

TIMISKAMING HEALTH UNIT

COMMUNICABLE DISEASE

A Report on the
Timiskaming Health Unit Area
1995-2005



Services de santé du

TIMISKAMING
Health Unit

Tracey Reid, BA, MSc
Epidemiologist

October 2007

TABLE OF CONTENTS

Executive Summary	1
Résumé.....	2
Introduction	3
Methodology	3
Overview.....	7
Sexually transmitted and bloodborne.....	9
Direct contact and respiratory.....	12
Enteric, Food and Waterborne	15
Vaccine Preventable.....	18
Recommendations.....	23
Appendix one.....	24
References.....	25

Communicable Disease

A REPORT ON THE TIMISKAMING HEALTH UNIT AREA, 1995-2005

EXECUTIVE SUMMARY

Certain communicable diseases are legislated as reportable to health authorities and as such are subject to local and provincial surveillance. This report summarizes communicable disease surveillance data from 1995 through 2005 for the Timiskaming Health Unit service area. Corresponding provincial data is presented for comparison purposes.

Diseases were categorized based primarily on mode of transmission and include the following: sexually transmitted and bloodborne; direct contact and respiratory; enteric, food and waterborne; vaccine preventable; and vectorborne and zoonotic. For each category, the report provides a brief description of disease transmission, local and provincial incidence rates and an overview of prevention and control measures implemented by public health and the Timiskaming Health Unit. Diseases with no reported cases during the eleven year time period under study are not discussed in this report.

The incidence of reportable disease is generally low in the district of Timiskaming. A total of 1 095 cases of disease were reported during the eleven year time period under study. Of these, chlamydia was the most common, representing 45% of all reportable disease. Sexually transmitted infections and bloodborne disease was the most predominant disease category (56.8% of total cases), followed by enteric, food and waterborne illnesses (22.1%). Vaccine preventable disease was the third most common disease category (18%), due primarily to the high number of laboratory confirmed cases of influenza A.

Public health is mandated to reduce the incidence and transmission of communicable disease. To this end, the public health unit plays a key role in disease surveillance and provides community based services and interventions designed to prevent and control the spread of infectious disease. While these measures are integral to the control of infectious disease, the identification of disease and monitoring of disease incidence needs to be improved through a strengthening of the local surveillance system.

Maladies transmissibles

RAPPORT SUR LA RÉGION DESSERVIE PAR LES SERVICES DE SANTÉ DU TIMISKAMING, 1995-2005

RÉSUMÉ

La loi oblige à déclarer certaines maladies transmissibles aux instances en matière de santé et font donc l'objet d'une surveillance locale et provinciale. Ce rapport résume les données sur les maladies transmissibles relevées de 1995 à 2005, dans la région desservie par les Services de santé du Timiskaming. Les données provinciales correspondantes sont présentées pour des fins de comparaison.

Les maladies ont été classées principalement par mode de transmission et incluent les suivantes : les maladies transmises sexuellement et par le sang; les maladies transmises par contact direct et respiratoires; les maladies entériques, les maladies transmises par les aliments et l'eau; les maladies évitables par la vaccination; les maladies transmises par des vecteurs et les maladies zoonotiques. Chaque catégorie est assortie d'une brève description de la transmission, des taux locaux et provinciaux d'incidence et d'un aperçu des mesures de prévention et de contrôle mises en œuvre par les instances de santé publique et les Services de santé du Timiskaming. Ce rapport ne fait pas état des maladies pour lesquelles on n'a consigné aucun cas au cours de la période de onze ans couverte par l'étude.

La fréquence des maladies à déclaration obligatoire est généralement faible dans le district du Timiskaming. Au total, 1 095 cas ont été signalés pendant la période de onze ans. L'infection à chlamydia est la plus commune et représente 45 % de toutes les maladies à déclaration obligatoire. Les infections transmises sexuellement et les maladies transmises par le sang constituent la catégorie prédominante (56,8 % du total des cas), suivies par les maladies entériques, les maladies transmises par les aliments et l'eau (22,1 %). Les maladies évitables par vaccination arrivent au troisième rang (18 %), principalement à cause du nombre élevé de cas confirmés de grippe de type A.

La santé publique consiste à réduire l'incidence et la transmission de maladies. Par conséquent, le personnel des Services de santé du Timiskaming joue un rôle clé dans la surveillance et offre des services et interventions communautaires visant à prévenir et à contrôler la propagation des maladies infectieuses. Quoique ces mesures fassent partie intégrante du contrôle des maladies infectieuses, il faut améliorer la détection de ces maladies et la surveillance de leur incidence en renforçant le système local de surveillance.

INTRODUCTION

Surveillance of communicable disease is conducted to understand the burden of illness for a given population, to identify changing disease trends, to identify outbreaks, to aid in public health program planning, and to assess the effectiveness of preventive measures/programs, all with a goal to prevent, control or eliminate communicable disease. Under the Health Promotion and Protection Act, Ontario Regulation 559/91, specific communicable diseases are designated as reportable to the Medical Officers of Health of public health units who are mandated to supply this information to the Ontario Ministry of Health and Long Term Care (MOHLTC). Through this system, public health units monitor disease at the local level which is then linked to provincial surveillance. The current report summarizes communicable disease surveillance data from 1995 through 2005 for the district of Timiskaming. Corresponding provincial data is provided for comparison purposes.

Information on reportable disease is presented in the following categories based primarily on mode of transmission: 1) sexually transmitted and bloodborne, 2) direct contact and respiratory, 3) enteric, food and waterborne and 4) vaccine preventable. While these disease categories are not mutually exclusive, they are generally adopted as standard format in public health research publications.

Not all reportable diseases are common to the district of Timiskaming. Many of the diseases/infections with mandatory reporting have not occurred during the eleven year time period under study (54% of reportable diseases had no reported cases during this time period). These diseases are not discussed in this report. A complete listing of the communicable diseases legislated as reportable is provided in Appendix 1.

METHODOLOGY

SOURCES OF DATA

From 1990 to mid 2005, communicable disease data reported to public health units was electronically recorded and managed in the Reportable Disease Information System (RDIS) database. This system was replaced with the Integrated Public Health Information System (iPHIS) in 2005. Information contained in the RDIS system was downloaded into iPHIS. At the local level, individual case data is aggregated to protect patient confidentiality and to allow for the calculation of disease rates among the health unit population as a whole. Data presented in this report were extracted from iPHIS in 2006.

At the provincial level, the Ontario Ministry of Health and Long Term Care produces summary statistics by health unit and for the province as a whole and publishes these statistics in annual communicable disease reports. National statistics are compiled using provincial data by the Public Health Agency of Canada (PHAC). Provincial disease rates were abstracted from the Ontario Ministry of Health “Summary of Reportable Diseases” annual reports for the years 1995 through 2002. Ontario estimates for the years 2003 and 2004 were taken from the Ministry of Health and Long Term Care “Public Health Ontario” website (<https://www.publichealthontario.ca/>). Provincial estimates for the year 2005 were not available at the time of publication of this report.

Population estimates, used in the calculation of crude incidence rates, were based on Statistics Canada 2001 census data and were taken from the Statistics Canada publication “Health Indicators – January 2005” (for the years 1996 through 1999). Estimates for the years 2000 through 2004, based also on 2001 Statistics Canada census data, were extracted from the Provincial Health Planning Database and were provided by the Ministry of Health and Long Term Care.

SUMMARY STATISTICS

Total incident case counts for the eleven year time period are presented for each disease. For diseases less common in the Timiskaming district, case counts are not provided but rather are presented as “less than five”. A case is attributed to a given year according to the date of the onset of illness or the date of diagnosis.

Given the small population served by the Timiskaming Health Unit and the low number of cases of disease, age-standardized incidence rates were not calculated. Also, to allow for comparison to available provincial and national summary statistics, crude rates were preferred over adjusted. The crude incidence rate is defined as the number of new cases per year per 100,000 population. This is calculated as follows: (number of incident cases during one year/population estimate for that year)*100,000.

The crude incidence rate is used to allow for comparison of two or more populations. Differences in local and provincial disease rates represent absolute differences and do not imply statistical significance.

DATA QUALITY

The primary data quality issue lies in the under-reporting of disease. While it is mandatory for health professionals, laboratories, hospitals, school principals and superintendents of institutions to inform the Medical Officer of Health of all cases of reportable disease, not all cases are captured for a number of reasons. The current surveillance system is a passive one – in that it is the responsibility of those who are expected to report to understand and follow through with notifying public health rather than public health actively seeking and collecting the information. Furthermore, the reporting system is not enforced.

For several reasons, medical professionals will not be aware of all new cases of reportable disease. Episodes of illness may not manifest symptoms. These asymptomatic cases will, for the most part, go undetected and therefore will be unreported. Mild cases of illness may not warrant/instigate medical care. Individuals who do not experience serious symptoms may not seek medical attention, especially in geographic areas that are under-serviced in health care. Diseases that are perceived to be common or to have low risk of complications and that have no treatment options, such as chickenpox or food poisoning, are also less likely to provoke an individual to seek medical advice or to notify the public health unit.

Mandatory reporting of positive laboratory testing provides some guarantee of capturing confirmed cases and relieves the diagnosing physician of the sole responsibility for reporting. However, not all cases are laboratory tested. For example, the contact of a confirmed case of chlamydia may be treated without diagnostic testing. In general, these cases are not reported to the health unit by the treating physician. Furthermore, one can not assume a 100% accurate predictive capability of laboratory diagnostic tests.

The introduction of the iPHIS system in 2005 may have introduced errors in the way reportable disease data is recorded. IPHIS data has not been validated nor has the conversion of RDIS to iPHIS data. Furthermore, iPHIS training has not been extensive – a new system and new users may have increased the possibility of inaccurate or incomplete information.

INTERPRETATION OF CHANGING INCIDENCE RATES

Disease rates are influenced by external factors and therefore changes over time must be viewed in context. For instance, the introduction of a new screening program or diagnostic test or an increased public awareness through education campaigns may increase the number of people tested thereby increasing the number of cases captured. A numeric increase in a disease rate may not represent a true increase in the disease burden but rather an improved capability in identifying cases (for example, the introduction of a urine test for

chlamydia made it easier and less invasive to test and thereby increased the number of people (especially males) who were being tested).

Changes in disease incidence rates over time among the Timiskaming Health Unit population must be interpreted with caution for many of the reportable diseases summarized in this report. The extremely small case counts and low incidence rates do not provide robust estimates to establish reliable trends. A change from zero to one to zero cases over a period of three years does not reflect a true or meaningful change in disease rates but rather a random occurrence of disease. Furthermore, a declining district population artificially increases the disease rate in that the numerator (number of confirmed cases of the disease) may remain the same but the denominator (population count for a given year) is smaller. Finally, a change from the RDIS to iPHIS system in 2005 may have had an impact on the collection of data or designation of cases, thereby affecting the incidence rates for that year.

OVERVIEW

The incidence of reportable communicable disease in the district of Timiskaming is generally low. Figure 1 presents a rank ordering of the most common of these diseases in Timiskaming. Case counts and relative proportions are presented in Table 1. During the eleven year time period under study, 1 095 cases of communicable disease were reported. Of these, chlamydial infections were the most common, representing 45% of the total reported disease. Influenza and hepatitis C were the next most frequently reported, at 14% and 10% of the total respectively.

Figure 1: Ten most common reportable diseases, Timiskaming, 1995 through 2005.

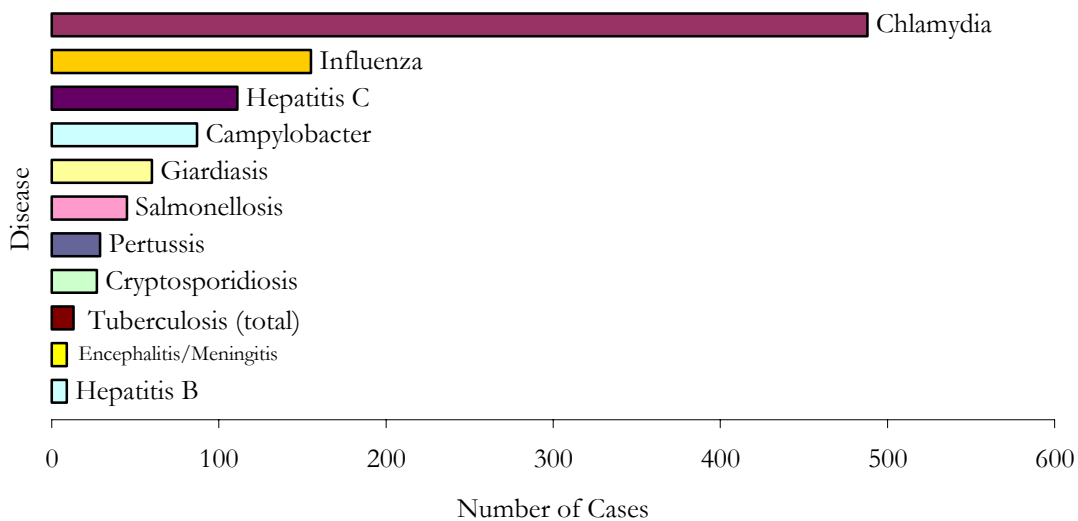


Table 1: Incidence count of all reportable diseases, district of Timiskaming, 1995 through 2005.

Disease by Mode of Transmission	1995 through 2005	
	Total Case Count	% of Total
<i>Sexually Transmitted and Bloodborne</i>		
Aids	Less than 5	--
Chlamydia	488	44.6
Gonorrhea	8	0.7
Hepatitis B	9	0.8
Hepatitis C	111	10.1
Syphilis	Less than 5	--
<i>Direct Contact and Respiratory</i>		
Group A Streptococcal Infection	Less than 5	--
Group B Streptococcal Neonatal Infection	Less than 5	--
Encephalitis/Meningitis	9	0.8
Meningococcal Disease	6	0.5
Streptococcus pneumoniae (Invasive Pneumococcal Disease)	Less than 5	--
Tuberculosis (total)	13	1.2
<i>Enteric, Food and Waterborne</i>		
Amebiasis	Less than 5	--
Campylobacter	87	7.9
Cryptosporidiosis	27	2.5
Giardiasis	60	5.5
Hepatitis A	6	0.5
Salmonellosis	45	4.1
Shigellosis	Less than 5	--
Verotoxin-Producing E. coli (VTEC)	8	0.7
Yersiniosis	6	0.5
<i>Vaccine Preventable</i>		
Influenza	155	14.2
Measles	5	0.4
Mumps	6	0.5
Pertussis	29	2.6
Rubella	Less than 5	--
<i>Vectorborne and Zoonotic</i>		
Tularemia	Less than 5	--
Total	1 095	100

SEXUALLY TRANSMITTED AND BLOODBORNE

Reportable sexually transmitted infections and bloodborne diseases include aids, HIV, chlamydia, gonorrhea, hepatitis B and C, and syphilis. These diseases are spread through the exchange of body fluids, primarily through sexual contact. Prevention is possible through the practice of “safe sex” (using a condom), clean needle use and screening of blood products to be used for transfusion. This category of disease is the most predominant of the reportable communicable disease in the district of Timiskaming, representing 56.8% of reported cases for the eleven year time period under study. Incidence rates at both the local and provincial level are presented in Table 2.

Table 2: Incidence rate (cases per year per 100,000 population) of sexually transmitted and bloodborne infections/disease, Timiskaming and Ontario, 1995 through 2005.

Disease and Geographic Area	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Aids - Timiskaming	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.8	0.0
Aids - Ontario	5.4	3.6	2.2	1.8	1.6	1.1	1.3	1.0	1.3	1.2	NA
Chlamydia - Timiskaming	87.5	55.5	114.9	129.6	123.7	69.4	132.9	132.7	170.9	173.6	125.2
Chlamydia - Ontario	110.8	96.9	94.9	109.9	116.3	125.7	136.5	149.9	156.4	166.7	NA
Gonorrhea - Timiskaming	5.0	2.5	0.0	5.2	0.0	0.0	0.0	0.0	2.8	5.7	0.0
Gonorrhea- Ontario	27.8	21.3	17.1	20.0	19.6	24.3	24.7	25.4	27.3	28.2	NA
Hepatitis B - Timiskaming	2.5	5.0	0.0	5.2	0.0	2.7	0.0	2.8	2.8	2.8	0.0
Hepatitis B - Ontario	2.8	2.0	1.5	1.2	1.2	1.2	1.1	1.2	1.3	1.1	NA
Hepatitis C - Timiskaming	30.0	30.3	17.9	36.3	15.8	34.7	27.1	13.8	30.8	37.0	22.8
Hepatitis C - Ontario	66.8	70.1	56.3	61.6	56.1	49.4	46.4	45.1	43.9	42.8	NA
Syphilis - Timiskaming	2.5	2.5	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Syphilis - Ontario	3.6	2.9	2.4	2.2	2.5	2.7	2.5	4.6	5.4	6.2	NA

Notes:

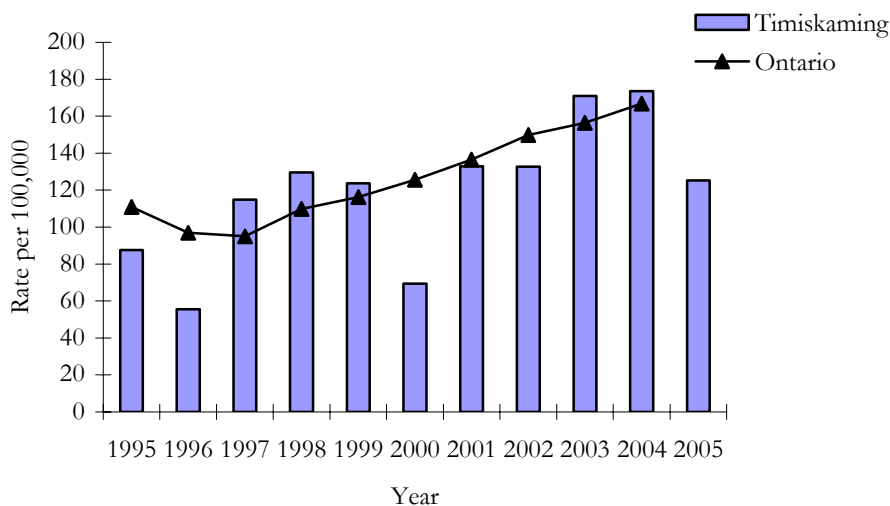
The population estimate for 1994 was used for 1995 (both locally and provincially).

The population estimate for 2004 was used for 2005 (both locally and provincially).

NA – not available

Chlamydia accounted for 78.5% of the total cases included in this category of reportable disease. With the exception of several years, rates of chlamydia in the district of Timiskaming have increased over the eleven year study time period. As shown in Figure 2, this local trend mirrors that of the province. While the disease rate is on the rise, detection of the disease has improved with the introduction of a diagnostic urine test in 2004. This less invasive test resulted in an increase in the number of people who were screened, thus increasing the number of confirmed cases (especially in the case of asymptomatic “contacts” of cases). This impacts on the rate in that the pool of potential cases is greater (more people tested) and with an easier method of detection, more of the cases will be captured. This does not necessarily imply that there are more cases than before but that more of the cases are being identified. The decrease in the rate of chlamydia infections for 2005 is likely due to a change in the way data is recorded when RDIS was replaced by iPHIS.

Figure 2: Incidence rate (cases per year per 100,000 population) of chlamydia, Timiskaming and Ontario, 1995 through 2005.



PREVENTION AND CONTROL

Public health is mandated to reduce the incidence and transmission of communicable disease among the population it serves. To this end, the Timiskaming Health Unit provides many services designed to prevent and control the spread of sexually transmitted and bloodborne disease. Prevention activities include public

awareness information and education campaigns (via the media, printed materials, posters), development of educational resources for schools and teachers, sexual health clinics (provision of information and counseling and screening for STIs), condom distribution, a free hepatitis B vaccination program (grade 7 students and high risk individuals), and a free needle exchange program. Other programs provide sexual health information resources and condoms to specific target groups including tree planters and first year college students. Control measures include investigation and treatment of confirmed cases and contact tracing, screening and treatment.

DIRECT CONTACT AND RESPIRATORY

Diseases included in this category are transmitted through contact with the secretions (usually from the nose or throat) of an infected individual, primarily in the form of a sneeze or cough. As close contact is required for transmission, these diseases are often spread among family members or people living together (for example, in institutions). Incidence rates are presented in Table 3. Respiratory outbreaks in institutions are not included in this data.

Table 3: Incidence rates (cases per year per 100,000 population) of diseases transmitted by direct contact or respiratory route, Timiskaming and Ontario, 1995 through 2005.

Disease and Geographic Area	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Group A Streptococcal Infection - Timiskaming	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0
Group A Streptococcal Infection - Ontario	0.8	1.9	2.0	2.4	2.6	3.5	2.7	3.1	3.3	2.3	NA
Group B Streptococcal Neonatal Infection - Timiskaming	NR	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Group B Streptococcal Neonatal Infection - Ontario	NR	0.5	0.5	0.3	0.4	0.4	0.5	0.6	0.5	0.4	NA
Encephalitis/Meningitis - Timiskaming	0.0	5.0	2.6	2.6	0.0	0.0	0.0	0.0	8.4	2.8	2.8
Encephalitis/Meningitis - Ontario	3.0	2.9	2.7	3.9	3.8	3.4	4.5	4.4	3.8	3.9	NA
Meningococcal Disease - Timiskaming	2.5	2.5	0.0	0.0	0.0	2.7	2.7	2.8	2.8	0.0	0.0
Meningococcal Disease - Ontario	0.9	0.9	0.7	0.4	0.7	0.7	0.9	0.5	0.5	0.5	NA
Streptococcus pneumoniae – invasive - Timiskaming	NR	NR	NR	NR	NR	NR	NR	0.0	0.0	2.8	5.7
Streptococcus pneumoniae – invasive - Ontario	NR	NR	NR	NR	NR	NR	NR	5.1	8.1	8.5	NA
Tuberculosis (total) - Timiskaming	15.0	0.0	0.0	2.6	5.3	0.0	5.4	0.0	0.0	0.0	5.7
Tuberculosis (total) - Ontario	7.3	7.0	6.9	6.5	6.1	6.0	5.9	5.9	5.7	5.3	NA

Notes:

The population estimate for 1994 was used for 1995 (both locally and provincially).

The population estimate for 2004 was used for 2005 (both locally and provincially).

NR – not reportable

NA – not available

*Streptococcus pneumoniae also referred to as Invasive Pneumococcal Disease (IPD).

Reportable diseases spread by direct contact are not common in the district of Timiskaming, representing 3% of the total number of communicable diseases reported during the eleven year time period. Case counts for tuberculosis represent totals, including active and latent TB. No cases of active pulmonary tuberculosis have been diagnosed in Timiskaming since 2001. While chickenpox would be included in this disease category and anecdotal information indicates recent outbreaks, this infection is not systematically reported to the health unit by medical professionals or schools. Thus data on chickenpox is limited and unreliable and not presented in this report.

PREVENTION AND CONTROL

Testing for tuberculosis in the district of Timiskaming is conducted by the health unit. Mantoux tests are administered at the health unit to individuals requiring TB screening to fulfill employment conditions of hire (for example, day cares, nursing homes etc.). Patients will also be referred to the health unit by a physician following a suspicious chest x-ray. In the event of a positive mantoux test result, contact tracing, exposure assessment, referral to the family physician and case follow-up is provided by a public health nurse. Medication for treatment and prophylaxis is provided by the health unit at no cost to the individual.

Respiratory outbreaks in institutions are monitored by public health nurses. In the event of an outbreak, institution staff notify nurses from the public health unit who then provide consultation and advice on containment strategies. In 2004, nine respiratory outbreaks were reported in institutional settings while in 2005, 11 were reported.

While not limited solely to reportable disease, an educational resource has been developed by the Timiskaming Health Unit, targeting primary school children, to prevent and control the spread of infectious disease in the school community. This resource is intended as a teaching guide to promote hand washing, cough etiquette, and other preventive health practices.

ENTERIC, FOOD AND WATERBORNE

Diseases included in this category are transmitted through ingestion of food or water infected with various bacteria, viruses or parasites. Transmission can also occur from person to person via a fecal-oral route if proper hand washing is not practiced. These diseases include amebiasis, campylobacter, cryptosporidiosis, giardiasis, hepatitis A, salmonellosis, shigellosis, verotoxin-producing E. coli, and yersiniosis. Enteric, food and waterborne illnesses are the second most predominant category of reportable disease in the district of Timiskaming. Of the 1 095 cases of reportable disease recorded for the years 1995 through 2005, 22.1% were in this disease grouping (data does not include enteric outbreaks in institutions).

Table 4: Incidence rates (cases per year per 100,000 population) of enteric, food and waterborne disease, Timiskaming and Ontario, 1995 through 2005.

Disease and Geographic Area	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Amebiasis - Timiskaming	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	2.8	0.0
Amebiasis - Ontario	8.5	7.5	8.8	7.3	6.6	7.0	7.1	6.8	6.2	5.3	NA
Campylobacter - Timiskaming	20.0	45.4	38.3	28.5	21.0	24.0	16.3	2.8	14.0	11.4	5.7
Campylobacter - Ontario	58.4	48.7	46.4	47.1	35.6	42.5	42.2	37.9	33.2	32.1	NA
Cryptosporidiosis - Timiskaming	NR	5.0	10.2	7.8	5.3	0.0	0.0	13.8	11.2	11.4	8.5
Cryptosporidiosis - Ontario	NR	2.4	2.0	1.6	1.8	2.0	2.1	1.9	2.2	2.4	NA
Giardiasis - Timiskaming	37.5	20.2	7.7	15.5	21.0	2.7	5.4	13.8	16.8	14.2	2.8
Giardiasis - Ontario	24.8	23.0	21.2	18.7	17.2	17.1	17.3	15.7	13.2	12.6	NA
Hepatitis A - Timiskaming	2.5	0.0	2.6	0.0	5.3	0.0	0.0	2.8	0.0	2.8	0.0
Hepatitis A - Ontario	4.6	5.6	4.1	2.8	2.3	1.3	1.5	1.2	1.2	1.5	NA
Salmonellosis - Timiskaming	7.5	27.7	10.2	13.0	10.5	2.7	13.6	13.8	8.4	11.4	0.0
Salmonellosis - Ontario	26.4	24.1	23.5	29.4	19.9	20.2	21.5	20.2	16.2	17.0	NA
Shigellosis - Timiskaming	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Shigellosis - Ontario	3.9	2.8	3.3	3.6	2.3	2.4	1.9	7.0	2.3	2.3	NA
Verotoxin-Producing E. coli (VTEC) - Timiskaming	2.5	10.1	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0
Verotoxin-Producing E. coli (VTEC) - Ontario	5.3	4.2	3.8	3.5	3.2	14.7	3.0	3.2	3.7	2.5	NA
Yersiniosis - Timiskaming	7.5	2.5	0.0	0.0	2.6	0.0	0.0	0.0	0.0	2.8	0.0
Yersiniosis - Ontario	5.1	4.4	3.6	3.0	3.1	2.8	2.6	3.1	2.6	2.4	NA

Notes:

The population estimate for 1994 was used for 1995 (both locally and provincially).

The population estimate for 2004 was used for 2005 (both locally and provincially).

NR – not reportable

NA – not available

The most common of the enteric, food and waterborne illnesses among the district population were, in rank order, campylobacter, giardiasis, salmonellosis and cryptosporidiosis, representing 36%, 25%, 19% and 11% of diseases in this category respectively. The incidence rates of these diseases fluctuate, with no real apparent trend over time. Campylobacter and salmonellosis rates in the district of Timiskaming are lower than provincial incidence rates while the rate of cryptosporidiosis is generally higher. Incidence rates of giardiasis have fluctuated both above and below provincial levels during the eleven year study time period.

PREVENTION AND CONTROL

Prevention and control of enteric, food and waterborne illness is primarily handled by health inspectors of public health units. Food safety and safe food handling is ensured through routine inspection of food storage and food preparation areas of restaurants, institutions, day cares, grocery stores, butcher shops etc. Temporary food vendors are issued permits and these high risk premises are inspected during operation at special events. Food handler courses are offered through the health unit with training provided by a certified health inspector.

The health unit distributes hand washing signs to post in all public, workplace and institutional washrooms. Hand washing, important to the control of infectious disease, is promoted by the Timiskaming Health Unit at community events and through educational resources for schools.

In the event of a reported case of enteric illness, public health inspectors investigate to determine the source of infection, the exposure, the patient's case history and contact tracing. In the case of Hepatitis A, free vaccination is offered to all contacts of the case. As with respiratory outbreaks, the public health unit plays a role in the control of enteric outbreaks in institutions through consultation of the institution staff with a health inspector.

Prevention and control of waterborne illness is ensured in a number of ways. A publicly funded program to test well water for bacteria (*E. coli* and total coliforms) is administered by public health units. Natural springs in the district of Timiskaming are posted as non-potable. Public beaches are tested weekly during the swimming season to ensure that bacteria levels are within acceptable limits for recreational use (in the case of accidental ingestion of water during swimming).

VACCINE PREVENTABLE

Vaccine preventable diseases that have occurred in the district of Timiskaming over the last eleven years include influenza, measles, mumps, pertussis (whooping cough) and rubella. These diseases are caused by viruses and bacteria and are highly contagious. With the exception of influenza, routine and mandatory immunization of children has all but eradicated these diseases from the Timiskaming population.

Table 5: Incidence rate (cases per year per 100,000 population) of vaccine-preventable disease, Timiskaming and Ontario, 1995 through 2005.

Disease and Geographic Area	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Influenza - Timiskaming	27.5	0.0	2.6	23.3	15.8	13.3	0.0	35.9	112.1	59.8	139.4
Influenza - Ontario	16.1	9.9	7.8	21.9	31.0	13.4	6.6	22.4	40.4	9.9	NA
Measles - Timiskaming	7.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Measles - Ontario	21.1	1.7	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.0	NA
Mumps - Timiskaming	10.0	0.0	0.0	0.0	2.6	2.7	0.0	0.0	0.0	0.0	0.0
Mumps - Ontario	1.8	0.7	0.6	0.3	0.4	0.3	0.1	0.1	0.1	0.2	NA
Pertussis - Timiskaming	0.0	0.0	7.7	54.4	13.2	0.0	0.0	0.0	0.0	0.0	0.0
Pertussis - Ontario	18.8	6.5	9.3	16.4	10.5	6.1	3.9	4.4	2.9	5.1	NA
Rubella - Timiskaming	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rubella - Ontario	1.8	0.6	0.3	0.1	0.0	0.1	0.1	0.0	0.1	0.0	NA

Notes:

The population estimate for 1994 was used for 1995 (both locally and provincially).

The population estimate for 2004 was used for 2005 (both locally and provincially).

Influenza counts include only laboratory confirmed cases.

Vaccine preventable disease represented 18% of all cases of reportable disease from 1995 to 2005. Of these, influenza was the most predominant (78.7% of vaccine preventable cases). As only laboratory confirmed cases are included in RDIS and iPHIS data, the influenza incidence rates at both the local and provincial level will be underestimated. Incidence rates for influenza fluctuate with no clear trend over time. Local rates vary from being above to below provincial estimates.

No cases of measles or rubella have been reported in the Timiskaming district since 1996. The incidence rate of pertussis increased dramatically in 1998 (54 per 100,000 vs 16 per 100,000 in Ontario) but no new cases have been diagnosed since 1999. Mumps was last diagnosed in 2000.

PREVENTION AND CONTROL

Universal vaccination for influenza is available in Ontario but is not mandatory. Public health units participate in the universal vaccination program by distributing the influenza vaccine each year to hospitals, long term care facilities and local physicians and by administering the vaccine to health unit clients and during community clinics.

Influenza immunization is strongly recommended for staff of health care establishments and specific high risk groups (for example, the elderly and immuno-compromised). The province has a target of 95% and 70% vaccination coverage rates for residents of long term care facilities and health care workers respectively. Data on influenza immunization of health care workers and long term care residents is collected by the health unit and reported to the Ontario Ministry of Health and Long Term Care. As shown in Table 6, the coverage rate was higher among staff and residents of long term care facilities in comparison with hospitals during each of the three years presented. Among all three population sub-groups, influenza vaccination rates improved over time.

Table 6: Proportion of health care workers and long term care residents with influenza vaccination, district of Timiskaming, 2003 to 2005.

Establishment and Population	Proportion (%) Immunized by Year		
	2003	2004	2005
Hospitals – staff	65.2	84.1	74.2
Long Term Care facilities – staff	91.4	91.1	97.1
Long Term Care facilities – residents	93.5	94.3	96.3

Notes: In the district of Timiskaming, there are three hospitals and five Long Term Care facilities.

Data on hospital staff was incomplete for 2004 (missing data for one of three hospitals).

Data on long term care facilities (both staff and residents) was incomplete for 2005 (missing one of five establishments).

The Timiskaming Health Unit provided influenza vaccination to 8 691 people in 2004. The majority of people attended community clinics that were held throughout the district, but vaccination was also administered through regular health unit clinics and at schools. In 2004, the health unit conducted a pilot project to offer influenza vaccination to students in three local schools. This initiative was well received by school officials and parents.

In the year 2005, district influenza immunization coverage rates increased to a total of 10 231 people, representing approximately 30% of the district population. In addition to community clinics and office intake (providing 7 572 people with influenza vaccination), a universal school flu immunization program was initiated in the district of Timiskaming in 2005. This program was open to both staff and students. All district primary and secondary schools participated in the program. Approximately 38% (n=2613) of students and staff were vaccinated at school clinics in 2005.

The Timiskaming Health Unit plays a key role in the prevention of vaccine preventable “childhood” disease by providing immunization to children and youth during Well Baby clinics and school immunization clinics. On average, 78% of children born between the years 1988 and 2000 had complete immunization by the age of two for diphtheria, pertussis, tetanus, polio, and measles, mumps and rubella (as of September 2006). Vaccination coverage rates increase as children attend school, with 95% of this same cohort having complete immunization as appropriate for their age by the time of school completion.

Public health units are responsible for monitoring and updating vaccination records for all children residing in the health unit catchment area. These records are used to ensure that children have up-to-date immunization or appropriate medical exemption at time of entry into school. Immunization that is provided by the health unit is recorded in a provincial database (Immunization Record Information System (IRIS)). Records for vaccinations administered by local physicians and nurse practitioners as well as by other health units are obtained by the Timiskaming Health Unit and are used to complete and update the IRIS information.

To ensure complete age appropriate vaccination by the age of two, public health nurses at the Timiskaming Health Unit conduct an 18 month follow-up of all live births in the district of Timiskaming. This follow-up acts as an immunization reminder for parents.

Vaccines are distributed by the health unit to local medical establishments. Cold chain inspections are conducted by public health nurses to ensure the safe storage of these vaccines (vaccine is stored properly,

fridge temperature is accurately monitored and recorded, cold chain failures are responded to appropriately, etc.).

As with other respiratory outbreaks, influenza outbreaks in institutions are monitored by public health nurses. The public health unit notifies the Ontario Ministry of Health and Long Term Care of confirmed influenza outbreaks and gathers exposure and treatment data for confirmed cases and their contacts. Public health nurses provide consultation to institution staff to control the spread of infection both within the institution (residents and staff) and out into the community.

RECOMMENDATIONS

Disease surveillance promotes and protects health in that it aids in the prevention and control of infectious disease. To this end, surveillance is a crucial and integral factor in public health. The role of surveillance in the health of a community needs to be better understood and recognized, especially by those who are mandated to report the incidence of communicable disease. The health unit is responsible for ensuring that local agencies (schools, day cares, institutions etc.) and medical personnel are aware of the reportable disease surveillance system and are knowledgeable of the procedures to report disease. It is strongly recommended that a significant effort be made to strengthen the partnership between the health unit, schools and the local medical community to collect information on reportable diseases, especially those with the potential for widespread community outbreak.

APPENDIX ONE

Health Protection and Promotion Act

ONTARIO REGULATION 559/91 -- Amended to O. Reg. 365/06

SPECIFICATION OF REPORTABLE DISEASES

The following diseases are specified as reportable diseases for the purposes of the Act:

Acquired Immunodeficiency Syndrome (AIDS)	Listeriosis
Amebiasis	Lyme Disease
Anthrax	Malaria
Botulism	Measles
Brucellosis	Meningitis, acute i. bacterial, ii. viral, iii. other
Campylobacter enteritis	Meningococcal disease, invasive
Chancroid	Mumps
Chickenpox (Varicella)	Ophthalmia neonatorum
Chlamydia trachomatis infections	Paratyphoid Fever
Cholera	Pertussis (Whooping Cough)
Cryptosporidiosis	Plague
Cyclosporiasis	Pneumococcal disease, invasive
Cytomegalovirus infection, congenital	Poliomyelitis, acute
Diphtheria	Psittacosis/Ornithosis
Encephalitis, including i. Primary, viral	Q Fever
ii. Post-infectious	Rabies
iii. Vaccine-related	Respiratory infection outbreaks in institutions
iv. Subacute sclerosing panencephalitis	Rubella
v. Unspecified	Rubella, congenital syndrome
Food poisoning, all causes	Salmonellosis
Gastroenteritis, institutional outbreaks	Severe Acute Respiratory Syndrome (SARS)
Giardiasis, except asymptomatic cases	Shigellosis
Gonorrhoea	Smallpox
Group A Streptococcal disease, invasive	Syphilis
Group B Streptococcal disease, neonatal	Tetanus
Haemophilus influenzae b disease, invasive	Transmissible Spongiform Encephalopathy, including i. Creutzfeldt-Jakob Disease, all types
Hantavirus pulmonary syndrome	ii. Gerstmann-Sträussler-Scheinker Syndrome
Hemorrhagic fevers, including i. Ebola virus disease	iii. Fatal Familial Insomnia
ii. Marburg virus disease	iv. Kuru
iii. Other viral causes	Trichinosis
Hepatitis, viral,	Tuberculosis
i. Hepatitis A	Tularemia
ii. Hepatitis B	Typhoid Fever
iii. Hepatitis C	Verotoxin-producing E. coli infection indicator conditions, including Haemolytic Uraemic Syndrome (HUS)
iv. Hepatitis D (Delta hepatitis)	West Nile Virus Illness
Herpes, neonatal	Yellow Fever
Influenza	Yersiniosis
Lassa Fever	
Legionellosis	
Leprosy	

REFERENCES

- Health Protection and Promotion Act – Ontario Regulation 559/91. *Specification of Reportable Diseases*. http://www.e-laws.gov.on.ca/DBLaws/Regs/English/910559_e.htm
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 1995*. Public Health Branch, December 1996.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 1996*. Public Health Branch, July 2001.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 1997*. Public Health Branch, July 2001.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 1998*. Public Health Branch, August 2001.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 1999*. Public Health Division, August 2004.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 2000*. Public Health Division, November 2004.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 2001*. Public Health Division, January 2005.
- Ontario Ministry of Health and Long Term Care. Communicable Disease Control. *Summary of Reportable Diseases, 2002*. Public Health Division, September 2005. <https://www.publichealthontario.ca/>
- Ontario Ministry of Health and Long Term Care. Infectious/Communicable Disease Surveillance. Reports – Data Tables, 2003 and 2004. Public Health Division, September 2005. <https://www.publichealthontario.ca/>
- Ontario Ministry of Health and Long Term Care. *Publicly Funded Immunization Schedules for Ontario – February 2005*. <http://www.health.gov.on.ca/english/providers/program/immun/pdf/schedule.pdf>
- Public Health Agency of Canada. Notifiable Diseases On-Line. http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/index_e.html
- Statistics Canada. *Health Indicators – January 2005*. Catalogue no. 82-221, Volume 2005, No. 1.