

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 **January 2005 - August 2015**. Reclassification of some cases due to updated information may be responsible for minor variation of data respect to the previous bulletins.

Highlights

- In the period January 2005 - August 2015 **77 congenital rubella infections** (probable and confirmed cases) were reported, with two peaks in 2008 and 2012. Fifty-eight of these infected newborns had at least one clinical manifestation.
- Moreover **163 rubella infections in pregnancy** (possible, probable and confirmed cases) were notified.
- In the same period, among the infected women, **32 voluntary terminations**, **1 stillbirth** and **1 spontaneous abortion** were reported.
- In the period **January 2014 - August 2015**, one asymptomatic confirmed congenital rubella case and 1 voluntary termination due to rubella infection were reported. It is, however, necessary to keep high the attention, taking into consideration that rubella infection has a cyclic-epidemic trend.
- 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.

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Congenital rubella: national data

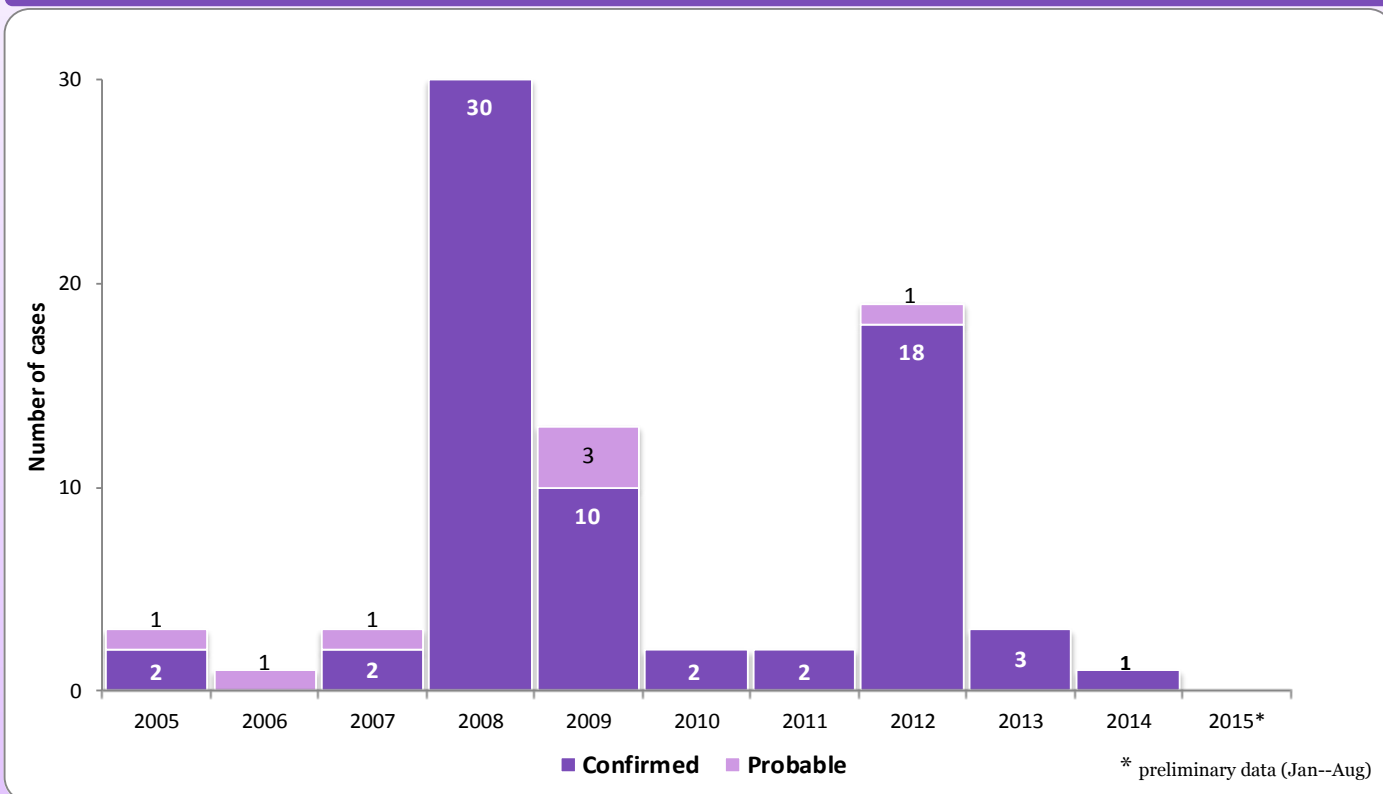
In the period **January 2005– August 2015**, **77** cases of congenital rubella were reported: **70 confirmed** and **7 probable** cases according to European Commission case definition.

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

In the first eight months of 2015, no congenital rubella infection was reported.

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 (30 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, 2005-2015*



Clinical information

Information on clinical manifestations are available for **75** of the 77 probable/confirmed reported cases. At least one clinical manifestation was reported for **58** cases. The most frequently reported symptoms were:

- Congenital heart disease (41 children)
- Loss of hearing (27 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 **January 2005– August 2015**, **163** cases of rubella in pregnancy (**150 confirmed, 9 probable and 4 possible cases**) were reported.

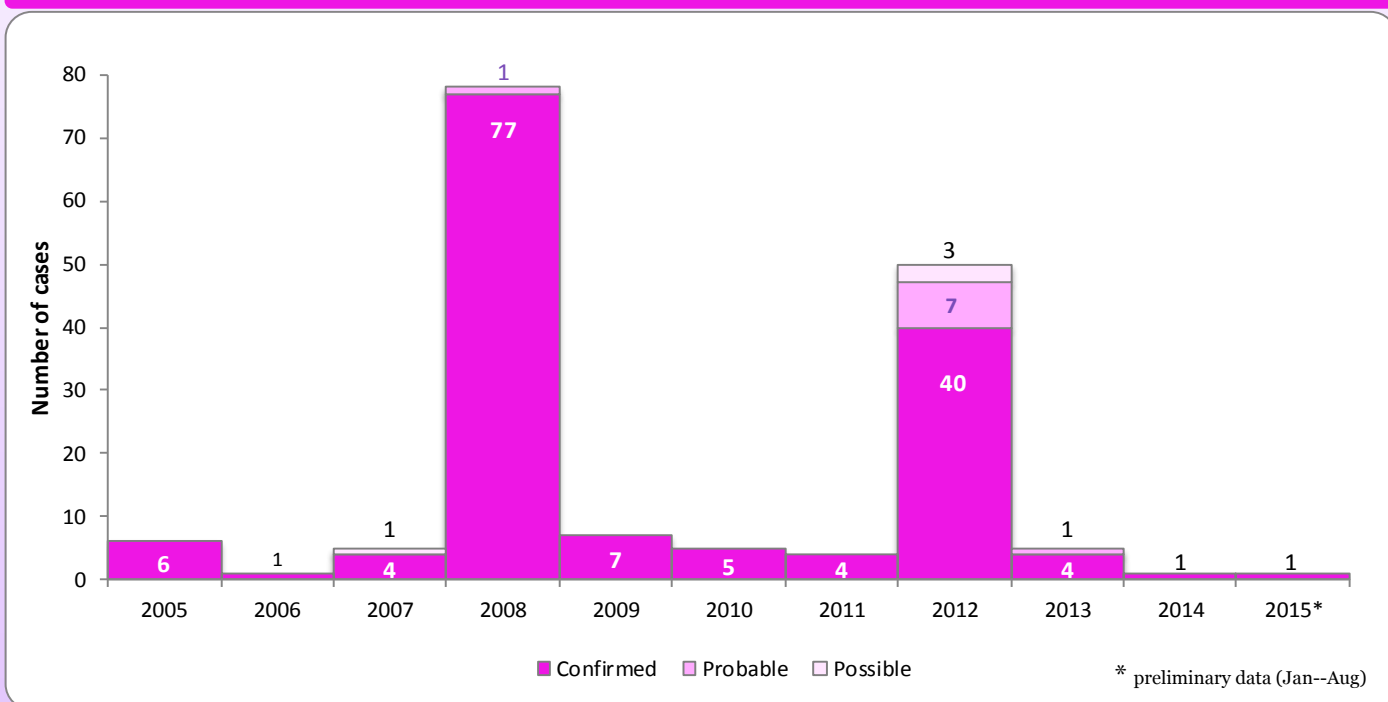
In addition, we received **106** notifications that we were unable to classify with the available information.

In the same period, among the infected women, **one stillbirth, one spontaneous abortion and 32 voluntary terminations** were reported.

In the first eight months of 2015, one confirmed rubella infection during pregnancy was reported. This Italian unvaccinated woman experienced a voluntary termination of pregnancy in the 11th week.

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 (78 cases) and one in 2012 (50 cases). This temporal trend is consistent with what reported for congenital rubella in the Figure 1.

Figure 2. Rubella in pregnancy by year and classification. Italy, 2005-2015*



Characteristics of women with rubella infection in pregnancy

(confirmed, probable and possible cases)

- The median age is 26 years
- 14% (23/160) is not Italian
- 42% (46/109) acquired the infection in the first trimester of pregnancy
- 30% (38/127) performed the rubella antibody screening before pregnancy
- 46% (70/151) 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.

Congenital rubella and rubella in pregnancy: regional data

Tab 1. Congenital rubella cases by Region/A.P., January 2005–August 2015

Region	Cases (N)
Piemonte	6
Lombardia	4
Veneto	2
Emilia-Romagna	3
Toscana	2
Lazio	7
Campania	37
Puglia	2
Calabria	5
Sicilia	5
Sardegna	4
Total	77

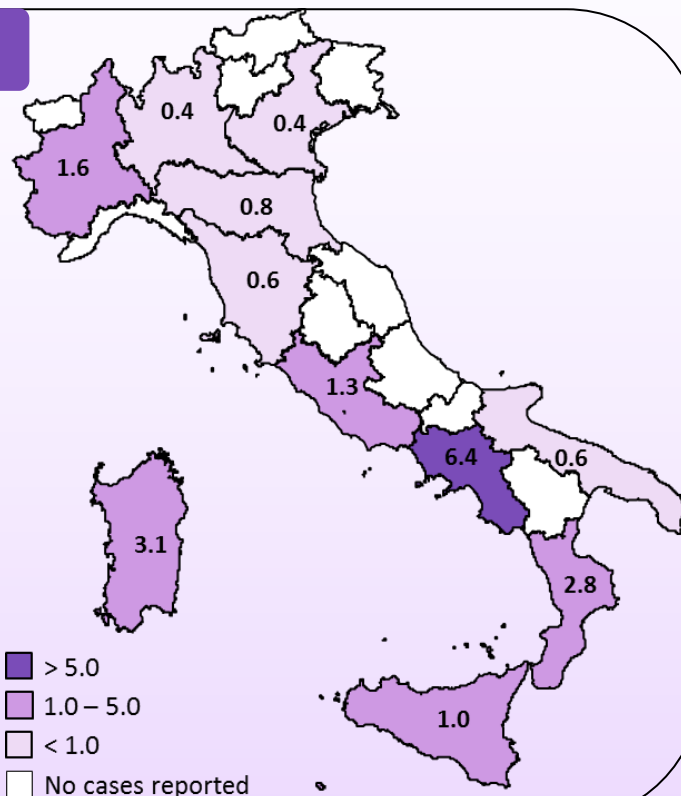


Figure 3. Annual mean incidence of congenital rubella (confirmed and probable cases) per 100,000 live births by Region/A.P., January 2005–August 2015

- Table 1 shows the number of cases (probable and confirmed) of congenital rubella infection by Region/A.P.
- In six regions the annual average incidence was greater than 1 in 100,000 live births (Figure 3).
- Figure 4 shows the number of rubella infection in pregnancy (confirmed, probable and possible) by Region/A.P.



Figure 4. Rubella in pregnancy cases (confirmed, probable and possible cases) by Region/A.P., January 2005–August 2015



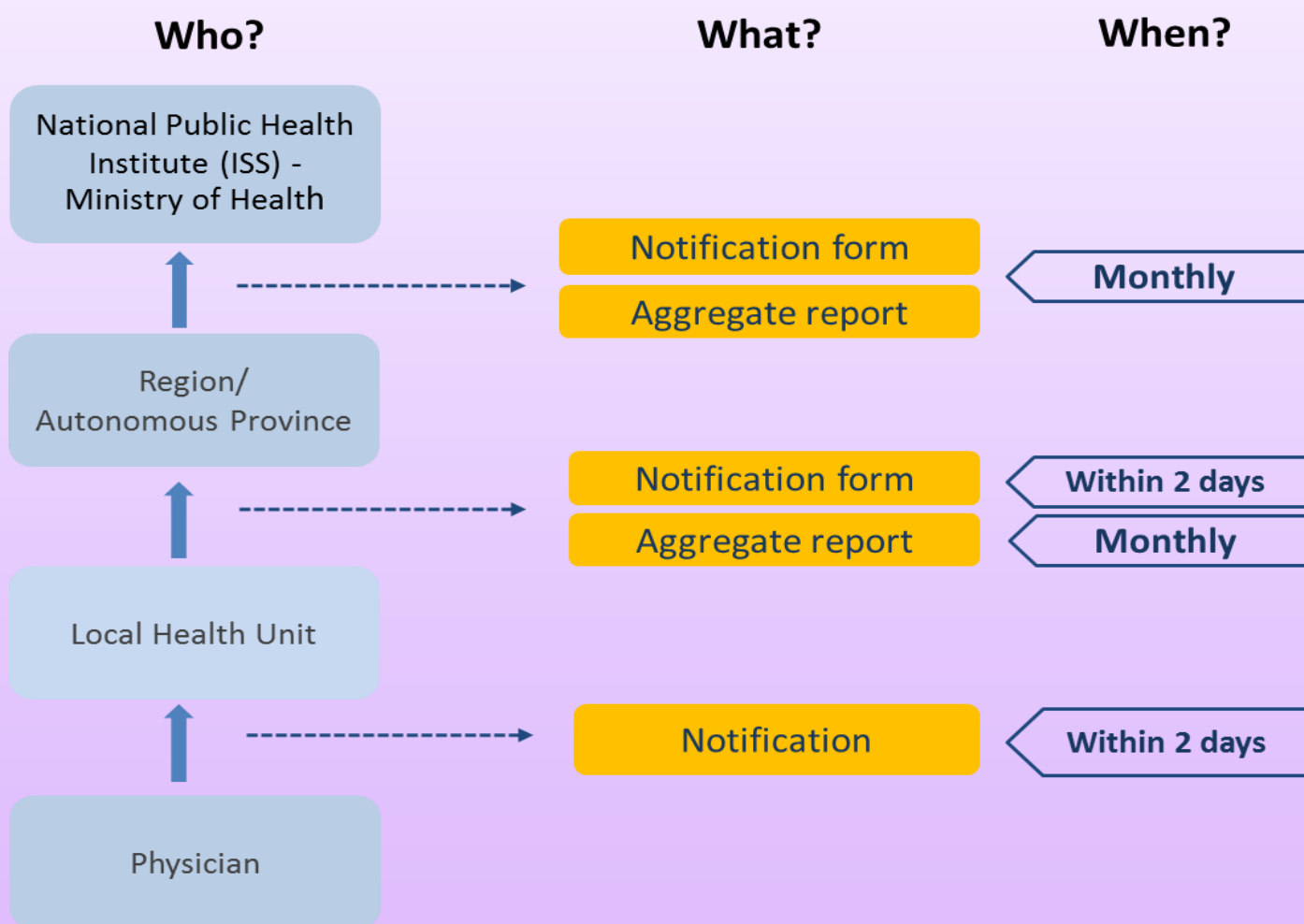
The surveillance system for congenital rubella and rubella in pregnancy

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.





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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)
- Scientific publication: "Congenital rubella still a public health problem in Italy: analysis of national surveillance data from 2005 to 2013" Euro Surveill. 2015;20(16):pii=21103: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=21103>
- Scientific publication: "Surveillance of congenital rubella and rubella infections in pregnancy in EU/EEA countries, 2012: Current status and future perspective to monitor elimination." Vaccine 2015; 33(38): 4929-4937

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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, September 2015.