Appendix A: Disease-Specific Chapters

Chapter: Rubella, congenital syndrome

Revised January, 2013
Rubella, congenital syndrome

Communicable

Virulent

Health Protection and Promotion Act:
Ontario Regulation 558/91 – Specification of Communicable Diseases

Health Protection and Promotion Act:
Ontario Regulation 559/91 – Specification of Reportable Diseases

1.0 Aetiologic Agent

Rubella virus (family Togaviridae; genus Rubivirus) (1).

2.0 Case Definition

2.1 Surveillance Case Definition

See Appendix B

2.2 Outbreak Case Definition

Rubella is not an endemic disease in Canada; therefore one confirmed case of congenital rubella syndrome is considered an outbreak.

Public health units should notify PHO, as specified by the ministry, when a case is identified.

3.0 Identification

3.1 Clinical Presentation

Congenital Rubella Syndrome (CRS) can result in miscarriage, stillbirth and fetal malformations, including congenital heart disease, cataracts, deafness and intellectual disabilities. Fetal infection can occur at any stage of pregnancy, but the risk of fetal damage following maternal infection is particularly high in the earliest months after conception (90% in the first trimester) with progressive diminution of risk thereafter, and it is very uncommon after the 20th week of pregnancy. Infected infants who appear normal at birth may later show eye, ear or brain damage. Congenital infection may give rise to such problems as diabetes mellitus and panencephalitis later in life. Congenitally infected infants may shed the virus in the urine and in nasopharyngeal secretions for 1 year or more (2).

3.2 Diagnosis

See Appendix B
4.0 Epidemiology

4.1 Occurrence
Occurs in up to 90% of infants born to women infected with rubella virus during the first trimester of pregnancy (1, 3). Defects are rare with infection after the 20th week of gestation (1).

Canada, as well as the Americas, has made great progress in its goal of rubella and CRS elimination, and endemic transmission of rubella and CRS has been interrupted by high vaccine coverage as a part of routine infant and childhood immunization programs. Rubella and CRS continue to be endemic in other areas of the world and therefore importation of rubella is an ongoing concern.

4.2 Reservoir
Humans; source is maternal viremia (1).

4.3 Modes of Transmission
Transplacental passage of rubella virus from maternal blood (4).

4.4 Incubation Period
Not applicable (3).

4.5 Period of Communicability
Birth to 9-12 months of age, rarely longer. A small number of infants with congenital rubella continue to shed virus in nasopharyngeal secretions and urine for 1 year or more and can transmit infection to susceptible contacts (4).

4.6 Host Susceptibility and Resistance
Fetuses of rubella-susceptible pregnant women who have not received at least one dose of rubella-containing vaccine. Immunity is usually permanent after immunization and natural infection.

5.0 Reporting Requirements

5.1 To local Board of Health
Confirmed and suspect cases shall be reported to the medical officer of health by persons required to do so under the Health Protection and Promotion Act, R.S.O. 1990.

Note:
Laboratory confirmed cases are to be reported by phone to the local medical officer of health as soon as identified.
5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry

Ontario is currently documenting the elimination of rubella and CRS and is involved in enhanced surveillance for this disease. Any confirmed or probable case of CRS identified by the public health unit should be reported via telephone to PHO, as specified by the ministry, within one business day of receipt of initial notification.

Cases shall also be reported using the integrated Public Health Information System (iPHIS), or any other method specified by the ministry within one (1) business day of receipt of initial notification as per iPHIS Bulletin Number 17: Timely Entry of Cases (5).

As part of elimination documentation, it is essential to document maternal rubella and travel history to assess the potential source of infection for every CRS case.

The minimum data elements to be reported for each case is specified in the following:

- *Ontario Regulation 569* (Reports) under the *Health Protection and Promotion Act* (HPPA);
- The disease-specific User Guides published by PHO; and,
- Bulletins and directives issued by PHO.

6.0 Prevention and Control Measures

6.1 Personal Prevention Measures

Refer to Appendix A, Disease-Specific Chapter for Rubella for prevention of maternal infection during pregnancy.

Prevention strategies:

- Women of child bearing age should avoid pregnancy for 28 days following immunization (2).
- Susceptible woman should be discouraged from traveling to rubella-endemic countries the month prior to conception and during pregnancy.

6.2 Infection Prevention and Control Strategies

Hospitals should obtain documented proof of immunity to rubella as a condition of employment for reasons of patient safety as per the Rubella Surveillance Protocol for Ontario Hospitals (7).

Routine practices and respiratory isolation precautions are recommended for hospitalized CRS cases; only persons with documented immunity to rubella should have contact with these infants.

6.3 Management of Cases

Confirm the diagnosis and ensure that appropriate specimens have been collected for diagnosis according to case definition.
Investigate the maternal history according to Appendix A, Disease-Specific Chapter for Rubella.
Collect appropriate data as per the *Ontario Regulation 569* (Reports) under the HPPA and include the following in the investigation:

- Determine whether the mother received rubella containing vaccine 28 days prior to conception;
- Antenatal serological test results; and
- Travel history or exposure to a person who travelled 30 days prior to conception or during pregnancy.

Infants with congenital rubella infection should be isolated from non-immune pregnant women, infants and children, and should be considered infectious until there are 2 sets of negative tests. Urine and nasopharyngeal (NP) specimens in addition to serology should be collected shortly after birth and again in 1-2 months. If the test results are not negative the infant is considered infectious and should continue to be isolated from non-immune persons. Regular testing should be done until tests are negative.

There is no specific treatment for congenital rubella except for symptomatic and supportive care (4).

6.4 Management of Contacts
Refer to Appendix A, Disease-Specific Chapter for Rubella.

6.5 Management of Outbreaks
Not applicable.

7.0 References


8.0 Additional Resources


9.0 Document History

Table 1: History of Revisions

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Document Section</th>
<th>Description of Revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2013</td>
<td>General</td>
<td>New template.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Title of Section 4.6 changed from “Susceptibility and Resistance” to “Host Susceptibility and Resistance”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Title of Section 5.2 changed from “To Public Health Division (PHD)” to “To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section 9.0 Document History added.</td>
</tr>
<tr>
<td>2.2 Outbreak Case Definition</td>
<td>Changed from “N/A” to “Rubella is not an endemic disease in Canada; therefore one confirmed case of congenital rubella syndrome is considered an outbreak. Public health units should notify PHO, as specified by the ministry, when a case is identified.”</td>
<td></td>
</tr>
<tr>
<td>3.1 Clinical Presentation</td>
<td>Entire section revised.</td>
<td></td>
</tr>
<tr>
<td>Revision Date</td>
<td>Document Section</td>
<td>Description of Revisions</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>4.1 Occurrence</td>
<td>Second paragraph changed from “CRS occurs rarely in Ontario, with a range of zero to two reported cases per year from 1998-2007. The last two cases were reported in 2004” to “Canada, as well as the Americas, has made great progress in its goal of rubella and CRS elimination…”</td>
<td></td>
</tr>
<tr>
<td>4.6 Host Susceptibility and Resistance</td>
<td>Entire section revised.</td>
<td></td>
</tr>
<tr>
<td>5.1 To local Board of Health</td>
<td>Addition of: “Laboratory confirmed cases are to be reported by phone to the local medical officer of health as soon as identified.”</td>
<td></td>
</tr>
<tr>
<td>5.2 To the Ministry of Health and Long-Term Care (the ministry) or Public Health Ontario (PHO), as specified by the ministry</td>
<td>First paragraph changed from “Report only case classifications specified in the case definition to PHD” to “Ontario is currently documenting the elimination of rubella and CRS and is involved in enhanced surveillance for this disease. Any confirmed or probable case of CRS identified by the public health unit should be reported via telephone to PHO, as specified by the ministry, within one (1) business day of receipt of initial notification.” Timeframe for reporting into iPHIS changed from “within five (5) business days of receipt of initial notification” to “within one (1) business day of receipt of initial notification” Addition of the third paragraph: “As part of elimination documentation, it is essential to document…” Final paragraph: Changed from “The disease-specific User Guides published by the ministry; and, Bulletins and directives issued by the ministry” to “The disease-specific User Guides published by PHO; and, Bulletins and directives issued by PHO”</td>
<td></td>
</tr>
<tr>
<td>6.1 Personal Prevention Measures</td>
<td>Entire section revised.</td>
<td></td>
</tr>
<tr>
<td>6.2 Infection Prevention and Control Strategies</td>
<td>Entire section revised.</td>
<td></td>
</tr>
<tr>
<td>Revision Date</td>
<td>Document Section</td>
<td>Description of Revisions</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 6.3 Management of Cases | Addition of first two sentences:  
- “Confirm the diagnosis and ensure…”  
- “Investigate the maternal …”  
Third paragraph changed from “Refer to Ontario Regulation 569 for relevant data to collect. Ensure that the investigation includes: Confirming the diagnosis as per the case definition; Determining the mother’s immunization and antenatal serological status; and Determining the possible source and exposure to rubella during her pregnancy including clinical details of her infection and possible setting/location of exposure” to “Collect appropriate data as per the Ontario Regulation 569 (Reports) under the HPPA and include the following in the investigation… prior to conception or during pregnancy.” |
| 6.4 Management of Contacts | Content removed and changed to: “Refer to Appendix A, Disease-Specific Chapter for Rubella.”                                                                                                                          |
| 7.0 Reference | Updated.                                                            |
| 8.0 Additional Resources | Updated.                                                            |