

CHAPTER 4: DISEASES SPREAD BY CLOSE PERSONAL CONTACT

Highlights

- In Peel, invasive meningococcal disease is most common among children aged less than one year, followed by those aged 1 to 4 years and those 15 to 19 years of age.
- A vaccine for meningococcal type C disease was added to the recommended schedule of routine childhood immunizations as of January 1, 2005.
- In Peel, the number of reported invasive group A streptococcal infections (GAS) has been decreasing since 2002 after an upward trend from 1995 to 2001. The increase from 1995 to 2001 is partially explained by the more inclusive case definition that has been used since 1996. Two outbreaks in 2001 also raised incidence rates in that year.
- Invasive group A streptococcal infection is most common in children less than one year of age and those over 60 years of age.
- The incidence of tuberculosis was generally stable in Peel from 1995 to 2004. It was found to be more prevalent in those aged 60 years and older.

INTRODUCTION

Diseases spread by close personal contact are most often passed between family members or people who share living arrangements. Transmission also occurs among casual contacts, but is much less likely since repeated, close and prolonged exposure is usually required for infection. Streptococcal and meningococcal infections are spread from the nasal and throat secretions of a person infected by or carrying the bacteria. Infections can occur through direct contact or from large droplets produced by coughing and sneezing. Many people carry these organisms without being sick. Some types of meningococcal disease can be prevented by immunization. Tuberculosis (TB) is spread in the air when a person coughs up TB bacteria from their lungs.⁶

INVASIVE MENINGOCOCCAL DISEASE

Invasive meningococcal disease is caused by the bacterium *Neisseria meningitidis* (also know as meningococcus). Invasive disease arises as a result of infection of the lining of the brain (meninges) or the blood stream and can be life-threatening. The symptoms of meningitis include high fever, headache, stiff neck, vomiting and drowsiness. Other symptoms of meningococcal disease might include sensitivity to bright light (photophobia), confusion and a purplish skin rash.⁶ Canadian children under one year of age are most at risk for meningococcal infection, followed by children aged 1 to 5 and those 15 to 19 years of age.³⁴ As of January 1, 2005, vaccine for meningococcal type C disease was added to the recommended schedule of routine childhood immunization.^{35,36}

Figure 4.1: Incidence of Meningococcal Disease, Region of Peel and Ontario, 1995-2004

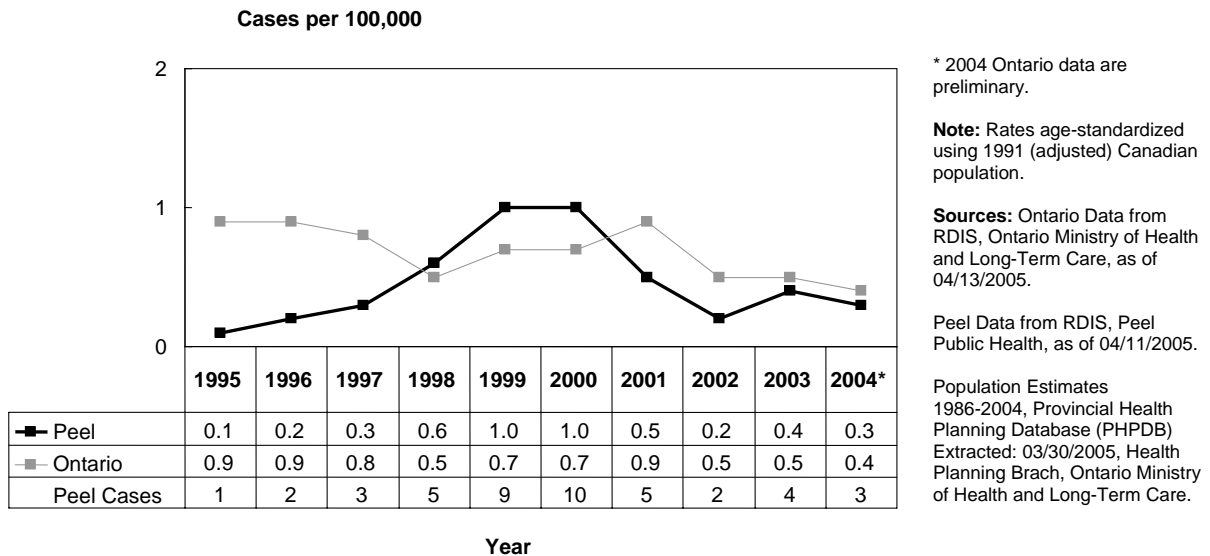
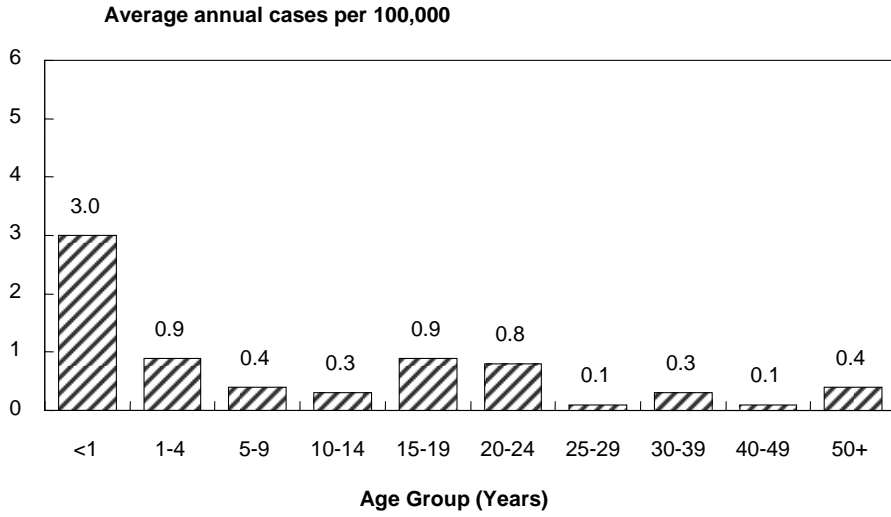


Figure 4.2: Incidence of Meningococcal Disease by Age Group, Region of Peel, 1995-2004 Combined



Sources: Peel Data from RDIS, Peel Public Health, as of 04/11/2005.

Population Estimates 1986-2004, Provincial Health Planning Database (PHPDB) Extracted: 03/30/2005, Health Planning Branch, Ontario Ministry of Health and Long-Term Care.

INVASIVE GROUP A STREPTOCOCCAL (GAS) INFECTIONS

Invasive Group A streptococcal (GAS) infections are caused by bacteria that are responsible for a number of different infections. Common infections include pharyngitis, tonsillitis, scarlet fever and ear infections. Although rarely, invasive GAS can also cause severe life-threatening infections resulting in necrotizing fasciitis (flesh eating disease) and toxic shock syndrome.^{6,37}

In 1996, the case definition of invasive GAS was made more inclusive. In 2001, there were two outbreaks of invasive GAS in long-term care facilities in the Region of Peel.

Figure 4.3: Incidence of Invasive Group A Streptococcal Infections, Region of Peel and Ontario, 1995-2004

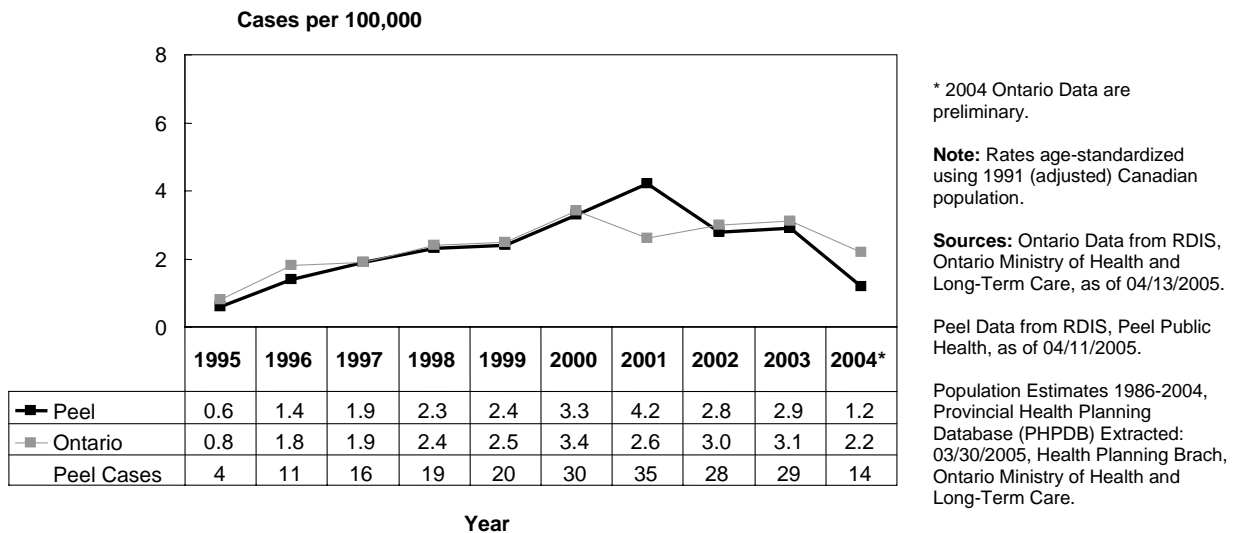
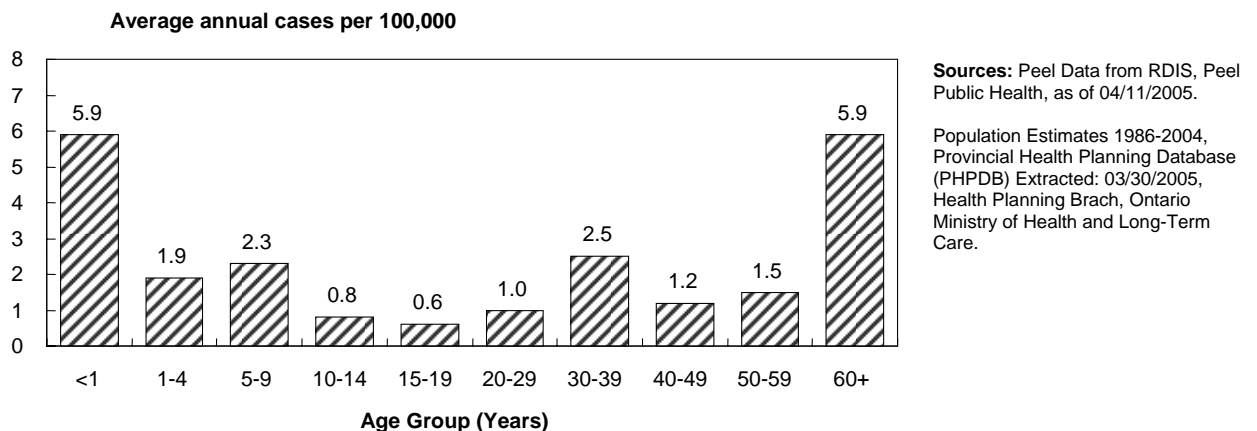


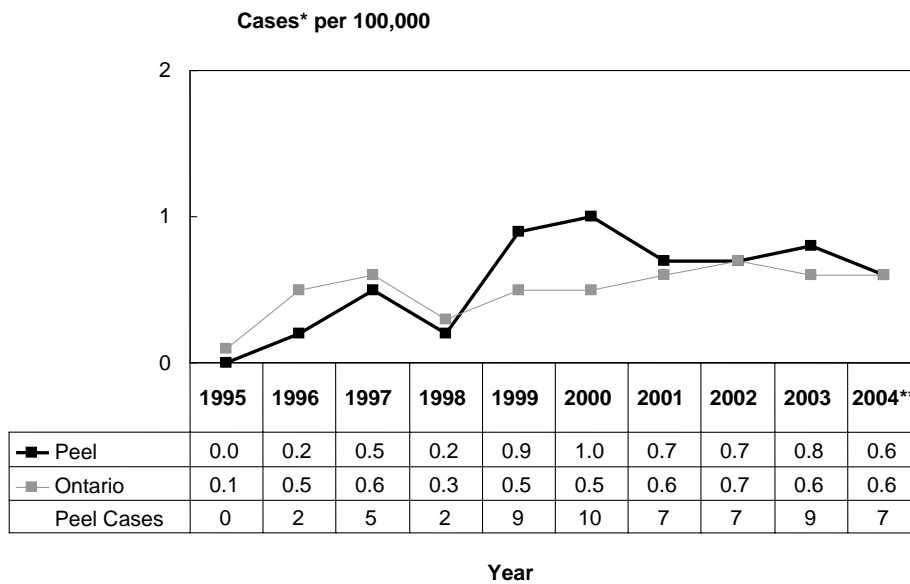
Figure 4.4: Incidence of Invasive Group A Streptococcal Infections by Age Group, Region of Peel, 1995-2004 Combined



GROUP B STREPTOCOCCAL (GBS) INFECTIONS

Group B streptococcal (GBS) infections are a major leading cause of bacterial disease and death among newborns and an important cause of morbidity occurring in women during the last month of gestation or the first few months after delivery; and in non-pregnant adults with chronic medical conditions. Disease in infants usually presents as sepsis, pneumonia or meningitis but also may include cellulitis or osteomyelitis. Disease in women however presents as urinary tract infection, postpartum endometritis and systemic sepsis. GBS can be prevented by screening women at 35 to 37 weeks gestation of pregnancy followed by selective intrapartum antibiotic chemoprophylaxis of all women found to be infected.^{6,38,39}

Figure 4.5: Incidence of Group B Streptococcal Infections, Region of Peel and Ontario, 1995-2004



* All cases were among children less than one year old.

** 2004 Ontario data are preliminary.

Note: Rates age-standardized using 1991 (adjusted) Canadian population.

Sources: Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 04/13/2005.

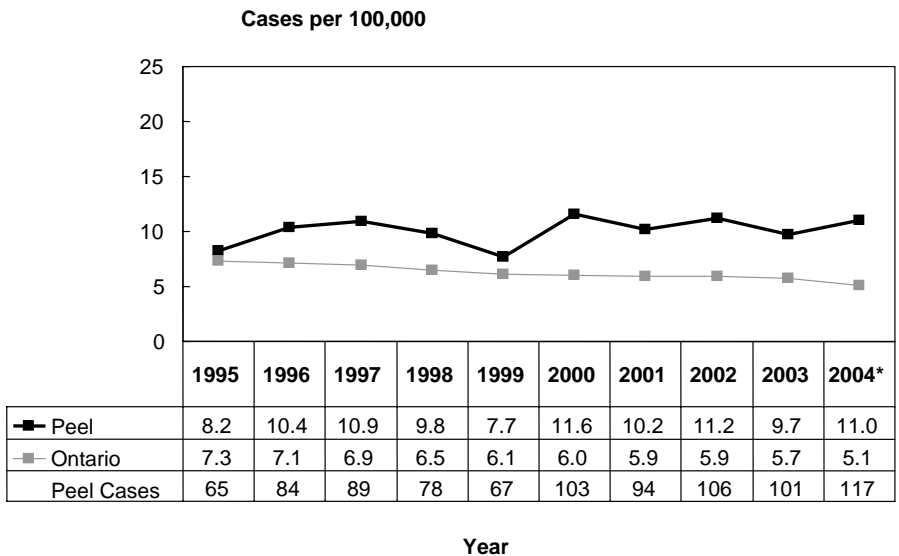
Peel Data from RDIS, Peel Public Health, as of 04/11/2005.

Population Estimates 1986-2004, Provincial Health Planning Database (PHPDB) Extracted: 03/30/2005, Health Planning Branch, Ontario Ministry of Health and Long-Term Care.

TUBERCULOSIS

Tuberculosis (TB) is a disease caused by bacteria called *Mycobacterium tuberculosis*. It mainly affects the lungs but can affect other parts of the body as well. Tuberculosis is spread through the air from person-to-person when someone with infectious or active TB disease in their lungs or larynx coughs or sneezes. Tuberculosis found in other parts of the body cannot be spread to other people and therefore is inactive. Even though TB is completely curable with antibiotics, it continues to be a major health problem and kills almost two million people worldwide every year.^{6,40,41}

Figure 4.6: Incidence of Active Tuberculosis, Region of Peel and Ontario, 1995-2004



* 2004 Ontario data are preliminary.

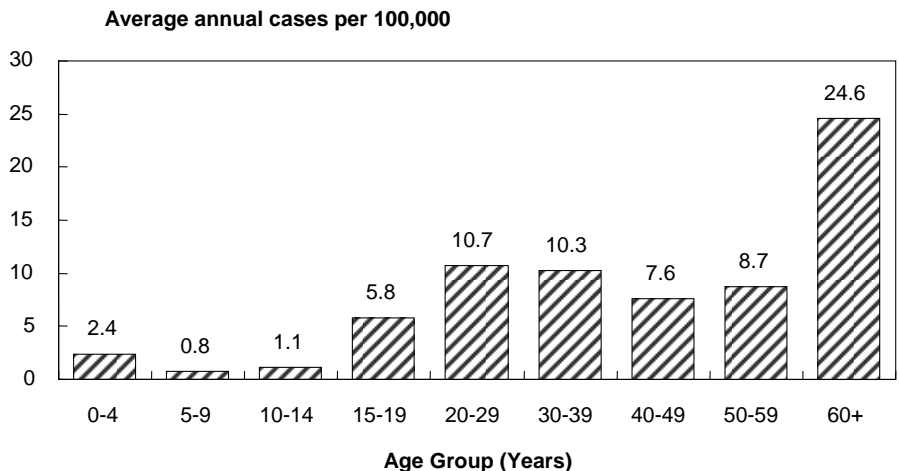
Note: Rates age-standardized using 1991 (adjusted) Canadian population.

Sources: Ontario data from RDIS, Ontario Ministry of Health and Long-Term Care, as of 04/13/2005.

Peel Data from RDIS, Peel Public Health, as of 04/11/2005.

Population Estimates 1986-2004, Provincial Health Planning Database (PHPDB) Extracted: 03/30/2005, Health Planning Branch, Ontario Ministry of Health and Long-Term Care.

Figure 4.7: Incidence of Active Tuberculosis by Age Group, Region of Peel, 1995-2004 Combined



Sources: Peel Data from RDIS, Peel Public Health, as of 04/11/2005.

Population Estimates 1986-2004, Provincial Health Planning Database (PHPDB) Extracted: 03/30/2005, Health Planning Branch, Ontario Ministry of Health and Long-Term Care.