

# Diseases Spread by Food and Water



## HIGHLIGHTS

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- The incidence of diseases spread by food and water is higher in Peel than in Ontario, with the exception of hepatitis A and verotoxin-producing *Escherichia coli* (VTEC).
  - The incidence of shigellosis, verotoxin-producing *Escherichia coli* (VTEC) and yersiniosis generally decreased between 1992 and 2001.
  - In 2001, the highest incidence of amebiasis was in people aged 60 years and older. This finding is unusual for this disease.
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## INTRODUCTION

Diseases spread by food and water are caused by bacteria, parasites and viruses that have found their way into our food or water from the feces of an infected person or animal.<sup>21</sup> Many of these diseases can also be spread from one person to another if hands are not thoroughly washed with soap and water after going to the bathroom (this is the main method of transmission for hepatitis A).<sup>21</sup> All of these diseases may cause diarrhea that can be quite severe. In some illnesses (campylobacter, hepatitis A, some types of salmonella, shigella, verotoxin-producing *Escherichia coli* (VTEC)) people will recover without antibiotics. Unfortunately, some of these infections have a risk of complications such as kidney failure (VTEC), systemic infections (amebiasis, salmonella and yersinia) and immune system problems (campylobacter, salmonella and yersinia).

The highest incidence for many of these diseases (campylobacteriosis, giardiasis, salmonellosis, shigellosis, verotoxin-producing *Escherichia coli* (VTEC) and yersiniosis) occurs in those under five years of age. This finding may be due to:

- poor personal hygiene,
- increased likelihood of severe illness due to susceptibility of dehydration in infants and young children,
- increased likelihood of severe illness due to less developed immune system, and
- increased likelihood of being seen by a physician and diagnosed if sick.

## AMEBIASIS

Amebiasis is caused by the parasite *Entamoeba histolytica*. It is most common in immigrants from and travellers to developing countries with poor sanitation. The disease can become widespread and infect the liver, lungs or brain.<sup>22</sup>

**Figure 4.1: Incidence of Amebiasis, Region of Peel and Ontario, 1992–2001**

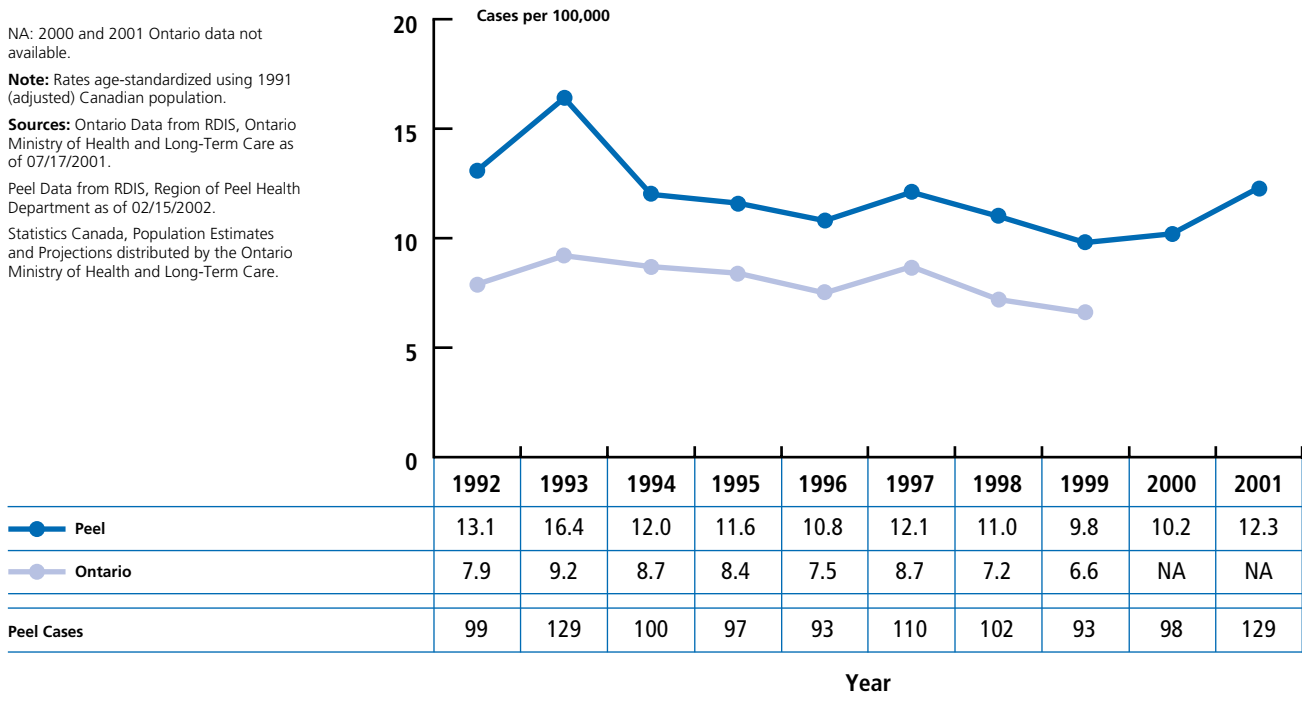
NA: 2000 and 2001 Ontario data not available.

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

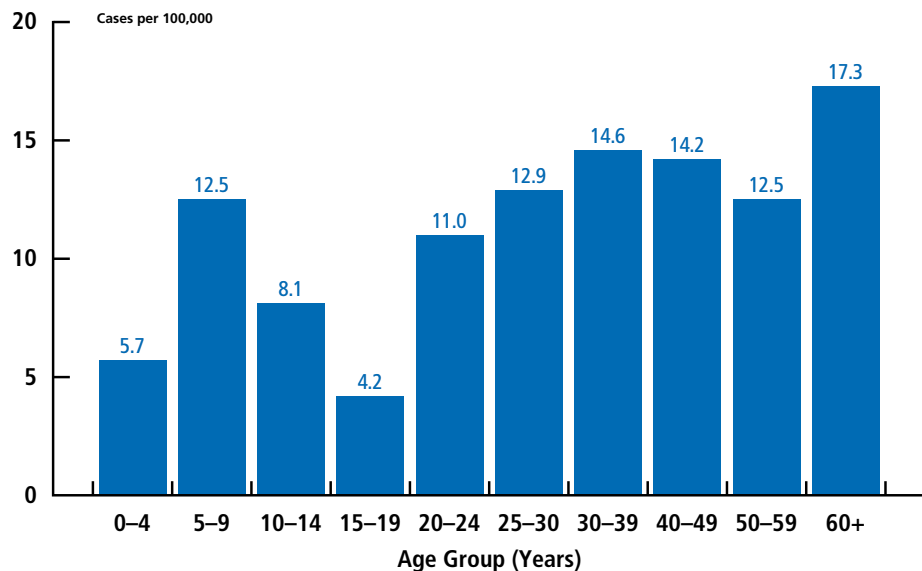
**Sources:** Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care as of 07/17/2001.

Peel Data from RDIS, Region of Peel Health Department as of 02/15/2002.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.



**Figure 4.2: Incidence of Amebiasis by Age Group, Region of Peel, 2001**



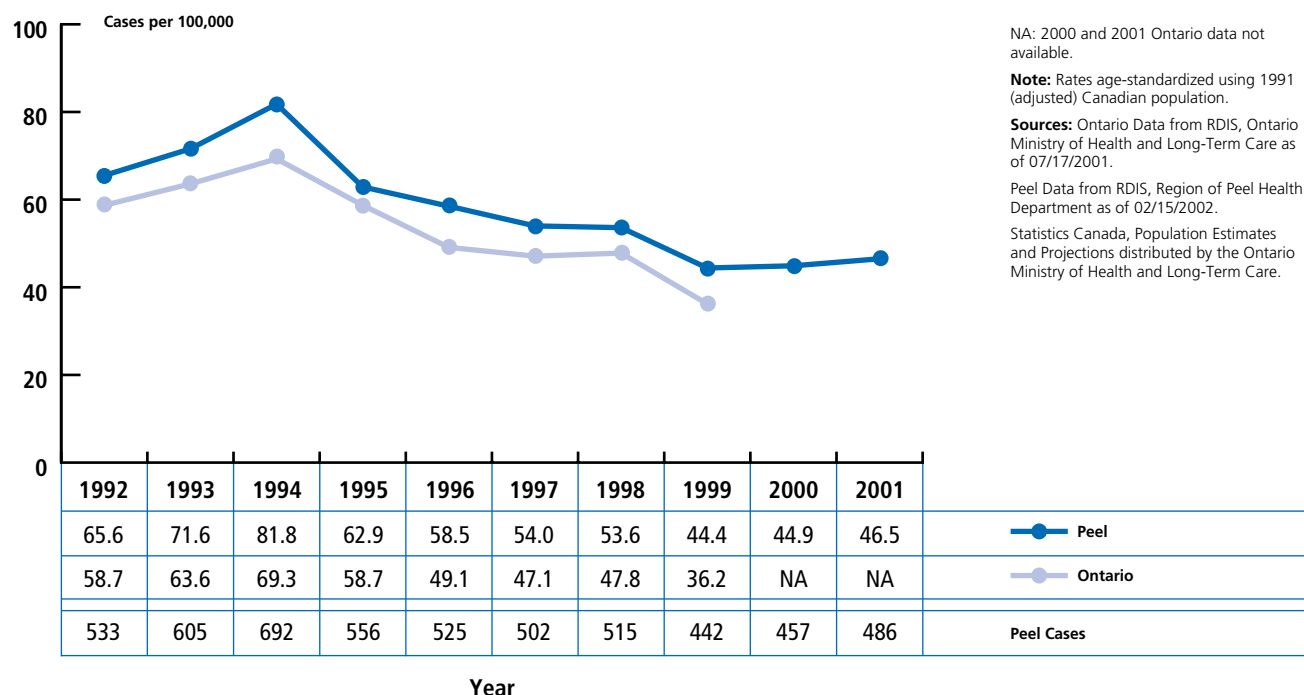
**Sources:** Peel Data from RDIS, Region of Peel Health Department, as of 02/15/2002.

Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.

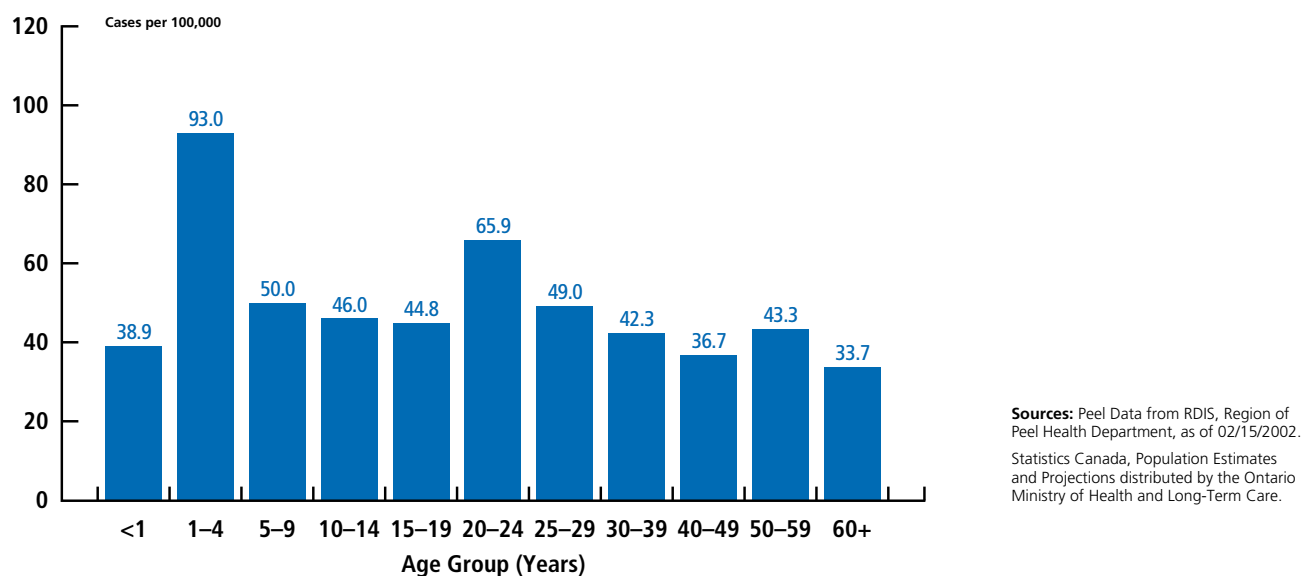
## CAMPYLOBACTERIOSIS

Campylobacteriosis is the most common bacterial cause of diarrheal illness in Ontario. Most cases are associated with handling or eating raw or undercooked poultry.<sup>23</sup> Other sources of infection include unpasteurized milk and the stool of an infected dog or cat.<sup>23</sup>

**Figure 4.3: Incidence of Campylobacteriosis, Region of Peel and Ontario, 1992–2001**



**Figure 4.4: Incidence of Campylobacteriosis by Age Group, Region of Peel, 2001**



## GIARDIASIS

Giardiasis is caused by *Giardia lamblia*, a one-celled, microscopic parasite that lives in the intestines of people and animals. It is one of the most common causes of waterborne disease (drinking and recreational). Person-to-person spread has occurred in day care centres and other institutional settings.<sup>24</sup>

**Figure 4.5: Incidence of Giardiasis, Region of Peel and Ontario, 1992–2001**

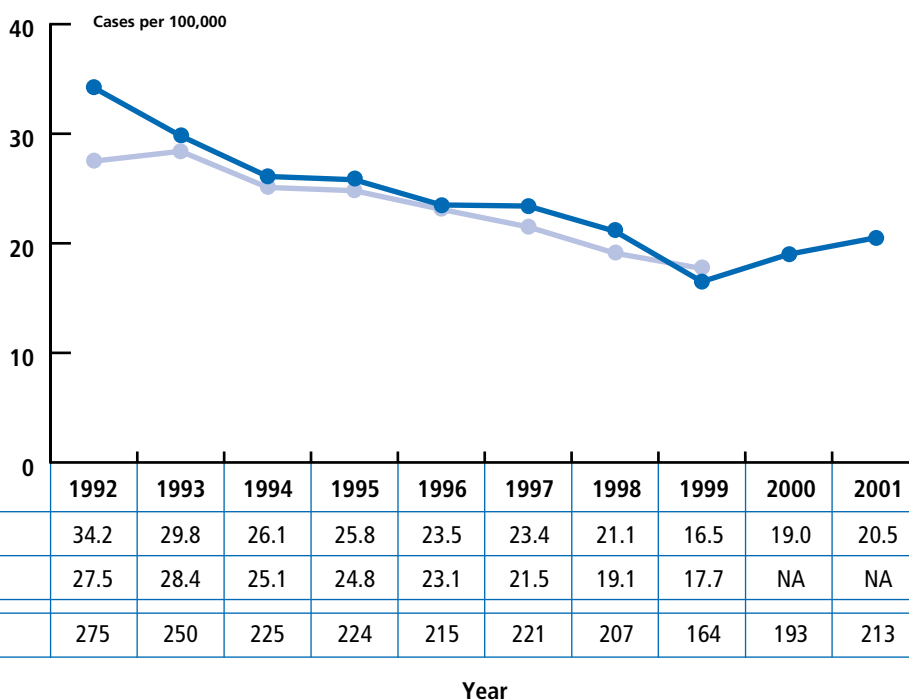
NA: 2000 and 2001 Ontario data not available.

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

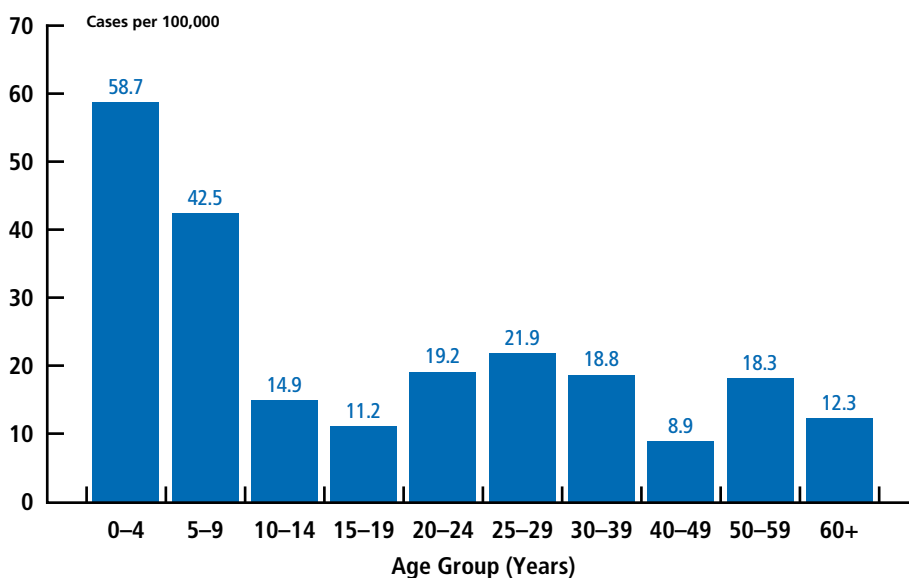
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**Figure 4.6: Incidence of Giardiasis by Age Group, Region of Peel, 2001**



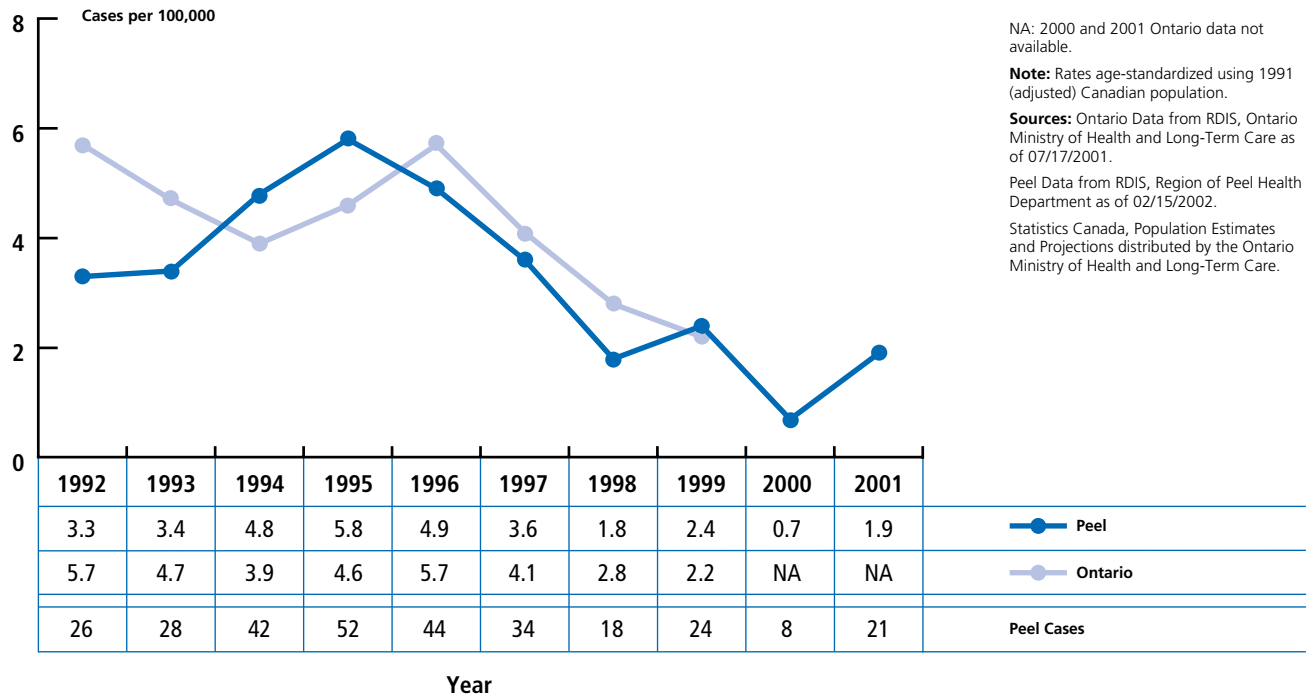
**Sources:** Peel Data from RDIS, Region of Peel Health Department, as of 02/15/2002.

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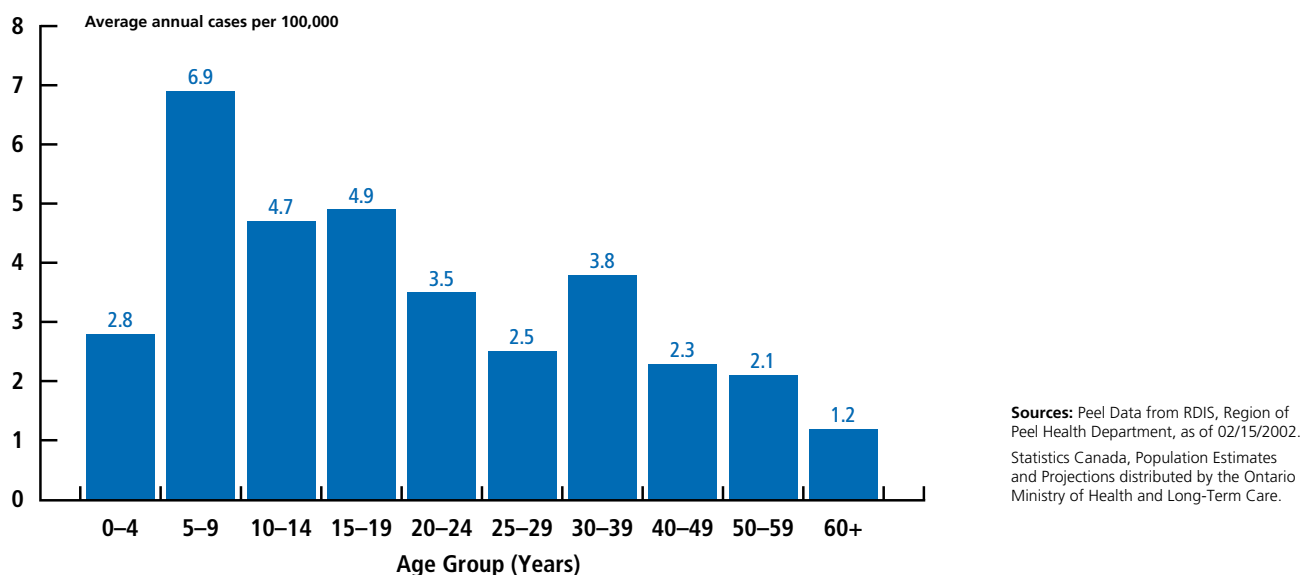
## HEPATITIS A

Hepatitis A is a viral infection of the liver with symptoms of fever, tiredness and jaundice. Unlike hepatitis B and C, the infection tends to have less severe consequences and chronic infection does not occur.<sup>25</sup>

**Figure 4.7: Incidence of Hepatitis A, Region of Peel and Ontario, 1992–2001**



**Figure 4.8: Incidence of Hepatitis A by Age Group, Region of Peel, 1992–2001 Combined**



## SALMONELLOSIS

Salmonellosis is caused by a number of different types of salmonella bacteria that live in the intestines of people and animals. Cases are usually associated with contaminated foods of animal origin such as poultry, pork and eggs, but all foods can be contaminated.<sup>26</sup> Salmonella can also be associated with pets, including dogs, cats and turtles.<sup>26</sup>

**Figure 4.9: Incidence of Salmonellosis, Region of Peel and Ontario, 1992–2001**

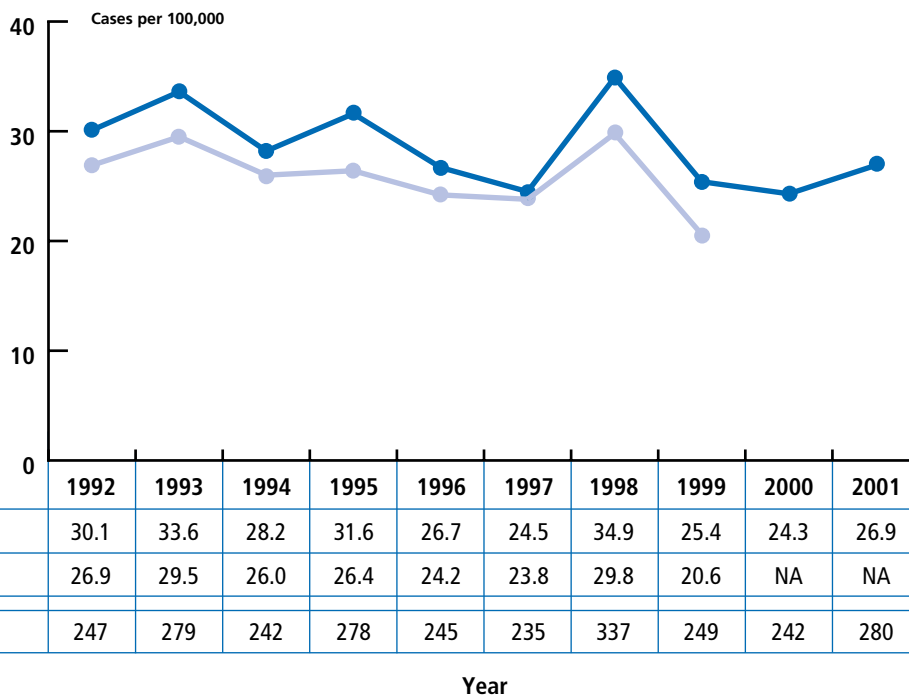
NA: 2000 and 2001 Ontario data not available.

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

**Sources:** Ontario Data from RDIS, Ontario Ministry of Health and Long-Term Care as of 07/17/2001.

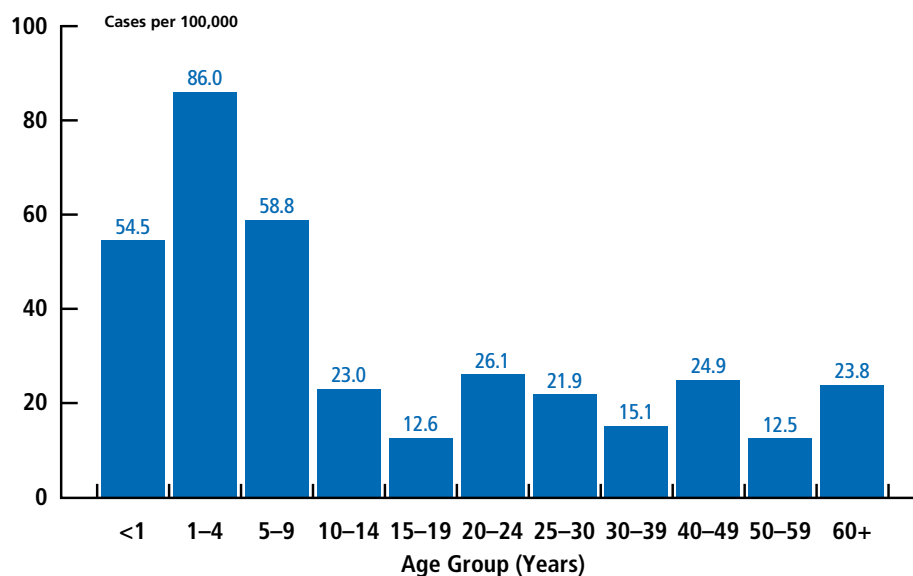
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● Peel	30.1	33.6	28.2	31.6	26.7	24.5	34.9	25.4	24.3	26.9
● Ontario	26.9	29.5	26.0	26.4	24.2	23.8	29.8	20.6	NA	NA
<b>Peel Cases</b>	247	279	242	278	245	235	337	249	242	280

**Figure 4.10: Incidence of Salmonellosis by Age Group, Region of Peel, 2001**



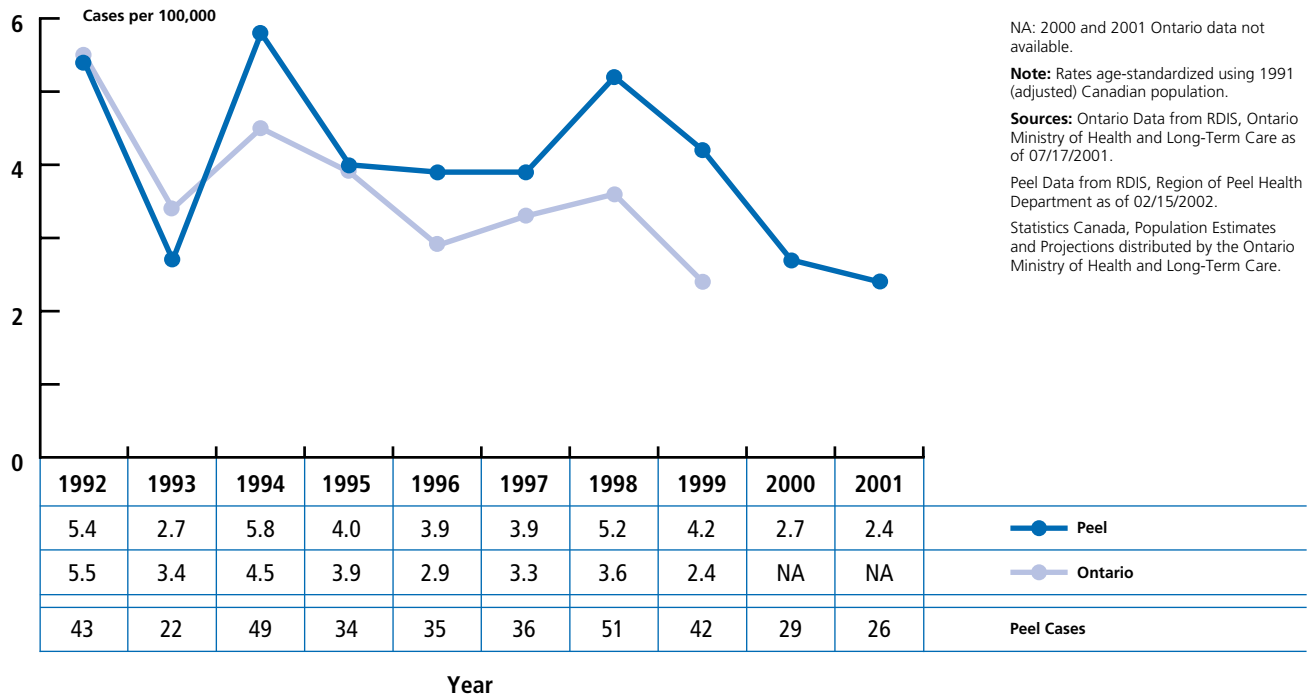
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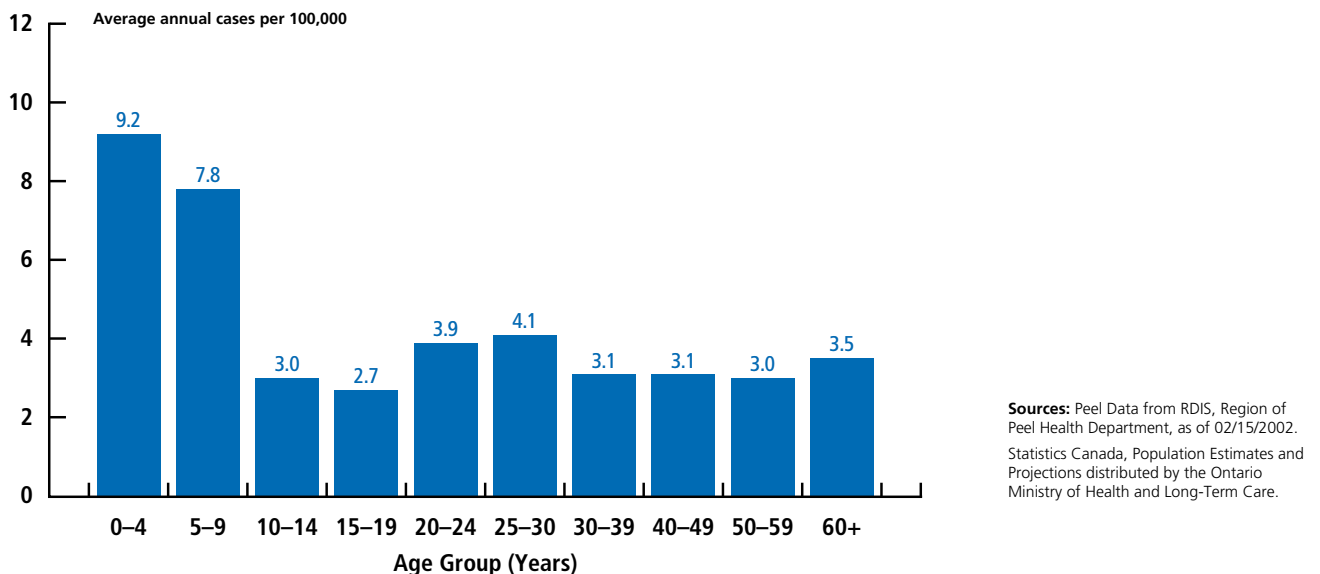
## SHIGELLOSIS

Shigellosis is caused by a family of bacteria called *Shigella* that are found only in the intestines of humans. This disease is spread directly from improperly washed hands. *Shigella* can also make its way into food and water from infected food handlers, infected fertilizer and contaminated flies.<sup>27</sup>

**Figure 4.11: Incidence of Shigellosis, Region of Peel and Ontario, 1992–2001**



**Figure 4.12: Incidence of Shigellosis by Age Group, Region of Peel, 1992–2001 Combined**



## VEROTOXIN-PRODUCING *ESCHERICHIA COLI* (VTEC)

Verotoxin-producing *Escherichia coli* (VTEC) has made the news in recent years due to outbreaks involving contaminated hamburgers<sup>28</sup> and a contaminated municipal water supply in Walkerton, Ontario.<sup>29</sup> The bacterium is found in the intestines of healthy cattle. Transmission can occur from one person to another. Most cases are the result of eating undercooked ground beef but other foods and water can be contaminated.<sup>28</sup>

**Figure 4.13: Incidence of Verotoxin-Producing *Escherichia coli* (VTEC), Region of Peel and Ontario, 1992–2001**

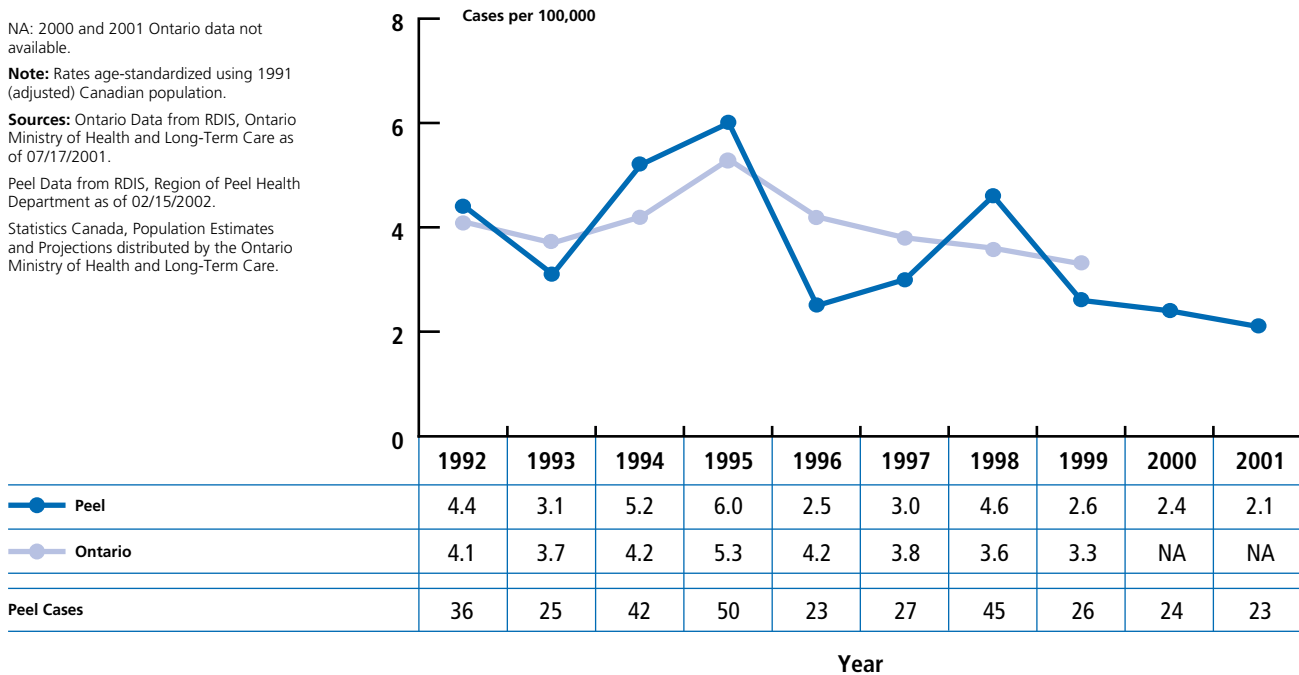
NA: 2000 and 2001 Ontario data not available.

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

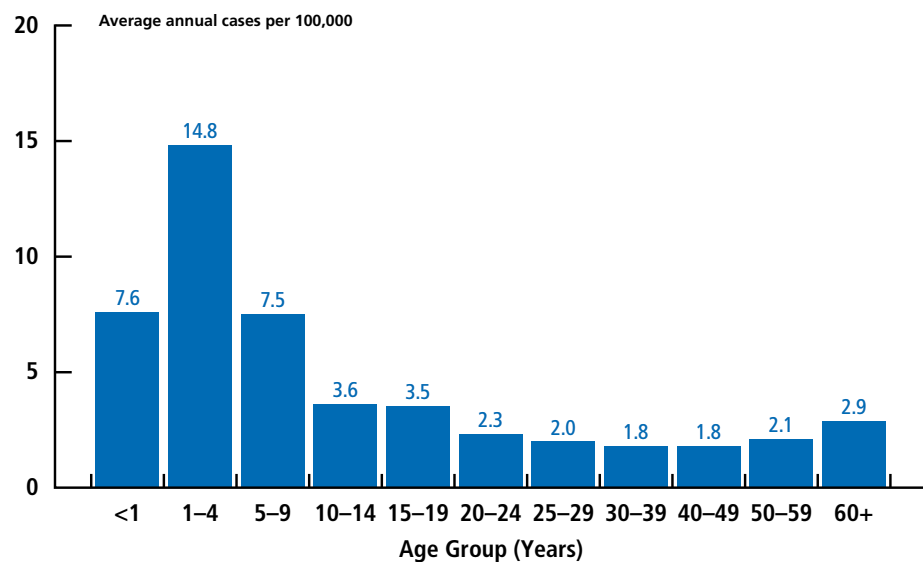
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**Figure 4.14: Incidence of Verotoxin-Producing *Escherichia coli* (VTEC) by Age Group, Region of Peel, 1992–2001 Combined**



**Sources:** Peel Data from RDIS, Region of Peel Health Department, as of 02/15/2002.

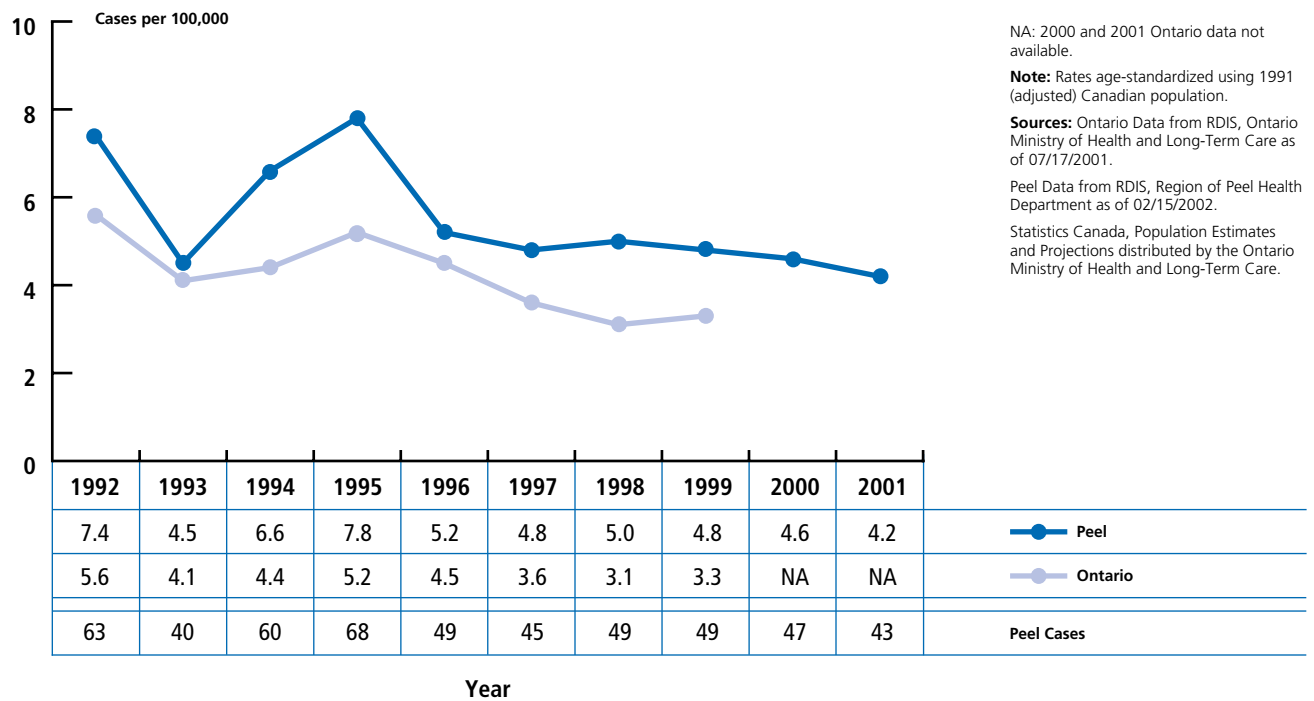
Statistics Canada, Population Estimates and Projections distributed by the Ontario Ministry of Health and Long-Term Care.



## YERSINIOSIS

Yersiniosis is caused by a number of types of *Yersinia* bacteria found in animals, especially pigs.<sup>30</sup> Most cases are caused by eating raw or undercooked pork. Children and infants are particularly susceptible to illness from *Yersinia*.<sup>30</sup>

**Figure 4.15: Incidence of Yersiniosis, Region of Peel and Ontario, 1992–2001**



**Figure 4.16: Incidence of Yersiniosis by Age Group, Region of Peel, 1992–2001 Combined**

