

INTRODUCTION

EMILY MUSING

The Canadian healthcare system faces many challenges and it is probable that this will continue to characterize the environment within which hospital pharmacy operates. A look back at the history of Canada's health care system over the past 100 years suggests that challenge and change have been near-constant themes that governments, the public, and health care professions have had to address. (Ref: "Making Medicare: The History of Health Care in Canada 1914-2007" (<http://www.civilisations.ca/cmce/exhibitions/hist/medicare>). In retrospect, however, many of those challenges turned out to be opportunities to strengthen and improve our health care system. We can only hope that the challenges we currently face, including many of those that are explored in this report, will also lead to improvements in Canada's health care system.

This year's Hospital Pharmacy in Canada Report addresses many of the current challenges that face both hospital pharmacy and our health care system as a whole. With the heightened consciousness of patient safety concerns in the hospital setting, as well as increased awareness of avoidable hospitalizations and re-admissions, health care organizations are being tasked by provincial governments to improve the quality of patient care. At the same time, a continuing public concern regarding the sustainability of Canada's healthcare system has focused attention on the issues of accessibility and cost. Healthcare organizations must balance sometimes conflicting demands for quality and affordability, while operating within a societal context that increasingly expects accountability and transparency in the planning and delivery of health care services.

This year's Hospital Pharmacy in Canada Report summarizes many important aspects of hospital pharmacy practice in the 160 participating organizations, which collectively represent some 62,814 inpatient beds across Canada. This year's report repeats our special interest topic from the 2007/08 report, dealing with CSHP's 2015 initiative. The data from the previous report established a baseline of how well Canadian hospitals measured up against CSHP's 2015 goals and objectives for hospital pharmacy practice. Carolyn Bornstein, CSHP's 2015 Project Coordinator, is our guest editor for this chapter. Her analysis of the data from this year's survey allows us to assess hospital pharmacy's progress over the last 2 years, with respect to the targets set by CSHP's 2015 initiative. Readers are encouraged to review this analysis in detail to identify opportunities for improvement within their own institutions.

The report contains our standard array of chapters related to clinical pharmacy, drug distribution, human resources, medication safety and technology. It also continues to build on the benchmarking sections dealing with both adult and pediatric hospital pharmacy services. This year's report contains new sections focused on pharmacy technicians and evaluation of pharmacy services, as part of the board's ongoing effort to expand the report to include topics that are timely and useful for our readership. Another enhancement in this year's report is the addition of "highlights" to emphasize points of interest within each of the sections which allow the reader to easily note new and emerging trends. Finally another new chapter, focused on emerging or high-priority topics in hospital pharmacy practice, provides information on certain issues that many institutions and pharmacy departments are currently addressing, such as waste disposal, cold-chain management, and the handling and disposal of hazardous pharmaceuticals. While this new chapter will likely be repeated in future years, the topics highlighted will change to reflect the current issues of the day.

Jean-Francois Bussieres' section on clinical pharmacy services provides a thoughtful and comprehensive overview of patient oriented pharmacy services. Jean-Francois compares the data collected in this year's survey with recommendations/standards for clinical practice that have appeared in a number of papers, published by organizations such as the American College of Clinical Pharmacy, American Medical Association, American Society of Health-System Pharmacists and Canadian Society of Hospital Pharmacists. This chapter provides data on the types of inpatient and outpatient clinical pharmacy services that are being offered in Canadian hospitals, as well as the evolving types of clinical practice models that are being used to deliver those services. This section also looks at how these clinical pharmacy services are evaluated and the clinical pharmacist competencies that are felt to be necessary to provide quality clinical services.

The review of pharmacy technician services, by Iain Smith and Chuck Wilgosh, addresses the evolving role of the pharmacy technician. This section includes information on the changing landscape regarding technician certification, regulation and remuneration. They also discuss the context within which these changes are

occurring, specifically the entry to practice technician competencies that have been developed by the National Association of Pharmacy Regulatory Authorities, and the accreditation standards for pharmacy technician training programs that have been established by the Canadian Council for the Accreditation of Pharmacy Programs.

Well-designed drug distribution systems, from the point of order-writing through to the dispensing and administration of medication, can reduce the rate of occurrence of medication errors. Janet Harding's review of the data collected on drug distribution systems shows an increase in the use of decentralized unit dose systems, especially as it relates to the use of automated dispensing cabinets. Janet also explores key issues arising from the data collected on medication order review by pharmacists, medication order entry, medication order entry verification, and medication administration records. Of note, while hospitals in the United States are moving towards twenty-four hour service, such an around-the-clock, on-site service is still limited to only a handful of hospitals in Canada. That raises questions concerning whether or not a pharmacist's involvement in the review of medication orders is essential or not. If it is essential, what options are there for insuring that it occurs for all new orders, regardless of when they are written? Janet's analysis of the data dealing with the handling and administration of cytotoxic and hazardous drugs indicates that there is need for improvement in many hospitals.

Janet also provides a review of drug purchasing, which shows that drugs continue to take up a substantial share of the total healthcare expenditure compared to other types of products and services. Janet also highlights several important factors that complicate the analysis of this data, including the regionalization of healthcare and provincial differences in the way that certain drugs, such as oncology and renal drugs, are expensed. An increase in the frequency and severity of drug shortages, combined with the pandemic preparedness initiatives that occurred in the past year may have resulted in increased stockpiling of product, which in turn may have affected inventory management practices. The survey data also shows that there has been an increase in the outsourcing of drug preparation, particularly sterile product preparation, and the repackaging of pharmaceutical products. This may be a reflection of staffing and space limitations in many facilities, or may be the result of concerns related to the ability of the pharmacy department to meet the more rigorous standards that are being expected, particularly for the preparation of sterile products.

Michele Babich's review of pharmacy human resources highlights the improvement that has occurred with respect to the pharmacist manpower shortage that has existed for the past 5 to 10 years. Respondents reported a total of 235 vacant pharmacist positions, down from 292 reported in 2007-08 and 270 reported in 2005-06. This improvement may be related to a number of developments that have taken place over the past few years, such as an increase in the enrolment at most pharmacy schools and increases in the scope of practice for pharmacy technicians, which might have led to a need for fewer pharmacists. While the vacancy rate for technicians is low compared to that of pharmacists, this is an issue that requires ongoing monitoring. There was an upward trend in technician vacancies and, following the expansion in technician roles that most hospital pharmacies have pursued, there is an increasing reliance on this category of staff. This chapter also provides the results for a number of staffing ratios that facilities can use to compare against their own staffing ratios. This chapter also provides information on compensation rates for a number of different categories of pharmacy staff.

Hospital pharmacists are increasingly providing leadership in patient safety, whether this is related to the development and implementation of effective medication distribution systems, provision of clinical services, or helping their hospital to meet Accreditation Canada's Required Organizational Practices. Patricia Lefebvre's review of the medication safety data provides a snapshot of the many areas in which pharmacists currently play a role in ensuring that medication safety is given a high priority in Canadian hospitals. Topic areas addressed in this chapter include medication incident reduction strategies, medication reconciliation, and patient education. Results show a decreasing variation in patient safety practices, regardless of hospital size, province, or teaching status of the facility. This likely reflects the impact that accreditation bodies and regulatory authorities are having on the implementation of specific medication safety practices, such as medication reconciliation, restrictions on the availability of concentrated electrolytes, and the management of other high-alert drugs.

Patricia Macgregor reports on the progress that hospitals are making in the adoption of information technology as a key component of their efforts to enhance safety and efficiency. This section reviews the data showing that more facilities have established interfaces between their pharmacy information systems and their lab systems. There has also been an increase in the number of facilities indicating that they have computerized prescriber order entry systems, and a notable increase in the use of wireless networks for managing smart pumps.

With respect to the use of clinical decision support systems, Patricia notes that there appears to be an enhanced accountability for the appropriate use of these systems with respect to having override policies and requirements to document a reason for selected high-risk overrides. However, most facilities still do not perform

audits of the overrides that have been performed by their staff. There has been little change in the number of respondents who indicate that their pharmacy information systems provide drug therapy guidance alerts, based on the integration of evidence-based guidelines or clinical pathways into the clinical decision support system.

Iain Smith and Chuck Wilgosh report on the indicators and measures currently used to audit the quality of pharmacy services. These include the assessment of clinical services, the assessment of sterile compounding facilities and procedures, the carrying out of retrospective medication incident-related root cause analysis, and the carrying out of prospective failure modes and effects analysis. This new chapter will help provide a better understanding of how well the quality of pharmacy services is being assessed in Canadian hospitals.

The adult and pediatric benchmarking chapters, authored by Kevin Hall and Jean-Francois Bussieres provide data on the pharmacy staff input and medication costs that are associated with the provision of pharmacy services to specific types of clinical programs, including critical care, medicine, surgery, and long term care. These detailed benchmarking analyses provide pharmacy managers with important information that can be used to benchmark existing program performance, or to plan new pharmacy services.

Kevin Hall reports on current topics of interest including waste handling, the impact that the current economic environment is having on hospital pharmacy practice, cold chain management, technician certification, compliance with accreditation standards and involvement in experiential undergraduate training. These topics were chosen to reflect timely issues pertinent to current practice.

As Executive Editor, I would like to take this opportunity to thank a number of individuals who have contributed to the success of this survey and report. The support of Eli Lilly Canada and the contributions of Linda Chow and France Dube of Eli Lilly Canada have ensured the ongoing success of the survey. The Editorial Board members continue to meet on a regular basis to identify trends, share information and analyze changes in practice. Their insight and dedication to this project is appreciated by all hospital practitioners. Paul Oeltjen collects and analyzes the data for the editors, Marjorie Robertson provides administrative support and designs the final layout of the chapters, and George Horne electronically publishes the results. Without their contributions the report would not be possible. Lastly, Kevin Hall and Chuck Wilgosh provided ongoing leadership as Managing Editors. Their attention to detail and oversight of both the survey process and report development are invaluable.

The Editorial Board would also like to extend special thanks to Andrew Merrick who, on behalf of Eli Lilly Canada Inc., has provided key support for the Hospital Pharmacy in Canada Report over the past five years. In addition, we extend our thanks to Janet Harding who will be retiring from the board in June 2011. Janet has been a valuable contributor to the board's work since 2001, authoring a variety of chapters in the past 5 surveys. Both of these individuals have contributed to the ongoing success of the report to help make it a valuable tool for hospital pharmacy leaders across Canada.