Ministry of Health and Long-Term Care

Health Human Resources

Background

Health human resources—physicians, nurses and other health-care providers—are crucial to the delivery of health services. They represent the single greatest asset, as well as cost, to the health-care system. Acting to address concerns over provincial physician and nursing shortages, long wait times and an increasing number of patients without family doctors, the Ministry of Health and Long-Term Care and the Ministry of Training, Colleges and Universities jointly developed a strategy called HealthForceOntario in the 2005/06 fiscal year. As part of the strategy, the Ministry of Health and Long-Term Care established the HealthForceOntario Marketing and Recruitment Agency (Agency) in 2007. The Agency's activities focus on recruitment and retention of health professionals.

The strategy's goal is to ensure that Ontarians have access to the right number, mix and distribution of qualified health-care providers, now and in the future. Responsibility for its implementation lies with the Health Human Resources Strategy Division of the Ministry of Health and Long-Term Care (Ministry), but its Assistant Deputy Minister reports to the Deputy Ministers at both ministries. This is meant to establish a link between the health care and education systems, and better manage the supply of health human resources.

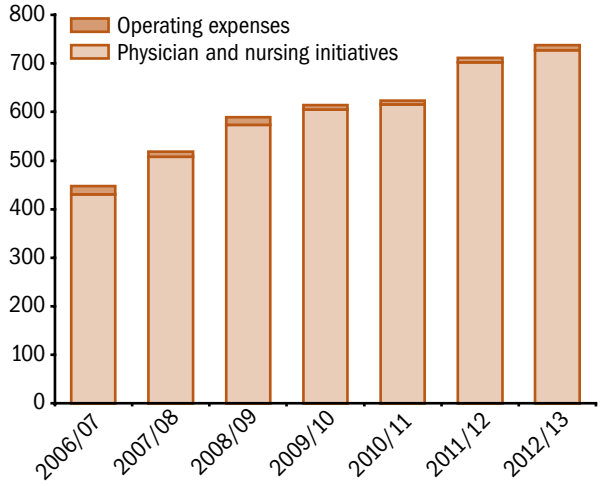
Total expenditures for the strategy grew from $448 million in the 2006/07 fiscal year to $738.5 million in the 2012/13 fiscal year, an increase of about 65%. These amounts included $431 million for physician and nursing initiatives in 2006/07 and $728 million for them in 2012/13, as well as ministry operating expenses of $17 million in 2006/07 and $10.5 million in 2012/13, as shown in Figure 1.

Audit Objective and Scope

The objective of our audit was to assess whether the Ministry of Health and Long-Term Care, in conjunction with the Agency, had adequate systems and procedures in place to:

- identify and assess the appropriateness of the mix, supply and distribution of qualified health-care professionals to help meet the current and future needs of Ontarians across the province;
- ensure that strategy initiatives were delivered in accordance with established regulatory requirements, applicable directives and policies, and agreements; and

Figure 1: Health Human Resources Strategy Division Expenditures, 2006/07–2012/13 ($ million)
Source of data: Ministry of Health and Long-Term Care



- measure and report regularly on the progress of the strategy's objectives.

The Ministry and Agency senior management reviewed and agreed to our audit objective and criteria.

Our audit focused on physician and nurse human resources. In conducting our audit, we reviewed relevant legislation, administrative policies and procedures, and interviewed staff at the Ministries of Health and Long-Term Care and Training, Colleges and Universities. We visited three Local Health Integration Network (LHIN) offices and three hospitals in the North West and South West regions, and we contacted two hospitals in the Greater Toronto Area region to interview staff and obtain relevant documents. We also obtained information related to various nursing initiatives from Greater Toronto Area hospitals. To gain an overall understanding and perspective of the health human resources area, we spoke with a number of external stakeholders such as the College of Family Physicians, the Ontario Hospital Association, the Registered Nurses Association of Ontario, the Registered Practical Nurses Association of Ontario, the Professional Association of Residents of Ontario (formerly the Professional Association of Internes and Residents of Ontario), and the Ontario Medical Association. We also spoke to representatives of other jurisdictions—Manitoba, Alberta and British Columbia—to gain an understanding of how health human resource planning is done in those provinces.

Summary

Over the last six years, the Ministry of Health and Long-Term Care (Ministry) has spent $3.5 billion through its HealthForceOntario strategy to address the shortages of physicians, nurses and other health professionals across Ontario. In 2012/13 the Ministry directed $738.5 million toward this strategy: $505 million for physician initiatives, $151 million for nursing initiatives, $72 million for other health human resource initiatives and the remaining $10.5 million for operating expenses.

Overall, Ontario has seen an 18% increase in physicians from 2005 to 2012 and a 10% increase in nurses from 2006 to 2012. While the initiatives increased enrolment, created more postgraduate training positions and attracted more doctors and nurses from other jurisdictions, Ontario has not met its goal of having the right number, mix and distribution of physicians in place across the province to meet the population's future health-care needs.

Specifically, we noted the following:

- The province spends an average of about $780,000 (including $375,000 for resident salaries and benefits) to educate one specialist who completes a four-year undergraduate degree and up to five years of postgraduate residency training. For a specialist who enters Ontario at the postgraduate level from outside the province, this cost is $225,000. However, many specialists trained in Ontario do not stay and practise here. Retention statistics show that, on average, 33% of Ontario-funded surgical specialist graduates left the province each year between 2005 and 2011. The lack of full-time employment opportunities for graduating residents of

certain surgical specialties may lead to more physicians deciding to leave the province, despite long wait times for these services. For example, wait-time data for the three-month period from June to August 2013 showed waits of 326 days for forefoot surgery and 263 days for cervical disc surgery.

- The Agency provides temporary physician or "locum" coverage in eligible communities across the province to support access to care. However, vacancy-based locum programs meant as short-term measures continued to be used for long periods of time. At the time of our audit there were about 200 specialist vacancies in Northern Ontario, and of those hospitals using locum services, one-third that had been using the Emergency Department Coverage Demonstration Project before January 2008 had been continuously using its locum services from as early as 2007, and one hospital had been using them since 2006.
- Over the four fiscal years from 2008/09 to 2011/12, $309 million was dedicated to hiring 9,000 new nurses. Our review showed that while the system was unable to hire that many nurses in the four years, it had increased the number of nurses by more than 7,300 and the Ministry was on track to achieve its goal within five years.
- At the end of 2011, 66.7% of nurses were working full-time in Ontario, which was just slightly under the Ministry's goal of 70% of nurses working on a full-time basis. However, the Ministry needed to improve its oversight and assessment of the effectiveness of its nursing programs and initiatives. For example, funding for the Nursing Graduate Guarantee Program is provided for up to six months with the expectation that organizations will offer permanent full-time employment for participating new graduate nurses. However, only about one-quarter of program participants in 2010/11 and one-third in 2011/12 actually obtained permanent full-time positions.
- Although the physician forecasting model built in partnership with the Ontario Medical Association was a positive step in determining physician workforce requirements, it is hampered by the limited reliability and availability of data. These limitations make planning the optimal number, mix and distribution of physicians with appropriate funding, training and deployment difficult. As well, a simulation model being developed by the Ministry to help plan for future nursing education positions and to help formulate nursing policies aimed at recruitment and retention determines only what the supply of nurses will be without considering how many nurses will be needed to meet the population's needs.

OVERALL MINISTRY RESPONSE

The Ministry of Health and Long-Term Care (Ministry) and the HealthForceOntario Marketing and Recruitment Agency acknowledge and thank the Auditor General for the timely audit and the recommendations in this report.

In a Canadian first, the province launched the HealthForceOntario strategy in May 2006. This was an innovative response to existing critical shortages in health human resources, and it aimed to ensure that existing gaps would not worsen.

The strategy has led to a significant improvement in the health human resource capacity of Ontario. Shortages of health providers, including physicians and nurses, are no longer the primary barrier to access or cause of wait times. The strategy has mitigated the shortages and improved the province's ability to plan, train and support its health workforce, with some key results since May 2006 including:

- more than 35,000 new regulated providers, including an 18% increase in physician supply and a 10% increase in nurse supply;
- expanded first-year undergraduate enrolment in medical schools (up by 22%) and first-year postgraduate trainees (up by 60%);

- 15,644 more nurses working full-time, a 23% improvement;
- 25 nurse practitioner-led clinics providing care to over 36,000 patients;
- more than 15,100 employment opportunities for new Ontario nursing graduates;
- new health-care provider roles including physician assistants, clinical specialist radiation therapists and five new nursing roles;
- creation of evidence capacity to inform planning;
- legislative and regulatory changes increasing the quality and safety of patient care, expanding scopes of practice and regulating new health professions; and
- establishment of the HealthForceOntario Marketing and Recruitment Agency.

Ontario is now able to focus health human resource activities on health-system transformation rather than responding to critical shortages of providers. The Ministry's work continues to evolve to address today's challenges. The Ministry is renewing the HealthForceOntario strategy so that it:

- builds on the successes of previous accomplishments;
- aligns with the goals of Ontario's Action Plan for Health Care; and
- advances evidence-informed planning and decision-making.

The recommendations in this audit will inform the strategy renewal.

Detailed Audit Observations

PHYSICIANS

Over the last six years, the Ministry of Health and Long-Term Care (Ministry) has spent $3.5 billion through its HealthForceOntario strategy to address the shortages of physicians, nurses and other health professionals across Ontario. While the province was able to increase the number of physicians, some Ontario communities face shortages of health-care providers, especially physicians. Primary-care physicians, also known as family physicians, are not always available in small, rural or remote communities. In Northern Ontario, general specialists (for example, in the areas of general surgery, internal medicine and psychiatry) also remain in high demand despite a significantly improved provincial physician supply.

Although the significant amount of funds that the Ministry has expended over the last six years has increased the supply of physicians in the province, shortages remain in certain specialties and geographical areas even as physicians in those specialties are unable to obtain full-time employment.

Increased Supply of Physicians in Ontario

Medical education is funded jointly by the Ministry of Training, Colleges and Universities and the Ministry of Health and Long-Term Care. The Ministry of Training, Colleges and Universities funds universities for undergraduate positions, while the Ministry of Health and Long-Term Care funds most aspects of postgraduate training. The majority of the $485 million the Ministry of Health and Long-Term Care spent on physician initiatives in the 2011/12 fiscal year was in two areas: total payments of $315 million to medical schools and hospitals for the salaries and benefits of residents who provide clinical services across Ontario; and $107 million paid to medical schools to support academic activities such as teaching, educational infrastructure and related administrative costs for clinical education of medical learners.

From 2005 to 2012, the Ministry of Health and Long-Term Care worked with the Ministry of Training, Colleges and Universities to increase enrolment in physician training programs. First-year undergraduate enrolment in medical schools went up by 22% and first-year postgraduate trainees by 60%. In family medicine, the number of first-year

postgraduate trainees went up by 67% and specialists by 56%. In addition, the number of international medical graduates who entered residency training went up by 48%. As seen in Figure 2, between 2005 and 2012, the number of physicians increased by 18%, or about 4,100. At the same time, the number of family doctors per 100,000 people went from 84.9 to 91, and specialists from 92.9 to 104.3. The total number of doctors per 100,000 people went from 177.8 to 195.3. According to the Canadian Institute for Health Information, the number of specialists per 100,000 people in Ontario in 2011 was in line with the Canadian average, while the number of family physicians per 100,000 people in Ontario was about 10% below the average.

Sub-optimal Distribution of Physicians in Ontario

Despite the overall increase in primary health-care providers and specialists, access to health care is still a problem for some Ontarians. According to the Ministry, based on data collected between October 2012 and March 2013, 6% of Ontarians lacked a family physician. Although more recent regional data is not available, in 2010 the percentage in the north was twice as high. Access has been a long-standing issue in many rural, remote and northern communities in Ontario with chronic physician shortages. Geographic isolation, long travel distances, low population densities and inclement weather conditions are just some of the challenges to providing health care in these areas.

A 2011 Canadian Institute for Health Information report showed that 95% of physicians in Ontario practised in urban areas while the remaining 5% practised in rural areas. This number falls short of urban-rural population distribution in Ontario: according to Statistics Canada's 2011 census, 86% of the population lived in urban areas while 14% lived in rural areas. To help assess the accessibility of health care in rural areas, the Ministry uses the Rurality Index of Ontario (RIO), developed by the Ontario Medical Association. The RIO incorporates data on population and physicians practising in rural and northern areas, including large urban centres in the north. The RIO indicates that in 2011, 8.1% of physicians in Ontario practised in these areas, which contained 11.6% of the province's population.

Although the Ministry acknowledged that physician distribution across Ontario was still not optimal, it cited factors that could account for the

Figure 2: Increase in the Number of Physicians and Physician Trainees in Ontario, 2005–2012
Source of data: Ministry of Health and Long-Term Care

	2005	2012	Increase (%)
First-year undergraduate enrolment	797	972*	22
Medical school graduates	663	875	32
First-year postgraduate trainees	757	1,213	60
Family medicine — first-year postgraduate trainees	305	508	67
Specialty — first-year postgraduate trainees	452	705	56
International medical graduates	171	253	48
Family physicians	10,641	12,296	16
Specialists	11,636	14,086	21
Total physicians	**22,277**	**26,382**	**18**
Family medicine physicians per 100,000 population	84.9	91.0	7
Specialists per 100,000 population	92.9	104.3	12
Total physicians per 100,000 population	**177.8**	**195.3**	**10**

* Latest data available for undergraduate enrolment is from 2011.

way physicians are distributed. For example, some highly specialized health-care services are delivered in tertiary care units, which means patients in some communities must travel to large urban centres to receive specialized care.

Medical Specialties Facing Employment Problems

On average, the province invests about $780,000 (including $375,000 for resident salaries and benefits) to educate one specialist for a four-year undergraduate degree and up to five years of postgraduate residency training. For a specialist who enters Ontario from outside the province at the postgraduate training level, this cost is $225,000. In 2011, the province spent a total of $438 million on specialist education—a 63% increase since 2005, when the amount spent was $269 million. However, many specialists trained in Ontario do not stay and practise here. Figure 3 shows that, on average, about 33% of surgical specialist graduates (including neurosurgeons and cardiac, orthopaedic, paediatric and general surgeons) who were funded by the Ministry left Ontario each year between 2005 and 2011.

Not every graduating specialist who leaves Ontario does so because of employment difficulties. The size and breadth of Ontario postgraduate training programs may attract trainees from jurisdictions where these programs are not offered, and some may complete residency training in Ontario and return to their home province afterward. However, others may leave Ontario because they have difficulty finding stable employment after graduation.

The Royal College of Physicians and Surgeons of Canada (College) and the National Specialties Societies conducted a mini-study from July to November 2010 that found physician unemployment and underemployment were common in the following areas: cardiac surgery, nephrology, neurosurgery, plastic surgery, public health and preventative medicine, otolaryngology (ear, nose and throat specialists) and radiation oncology. In light of these results, the College expanded its research in April 2011 to conduct a multi-phase national study of medical specialist employment in Canada. The final report was released in October 2013. The report indicated that the specialties affected included orthopaedic surgery, urology, gastroenterology, hematology, critical care, general surgery, ophthalmology, neurosurgery, nuclear medicine, otolaryngology and radiation oncology. In our discussions with medical associations, we repeatedly heard that graduating specialists face employment difficulties in various surgical specialties, including many of the above.

Figure 3: Surgical Specialists Leaving Ontario, 2005–2011

Source of data: Ministry of Health and Long-Term Care retention data extracted from Canadian Post-M.D. Education Registry (CAPER) Annual Census of Post-M.D. Trainees

	2003	2004	2005	2006	2007	2008	2009	Average for 2003–09
Surgical specialists graduating in Ontario	120	122	120	125	111	114	147	123
	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**Average for 2005–11**
Surgical specialists practising in Ontario two years after graduation	79	79	79	87	73	70	108	82
Surgical specialist graduates leaving Ontario	(41)	(43)	(41)	(38)	(38)	(44)	(39)	(41)
% of surgical specialist graduates leaving Ontario	**34**	**35**	**34**	**30**	**34**	**39**	**27**	**33**
Surgical specialists coming into Ontario to practise	22	8	12	19	18	14	9	15
Net number of specialists leaving Ontario	19	35	29	19	20	30	30	26

The College's 2011–12 study found that about 20% of new specialists and subspecialists in Ontario (compared to 16% in Canada) could not find a job after completing their residency training periods of two to five years following medical school. It also noted that employability was impacted by personal factors and preferences such as jobs not being based in new graduates' preferred locations; hospital budgetary restrictions; and delayed retirements. Such factors could result in physicians choosing to prolong their studies or make do with contract and temporary work, losing skills, leaving Ontario or having to work in non-surgical practice. At the same time, there are specialist vacancies in some areas of the province. For example, in the north, almost all (99%) of the $13 million spent on temporary specialist coverage in 2011/12 was for covering specialist vacancies while recruitment was being pursued.

The Ontario Medical Association also collected employment data in a 2011 survey. It described some of the barriers new graduates face in finding positions in anaesthesiology, cardiac and thoracic surgery, general surgery, neurosurgery, orthopaedic surgery and vascular surgery:

- Many cardiac surgeons were working as surgical assistants because they could not find jobs in their specialty; 34% of those graduates who were working as cardiac surgeons still considered themselves underemployed.
- More general surgeons were choosing to do fellowships in surgical subspecialties, which decreased the number of general surgeons in the health-care system.
- There was competition among orthopaedic surgeons for operating room time; older surgeons were reluctant to relinquish operating room time to enable new physicians to practise.
- Senior vascular surgeons were working past the normal retirement age, which meant they were holding on to operating room time and hospital clinic resources.

Naturally, individual job preferences also affect employment patterns. More students may be choosing specialties over general practice because of the perception that specialists have more prestige and higher earning potential. According to the Future of Medical Education in Canada Postgraduate Project funded by Health Canada, a 50/50 balance of generalists and specialists is needed to provide optimal care to patients. In 2011, Ontario had about 1,700 more specialists than generalists. The Ministry has worked with the faculties of medicine to increase the number of family medicine residency positions by 119% from 2003/04 to 2011/12. Since 2012, the Ministry and medical schools moved to implement a more structured, annual planning cycle to better support decision-making and fine-tuning of the size and composition of the postgraduate training system.

The Ministry acknowledged that graduating residents faced a number of employment concerns and that unemployment and underemployment were concentrated in specific specialties, particularly those requiring hospital resources. However, we found that it had not collected data from hospitals nor analyzed existing data to identify the causes or to develop solutions. For example, the Ministry had not examined how hospital funding might affect areas such as operating-room capacity, and how this in turn might impact employment in some surgical specialties. It also had not collected data on factors such as the volume of individual physicians' surgical bookings, the allocation of surgical bookings among physicians by level of experience, or the available operating room capacity across the system. The Ministry indicated that it continues to work with stakeholder partners such as the Ontario Medical Association and the Ontario Hospital Association to better understand how profession-specific challenges, including hospital operating practices, affect physician employment and underemployment.

The Ministry told us that once the final results of the College's national study are available with jurisdictional results, it will help inform it of the current status of and the multiple factors that contribute to

physician unemployment and underemployment across Canada.

Lengthy Wait Times for Specialist Services

Ministry data that we examined for the three-month period from June to August 2013 showed long waits for certain surgical services, as shown in Figure 4. We found that some of the procedures with long wait times were in the same surgical specialties in which graduating residents faced unemployment and underemployment. For example, for some orthopaedic surgeries, waits following a specialist's assessment were as long as 326 days (forefoot) and 263 days (cervical disc). Patients often wait months just to see a specialist after the family physician's referral.

Our discussions with hospitals we visited and the Ontario Medical Association suggested that long wait times could be related to factors such as hospital funding. Reduced capacity caused by budget constraints could mean long wait times for some services; if funding is constrained then operating room hours and/or the resources who staff them could be cut, resulting in unemployment and underemployment among the specialists who provide these services.

The hospitals we spoke to in rural areas said they needed resources in various specialties, such as neurosurgery, orthopaedic surgery, psychiatry, paediatrics, obstetrics/gynaecology, geriatrics and emergency medicine, but had difficulty recruiting physicians to meet their needs. They indicated that graduating physicians often prefer to work in large urban centres rather than rural, remote and northern areas. Practising in non-urban areas presents challenges that may be quite different from those encountered during physicians' medical training or posed by practising in an urban centre. There are differences in the level of back-up, the extent of on-call work and the types of illnesses that need treating. There may also be fewer social and cultural activities available and limited employment opportunities for physicians' partners.

Figure 4: Provincial Wait Times* in Surgical Specialties with High Unemployment/ Underemployment, June–August 2013

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

Type of Service/Procedure	Wait Time (days)
Neurosurgery (overall)	134
Orthopaedic surgery (overall)	192
Cervical disc	263
Forefoot	326
Hip replacement	186
Knee replacement	220
Lumbar disc	251

* Wait time is calculated as the number of days from when 9 out of 10 patients see their specialist to when they undergo surgery.

Physician Initiatives

A number of studies have suggested that one factor affecting a physician's practice location decision is where he or she receives a significant portion of postgraduate medical training. For this reason, rural, remote and northern communities may have more trouble attracting physicians than urban centres that are close to medical faculties and teaching hospitals. Figure 5 shows a number of programs and initiatives the Ministry has funded to help those communities recruit and retain physicians.

The Ministry also manages a Return of Service Program that requires international medical graduates and participants in certain other physician postgraduate training programs to practise in eligible communities in Ontario, generally for a period of five years. (The program is covered in a subsequent section of this report.) The Ministry, through separate divisions, also funds a number of related initiatives, such as the Northern and Rural Recruitment and Retention Initiative, which offers financial incentives to physicians who establish a full-time practice in an eligible northern, rural or remote community.

At the time of our audit, the effectiveness of these initiatives had yet to be evaluated. Some of the initiatives had only recently been implemented.

Figure 5: Selected Ministry Initiatives for Physician Recruitment and Retention in Rural and Remote Communities
Source of data: Ministry of Health and Long-Term Care

Initiative	Description	Funding Received in 2011/12 ($ million)
Northern Ontario School of Medicine	Rural-distributed, community-based medical school that seeks to recruit students coming from Northern Ontario or rural, remote, aboriginal or francophone backgrounds (started 2005)	12.7
Distributed Medical Education	Organizations co-ordinate clinical teaching placements in small urban and rural communities for undergraduate and postgraduate learners (started 1995)	11.7
Northern and Rural Recruitment and Retention Initiative	Financial incentives to physicians who establish a full-time practice in an eligible community (started 2010)	3.4
Hospital Academic and Operating Costs for hospitals affiliated with the medical education campuses	Funding to cover academic and operating costs for hospitals affiliated with the Medical Education Campuses (started 2008)	3.5

The 2010 evaluation of the Return of Service Program found that it was not meeting the needs of most northern and remote communities. In response, the Ministry implemented changes to that program, including expanding the eligible geographic boundaries and providing other targeted funding for certain geographic areas that were underserviced.

The Northern Ontario School of Medicine, opened in September 2005, has not been operating long enough for a meaningful evaluation, but a five-year tracking study from 2010/11 to 2014/15 is under way to determine the extent to which the school's undergraduate and postgraduate programs improved the supply and distribution of physicians in northern and rural communities.

In addition, as noted in Figure 5, the Ministry funds the Distributed Medical Education Program, in which organizations co-ordinate clinical teaching placements in small urban and rural communities for undergraduates and postgraduates. The Ministry informed us that it has been working with medical schools since autumn 2012 on an approach to evaluate this initiative.

Physician Locum Programs

The Agency provides support for temporary physician or "locum" coverage in eligible communities across the province. Locum support targets two specific types of need:

- Respite coverage is an ongoing retention support to physicians who work in northern and rural communities. Because there are fewer physicians in these communities, there are limited options for local replacements. Respite locum coverage provides these rural and northern physicians with back-up when they are temporarily away on leave, continuing medical education or vacation.
- Vacancy-based coverage is intended as a short-term solution to provide access to care in areas where there are physician vacancies while long-term recruitment is pursued.

As well as providing access to physician care in communities with temporary physician absences or vacancies, these programs are also meant to support the retention of rural and northern physicians. In the 2011/12 fiscal year, the Ministry spent a total of about $22 million on three physician locum programs administered by the Agency.

The programs include the Northern Specialist Locum Programs, the Emergency Department

Coverage Demonstration Project and the Rural Family Medicine Locum Program.

We focused our audit work on the Northern Specialist Locum Programs and the Emergency Department Coverage Demonstration Project because these programs specifically targeted physician vacancies while permanent recruitment was pursued.

Costly Long-term Use of Northern Specialist Locum Programs

Northern communities can access up to 26 locum specialty services. The Northern Specialist Locum Programs incurred $13 million in expenditures in 2011/12 to provide temporary physician specialty coverage through two sub-programs that provide short-term coverage for specialist physician vacancies and ongoing respite coverage to support retention.

According to the Agency, the latest available data at the time of our audit indicated that about 30% of specialist positions in Northern Ontario were vacant. This translates to a total of about 200 specialist vacancies, or 40,000 work days that need coverage. Data that we examined for the years from 2009 to 2011 showed that the specialties requiring the greatest number of locum days in Northern Ontario were internal medicine, diagnostic imaging, general surgery and psychiatry. Over the past five fiscal years, from 2008/09 to 2012/13, four large northern cities—Sault Ste. Marie, Thunder Bay, Timmins and Sudbury—received more than 80% of specialist locum coverage days. According to the Ministry, the four larger northern city hospitals have the highest usage because they act as critical referral centres to the smaller rural northern communities where low population and other factors would not support specialist practice. Also, they provide teaching and research to the Northern Ontario School of Medicine.

In addition to fees for services or claims for work sessionals for daily clinical work, payments to physicians for vacancy coverage averaged $1,017 per day for travel, accommodation and honorarium—about four times the average amount paid for respite coverage. In addition to fees for service, physicians receive eligible travel and accommodation expense reimbursement for respite coverage, which amounts to $241 per day on average. In some Northern Ontario communities, physician shortages and recruitment challenges might have contributed to the extended use of physician locums to support ongoing access to care for patients. Our review showed that using locums has become a service delivery model. Almost all (99%) of the $13 million spent on locum coverage in 2011/12 was for covering specialist vacancies.

We looked at locum programs in other Canadian jurisdictions and found that they generally provide only respite coverage. The Ministry indicated that Ontario is unique in that it provides large-scale hospital-based services to five Northern Urban Referral Centres and has a medical school based in the north. The mass of critical services in the north combined with physician vacancies and recruitment challenges in some communities and/or specialties creates a need for locum support that may not exist in other jurisdictions. The Agency's long-term goal is to transition to a predominantly respite program in Ontario and eliminate use of the locum program as a service delivery model. The Agency indicated that it is working to implement new eligibility criteria, with full implementation by 2014/15.

We found extensive reliance on locum programs to deliver needed health-care services to some rural, remote and northern communities. For example, at a number of the hospitals we visited we reviewed the on-call locum usage for a single month in 2012 and found that locum coverage was as high as 94% for internal medicine at one hospital and 72% for diagnostic imaging at another hospital.

Although hospitals with specialist vacancies receiving coverage by the Northern Specialist Locum Programs are required to post the positions on the Agency's HealthForceOntario jobs website, they are not required to report on their progress in recruiting for and filling their vacancies. The

Agency informed us that it was in the process of developing new criteria for locum coverage eligibility. In a phased approach over the next two fiscal years starting in 2013/14, the Agency will require hospitals to regularly complete a form, which was being piloted at the time of our audit, to inform it of recruitment efforts that have been made to fill vacancies by specialty area.

Emergency Department Coverage Demonstration Project

The Ministry and the Ontario Medical Association designed the Emergency Department Coverage Demonstration Project to be a measure of last resort for hospitals to prevent unplanned emergency department closures due to physician unavailability that otherwise would result in patients being unable to access critical emergency services in their own community.

About 50 of 164 emergency departments across Ontario have used the project's locum services since it started in 2006. According to the Agency, about 20 hospitals use this resource at any one time, on average. The Agency's total expenditures on the project for the 2011/12 fiscal year were approximately $4 million.

We found at the time of our audit that of those hospitals using the locum services since before January 2008, one-third had been continuously using the services from as early as 2007. One hospital had been using them from 2006 up to the time of our audit. These hospitals received a total of about 9,000 hours of locum coverage in 2011/12. We reviewed a sample of the monthly emergency department schedules between local and locum doctors at one of the hospitals we visited and found that more than half of the emergency department shifts had been covered by locum physicians.

These findings imply that some hospitals facing physician shortages and recruitment challenges need long-term use of the locum support to maintain access to services while permanent recruitment is pursued. However, given that approximately $4 million was able to cover about 20 hospitals in meeting the emergency needs of communities at any one time, the amount that has been spent is not significant overall, averaging about $200,000 per hospital.

Problems With Retaining Physicians in Northern and Rural Areas

The Return of Service Program is intended to provide greater access to physicians in smaller urban communities and underserviced northern and rural communities by allowing them to recruit from a pool of physicians. The Ministry funds postgraduate training and assessment for international medical graduates and other physicians seeking to qualify to practise in Ontario in return for a commitment from them to provide services for a period of time (usually five years) in an Ontario community (except the cities of Ottawa and Toronto and adjacent municipalities). As of August 2013, the Ministry had active return of service agreements with 550 physicians who had completed their training.

According to the Ministry, before 2010 under the Underserviced Area Program, physicians could only complete their return of service commitment in a community designated as underserviced. Originally, the Underserviced Area Program was focused on northern and rural communities. However, over time more communities outside of the north were designated as underserviced to attract return of service physicians, with the result that designated communities close to major population centres in the south outnumbered those in Northern Ontario, which made it even more difficult for northern and most rural communities to compete for physician resources. From 2010 onward the Ministry attempted to improve access to care by expanding eligible practice areas to include all but the cities of Ottawa and Toronto and adjacent municipalities. These areas were excluded so they would not be able to out-compete smaller urban, rural, northern and remote communities for physician resources.

In our discussions with staff at the rural and northern hospitals we visited, we heard repeatedly

that they were in need of more physicians. They told us that it was challenging to keep return of service physicians on after their five-year commitment was up. The Ministry does not keep track of international medical graduate physicians who stay on and practise in eligible communities after their return of service commitments have been met, but information we obtained from one of the hospitals we visited showed that only one of three physicians stayed on after completing their service commitments. The other hospitals we visited did not keep information on retention.

The Ministry has not evaluated the Return of Service Program to assess its effectiveness since it was redesigned in 2010. There are currently no performance measures or metrics to measure the program's success. The Ministry has only a quarterly update on the number of international medical graduate physicians in the program, broken down by LHIN and specialty at a snapshot date.

Alternative Health Careers for International Medical Graduates

The Access Centre is a unit within the Agency to help physicians and all other regulated health professions who want to practise in Ontario with the licensing, certification and regulatory process. Many international medical graduates use the Access Centre for assistance with navigating the system and competing for Canadian Resident Matching Service (CaRMS) residency positions. CaRMS is a national not-for-profit organization that provides an electronic matching service for postgraduate medical training in Canada. It enables applicants to decide where they wish to train in Canada and enables programs to indicate which applicants they wish to enrol in postgraduate medical training. In the 2011/12 fiscal year, approximately 2,100 international medical graduates were registered with the Agency's Access Centre, but only 173 obtained residencies in Canada; of those, 156 obtained residencies in Ontario.

Some of the unsuccessful candidates may go on to consider a field of practice outside their original profession, such as physiotherapy, dietetics and chiropractics. In the 2012/13 fiscal year, the Agency helped 27 international medical graduates who had been unsuccessful in obtaining residencies to transition to other careers in the health sector.

Although its current primary mandate does not include helping international medical graduates find employment in alternative fields, the Access Centre informed us that it plans to further develop services to assist internationally educated health professionals who are unable to practise in their field to transition to an alternative health career consistent with their education and experience. At the time of our audit, the first module of an Alternative Career Toolkit was available on the Access Centre's website.

RECOMMENDATION 1

To better meet the health-care needs of Ontarians, the Ministry of Health and Long-Term Care, in conjunction with the HealthForceOntario Marketing and Recruitment Agency, should:

- compare the existing mix and distribution of physicians across the province to patient needs and consider what measures it can take to reduce any service gaps;
- assess how various factors, including hospital funding and capacity and health-delivery models, affect patients' access to needed services and physician employment, and develop cost-effective solutions where concerns are identified;
- continue to work with medical schools and associations to encourage more medical students to select fields of study and geographic areas in which to practise that are in demand; and
- assess the effectiveness of its various physician initiatives in meeting the health-care needs of underserved areas.

MINISTRY RESPONSE

The Ministry welcomes this recommendation as it is consistent with and supports work that it has undertaken. Working with the Agency and other key health-system partners, the Ministry's HealthForceOntario strategy strives to continually advance evidence-informed health human resource planning that is responsive to the health-care needs of the people of Ontario.

The Ministry will continue working with partners to better understand these factors and their impact on access to health care and health human resource requirements, including physicians.

The Ministry is actively engaged with medical schools and professional associations to identify and promote a stable supply of physicians across the continuum of specialties with a focus on those that are required for harder-to-service patient populations or geographic areas.

The Ministry is committed to ongoing assessment of the effectiveness of initiatives launched to address specific needs, and looks forward to the outcome of such evaluations to inform future planning.

NURSES

A comprehensive strategy on nursing was an integral part of the HealthForceOntario strategy launched by the Ministry in May 2006. The Nursing Strategy is a collection of programs and initiatives intended to achieve the right number and mix of nurses in Ontario now and in the future. It addresses issues such as work environments, full-time employment, and recruitment and retention of nurses.

At the time the Nursing Strategy was launched, the province was experiencing a shortage of nurses, and further shortages were anticipated with imminent retirements. The Ministry's focus was on increasing the number of nurses—registered nurses (RNs), registered practical nurses (RPNs) and nurse practitioners (NPs)—in Ontario to improve access to care. RNs usually obtain their education through a four-year university degree. RPNs usually obtain education through a college program. A nurse practitioner is a registered nurse who has acquired the knowledge base, decision-making skills and clinical competencies for a practice that extends beyond that of an RN.

From 2006 to 2012, the number of nurses in Ontario increased by 10%, from 138,583 to 153,073. The number of nurses employed per 100,000 people in Ontario increased by 3.5%, from 1,106 in 2006 to 1,145 in 2012. Figure 6 provides a detailed breakdown of the increase.

We found that the Agency played a small role in the nursing sector. Agency regional advisers who operate from various LHINs across Ontario focused mainly on physicians, and very few Agency advisers worked at the Access Centre to counsel internationally trained nurses.

Although the Nursing Strategy has successfully increased the number of nurses in Ontario, we found that improvements were generally needed in ministry oversight and assessment of the effectiveness of its nursing programs and initiatives.

Nursing Initiatives

According to data from the College of Nurses of Ontario, 66.7% of members employed in nursing in this province said they worked full-time in 2012. The rest were categorized as part-time or casual. Figure 7 breaks down the working status for nurses in Ontario from 2008 to 2012, and Figure 8 shows employment by practice sector for full-time, part-time and casual employment, where the nurse does not have a set number of hours and is called in to work as needed.

The Ministry has implemented several nursing initiatives aimed at stabilizing the workforce and increasing full-time opportunities and retention of nurses across Ontario. The Health Human Resources Strategy Division spent $151 million on nursing initiatives in 2012/13. This amount does not

Figure 6: Number of Nurses in Ontario, 2006–2012*

Source of data: College of Nurses of Ontario

Type of Nurse	2006	2012	Increase	Increase (%)
Registered nurse	108,185	112,194	4,009	4
Registered practical nurse	29,706	38,859	9,153	31
Nurse practitioner	692	2,020	1,328	192
Total	**138,583**	**153,073**	**14,490**	**10**

* The data provides a "point-in-time" snapshot of the available labour supply of nurses (at the end of the prior year or beginning of the stated year).

Figure 7: Overall Working Status of Nurses in Ontario, 2008–2012*

Source of data: College of Nurses of Ontario

	2008		2009		2010		2011		2012	
Working Status	#	%	#	%	#	%	#	%	#	%
Full-time	75,649	62.9	78,694	63.9	80,356	63.8	83,972	66.4	85,010	66.7
Part-time	34,820	29.0	34,371	27.9	34,939	27.8	32,316	25.6	32,712	25.6
Casual	9,796	8.1	10,026	8.2	10,549	8.4	10,117	8.0	9,889	7.7
Total	**120,265**	**100.0**	**123,091**	**100.0**	**125,844**	**100.0**	**126,405**	**100.0**	**127,611**	**100.0**

* The data provides a "point-in-time" snapshot of the working status of nurses (at the end of the prior year or beginning of the stated year).

Figure 8: Employed Nurses[1] by Practice Sector, 2010[2]

Source of data: College of Nurses of Ontario

	Registered Nurses		Registered Practical Nurses		Total	
Working Status	#	%	#	%	#	%
Full-time						
Hospital	41,030	44	7,544	25	48,574	40
Long-term care	4,851	5	6,690	22	11,541	9
Community	10,947	12	2,636	9	13,583	11
Other & not specified	4,656	5	771	2	5,427	4
Part-time						
Hospital	15,576	16	4,669	15	20,245	16
Long-term care	2,201	2	3,597	12	5,798	5
Community	4,757	5	1,409	4	6,166	5
Other & not specified	2,052	2	468	1	2,520	2
Casual						
Hospital	4,352	5	1,168	4	5,520	4
Long-term care	552	1	804	3	1,356	1
Community	2,134	2	506	2	2,640	2
Other & not specified	808	1	180	1	988	1
Total	**93,916**	**100**	**30,442**	**100**	**124,358**	**100**

1. Not including nurse practitioners.
2. Most recent year that data was available.

include funds spent by other program areas within the Ministry for nursing initiatives.

We examine a few of the Ministry's more significant initiatives in the following sections.

Meeting the 9,000 Nurses Commitment

In 2007, the government committed to hiring 9,000 more nurses over a four-year period. It also committed to a goal of 70% of nurses working full-time. However, in fall 2008, the province indicated that it would take longer to achieve the goal of 9,000 new hires. From 2008/09 to 2011/12, $309 million was dedicated to this initiative. Our review of the initiative showed that:

- From year-end 2007 (reported as 2008 by the College of Nurses of Ontario), the number of nurses in the province increased by more than 7,300 over four years. At the time of our audit, CNO nursing data was not available for 2013 (which would represent 2012 figures), but it appeared likely that the goal of hiring 9,000 new nurses would be achieved by the end of 2012.
- The province was slightly under its goal of having 70% of nurses working on a full-time basis. As of the year ended 2011, reported by CNO as 2012 numbers, 66.7% of nurses were working full-time. From the year ended 2007 (reported as 2008) to the year ended 2011 (reported as 2012), there were almost 9,400 more nurses working full-time, representing a 12% increase.

We reviewed five Nursing Secretariat programs that reported creating 1,316 nursing positions. Two of the programs we reviewed had been in place since 2008/09 and the other three had been implemented in 2011/12. The Ministry indicated that 1,125 of the 1,316 new positions (85.4%) had been filled by March 2013. We also noted that the 1,316 nursing positions created were not all full-time, but included part-time and casual positions. The Nursing Secretariat did not have detailed information to determine the type of employment obtained by some of the positions funded through the Division. Specific data was not available to determine the number of full-time, part-time or casual positions that the funded organizations had created through the 9,000 Nurses Commitment.

Inadequate Assessment of the Nursing Graduate Guarantee Program's Effectiveness

Announced in February 2007, the Nursing Graduate Guarantee Program's objective was to support new Ontario nursing graduates (both RNs and RPNs) in finding full-time employment immediately upon graduation. Some of the program's other objectives include facilitating recruitment in all nursing sectors; transforming employer practices to make more full-time nursing positions available; and increasing the total supply of nurses by providing full-time employment to nurses who may have otherwise sought work in other jurisdictions or professions.

The program provides funding for temporary full-time, above-staffing-complement positions for 26 weeks with the expectation that these bridging positions will lead to permanent full-time employment. Employers must commit to funding an additional six-week full-time position for the new graduate nurse if he or she is not bridged to permanent full-time employment by the end of the 26 weeks. The program is open to employers in all health sectors (hospitals, long-term-care homes and community care organizations); all Ontario-educated new graduate nurses are eligible to take part as long as they register on the Agency-administered new graduate guarantee job website and accept a job offer within six months of completing their studies. In 2011, there were approximately 1,200 potential employers. In the 2011/12 fiscal year, about $66 million of ministry funding was provided to about 210 participating health-care organizations (representing an 18% employer participation rate), which employed 2,235 new graduate nurses under the program.

According to the Ministry's January 2011 *Guidelines for Participation in the Nursing Graduate Guarantee for New Graduate Nurses*, program funding is provided with the expectation that the

bridging positions offered by organizations will lead to permanent full-time jobs. In the transfer-payment agreements that they enter into with the Ministry, participating organizations commit to making their "best effort" to place a new graduate in a permanent full-time position after he or she has worked with the employer for at least 12 weeks, but the Ministry does not assess program data against established program targets to determine how well organizations are doing with bridging participants to permanent full-time employment. We conducted our own analysis of 2010/11 and 2011/12 program data and found that only about one-quarter of participants had been transitioned to permanent full-time employment after the six-month period in 2010/11 and one-third in 2011/12; about an additional one-third of participants had been transitioned to part-time employment in both 2010/11 and 2011/12.

We also found that the Ministry had not reviewed employment trends at participating health-care organizations to determine whether employers were making their best efforts to transition program participants to full-time permanent employment. We reviewed a sample of health-care organizations that received funding from the program in 2007/08 to 2011/12 to look for employment patterns and found the following:

- In 2011/12, one organization reported that 15% of its graduates had transitioned to full-time employment while 65% went to part-time. In 2007/08, the same employer reported 24% of its graduates had transitioned to full-time employment and 59% to part-time.
- In 2007/08, another organization reported that 85% of its graduates had transitioned to full-time employment and 2% went to part-time. By 2011/12, the same organization reported that 19% of its graduates had transitioned to full-time employment and 47% to part-time.
- In 2011/12, an organization reported that 40% of its nursing graduates had voluntarily left the program early. Sixty percent of them left because they found employment elsewhere, while no explanations were given for the others who left.

The Ministry has allocated funds ranging from about $86 million to almost $100 million per year for the program since it began in 2007/08. We found that for each of the past five fiscal years (from 2007/08 to 2011/12), program expenditures were less than the amount of funds allocated. As shown in Figure 9, other than for 2009/10, the amounts of unspent funds varied considerably, ranging from $17.2 million (20%) to $33.6 million (37%) of total funds allocated for the year; they totalled $105.7 million over the five-year period. Figure 9 also shows how declining program expenditures are related to a one-third drop in program participation by eligible graduate nurses. Participation was as high as 62% in 2007/08 but declined to 35% in 2011/12. When we asked the Ministry about the reasons for this decline,

Figure 9: Nursing Graduate Guarantee Program Funding and Participation

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

Fiscal Year	Allocated Amount ($ million)	Actual Expenditure ($ million)	Unused Portion ($ million)	# of New Nurse Graduates	# of New Nurse Graduates Participating	% of New Nurse Graduates Participating
2007/08	88.9	71.7	17.2	4,300	2,660	62
2008/09	94.2	72.3	21.9	4,902	2,825	58
2009/10	85.8	85.5	0.3	5,139	2,598	51
2010/11	87.5	54.8	32.7	5,555	1,804	32
2011/12	99.6	66.0	33.6	6,386	2,237	35
Total	**456.0**	**350.3**	**105.7**			

it indicated that not every nursing graduate will secure a job through this program. Some move into positions in the same organization where they completed their clinical placement, but outside the program, while others may decide to continue their studies or take time off. Nevertheless, the significant decline in graduate participation in this program raises questions that need to be considered in evaluating the program's effectiveness.

An external party has evaluated the Nursing Graduate Guarantee Program annually since 2007/08 using ministry data supplemented by a survey of participants and employers. The 2011/12 evaluation resulted in nine recommendations that included, for example, continuing to promote the participation of long-term-care and community employers in the program; supporting the participation of northern, rural and small organizations in the program; and examining the differences in employment status, retention and transition into the nursing profession across sectors. The Ministry indicated that it was working to address the recommendations.

However, the evaluator has not assessed the overall effectiveness of the program. For example, it has not reported on the total percentage of nurse graduates who have transitioned to permanent full-time employment through the program.

The Ministry has set performance targets for the number of temporary full-time positions to be bridged—the number of participants—but has not set an outcome-based performance target— the number of participants to achieve permanent full-time positions—for the Nursing Graduate Guarantee Program. In the program's first year (2007/08), the target was 3,000 positions to be bridged; by 2011/12 the target had decreased to 2,500 positions. The Ministry met its targets in only one of the five years—2008/09.

Inadequate Assessment of Nurse Practitioner–led Clinics

The purpose of nurse practitioner–led clinics is to provide increased access to primary health care to the people of Ontario. Patients at these clinics see a nurse practitioner (NP) as their primary health care provider, consulting with a physician only when needed. The first clinic opened in Sudbury in 2007 and served as a pilot project for the initiative. In November 2007, the Ministry announced that it would establish 25 more NP-led clinics across the province. In 2011/12, the 26 clinics received $29 million in ministry funding for development and implementation.

Each clinic can have up to four NPs who operate in collaboration with an interprofessional team (such as RNs, dietitians and social workers) to provide increased access to primary health care. To achieve this, the clinic may, for example, focus on providing:

- family health care for people previously without a primary care provider;
- chronic disease detection and management, such as obesity programs, smoking cessation and cancer screening; and
- faster access to care through house calls and same-day or next-day appointments and extended hours.

We looked at information from a sample of clinics to determine whether the majority of patients had indeed previously been without primary care providers. We found that only two of the five clinics we contacted had taken steps to document whether their patients had family physicians. Two of the other clinics informed us that patients were asked if they had a family physician. The remaining clinic did not begin collecting this information until April 2013, when it began having patients complete an intake form that included a question about family physicians.

At the time of our audit, the Ministry's overall target was to have a total of 40,000 registered patients (who do not have regular access to a family health-care provider) at all 25 clinics. As of January 2013, the 24 NP-led clinics that were open (one NP-led clinic is targeted to open late in the 2013/14 fiscal year) reported having about 33,000 registered patients, or 82% of the program target. Given that

the clinics are a new model of primary health-care delivery and that many of them had been open less than two years, not all clinics are at full capacity, as it takes time to establish a patient roster.

Clinic budgets setting out operational and one-time costs are approved annually by the Ministry. Clinics are required to submit quarterly and annual financial and performance information and statistics to the Ministry for review as well as an audited statement of revenues and expenditures for the year. Our review of ministry documentation from a sample of clinics indicated that the Ministry generally followed up with clinics on matters during their development phase. Ministry staff informed us that they reviewed clinic operating costs, comparing actual operating expenditures to those set out in the clinic's budget, approving funding levels and discussing any variances with the appropriate clinic staff.

The Ministry's performance measure for this program is the establishment of 25 nurse practitioner–led clinics, which has been met. However, this measure does not assess whether the clinics are effectively meeting program goals. At the time of our audit, the Ministry had evaluated only one clinic (Sudbury) for its effectiveness in meeting program objectives.

RECOMMENDATION 2

To provide an appropriate level of nursing services and thereby improve access to care across the health sector, the Ministry of Health and Long-Term Care should:

- monitor nursing employment trends and assess the outcome of its nursing initiatives in transitioning graduating nurses to permanent full-time employment;
- assess the reasons for declining participation rates of nurse graduates in its Nursing Graduate Guarantee Program, and take steps to improve program effectiveness, including encouraging participation in the program across sectors; and
- monitor the nurse practitioner-led clinics more closely to ensure that they are meeting program requirements and achieving their patient targets and program objectives.

MINISTRY RESPONSE

The Ministry acknowledges the recommendation and comments regarding the Nursing Graduate Guarantee (NGG) program and the nurse practitioner–led clinics.

Recognizing the importance of monitoring and evaluating the NGG program, work has been under way since early 2012 to enhance its online management. A new tool was launched in April 2013 that allows the Ministry to collect and analyze information that was previously unavailable, including monitoring aspects of NGG participation rates by both nursing graduates and employers, as well as employment outcomes.

The annual program evaluation will continue and will be enhanced to examine the variations in participation rates.

The Ministry will also implement a targeted communication strategy to promote increased uptake of NGG participants across health-care sectors, with particular attention to the community—for example, in home care, long-term care, primary care and public health sectors.

The recommendation about nurse practitioner–led clinics is timely as the clinics transition from startup to full operations. The Ministry will review how it can apply greater oversight to these clinics and ensure accountability for outcomes including achievement of patient targets and program objectives. The Ministry will continue to take timely, appropriate action when non-compliance with agreements is identified.

Untimely Recovery of Unspent Funds

Organizations that receive transfer payment funding from the Ministry are required to submit annual financial statements. Subsequent to year-end, the Ministry reviews year-end financial statements to assess whether it is owed any surplus funds. Any payables to the Ministry are recovered from the transfer payment recipients.

For the nursing initiatives we examined in our audit, we found that some related transfer payment agreements did not set out time requirements for submitting or completing the financial reconciliation. For some organizations that received funding through the 9,000 Nurses Commitment, the information provided was lumped into broader programs instead of being broken down by initiative. For example:

- Our review of a sample of the organizations that received 9,000 Nurses Commitment funding found 36 programs for which many of the year-end reconciliations had not been completed on a timely basis.
- At the completion of our audit, the Ministry had completed reconciliations up to only 2009/10 for the Nursing Graduate Guarantee Program. Pending completion of the other years, the total amount of recoveries identified to date was at least $7.3 million. The Ministry was still in the process of recovering the funds.
- We looked at a sample of five nurse practitioner–led clinics and identified total operating funds of about $1.3 million owed to the Ministry for the 2011/12 fiscal year. This amount represented about 30% of the total funding provided to these clinics. In addition, the audited statements of two of the clinics showed about $360,000 owing to the Ministry for the 2010/11 fiscal year. Shortly after we completed our audit fieldwork, the Ministry indicated that it had identified approximately $3.4 million in recoveries related to 2009/10 and 2010/11, which it was in the process of recovering from the clinics. The Ministry also informed us that it is working to complete the reconciliations that remained for 2009/10, 2010/11 and 2011/12.

In October 2012, the Ministry of Finance's internal audit department issued a report on oversight and monitoring of transfer payment recipients that made observations similar to ours. It recommended establishing outcome-based performance measures and guidelines for review and analysis of financial reporting to increase consistency and enhance efficiency. The Ministry informed us that the focus of the strategy to date has been to establish capacity in the province by increasing the supply of providers, which relates to an output-based measure. It has plans to establish outcome-based performance measures and guidelines where appropriate.

RECOMMENDATION 3

To improve financial oversight of funded organizations and recover unspent funds, the Ministry of Health and Long-Term Care should perform timely reviews of relevant financial statements.

MINISTRY RESPONSE

The Ministry is committed to enhancing financial management systems to ensure optimal use of financial resources. In 2013/14, the Ministry is implementing processes that will ensure emphasis is placed on in-year review and analysis of financial reports submitted by funding recipients to support timely recovery or payment adjustments.

For the HealthForceOntario strategy, the Ministry has made significant progress over the past two fiscal years through dedicated efforts in the area of reconciliations. Its goal is to have all reconciliations current by March 31, 2014.

HEALTH HUMAN RESOURCE FORECASTING MODELS

Forecasting models are recognized as one important component of evidence-based health human resource planning. Good information and proper health human resources planning are essential if the Ministry and health system stakeholders are to work together to determine an appropriate number and mix of health professionals to meet the health needs of Ontarians across the province.

Better Physician Forecasting Data Needed

Some Canadian jurisdictions are engaged in physician forecasting and modelling. For example, Alberta and Nova Scotia have developed needs-based physician forecasting models similar to Ontario's to plan their physician supply requirements. This type of planning generally involves estimating the health services required to meet the needs of the population and then translating them into the number and type of physicians required to deliver those services.

Historically, physician human resources planning in Ontario has been supply- or utilization-based; however, this method does not provide a complete picture because it does not consider the population's health needs. In 2009, the Ministry partnered with the Ontario Medical Association and used a tendering process to select an external party to develop a new, needs-based model. The new model works by examining the population's health needs and translating them into needs for physician services, then comparing these needs to the supply of physician services currently available. Service gaps are quantified and converted into the number of physicians required to meet the needs.

Ontario's physician forecasting model is a positive step in determining physician workforce requirements. However, the model is hampered by the limited reliability and availability of data. We found that Ontario's model does not account for some important variables because of a lack of available quantifiable data on physician productivity. Physician productivity is an important component, and even small improvements in productivity can have a significant impact on the number of human resources required in the system.

During development, the consultant who built the model defined productivity as the number of patients seen in the physician's practice for a given period of time, noting several factors that affect physician productivity, including:

- information and communication technology (electronic health records, telemedicine);
- health system change (new or different primary health-care models, such as Family Health Teams);
- non-physician clinicians (other health-care providers working with physicians, such as NPs); and
- funding and compensation models.

Even for these four factors, specific quantifiable data for only one category of non-physician clinicians—NPs—was available and incorporated into the model.

Also, while physician human resource forecasting reflects factors such as workforce demographics and changing population health needs, it is also significantly affected by broader economic, social and health-system trends, as well as health technology advancements. Many of these other factors—the availability of diagnostic and laboratory equipment, operating-room time and space to perform surgeries, physician preferences for certain specialties and practice locations, and employment opportunities across the province—can affect access to and delivery of health-care services, but they are not easily incorporated into the model. Although the needs-based simulation model does make it possible to test "what-if" simulations that may help to assess the impact of some of these factors, it cannot incorporate all of them.

For these reasons, the results obtained from Ontario's physician forecasting model can be considered only one of many tools and pieces of evidence available to support policy formulation.

The model's limitations make it difficult to use in planning for the optimal number, mix and distribution of physicians with appropriate funding, training and deployment across the province.

Lack of Forecasting of Demand for Nursing Services

In 2008, the Ministry also engaged an external consultant to develop a needs-based nursing model that would be able to project the gap between the need for and the actual supply of RNs, RPNs and NPs in Ontario for each year over a 10-year period. Separate simulation models to test various health human resources policy scenarios were also developed for both RNs and RPNs.

Although the model cost about $435,000 to develop, it was initially not used to specifically inform any nursing policies because of concerns about the accuracy of its predictions.

In 2012, as part of its ongoing evidence development work, the Ministry found that the model had understated data for first-year enrolment of RNs in 2007 and incorrectly assumed that all RNs provided the same rate of direct patient care regardless of their years of experience; in practice, younger RNs just entering the profession may be providing different amounts of direct patient care than RNs near the end of their careers. The model had also applied an estimated percentage of total RNs providing direct patient care based on previous outdated data. The Ministry corrected the first-year enrolment data and updated the direct patient care data and completed two simulations. However, assumptions regarding attrition, retirement and workload were not updated, and no other data reviews were conducted.

The model has other limitations. For example, it forecasts the gap between supply and need at the provincial level but not at a regional level. At the time of model development, data on the patterns of service delivery for NPs was not available, and therefore the consultant was unable to conduct a simulation model analysis that would accurately estimate the requirements for this nursing group.

During the course of our audit, the Ministry was in the process of working with the Ministry of Training, Colleges and Universities to develop a supply-based nursing simulation model for RNs and RPNs, with results expected to be available by late 2013.

The Ministry advised us that the purpose of the supply-based simulation model is to help the government plan properly for future nursing education positions and formulate nursing recruitment and retention policies. The initial model is to provide projections for the future supply of nurses (RNs and RPNs) at the regional level and will enable planners to test the potential impact of policy changes on the supply, such as changes to enrolment numbers and percentages of full-time nurses, the introduction of incentives for working in rural and remote areas, shifting distribution of nurses by employment sector, recruitment and retention rates and other attrition factors. However, a supply-based model cannot assess whether the supply is appropriate because it does not take into account the population's need for nurses. In addition, the new supply-based model will not include NPs because some historical data specific to them is not available from the College of Nurses of Ontario. The Ministry informed us that the initial focus is on the future supply of nurses, which is important work that needs to be completed to support future needs-based modelling considerations.

To get better information to inform future policy work, the Ministry entered into an agreement with a large hospital in late 2012 to create a one-time snapshot of the current supply, distribution and predicted shortfall or surplus of RNs, RPNs and NPs working in selected primary healthcare organizations, long-term-care homes and acute-care hospitals across the province for the next three months. Each surveyed health organization is to report on current staffing, vacancies,

details about leaves of absence and predictions of short-term staffing changes. There will also be a comprehensive analysis of the overall staffing situation in each area. This data will be used to identify which organizations and geographical areas are having difficulty in recruiting and retaining nurses in Ontario.

RECOMMENDATION 4

To provide reasonable and reliable forecasts of the requirements for physicians and nurses and to better ensure effective health human resources planning, the Ministry of Health and Long-Term Care should:

- conduct assessments of employment trends, the supply and projected needs for health services, and the associated health workforce requirements to best meet those needs cost-effectively; and
- for physicians and nurses, further refine its forecasting models and their capabilities to assess the impact of various factors on service-provider productivity.

MINISTRY RESPONSE

The Ministry agrees with the audit findings that its physician forecasting model is a positive step in determining physician workforce requirements. Similarly, the Ministry concurs with the audit observations regarding forecasting models as one of many types of tools that are required to support health human resource planning.

As such, the Ministry is actively engaged with the health sector to improve evidence for decision-making. Over the summer of 2013 the Ministry has been meeting with the field regarding the current health human resource environment, including how we continue to evolve and develop evidence. This work will contribute important information to inform future HealthForceOntario work.

The HealthForceOntario strategy will continue to provide innovative health human resource solutions to meet patient-care needs. Evidence for decision-making will continue to be a key aspect of the strategy and the Ministry will seek to enhance and expand tools, including forecasting models, to improve planning.