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Disease Control Service

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Population Health Service

Statistics

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***CYCLOSPORA CASE
SURVEILLANCE IN ONTARIO, 2000*****Introduction**

Cyclosporiasis is a disease caused by the coccidian protozoa, *Cyclospora cayetanensis*. Clinical symptoms may include watery diarrhea, nausea, anorexia, abdominal cramping, fatigue and weight loss.¹ Outbreaks of cyclosporiasis occurred in Ontario from 1996 to 1999. These outbreaks were either associated with or had a suggested link with raspberries or blackberries that were imported from Guatemala.² Cyclosporiasis was made nationally reportable in 2000, but is not yet a reportable disease in Ontario.

On April 7, 2000, the Canadian Food Inspection Agency restricted the entry of Guatemalan berries into Canada for the spring 2000 importation season (March 15 to August 15); however, during this period, berries from other *Cyclospora* endemic countries were imported. Active surveillance of cyclosporiasis cases was implemented in the spring and summer of 2000 in order to attempt to determine the source of the infection. This article describes the findings from the surveillance.

Methods

By a letter of April 7, 2000, all laboratories in Ontario licensed for parasitology were asked to voluntarily report every positive case of *Cyclospora* to their local Medical

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Officer of Health and submit all stool specimens positive for *Cyclospora* from their laboratory to the Central Public Health Laboratory for confirmation.

By a letter of May 12, 2000, all health units in Ontario were asked to complete a questionnaire for *Cyclospora* cases identified from May 12 to August 31, 2000. The purpose of the questionnaire was to assist in determining the source of infection for confirmed cases of cyclosporiasis. Risk factors addressed in the questionnaire based on sources of infection previously described in North America included travel to an endemic country, raspberries, strawberries, blackberries, mesclun lettuce, and basil.

Results

A total of 28 cyclosporiasis cases were reported by the Central Public Health Laboratory. A questionnaire was administered by health unit staff to 19/28 (68%) of the cases. Two cases for which a questionnaire was not completed had "travel to another country" written on the laboratory requisition and these two cases were included with the analysis of the 19 that had a questionnaire completed.

The 28 cases were relatively evenly distributed over the time period (Figure 1). Of the 21 cases for which a questionnaire was completed or travel was listed on the laboratory requisition, 16/21 (76%) had a history of travel prior to onset of illness. The country of travel for the 16 cases is shown in Figure 2. Of the five cases without a history of travel, no risk factor was found in two cases. Basil, strawberries, and mesclun lettuce were consumed by each of the other three cases, respectively.

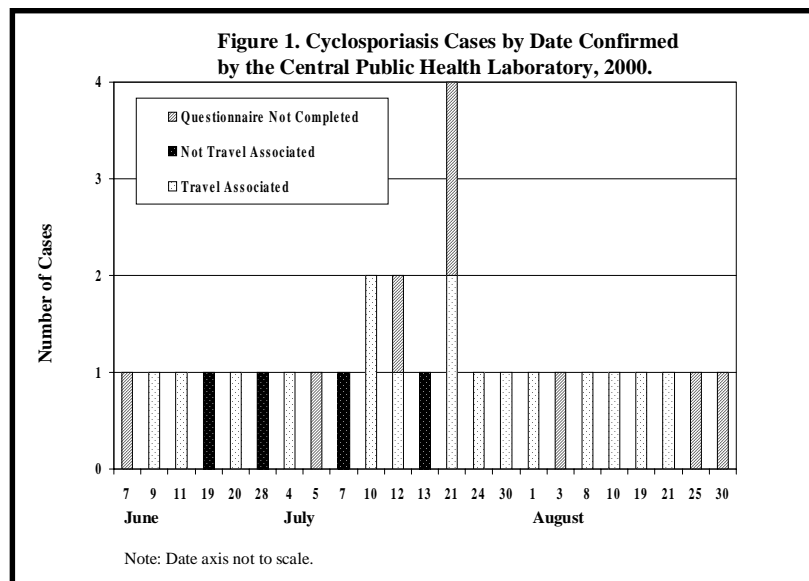


Figure 2. Cyclosporiasis Cases by Country of Travel (n = 16)

Country of Travel	Number of Cases
Cuba	4
Mexico	4
Nicaragua	2
China	2
El Salvador	1
China/Taiwan/Philippines*	1
Thailand/Taiwan/Korea*	1
Thailand/Nepal*	1
Total	16

* Travel to these countries occurred on the same trip.

Discussion

Travel to an endemic area was the most notable risk factor identified among reported cases. Illness resulting from *Cyclospora* has been identified in North, Central (including Mexico), and South America, the Caribbean, Southeast Asia (including Nepal), Eastern Europe, United Kingdom, India, and Africa.² The sole countries of travel where infection may have been acquired by the Ontario cases reported were Mexico, Nicaragua, El Salvador, Cuba, and China. It is difficult to determine whether infection was acquired in Taiwan, the Philippines, Korea and/or Nepal because the travelers to these countries visited other countries during the same trip.

While basil, strawberries and mesclun lettuce, food items associated with prior *Cyclospora* outbreaks, were consumed by three of the five cases not associated with travel, these items cannot be assumed as the definitive cause of these cases. Person-to-person spread was unlikely due to the relatively long sporulation period required before oocysts become infective. Transmission by means of fecally contaminated drinking water or irrigation water has been demonstrated in endemic countries.²

This route of transmission is thought to be unlikely in Ontario, however, because *Cyclospora* is not endemic. It is hypothesized

that the most likely source of infection for the five cases resulted from consuming an imported food item carrying the parasite.

Outbreaks of cyclosporiasis that had a link or suggested link to imported Guatemalan raspberries or blackberries occurred in Ontario annually from 1996 to 1999. The year 2000 was the first year since 1996 that no outbreaks were detected and Guatemalan raspberries and blackberries were not imported. The 28 cases identified between May 12 to August 31, 2000 represent the expected or background number of cases for this period in the absence of an outbreak. Assuming a stable incidence of travel-associated cases, this background incidence estimate provides a level above which the occurrence of an outbreak should be suspected and investigation commenced.

The cases were relatively evenly distributed temporally during the time period. Furthermore, the "travel related" cases were evenly distributed, and the combined categories of "non-travel related" and "cases for which a questionnaire was not completed" were evenly distributed. No more than two cases of the latter combined category were diagnosed on one day. This has importance for a health unit attempting to determine if cases are part of an outbreak. Health units should consider the possibility that cases under investigation are part of a common source outbreak if they have more than two cases, without a recent history of travel to an endemic country, reported in a two-week period.

Conclusion

Travel to an endemic country was the main risk factor identified by cases of cyclosporiasis during the study period. The consumption of food items imported from a *Cyclospora* endemic country was the most likely source of illness for those cases without a travel history.

Health Canada is reviewing its policy for Guatemalan berries for the spring 2001 importation season. Health units should consider the possibility of a common source outbreak if two or more cases, without a recent history of travel to an endemic country, are reported in a two-week period.

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REFERENCES

1. Chin J. Control of Communicable Diseases Manual; Seventeenth Edition. American Public Health Association. Washington: 2000.
2. Health Canada. Qualitative Risk Assessment: *Cyclospora* on Raspberries from Guatemala. Draft November 17, 1999. Ottawa.



GINI CONCENTRATION RATIO - MEASUREMENT OF DISPARITY OF HOUSEHOLD INCOME

Household income is an important socio-demographic data item collected in a population census. Several indicators such as average household income, median household income, and percentage of low income households etc., have been derived from this data item. These absolute measures of income distribution are included in Census reports and databases released by Statistics Canada.

Another important indicator that can be derived from household income data is the Gini Concentration Ratio or the Gini Coefficient of Income Disparity (Lorenz, 1905). The Gini Coefficient is often associated with a Lorenz Curve that visually displays disparity in distribution.

The Lorenz Curve (Figure 1) shows the percentage of income received (y-axis) by the cumulative percentage of households (x-axis). If income was equally distributed and every household had the same income, the Lorenz Curve would follow the reference diagonal line exactly. The extent to which the Lorenz curve diverges from the diagonal illustrates the degree of inequality of income distribution.

The degree of inequality of income distribution can be measured numerically by the Gini Coefficient of Income Disparity. This ratio is based on the area between the diagonal line and the curve below it, compared to the area below the diagonal line. If household incomes were exactly equally distributed between households (totally equal distribution), the Gini Coefficient would equal zero; if all the income was owned by one household (totally unequal distribution), the Gini Coefficient would equal one.

Using available census data on categories of household income, the Gini Coefficient of Income Disparity is approximated by the use of the following formula:

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$$G = 1 - \frac{\sum_{i=1}^n [(X_i - X_{i-1}) * (Y_i + Y_{i+1})]}{\sum_{i=1}^n (X_i - X_{i-1}) * \sum_{i=1}^n (Y_i - Y_{i-1})}$$

Where:

G is the Gini Coefficient of Income Disparity.

X_i is the cumulative percentage of households.

Y_i is the cumulative percentage of total household income.

Findings

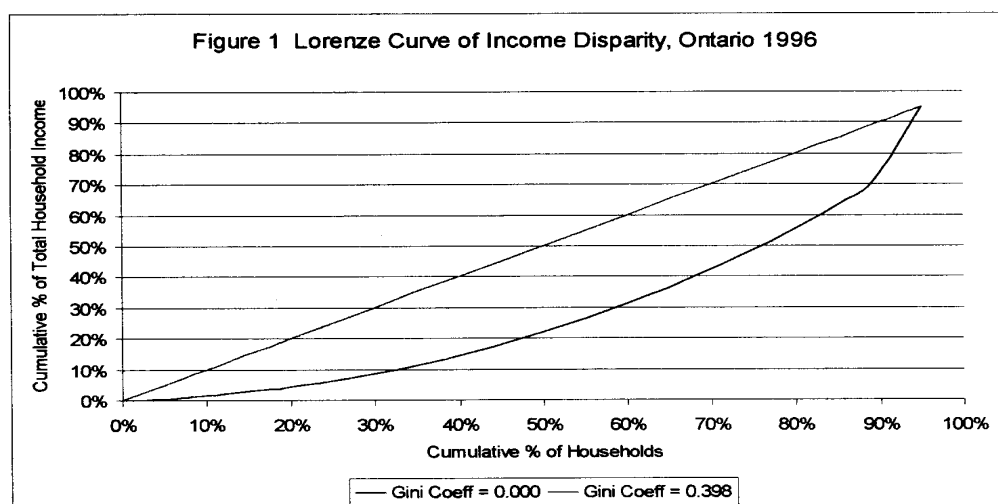
The above formula was applied to 1996 Census data on household income. Gini Coefficients of Income Disparity were calculated for Ontario and each census division. Appendix 1 illustrates the application of the formula for Gini Coefficient to Census data for Ontario overall. Table 1 presents the Gini Coefficients by Census Division in Ontario, 1996, ordered by rank.

Of the 49 census divisions, 15 had Gini Coefficients higher than the provincial total and 34 had Gini Coefficients lower than the provincial total. The highest five Gini Coefficients were Toronto (0.3991), Timiskaming (0.3973), Algoma (0.3893), Sudbury Regional Municipality (0.3855), and Nipissing (0.3842). The lowest five were Halton (0.3163), York Region (0.3189), Peel (0.3231), Dufferin (0.3266) and Durham (0.3281).

Discussion

Does income disparity reflect geography?

Does income disparity, measured by the Gini Coefficient,



The straight line indicates Gini Coefficient = 0.000

The curve indicates Gini Coefficient = 0.3719

Table 1. Gini Coefficient of Income Disparity by Census Division in Ontario (Approximations, based on 1996 Census Data with categories of income)

Census Division (Census Division codes)	Gini Coefficient	Comparison with Ontario Average
Ontario	0.3719	-
Toronto Metropolitan Municipality (20)	0.3991	H
Timiskaming District (54)	0.3973	H
Algoma District (57)	0.3893	H
Sudbury Regional Municipality (53)	0.3855	H
Nipissing District (48)	0.3842	H
Hamilton-Wentworth Regional Municipality (25)	0.3803	H
Sudbury District (52)	0.3798	H
Rainy River District (59)	0.3787	H
Stormont, Dundas and Glengarry United Counties (01)	0.3764	H
Huron County (40)	0.3764	H
Frontenac County (10)	0.3745	H
Middlesex County (39)	0.3741	H
Bruce County (41)	0.3738	H
Cochrane District (56)	0.3735	H
Essex County (37)	0.3727	H
Manitoulin District (51)	0.3709	L
Peterborough County (15)	0.3704	L
Parry Sound District (49)	0.3695	L
Niagara Regional Municipality (26)	0.3695	L
Kent County (36)	0.3674	L
Hastings County (12)	0.3671	L
Kenora District (60)	0.3637	L
Grey County (42)	0.3633	L
Thunder Bay District (58)	0.3626	L
Lambton County (38)	0.3621	L
Victoria County (16)	0.3616	L
Ottawa-Carleton Regional Municipality (06)	0.3607	L
Muskoka District Municipality (44)	0.3606	L
Prince Edward County (13)	0.3606	L
Brant County (29)	0.3604	L
Haliburton County (46)	0.3598	L
Lennox and Addington County (11)	0.3597	L
Prescott and Russell United Counties (02)	0.3592	L
Northumberland County (14)	0.3588	L
Renfrew County (47)	0.3578	L
Waterloo Regional Municipality (30)	0.3565	L
Haldimand-Norfolk Regional Municipality (28)	0.3545	L

Note: H = higher than Ontario average, L = lower than Ontario average

Table 1 shows that in 1996, the Gini Coefficient for Ontario was 0.3719. The range of the Gini Coefficient among the 49 census divisions was 0.3163 to 0.3991.

reflect either remoteness or urban location? Three of the 19 census divisions with Gini values greater than Ontario overall are large urban centres (Toronto 0.3991, Sudbury Municipality 0.3893, Hamilton 0.3803) whereas the other 12 census divisions with high Gini Coefficients are not urban areas. Central East Region includes census divisions with the highest Gini Coefficient (Toronto 0.3991 and Hamilton 0.3803) as well as the census divisions with the lowest Coefficient (Halton 0.3163, York Region 0.3189, and Peel 0.3231). These findings refute the notion that geographic location determines the value of the Gini Coefficient.

How are other income-related indicators related to the Gini Coefficient?

Three other income-related indicators, namely the percentage of low income households, average household income, and median household income for each of census divisions were also derived from the census data. A correlation coefficients matrix among Gini Coefficient and the three indicators was calculated for the 49 census divisions within Ontario (Table 2).

A positive correlation ($r=0.616$) was observed between the Gini Coefficient of Income Disparity and the percentage of low income households, indicating that the two indicators move in the same direction. That is, as the

percentage of low income households increases, the Gini Coefficient of Income Disparity increases. On the other hand, negative correlations were found between the Gini Coefficient and average household income ($r=-0.662$) and between the Gini Coefficient and median household income ($r=-0.741$). In other words, as average and median household incomes increase, income disparity decreases.

How can the Gini Coefficient be used in Public Health?

In the Mandatory Health Program and Services Guidelines (1998), equal access is a general standard for all program areas. By definition, the Gini Coefficient of income dispersion can be considered a suitable indicator for this general standard. Knowing that a community has a relatively large disparity in incomes may be helpful in setting policies and priorities for program planning and evaluation.

When devising equity-adjusted or needs-adjusted funding models for different health programs, income-related indicators have been used. These have included: 'the percent of low income persons, all ages' adopted in the 1996 Public Health Funding Allocation Model, and 'the percent of low income households among households with children aged under six' in the Healthy Babies, Healthy

Table 2.
Correlation Coefficient Matrix between Gini Coefficient and Three Other Income-related Indicators

		Gini Coefficient	AVGHHINC	MDHHINC	LOWINC
Gini Coefficient	Pearson Correlation	1.000	0.662(**)	0.741(**)	0.616(**)
	Sig (2-tailed)	-	0.000	0.000	0.000
	N	49	49	49	49
Average Household Income (AVGHHINC)	Pearson Correlation	-0.662(**)	1.000	0.978(**)	-0.139
	Sig (2-tailed)	0.000	-	0.000	0.000
	N	49	49	49	49
Median Household Income (MDHHINC)	Pearson Correlation	-0.741(**)	0.978(**)	1.000	-0.266
	Sig (2-tailed)	0.000	0.000	-	0.065
	N	49	49	49	49
Percent of Low Income Households (LOWINC)	Pearson Correlation	0.616(**)	-0.139	-0.266	1.000
	Sig (2-tailed)	0.000	0.340	0.065	-
	N	49	49	49	49

** Correlation is significant at the 0.01 level (2-tailed)

Children Funding Allocation Models. Although the use of these two indicators is generally accepted by health planners and researchers in public health, consideration of new indicators is encouraged. The Gini Coefficient of Income Disparity is suggested in this article as one possible income-related indicator for consideration in the development of public health funding allocation models.

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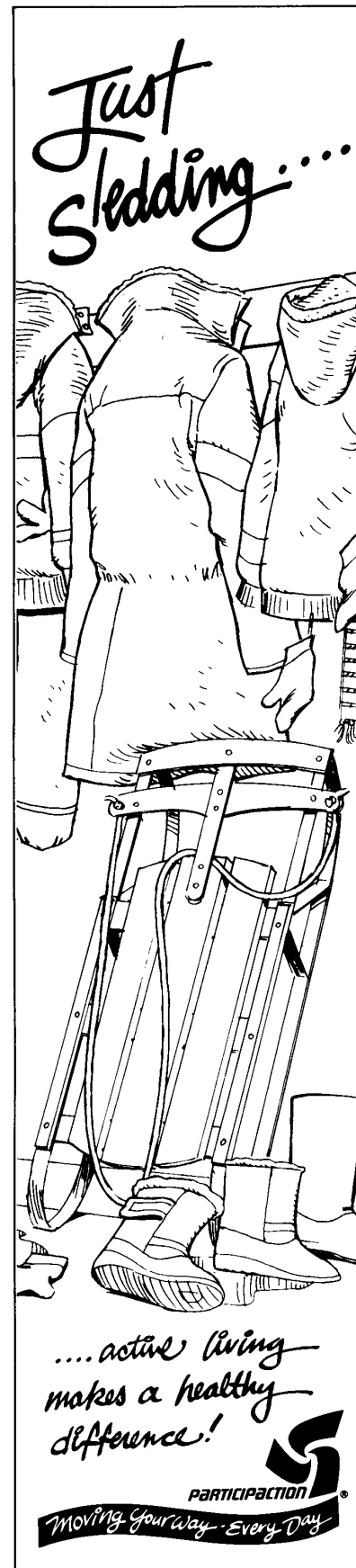
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REFERENCES

1. Lorenz MO. (cited by Shryock & Siegal et al., 1976:98) "Methods of Measuring the Concentration of Wealth." Quarterly Publications of the American Statistical Association. 1905; 9(70):209-19.
2. Shryock HS, Siegel JS et al., The Methods and Materials of Demography. Toronto: Academic Press, Inc., 1976. (Chapter 6. Population Distribution - Classification : & Chapter 12. Economic Characteristics).
3. Murray, CJL. and Lopez, AD. Estimating Causes of death - New Methods and Global and Regional Application for 1990. In Murray, CJL, Lopez, AD, eds. The Global Burden of Disease, Cambridge, Harvard University Press, 1996.
4. Ministry of Health (Ontario). Mandatory Health Program and Services Guidelines December 1997. Toronto: Queen's Printer for Ontario, 1998.
5. Statistics Canada. Income in Canada. (electronic edition) Catalogue #75-2020- XIE. Ottawa: Statistics Canada, 2000 Jun 12.



Appendix 1
Calculation of Gini Coefficient of Income Disparity for Ontario 1996
- Based on Income Distribution of All Types of Private Households

Household Income	No. of Households	Estimated Total Income (\$ million)	Xi	Yi	F	G	Area (F*G)/2
	Households		Cumulative % of Households	Cumulative % of Total Income	Xi+1 - Xi	Yi + Yi+1	
Under \$10,000	251385	1256.9	6.41%	0.62%	6.41	0.62	1.97
\$ 10,000 - \$19,999	553265	8299	20.50%	4.68%	14.1	5.3	37.35
\$ 20,000 - \$29,999	475580	11889.5	32.62%	10.51%	12.12	15.19	92.05
\$ 30,000 - \$39,999	453685	15879	44.18%	18.29%	11.56	28.8	166.47
\$ 40,000 - \$49,999	425920	19166.4	55.03%	27.68%	10.85	45.98	249.48
\$ 50,000 - \$59,999	385650	21210.8	64.86%	38.08%	9.83	65.76	323.12
\$ 60,000 - \$69,999	334690	21754.9	73.39%	48.74%	8.53	86.82	370.2
\$ 70,000 - \$79,999	266925	20019.4	80.19%	58.55%	6.8	107.29	364.87
\$ 80,000 - \$89,999	204200	17357	85.39%	67.06%	5.2	125.61	326.78
\$ 90,000 - \$99,999	147715	14032.9	89.16%	73.93%	3.76	140.99	265.34
\$100,000 and over	425510	53188.8	100.00%	100.00%	10.84	173.93	942.93
Sum	3924525	204054.4					3140.56
Gini Coefficient of Income Disparity							0.3719

Mid point of the last income group is set at \$125,000.

Appendix 2

Calculation of Gini Coefficient of Income Disparity for Ontario 1996

- Based on Income Distribution of Census Families including Two Persons or More

Household Income	Census Families	No. of Families	Estimated Total Income (\$ million)	X_i Cumul % of Hhds	Y_i Cumul % of Total Income	F Height $X_{i+1} - X_i$	G Top+Base $Y_{i+1} - Y_i$	Area $(F*G)/2$
Under \$10,000		148050	740.3	5.05%	0.44%	5.05	0.44	1.12
\$ 10,000 - \$19,999		256625	3849.4	13.80%	2.75%	8.75	3.19	13.96
\$ 20,000 - \$29,999		332130	8303.3	25.12%	7.72%	11.32	10.47	59.26
\$ 30,000 - \$39,999		336440	11775.4	36.60%	14.77%	11.47	22.49	128.98
\$ 40,000 - \$49,999		340330	15314.9	48.20%	23.94%	11.6	38.7	224.58
\$ 50,000 - \$59,999		324365	17840.1	59.26%	34.62%	11.06	58.55	323.81
\$ 60,000 - \$69,999		289155	18795.1	69.12%	45.87%	9.86	80.49	396.78
\$ 70,000 - \$79,999		235015	17626.1	77.13%	56.42%	8.01	102.29	409.85
\$ 80,000 - \$89,999		179905	15291.9	83.27%	65.58%	6.13	122	374.19
\$ 90,000 - \$99,999		127950	12155.3	87.63%	72.85%	4.36	138.43	301.97
\$100,000 and over		362765	45345.6	100.00%	100.00%	12.37	172.85	1069.06
Sum		2932730	167037.2					3303.56
Gini Coefficient of Income Disparity								0.3393

Mid point of the last income group is set at \$125,000.

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Summary of Reportable Diseases in August, 2000

Health Units by Region	1996 Population	AIDS	Campylo.	Chicken- pox	Chlamydia	Enceph./ Meningitis	GAS	Gonorrhea
Algoma	123,953		1		12			
North Bay	93,841		3		7			
Northwestern	80,235		2	23	11			
Porcupine	97,437				7	1		
Sudbury	201,154		3		18	1		1
Thunder Bay	161,187		4	14	36		1	4
Timiskaming	38,847		3					
Total - Northern	796,654		16	37	91	2	1	5
Eastern Ontario	185,314		6		8			
Hastings-Prince Edward	143,790		8	4	6		1	
Kingston-Frontenac	175,568		11		25		1	1
Leeds-Grenville	156,129		1					
Ottawa-Carleton	721,136		46	63	81	4	1	7
Renfrew	97,634		6		3			
Total - Eastern	1,479,571		78	67	123	4	3	8
Durham Region	458,616		12	16	54			5
East York	107,822		4		13			7
Etobicoke	328,718		22	3	42	1		10
Haliburton-Kawartha	165,039		8		5			
Muskoka-Parry Sound	78,675		4	6	2			
North York	589,653		31	5	103	3		31
Peel Region	852,526		49	40	101	5		34
Peterborough	123,448		4		20	1	1	
Scarborough	558,960		33	18	94	3	1	30
Simcoe County	329,865		12	4	27			1
Toronto City	653,734	5	42	31	27	1	1	16
York City	146,534		13		27			11
York Region	592,445		43		11	1		1
Total - Central East	4,986,035	5	277	123	526	15	3	146
Bruce, Grey-Owen Sound	153,312		20	1	8			
Elgin-St. Thomas	79,159		2	4	7		1	2
Huron	60,220		1	7	1			
Chatham-Kent	109,650		4		6			
Lambton	128,975		2					
Middlesex-London	389,616		24		39	6	1	4
Oxford	97,142		4		5	1		
Perth	72,106		13	1	1			
Windsor-Essex	350,329		27	6	35	1		5
Total - Southwest	1,440,509		97	19	102	8	2	11
Brant	114,564		6		11	1	1	
Haldimand-Norfolk Region	102,575		3		6	1		1
Halton Region	339,875		16		15	1		1
Hamilton-Wentworth	467,799		22	3	80	1		4
Niagara Region	403,504		20	26	27	2	1	6
Waterloo Region	405,435		20		41	2	1	7
Wellington-Dufferin	217,052		24	2	12	1		
Total - Central West	2,050,804		111	31	192	9	3	19
August 2000	10,753,573	5	579	277	1,034	38	12	189
* Total YTD 2000	-	45	3,328	19,813	8,981	220	306	1,670
* Total YTD 1999	-	97	2,968	10,794	8,800	229	211	1,453

* Adjusted for deletions and late reports.

Summary of Reportable Diseases in August, 2000

Health Units by Region	1996 Population	PPNG	Hepatitis A	Hepatitis B	Hepatitis C	Hib	Influenza	Measles	Meningo- coccal
Algoma	123,953				6				
North Bay	93,841				6				
Northw estern	80,235			1	4				
Porcupine	97,437				1				
Sudbury	201,154				4				
Thunder Bay	161,187				8				
Timiskaming	38,847								
Total - Northern	796,654			1	29				
Eastern Ontario	185,314			1	5				
Hastings-Prince Edward	143,790				2				
Kingston-Frontenac	175,568								
Leeds-Grenville	156,129								
Ottawa-Carleton	721,136		1		52				
Renfrew	97,634			2	1				
Total- Eastern	1,479,571		1	3	60				
Durham Region	458,616								
East York	107,822				7				
Etobicoke	328,718				15				
Haliburton-Kaw artha	165,039				3				
Muskoka-Parry Sound	78,675								
North York	589,653				37				
Peel Region	852,526		1		40				
Peterborough	123,448				5				
Scarborough	558,960	1	1		26				
Simcoe County	329,865		1		7				
Toronto City	653,734	5		1	40				
York City	146,534		1		11				
York Region	592,445	1			21				1
Total - Central East	4,986,035	7	4	1	212				1
Bruce, Grey-Ow en Sound	153,312				1				
Elgin-St. Thomas	79,159				5				
Huron	60,220								
Chatham-Kent	109,650				8				
Lambton	128,975								
Middlesex-London	389,616	1			18				
Oxford	97,142				1				
Perth	72,106								
Windsor-Essex	350,329				8				
Total - Southwest	1,440,509	1			41				
Brant	114,564								
Haldimand-Norfolk Region	102,575				1				
Halton Region	339,875				1				
Hamilton-Wentw orth	467,799	1			39				
Niagara Region	403,504				15				1
Waterloo Region	405,435	2			14				
Wellington-Dufferin	217,052			1	1				
Total - Central West	2,050,804	3		1	71				1
August 2000	10,753,573	11	5	6	413				2
* Total YTD 2000	-	111	78	95	3,736	5	1,517	8	56
* Total YTD 1999	-	72	186	90	4,385	3	2,283	1	57

* Adjusted for deletions and late reports.

Summary of Reportable Diseases in August, 2000

Health Units by Region	1996 Population	Mumps	Pertussis	Rubella	Salmon.	Shigellosis	Syphilis (Prim/Sec)	VTEC
Algoma	123,953		2					
North Bay	93,841				1			
Northw estern	80,235		1		2			
Porcupine	97,437				1			1
Sudbury	201,154				5			1
Thunder Bay	161,187				3			1
Timiskaming	38,847							
Total - Northern	796,654		3		12			3
Eastern Ontario	185,314		1		2			5
Hastings-Prince Edward	143,790				6			
Kingston-Frontenac	175,568		2		2			
Leeds-Grenville	156,129				1			2
Ottawa-Carleton	721,136		5		26	2		6
Renfrew	97,634				3			1
Total - Eastern	1,479,571		8		40	2		14
Durham Region	458,616		4		7			1
East York	107,822				1			
Etobicoke	328,718				8	2		1
Haliburton-Kaw artha	165,039				18			4
Muskoka-Parry Sound	78,675							
North York	589,653	1	7		20	4		3
Peel Region	852,526	1	5		31	2		4
Peterborough	123,448		1		4			2
Scarborough	558,960		5		25	1		4
Simcoe County	329,865		3		5	1		1
Toronto City	653,734	1	3		23			2
York City	146,534				7	2		
York Region	592,445		6	1	19			2
Total - Central East	4,986,035	3	34	1	168	12		24
Bruce, Grey-Owen Sound	153,312		1		3			2
Elgin-St. Thomas	79,159					1		2
Huron	60,220				1			
Chatham-Kent	109,650				1			1
Lambton	128,975				4			
Middlesex-London	389,616		4		17	1		2
Oxford	97,142				2	1		
Perth	72,106				2			1
Windsor-Essex	350,329		2		9			
Total - Southwest	1,440,509		7		39	3		8
Brant	114,564		1		3		1	1
Haldimand-Norfolk Region	102,575		1		2			
Halton Region	339,875		1		13			2
Hamilton-Wentworth	467,799				5	1		7
Niagara Region	403,504		2		8	2		2
Waterloo Region	405,435		12		7			5
Wellington-Dufferin	217,052		5		6			3
Total - Central West	2,050,804		22		44	3	1	20
August 2000	10,753,573	3	74	1	303	20	1	69
* Total YTD 2000	-	27	394	7	1,592	193	7	474
* Total YTD 1999	-	23	837	3	1,660	193	18	265

* Adjusted for deletions and late reports.

Summary of Reportable Diseases

Quarterly Report

3rd Quarter, 2000

Ministry of Health



Ontario

Ontario Region, July 1 - September 30, 2000

DISEASE	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24		25 - 29		30 - 39		40 - 49		50 - 59		Over 60		UI
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Campylobacter Enteritis	1															1	1				
Chickenpox (Varicella)	21	19	7	3	1	1															
Chlamydia Trachomatis Infections							4	32	8	24	6	11	10	14		1			2		
Giardiasis		1																			
Gonorrhoea													1								
Hepatitis C																2					
Salmonellosis	1	3														1					
Tuberculosis						1															

On-Reserve Population for MSB - Ontario Region = 66,154