To: Mayor and Members
Board of Health

From: Elizabeth Richardson, MD, MHSc, FRCPC
Medical Officer of Health
Public Health Services

Date: February 13, 2007

Re: Control of Infectious Disease Program (BOH07007) (City Wide)

Council Direction:
This report is provided in keeping with the Board of Health policy on communication between the Medical Officer of Health and the Board of Health, as outlined in Report PH06038.

Information:
Overview
Infectious diseases are illnesses caused by living organisms or the toxins they produce. They are often spread directly from an infectious person, animal or environmental source. Sometimes spread occurs indirectly by contaminated animals or objects. Under Ontario’s Mandatory Health Programs and Services Guidelines (MHPSG), the Control of Infectious Disease Program lays out the roles and responsibilities of local Boards of Health and their staff.

Ontario's Health Protection and Promotion Act (HPPA) identifies 55 reportable communicable diseases that must be reported to the local Medical Officer of Health by health care professionals, hospitals, laboratories and schools.

Control of Infectious Diseases
MHPSG Program Goals:
Infectious diseases will be reduced or eliminated by reducing the incidence of infectious diseases of public health importance.

Transmission of infectious diseases in institutions (acute care hospitals and long term care homes) will be reduced.

MHPSG Program Objectives:
To reduce morbidity and mortality associated with infectious diseases.
To reduce morbidity and mortality associated with outbreaks of infectious disease in acute care and long term care homes as well as in declared community outbreaks.

**Staff Complement & Scope of Work:**

The Infectious Disease (ID) Program has 1 program manager, 1.5 program secretaries, 4.5 FTE public health nurses, and 4 FTE public health inspectors.

The work of the Infectious Disease Program is organized around 3 areas: reportable disease investigations, outbreak management and infection control in institutions.

**Reportable Disease Investigations**

City of Hamilton Public Health Services (PHS) receives approximately 2500 such reports annually, of which roughly 1200 fall within the work of the ID program. For each report, PHS staff follow this general outline:

- Receive reports of reportable and communicable diseases, apply provincial case definitions and initiate investigations where case definition is met, using program disease specific policies and procedures
- For each reported case, call the ordering physician as well as the client to collect information that will inform the investigation regarding possible cause or source of infection and to determine if anyone else is at risk of acquiring the infection so prevention and control measures can be implemented
- The interviews with the individual and the doctor are designed to:
  (a) collect information on signs and symptoms and confirm that effective treatment has been provided; if not, advise case person and physician about effective treatment
  (b) gather information about case behaviour and exposures that may identify the source or cause of infection
  (c) assess the period of communicability where others may have been at risk, and incubation period which may confirm potential exposures as the source of infection
  (d) create the opportunity for staff to provide health teaching about the disease, measures to prevent further spread, and to identify contacts where necessary that may require prophylaxis to prevent infection or follow-up to determine if these contacts have become infected
- After regular working hours and on weekends, the ID Program provides 24/7 response through a staff and manager on call system. In 2006, 259 calls were responded to after hours and on weekends. In addition, some cases require evening or weekend work to complete the investigation in a timely way. This is especially the case in outbreak investigation.
- All the case and contact management information obtained from various sources on each reported disease and incident is entered into the provincial integrated public health information system (iPHIS) by staff from the Surveillance Unit (SU) and ID teams and is accessible by the Public Health Division of the MOHLTC.
• iPHIS is compliant with the requirements under the Personal Health Information Protection Act (PHIPA).

• In addition, ID program staff provide consultations through the ID intake duty line. Calls from physicians, schools, citizens, and others are logged in an electronic database which captures the scope and type of call and issue. In 2006, 1,159 calls were received and callers provided information by PHS staff. Information Report BOH07008, “Communicable Disease and Health Hazard Investigations Quarterly Report”, provides the numbers of reportable diseases for 2005 and 2006.

Outbreak Management
The MHPSPG require that boards of health provide appropriate response to outbreaks. There is no single definition of outbreak for all reportable diseases. The highest-profile outbreaks are typically those with a point source (e.g. everyone who ate at a banquet became sick) or clear exposure (e.g. many people who were visiting this facility became sick), however, as is the nature of outbreak investigations, PHS usually receives notification after people have already been exposed, and often after all those who are going to be sick have already become ill.

In other situations an investigation is launched because of an increase in the number of cases above numbers expected for the population. Surveillance systems, particularly the work done by the SU within PHS, detects these increases. Once an increase is detected, an investigation commences to identify whether this is a true increase or a false alarm. Where a true increase is suspected, further investigation is needed to identify the source and, in the best-case scenario, trigger interventions that prevent further cases of illness or reduce severity of illness.

In addition, ID program staff receive reports of possible food borne illness from individuals in the community as well as reports of respiratory and food borne illness in institutions such as acute care hospitals and long term care homes. Institutional respiratory illness outbreaks are verified by public health staff working with staff of the affected institution. In the event that evidence from surveillance and initial investigations suggests a community outbreak, ID staff in consultation with the office of the Medical Officer of Health, convene an outbreak response team to determine the scope of the event and to manage the ongoing outbreak investigation. Information Report BOH07008 contains details of the outbreaks declared in 2006.

Infection Control in Institutions
The board of health is required to ensure appropriate input to infection control programs in hospitals located within the health unit boundaries. This standard is met by having public health representation on the Hamilton Infection Prevention and Control Committee (HIPCC). The ID Program Manager is a member of this committee which includes infection control practitioners from hospitals, Long Term Care Homes (LTCH) representatives, a Community Care Access (CCAC) representative, and family practice physicians.

The ID Manager is also a member of the Central South Infection Control Network (CSICN) Steering Committee for the Local Health Integrated Network (LHIN 4). In this
role, PHS staff represent the 5 health units within LHIN 4 in this MOHLTC-funded Regional Infection Control Network (RICN). This has helped enhance collaboration on infection control between hospitals, nursing homes and other health care organizations.

In October 2006, the Hospital Liaison Pilot Project was initiated. This partnership between PHS and Hamilton Health Sciences places four public health staff on site to collect information on persons in hospital with a reportable disease. By working together with the hospitals, PHS hopes to obtain more timely and detailed information and to deepen collaboration with hospital staff as part of pandemic preparedness. This will be beneficial in an influenza pandemic when it occurs.

The MHPSG also mandate that the board of health shall ensure that infection control programs are in place in all nursing homes. Individuals who reside in nursing homes are more vulnerable to infectious diseases due to their age, living in close quarters, and in many cases, underlying medical conditions. ID program staff are assigned to each of the 29 homes in Hamilton and their work within these facilities includes:

- representation on infection control committees
- ongoing consultation about a surveillance program to include collection, analysis and appropriate management of nosocomial infections (infections spread within the facility)
- support for the development and revision of infection control policies
- informing the facility about required reporting of designated communicable diseases and outbreaks of diseases as per the HPPA
- annual promotion of the influenza vaccination to staff and residents; collecting stats on flu immunization from each facility and forwarding to MOHLTC
- ensuring the provision of annual in-service education for staff on infectious diseases (An education day was organized on November 2, 2006)

Conclusion:

Infectious diseases remain an important cause of both morbidity and mortality globally as well as locally. Infectious diseases are an ongoing challenge to human health as new organisms emerge and old ones become more virulent. Locally, PHS works with hospitals and nursing homes, physicians and the public, to reduce the burden of illness and the number of cases from infectious disease.

After SARS and the many reports that followed SARS, there is an expectation that some of the roles of boards of health in the area of control of infectious disease may be strengthened. To meet these challenges and the public’s high expectations borne of intensified media attention to infectious disease, ID staff are involved in continuing professional development and program specific courses to improve and enhance skills in the control of infectious diseases.

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