



**SUMMARY OF OUTBREAKS REPORTED AT HKPR DISTRICT
HEALTH UNIT FOR THE YEARS 2005/2006, 2006/2007 and
2007/2008**

TABLE OF CONTENTS

Introduction	3
Outbreak Reporting and Investigation	3
Summary	4
Enteric Outbreaks	5
Duration of Enteric Outbreaks.....	7
Respiratory Outbreaks.....	7
Duration of Respiratory Outbreaks.....	8
Conclusion.....	9
References.....	9
Resources.....	9

LIST OF FIGURES

Figure1: Number of Outbreaks by type reported at HKPR District Health Unit, September 2005 – August 2008	4
Figure 2: Number of Outbreaks reported at HKPR District Health unit by month by year, September 2005 – August 2008.....	5
Figure 3: Enteric outbreaks by exposure setting 2005/2006, 2006/2007 and 2007/2008	5
Figure 4: Enteric outbreaks by aetiological agent reported to HKPR District Health Unit, September 2005 – August 2008.....	6
Figure 5: Respiratory outbreaks by exposure setting 2005/2006, 2006/2007 and 2007/2008.....	7
Figure 6: Respiratory outbreaks by aetiological agent reported to HKPR District Health Unit, September 2005 – August 2008.....	8

LIST OF TABLES

Table 1: Number of enteric outbreaks by aetiological agent reported to HKPR District Health Unit September 2005 – August 2008.....	6
Table 2: Number of respiratory outbreaks by aetiological agent reported to HKPR District Health Unit September 2005 – August 2008.....	8

Introduction

Ontario's Health Protection and Promotion Act (HPPA¹) has identified communicable disease outbreak investigation as one of its legislated mandates. The public health management of cases and outbreaks is carried out in accordance with the Ontario Public Health Standards², specifically the Infectious Diseases Protocol, Institutional/Facility Outbreak Prevention Protocol and provincial and national protocols on best practices.

The Haliburton Kawartha Pine Ridge District Health Unit (HKPRDHU) Communicable Disease Control (CDC) Department performs the outbreak and case management for any outbreak reported to the health unit. The

Environmental Health and Epidemiology departments support the CDC department in outbreak investigations on an as needed basis.

On average, 4 outbreaks were reported per month to the HKPRDHU for the years 2005/2006, 2006/2007 and 2007/2008. The data analyses of enteric and respiratory outbreaks reported in this summary report are based on the norovirus and influenza season respectively for each year (September to August). The results based on the last 3 seasons will assist in identifying peak times of local outbreak activity, in turn helping to identify the best times for preventative educational interventions.

Outbreak Reporting and Investigation

Institutions, specifically Long Term Care Homes (LTCHs) and hospitals are required to report any suspect respiratory or enteric outbreaks to the local Medical Officer of Health. Retirement homes are required to report only confirmed cases of reportable diseases. Community outbreaks are not required to be reported to the health units resulting in under reporting of community type outbreaks.

When an institutional outbreak is reported to the HKPRDHU, the CDC department staff assist the institution's

infection control staff with case finding and management according to the appropriate protocol. In the case of a community outbreak, case finding and management is completed by the health unit. Respiratory and enteric outbreaks reported to the health unit are investigated according to the criteria for "suspect outbreak" defined as per integrated Public Health Information System (iPHIS) definitions. Any outbreak reported to the health unit is communicated to the Ministry of Health and Long Term Care through iPHIS.

IPHIS Definitions

Enteric Outbreaks

Community:

Two or more individuals develop similar gastro-intestinal symptoms within 7 days from a suspected meal/event within the community

Institutional:

Two or more cases in institutionalized individuals who are thought to be linked in terms of clinical signs and symptoms, time, and either location or exposure to source.

Respiratory Outbreaks

Community:

Sporadic cases of respiratory illness within the community are investigated on an individual basis

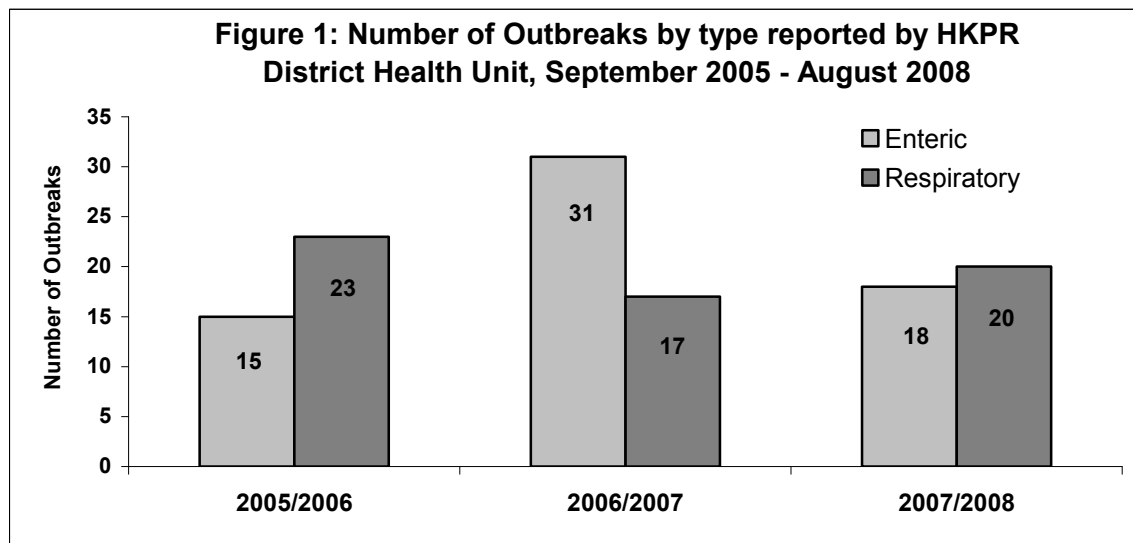
Institutional:

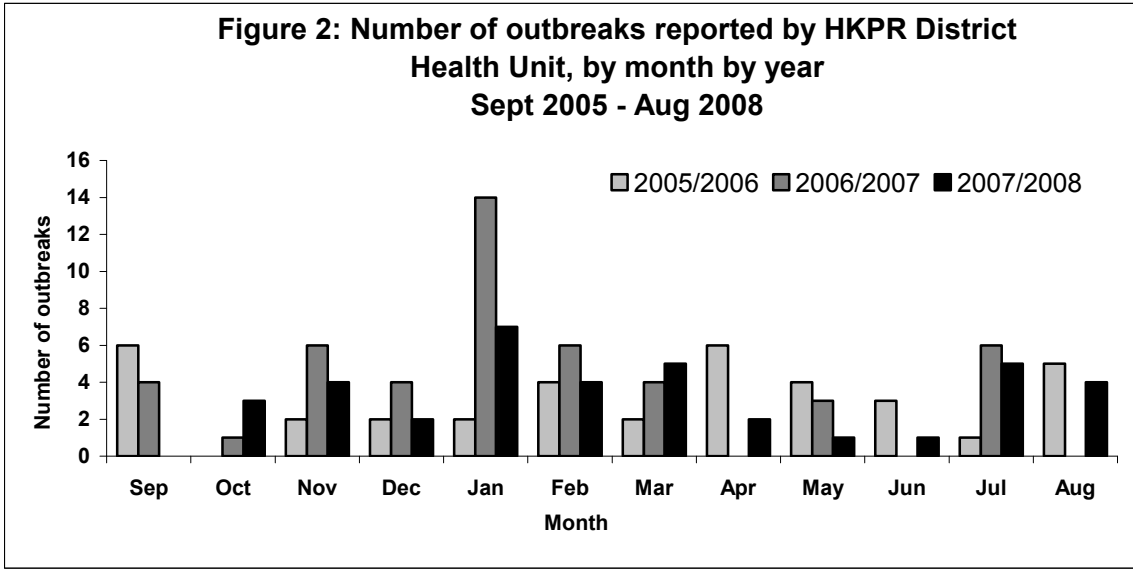
One laboratory confirmed case of influenza; or
Two cases of acute respiratory illness occurring within 48 hours in a geographical area (unit or floor); or
More than one unit having a case of acute respiratory illness within 48 hours.

Summary

During 2007/08, HKPRDHU received reports of 38 outbreaks. This was significantly lower than the number of outbreaks reported during the year 2006/07 (48 outbreaks) but was similar to that reported for 2005/06 (38 outbreaks). Figure 1 shows the type of outbreaks by year and Figure 2 shows the number of outbreaks by month for

the years 2005/06, 2006/07 and 2007/08. An organism was identified as the causative agent for 1 in 3 of the outbreaks reported to the health unit. LTCHs were the most common type of facility associated with outbreaks. A higher number of outbreaks were reported during November – April each year (Figure 2).

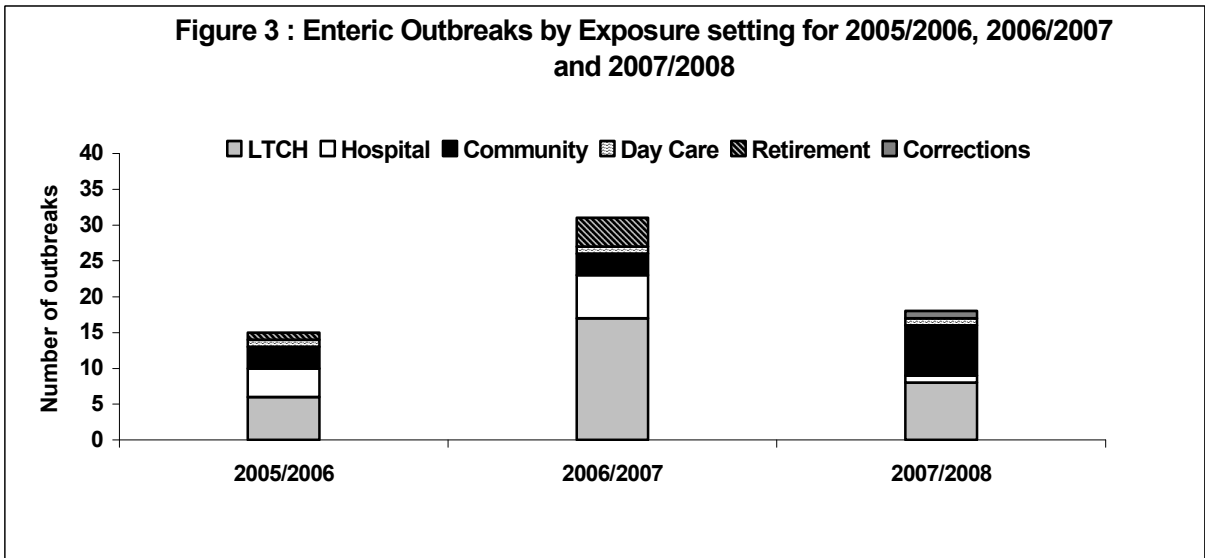




Enteric Outbreaks (2005/2006, 2006/2007 and 2007/2008)

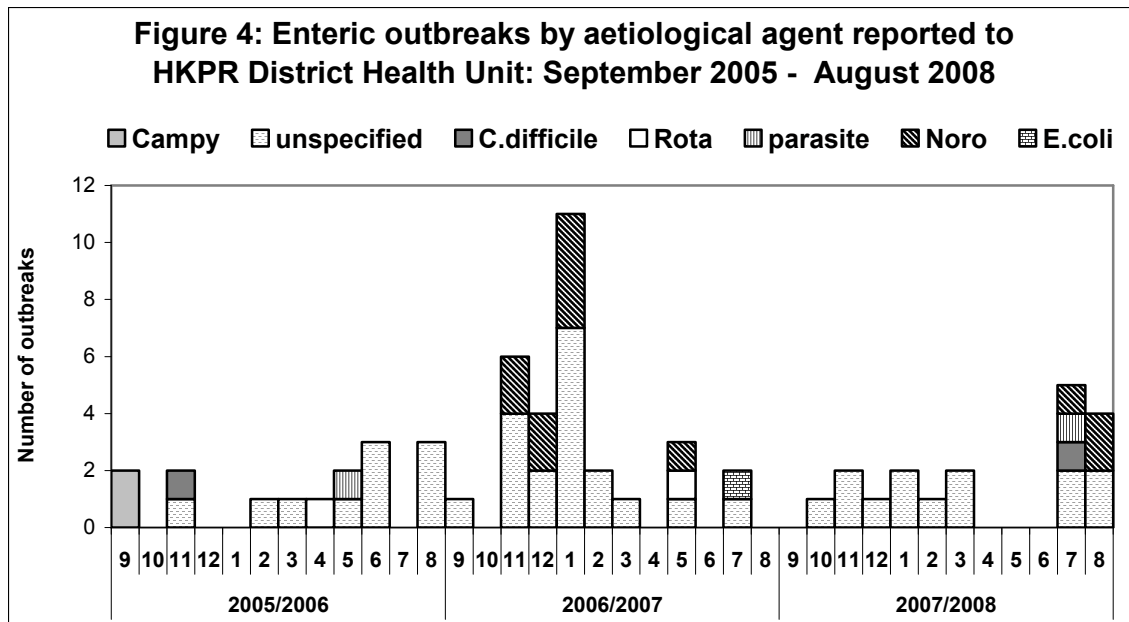
During 2007/08, HKPRDHU received 18 reports of enteric outbreaks. This was significantly lower than the number of outbreaks reported during the previous season 2006/07 (31) but was similar to that reported for 2005/06 (15). The most common settings for enteric outbreaks were LTCHs. Of the 18 enteric outbreaks reported during the 2007/08 season, 8 outbreaks were reported from

LTCHs, 7 were community type and the rest were reported in other types of facilities. For the 2006/07 season, 17 out of 31 outbreaks were reported from LTCHs and 6 outbreaks were reported from hospitals. During the 2005/06 season 6 out of 15 outbreaks were reported from LTCHs. Figure 3 shows the number of outbreaks by exposure setting for all the three seasons.



During the 2007/08 season, a causative agent were identified in 5 of 18 outbreaks (28%) and the remaining 13 outbreaks (72%) were recorded as “unspecified”. For the years 2005/06 and 2006/07, 61% and 67% of the outbreaks were reported as “unspecified” respectively. Figure 4 and Table 1 summarize enteric outbreaks reported to the HKPRDHU from September 2005 to August 2008 (2005/06, 2006/07 and 2007/08 norovirus seasons) by aetiological agent. Lack of food samples

or stool samples for laboratory testing is one of the main reasons for the large proportion of “unspecified” outbreaks. Reasons for not collecting specimens included too much time elapsed between an event and reports of illness, unwillingness to provide specimens, or hard-to-reach cases. During the 2006/07 season, a higher number of enteric outbreaks were investigated during the winter months, however no such trend was observed for the other seasons.



- Campy: *Campylobacter*
- C.Difficile: *Clostridium Difficile*
- Rota: *Rota virus*
- Noro: *Noro virus*
- E.coli: *Eschrichia coli*

Table 1: Number of enteric outbreaks by aetiological agent reported to HKPR District Health Unit September 2005 – August 2008

Disease	Sept 2005 - Aug 2006	Sept 2006 - Aug 2007	Sept 2007 - Aug 2008
Campylobacter	2	0	0
Unspecified	10	19	13
Rotavirus	1	1	0
Norovirus	0	10	3
Parasite	1	0	1
C.Difficile	1	0	1
E.coli	0	1	0
Total	15	31	18

Duration of Enteric Outbreaks

The outbreak period is defined as the period between date of onset of symptoms of the index case and the date on which the outbreak is declared over (iPHIS definition). The duration of enteric outbreaks reported during the 2005/06, 2006/07 and 2007/08 seasons ranged from 6 days to 45 days (average and median equal to 16 days). Outbreaks

in which person-to-person transmission was possible included the norovirus and rotavirus outbreaks. For the confirmed norovirus outbreaks reported during the three years, duration ranged from 9 – 33 days (average 17 days and median 16 days). Duration of the two outbreaks caused by rotavirus during the three seasons was 22 days each.

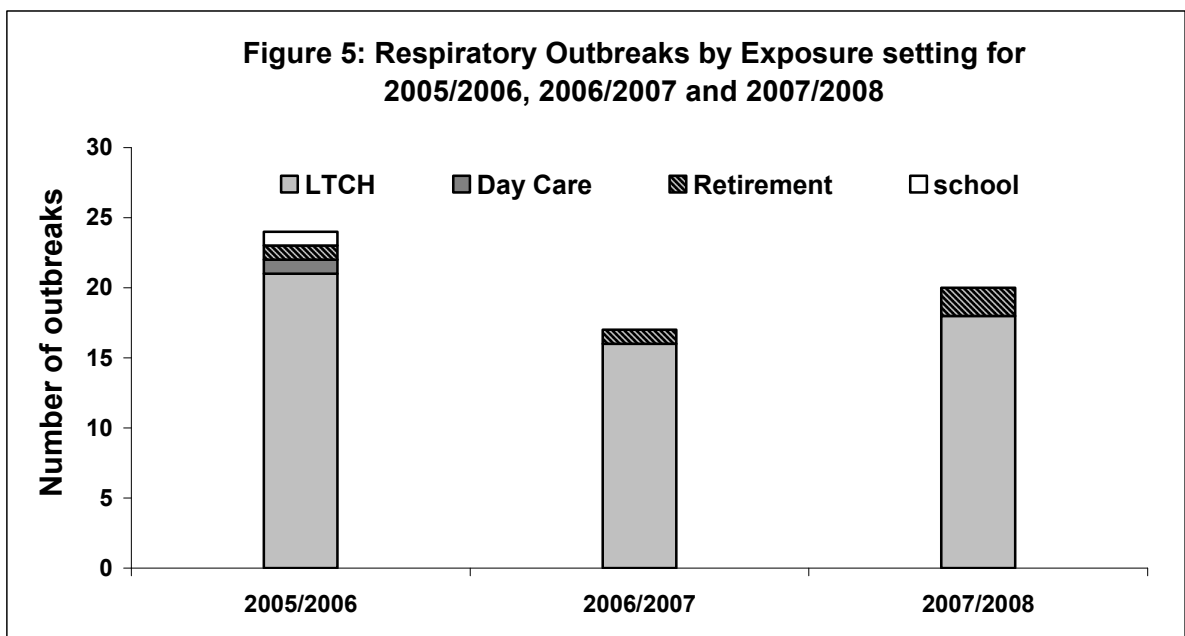
Respiratory Outbreaks (2005/2006, 2006/2007 and 2007/2008)

The HKPRDHU investigated 20 respiratory outbreaks during 2007/08. There were no significant differences in the number of outbreaks reported in 2007/08 when compared to 2005/06 (23 outbreaks) and 2006/07(17 outbreaks). More than 90% of the respiratory outbreaks reported during all three seasons occurred in LTCHs (Figure 5). Influenza virus was identified as the causative agent in two of the outbreaks reported during the 2007/08 season. Respiratory Syncytial Virus (RSV) was identified as the causative agent in 4 outbreaks during 2007/08 and the agent

was “unspecified” for 65% (13 outbreaks) of the total outbreaks reported.

Of note, the number of reported influenza outbreaks was lower during the 2007/08 season than was reported during previous seasons (2005/06 and 2006/07).

Figure 5 and Table 2 summarize the numbers and aetiologies of respiratory outbreaks reported to the health unit during the last three seasons. A larger number of respiratory outbreaks were investigated during January – April each year when compared to other months.



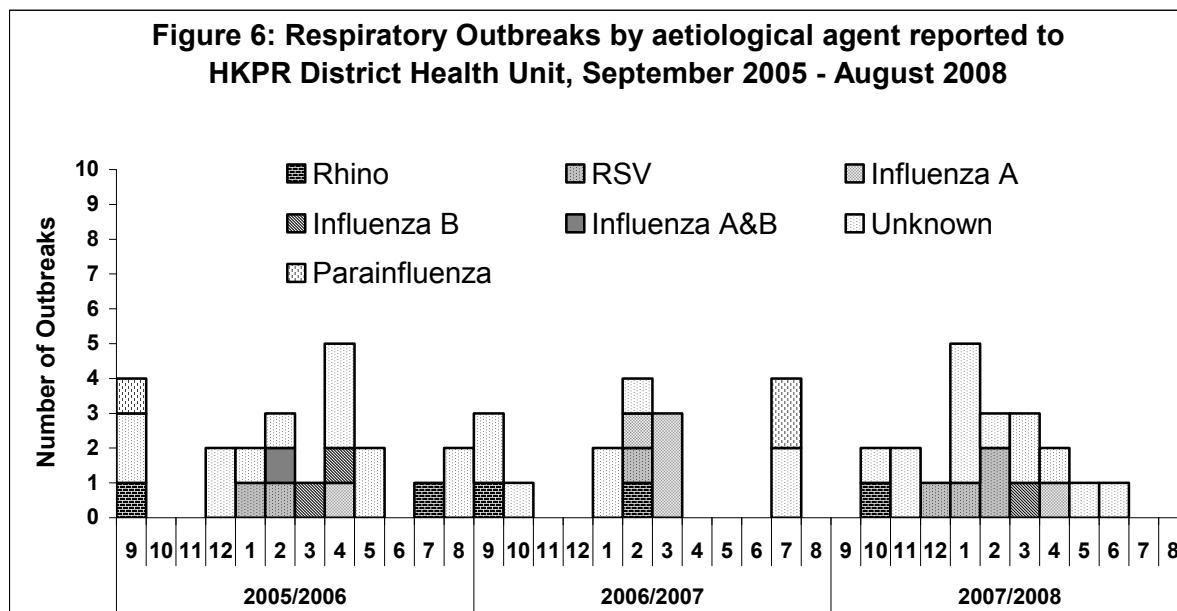


Table 2: Number of respiratory outbreaks by aetiological agent reported to HKPR District Health Unit September 2005 – August 2008

Disease	Sept 2005 - Aug 2006	Sept 2006 - Aug 2007	Sept 2007 - Aug 2008
Rhinovirus	2	2	1
RSV	2	1	4
Influenza A	1	4	1
Influenza B	2	0	1
Influenza A&B	1	0	0
Unknown	14	8	13
Parainfluenza	1	2	0
Total	23	17	20

Duration of Respiratory Outbreaks

The outbreak period is defined as the period between the date of onset of symptoms in the index case and the date on which the outbreak is declared over. The duration of outbreaks reported during the 2005/06, 2006/07 and 2007/08 seasons ranged from 7 days to 44 days (average 19 days and median 17

days). For the confirmed influenza outbreaks reported during the three seasons, duration ranged from 8 to 25 days (average 16 days and median 15 days). The duration of the outbreaks caused by RSV was 12 to 37 days.

Conclusion

An average of 4 outbreaks per month was reported to the HKPRDHU during the 2005/06, 2006/07 and 2007/08 years, however a higher number of outbreaks was reported and investigated during the winter months (November – April). The number and pattern of outbreaks in HKPR District over the last 3 seasons suggest that preventative intervention would be best in the early fall, just prior to the peak season for norovirus and influenza. LTCHs were the most common exposure setting for both enteric and respiratory outbreaks.

Of note, there are some limitations to this report. The morbidity and mortality associated with outbreaks could not be compared in this report, as the iPHIS reporting on morbidity and mortality in an outbreak was only initiated in 2007. Further analysis was also not possible in

regards to whether or not a specimen sample was collected from a case in an outbreak, as this information was not reported in iPHIS. A hard copy outbreak record is kept on file for internal purposes that includes information on whether or not a sample was collected, however it was not feasible to extract the information for the purposes of this report.

It is also important to note that the number of reported outbreaks may not be entirely reflective of the magnitude of the outbreaks or the burden of outbreak-related illness in HKPRDHU region. Cases with mild symptoms that may not seek medical attention are not captured and are therefore not reflected in these data, resulting in an under reporting of the magnitude of outbreak-related illness.

REFERENCES

1. Health Protection and Promotion Act, R.S.O. 1990, c.H.7.
Available from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm.
2. Ontario Public Health Standards and Protocols, 2008
Available from <http://www.ontario.ca/publichealthstandards>

Data is extracted from integrated Public Health Information System, Ontario (iPHIS), February 2009.

RESOURCES

1. Ministry of Health and Long-Term Care. A Guide to control of respiratory infection outbreaks in long-term care homes. Toronto, ON: Queen's printer for Ontario; 2004.
Available from http://www.health.gov.on.ca/english/providers/pub/pubhealth/ltc_respoutbreak/ltc_respoutbreak.pdf
2. Ministry of Health and Long-Term Care. A Guide to control of enteric disease outbreaks in health care facilities. Toronto, ON: Queen's printer for Ontario; 1993