

RUBELLA SURVEILLANCE PROTOCOL FOR ONTARIO HOSPITALS

Developed Jointly by the Ontario Hospital Association and
the Ontario Medical Association
Joint Committee on Communicable Disease Protocols
in collaboration with the Ministry of Health and Long-Term Care

Approved by
The OHA and The OMA Board of Directors
The Ministry of Health and Long-Term Care –
The Minister of Health and Long-Term Care

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This protocol was developed jointly by the Ontario Hospital Association and the Ontario Medical Association to meet the requirements of the *Public Hospitals Act 1990, Revised Statutes of Ontario, Regulation 965*. This regulation requires each hospital to have by-laws that establish and provide for the operation of a health surveillance program including a communicable disease surveillance program in respect of all persons carrying on activities in the hospital. The communicable disease program is to include the tests and examinations set out in any applicable communicable disease surveillance protocol. The regulation states that the communicable disease surveillance protocols that hospitals must adopt are those "published jointly by the Ontario Hospital Association (OHA) and the Ontario Medical Association (OMA) and approved by the Minister (of Health and Long-Term Care)."

This Protocol has been reviewed since the previous version; changes have been highlighted in yellow for easy identification. Protocols are reviewed on a regular basis, every two years or as required. The primary objective of a rubella immunization program is to prevent fetal infection and consequent congenital rubella syndrome (CRS).

The protocol reflects clinical knowledge, current data and experience, and a desire to ensure maximum cost effectiveness of programs, while protecting health care workers and patients. It is intended as a minimum standard that is practical to apply in most Ontario hospital settings. It does not preclude hospitals from adopting additional strategies that may be indicated by local conditions.

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Rationale for Rubella Surveillance Protocol

Susceptible health care workers (HCWs) are at risk of acquiring and transmitting rubella, and have been implicated in hospital outbreaks of rubella.¹

Rubella or *German measles*, usually a mild rash illness of childhood, is caused by the rubella virus. Rubella is contagious and is transmitted by large respiratory droplets. Serious complications are rare.² Arthralgia and arthritis are more common complications following rubella infection in adults.

Rubella is most often a mild febrile viral disease, characterized by a diffuse punctate and maculopapular erythematous rash 14 to 17 days after exposure.²⁻⁴ There may be a prodromal illness consisting of a low-grade fever, malaise and mild conjunctivitis. Lymphadenopathy, especially post auricular, occipital and posterior cervical, is the most characteristic clinical feature and precedes the rash by 5-10 days. Twenty-five to 50% of cases are subclinical, especially in children.

The major concern of rubella infection is congenital rubella syndrome (CRS). CRS may occur in up to 90% of infants born to women who are infected with rubella during the first 10 weeks of pregnancy, and can lead to severe consequences to the fetus such as miscarriage, fetal death, congenital heart disease, cataracts, deafness and developmental delay.⁵ Maternal infection acquired after 20 weeks of pregnancy rarely results in congenital abnormalities.⁶ Infants with congenital rubella infection are highly infectious at birth and may remain infectious for up to 12 months.

Between 2006 and 2014, an average of five (range 1-13) rubella cases has been reported annually in Canada, all of these imported.⁷ In Ontario in 2005, there was a rubella outbreak involving over 300 cases in a mainly unimmunized community. A total of 313 cases was reported in 2005, with no cases of CRS.⁷ Between 2006 and 2015 in Ontario, 15 cases of rubella have been reported⁸ and only two cases of CRS have been reported: one in 2009 in an infant whose mother was exposed to rubella outside Canada, and one in 2015 in an infant whose mother was reported to be unimmunized.⁹

The primary goal of vaccination against rubella is to prevent infection during pregnancy. Vaccination against rubella was introduced in Ontario in 1970 with a live attenuated rubella vaccine. Rubella vaccine stimulates the formation of antibody to rubella virus in over 95% of susceptible individuals.¹⁰

The only effective control measure to prevent the transmission of the rubella virus is immunization. Both male and female susceptible HCWs are at risk of acquiring as well as transmitting rubella to others. Therefore, all HCWs should, as a condition of employment, provide evidence of immunity as per this protocol.

This protocol is only one component of an infection prevention and control program; HCWs must consistently adhere to Routine Practices.

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I. Purpose

The purposes of this protocol are:

- i. To provide direction to hospitals for the prevention and management of rubella infections among health care workers (HCWs), and
- ii. To establish a system for preventing transmission of rubella among HCWs and patients.

II. Applicability

This protocol applies to **all persons carrying on activities in the hospital**, including but not limited to employees, physicians, nurses, contract workers, students, post-graduate medical trainees, researchers and volunteers. The term health care worker (HCW) is used in this protocol to describe these individuals. This protocol does not apply to patients or residents of the facility or to visitors.

When training students or hiring contract workers, the hospital must inform the school/supplying agency that the school/agency is responsible for ensuring that their students/contractors are managed according to this protocol.

This protocol is for use by the Occupational Health Service (OHS) in hospitals. It is expected that OHS collaborate with Infection Prevention and Control (IPAC) and other departments, as appropriate.

III. Pre-placement

At the time of hiring, OHS must ask all HCWs for evidence of rubella immunity. HCWs can be considered immune to rubella if they have:

- laboratory evidence of rubella immunity,
- documented evidence of immunization with live rubella containing vaccine (one dose) on or after their first birthday.¹⁰

The OHS should make all reasonable efforts, together with the new hire/placement, to obtain previous immunization records. If this documentation is

not available, the OHS must offer rubella immunization (supplied as trivalent measles-mumps-rubella [MMR] vaccine) to the HCW. Documentation of each HCW's status must be kept up to date with current requirements and available in the occupational health record. While there is no known fetal risk to giving MMR vaccine during pregnancy, because MMR vaccine is a live vaccine, it should not be given to pregnant women.² Females of child-bearing age must first assure the OHS that they are not pregnant, and will not become pregnant for one month after receiving this vaccine. The OHS must also counsel susceptible HCWs, especially women of child-bearing age, of the infection risks related to their activities in the hospital.

For reasons of patient safety, hospitals should make documented proof of immunity to rubella a condition for persons carrying on activities in the hospital.

Serologic testing is not routinely recommended either before or after receiving rubella containing (MMR) vaccine.¹⁰ If an HCW is already immune, there is no increased risk of adverse reaction from vaccination.

In the event that an HCW who has had a documented dose of MMR or rubella containing vaccine is tested serologically, and is negative, an additional dose is not recommended; the HCW should be considered immune.

Only HCWs known to be immune to rubella may be assigned to care for patients with rubella. **However, pregnant women should not be assigned to care for patients with rubella regardless of immune status.**⁴

IV. Continuing Surveillance

No routine surveillance of any persons carrying on activities in the hospital is required. Follow-up is required for susceptible female HCWs unable to be vaccinated due to pregnancy. These HCWs have a responsibility to report to the OHS when they are no longer pregnant. The OHS must ensure that these HCWs are offered rubella immunization (i.e. MMR vaccine) when they are no longer pregnant.

V. Exposure

Exposure to rubella is considered significant if it involves direct or face-to-face contact of a susceptible HCW with a person who has rubella, between 7 days prior and 7 days after onset of illness. Consider a susceptible HCW who provided care within 1 metre of a case of rubella without personal protective equipment to be potentially exposed.*

Rubella is spread by large respiratory droplets. Infants with congenital rubella syndrome shed rubella virus in large quantity for prolonged periods in urine and saliva.

When determining whether an HCW has had an exposure to rubella, consider the following:

- immune status of the exposed person
- frequency of contact with the infected person
- proximity to the infected person (i.e. < 1* metre)*
- duration of face-to-face contact with the infected person, and
- whether appropriate personal protective equipment was worn

Any susceptible HCW who has a significant exposure to a person who has rubella, either in the health care setting or the community, must report this exposure to the OHS.

- Immune HCWs (as defined in III above) may continue to work without disruption of their work pattern.
- Susceptible exposed HCWs, i.e. those who have negative serology for rubella antibodies and who have never received rubella containing vaccine, should receive rubella containing vaccine (i.e. MMR) as soon as possible after the exposure if no contraindication exists, and should be excluded from work (see below). Although rubella immunization after exposure has not been demonstrated to prevent disease, should the exposure not result in infection, the vaccine should provide protection against future exposures.
- Susceptible exposed HCWs for whom vaccine is contraindicated for medical reasons (e.g. immunocompromised, pregnant) should be excluded from work (see below). They may be offered immune globulin (Ig) within 48 hours of exposure to modify or suppress symptoms, but this may not prevent infection including congenital infection.¹¹ Routine use of Ig in susceptible women exposed to rubella in early pregnancy is therefore not recommended.¹⁰ It is important to consider that Ig only provides short-term protection. For HCWs who can later receive MMR vaccine (e.g. pregnant HCWs), MMR vaccine should be postponed 5 to 6 months after Ig is administered.
- HCWs who have no documentation of immunity (as defined in III above) should receive one dose of rubella containing vaccine (i.e. MMR) if no contraindications exist. They are considered susceptible and should be excluded from work (see below). Serology should be performed; if rubella

*The recommended distance for droplet precautions in patients who have acute respiratory infections that cause coughing and sneezing is 2 metres because coughing and sneezing results in forceful projection of potentially infectious respiratory droplets. For rubella, 1 metre is adequate for interruption of transmission to HCWs and patients.

IgG positive, they may return to work. If IgG negative, work restrictions apply.

Work Restrictions

Susceptible exposed HCWs, including those who have been immunized or received Ig after exposure, must be excluded from any work in the hospital from 7 days after the first exposure until 21 days after the last exposure if rubella does not result from exposure, or until 7 days after onset of rash if rubella results from exposure.

HCW must be excluded from work while waiting for serology results if they are still within the period of work exclusion defined above.

HCWs who are excluded from work should not work in any other health care setting. These HCWs should be counselled to disclose their work restrictions to other health care employer(s).

VI. Acute Disease

If clinical rubella develops, the HCW must remain off work until 7 days after the appearance of a rash. Infected HCWs and their personal physicians are responsible for follow up care and treatment.

OHS should inform IPAC of HCWs with suspected or confirmed rubella when exposure of patients or other HCWs may have occurred.

VII. Reporting

Suspect or confirmed reportable diseases (as per Ontario Regulation 559/91 and amendments under the Health Protection and Promotion Act), including rubella, must be reported to the local Medical Officer of Health.

In accordance with the Occupational Health and Safety Act and its regulations, an employer must provide written notice within 4 days of being advised that a worker has an occupational illness, including an occupationally-acquired infection, and/or Workplace Safety and Insurance Board (WSIB) claim has been filed by or on behalf of the worker with respect to an occupational illness, including an occupational infection, to the:

- Ministry of Labour,
- Joint Health and Safety Committee (or health and safety representative), and
- trade union, if any.

Occupationally-acquired infections and illnesses are reportable to the WSIB.

VIII. Glossary

Ontario MOHLTC Surveillance Case Definition for Rubella:¹²

Confirmed Case

1. Laboratory confirmation of infection in the absence of immunization with rubella- containing vaccine in the last 7 - 42 days:
 - Isolation of rubella virus in culture from clinical samples (i.e., throat swabs, nasopharyngeal swabs/aspirates, urine);
OR
 - Detection of rubella virus ribonucleic acid (RNA)) by nucleic acid amplification test (NAT);
OR
 - Positive serologic test for rubella Immunoglobulin M (IgM) antibody using a recommended assay in a person with an epidemiologic link to a laboratory-confirmed case or has recently travelled to an area of known rubella activity;
OR
 - A significant (i.e., fourfold or greater) rise in rubella Immunoglobulin G (IgG) antibody level or a seroconversion using a recommended IgG assay in paired acute and convalescent sera.

OR

2. Clinically compatible signs and symptoms with an epidemiologic link to a laboratory-confirmed case.

Probable Case

Clinically compatible signs and symptoms in a person with recent travel to an area of known rubella activity.

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