Term Care (Ministry) has, through its timing of funding decisions, specifically on cancer surgeries, made it difficult for hospitals to properly plan their operating budgets throughout the year.

The Ministry provides funding for cancer surgeries based on projections submitted by hospitals. At one of the hospitals we visited, the hospital spent over $3.7 million on 492 cancer surgeries, which was about $321,000 more than its mid-year

projection, which was based on 38 fewer cancer surgeries. However, the Ministry did not confirm with this hospital that it would receive additional funding for the shortfall until six months after the March 31, 2016, year-end due to the timing of the current hospital data reporting and reconciliation process. This delay has created funding uncertainty and made it difficult for the hospital to plan and forecast in the current fiscal year and in the development of the future year's operating budget.

We also noted that 58% of the large community hospitals that responded to our survey said that they had to defer some types of surgeries, including cataract and hip/knee replacements, to the following year, because Ministry funding had not met the demand.

Some physicians who responded to our survey on the scheduling and use of operating rooms pointed out the same problem. They commented that the number of surgeries performed at a hospital is capped to a particular "quota" and that the hospital would not receive extra funding once the caps are reached, in spite of patient needs.

RECOMMENDATION 1

To ensure that funding to hospitals accurately reflects patient needs, the Ministry of Health and Long-Term Care should plan appropriately so that surgeries are delivered when needed.

MINISTRY RESPONSE

The Ministry is committed to ensuring that patients are provided with faster access to the right care.

To ensure patient access, the Ministry works with LHINs to determine local need and projected volume of required procedures. In addition, the Ministry has issued volume management instructions to the LHINs, asking LHINs to work with their hospitals to ensure that patients have access to surgery throughout the year.

The Ministry works with LHINs and hospitals throughout the year to rebalance and supplement funding for procedures, such as cardiac procedures, based on patient needs.

The Ministry will continue to work with LHINs and hospitals on aligning capacity and funding for surgeries with patient needs.

4.2 Patients Waiting Too Long in Emergency Rooms

Typically, about nine out of every 10 patients leave hospital after being diagnosed and treated in the emergency room. Based on data provided by the three hospitals we visited, we found that half of these patients generally receive service and are able to leave the hospital within three hours. In addition, the 90th percentile wait time (after the 10% of patients with the longest wait times are removed) was six-and-a-half hours, which is within the Ministry's target of eight hours.

However, we found that the one in ten patients whose conditions were serious enough to warrant admission to hospital for further treatment waited too long in the emergency room. These patients waited much longer to be transferred to a ward than the Ministry-set target of eight hours from the time they first arrive in the emergency department. The Ministry target for these patients is also set for the 90th percentile. This means that 90% of these patients should be transferred within eight hours, and no more than 10% should wait any longer. Based on 2014/15 data provided by the three hospitals we visited, we found the following:

- Only 52% of patients were transferred to intensive-care units (ICUs) in eight hours, and the 90th percentile wait time was 23 hours, not eight.
- Only 30% of patients were transferred to other acute-care wards in eight hours, and the 90th percentile wait time was 37 hours, not eight.

Figure 7 summarizes the patient wait times in emergency rooms at the three hospitals we visited.

Figure 7: Combined Emergency-Room Wait Time (Including Bed-Wait Time) at the Three Hospitals We Visited, Median and 90th Percentile, 2014/15

Source of data: Ministry of Health and Long-Term Care, Rouge Valley Health System, Trillium Health Partners and Windsor Regional Hospital

	Length of Stay (# of Hours)	
	Median[1]	90th Percentile[2]
Patients who were admitted to an intensive-care unit (ICU)		
Total wait time in emergency room[3]	8	23
Bed-wait time[4]	2	17
Patients who were admitted to acute-care wards other than an ICU		
Total wait time in emergency room[3]	13	37
Bed-wait time[4]	5	28

1. The median indicates the mid-point at which half of the patients waited less and half waited more.
2. The 90th percentile is the longest wait time that remains after the 10% of patients with the longest wait times are removed. The Ministry target is eight hours for total wait time in the emergency room, not for bed-wait time.
3. This wait time measures the total time a patient spent waiting in an emergency room, from the time the patient was triaged to the time the patient was transferred to a bed elsewhere in the hospital for further treatment.
4. Bed-wait time is part of the total wait time a patient spends in an emergency room—the time spent after admission to the hospital for a bed to become available elsewhere in the hospital.

We noted that most of the time the patients spent in emergency rooms was not waiting for an emergency-room physician to diagnose and treat them; rather, the patients were waiting to be transferred to a bed elsewhere in the hospital for further treatment. This issue is discussed in the next section.

4.2.1 Long Wait Times for Beds

We found that many patients had to remain in the emergency room after being seen by a physician because beds in ICUs and other acute-care wards were unavailable. This difference in time between physician's decision to admit the patient to the hospital and the patient's being given a bed is referred to as the "bed-wait time."

Based on 2014/15 data from the three hospitals we visited, we found the following:

- The 90th percentile bed-wait time for patients admitted to the ICU was 17 hours. This means that 10% of patients waited longer than 17 hours, and 90% waited some amount of time under 17 hours. The median time was two hours. This means that half waited less than two hours, and half more than two hours. The bed-wait time of patients admitted to the ICU accounted for about 70% of the total time they spent in the emergency room (refer to **Figure 7**).
- The 90th percentile bed-wait time for patients admitted to other acute-care wards was 28 hours. This means that 10% of patients waited longer than 28 hours and 90% waited some amount of time under 28 hours. The median time was five hours. This means that half waited less than five hours, and half more than five hours. The bed-wait time of patients admitted to other acute-care wards accounted for about 75% of the total time they spent in the emergency room (refer again to **Figure 7**).

We noted that the large difference between the median and 90th percentile for admission to the ICU suggests that most cases are handled well, while a small minority of difficult cases and occasional periods of overflow extend the average time. This suggests that a crisis response system is needed to better handle difficult cases and huge case volumes.

We also found that bed-wait time varied depending on the nature of a patient's illness or injury, and the patient's age. For example:

- Patients, many of them over 65 years of age, with infections (such as pneumonia),

stroke, chronic heart disease, or kidney or respiratory conditions are usually admitted to medicine-ward beds, and they experienced the longest waits—the 90th percentile wait time was about 35 hours (median wait time 10 hours)—due to higher occupancy rates, at 108%, in medicine-ward units. Once these units are occupied at 100% capacity, any additional patients are placed in "overflow" beds in other dedicated units (refer to **Section 4.4** for further details).

- In comparison, the 90th percentile wait time for beds in other wards ranged from two hours for obstetrics (median wait time half an hour) to 22.5 hours for mental health care (median wait time two hours). Occupancy rates in these wards ranged from 41% to 98%. Mental health patients wait a long time at the emergency room to be transferred to the mental health units. The primary reason is that mental health patients typically occupy their beds for longer periods due to the complexity of their health conditions, leading to a slower turnover of beds and fewer beds being available at any given time. In 2015/16, at the three hospitals we visited, mental health patients stayed on average 14.6 days, compared to 8.9 days for patients in medicine wards and 5.1 days for patients in post-surgical wards.

The Ministry has no standards for how long it should take to transfer a patient from the emergency room to an acute-care bed once a physician has admitted the patient to the hospital. However, we found that the actual bed-wait times for ICU and other acute-care beds were two and 3½ times longer, respectively, than the eight hours recommended by the Canadian Association of Emergency Physicians.

Delays in transferring a patient from emergency to an acute-care ward sometimes happen because all beds are full, or an available bed has not yet been cleaned. Delayed internal communication about bed availability can also contribute to longer bed-wait times. Delays in the transfer process are further discussed in **Section 4.4**.

4.2.2 Emergency Rooms Are Overcrowded

Emergency rooms often get overcrowded due to a backlog of patients awaiting beds elsewhere in the hospital. At the hospitals we visited, we saw patients placed on uncomfortable stretchers or gurneys in hallways and other high-traffic areas that were never designed for patient care. As we noted in the previous section, these waits can last as long as 28 hours for a minority of patients.

Overcrowded emergency rooms also make it difficult to control infections. The first Canadian to die in the 2003 SARS outbreak, for example, was infected after spending one night in a hospital emergency room.

Overcrowding also causes budget overruns by creating a need to bring in additional nurses to care for the high number of patients, including those waiting for beds. At the three hospitals we visited, emergency rooms were consistently among the top units for nurse overtime and agency replacement costs. See **Section 4.6.2** for more on this issue.

RECOMMENDATION 2

To better ensure timely transfer of patients from the emergency room to an acute-care bed when needed, hospitals should:

- monitor the bed-wait time by acute-care wards on a regular basis;
- investigate significant delays;
- develop a crisis response system to better handle difficult cases and high case volumes; and
- take corrective actions as necessary.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals have in place systems and practices to frequently (more than daily) monitor bed wait time. Significant delays are monitored and patients are

prioritized based on length of wait and acuity. Formal escalation and triaging practices are in place, and corrective actions are initiated when appropriate. Hospitals are working with community partners, such as Local Health Integration Networks and Community Care Access Centres, to find solutions for those patients who no longer need to be in the hospital but don't have an appropriate place to go. These patients, who need an alternate level of care (ALC), are occupying the beds needed for acute patients. High ALC rates are one of the key contributors to the long wait times experienced by patients waiting to be seen in the emergency room or waiting for a bed.

4.3 Long Surgical Wait Times Put Patients at Risk

We reviewed a sample of surgical cases between January 2013 and January 2016 at the three hospitals we visited, and found delays in emergency surgeries (**Section 4.3.1**) that put patients at risk. We also found that patients waited too long for some of the more urgent elective surgeries (**Section 4.3.2**). Our observations are outlined below.

4.3.1 Patients Waiting Too Long for Emergency Surgeries

As part of the Wait-Time Strategy announced in 2004, the Ministry established guidelines for how quickly emergency surgeries should be performed. However, it did not translate the guidelines into formal targets for hospitals to report against, and therefore does not know whether the guidelines are being met. **Figure 8** provides examples of emergency surgeries and the Ministry's clinical wait-time guidelines for them.

These clinical wait-time guidelines are extremely important to follow because an hour's (or even minutes') delay in surgery can decrease a patient's chance of survival and/or jeopardize a patient's quality of life. For instance, patients with critical or life-threatening conditions such as bleeding in the brain or accumulation of fluids in the abdomen require immediate emergency surgeries within two hours or risk permanent brain damage

Figure 8: Clinical Guidelines on Wait Times for Emergency Surgeries

Source of data: Ministry of Health and Long-Term Care

Clinical Wait-Time Guideline*	Health Conditions That Require Emergency Surgery
Within 0–2 hours	**Patients with critical or life-threatening conditions** Conditions that pose a risk to life or limb requiring surgical intervention as soon as preparations can be made. These cases can bump other less urgent cases from the operating-room schedule. For example: • Established ruptured vessel/aneurysm • Critical airway obstruction • Rapidly deteriorating neurological status • Compound fracture with bone protruding through the skin or lacerated major artery • Abdominal compartment syndrome
Within 2–8 hours	**Patients with conditions that require surgery as soon as possible** Acute conditions where surgery on a timely basis would lead to better outcomes. These cases typically do not bump other less urgent cases from the operating-room schedule. For example: • Open fractures/fracture dislocations • Bleeding ectopic pregnancy • Bowel obstruction, incarcerated hernia • Acute appendicitis • Intra-cranial hemorrhage

* Guidelines were established by the Ministry of Health and Long-Term Care's Surgical Efficiency Targets Program as part of a provincial wait-time strategy announced in 2004. Surgeons are responsible for prioritizing each patient based on the urgency of the patient's condition.

or multiple organ failures. In some cases, delay in performing these surgeries can lead to death.

Hospitals do not formally evaluate how quickly they perform all emergency surgeries. We found that none of the hospitals we visited consistently track sufficient information to assess the timeliness of surgeries and document reasons for surgical delays.

However, our own assessment of emergency-surgery wait times found that, overall, 38% of patients in our samples who required emergency surgeries did not get them within the time frames recommended by the Ministry. In particular, we found that one in four patients with these critical or life-threatening conditions had to wait four hours on average to undergo surgery that should have started within two hours. In one case, a patient who was suffering from a traumatic brain injury waited a total of 21.5 hours at a hospital before having a surgery. The patient subsequently died. The account of the event is as follows:

- Upon admission, this patient was diagnosed with subdural hematoma with a midline shift—a condition where the accumulated blood has shifted the brain past its centre line. The attending physician assessed the patient as stable but suffering from a critical condition. Based on the surgeon's clinical judgment, the plan was to proceed with surgery the following day.
- The next morning, the surgeon, jointly with another surgeon, reassessed the patient to be clinically stable. However, two elective surgeries were prioritized to be completed before this case. During the waiting period, the patient's condition suddenly deteriorated; the patient went into a coma and required emergency surgery. The patient did not recover and died four days later.

Other patients with conditions not as life-threatening as the case mentioned above still require surgery within two to eight hours. This two-to-eight-hour guideline is crucial to follow. In a case of acute appendicitis, for example, the appendix might rupture, leading to serious infection and possibly death.

At the three hospitals we visited, we found that 47% of patients had to wait on average over 10 hours more than the Ministry's two-to-eight-hour guideline. In one case, a patient who was suffering from abdominal pain waited a total of 25 hours at a hospital before having a surgery, and the patient had to stay in the hospital twice as long as necessary. Specifically:

- Upon admission, the patient first waited 7.5 hours overnight in the emergency room for a diagnosis of acute appendicitis to be made.
- The patient was seen by a surgeon and a 2-8 hour surgical priority was booked.
- The patient waited another 17.5 hours for surgery to be completed. During this time, other emergency cases and less urgent cases were done. At the time of the surgery, the surgeon noted that the patient's appendix was perforated. The patient stayed in hospital for a total of eight days instead of the typical four that would be expected for this type of surgery due to a surgical complication.
- This patient was readmitted with a post-surgical infection three days after being discharged and remained hospitalized for another seven days.

These delays in emergency surgery not only cause prolonged and unnecessary suffering for patients, but they also use hospital resources unnecessarily.

We found that availability of operating rooms and/or surgeons was the biggest challenge to timely emergency surgeries. We discuss this in the section that follows.

Emergency Surgery Patients Not Always Given First Priority

We found that the leading cause of long surgical wait times is that emergency surgeries have to compete with elective surgeries for operating-room time.

All three hospitals we visited have internal policies that allow the most urgent emergency surgeries to bump all others in order to use the next available operating room. However, other types of emergency surgeries typically have to wait until after 3:00 p.m., when that day's elective surgeries have been completed (similar to the patient with acute appendicitis who waited 25 hours, mentioned above), or wait for a slot after hours or on the weekend. For example:

- Three of the six hospital sites we visited do not have dedicated operating-room time set aside for emergency surgeries during daytime on weekdays. The other three sites we visited have dedicated operating-room time for only one to two emergency procedures.
- When operating rooms are in use (not including planned closures discussed in **Section 4.3.2**), we found a high utilization rate at the three hospitals we visited, ranging from 92% to 100%, compared to the 85% to 90% clinical best practice recommended by an advisory committee of an expert panel to the Ministry. This means that, aside from planned closures such as weeknights and weekends, the operating rooms are almost fully booked back to back and have limited ability to respond to emergency cases, resulting in surgery delays.

We also analyzed the three hospitals' data for 2014/15 and found that there is a higher chance of surgeries being performed on time, whenever there is dedicated operating-room time for emergency surgeries. For example:

- At one hospital, emergency cases booked during the Christmas holiday and summer breaks (when operating rooms are not scheduled for elective surgeries) were done within the recommended time frames—in other words, on time—84% of the time, compared to 69% at all other times.
- Conversely, at another hospital, emergency surgeries requested during daytime hours, when there are elective surgeries scheduled, were 37% more likely to be performed outside the recommended time frame—that is, not on time—than those requested at night.

We also noted that 62% of the 54 large community hospitals we surveyed allow their surgeons to schedule elective surgeries during times that they are on call for emergency cases. This is problematic, because the on-call surgeon might not be available if he or she is performing an elective surgery when an emergency case arises. This conflict in scheduling surgical cases contributed to the 21.5-hour wait time of the patient with a brain injury, mentioned above.

We observed that although the current scheduling of operation room and surgeon times gives hospital staff such as surgeons, nurses and other operating room personnel the convenience of a predictable daytime work schedule, this system limits flexibility and makes it very difficult for the hospital and surgeons to respond to unexpected emergency surgical situations on a timely basis.

RECOMMENDATION 3

To better ensure the equitable and timely treatment of patients requiring emergency surgery, hospitals should:

- on a regular basis, track and assess the timeliness of emergency surgery performed;
- document and analyze the reasons for delays in performing emergency surgery; and
- evaluate dedicating emergency-surgery operating-room time and/or take other measures, such as ensuring surgeons perform only emergency surgeries while they are on call, as part of their regular planned activity, in order to reduce the risk that emergency-surgery delays result in negative impacts on patient health.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals will review their methods for tracking and analyzing the timeliness for emergency surgeries.

In conjunction with this review, hospitals will ensure that adequate controls are in place to enable all reasons for delays to be documented accurately. When reviewing wait-time targets versus performance, hospitals will determine whether more operating-room time should be dedicated to emergency surgeries or whether surgeons' schedules need to be revised. The operational feasibility of revising either operating-room time or surgeons' schedule may require realignment of the funding model and/or the Ontario Health Insurance Plan's fee schedule for surgeons.

4.3.2 Patients Waiting Too Long for Some Urgent Elective Surgeries

Although not rated as emergencies, some elective surgeries may still be quite urgent. These include, for example, surgeries to remove some types of aggressive cancerous tumours that should be done within two weeks of discovery to maximize a patient's long-term chances.

Surgeons schedule and prioritize elective surgeries taking into account such factors as the urgency of the case, patient preference, the times the surgeon has available and availability of hospital operating rooms.

The Ministry sets formal targets for elective surgeries, and requires each hospital to submit wait-time performance data on a monthly basis. We reviewed this data for the past five years province-wide and found that:

- wait times for elective surgeries have not improved over time; and
- hospitals are struggling to meet the Ministry's wait-time targets for the most urgent elective surgeries.

Figure 9 summarizes elective-surgery wait-time performance for large community hospitals in 2015/16 by type of surgery. The Ministry requires 90% of the surgeries to be performed within the wait-time target assessed for each type of surgery and level of urgency. As the figure shows, the more urgent the surgery, the less likely it is to be performed within the wait-time target. For example:

- Only 33%, not 90%, of highly urgent neurosurgeries were completed within the Ministry's 28-day wait-time target. With the top 10% of patients with the longest wait time removed, the 90th percentile wait time was 63 days, not 28 days, in 2015/16.
- Only 60%, not 90%, of highly urgent oral and dental surgeries were completed within the Ministry's 14-day wait-time target. With the top 10% of patients with the longest wait time removed, the 90th percentile wait time was 68 days, not 14 days, in 2015/16.

Frequent Planned Operating-Room Closures

The availability of operating rooms is a factor in the long wait time for some elective surgeries, as is competition for operating-room time between elective and emergency surgeries. In particular, at the three hospitals we visited, we found that although most sites had nine to 12 operating rooms, only one at each site remained open on evenings and weekends, and these were dedicated to emergency surgeries only. With respect to the hospitals we surveyed, we found that a majority of hospitals typically have planned operating-room closures on statutory holidays, over the March break, and for two to 10 weeks during the summer, in addition to weeknights and weekends. About 45% of hospital survey respondents also indicated that one or more of their operating rooms were not currently in use because of funding constraints. Our physician survey results confirmed the same.

Over half of the surgeons who responded said that their hospitals have no policy to schedule elective surgeries on evenings and weekends due to funding constraints. It is costly for the hospitals to have, for example, sufficient nursing and supportive staff and anesthesiologists on duty for all operating rooms after hours.

Figure 9: Large Community Hospitals' Wait-Time Performance for Adult Elective Surgeries, 2015/16

Source of data: Ministry of Health and Long-Term Care, Cancer Care Ontario

Type of Surgery	Level of Urgency[1]	Median Wait Time—Actual (Days)	90th Percentile Wait Time—Target (Days)	90th Percentile Wait Time—Actual (Days)	Percentage of Cases Completed within Wait-Time Targets[2] (%)
Neurosurgery	High	13	7–28	63	**33**
	Medium	30	56– 84	86	**78**
	Low	36	182	108	98
Oral and Dental Surgery	High	10	14	68	**60**
	Medium	43	84	104	**84**
	Low	53	182	145	94
Thoracic Surgery	High	9	14	26	**62**
	Medium	18	84	38	99
	Low	31	182	83	99
Vascular Surgery	High	8	14	27	**73**
	Medium	24	28–56	67	**80**
	Low	36	182	145	95
Orthopedic Surgery	High	21	7–42	78	**75**
	Medium	53	56–84	180	**71**
	Low	65	182	181	90
Gynecologic Surgery	High	18	28	53	**75**
	Medium	40	84	113	**83**
	Low	51	182	132	96
Ophthalmic Surgery	High	15	7–42	77	**75**
	Medium	37	42–84	134	**84**
	Low	62	84–182	187	**89**
Cancer Surgery	High	8	14	23	**78**
	Medium	17	28	32	**86**
	Low	29	84	63	96
General Surgery	High	13	14–28	33	**86**
	Medium	30	84	74	93
	Low	42	182	113	98
Urologic Surgery	High	10	28	33	**86**
	Medium	23	84	61	96
	Low	34	182	91	98
Otolaryngic Surgery (ear, nose and throat/head and neck)	High	18	28–56	64	**87**
	Medium	46	70–112	118	**89**
	Low	59	182	165	92
Plastic and Reconstructive Surgery	High	6	28	29	90
	Medium	33	84	83	90
	Low	48	182	144	94

1. High, medium and low urgency are our categories; they are equivalent to priority 2, 3 and 4, which are the categories used by hospitals and the Ministry of Health and Long-Term Care (priority 1 is emergency surgery and therefore not applicable to this figure).
2. The Ministry requires 90% of cases to be completed within the wait-time target. The types of surgeries that are not meeting the 90% target are in bold.

RECOMMENDATION 4

To ensure patients receive urgent elective surgery on a timely basis, the Ministry of Health and Long-Term Care (Ministry) should:

- review the relationship between the level of funding provided for urgent elective surgeries, the wait-time targets for those surgeries, and the difficulties hospitals are facing achieving those targets within the level of funding provided; and
- using the information from this review, determine future urgent-elective-surgery funding needs, such that the risk to patients is addressed and hospitals are enabled to achieve the Ministry's urgent-elective-surgery wait-time targets.

MINISTRY RESPONSE

Recognizing and supporting excellence in health care is part of the government's Patients First: Action Plan for Health Care. To ensure patient access, the Ministry works with Local Health Integration Networks (LHINs) to determine local need and the projected volume of required procedures.

As part of the 2016 Budget, Ontario invested more than $345 million into all publicly funded hospitals to provide better patient access to high-quality health care services. Among the targeted investments was $50 million to improve access and wait times for hospital services, including additional procedures, such as cataract surgeries, and knee and hip replacements.

The Ministry works closely with LHINs each year to determine how additional Quality-Based Procedure (QBP) funding is allocated. The LHINs have discretion to reallocate funding and volumes across hospitals and QBPs based on local needs.

The Ministry is currently working with the LHINs to develop a methodology that reflects local funding requirements for urgent elective surgeries.

RECOMMENDATION 5

To continue to make the most effective use of hospital resources within funding constraints, and to better ensure that patients get urgent elective surgeries within the wait-time targets established by the Ministry of Health and Long-Term Care (Ministry), hospitals should consult with the Ministry and the Local Health Integration Networks (LHINs) when necessary, and work with surgeons to identify ways to alleviate the backlogs, such as scheduling some elective surgeries for times other than typical daytime business weekdays.

MINISTRY RESPONSE

Although the Ministry provides funding for hospitals through Local Health Integration Networks (LHINs), hospitals are independent corporations. As set out under the *Public Hospitals Act* and other legislation, hospitals are directly responsible for day-to-day management, including decisions about scheduling health services. Hospitals can fund additional volumes during the year or redistribute funding between programs to ensure that services continue to be aligned with patient needs.

The Ministry regularly reviews hospital performance and holds quarterly stock-taking meetings with LHIN leadership to review performance issues—including hospital efficiency data—and discuss how to address challenges.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals are continuously balancing the performance of medically necessary planned elective surgeries, emergency (unplanned) surgeries and physician schedules, while ensuring that volume targets for surgeries in the Hospital Service

Accountability Agreement are met and the associated funding provided by the LHINs is not exceeded. Hospitals will continue to look at ways to balance these competing priorities with the aim of reducing wait times. Hospitals will work with the Ministry and surgeons to identify opportunities to reduce wait times and alleviate backlogs in the context of current labour, physician and funding constraints.

Wait Time for Elective Surgeries Varies across Ontario

The time a patient must wait for surgery depends on which surgeon the patient is referred to. For example, the difference in 90th percentile wait times (after 10% of patients with the longest wait time are removed) for ear, nose and throat surgery between two hospitals just 100 kilometres apart was 127 days—the wait time was almost four months, or 113 days, at one hospital versus eight months, or 240 days, at another.

Although eight of the 14 LHINs across Ontario currently have central referral services for hip- and knee-replacement surgeries in their regions, there is no centralized system in place for booking other types of elective surgeries. Instead, individual surgeons manage their own surgery wait lists—and some have longer wait lists than others because they are well known or because of recurring referrals from family physicians.

While Alberta, British Columbia, Saskatchewan and Nova Scotia publicly report wait times by individual surgeons for all types of surgeries, Ontario currently does not. The lack of wait-time information for each surgeon means that Ontarians are not aware of this situation and that their physicians do not have the information to be able to refer their patients to another surgeon with a shorter wait list, or to another facility that could offer treatment and/or consultation sooner.

Misleading Elective Surgery Wait-Time Information

The Ministry publicly reports wait-time performance by hospital for all 12 types of elective surgery. However, we found that the way the Ministry presents this information on the public section of its wait-time performance website is misleading.

The Ministry does not, for example, report wait-time performance by level of urgency. Wait time targets for individual procedures vary widely, depending on how urgently the surgery is needed—the more urgent the case, the shorter the target. However, the Ministry reports wait times for all urgency levels against only the least urgent and therefore longest wait-time target. **Figure 10** shows two examples of the way the Ministry publicly presents hospital wait-time performance. For the example related to hysterectomy surgeries (procedures to remove all or part of the uterus), the Ministry lists a target wait time of 182 days for 90% and an actual wait time of 148 days, indicating that this procedure is being performed on time in a great majority of cases. However, 182 days is the time frame for only low-urgency hysterectomies, and the actual wait time for them is 156 days; medium-urgency hysterectomies are supposed to be performed within 84 days, and the actual wait time for them is 132 days. High-urgency hysterectomies are supposed to be performed within 28 days and the actual wait time for them is 65 days.

Unlike other jurisdictions such as Nova Scotia and the United Kingdom, Ontario does not report full wait times. Before a surgery can be booked, a patient must first be assessed by a specialist to determine the type of surgery needed and how urgently it is required. Although the Ministry does track the time a patient waits for a specialist consultation, it does not report it publicly or include it in its wait times for surgeries.

Wait times to see specialists vary, and if this period were taken into account, it would add months to the wait time for some surgeries. **Figure 11** summarizes both median and 90th percentile wait times to see a specialist by type of surgery in 2015/16.

Figure 10: Two Examples of How Wait-Time Information Is Publicly Reported by the Ministry of Health and Long-Term Care For Ontario Hospitals, December 2015–February 2016

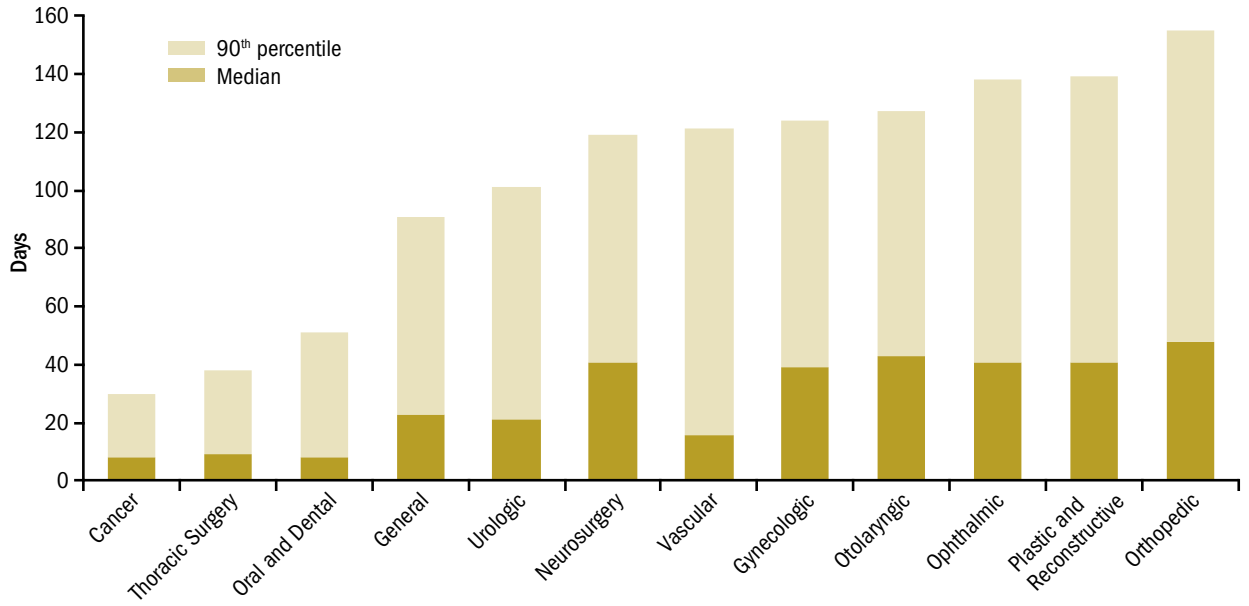
Source of data: Ministry of Health and Long-Term Care

	Level of Urgency	Target Wait Time for 90% of Cases (Days)	Actual Wait Time for 90% of Cases (Days)	Performed Within Target?
Adult Hysterectomy Surgery*				
Information shown on the public section of the Ministry's wait-time reporting website	Not shown	182	148	Yes
Actual wait-time information broken down by urgency level (this information is not shown on the public section of the Ministry's wait-time reporting website)	High	28	65	No
	Medium	84	132	No
	Low	182	156	Yes
Adult Prostate Cancer Surgery				
Information shown on the public section of the Ministry's wait-time reporting website	Not shown	84	79	Yes
Actual wait-time information broken down by urgency level (this information is not shown on the public section of the Ministry's wait-time reporting website)	High	14	20	No
	Medium	28	50	No
	Low	84	84	Yes

* Hysterectomy is a surgery to remove all or part of the uterus.

Figure 11: Median and 90th Percentile Wait Time to Consult a Specialist, by Type of Surgery, 2015/16

Source of data: Ministry of Health and Long-Term Care, Cancer Care Ontario



Note: This wait time measures the time between a family physician's referral and the appointment with a specialist. At the time of our audit, the Ministry has started to collect data on actual wait time to consult a specialist by urgency level for each type of surgery.

This wait time measures the time between a family physician's referral and the appointment with a specialist. The 90th percentile wait time ranged from 30 days to consult a specialist for cancer surgery to 155 days to consult an orthopedic surgeon for bone- and joint-related surgery. Because the Ministry does not publish these wait times, the public is missing a large part of the wait time picture. For example, 90% of orthopaedic surgery patients waited, on average, 155 days to see a specialist. Depending on the urgency level decided on by the specialist, patients could then wait another 78 to 181 days to actually receive their surgery, potentially extending their total wait time to almost a year. At the time of our audit, the Ministry has started to collect data on actual wait time to consult a specialist by urgency level for each type of surgery and use this to measure against its wait time targets.

RECOMMENDATION 6

To help ensure that both patients and healthcare providers make informed decisions, and that patients undergo elective surgery within an appropriate time, the Ministry of Health and Long-Term Care (Ministry) should work with hospitals to:

- implement a centralized patient referral and assessment system for all types of elective surgeries within each region;
- break down the wait-time performance data by urgency level for each type of elective surgery on the Ministry's public website; and
- publicly report the complete wait time for each type of surgery, including the time from the date of referral by family physician to the date of a patient's appointment with a specialist.

MINISTRY RESPONSE

The Ministry has conducted a review of the existing orthopaedic Central Intake and Assessment Centre (CIAC) models. These models streamline the intake process by determining whether a surgical consultation is appropriate, leading to more timely access to specialists. Patients requiring a surgical consultation are assigned a surgeon based on their choice, their referring physician's choice, or the first available surgeon with the lowest wait list.

The Ministry is working to standardize reporting and practices among current CIAC models and is considering expanding to additional Local Health Integration Networks. In addition, the Ministry will consider whether to increase the scope of the existing models to include other procedures, such as foot and ankle surgery, and other specialties.

Since 2005, the Ministry has publicly reported monthly wait-time data; wait times for over 200 surgical procedures are available and reported online as "Wait 2" (the time from the decision to treat to the date of surgery).

The time from the date of referral to the date of surgical consultation with a specialist is referred to as "Wait 1." The Ministry is working closely with key stakeholders to develop a plan to publicly report this information. As part of the government's Open Health Initiative, the Ministry is working to publicly report in late 2016/17 the wait time for consultations with a surgical specialist. This reporting will be in addition to the current public reporting of wait-time data for surgical and diagnostic-imaging procedures.

There are a number of components involved in reporting this data publicly, including: ensuring data quality, interpretation of the data, engaging clinicians to understand the data and building the online infrastructure to publicly report it.

The Ministry is also following through with its commitment to address wait times for specialists and specialist services with a multi-year strategy that will address access, capacity and quality.

RESPONSE FROM HOSPITALS

We agree with the recommendation and will support the Ministry in its efforts to develop centralized referral and assessment systems with the aim of reducing patient wait times. Hospitals support the public reporting of wait times, including the time from date of referral by the family physician, and will support the Ministry in all wait-time reporting initiatives.

RECOMMENDATION 7

To ensure patients receive timely elective-surgery consultation from a specialist, the Ministry of Health and Long-Term Care (Ministry) should identify the reasons why there is a long wait for some specialists and work with the Local Health Integration Networks (LHINs), hospitals and specialists to improve wait time and access to specialists and specialist services.

MINISTRY RESPONSE

The Ministry acknowledges this recommendation and is committed to addressing wait times for specialists and specialist services with a multi-year strategy that will address access, capacity and quality. The Ministry will continue to work with the Local Health Integration Networks (LHINs) to determine ways to address wait times and risks to patients.

This Ministry has collected Wait 1 (date of referral to the date of surgical consultation with a specialist) data since 2012 and shares monthly Wait 1 summary reports with LHINs and hospital partners to help identify and address wait-time concerns.

In addition, Ontario collects and reports wait times for over 200 surgical procedures performed by over 3,000 surgeons in Ontario each year. To support LHINs in understanding how providers contribute to better access for patients, a LHIN Surgeon Wait Time Report, with information related to consultation and surgery, is shared quarterly. The report focuses on wait times for high-volume priority procedures, such as cancer surgery, hip and knee replacement surgery, and cataract surgery, and allows for comparisons. A surgeon Scorecard is also provided directly to the surgeon to help manage their practice by providing wait-time data for surgical patients. The intent of the Scorecard is to help increase surgeons' awareness of their wait-time data and help drive further improvements in wait times and backlogs.

This fall, the Ministry reintroduced the *Patients First Act, 2016*, (Bill 41) that, if passed, should improve access to health care services by putting patients at the centre of an integrated health system. The *Patients First Act, 2016*, proposes to give LHINs an expanded role, including responsibilities for primary-care planning, and home and community care services delivery. If Bill 41 is passed, LHINs will become the single point of accountability for the effective integration of services at the local level. Smaller sub-regions would become the focal point for local integration and collaboration, and provide an opportunity to improve primary-care access, including access to specialists.

4.3.3 Poor Surgical-Safety Performance

Ontario patients have a relatively high incidence of health problems and risks that could be more effectively managed with better quality-of-care practices. We identified two surgical-safety related problems that Ontario hospitals do not manage or prevent as well as hospitals outside Ontario.

According to 2013 data from the Canadian Institute for Health Information, Ontario ranks behind most developed countries on the following measures of patient safety in acute-care settings (data compiled by the Organisation for Economic Co-operation and Development, or OECD):

- **Post-operative pulmonary embolism**—A pulmonary embolism is a blockage in the lung, often caused by a blood clot, that can

damage the lung and other organs, and even lead to death. Leg or hip surgery is one of the risk factors for blood-clot blockage, as is having to stay in bed after surgery. There are ways to predict its likelihood and prevent clots after surgery, including medication and making the patient active as soon as possible after surgery. Ontario hospital patients aged 15 and over have a relatively higher incidence of post-operative pulmonary embolism after hip- and knee-replacement surgeries than patients in other OECD countries: 679 cases per 100,000 patients discharged, compared with 660 Canada-wide and 362 for the 34 other OECD countries.

- **Objects left inside surgical patients:** Objects such as sponges or pieces of other medical tools that are inadvertently left in a patient after surgery can cause internal bleeding, infections, other complications or death. Ontario surgical patients aged 15 and over experienced a relatively higher rate of errors per 100,000 discharges than patients in other OECD countries: 7.5, compared with 4 for the 34 other OECD countries (the Canada-wide rate is 8.6).

At the time of our audit, the Ministry did not know which hospitals contributed to the poor surgical performance in Ontario, nor has it taken any specific actions to address this shortcoming.

RECOMMENDATION 8

To ensure the safety of surgical patients, the Ministry of Health and Long-Term Care should work with hospitals to ensure hospitals regularly monitor patient incident occurrences and take corrective actions as necessary.

MINISTRY RESPONSE

The Ministry takes this recommendation very seriously and has several established requirements for the ways in which hospitals must handle critical incidents and reduce the risk of similar incidents in the future.

A regulation under the *Public Hospitals Act* specifies requirements for hospitals when responding to a critical incident, including disclosure to their Medical Advisory Committee, the hospital administrator and the affected patient or their substitute decision-maker, as soon as practically possible. The hospital board is required to ensure that the hospital administrator establishes a system for analyzing the critical incident and developing a system-wide plan to avoid or reduce the risk of further similar incidents. Also, the board ensures that the administrator provides aggregated critical-incident data to the hospital's quality committee at least two times per year. Under the *Excellent Care for All Act, 2010*, the hospital must consider this aggregated critical-incident data when developing its annual Quality Improvement Plan.

All Ontario hospitals are required to report critical incidents relating to medication or intravenous fluids through the National System of Incident Reporting, a web-based tool that allows users to report, analyze and share information on patient safety incidents. The reporting must occur within 30 days following the incident, and the data is analyzed by the Canadian Institute for Health Information. This data helps to inform quality improvement at local, provincial/territorial and national levels.

All Ontario hospitals are also required to publicly report on 10 patient safety indicators, including surgical-site infection prevention and surgical safety checklist compliance.

Health Quality Ontario supports hospitals in improving surgical care in Ontario through the Ontario Surgical Quality Improvement Network. A key component of participation in the network is the implementation of the National Surgical Quality Improvement Program, which was created by the American College of Surgeons. This

peer-to-peer initiative has been shown to deliver better patient outcomes, shortened hospital stays and fewer surgical complications per year.

RESPONSE FROM HOSPITALS

We agree that oversight of quality of care and safety incidents across the health-care system is a critical component in ensuring the safety of all patients, including surgical patients. The hospital board of directors has oversight responsibility for patient safety. Each board has a Medical Advisory Committee to which hospital administrators report critical incidents. In addition, most boards also have a Quality of Care and Patient Safety Committee dedicated to oversight in these areas and for the hospital's Quality Program. These committees, which report to the board, regularly review key quality of care and safety indicators and all critical incidents, including those from the surgery program. At the operational level of a hospital, processes, systems and practices are in place to record, report, investigate and remediate errors to reduce the likelihood of such incidents happening to other patients. This includes the use of software to support incident management.

4.4 High Bed Occupancy Rates Can Contribute to Higher Patient Infection Rates

Occupancy rates vary significantly among different acute-care wards within a hospital. **Figure 12** shows that, of the 57 large community hospitals, 60% of all medicine wards had an occupancy rate (the percentage of available beds occupied by patients) of 85% or more, whereas only 2% of all obstetrics wards had this same high occupancy rate during 2015/16.

There is much research to show that occupancy rates higher than 85% not only result in longer wait times for hospital beds in acute-care wards, but also increase the risk of transmitting infectious disease.

Hospital executives we interviewed explained that outbreaks of infections are more frequent and more severe when patient density is high because it becomes more difficult to comply with infection control and prevention standards.

One example of hospital-acquired infection is sepsis, a life-threatening complication of infection. Data from the Canadian Institute for Health Information as of the 2014/15 fiscal year shows Ontario had the second-highest rate of sepsis in Canadian hospitals after the Yukon—4.6 cases per 1,000 patients discharged in Ontario, compared to an average of 4.1 for other Canadian provinces.

Hospitals Need to Reallocate Funding on an Ongoing Basis to Avoid Deficit Due to "Overflow" Beds

In addition, occupancy rates higher than 100% indicate that hospitals are accommodating patients in temporary "overflow" beds. Hospitals are required to accept a person as an in-patient if the person has been admitted in accordance with the regulations, and the person requires care that is provided by the hospital. In other words, hospitals are not allowed to turn away patients due to overflow occupancy

Figure 12: Bed Occupancy Rate at 57 Large Community Hospitals, by Selected Acute-Care Wards, 2015/16
Source of data: Ministry of Health and Long-Term Care

	Acute-Care Ward (%)				
Range of Bed Occupancy Rate (%)	Medicine	Surgical	Intensive-Care Unit	Pediatric	Obstetric
>100	29	6	4	2	1
Between 85 and 100	31	30	25	2	1
<85	40	64	71	96	98
Total	**100**	**100**	**100**	**100**	**100**

rates. Hospitals generally are funded based on the number of patients treated, their acuity, and the expected cost of providing services, rather than the number of beds that they have. However, there is a time lag on the funding; hospitals would be funded for the overflow after two years. This means that hospitals often have to divert funding from other areas to cover the operating costs of overflow beds during the current fiscal year in order to balance their budgets. **Figure 12** indicates that in 2015/16, all five categories of acute-care wards in Ontario's 57 large community hospitals had experienced, on a combined basis, an over 100% occupancy rate; in particular, 29% of medicine wards had an occupancy rate over 100% in 2015/16.

One hospital we visited, for example, operated the equivalent of nine overflow beds when it was over 100% occupancy during the 2014/15 fiscal year. These beds are located in other units dedicated for overflow beds. The direct costs of operating these beds totalled $1.45 million for the year ($733,000 for diagnostic and therapeutic services, $587,000 for direct patient care and $128,000 for food).

4.4.1 Bed Shortages Caused by Patients Waiting in Hospital for Other Types of Care

One reason for high occupancy rates in acute-care wards is that about 14% of hospital beds in the province are occupied by alternate-level-of-care patients—people who no longer require hospital care but who must remain there until a bed becomes available in another setting such as a long-term-care home.

Figure 13 breaks down all the different discharge destinations for the approximately 4,110 alternate-level-of-care patients waiting in all Ontario hospitals during 2015/16. As of March 31, 2016, about 45% were waiting for long-term-care-home beds while occupying the more expensive acute-care beds in hospitals. Another 19% were waiting for rehabilitation, complex-continuing care, or convalescent care hospitals, while 15% were waiting for provincial subsidized home-care services to be available at patient's home. The remaining 22% were waiting for group home, retirement home, palliative hospice, or other types of supportive housing.

The median wait time for patients awaiting long-term-care home placement has increased from 73 days in 2012/13 to 85 days in 2015/16. In other words, in 2015/16 half the patients waited less than 85 days and half waited longer—however, in 2015/16, the 90th percentile wait time (after the 10% of patients with the longest wait times are removed) was 406 days, a slight improvement from 437 days in 2012/13.

Considering that the average length of stay for a regular acute-care patient is 8.6 days or less,

Figure 13: Discharge Accommodations Needed for Alternate-Level-of-Care Patients Waiting at Hospitals, as of March 31, 2013 and March 31, 2016

Source of data: Ministry of Health and Long-Term Care

Discharge Accommodations Needed	# of Patients Waiting as of March 31, 2013	# of Patients Waiting as of March 31, 2016	% Waiting as of March 31, 2016
Long-term-care home	1,853	1,854	45
Rehabilitation/complex-continuing care/convalescent care hospital	679	775	19
Patient's own home, with CCAC home-care services	560	609	15
Supportive housing, group home, assisted living residence	257	253	6
Retirement home	124	216	5
Other destinations (including palliative care)	423	405	11
Total	3,896	**4,112**	**100**

we calculated that hospitals could treat roughly 37,550 patients more each year if alternate-level-of-care patients were not waiting in hospital beds for long-term-care spots.

We found that the high occupancy of acute-care beds was partly due to the right of patients in Ontario to stay in hospital until a spot comes up in the long-term-care home(s) of their choice, even if their preferred choices have long wait lists. (Another reason for this bottleneck is that the supply of long-term-care beds is not able to meet the demand.) In comparison, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia and Prince Edward Island all require patients to go to the first available vacant long-term-care-home bed anywhere in the province. Saskatchewan and New Brunswick require patients to take any available long-term-care-home bed within 150 and 100 kilometres away from the patient's home, respectively.

We also noted that although 45% of alternate-level-of-care patients in Ontario hospitals are waiting for placement in long-term-care homes (refer again to **Figure 13**), the Ministry has since 2009 increased funding for temporary transitional beds, convalescent care beds, supportive housing and assisted living services, and has been prioritizing home care over long-term care.

High Cost of Alternate-Level-of-Care Patients Waiting in Hospitals

For the 2015/16 fiscal year, we calculated that keeping about 4,110 alternate-level-of-care patients in hospitals cost the province an additional $376 million, of which $236 million relates to the 1,850 patients waiting for long-term-care homes.

Our calculation was based on the fact that the average cost of an alternate-level-of-care patient occupying a hospital bed is about $730 per day, compared to $130 per day for a bed at a long-term-care home (for the portion funded by the Ministry, net of what the patient pays).

Despite the high cost of keeping such patients in hospital, we found that the Ministry did not have long-term-care capacity-planning in place; nor does it know the future demand for long-term-care beds. As of March 2015, there were close to 19,460 people, including those who were staying in hospitals aged 65 or over, waiting for a long-term-care home bed. As things stand, the Ministry is not in a position to meet the demand for long-term-care homes.

Overly Long Waits in Hospital Expose Patients to Unwarranted Health Risks

Acute-care hospital units are not the ideal setting for patients awaiting other types of care. Many such patients are seniors with health conditions similar to those residing in long-term-care homes.

In a June 2011 report, Dr. David Walker, Provincial Alternate-Level-of-Care Lead to the Ministry, pointed out that patients waiting in hospital until the bed they need becomes available may not get the rehabilitative care they require while they wait. This can lead to physical deterioration, falls and other problems that can result in permanent damage to the patient. We noted the following concerns:

- *Falls*—Two of the three large community hospitals we visited place alternate-level-of-care patients in various acute-care wards throughout the hospital. These two hospitals did not specifically track the number of alternate-level-of-care patients who fall while in hospital because they only track falls by patient wards. At the third hospital, which co-locates all alternate-level-of-care patients to a special patient-care ward, we found that from January 2014 to March 2016, these patients fell 2½ times more often than those living in long-term-care homes in the area.
- *Higher use of anti-psychotic drugs*—Anti-psychotic drugs are used to treat behavioural symptoms of dementia, especially in patients at risk of harming themselves or others. Unlike long-term-care homes, hospitals are not subject to the same stringent legislative

requirements regulating the use of these drugs on patients. Although all patients have their drug use tracked in their medication records and their prescriptions were reviewed periodically, two of the large community hospitals we visited do not have practices in place to review the overall use of anti-psychotic drugs given to alternate-level-of-care patients. At the third, we found that 37% of such patients received anti-psychotic drugs in 2014/15, compared to 31% at long-term-care homes in the same community and 27% at homes province-wide.

- *Infections*—Dr. Walker noted in his report that alternate-level-of-care patients have a higher chance of developing an infection while waiting in hospital for their next phase of care than if they wait at home.

RECOMMENDATION 9

To ensure optimal use of health-care resources for patients requiring hospital care and for those requiring long-term care, the Ministry of Health and Long-Term Care should:

- ensure that alternate-level-of-care patients waiting in hospital are safe and receive the restorative and transitional care they need while they wait;
- evaluate policies in other jurisdictions aimed at placing reasonable limits on the time patients can spend waiting in hospital for beds in long-term-care homes, such as by discharging patients to the first appropriate available home within reasonable proximity; and
- conduct capacity-planning for senior care and address bed shortages, if any, in long-term-care homes.

MINISTRY RESPONSE

Since 2013/14, the Ministry has invested more than $40 million across all 14 Local Health Integration Networks (LHINs) to implement the Ministry's Assess and Restore (A&R) Guideline. The A&R Guideline sets standards and expectations for LHINs, hospitals, Community Care Access Centres and other care organizations delivering A&R interventions to help frail seniors who have experienced a recent, reversible functional loss to recover functional ability so they can continue living in the community. The Ministry expects LHINs and hospitals to ensure that all patients in hospital receive restorative and transitional care that is appropriate to their needs.

Another Ministry initiative is the Interim Bed Short-Stay program (IBP) for individuals who meet the following criteria: they occupy a bed in a public hospital, they no longer require acute care services provided by the hospital, they require an alternate level of care, they are eligible for long-stay admission to a long-term-care (LTC) home, and they are on a waiting list for a long-stay bed in an LTC home.

IBP:

- provides a mechanism to assist the LHINs addressing hospital-emergency-room wait-time and alternate-level-of-care pressures;
- facilitates earlier and faster discharge of hospital patients seeking admission to an LTC home;
- provides a safe and suitable care setting for LTC-home applicants to live in while they wait for a long-stay bed; and
- ensures a continuous "flow-through" so that interim beds are constantly freed up for new applicants from hospitals.

The Ministry is working closely with LHINs to monitor the need for LTC-home beds throughout the province on an ongoing basis, and is currently examining future needs for LTC-home capacity and planning accordingly.

The Ministry is also developing a provincial capacity planning framework to support integrated population-based health planning. The framework will support the Ministry, LHINs and health system partners by providing access

to consistent data and guidance on policy and planning actions. Developing a capacity planning framework will help support the provision of care in the most appropriate setting possible across the health care continuum.

4.4.2 Hospitals Lack Efficient Systems for Allocating Beds

Poor communication between the emergency room and other hospital units can create longer wait times for emergency-room patients who need to be transferred to hospital beds in other units.

One of the hospitals we visited was able to transfer emergency patients to hospital beds in acute-care wards more quickly than the other two because it had an information-technology system for hospital-wide bed management, whereas the other two had only a bed-allocation team to centralize management of in-patient beds.

We also noted that fewer than one-third of the large community hospitals that responded to our survey indicated they had a hospital-wide IT system in place to manage beds.

At hospitals that do not have such systems, acute-care wards need to be individually contacted by telephone, intercom or walkie-talkie, to identify available beds. The onus is on the emergency room to send a patient to a bed in an acute-care ward—the ward cannot pull a waiting patient from the emergency room when the right type of bed becomes available.

In comparison, hospital-wide bed management IT systems reduce bed-wait times because they provide real-time information such as bed availability and the number of patients waiting for each type of bed in each acute-care ward. Such systems also allow two-way communication between the emergency room and acute-care wards.

The databases that hospitals use to track patient information also have an impact on bed management. Physicians are required to estimate how long each patient is expected to stay in hospital, so this information can be used to manage beds by planning discharges appropriately.

We found that two of the three hospitals we visited did not frequently update estimates on expected length of stay for all patients in the database. As a result, they lacked an accurate picture of when patients could be discharged and how many beds would become available. This caused delays in patient discharges, contributing to longer wait times for beds.

RECOMMENDATION 10

To help reduce the time that hospital patients must wait for beds after admission, hospitals should conduct cost-benefit analysis in adopting more efficient bed-management systems that provide real-time information about the status of hospital beds, including those occupied, awaiting cleaning or available for a new patient, as well as the number of patients waiting for each type of bed in each acute-care ward.

RESPONSE FROM HOSPITALS

We agree with this recommendation. For hospitals that do not already have an electronic bed-management system in place, a cost-benefit analysis on implementing a system that provides real-time information about bed status will be conducted.

4.4.3 Poorly Scheduled Admissions and Discharges Cause Longer Bed-Wait Times

At times of high hospital occupancy rates, timing of patient admissions and discharges becomes crucial.

Hospitals have limited control over how many patients are admitted for further care via the emergency room. However, they do have some control over the way they schedule patient discharges and referral admissions (admissions that do not come via the emergency room—**Figure 5** (in **Section 2.5**) illustrates the various ways patients can

"flow" through the hospital) during the day and throughout the week.

Backlogs develop when there is a constant lag between hospital admissions and discharges, as we observed in the three hospitals we visited. This translates to even longer bed-wait times for patients admitted via the emergency room. We noted several issues, as outlined below.

Daily Scheduling Clashes between Admissions and Discharges

At the three hospitals we visited, we found that patients identified as admitted and awaiting a bed from the emergency room usually peak in the evening, between 7:00 p.m. and 11:00 p.m. These patients often face long overnight waits (11.6 hours on average) in the emergency room until a bed in the acute-care ward to which they have been admitted becomes available the next day.

Admissions from referrals are usually concentrated between 6:00 a.m. and 9:00 a.m. This means that at the same time that hospital staff are still busy dealing with the buildup of admissions from the night before in the emergency room, they must also start dealing with that day's scheduled referral admissions.

Hospitals try to maximize the number of daytime discharges, with most occurring between 10:00 a.m. and 4:00 p.m. While it is not practical for most patients to be discharged late in the evening or at night, we found the number of patient discharges starts to drop significantly as early as 4:00 p.m.

High bed-occupancy rates, combined with a low volume of discharges after 4:00 p.m., means that the number of newly admitted patients awaiting transfer to acute-care wards builds in the emergency room throughout the evening and overnight, until more patients are discharged and more beds become available the next day. This backlog cycle repeats every evening.

Referral Admissions Not Evenly Scheduled throughout the Week

The fact that fewer physicians and administrative staff are on duty during weekends affects referral admissions.

On average, about 50% fewer patients are admitted to hospital through pre-scheduled referrals by physicians for general medicine, cardiology and respiratory care on weekends than on weekdays (these three types of patients account for 25% of all patients requiring hospital care).

If referral admissions were evenly distributed throughout the week instead of concentrated from Monday to Fridays, the number of patients to be admitted would be more spread out and therefore alleviate the workload of hospital staff. There would be fewer backlogs and shorter wait times for beds as a result.

Patient Discharges Not Evenly Distributed throughout the Week

While the demand for in-patient beds remains about the same from Monday to Sunday, a drop in patient discharges on weekends means fewer beds become available then and bed-wait times therefore increase.

We found that patients admitted via the emergency room on weekends had to wait, on average, 35 minutes longer than the typical 10-hour wait on weekdays for in-patient beds because there are fewer physicians and support staff on duty during weekends. This staffing situation contributed to 25% fewer daily patient discharges on weekends.

According to physicians and hospital management we interviewed, physicians on duty during weekends might not be comfortable discharging patients who were under the care of other physicians during the week. Hospital officials also informed us that they have fewer administrative staff on duty to support patient discharges on weekends.

We also noted that other health-care institutions such as rehabilitation facilities and long-term-care

homes accept fewer patients on weekends, further adding to backlogs and wait times.

RECOMMENDATION 11

To help reduce the time patients have to wait for beds after admission, hospitals should review the times and days of the week where patients are waiting excessively at admission and discharge, and make necessary adjustments to allow sufficient time for beds to be prepared for new admissions, especially those arriving at peak times.

RESPONSE FROM HOSPITALS

We agree with this recommendation. Hospitals will undertake a review of peak admissions and discharges, and will realign bed cleaning resources where appropriate.

4.4.4 Hospital Beds Not Ready for Patients on a Timely Basis

We found that patients had to wait at least 1½ hours longer in the emergency room for beds in acute-care wards once the day shift ended for housekeeping staff, typically at 3:00 p.m., because there are significantly fewer housekeeping staff on duty during the night shift to clean rooms and prepare beds for new patients.

At one hospital we visited, for example, the number of full-time housekeeping staff on duty dropped from 62 during the 7:00 a.m.–3:00 p.m. shift to just 18 during the 3:00 p.m.–11:00 p.m. shift. At another, the number of full-time housekeeping staff on duty dropped from 58 during the day to 27 during the evening, and then to only five overnight.

We also noted at two of the three hospitals we visited that room and bed cleaning after patients are discharged is mostly done in the order that requests come in; it is not prioritized according to the type of beds that emergency-room patients are waiting for.

For example, a bed in the pediatric ward might be made ready before a bed in a medicine ward, even if there are many emergency-room patients waiting for medicine beds and none waiting for pediatric beds.

About 47% of the large community hospitals that responded to our survey also said they clean rooms and ready beds on a first-come, first-served basis, instead of by demand.

We also noted that 68% said they relied on individual wards in the hospital to request housekeeping for a bed needed for a new patient. This can also contribute to long wait times because staff are often busy discharging patients and may not have time to talk to housekeeping.

RECOMMENDATION 12

To help reduce the time that patients have to wait for beds, hospitals should ensure that a sufficient number of housekeeping staff are on duty to clean recently vacated rooms and beds on a timely basis, and that the order of cleaning is prioritized based on the types of beds most in demand.

RESPONSE FROM HOSPITALS

We agree with this recommendation. Practices are in place to realign bed cleaning resources based on changes in priority and demand. These practices will be reviewed to determine if any improvements can be made without the implementation of an electronic bed-management system. Hospitals will review the adequacy of bed cleaning resources and adjust where appropriate while being fiscally responsible.

4.5 Hospitals' Decision Making on Patient Care Negatively Impacted by the Physicians Appointment and Appeal Process

4.5.1 Appeal Process for Hospitals and Physicians under *Public Hospitals Act* Needs Review

A hospital's professional staff include the physicians, dentists, midwives and Nurse Practitioners who work in the hospital. Professional staff are appointed directly by the hospital's board—they are typically not salaried employees. Instead, they are reimbursed by the Ontario Health Insurance Plan for services they provide to patients at hospitals and wherever else they practise.

Physicians who work as medical staff are given hospital privileges, meaning they have the right to practise medicine in the hospital and use the hospital's facilities and equipment to treat patients without being employees of the hospital. These hospital privileges were originally intended to allow physicians to base their decisions primarily on what is best for the patient and not what is best for the hospital. The *Public Hospitals Act* (Act) of 1990 governs important elements of the physician-hospital relationship.

We have noted some instances where hospitals were not able to resolve human resources issues with physicians quickly because of the comprehensive legal process that the hospitals are required to follow under the Act. In some cases, longstanding disputes over physicians' hospital privileges have consumed considerable hospital administrative and board time that could be better spent on patient care issues.

Hospital Board Responsibilities Regarding Hospital Privileges

The Act makes the hospital board responsible for the following with respect to hospital privileges:

- establishing a medical advisory committee composed of elected and appointed medical staff members, to consider and make recommendations to the board related to medical staff appointments and their privileges;
- appointing and annually reappointing medical staff and determining their privileges;
- revoking, suspending or refusing reappointment of medical staff where necessary; and
- holding formal legal hearings upon request by medical staff in case of disputes or other issues related to hospital privileges.

In addition, the Act allows physicians to appeal a hospital board decision to the Health Professional Appeal and Review Board. The Board hears appeals from medical staff who consider themselves aggrieved by any decision revoking, suspending, or substantially altering their appointment, among others. Both physicians and hospitals have the right of appeal to a court of law from a Board decision.

Therefore, while hospitals can manage their own employees, such as nurses, pharmacists, dieticians and lab technicians, they do not have the same authority to manage physicians without going through the legal process specified by the Act. This legal process is lengthy, cumbersome and costly, and does not put the patients' interests first, as the following examples indicate.

Hospital Management Unable to Meet Its Service and Staffing Needs

The management of one hospital indicated to us that when its service priorities change or resources are transitioned between programs (for example, to shift operating-room time from one type of surgery to another), and the result will mean changes to its professional staff needs, it has no simple mechanism to give notice to affected professional staff members that their relationship with the hospital will change. If the hospital wishes to recommend that a physician move either within the hospital or to another hospital, or to sever its relationship with a physician, the hospital may not be able to do so without triggering appeal rights. The management explained that this is due to restrictions it faces

under the *Public Hospitals Act*, and that it is more time consuming and costly than proposing changes or moves for non-professional staff members, who are employees of the hospital.

The same hospital management also informed us that, under the *Public Hospitals Act*, the hospital privilege system for physicians leaves it without the flexibility to adjust physician and other staffing resources to meet its changing local needs.

Hospital Board Entangled in Conflict with Its Physician

Management from one hospital board told us that it has had to spend about five years in administrative and legal disputes with one of its physicians:

- The hospital board attempted to not reappoint a physician to hospital privileges in 2009 due to numerous conflicts between the physician and the hospital management on a hospital policy, causing disruptions that put patient care at risk.
- The hospital's internal and external independent reviews found that the physician had hindered the functioning of a department within the hospital. Even though the College of Physicians and Surgeons of Ontario's investigation confirmed that the physician failed to follow hospital policies, the hospital board was not able to refuse the physician's reappointment because the physician appealed the decision to the Health Professions Appeal and Review Board.
- Under the *Public Hospitals Act*, the physician was allowed to continue to work at the hospital between 2009 and 2013 while the case was heard. The Health Professions Appeal and Review Board decided in 2013 that the physician was to be reappointed without any conditions.
- The hospital spent over $800,000 in legal fees on the case, equivalent to the annual funding for two in-patient acute beds. Unable to remove the physician's privileges or require the physician to undertake behavioural assessment, hospital management eventually repaired the hostile work environment with the physician over time.

Recent Increase in Legal Disputes

The Canadian Medical Protection Association provides legal advice and defence to physicians when medical-legal issues arise in their work. The types of medical-legal difficulties the Canadian Medical Protective Association can assist physicians with include, among other things, conflicts with hospitals and human resources issues.

We noted that over the past five years, the Canadian Medical Protection Association reported about 2,250 legal cases involving disputes between hospitals and their physicians. The number of cases per year increased 87% in 10 years, from 285 cases in 2006 to 533 cases in 2015.

4.5.2 Co-ordinating with Physicians Is a Challenge for Hospitals

Some hospital managements believe that under the current structure, it is difficult for hospitals to achieve an integration of patient care. For example, physicians at some hospitals have the professional autonomy to choose different brands of medical devices for the same surgical procedure, such as brackets used in knee joint replacement, resulting in variations in practice and costs.

We also found instances, as in the previous section, where hospital management and individual physicians did not work collaboratively, with the result that they were unable to deliver patient-centred health-care services.

Other examples we found focus on more general scheduling and staffing issues. In some of these cases, patients experienced unnecessary inconvenience and delays in treatment, sometimes with extremely serious outcomes. In particular, as we detail in **Section 4.3.1**, the scheduling of surgeons' hours leaves hospitals at different times of day

without the resources to treat emergency patients in a timely manner. Weekend and holiday scheduling of patient services is also not well co-ordinated, as we detail in **Sections 4.3.2** and **4.4.3**. March break and summertime closures also extend the wait for elective surgery for many patients.

Physicians We Surveyed Are Aware of Scheduling and Co-ordination Issues

Our survey of physicians informed us that physicians are also aware of these problems. Some respondents suggested that more collaboration is needed between hospitals and physicians to decide what is reasonable in terms of work hours and compensation. When we asked the physicians in our survey about the scheduling and use of operating rooms, some suggested two operating-room shifts a day and all-day time slots during the summer to better serve patients and hospital staff. Many physicians saw the need to allow more evening and weekend time for surgery.

When asked whether hospitals should be given the authority to schedule their physicians to work when needed to meet patient demand, including evenings and weekends, 58% of the physicians who responded disagreed and felt that physicians should not be forced to work these times. However, as many as 42% of the physicians who responded to our survey agreed with this suggestion.

RECOMMENDATION 13

To ensure that hospitals, in conjunction with physicians, focus on making the best decisions for the evolving needs of patients, the Ministry of Health and Long-Term Care should review the physician appointment and appeal processes for hospitals and physicians under the *Public Hospitals Act*.

MINISTRY RESPONSE

The Ministry accepts this recommendation and will develop, in consultation with stakeholders, a proposal for a review.

RECOMMENDATION 14

To ensure that hospitals are able to make the best decision in response to the changing needs of patients, the Ministry of Health and Long-Term Care should assess the long-term value of hospitals employing, in some cases, physicians as hospital staff.

MINISTRY RESPONSE

The Ministry accepts this recommendation and will develop, in consultation with stakeholders, a proposal for a review.

4.6 More Effective Scheduling of Nurses Needed

Labour is the biggest single expenditure of hospitals, and the majority of hospital staff are nurses. It therefore follows that nurse staffing is an important area in which hospitals should seek efficiencies while maintaining a safe standard of care for patients.

We found that hospitals could be doing more to deploy nurses more efficiently. First, implementation of centralized scheduling systems would cut down on costly overtime and agency nurses without compromising patient care.

Centralized nurse scheduling could also help hospitals avoid some of the cost-saving measures they currently rely on, including scheduling fewer nurses and employing more Registered Practical Nurses than Registered Nurses, as discussed in the following sections.

4.6.1 Hospitals Lack Efficient Nurse-Scheduling Systems

Many studies have shown that scheduling nurses efficiently through a centralized scheduling system can reduce overtime and staffing costs. However, we found that:

- None of the three hospitals we visited had a centralized scheduling system to track and manage individual nurse schedules among all hospital wards.
- Only 27% of the hospitals that responded to our survey had such centralized scheduling systems in place.

At hospitals without a centralized system, each ward must fill in any nurse-staffing shortages on its own, which usually involves asking nurses to work overtime and/or calling an agency for replacements.

For example, when a nurse from a medicine ward calls in sick, that ward will call for a replacement from an agency rather than checking with other wards throughout the hospital to see if they have nurses available.

Although two of the three hospitals we visited have a pool of nurses who fill absences or meet other temporary staff shortage needs, not all hospitals have nursing pools. The ones that do have either been only recently established or do not have a sufficient number of nurses to eliminate the need for costly agency nurses.

The College of Nurses of Ontario provides guidelines for hospitals to make nurse-staffing decisions based on patient condition, the scope of practice and experience of the existing pool of staff, and the work environment. However, we found that hospitals we visited were not always able to make the best informed decisions about staffing levels and scheduling because they did not have systems in place to analyze their staffing data.

In recent years there have been significant increases in nurse-staffing costs, including agency costs, overtime costs and sick leave at these hospitals.

4.6.2 Increased Overtime Leads to Sick Leave and Use of Costly Agency Nurses

Hospitals can employ nurses on a full-time, part-time or casual basis. They pay them the same hourly rates set out in collective agreements regardless of category. For example, Registered Practical Nurses are typically paid a maximum of $34.2 per hour with benefits including pension, whether they are full-time, part-time or casual.

When hospitals require additional nurses, they can bring in temporary nurses through agencies. Agency nurses are not bound by union contracts, and their hourly rates are stipulated in separate agreements between the agencies and individual hospitals.

In general, the maximum hourly agency rate is 27% higher than the collective agreement rate for a Registered Nurse, and 52% higher for a Registered Practical Nurse (rates already accounted for benefits including pension). **Figure 14** outlines employment and compensation for full-time, part-time, casual and agency nurses.

We found that many of the nurses in the hospitals we visited consistently worked significant amounts of overtime. Additional nursing hours at one hospital totalled $6 million, which included $2 million for premium pay in 2014. The hospital could have hired 31 full-time (with a minimum of 1,950 hours a year) or 51-part time (with a minimum of 1,170 hours a year) nurses with the overtime it paid in just two wards.

At another hospital we visited, one full-time Registered Nurse worked 4,040 overtime hours over a four-year period, earning approximately $247,000 in overtime pay alone. On average, this nurse had worked the equivalent hours of 1.5 full-time nurses continuously throughout the four-year period.

Although some nurses welcome the chance to work overtime, studies show that too much overtime leads to burnout and sick days. For example:

- At all three of the hospitals we visited, the emergency room and the intensive-care unit

Figure 14: Comparison of Employment, Compensation, Benefits and Working Hours for Different Types of Nurses
Prepared by the Auditor General of Ontario

	Employment Classification			
	Full Time	**Part Time**	**Casual**	**Agency**
Hospital employee?	Yes	Yes	Yes	No
Unionized[1]	Yes	Yes	Yes	No[2]
Maximum hourly rate (not including benefits):				
Registered Practical Nurse	$30	$30	$30	$52
Registered Nurse	$45	$45	$45	$65
Benefits including pension	Estimate 14%	14% in lieu of benefits	14% in lieu of benefits	Hourly rate includes benefits
Regular overtime pay	1.5 x hourly rate	1.5 x hourly rate	1.5 x hourly rate	None
Statutory holiday overtime pay	1.5 x hourly rate plus lieu day	1.5 x hourly rate	1.5 x hourly rate	None
Number of sick days[3]	Up to 15 continuous weeks, but no stated yearly limit	Not covered	Not covered	n/a
Number of work hours per year	Regular 1,950	Minimum 1,170	No minimum or maximum	No minimum or maximum

1. The majority of nurses working in Ontario hospitals are unionized. They work under collective agreements negotiated between their respective unions and the Ontario Hospital Association. The collective agreements set out, among other things, the minimum working-hour requirement, hourly rates and overtime rates.
2. Agency nurses are not union members and therefore are not covered by the same contracts as other nurses. Their rates are generally higher than union rates to compensate for lack of benefits. Agencies pay their nurses for the number of hours worked according to the hourly rates set by the agency or according to the agreement signed between the nursing agency and the hospital.
3. Covered by short-term sick leave plan under the Hospitals of Ontario Disability Income Plan.

were the two with the most nurse overtime—and with the highest number of nurse sick days.

- At one hospital, we found a full-time Registered Nurse who between 2011 and 2014 worked 2,180 hours of overtime—and took 125 sick days, an average of 31 sick days a year (the 2014 industry average for health-care workers including nurses was 11 sick days a year).

Nurses who work in Ontario can take short-term leave (or sick days) up to 15 continuous weeks, whereas nurses in most other provinces are entitled to 18 days per year. Although nurse sick days are covered by the Hospitals of Ontario Disability Income Plan, their absences still cost hospitals, either through overtime pay for other nurses to cover, or in nursing agency costs for a replacement.

We found that the number of nurse sick days is on the rise, with 8% of nursing staff at one hospital taking more than 20 sick days each in 2014/15, while another 10% took between 11 and 20 days.

The same year, 11% of nursing staff at another hospital took more than 20 sick days each, and another 7% took between 11 and 20 sick days each.

Two of the three hospitals we visited managed their workload by using agency nurses in addition to overtime and nursing pools. One of these hospitals indicated that it had difficulty recruiting critical-care nurses. The third hospital used only overtime.

We found that two of the three hospitals had done only limited analysis to inform their decisions on the costs and benefits of using agency nurses compared to other types of nursing staff. For example, full-time nurses could be paid overtime

or more part-time and casual nurses could be hired for each nursing unit. Although the third hospital has conducted cost-benefit analysis on the use of agency nurses, this hospital reported an increase of 335%, or $2.5 million, in its agency costs from 2011/12 to 2014/15. For the amount this hospital spent in 2015 on agency nurses for its emergency department, it could have hired four full-time or seven part-time emergency-room nurses.

At the same hospital, one Registered Practical Nurse from a nursing agency had worked more than 1,530 hours in 2015. This is considered excessive, because part-time nurses at this hospital are only required to work 1,170 hours a year.

Overreliance on agency nurses is a concern because, in addition to being costly, it creates a lack of continuity that may lead to inconsistencies in care delivered to patients.

4.6.3 Nurse Caseloads Are Heavier Than What Best Practices Recommend

Several jurisdictions, such as California, some states in Australia, and Japan, have mandated nurse-to-patient ratios that define minimum nurse staffing levels. Ontario currently does not have a mandated nurse-to-patient ratio, but research has established a best practice ratio of 1:4 (one nurse for every four patients) in medicine and surgery wards.

The *Journal of the American Medical Association* reports that every extra patient beyond four that is added to a nurse's workload results in a 7% increased risk of patient death.

We found that at the three large community hospitals we visited, nurse-to-patient ratios are as high as 1:6 during the day, and 1:7 during night shifts for medicine and surgery patients.

Our survey of large community hospitals also revealed that nurse-to-patient ratios for medicine wards is as high as 1:9 during overnight shifts. The majority of survey respondents attributed lower nurse-to-patient ratios to staff shortages caused by lack of funding.

We also noted a recent trend in hospitals hiring more Registered Practical Nurses (who earn lower hourly rates than Registered Nurses) because of funding constraints; 82% of the hospitals we surveyed acknowledged that their hospitals have found savings by modifying their ratios of Registered Nurses to Registered Practical Nurses.

According to the Registered Nurses' Association of Ontario, 2014 CIHI data shows that Ontario has the second lowest (after British Columbia) RNs per capita compared to other Canadian provinces. In 2014, Ontario had 71.4 RNs per 10,000 people, compared to 83.6 for the rest of Canada.

RECOMMENDATION 15

To ensure better use of hospital resources for nursing care in each ward, hospitals should:

- assess the need for implementing a more efficient scheduling system, such as a hospital-wide information system that centralizes the scheduling of all nurses based on patient needs; and
- more robustly track and analyze nurse overtime and sick leave, and conduct thorough cost/benefit studies to inform decision-making on the use of different types of nursing staff without overreliance on agency nurses to fill in shortages.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals that have not already done so will conduct a cost-benefit analysis of the options for more robust centralized scheduling, including an electronic scheduling system. Hospitals will review current methods of reporting on overtime, sick time and agency use with the aim to strengthen reporting to support deciding on ways to reduce overtime and agency use, when and where applicable. An electronic staffing solution alone will not address this issue but rather is a tool to assist in tracking and monitoring for decision-making. Hospitals will review

their current nurse staffing model to ensure adequate resources are in place to minimize sick time and overtime, meet patient needs and be fiscally prudent, and will make adjustments where appropriate.

4.7 Protection of Patients and Their Personal Health Information Needs Improvement

4.7.1 Background Checks Not Consistently Done

One of the hospitals we visited did not perform criminal record checks before hiring new employees. The other two did, but did not periodically update checks for existing staff.

Hospitals in British Columbia require every individual who works with children or vulnerable adults to undergo a criminal record check before that individual is hired, and at least once every five years from then on. Currently, Ontario hospitals do not have a similar legal requirement.

4.7.2 Accounts Not Always Closed on Time

We found significant weaknesses in the protection of patients and their personal information on computer systems in all three large community hospitals we visited.

At one hospital, for example, we found 136 active computer accounts for people no longer employed there. At another, we found that it took more than 14 days to delete unneeded accounts in one-fifth of the 730 cases we reviewed. We also noted that this hospital's human resources department did not always promptly inform the IT department about staff changes.

At the third hospital, we found 22 employees had multiple computer accounts for no justifiable reason.

4.7.3 Unattended Computers Not Automatically Logged Off

The risk of unauthorized access to personal health data increases when computers are left logged in and unattended. The Information and Privacy Commissioner of Ontario recommends that, where appropriate, automatic system timeouts be put in place so that the hospital's electronic information system logs the user off or locks the computer screen after a short period of inactivity.

We noted that one hospital we visited reported and remediated an incident that highlighted this risk. In March 2016, an unauthorized external health service provider used an unattended computer to view patient information while the emergency-room nurse was away.

At another, none of the approximately 2,000 computers had an automatic logout function, and a key application containing personal health information was programmed to log out automatically only after 12 hours of inactivity.

4.7.4 Portable Devices Unencrypted

In 2007, after several incidents of lost and stolen USB keys and laptops containing thousands of personal health records, the Information and Privacy Commissioner of Ontario recommended that hospitals implement enterprise-wide encryption of portable electronic devices. Such encryption protects data stored on mobile computing devices by denying unauthorized viewing or access.

We found that one hospital we visited has no controls in place to prevent employees from using unencrypted USB keys. The same hospital also did not have a centralized system in place for tracking IT assets. Another hospital we visited had no process in place to manage USB keys.

RECOMMENDATION 16

To ensure the safety of patients and that their personal health information is safeguarded,

hospitals should have effective processes in place to:

- perform criminal record checks before hiring new employees, and periodically update checks for existing staff, especially those who work with children and vulnerable patients;
- deactivate access to all hospital information systems for anyone no longer employed by the hospital;
- where appropriate, implement adequate automatic logout functions for computers and any information systems containing patient information; and
- encrypt all portable devices, such as laptops and USB keys, used by hospital staff to access patient information.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals will review and improve their practices around deactivation of terminated employees, automatic log-offs and encrypted portal devices. The hospitals will engage the Ontario Hospital Association to develop a province-wide hospital standard for criminal reference checks and will ensure practices are in compliance with this standard.

4.8 Patients at Risk from Poorly Maintained Medical Equipment

In all three of the large community hospitals we visited, we found that preventative maintenance on large equipment such as Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scanners was regularly performed by external vendors. However, for smaller medical equipment (such as ventilators) that are typically maintained in-house, none of the hospitals we visited kept accurate and complete preventive maintenance schedules for their medical equipment, increasing the risk that some vital equipment was not being maintained as required.

4.8.1 Preventive Maintenance Lists Inaccurate

At one hospital, only 83% of all medical equipment was part of the preventive maintenance program. We also noted that the hospital's preventative maintenance database was outdated because it included about 310 items of medical equipment that had already been retired.

At another hospital, decommissioned equipment was not taken out of the hospital's scheduled maintenance list, resulting in technicians wasting time searching for equipment that did not exist.

At the third hospital, about 35% of all medical equipment was not included in the preventive maintenance schedule, including high-risk equipment such as anesthesia units, ventilators and aspirators.

4.8.2 Preventive Maintenance Conducted Sporadically

The Emergency Care Research Institute categorizes some hospital equipment as "high risk" if its failure or misuse is reasonably likely to seriously injure patients or staff. For example, life-support, resuscitation and critical-monitoring devices are all considered high risk.

The Joint Commission on Accreditation of Healthcare Organizations, which accredits and certifies over 20,000 health care organizations and programs in the United States, recommends that hospitals prioritize maintenance of high-risk equipment and take measures to ensure maintenance is not skipped or deferred.

We found that some high-risk medical equipment was not being regularly serviced according to service manuals or hospital policy:

- At one hospital, 20% of medical equipment was not being maintained according to schedule, and some maintenance was two years past due. This included high-risk devices such as ventilators, anesthesia units and defibrillators used in the emergency room, intensive-care units and operating rooms.

- At another hospital, we reviewed all scheduled maintenance and found that only 53% of equipment was being maintained according to schedule, 30% received maintenance late, and 17% did not receive maintenance at all.
- At the third hospital, the number of patient incidents involving medical devices tripled between 2011 and 2015. The hospital attributed this to a change in its policy on reporting patient incidents. We also noted that some of the high-risk devices involved in patient incidents were not included in the hospital's preventive maintenance database.

At all three of the hospitals we visited, we noted that scheduled preventive maintenance was missed mainly for the following reasons: maintenance schedules were incomplete and inaccurate; there was insufficient maintenance staff to perform all the necessary work; and there was a lack of performance-monitoring for preventive maintenance staff.

RECOMMENDATION 17

To ensure medical equipment functions properly when needed, and that both patients and health-care workers are safe when equipment is in use, hospitals should:

- maintain a complete inventory of medical equipment, with accurate and up-to-date information on all equipment that requires ongoing preventive maintenance;
- perform preventive and functional maintenance according to manufacturers' or other established specifications, and monitor maintenance work to ensure that it is being completed properly and on a timely basis; and
- monitor the performance of preventive maintenance staff to ensure equipment is being maintained in accordance with appropriate scheduling.

RESPONSE FROM HOSPITALS

We agree with the recommendation. Hospitals will ensure that the databases for recording preventive maintenance activities are accurate and that preventive maintenance activities, including the performance of preventive maintenance staff, are monitored to ensure they are completed on a timely basis.

Appendix 1: Ontario Public Hospitals, by Type, Local Health Integration Network (LHIN) and Funding, 2015/16

Source of data: Ministry of Health and Long-Term Care

	Hospital	Hospital Type	LHIN	Funding ($ million)
1	Trillium Health Partners	Large community	Mississauga Halton	714
2	William Osler Health System	Large community	Central West	489
3	Niagara Health System	Large community	Hamilton Niagara Haldimand Brant	385
4	Lakeridge Health	Large community	Central East	335
5	Windsor Regional Hospital	Large community	Erie St. Clair	320
6	Humber River Regional Hospital	Large community	Central	307
7	Southlake Regional Health Centre	Large community	Central	294
8	Rouge Valley Health Systems	Large community	Central East	269
9	Scarborough Hospital	Large community	Central East	259
10	North York General Hospital	Large community	Central	248
11	Halton Healthcare Services Corp	Large community	Mississauga Halton	244
12	Peterborough Regional Health Centre	Large community	Central East	219
13	Grand River Hospital	Large community	Waterloo Wellington	215
14	Royal Victoria Regional Health Centre	Large community	North Simcoe Muskoka	211
15	St. Joseph's Health Centre (Toronto)	Large community	Toronto Central	199
16	Toronto East General Hospital	Large community	Toronto Central	192
17	North Bay Regional Health Centre	Large community	North East	183
18	Mackenzie Health	Large community	Central	179
19	Markham Stouffville Hospital	Large community	Central	162
20	Queensway Carleton Hospital	Large community	Champlain	149
21	Quinte Healthcare Corp	Large community	South East	139
22	Bluewater Health	Large community	Erie St. Clair	131
23	Sault Area Hospital	Large community	North East	131
24	Grey Bruce Health Services	Large community	South West	128
25	Brant Community Healthcare System	Large community	Hamilton Niagara Haldimand Brant	121
26	St. Mary's General Hospital	Large community	Waterloo Wellington	121
27	Joseph Brant Hospital	Large community	Hamilton Niagara Haldimand Brant	117
28	Guelph General Hospital	Large community	Waterloo Wellington	106
29	Orillia Soldiers' Memorial Hospital	Large community	North Simcoe Muskoka	92
30	Cambridge Memorial Hospital	Large community	Waterloo Wellington	89
31	Cornwall Community Hospital	Large community	Champlain	78
32	Woodstock General Hospital Trust	Large community	South West	71
33	St. Thomas-Elgin General Hospital	Large community	South West	67

Hospital		Hospital Type	LHIN	Funding ($ million)
34	Stratford General Hospital	Large community	South West	67
35	Timmins and District Hospital	Large community	North East	65
36	Ross Memorial Hospital	Large community	Central East	65
37	Public General Hospital Society of Chatham	Large community	Erie St. Clair	62
38	Pembroke Regional Hospital Inc	Large community	Champlain	54
39	Muskoka Algonquin Healthcare	Large community	North Simcoe Muskoka	51
40	Brockville General Hospital	Large community	South East	50
41	Georgian Bay General Hospital	Large community	North Simcoe Muskoka	45
42	Headwaters Health Care Centre	Large community	Central West	45
43	Northumberland Hills Hospital	Large community	Central East	42
44	Perth and Smiths Falls District Hospital	Large community	South East	40
45	Collingwood General and Marine Hospital	Large community	North Simcoe Muskoka	36
46	Norfolk General Hospital	Large community	Hamilton Niagara Haldimand Brant	35
47	West Parry Sound Health Centre	Large community	North East	33
48	Leamington District Memorial Hospital	Large community	Erie St. Clair	29
49	Strathroy Middlesex General	Large community	South West	29
50	St. Joseph's Health Services Association of Chatham Inc	Large community	Erie St. Clair	28
51	Lake of the Woods District Hospital	Large community	North West	27
52	Winchester District Memorial Hospital	Large community	Champlain	27
53	Hôpital Général de Hawkesbury and District General Hospital Inc	Large community	Champlain	21
54	Stevenson Memorial Hospital	Large community	Central	20
55	St. Joseph's General Hospital	Large community	North East	19
56	Temiskaming Hospital	Large community	North East	19
57	Sydenham District Hospital	Large community	Erie St. Clair	18
58	Women's College Hospital	Small	Toronto Central	73
59	Holland Bloorview Kids Rehabilitation Hospital	Small	Toronto Central	47
60	Sioux Lookout Meno-Ya-Win Health Centre	Small	North West	31
61	South Bruce Grey Health Centre	Small	South West	31
62	Weeneebayko Area Health Authority	Small	North East	27
63	Riverside Health Care Facilities Inc	Small	North West	26
64	Renfrew Victoria Hospital	Small	Champlain	24
65	Lennox and Addington County General Hospital	Small	South East	22
66	Tillsonburg District Memorial Hospital	Small	South West	21
67	Dryden Regional Health Centre	Small	North West	20
68	Kemptville District Hospital	Small	Champlain	20
69	Kirkland and District Hospital	Small	North East	20
70	Groves Memorial Community Hospital	Small	Waterloo Wellington	17
71	Alexandra Marine And General Hospital	Small	South West	17

Hospital		Hospital Type	LHIN	Funding ($ million)
72	Manitoulin Health Centre	Small	North East	16
73	North Wellington Health Care Corp	Small	Waterloo Wellington	16
74	Sensenbrenner Hospital	Small	North East	16
75	Arnprior Regional Health	Small	Champlain	16
76	West Nipissing General Hospital	Small	North East	15
77	Listowel Memorial Hospital	Small	South West	14
78	Campbellford Memorial Hospital	Small	Central East	14
79	Hanover and District Hospital	Small	South West	14
80	Hôpital Notre-Dame Hospital (Hearst)	Small	North East	13
81	Alexandra Hospital	Small	South West	13
82	Blind River District Health Centre/Pavillon Santé du District de Blind River	Small	North East	13
83	Haldimand War Memorial Hospital	Small	Hamilton Niagara Haldimand Brant	12
84	Espanola General Hospital	Small	North East	12
85	Almonte General Hospital	Small	Champlain	12
86	Wingham and District Hospital	Small	South West	12
87	North of Superior Healthcare Group[1]	Small	North West	12
88	West Haldimand General	Small	Hamilton Niagara Haldimand Brant	11
89	Clinton Public Hospital	Small	South West	11
90	Glengarry Memorial Hospital	Small	Champlain	10
91	Lady Minto Hospital at Cochrane	Small	North East	10
92	Carleton Place District Memorial Hospital	Small	Champlain	10
93	Haliburton Highlands Health Services Corporation	Small	Central East	10
94	Geraldton District Hospital	Small	North West	10
95	Four Counties Health Services	Small	South West	9
96	St. Francis Memorial Hospital	Small	Champlain	8
97	Anson General Hospital	Small	North East	8
98	St. Marys Memorial Hospital	Small	South West	8
99	Atikokan General Hospital	Small	North West	7
100	Services de Santé de Chapleau Health Services	Small	North East	7
101	South Huron Hospital	Small	South West	7
102	Lady Dunn Health Centre	Small	North East	7
103	Seaforth Community Hospital	Small	South West	7
104	Deep River and District Hospital	Small	Champlain	7
105	Nipigon District Memorial Hospital	Small	North West	7
106	Red Lake Margaret Cochenour Memorial Hospital Corp.	Small	North West	6
107	Englehart and District Hospital Inc	Small	North East	6
108	Mattawa General Hospital	Small	North East	6
109	Bingham Memorial Hospital	Small	North East	6
110	Smooth Rock Falls Hospital	Small	North East	6
111	Manitouwadge General Hospital	Small	North West	5

Hospital		Hospital Type	LHIN	Funding ($ million)
112	Casey House Hospice	Small	Toronto Central	5
113	Hornepayne Community Hospital	Small	North East	4
114	University Health Network	Teaching	Toronto Central	991
115	Hamilton Health Sciences Corp	Teaching	Hamilton Niagara Haldimand Brant	834
116	London Health Sciences Centre	Teaching	South West	748
117	Ottawa Hospital	Teaching	Champlain	693
118	Sunnybrook Health Sciences Centre	Teaching	Toronto Central	599
119	Hospital for Sick Children	Teaching (specialty children)	Toronto Central	448
120	St. Michael's Hospital	Teaching	Toronto Central	436
121	St. Joseph's Healthcare Hamilton	Teaching	Hamilton Niagara Haldimand Brant	402
122	Sinai Health System	Teaching	Toronto Central	366
123	Health Sciences North	Teaching	North East	295
124	Kingston General Hospital	Teaching	South East	282
125	St. Joseph's Health Care London	Teaching	South West	269
126	Thunder Bay Regional Health Sciences Centre	Teaching	North West	205
127	Children's Hospital of Eastern Ontario	Teaching (specialty children)	Champlain	145
128	Montfort Hospital	Teaching	Champlain	142
129	University of Ottawa Heart Institute	Teaching	Champlain	130
130	Religious Hospitallers of St. Joseph of the Hôtel Dieu of Kingston	Teaching	South East	52
131	Bruyère Continuing Care Inc	Chronic/rehab	Champlain	93
132	St. Joseph's Care Group Corp	Chronic/rehab	North West	91
133	Hôtel-Dieu Grace Hospital-Windsor	Chronic/rehab	Erie St. Clair	72
134	Providence Care Centre	Chronic/rehab	South East	71
135	West Park Healthcare Centre	Chronic/rehab	Toronto Central	64
136	Providence Health Care	Chronic/rehab	Toronto Central	58
137	Baycrest Centre for Geriatric Care	Chronic/rehab	Toronto Central	58
138	Runnymede Healthcare Centre	Chronic/rehab	Toronto Central	37
139	Religious Hospitallers of St. Joseph of the Hôtel Dieu of St. Catharines	Chronic/rehab	Hamilton Niagara Haldimand Brant	27
140	St. Joseph's Health Centre (Guelph)	Chronic/rehab	Waterloo Wellington	18
141	Salvation Army Grace Hospital	Chronic/rehab	Toronto Central	18
142	St. Joseph's Continuing Care Centre of Sudbury	Chronic/rehab	North East	11
143	Religious Hospitallers of St. Joseph of Cornwall	Chronic/rehab	Champlain	8
144	Centre for Addiction and Mental Health	Specialty psychiatric	Toronto Central	261
145	Waypoint Centre for Mental Health Care	Specialty psychiatric	North Simcoe Muskoka	121
146	Ontario Shores Centre for Mental Health Sciences	Specialty psychiatric	Central East	118
147	Royal Ottawa Health Care Group	Specialty psychiatric	Champlain	102
Total Funding				**16,973**

1. Wilson Memorial General Hospital and McCausland Hospital amalgamated to form North of Superior Healthcare Group on April 1, 2016.

Appendix 2: Best Practices in Selected Areas of Hospital Operations

Prepared by the Office of the Auditor General of Ontario

Area of Hospital Operation	Best Practice
Occupancy rate	Numerous clinical research studies[1, 2, 3, 4] show that an occupancy rate higher than 85% resulted in longer wait times for hospital beds in acute-care wards and an increased risk of hospital-acquired infections, such as bloodstream infections, that may cause sepsis.
Alternate-level-of-care patients waiting for long-term-care home placements	Other Canadian provinces including British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia and Prince Edward Island require patients to go to the first vacant bed anywhere in the province. Saskatchewan and New Brunswick require patients to go to any available long-term-care home bed within the same region.
Bed-wait time	The Canadian Association of Emergency Physicians recommends that the median wait time at intensive care units and other acute-care wards should not exceed two hours and that 90% of patients should be transferred to a hospital bed within eight hours.
Bed management	Some hospitals use an integrated bed management IT system that offers real-time bed availability and bed demand information.
Patient admissions and discharges	Kaiser Permanente hospitals[5] engage in the following activities: • divert patients to out-patient clinic programs and services as much as possible; • ensure patients stay in the hospital only as long as is medically appropriate; and • smooth out the volume of patient admissions and discharges throughout the day and throughout the week with advance discharge planning
Scheduling of operating rooms	Kaiser Permanente hospitals[5] have a dedicated operating room for emergency surgeries. In addition, for ease of bed planning, these hospitals also schedule the same type of elective surgery to be performed on the same day (e.g., all orthopedic surgeries on Tuesday). Since the same types of surgery usually have the same expected length of hospital stay, most of these patients could be discharged on the same day for better bed management.
Reporting on elective surgery wait time	Other jurisdictions, such as Nova Scotia and the United Kingdom, report wait time from the day the patient is referred by the family doctor to the day the patient receives the elective surgery.
Criminal background checks	Hospitals in British Columbia require every individual who works with children or vulnerable adults to undergo a criminal record check before being hired and at least once every five years from then on.
Scheduling of nursing staff	Kaiser Permanente hospitals[5] use a centralized hospital-wide scheduling system to schedule nursing shifts. They also employ mostly part-time, rather than full-time, nurses to improve flexibility of the workforce. Data on overtime, use of agency nurses and sick time are also collected in a centralized system to facilitate data analysis.

1. *The BMJ* (formerly *British Medical Journal*), "Dynamics of bed use in accommodating emergency admissions: stochastic simulation model" (July 1999).
2. *The BMJ* (formerly *British Medical Journal*), "Bed utilisation and increased risk of Clostridium difficile infections in acute hospitals in England in 2013/2014" (September 2016).
3. Department of Health and Children, Republic of Ireland, "Acute Hospital Bed Capacity, A National Review" (2002), p. 54.
4. European Society of Clinical Infectious Diseases, "Bed occupancy rates and hospital-acquired infections—should beds be kept empty?" (June 2012).
5. Kaiser Permanente is one of the leading health-care providers and not-for-profit health plans in the United States. It manages 38 hospitals, more than 600 medical officers and other out-patient facilities. It also offers educational programs on its leading best practices in health care and in system integration across its health plan, hospitals and physician groups.

Appendix 3: Relevant Recommendations Reported Previously and Their Current Status

Prepared by the Office of the Auditor General of Ontario

Relevant Recommendation Reported Previously	Current Status as Detailed in This Report*
3.08 Long-Term-Care Home Placement Process (2012)	
Recommendation 2 To help clients move out of hospital more quickly and to help manage growing wait lists, the Ministry of Health and Long-Term Care (Ministry) should consider options employed by other jurisdictions, as well as making more community alternatives to long-term-care (LTC) homes available and having LTC homes provide more restorative and transitional care programs to improve, among other things, clients' functioning....	4.4.1 Bed Shortages Caused by Patients Waiting in Hospital for Other Types of Care
3.02 Discharge of Hospital Patients (2010)	
Recommendation 5 To help reduce the time admitted hospital patients wait for a bed: • hospitals should review the times and days of the week patients are admitted and discharged, and arrange patient discharges to allow sufficient time for beds to be prepared in advance for new admissions, especially for patients arriving at known peak admission times; and • larger hospitals should assess the costs and benefits of implementing a bed management system that provides "live" information on the status of hospital beds....	4.4.3 Poorly Scheduled Admissions and Discharges Cause Longer Bed-Wait Times 4.4.2 Hospitals Lack Efficient Systems for Allocating Beds
3.05 Hospital Emergency Departments (2010)	
Recommendation 5 To ensure that vacant in-patient beds are identified, cleaned, and made available on a timely basis to admitted patients waiting in emergency departments: • hospitals should have an effective process in place to identify vacant beds and communicate their availability between in-patient units and emergency departments....	4.4.2 Hospitals Lack Efficient Systems for Allocating Beds
3.09 Hospitals—Management and Use of Surgical Facilities (2007)	
Recommendation 4 To better ensure the equitable and timely treatment of patients requiring urgent surgery, hospitals should:... • review whether urgent patients are being prioritized by all surgeons in accordance with hospital policy, as well as whether these patients are receiving surgery within the established time frames, and take corrective action where necessary; and • review the costs and benefits of dedicating operating room time each day for urgent surgical cases as part of their regular planned activity....	4.3.1 Patients Waiting Too Long for Emergency Surgeries
Recommendation 6 To enable both patients and health-care providers to make informed decisions and to help ensure that patients receive the surgery that meets their needs within an appropriate length of time ... the Ministry of Health and Long-Term Care should ... reconsider its decision not to report wait times by surgeon or, as a minimum, make this information available to referring physicians.	4.3.2 Patients Waiting Too Long for Some Urgent Elective Surgeries
3.05 Hospitals—Administration of Medical Equipment (2006)	
Recommendation 6 To ensure that medical equipment operates properly, hospitals should: • perform preventive and functional maintenance according to manufacturer's or other established specifications and monitor such maintenance to ensure that it is being completed....	4.7.2 Preventive Maintenance Conducted Sporadically
Recommendation 7 To assist in better managing medical equipment needs and identifying equipment for maintenance, hospitals should ensure that medical equipment inventory listings contain complete and up-to-date information on the acquisition, maintenance, and disposal of medical equipment.	4.7.1 Preventive Maintenance Lists Inaccurate

* Refer to the listed sections for details.