

Congenital rubella and rubella in pregnancy *News*



Congenital rubella and rubella in pregnancy surveillance report

The National Measles and Rubella Elimination Plan (PNEMoRc) 2010-2015 includes among its objectives the reduction of the incidence of congenital rubella to less than one case per 100,000 live births by 2015, according to the recommendations of the European Region of the World Health Organization (WHO-EURO).

In Italy a national surveillance system of congenital rubella and rubella infections in pregnancy is active since 2005 in order to monitor progress toward elimination.

This report shows national and regional surveillance data for the period **2005-2014**.

Highlights

- In the period 2005-2014 **76 congenital rubella infections** (probable and confirmed cases) were reported, with two peaks in 2008 and 2012.
- Moreover **161 rubella infections in pregnancy** (possible, probable and confirmed cases) were reported.
- In the same period, among the infected women, **31 voluntary terminations, 1 stillbirth** and **1 spontaneous abortion** were reported.
- **The collection of information** on cases should be improved in terms of **timeliness** and **completeness**.
- It is necessary to reinforce the **follow up of the outcome of pregnancies** and of **the status of infection of the newborns** with suspected congenital rubella over time.

Index

Congenital rubella: national data	2
Rubella in pregnancy: national data	3
Congenital rubella and rubella in pregnancy: regional data	4
Congenital rubella and rubella in pregnancy: focus 2014	4
The surveillance system	5
To improve the surveillance...	6
Useful links...	6

Congenital rubella: national data

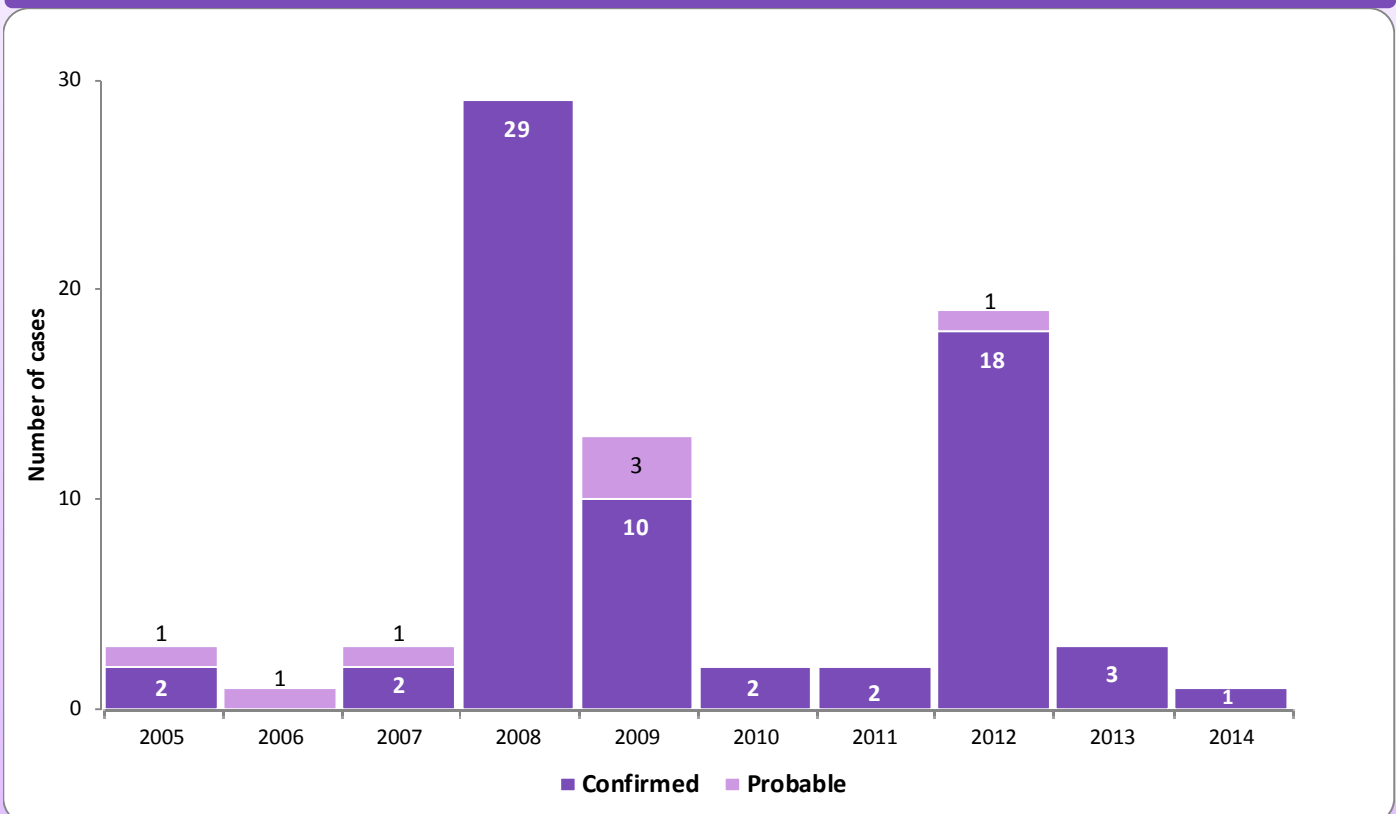
In the period **2005-2014**, **76** cases of congenital rubella were reported: **69 confirmed** and **7 probable** cases according to European Commission case definition.

Furthermore, we received **60** notifications that we could not classify because of lack of information or because these cases were not monitored over time.

The number of cases and case classifications are different from what reported in the previous report, because during the follow up of cases new data to confirm or exclude the diagnosis are collected and clinical manifestations can be detected after birth.

Figure 1 reports the number of congenital infections (confirmed and probable cases) by year and classification. We can observe a peak of notifications in 2008 (29 cases, with an incidence of 5.0 per 100,000 live births) and one in 2012 (19 cases, with an incidence of 3.6 per 100,000 live births).

Figure 1. Congenital rubella infections by year and classification. Italy, 2005-2014



Clinical information

Information on clinical manifestations are available for **74** of the 76 probable/confirmed reported cases. At least one clinical manifestation was reported for **57** cases. The most frequently reported symptoms were:

- Congenital heart disease (41 children)
- Loss of hearing (26 children)
- Meningoencephalitis (11 children)
- Cataract (12 children)

Twenty cases had multiple defects involving the heart, hearing or vision.

Seventeen infants were asymptomatic: they are cases with laboratory confirmation and epidemiological link.

Rubella in pregnancy: national data

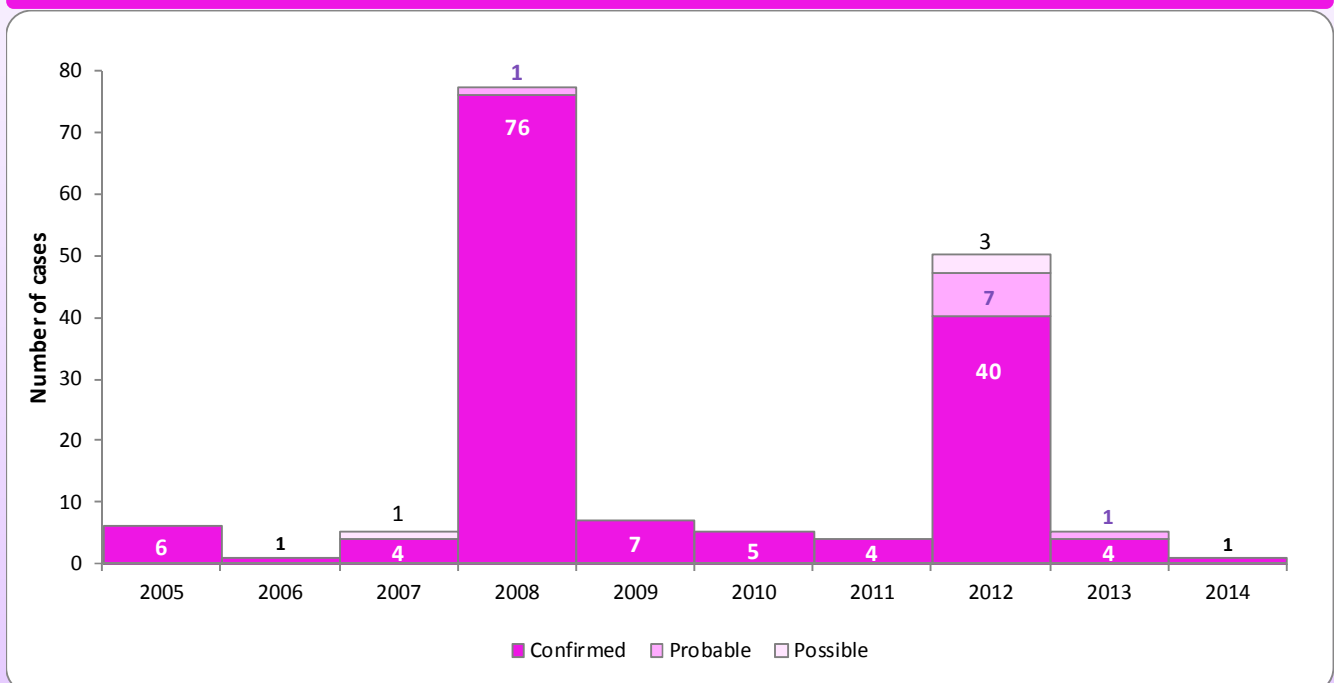
In the period **2005-2014**, **161** cases of rubella in pregnancy (**148 confirmed, 9 probable and 4 possible cases**) were reported.

In addition, we received **106** notifications that we were unable to classify with the available information.

The Figure 2 reports the number of rubella infections in pregnancy (confirmed, probable and possible cases) by year and case classification. We can observe a peak of notifications in 2008 (77 cases) and one in 2012 (50 cases). This temporal trend is consistent with what reported for congenital rubella in the Figure 1.

In the same period, among the infected women, **one stillbirth, one spontaneous abortion and 31 voluntary terminations** were reported.

Figure 2. Rubella in pregnancy by year and classification. Italy, 2005-2014



Characteristics of women with rubella infection in pregnancy

(confirmed, probable and possible cases)

- The median age is 26 years
- 14% (23/159) is not italian
- 42% (45/108) acquired the infection in the first trimester of pregnancy
- 30% (38/126) performed the rubella antibody screening before pregnancy
- 47% (70/149) had previous pregnancies
- Three women reported to be vaccinated (but the vaccination history was documented only for one of them)
- For 38 women (23%) it is unknown if the infection was transmitted to the newborn, because the outcome of the pregnancy is unknown or because information regarding the status of infection of the newborn was not available.

Rubella infections in pregnancy include: 1) the cases that were notified through the notification form for rubella in pregnancy and 2) the cases whose information was obtained from the notification form of the newborn (if the mother's infection had not previously reported) (see page 5).

Out of the **267** suspected infections in pregnancy (161 confirmed/probable/possible cases plus 106 not classified), the notification form of rubella in pregnancy was not filled for 117 (**44%**) cases and the information was collected from the notification form of the newborn, documenting underreporting of infections in pregnancy. Moreover this delay makes difficult the collection of data necessary to classify cases.

Congenital rubella and rubella in pregnancy: regional data

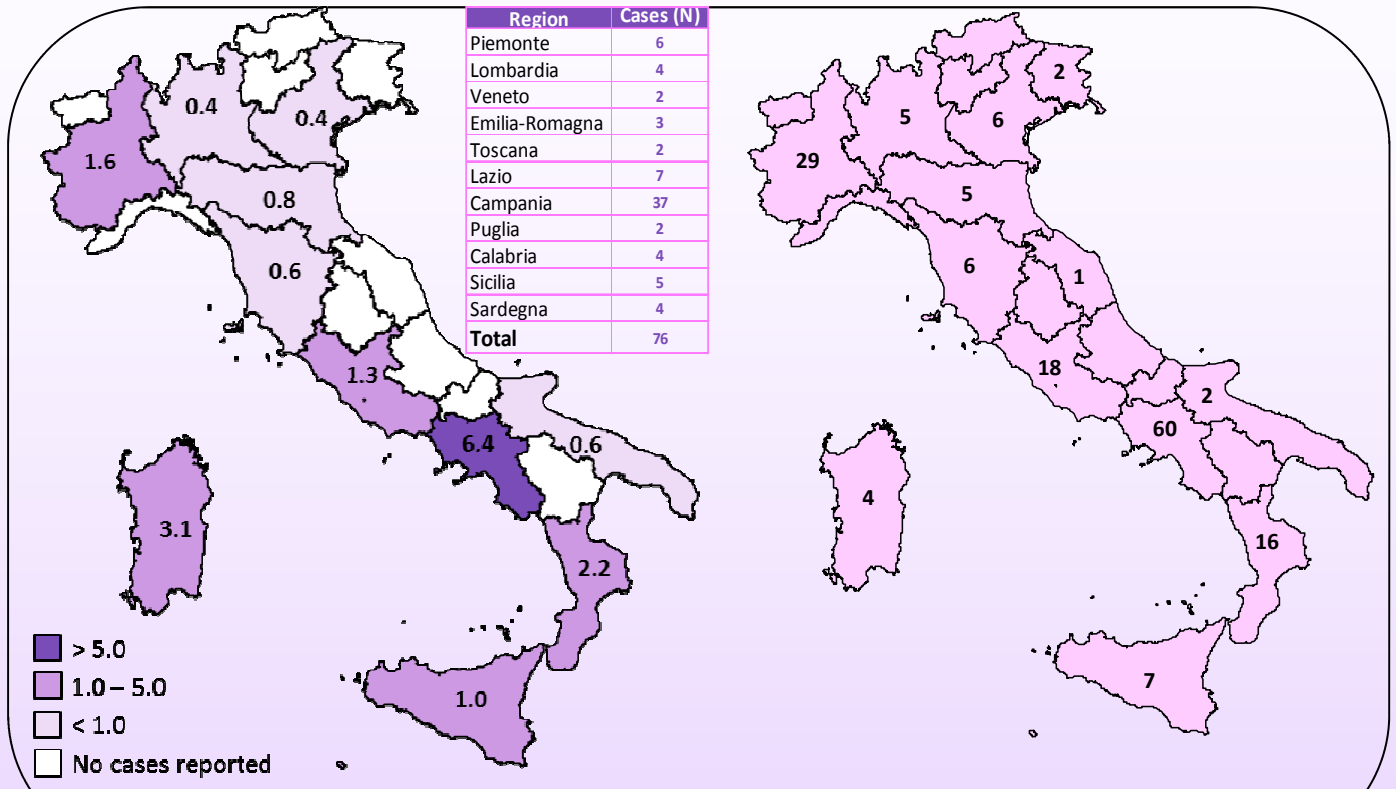


Figure 3. Annual mean incidence of congenital rubella (confirmed and probable cases) per 100,000 live births by Region/A.P. 2005-2014

Figure 4. Rubella in pregnancy cases (confirmed, probable and possible cases) by Region/A.P. 2005-2014

Congenital rubella and rubella in pregnancy: Focus 2014

In 2014 the following cases were reported:

- **one confirmed rubella infection in pregnancy**, in an Italian multiparous unvaccinated woman who was infected during the 17th week of pregnancy.
- **one asymptomatic confirmed congenital rubella infection** (the baby of the woman mentioned above).

Additionally two suspected infections were reported:

- **one suspected rubella infection in pregnancy**, in an Italian nulliparous unvaccinated woman with spontaneous abortion during the 9th week of pregnancy. She did not report clinical manifestations compatible with rubella and the available laboratory information was not sufficient to classify the case.
- **one suspected congenital rubella infection**: the newborn had a PCR positive for rubella at birth and she did not have clinical manifestations. Her mother, of Romanian nationality, referred to have had rash and fever during the 21st week of pregnancy but no clinical documentation was available. Therefore the case was not classified.

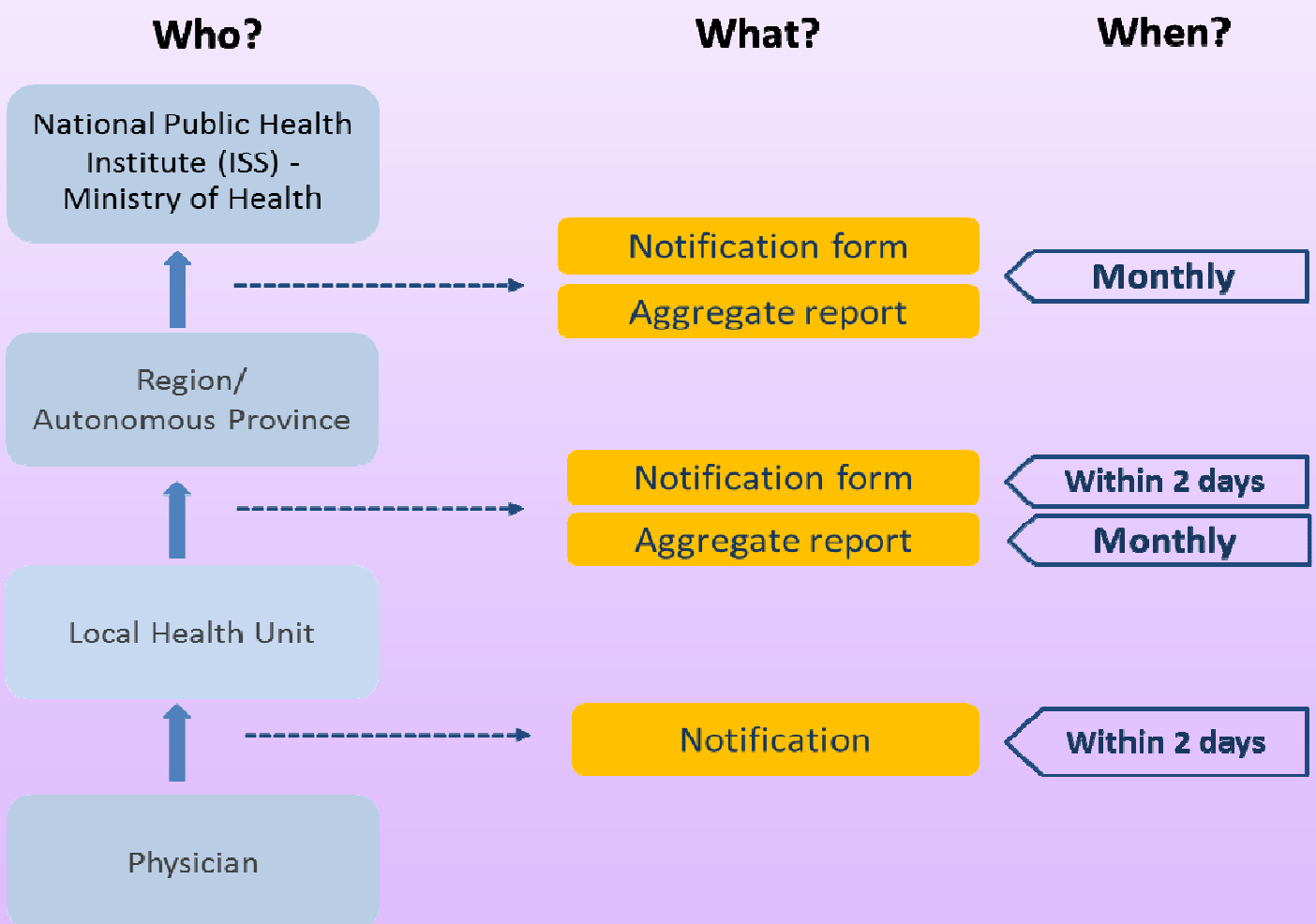
The surveillance system for congenital rubella and rubella in pregnancy

In Italy the notification of congenital rubella syndrome, congenital rubella infections and rubella infections in pregnancy is mandatory since the 1st of January 2005.

The national surveillance system for congenital rubella and rubella in pregnancy is mandatory, passive, case-based and based on clinicians.

Two separate notification forms are used for congenital rubella and rubella infections in pregnancy; the notification form for congenital rubella also includes a section regarding the mother's history.

Data flow is described below.





Congenital rubella and rubella in pregnancy News

To improve the surveillance...

- Improving the sensitivity and specificity of the surveillance system is important to monitor the epidemiology of the infection and progresses towards elimination and to plan actions to reduce the amount of susceptible women in childbearing age.
- Strengthening the surveillance of pregnant women with suspected rubella infection is fundamental because it is an entry point for congenital rubella cases. Early diagnosis of congenital rubella cases also allows quick interventions for any associated defect and prevention of rubella spread from infected infants.
- Monitoring of infected pregnant women is also important to record all the outcomes of the pregnancy, including stillbirth, spontaneous and voluntary terminations, that contribute to assess the burden of congenital rubella.
- It is important that all the babies born from mothers with possible, probable and confirmed infection in pregnancy are followed up over time with laboratory, clinical and diagnostic investigations, in order to confirm or exclude the congenital infection and correctly classify the cases as infection or syndrome. In fact, a long follow up is necessary to definitively classify cases, being laboratory confirmation of congenital infection not always possible at birth (for instance, in case of infants that are IgM negative at birth, the decline of rubella-specific IgG levels by 6-12 months allows to exclude the infection) and also because clinical manifestations can be recognized in later infancy.
- It is necessary to improve the timeliness of the collection of clinical information and laboratory results and their completeness, in order to reduce the amount of cases that cannot be classified.
- A monthly report of congenital infections and infections in pregnancy, including zero-reporting, is needed to improve the sensitivity and the timeliness of the surveillance system.

Useful links...

- 2012 European Commission case definitions for rubella and congenital rubella: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:262:0001:0057:EN:PDF>
- Italian Ministry of Health. National Plan for the elimination of measles and congenital rubella 2010-2015. http://www.salute.gov.it/imgs/C_17_pubblicazioni_1519_allegato.pdf (in Italian)
- Italian Ministry of Health. "Surveillance of congenital rubella and rubella infection in pregnancy according to the new National Plan for measles and congenital rubella elimination 2010-2015" del 17 Luglio 2013: <http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=0&codLeg=46583&parte=1%20&serie=> (in Italian)
- Morbillo & Rosolia News: the monthly bulletin of the integrated measles and rubella surveillance: <http://www.epicentro.iss.it/problemi/morbillo/bollettino.asp> (in Italian)

This report was produced by: Cristina Giambi, Martina Del Manso, Antonino Bella, Antonietta Filia, Maria Cristina Rota, Gloria Nacca e Silvia Declich and thanks to the precious contribution of the Ministry of Health, Regions and Autonomous Provinces, Local Health Units and diagnosis laboratories.

Regional representatives for congenital rubella and rubella in pregnancy: Di Giacomo M (Abruzzo); Locuratolo F (Basilicata); Natter B (PA Bolzano); Mignuoli A (Calabria); Pizzuti R (Campania); Pascucci MG, Moschella L, Frasca G (Emilia-Romagna); Gallo T, Braida C (Friuli Venezia Giulia); Vitagliano A, Guerra M (Lazio); Cremonesi I (Liguria); Coppola L, Piatti A (Lombardia); Fiacchini D, Damiani N (Marche); Bagnoli C, Ponzio GV (Molise); Ferrara L (Piemonte); Prato R, Cappelli MG (Puglia); Salotto M, Cadau P (Sardegna); Palermo M (Sicilia); Balocchini E, Gallicchio S, Pecori L (Toscana); Carraro V (PA Trento); Sudano L (Valle d'Aosta); Russo F, Zanella R (Veneto); Tosti A (Umbria).

We thank Wilma Buffolano, coordinator of the Registry of Perinatal Infections and the Network of the Delivery Clinics (RePuNaRC) for Campania Region, for the precious contribution to the surveillance and follow up of cases.

The congenital rubella and rubella in pregnancy surveillance is made with the financial support of the Ministry of Health - CCM.

To be cited as follow: Giambi C, Del Manso M, Bella A, Filia A, Rota MC, Nacca G, e Declich S. Rosolia congenita e in gravidanza News, Marzo 2015.