3.09–Public Health Activity

BACKGROUND

The Ministry's Public Health Branch, under the direction of the Chief Medical Officer of Health, is responsible for administering the Public Health Activity. The primary legislative authority governing the Activity is the *Health Protection and Promotion Act*, which provides for the organization and delivery of public health programs and services, the prevention of the spread of disease, and the promotion and protection of the health of the people of Ontario. Other legislation that plays a role in the Public Health Activity includes the *Immunization of School Pupils Act*, the *Day Nurseries Act*, and the *Tobacco Control Act, 1994*.

Public health services are primarily delivered through 37 local health units across the province. The *Health Protection and Promotion Act* provides the authority for establishing the local health units, which serve populations ranging in size from approximately 37,000 to 2.5 million. Each health unit is governed by a local board of health and administered by a local medical officer of health who reports to the board of health. A board of health may be an autonomous corporation with representation from its constituent municipalities, or it may be part of a regional municipality.

During the 2001/02 fiscal year, the Ministry provided approximately $222 million in transfer payments to local health units, primarily for the delivery of health programs and services mandated by the Ministry. Each local health unit is responsible for the delivery of public health programs and services in accordance with applicable legislation. In addition, local health units deal with emerging public health issues such as *E. coli* outbreaks, West Nile virus, and Severe Acute Respiratory Syndrome (SARS).

AUDIT OBJECTIVES AND SCOPE

The objectives of our audit of the Public Health Activity were to assess whether:

- the Ministry's expectations for public health were being met in a cost-effective manner; and
- the Ministry had adequate processes in place to ensure that local health units were complying with applicable legislation and policies.

Our audit focused primarily on the monitoring and funding of local health units for mandatory programs and services, surveillance, and vaccine-preventable diseases. We also followed up on the current status of recommendations made in our 1997 audit of the Public Health Activity.

In conducting our audit, we reviewed relevant files and administrative policies and procedures, interviewed appropriate ministry staff, reviewed relevant literature, and researched the delivery of public health programs in other jurisdictions. While our audit focused primarily on the Ministry, we also visited a number of local health units to obtain their perspective on their responsibilities and surveyed the remaining local health units about specific activities.

Our audit, which was substantially completed in March 2003, was conducted in accordance with the standards for assurance engagements, encompassing value for money and compliance, established by the Canadian Institute of Chartered Accountants and accordingly included such tests and other procedures as we considered necessary in the circumstances. The criteria used to conclude on our audit objectives were discussed with and agreed to by ministry management and related to systems, policies, and procedures that the Ministry should have in place.

Towards the end of our audit, the Ministry and health service providers were coping with an outbreak of Severe Acute Respiratory Syndrome (SARS). Since our audit fieldwork was substantially completed before this outbreak occurred, our audit did not include work in this area.

While the Ministry's internal audit branch had performed some audit work on the Public Health Activity, this work related to areas outside the scope of our audit and therefore did not affect our audit.

OVERALL AUDIT CONCLUSIONS

The Ministry did not have adequate procedures to ensure that its expectations for public health were being met in a cost-effective manner. The importance of knowing that local health units are meeting the Ministry's expectations for public health is significantly heightened in light of the emergence of new diseases such as West Nile virus and Severe Acute Respiratory Syndrome (SARS). The Ministry must be able to ensure that local health units respond quickly and properly to such diseases while continuing to minimize the health impact of existing diseases and continuing to provide other mandatory public health programs and services.

Many of the issues and concerns raised in this audit were also identified in our 1997 audit of public health. In particular, we were concerned that the Ministry had not analyzed the extent to which individuals received differing levels of public health services or were exposed to greater levels of risk depending on where in Ontario they lived. Specifically, the Ministry had not analyzed whether funding for mandatory health programs and services was based

on assessed need or on a jurisdiction's commitment or capacity to pay for the programs and services. In this regard, 2002 per capita funding for mandatory health programs and services, while averaging $37 for the province, ranged from approximately $23 per capita to $64 per capita among the 37 local health units.

In addition, although the Ministry had introduced a questionnaire whereby local health units self-reported on their performance, the Ministry had conducted virtually no regular assessments of local health units in the last five years to determine whether the health units were complying with the guidelines for mandatory programs and services. Such assessments were recommended in the *Report of the Walkerton Inquiry: The Events of May 2000 and Related Issues* (Part One of the Walkerton Report). We also noted the following:

- None of the 33 local health units reporting information to the Ministry had conducted the necessary inspections of all of the food premises within their jurisdiction. In fact, 13 of the 33 local health units had only conducted the required inspections for less than 50% of the high-risk premises in their jurisdictions. Four local health units did not report their information.
- Seventeen out of 25 local health units that provided information to the Ministry reported that less than half of the high-risk food premises in their jurisdictions had food handlers who had the required training to help recognize and prevent risks associated with food-borne illnesses.
- In 2001, local health units only inspected approximately 60% of Ontario's tobacco vendors to verify compliance with the provisions in the Mandatory Programs and Services Guidelines regarding sales to people under the age of 19. In addition, only 60% of vendors that had been warned or charged for non-compliance within the previous two years received the required semi-annual inspections.
- Local health units reported that, in 2001, only 65% of individuals identified by Citizenship and Immigration Canada as requiring medical surveillance for tuberculosis were successfully contacted and managed in accordance with the Ministry's Tuberculosis Control Protocol.
- Federal guidelines state that immigrants with inactive tuberculosis who are placed on medical surveillance should receive a complete medical examination, including an x-ray, after arriving in Canada. These individuals are required to obtain a letter from a local health unit verifying their compliance with federal requirements. However, according to the Ministry, the federal government only requires that the individuals contact a local health unit. Nine of the 21 local health units that provided letters indicated that they would do so as soon as the individual contacted them, regardless of whether they had had a physical examination or x-ray. Except in rare circumstances, an immigrant cannot be forced to have a physical examination or x-ray. Therefore, issuing letters based on contact alone reduces a local health unit's ability to ensure compliance with federal guidelines and places the community at increased risk.

- The limited information the Ministry had with respect to immunization indicated that at least 14% of children had not had all required vaccinations by age seven.
- The Ministry lacked accurate and timely information on communicable diseases, vaccine-associated adverse events (that is, adverse events such as illnesses occurring as a result of vaccinations), and immunization, limiting its ability to identify and take the necessary action to mitigate potential problems.
- The Ministry had not yet developed a process to ensure that all local health units were conducting risk assessments and taking appropriate action to decrease the incidence of West Nile virus.

DETAILED AUDIT OBSERVATIONS

FUNDING

The *Health Protection and Promotion Act* (Act) requires municipalities within the jurisdiction of a local health unit to cover the costs incurred by the local health unit in fulfilling its legislated responsibilities. The Ministry provides grants to help cover the costs of mandatory health programs and services (the mandatory programs). The Act authorizes the Ministry to develop and publish guidelines for the mandatory programs and requires each board of health to comply with the guidelines.

In our *1997 Annual Report* we had recommended that, "To ensure that funding for all mandatory public health programs is allocated equitably, the Ministry should expand the use of indicators of service costs and of the relative health needs of communities." Allocating funds equitably—that is, based on assessed need—helps ensure that individuals with similar needs have access to similar services, regardless of where they live in the province.

At the time of our 1997 audit, the Ministry had just initiated an "equity funding strategy" that was used then to ensure that any reduction in funding to public health units was applied in a rational manner using indicators of community health needs and service costs. At that time, the cost of the mandatory public health programs and services was shared by the Ministry and municipalities. Depending on the program, the province's share ranged from 40% to 100% of the cost. In 1998, through Local Services Realignment, the funding and responsibility for the delivery of mandatory public health programs and services was transferred to municipalities. Since 1999, the Ministry has generally funded 50% of each local health unit's costs, up to a maximum of 50% of the health unit's locally approved budget for providing the mandatory programs and services detailed in the Ministry's guidelines.

In 2001, the Public Health Branch established a Funding Allocation Formula Working Group "to determine a methodology for allocating provincial grants to boards of health for the delivery of mandatory public health programs and services." In its September 2001

report, the Working Group, which included representatives from the Association of Local Public Health Agencies and the Association of Municipalities of Ontario, stated that "the concept of funding based on demographic and health status is relatively well established in the health sector of other jurisdictions." The Working Group recommended developing a model consisting of three funding components: core (or base), per capita, and needs, noting that "the implementation of an equitable funding model is difficult when there are two funders that operate under different rules." Under the current funding model, the province's contribution is dependent on the locally approved budget.

The Working Group also noted that, traditionally, provincial funding for public health has been allocated on the basis of cost-sharing of the locally approved board of health budget and that "consequently, provincial grants may be based not only on need, but also on local commitment to public health and capacity to pay for services from the municipal tax base." The Working Group noted that in 2000, there was "slightly more than a three-fold difference in per capita funding between the lowest and highest funded boards." In our *1997 Annual Report*, we also had noted that "over time, significant variations in funding have occurred, with per capita funding for some boards being three times the rate of that for other boards."

A recent analysis performed by the Ministry identified that significant variations in per capita funding for the mandatory programs still exist among local health units. While the 2002 average per capita rate for the province was approximately $37, the rate ranged from approximately $23 to $64 among local health units. At the time of our audit, the Ministry had not analyzed whether these variations had resulted in differing levels of services for individuals with similar needs depending on where in Ontario they live. We also noted that public health programs in unorganized territories, which are 100% funded by the province, receive approximately the same amount of funding as they did in 1991 ($3 million). The Ministry has noted that in "most areas of the north, funding for unorganized areas, on a per capita basis, is well below the per capita rate in areas covered by municipalities."

The Ministry also had not defined what constitutes an "eligible expenditure"—in particular, which administrative and overhead costs are eligible—beyond the requirement that eligible expenditures be incurred to comply with the Mandatory Programs and Services Guidelines.

While not required to do so, most of the local health units submitted to the Ministry in their budgets a breakdown by specific mandatory program or service. At year end, local health units are required to submit audited financial statements, but again were not required to provide a breakdown by mandatory program or service. In our current audit, we noted that there were some significant variances in the proportion of local health units' funding allocations spent on particular mandatory programs or services. For example, based on budget submissions for 2002, expenditures by local health units for the Vaccine Preventable Diseases mandatory program ranged from 5% to 21% of each health unit's funding for the mandatory programs. The Ministry had not investigated the reasons for these variances.

Recommendation

To help it meet its objectives for the Public Health Activity, the Ministry should ensure that individuals with similar needs and risks receive a similar level of service regardless of where in the province they live.

To help ensure that provincial funding is allocated on a consistent basis, the Ministry should provide clear guidance on what constitutes an eligible public health expenditure.

Ministry Response

The Ministry notes that service and funding levels across the province are related to the current legislative and funding framework. However, the Ministry will conduct an analysis of the comparative risks and needs in relation to levels of service currently delivered throughout the province. Based on the results of the analysis, the Ministry will consider options, including modification to the legislative and funding framework in order to rectify any inconsistencies in service levels in Ontario.

The Ministry will further clarify definitions of eligible expenses to local health units as part of the roll-out of the new program-budgeting system.

COMPLIANCE WITH LEGISLATION AND GUIDELINES

The Mandatory Health Programs and Services Guidelines (Guidelines), which were last revised in December 1997, consist of three general standards and 14 program standards that set out minimum requirements for the mandatory programs. The general standards—dealing with equal access, health hazard investigation, and program planning and evaluation—outline considerations or activities to be undertaken in planning for the mandatory programs. The program standards—which are grouped under chronic diseases and injuries, family health, and infectious diseases—specify the minimum requirements "for each program in order to contribute to the achievement of stated, province-wide public health goals. These programs translate broad goal directions into objectives and targets and outline the activities that boards of health are required to undertake to achieve the stated objectives." At the time of our audit, we were advised that the Ministry was reviewing six of the program standards.

Program Objectives in the Guidelines

We noted several problems with the program objectives in the Guidelines. First, many of the objectives need to be updated. For instance, the Guidelines refer to the Ministry's 1998 "Determination of Tobacco Vendor Compliance Protocol," yet the Protocol was revised in

2000. In addition, some objectives still refer to a year 2000 target date. We also noted that some program objectives do not have specific targets. For example, one objective under the Prevention of Chronic Diseases program is to increase the proportion of smoke-free homes by 2010; however, the objective does not include a target to be reached. We further noted that, in some instances, the Ministry did not have reliable data that could be used to determine whether boards of health were meeting objectives on a timely basis. For example, the Vaccine Preventable Diseases Program includes an objective to achieve, by the year 2000, coverage rates of 95% for the immunization of children against certain diseases by their second birthday. However, because the Ministry does not gather immunization information for all children by their second birthday, it can only determine whether the objective was met using data provided when children enter a licensed daycare facility or in many cases when children enter school—three years after their second birthday.

Assessment of Compliance

Under the Act, the Minister of Health and Long-Term Care may assess whether local health units are providing or ensuring the provision of health programs and services in accordance with the Guidelines. In addition, Part One of the Walkerton Report, released in January 2002 (the report was the result of the Walkerton Inquiry, established in June 2000 to investigate the water-borne *E. Coli* outbreak in Walkerton, Ontario), recommended that the Ministry conduct random assessments on a regular basis to ensure local health units are complying with the Guidelines. The report also stated that the Ministry should annually track trends in non-compliance in order to assess whether changes are required to the mandatory programs and whether resources require adjustment to ensure full compliance.

Ministry staff informed us that, since 1998, only one assessment of a local health unit had been undertaken and that in March 2003, the Ministry began limited assessments of mandatory program areas at five local health units.

When the Guidelines were revised in 1997, the Ministry estimated that it would take three years to achieve full compliance. In 1998, the Ministry initiated an annual Mandatory Programs Indicator Questionnaire (MPIQ), whereby local health units answered a series of questions related to the Guidelines. The Ministry uses their answers to assess whether program requirements are being met. At the time of our audit, the Ministry was in the process of reviewing the MPIQs covering the year 2001.

We questioned the Ministry's full reliance on the MPIQ as a basis for its assessment, as the MPIQ data consisted solely of local health units' self-reported answers and the Ministry did not have any procedures in place for verifying the reliability of the information reported. In this regard, in 2000, the Mandatory Programs Measurement Working Group, comprising representatives from the Public Health Branch and Ontario's Association of Local Public Health Agencies, recommended that the MPIQ be evaluated for its validity as a tool for assessing compliance with the mandatory programs. At the time of our audit, the recommended evaluation had not been conducted.

Based on its review of the completed MPIQs for the year 2000, the Ministry concluded that local health units were 78% compliant with the Guidelines. This was calculated by averaging the overall compliance rate for each of the MPIQ areas across the 37 local health units. However, we noted that this calculation was not a meaningful measure of compliance and was therefore not an indicator of the actual performance and overall effectiveness of public health programs across the province. Specifically, we noted the following weaknesses in the compliance calculation and the MPIQ itself.

- The Ministry calculated overall compliance without considering the relative size of individual health units (the population served by the largest local health unit is over 60 times that of the smallest health unit).
- Compliance was assessed in absolute, "either/or" terms, rather than taking into account degrees of compliance. For instance, one health unit was about 10% compliant in a mandatory program area while another was 70% compliant, yet both were rated equally non-compliant.
- The MPIQ did not elicit compliance data for all of the mandatory programs and services. For example, the Guidelines include an objective for a coverage rate of 95% for vaccinating children for hepatitis B by the end of grade 7, but the MPIQ did not address hepatitis B vaccination coverage rates.

Some local health units had taken the initiative of using other measurement tools that may warrant consideration by the Ministry. For instance:

- Fourteen of the 37 local health units have chosen to have their organizational and administrative functions—including program planning, implementation, monitoring, and evaluation—measured against the principles and standards that are peer-set by the Ontario Council on Community Health Accreditation. However, the Ministry was not receiving or requesting copies of the accreditation reports from participating health units. We noted that the Mandatory Programs Measurement Working Group also had indicated its support of accreditation as a validation of compliance with the mandatory programs.
- The Ministry and other stakeholder groups have jointly been conducting pilot projects on benchmarking various public health areas such as universal influenza immunization and the inspection of food premises.

The Ministry had not evaluated any of these initiatives to determine whether they effectively measure compliance with the Guidelines or whether they should be expanded to measure compliance across the province.

Full-time Medical Officer of Health Requirement

The *Health Protection and Promotion Act* requires local health units to employ the services of an appropriately trained medical officer of health. Part One of the Walkerton Report recommended that the Act be amended to require boards of health and the Minister to

expeditiously fill any vacant medical-officer-of-health positions with a full-time medical officer of health. In December 2002, the following amendment to the Act received royal assent: "If the position of medical officer of health of a board of health becomes vacant, the board of health and the Minister, acting in concert, shall work expeditiously towards filling the position with a full-time medical officer of health." According to the Ministry, there is a national shortage of physicians with community medicine training to fill vacancies, and as of January 2003, there were eight boards of health without the mandated full-time medical officer of health. While there were individuals acting in the medical-officer-of-health position, according to the Ministry they may not have had all of the required qualifications for the position. At five boards, acting medical officers of health had occupied the position for over three years.

At the end of our audit, the Ministry was advertising to attract potential candidates. We were also advised that the Ministry has identified community medicine as a priority specialty for the Ministry's recruitment, retention, and retraining program.

Recommendation

To help ensure compliance with legislation and the Mandatory Health Programs and Services Guidelines, the Ministry should:

- **establish more valid measures for assessing the performance and overall effectiveness of public health programs and services delivered by local health units;**
- **periodically verify the reliability of the compliance information reported by local health units; and**
- **ensure that every local health unit has a full-time medical officer of health as required by legislation.**

Where local health units are using other measurement tools, such as accreditation, the Ministry should:

- **obtain any resulting reports and analysis; and**
- **assess whether any of these tools should be used by all local health units.**

Ministry Response

The Ministry will re-examine current measurement tools with the aim of implementing improvements to the performance measures.

Subject to funding approvals, the Ministry will undertake an assessment program in order to verify compliance information reported by local health units. In addition to the limited assessments undertaken in 2002/03, the Public Health Branch is currently undertaking an assessment in one local health unit.

The Ministry will continue its efforts to ensure that every local health unit has a full-time medical officer of health through promotion and expansion of the

Medical Officer of Health In Training bursary program and the national advertising campaign, subject to funding approval of the bursary program.

The Ministry will consult with local health units, the Ontario Council on Community Health Accreditation, and other stakeholders on the acceptability of accreditation information as a source of input for the Ministry's assessment of affected local health units.

FOOD SAFETY

The Guidelines state that the goal of the Food Safety program is "to improve the health of the population by reducing the incidence of food-borne illness." The objectives of the program are to ensure that food is prepared, stored, and served in a manner consistent with accepted public health practices and "to stop the sale or distribution of food that is unfit for human consumption by reason of disease, adulteration, impurity or other cause."

Inspections of Food Premises

The Guidelines require that local health units assess all food premises at least annually and determine their risk status (high, medium, or low) based on risk assessment criteria specified in the Ministry's Hazard Analysis Critical Control Point (HACCP) Protocol. Inspections are required at high-risk premises at least once every four months, at medium-risk premises at least once every six months, and at low-risk premises at least once a year. High-risk premises must also have an annual HACCP Protocol audit, which focuses on those steps in the food preparation process that can control or eliminate food safety hazards. Inspections focus on regulatory requirements such as basic sanitation.

In our *1997 Annual Report,* we recommended that the Ministry should determine whether local health units had fully implemented HACCP and take corrective action as necessary. The Ministry replied that it would be setting and monitoring program standards and would take action as appropriate to enforce the standards. In our current audit, we noted that, based on information reported to the Ministry for 2002, about 60% of local health units had completed less than half of the required annual HACCP Protocol audits. We also found that the Ministry had not reviewed the application of the HACCP risk-assessment criteria by the health units and therefore had no assurance that the assessed risk had been assigned to food premises in a consistent manner across the province.

Based on our review of information submitted to the Ministry by 33 of the 37 local health units, we found that no local health units were conducting 100% of the required inspections for premises in their jurisdiction. In fact, in 2002, for food premises that had been assessed as high risk:

- only six of the 33 local health units conducted the required inspections for more than 90% of the premises;

- 14 conducted the required inspections for from 50% to 90% of the premises; and
- 13 conducted the required inspections for less than 50% of the premises.

A similar pattern of inspection coverage had occurred for medium- and low-risk premises.

Recommendation

To help minimize the risk to the public of food-borne illnesses, the Ministry should ensure that local public health units are conducting the required inspections and Hazard Analysis Critical Control Point Protocol audits of food premises to ascertain whether food premises are complying with acceptable public health practices.

Ministry Response

The Ministry will include the food safety mandatory program in the health unit assessment program, subject to funding approval of the assessment program.

Food-handler Training

Another component of ensuring food safety involves the proper training of food handlers. Training assists food handlers in recognizing and preventing risks associated with food-borne illnesses.

In our *1997 Annual Report*, we recommended that the Ministry determine whether local health units had fully implemented food-handler training. In January 1998, the Ministry issued the Food Handler Training Protocol, which specified the circumstances in which a trained food handler must be in food premises at all times. The Guidelines require that local health units ensure that food-handler training courses are provided in accordance with the Protocol to food handlers in high- and medium-risk food premises. Training requirements were to be fully implemented by 2002.

The Ministry does not require the presence of trained food handlers at food premises of any assessed level of risk when fewer than three employees prepare food at the same time. However, the Ministry does not have any evidence that establishments with lower numbers of food handlers are less prone to food-borne illnesses. In comparison, British Columbia has legislated a requirement that all food service establishments have a person trained in food handling on site at all times.

Several local health units indicated that they have had difficulty in requiring food handlers to be appropriately trained. In 2002, 17 out of the 25 local health units that provided information to the Ministry indicated that less than half of the high-risk premises in their jurisdiction had trained food handlers; 91% indicated that less than half of the medium-risk premises had trained food handlers. A number of local health units indicated that legislating these requirements would assist them in ensuring that food handlers are properly trained.

Recommendation

To help minimize the risk to the public of food-borne illnesses, the Ministry should:

- **ensure that public health units are complying with food-handler-training requirements;**
- **assess the risk of not requiring trained food handlers at food premises using fewer than three employees to prepare food; and**
- **determine whether food-handler training should be legislated.**

Ministry Response

The Ministry will continue to monitor local-health-unit compliance with the requirement to ensure the provision of food-handler training. In addition, the Ministry will promote the use of food-handler training programs through local health units and food industry trade organizations.

The Ministry is supportive of having trained food handlers in all high- and medium-risk food premises regardless of the size of the operation.

The Ministry will continue to seek approval for regulatory amendments that would require the presence of a certified food handler in all medium- and high-risk food premises in Ontario.

TOBACCO CONTROL

The Ministry's Chronic Disease Prevention Program, which includes tobacco control, is intended to reduce premature mortality and morbidity from preventable chronic diseases such as stroke, lung cancer, and oral cancer. The *Tobacco Control Act, 1994* was enacted primarily to provide legislative support to efforts to reduce the rate of smoking and to protect Ontarians from second-hand smoke.

The Guidelines' objectives in this regard include: reducing tobacco use by teenagers and adults who smoke daily; increasing smoke-free public places and workplaces; and reducing tobacco sales to people under the age of 19. These objectives specifically state that the proportion of 12-to-19-year-olds who smoke daily was to be reduced to 10% by the year 2005, and the proportion of vendors that sell tobacco to minors (persons under the age of 19) was to be reduced to 10% by the year 2000. Statistics Canada reported that in the 2000/01 fiscal year, about 11.4% of 12-to-19-year-olds in Ontario smoked daily.

The Ontario Tobacco Research Unit (OTRU)—a ministry-funded organization that researches tobacco-related health problems in Ontario—noted that in 2001, 35% of Ontario students reported they were able to purchase tobacco without being asked to provide photo identification, a situation that had not changed since 1995. In December 2002, OTRU noted that progress in restricting access to minors had been good in some

locales but was generally uneven and that compliance was generally not improving. However, information in the 2001 Mandatory Program Indicator Questionnaires (MPIQs) indicated that overall reported compliance in not selling to minors was 87%. While this indicates a relatively high success rate, we noted that the Ministry had not followed up on OTRU's conclusion that compliance was not improving. In 2002, Health Canada commissioned a national evaluation into retailer behaviour towards certain youth-access-to-tobacco restrictions. The results, based on seven major cities in Ontario, indicated that the overall provincial rate of vendor compliance in not selling to minors was approximately 75%.

Inspections and Compliance Checks

Local health units are required to inspect all tobacco vendors at least annually and perform follow-ups to ensure compliance with the *Tobacco Control Act, 1994*. For a sample of vendors, local health units are also required to perform compliance checks, where a test shopper who is 15 to 17 years of age attempts to purchase tobacco. Where inspections or compliance checks discover issues of non-compliance, warnings are issued. If the vendor is found to still be non-compliant on a follow-up visit, the vendor is charged. Charges may result in fines or a prohibition from selling tobacco.

The Ministry communicates its requirements regarding the frequency of inspections and compliance checks through the Guidelines and its tobacco control protocols. However, even though the Ministry revised its Tobacco Vendor Compliance Protocol in 2000 to require most local health units to increase the number of test-shopper compliance checks of tobacco vendors, the Guidelines continue to refer to the 1998 protocol. We noted that, in many instances, local health units did not perform compliance checks for a sufficient number of vendors according to the 2000 protocol.

Based on information submitted to the Ministry on their 2001 MPIQs, local health units' tobacco vendor-inspection activities were not as rigorous as required. Specifically:

- Only 10 of the 36 local health units that provided inspection information to the Ministry indicated that they inspected 100% of their vendors during the year. A total of approximately 40% of tobacco vendors across the province did not receive the annual inspection that is required under the Guidelines.
- Only 60% of the tobacco vendors who were warned of non-compliance or who were charged within the previous two years received the required semi-annual inspections in 2001.

Enforcement

In December 1998, the then-Minister of Health and Long-Term Care appointed an advisory panel of experts to recommend how Ontario could achieve more effective tobacco control results. At the time, vendors charged under the *Tobacco Control Act, 1994* could be

prohibited from selling tobacco for six months or subject to fines under either that Act or the *Provincial Offences Act*.

In its 1999 report, the Expert Panel on the Renewal of the Ontario Tobacco Strategy indicated nine areas that needed to be addressed by the government. These included enforcement resources, fines and penalties for non-compliant vendors, increased smoke-free spaces, and increased tobacco prices. The panel also recommended that the Act "should be amended to make it easier to prosecute vendors, and should be streamlined and clarified in order to prevent senior courts from diluting its intent." In 1999, fines under the *Tobacco Control Act, 1994* were increased. However, no other significant changes were made to the Act.

The Ministry had not followed up with local health units to determine whether the increased fines had had any impact on compliance. Although the Ministry was maintaining a cumulative summary of charges and convictions resulting from violations of the *Tobacco Control Act, 1994*, it did not track trends.

The *Tobacco Control Act, 1994* states that a vendor is automatically prohibited from selling tobacco for six months if the same person is convicted twice within five years of selling tobacco to someone under the age of 19. To assist in obtaining prohibitions of the sale of tobacco when appropriate, the Ministry's 1994 guide to the Act indicates that, if possible, the owner should be charged in addition to the sales clerk. However, 80% of the local health units we surveyed indicated that they encountered problems in effectively enforcing the Act, including difficulty in obtaining a prohibition of the sale of tobacco.

The expert panel also recommended that the government require that indoor public places be 100% smoke free. This coincides with one of the objectives of the mandatory programs, which stipulates that the proportion of smoke-free public places and workplaces be increased to 100% by the year 2005. However, the *Tobacco Control Act, 1994* delegates the responsibility for achieving this objective, in part, to municipalities. The Ontario Tobacco Research Unit concluded in its December 2002 report that this objective is unlikely to be achieved without provincial legislation. Many of the local health units who responded to our survey also indicated their support for provincial legislation to assist in achieving local goals for smoke-free premises and public spaces.

Recommendation

To improve tobacco control in Ontario and thereby help achieve the Ministry's goal of reducing premature mortality and morbidity from preventable chronic diseases, the Ministry should:

- **ensure that local health units work towards the goal of reducing the number of minors having access to tobacco products by conducting the required number of inspections and compliance checks; and**
- **determine whether changes to legislation would assist the Ministry and local health units in better meeting tobacco control objectives.**

Ministry Response

Random assessments of local health units by ministry staff regarding tobacco enforcement were started in March 2003. These assessments will help improve local health units' compliance with program standards (including the number of compliance checks) outlined in the Mandatory Health Programs and Services Guidelines.

The Ontario Tobacco Strategy is in the process of reviewing training needs of tobacco-enforcement staff in health units to further assist with tobacco enforcement and to better ensure compliance with the Mandatory Health Programs and Services Guidelines.

The Public Health Branch will continue to seek approval for a comprehensive tobacco control strategy, including strengthening of the* Tobacco Control Act, 1994*.

TUBERCULOSIS CONTROL

According to the World Health Organization, tuberculosis (TB) affects an estimated one-third of the world's population, mostly in developing countries. Annually, an estimated 8.4 million people are newly infected worldwide, and 1.9 million people die of the disease. In addition, the World Health Organization estimates that 50 million individuals are infected with strains of TB that are resistant to one or more common anti-TB drugs.

Infected individuals with a healthy immune system have only a 10% chance of developing active symptoms of TB. However, once someone develops active TB lung-infection symptoms, that person can spread the disease. People with inactive TB may take medication to help prevent the disease from becoming active.

According to ministry data, the incidence of TB has been declining in Ontario, from 6.8 per 100,000 people in 1997 to 5.8 per 100,000 people in 2001. One objective of the TB Control mandatory program is to reduce the annual incidence rate of active TB to 3.5 per 100,000 people by the year 2005.

Medical Surveillance

Most of the cases of TB in Ontario occur among immigrants living in major urban areas. Individuals are at the highest risk of developing active TB within the first five years of their arrival in Canada. The foreign-born active and relapsed cases of TB in Ontario in 2001 accounted for over 80% of all active and relapsed cases.

All potential immigrants and some visitors to Canada are required to undergo a clinical examination. For individuals 11 years of age or older, this includes a chest x-ray. Individuals found to have active TB are not permitted to immigrate to Canada until they have completed treatment. Individuals with inactive TB lung infection are required to report to

their local public health unit for medical follow-up within 30 days of arriving in Canada. This is done to ensure that their TB has not become active and to determine whether medical treatment is appropriate. The Ministry provides local health units with information from Citizenship and Immigration Canada concerning these individuals.

National guidelines for the investigation and follow-up of immigrants with inactive TB who are referred for medical surveillance are included in the Canadian TB Standards and state that these individuals should receive at least one complete medical evaluation. Important components of this evaluation include obtaining a comprehensive patient history and performing a physical examination and laboratory tests, including an x-ray. Such an evaluation is consistent with the requirements in the Ministry's Tuberculosis Control Protocol, which provides guidance to local health units. The national guidelines also state that individuals who are placed under medical surveillance are required to provide to Citizenship and Immigration Canada evidence of compliance with the medical surveillance requirement from the local health unit to have their medical surveillance terms and conditions removed. According to Public Health Branch staff, the Citizenship and Immigration Canada requirement regarding evidence of compliance is met as soon as an individual contacts a local health unit. However, except in rare circumstances, an individual cannot be forced by the local health unit to have a physical examination or x-ray.

We were informed that the Ministry does not keep track of the number of individuals that Citizenship and Immigration Canada has referred for medical surveillance. However, based on information reported by the local health units to the Ministry, we calculated that there were about 6,100 such individuals in 2001. Of the 21 local health units we surveyed that did issue the required evidence-of-compliance letters for Citizenship and Immigration Canada, nine indicated that they would provide the letters once individuals contacted them, in some cases even if only by telephone. Despite the requirement that health units continue with surveillance of those individuals, once a letter is provided an individual may choose not to have a physical examination or x-ray. The other 12 local health units indicated that they would provide the letter only after the individual had had a physical examination or x-ray. The national guidelines note that "non-compliance with prescribed treatment for inactive TB may be problematic for those on medical surveillance and has been significantly associated with the development of TB disease in refugees."

In our *1997 Annual Report*, we recommended that the Ministry should improve its ability to track individuals under surveillance for inactive TB. At that time we noted that the Public Health Branch had indicated that approximately 35% of the individuals who were required to undergo medical surveillance for inactive TB by boards of health, including notifying the appropriate authorities of address changes, could not be followed up on due to missing or incorrect information such as a wrong address provided. Ministry staff also indicated at that time that Public Health Branch staff may be able to use OHIP's Registered Persons Data Base to obtain the necessary information.

Information reported by local health units to the Ministry for the 2001 year indicated that only 65% of referred individuals were successfully contacted and managed by local health units in accordance with the Ministry's Tuberculosis Control Protocol. We were advised that local health units were required to inform the Ministry of those individuals who could not be contacted. However, the Ministry had not determined whether local health units were fully complying with this requirement. Procedures had also not been implemented to utilize the Ontario Health Insurance Program's (OHIP's) Registered Persons Data Base to attempt to locate individuals who had not reported to a local health unit or had not undergone a physical examination and x-ray.

Recommendation

To help reduce the incidence of active tuberculosis, the Ministry should enhance the effectiveness of medical surveillance by:

- **ensuring that local health units consistently and appropriately complete the medical surveillance of individuals with inactive tuberculosis, including ensuring that they have undergone a physical examination and x-ray; and**
- **using all available sources of information, including the Ontario Health Insurance Program's Registered Persons Data Base, to track those individuals under medical surveillance who were not successfully contacted and managed by local health units.**

Ministry Response

The Ministry will confirm with local health units that, notwithstanding Citizenship and Immigration Canada's limited requirement for persons on medical surveillance (that they make contact with the local public health authority), the follow-up by local health units in Ontario for persons on medical surveillance must be completed as outlined in the Tuberculosis Control Protocol (January 1998). This follow-up by local health units would require, as a minimum, that the person on medical surveillance has undergone a follow-up medical examination and chest x-ray in Canada.

The Ministry has put processes in place to improve the effectiveness of medical surveillance. The Ministry will continue to work with Citizenship and Immigration Canada and the Ministry's Registration and Claims Branch to determine how their respective data can be shared with local public health units.

Contact Tracing

The Ministry's Tuberculosis Control Protocol requires that local health units locate and screen (trace) individuals who have been in contact with a person with active TB, in order to ensure that such individuals do not have active TB and to determine if they should be receiving treatment.

In our 1997 audit, we recommended that the Public Health Branch obtain additional information on the results of TB contact tracing by boards of health. The Ministry responded that a new information system for tracking reportable diseases was in early development and that additional information on individuals who have come in contact with a person with active TB would be included in the system. At the time of our current audit, such a system had not been put in place, and the Ministry's information on the extent and results of contact tracing was still limited. In addition, ministry and local health unit staff informed us that, except under rare circumstances, they generally cannot force individuals who have come in contact with a person with active TB to be screened. We were informed that the Ministry is considering a federal/provincial/territorial initiative to implement an automated public health information system that would support public health case management. Such a system would also prove useful in cases of other communicable diseases.

Recommendation

To help monitor the effectiveness of tuberculosis control in reducing the risk of spreading active tuberculosis, the Ministry should obtain more complete information on the results of tuberculosis contact tracing by local health units.

Ministry Response

The Ministry will continue to work with Health Canada, other provinces and territories, and other stakeholders to implement the integrated Public Health Information System for the surveillance of communicable diseases. This system, when implemented, should enable the Ministry to obtain information on the results of contact tracing.

Treatment

The Tuberculosis Control mandatory program requires that local health units monitor patient adherence with prescribed drug regimens, including monitoring for the completion of therapy in accordance with the Ministry's Tuberculosis Control Protocol. A patient's failure to comply with the drug regimens may result in a recurrence of TB that is drug resistant.

In our 1997 audit, we noted that the Ministry was reviewing the need for directly observed therapy (DOT), whereby a trained individual directly observes the patient taking the required anti-TB medication. The World Health Organization recommends DOT. In 1998, the Ministry issued the Tuberculosis Control Protocol, which stated that DOT should be arranged for all patients with respiratory TB, unless their assessment indicated they are highly likely to comply with therapy. This is consistent with national standards. However, information reported by local health units to the Ministry for 2001 indicated that only 66% of patients requiring DOT actually underwent any direct observation.

Recommendation

To help prevent the spread of drug-resistant tuberculosis, the Ministry should develop and implement strategies to better ensure that all patients actually complete the required treatment.

Ministry Response

The Ministry will continue to monitor local health unit activity with regard to the number of patients treated with Directly Observed Therapy. The Ministry will continue to review treatment completion data and will work with local health units to develop strategies to improve the treatment completion rate.

VACCINE-PREVENTABLE DISEASES

The development of vaccines and immunization programs has almost eliminated some diseases and drastically reduced the impact of others. As international travel has increased, immunization and vaccination programs have been implemented on a wide scale to help protect individuals from contracting diseases, such as measles, from infected travellers from foreign countries where the diseases are still common.

The goal of the Ministry's Vaccine Preventable Disease mandatory program is "to reduce the incidence of vaccine preventable diseases." Immunization is widely considered to be a cost-effective health intervention for achieving this goal, leading to improved health, reduced suffering, and fewer premature deaths. Ontario's Association of Local Public Health Agencies (ALPHA) has stated that "effective vaccination programs have repeatedly proved to be one of the most cost-beneficial components of the health care system." The Ministry provides certain vaccines free of charge to local health units and physicians. In the 2002/03 fiscal year, the Ministry spent $67.7 million on vaccines.

Vaccines Covered

The range of immunizing agents available continues to expand as new vaccines are licensed or as currently available vaccines are improved or modified. The Ministry currently covers the cost of routine vaccinations against measles, mumps, rubella, diphtheria, tetanus, polio, pertussis, haemophilus influenza type B, influenza, and hepatitis B.

The National Advisory Committee on Immunization, an expert advisory board to Health Canada, makes recommendations on the use of vaccines in Canada. It recommends routine vaccination against varicella (chickenpox) and certain types of bacterial infections that can cause serious illnesses such as pneumococcal and meningococcal disease (meningitis). Some provinces in Canada offer these vaccines to their population at no cost. For example, British Columbia and Alberta offer the meningococcal vaccine at no cost, and PEI and Alberta offer the chickenpox vaccine at no cost. In Ontario at the time of our audit, the chickenpox vaccine was not being provided on a routine basis, the pneumococcal vaccine was being

covered only for high-risk persons, including persons over 65 years old, and meningococcal vaccine was being provided only to individuals in close contact with individuals who have a vaccine-preventable strain of the disease. We noted that ALPHA has stated that "by failing to fund new licensed and effective vaccines, the province is displaying an incomplete commitment to the goal of the program that its own Ministry of Health has set."

Recommendation

To help reduce the incidence of vaccine-preventable diseases, the Ministry should ensure that other vaccines recommended by the National Advisory Committee on Immunization are added to Ontario's routine immunization program unless sound reasons exist for not including the recommended vaccines.

Ministry Response

The Ministry will continue to review all new vaccines recommended by the National Advisory Committee on Immunization and to develop and propose implementation options (including costing) for the introduction of these vaccines in Ontario.

Immunization

IMMUNIZATION OF CHILDREN

The immunization of children is primarily governed by the *Immunization of School Pupils Act*, the *Day Nurseries Act*, and the Guidelines. The *Immunization of School Pupils Act* and the *Day Nurseries Act* require that all school-aged children and children attending licensed child care facilities in Ontario be vaccinated against certain diseases unless they have an exemption for medical reasons, statement of conscience, or religious beliefs.

The requirements of the Guidelines and legislation vary with respect to the information about children to be provided to local health units. For example:

- The Guidelines require that a record of each child's vaccination status or exemption be on file with the local health unit. If no record is on file, local medical officers of health can have the child suspended from school.
- Although not required to under the *Immunization of School Pupils Act*, local health units do obtain the vaccination status of children regarding pertussis (whooping cough) and haemophilus influenza type B—vaccinations that are required for children entering a day nursery.
- *The Education Act* requires that public schools provide the local health unit with information on the students enrolled at the school, including the student's name, address, date of birth, and parent's/guardian's name.

Local health units enter the immunization status of children into the local Immunization Records Information System (IRIS), for local and provincial tracking. However, the Ministry cannot access immunization information on children who were entered without an OHIP number and must rely on reports from local health units for this information. While local health units have the right to collect OHIP numbers, schools are not required to provide them. As a result, it is difficult for local health units to ensure that the records of children entered without a number are not duplicated (for example, if the children change schools or local health units). IRIS information may also be incomplete for pre-school children not in licensed child care facilities and for children in private schools, since the *Education Act* does not require private schools to provide the local health unit with a list of students. In these cases, it is up to parents to contact the health unit with information on their children. Consequently, the IRIS does not have sufficient data to provide the Ministry with a complete picture of the immunization status of children, and therefore the Ministry relies on the information self-reported by local health units through the MPIQ process or provided in response to a ministry request. The 2001 MPIQs indicated that at least 14% of children entered in IRIS had not had all required immunizations by age seven.

IMMUNIZATION REGISTRY

Immunization registries are confidential computerized information systems in which vaccination data about individuals are stored. The registries consolidate all the vaccination records from an individual's health care providers, identify individuals who are due or late for vaccinations, generate reminder notices to ensure that individuals are vaccinated appropriately, and identify service providers or geographic areas with low vaccination coverage.

In Ontario, vaccines are primarily administered by doctors but may also be administered through various other means, including public health clinics. However, physicians and other administering groups are not required to report to local health units on vaccines administered either at the time of immunization or at any later time. Instead, as already mentioned, Ontario's current legislation places the onus on parents to report the immunization status of their children to local health units. Since parents generally do not report immunization results until a child enters a licensed day care or school, immunization information for pre-school children not in licensed facilities is incomplete at best. In addition, because the information is generally reported a number of years after the child was vaccinated, children's records may be inaccurate.

In our *1997 Annual Report*, we recommended that the Ministry assess the feasibility of modifying existing systems or developing appropriate ones to capture necessary immunization information. The Ministry responded that it was working on improving monitoring systems to enable better assessment of immunization coverage in the population. However, no such system had been implemented at the time of this audit.

We were informed that the Ministry was considering a federal/provincial/territorial initiative to implement an automated public health information system that would support public

health case management and the sharing of communicable disease surveillance and immunization information. The Ministry recognized that this system would need to be modified to provide all of the information that the Ministry needs.

Recommendation

To help achieve its goal of reducing the incidence of vaccine-preventable diseases, the Ministry should more effectively monitor the immunization status of children to ensure that all school-aged children have had the required vaccinations. To this end, the Ministry should ensure that it has an immunization registry that provides complete, accurate, and timely immunization information.

Ministry Response

The Ministry supports the National Immunization Strategy by working with the Canadian Immunization Registry Network to assist in the development of a core data set and standards. In addition, the Ministry supports efforts to develop an immunization registry that effectively monitors the immunization status of children in Ontario.

Influenza Vaccine

Prior to the 2000/01 fiscal year, only high-risk individuals, such as seniors and health care workers, were eligible to receive the influenza vaccine at no charge. Since then, the Ministry has provided the influenza vaccine free to all Ontarians through its universal influenza immunization program.

The immunization program's main objectives are to decrease the number of cases and severity of influenza and to reduce the impact of influenza on emergency room visits and other areas of the health care system. However, since the Ministry lacks data on the number of vaccines actually administered, it could only estimate that 26% to 45% of Ontarians were immunized against influenza during each of the 2000/01 and 2001/02 influenza seasons. (The variation in the estimate is due to differences in the estimating methods used and assumptions made.)

The Centers for Disease Control and Prevention—a U.S. government agency—states that the "flu vaccine is the single most effective means for preventing infection with the flu virus and the complications associated with flu." Yet Ontario is the only jurisdiction in North America to have a universal influenza immunization program. Therefore, assessing whether the influenza vaccine is meeting all program objectives is especially relevant. Such an evaluation is also important because the cost per dose of the influenza vaccine has almost doubled since the program started and Ontario spent $19.6 million on the vaccine in the 2002/03 fiscal year. In the 2000/01 fiscal year, the Ministry established a committee—with

representation from the Institute of Clinical Evaluative Sciences, the Public Health Research, Education and Development group, and local health units—to provide advice regarding the evaluation activities that could be conducted. The Ministry noted in this regard that, since influenza seasons vary in severity, a multi-year outcome evaluation is required.

While various stakeholders have examined the delivery of the program, as of March 2003—the third year of the program—the Ministry had not evaluated whether, as a result of the program, the number of cases and the severity of influenza had decreased and the impact of influenza on emergency room visits and other areas of the health care system had been reduced.

Recommendation

To help determine the effectiveness of the universal influenza immunization program, the Ministry should evaluate whether the program is meeting its objectives of decreasing the number of cases and severity of influenza and reducing the impact of influenza on emergency room visits and other areas of the health care system.

Ministry Response

There are plans by the Ministry to reconvene the Universal Influenza Immunization Program Evaluation Planning Group to provide advice regarding the evaluation activities that could be conducted in the long term using cumulative data.

Vaccine Wastage

The Ontario Government Pharmacy and Medical Supply Service (OGPMSS) buys vaccines and distributes them free of charge to local health units, who may retain some for their own programs and distribute the rest to doctors and other vaccine-administering groups such as health care facilities. In Toronto, doctors, as well as other administering groups, receive their vaccines directly from the OGPMSS.

Although a certain amount of vaccine wastage, mishandling, and over-ordering is inherent to any vaccine distribution process, one objective of the Vaccine Preventable Diseases mandatory program is to minimize wastage of provincially funded vaccines to 5% or less. The Guidelines require that local health units optimize vaccine use by following the Ministry's Vaccine Distribution, Storage and Handling Protocol, which focuses on ensuring vaccine potency and reducing spoilage.

In order for the Ministry to monitor vaccine use and wastage, it requires complete and accurate information on vaccines distributed, administered, returned, and wasted due to expiration or spoilage. The OGPMSS distributes vaccines on the basis of orders received

from local health units and Toronto doctors and tracks the quantities distributed. If an order size seems unusual, the OGPMSS may check it against past orders and may ask for clarification. The OGPMSS also requires that unused or spoiled vaccines be returned.

Local health units and Toronto doctors are requested to complete a vaccine return record indicating the reason the vaccine is being returned and, in the case of local health units, whether the vaccine can be redistributed. Returned vaccines may be redistributed if they were properly stored and have not expired. All returns from doctors are considered wastage, because the vaccine may have spoiled due to improper storage.

However, although the Ministry has information on vaccines distributed and some information on vaccines returned, information is not available on the amount of vaccine actually administered to patients. Without this information, the Ministry is unable to accurately determine the overall amount of vaccine wasted and the possible reasons why.

We note that OGPMSS does report on vaccine wastage using the information available to it—it reported wastage of about 9% of the vaccines distributed to local health units and of less than 1% of those distributed to Toronto doctors in 2002. However, this reporting is incomplete because it excludes returns from doctors that are not accompanied by a return record—and we were informed that doctors often do not complete the return records or may otherwise dispose of the vaccine. In addition, while the OGPMSS's tracking system can produce wastage reports by individual local health unit, it is unable to produce reports on wastage by individual Toronto doctor, limiting the Ministry's ability to determine the extent of wasted vaccines and to take appropriate action.

Recommendation

To help limit vaccine wastage, the Ministry should obtain accurate and complete information about vaccine wastage and take appropriate action to reduce wastage.

Ministry Response

The Ministry's Public Health Branch is in discussions with the Ontario Government Pharmacy and Medical Supply Service on this matter. The two will work together to streamline and improve the reporting and tracking of vaccines distributed, used, and wasted. The Ministry will remind doctors about the importance of completing and returning records for accounting purposes and of reducing vaccine wastage.

WEST NILE VIRUS CONTROL

West Nile virus (WNv) was first confirmed in North America in 1999 and in Ontario in 2001. The first human cases in Ontario occurred in the summer of 2002. WNv is carried by mosquitoes and affects birds and mammals, including people. Studies indicate that most

persons bitten by an infected mosquito will have no symptoms; however, approximately 20% of those infected will develop a mild illness (for example, West Nile fever), and 1% develop a serious illness. During the 2002/03 fiscal year, the Ministry funded local health units with approximately $1.8 million for WNv activities.

Since each of the 37 local health units in Ontario has a high degree of autonomy in protecting the health of its community, there exists the possibility of many different responses to WNv. However, given that WNv is a provincial issue, in that WNv can spread across the province, there is a need for some consistency in responses. The Ministry has provided guidance to local health units, including the following:

- In August 2000, the Ministry sent local health units a document that addressed the potential arrival of WNv in Ontario. The document described surveillance plans (for example, testing birds, mammals—including humans—and mosquitoes for WNv) and prevention, response, and control issues. Subsequent updated documents were sent to local health units in May 2001 and February 2002 and included the importance of public education to help reduce mosquito-breeding areas.
- On March 22, 2003, the Ministry announced a seven-point action plan to combat WNv. This action plan included expanding laboratory services in Ontario to test for WNv, providing funding to local health units for insecticides, and enhancing surveillance by making WNv a reportable disease.
- On March 27, 2003, the Ministry sent local health units the WNv Preparedness and Prevention Plan for Ontario 2003. This was the "field guide" to the seven-point action plan and provided the "planning basis for an Ontario approach to the prevention and control of West Nile virus across the province by the health units." While this Plan covered a wide range of areas, it did not state when local health units should consider the use of insecticides. Instead, the Plan stated that, prior to using insecticides, local health units are required to conduct their own risk assessments, which should include factors such as community attitudes towards the risks posed by WNv versus the likely benefits and risks of using insecticides.

Notwithstanding this ministry guidance, most of the 37 local health units had to conduct their own research to determine best practices for when to use insecticides. In fact, many of the local health units we surveyed in April 2003 indicated that additional and more timely guidance on when to use insecticides was needed, and in 2002 none of the local health units carried out any insecticiding at all.

Effective May 31, 2003, the Control of West Nile Virus regulation was made under the *Health Protection and Promotion Act*, requiring local medical officers of health to conduct risk assessments in accordance with the West Nile Virus Preparedness and Prevention Plan for Ontario 2003 (which was revised to reflect the new regulation). Local medical officers of health may give notice to their respective municipalities of any action required. In addition, the regulation provides guidance to local medical officers of health on insecticide use.

As of May 1, 2003, West Nile virus illnesses became a reportable disease, whereby physicians are required to report the specific diagnosis of WNv to the local health unit. According to the Ministry, the initial intent was to then have the cases recorded on the Ministry's Reportable Diseases Information System (RDIS). Previously, WNv was reportable on RDIS only as a cause of viral encephalitis/meningitis, which could also be caused by other viruses. However, as of May 2003, there was still no electronic system in place to enable more timely reporting of all cases of WNv to the Public Health Branch, though as an interim step, the Ministry has requested local health units to manually report information on all probable and confirmed human cases of WNv.

Recommendation

To facilitate an effective response to West Nile virus by local health units, the Ministry should ensure that:

- **local health units comply with the Control of West Nile virus regulation and other guidance provided by the Ministry, including conducting risk assessments;**
- **local health units carry out West Nile virus interventions in a cost-effective manner based on the results of local risk assessments; and**
- **there is an electronic system in place to record and report all cases of the West Nile virus on a timely basis.**

Ministry Response

The Ministry will ensure compliance with the Control of West Nile virus regulation by:

- ***reviewing board-of-health budget submissions for West Nile virus prevention and control;***
- ***holding weekly teleconferences with local health units; and***
- ***requiring post-season report-backs from boards of health.***

With regard to the cost effectiveness of interventions by local health units at the provincial level, the Ministry will also flag cost-effectiveness issues that will require working with Health Canada and the Ministry of the Environment.

The Ministry is implementing the integrated Public Health Information System for all communicable diseases, including West Nile virus; however, the automated application will not be available until next year's West Nile virus season. In addition, the Ministry has developed a process for electronic data transfer of laboratory test results of human West Nile virus testing to the Ministry, local health units, and Canadian Blood Services. This process will be operating shortly.

INFORMATION SYSTEMS

Public Health Information Strategy

In October 2000, the Ministry, in conjunction with a consulting firm, prepared a Public Health Information and Information Technology Strategic Plan. The Plan presented an overall information technology strategy for public health. However, at the time of our audit it had generally not been implemented.

The Plan also identified a large number of systems that have been developed independently among the 37 local health units, primarily in areas where ministry-supported systems were inadequate or non-existent. The Plan noted that the sharing of information between the local health units and the Ministry was limited and that "current legislation and technology infrastructure limits sharing between the health units themselves."

The development of independent systems is a concern, as it could hinder the integration of public health information across the province, possibly resulting in the loss of timely, important information needed for public health interventions and for prevention activities. It is also a concern because of the duplication of effort, costs, and time associated with independently developed information systems.

Surveillance Systems

Health surveillance is the ongoing collection, analysis, and interpretation of information that can be used to plan and manage efforts to control diseases. This includes information that assists in controlling outbreaks, making informed resource allocation decisions, and developing or changing public health policies and programs to make them more effective. Currently, the Public Health Branch supports two surveillance systems: the Reportable Diseases Information System (RDIS)—for communicable diseases and vaccine-associated adverse events (such as illnesses occurring as a result of vaccination)—and the Immunization Records Information System (IRIS) for immunization.

In our *1997 Annual Report* we noted that the Ministry indicated that it planned to replace RDIS with an improved system. However, this has not happened, even though the Ministry's October 2000 Strategic Plan noted that RDIS "was developed in the late 1980s with technology that today is extremely outdated, proprietary, and very costly to maintain and support." It further stated that, "one public health role is to analyze health surveillance data to create public health policy and to prioritize and amend public health programs. Much of the information required to provide this analysis is either unavailable or of questionable quality."

The only information a local health unit can access on a timely basis is information pertaining to its own jurisdiction. This may limit a health unit's ability to manage fast-spreading outbreaks that may have occurred in other jurisdictions in Ontario. In addition, because local health units generally send communicable diseases data to the Ministry only on a weekly basis, cross-jurisdiction information may not be readily available at the Ministry

on a timely basis. Also, if local health units are behind in entering data into the systems, the information at the Ministry may be incomplete or inaccurate.

As mentioned previously, we were informed that the Ministry was considering a federal/provincial/territorial initiative to implement an automated public health information system that would support public health case management and the sharing of communicable disease surveillance and immunization information. We were also informed that there were plans to pilot this system in Ontario.

In seeking improvements in its surveillance systems, the Ministry in 2002 participated in a health surveillance project as part of the Network for Health Surveillance in Canada initiatives—a collaborative federal/provincial/territorial effort to build the capacity for specific types of health surveillance at local, provincial, and national levels by, for example, developing information systems to support public health practice and health surveillance. The Network's Communicable Disease Surveillance Sub-Group, which "is developing a long-term strategy for the surveillance of communicable diseases," has also been focusing on developing data standards and data definitions for information collected on communicable diseases, immunization, and vaccine-associated adverse events.

In assessing Ontario's status as part of the health surveillance project, problems were noted with both RDIS and IRIS. For example, it was noted in the project that changes to data in both systems were not being tracked, making it difficult to know what changes had occurred, who had made the changes, and when the changes had occurred. In addition, many local health units were not collecting certain types of data (for example, laboratory slips and school lists) electronically and had to manually enter the data into the information systems.

Recommendation

To help ensure that timely, consistent, and integrated information is available to deliver public health services across the province, the Ministry should implement, either in conjunction with the federal/provincial/territorial initiative to implement an automated public health information system or independently, an adequate public health surveillance system for communicable diseases and immunization.

Ministry Response

The Ministry is proceeding to implement a province-wide, integrated Public Health Information System for the purpose of surveillance, case management, and reporting of communicable diseases in Ontario. This information system is available to all federal, provincial, and territorial jurisdictions through the Canadian Integrated Public Health Surveillance Collaborative.