



## EPIET REPORT



# Summary of work activities

Cristina Giambi  
European Programme for Intervention  
Epidemiology Training (EPIET), 2011 cohort

## Background

### Pre-fellowship short biography

Prior to EPIET, Cristina Giambi studied medicine and specialised in Preventive Medicine and Public Health (2004). She received a PhD in Methodologies in Preventive Medicine and Therapy from Tor Vergata University of Rome. In 2006, she accepted a position as epidemiologist in the field of vaccine-preventable diseases at the National Centre of Epidemiology, Surveillance and Health Promotion (CNESPS), Istituto Superiore di Sanità (ISS), Rome, where she still works today.

### EPIET assignment

On 19 September 2011, Cristina Giambi joined the EPIET programme as a Member-State-track fellow. She remained at the National Centre of Epidemiology, Surveillance and Health Promotion, Istituto Superiore di Sanità, Rome, Italy.

## Fellowship projects

### Surveillance project

#### **Survey on rubella, rubella in pregnancy and congenital rubella surveillance systems in EU/EEA countries – ECDC project**

This ECDC project, carried out in May–November 2012, collected information on surveillance systems for rubella, rubella in pregnancy, and congenital rubella in 29 EU/EEA countries through an electronic survey form in order to verify the feasibility of the collection of congenital rubella data at the European level (ECDC's TESSy database system).

Cristina Giambi designed the survey, collected and analysed the data, and disseminated the results.

#### **Congenital rubella surveillance in the European Union: Current status and future perspective of harmonised practices to monitor elimination – Results from a multi-country survey, 2012<sup>1</sup>**

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**Background:** The elimination of rubella and prevention of congenital rubella syndrome (CRS) by 2015 is a goal established by the WHO Regional Office for Europe for the WHO European Region. Surveillance data are essential to monitor the achievement of this goal, and CRS incidence data are not available at the European level. We surveyed 27 EU Member States plus two EEA countries (Norway and Iceland) to describe existing CRS surveillance at the national level in view of the planned EU-wide enhanced CRS surveillance.

**Methods:** In June–September 2012, we surveyed 29 ECDC country contact points for rubella to collect information on characteristics and coverage of surveillance systems, case definitions, variables collected, data collection frequency, analysis and dissemination, reference laboratories, epidemiological investigation and follow-up of cases.

**Results:** The response rate was 100%; 28/29 countries (97%) had national CRS surveillance. The systems were mainly mandatory (26/28, 93%), comprehensive (27/28, 96%) and case-based (27/28, 96%). Eight countries (29%) had active surveillance, and six (21%) required zero-reporting. Reports originated from general practitioners (23/28, 82%), hospitals (21/28, 75%) and laboratories (18/28, 64%). Twenty-four countries (86%) adopted the EU case definition. Twenty-three countries (82%) investigated the source of infection, but only 13 (46%) collected information on the follow-up of asymptomatic infections. All countries identified a reference laboratory for congenital rubella: 27 at the national level and one at the sub-national level; genotyping was performed in 15 countries.

**Conclusion:** Collection of congenital rubella incidence data at the ECDC level seems to be feasible because surveillance systems for congenital rubella syndrome are in place in all countries but one. Coordination of these systems by ECDC would allow introduction of common indicators and harmonisation of laboratory procedures to ensure data comparability between countries, which in turn would support the WHO elimination goal.

An ECDC technical report entitled 'Survey on rubella, rubella in pregnancy and congenital rubella surveillance systems in EU/EEA countries' is available on the ECDC website<sup>2</sup>.

Status: Completed

### **Introduction of integrated surveillance of measles and rubella in Italy and modification of the current surveillance system for rubella in pregnancy and congenital rubella according to WHO recommendations for the Global Measles and Rubella Elimination Plan**

At the end of 2011, a Working Group for Measles and Rubella Elimination National Plan was established. The Working Group brings together representatives from national public health institutes, ministries of health and regional authorities. The Group's aim is to strengthen surveillance and improve vaccination coverage in order to meet the WHO elimination goals. In the period 2011–2013, two main goals were accomplished:

- A new integrated surveillance system for measles and rubella (reporting, epidemiological and laboratory investigation procedures common to measles and rubella) was set up. A web platform for data reporting was developed, and zero-reporting for measles and rubella was introduced.<sup>3</sup>
- The surveillance system for congenital rubella and rubella in pregnancy was strengthened through the introduction of ECDC case definitions and case classifications, new notification forms, an improved data flow, zero-reporting, and actions aimed at increased reporting from all HCWs.<sup>4</sup>

Cristina Giambi participated in the planning and discussion of all the items and was the main author drafting the ministerial note (Ministry of Health) on the surveillance system for rubella in pregnancy and congenital rubella.

### **Congenital rubella still a relevant public health problem in Italy: national surveillance data, 2005–2012<sup>5,6</sup>**

**Background:** A national, mandatory, passive, case-based and exhaustive surveillance system for congenital rubella and rubella during pregnancy was implemented in Italy in 2005. We analysed surveillance data in order to monitor progresses toward congenital rubella elimination, which should be achieved by 2015 according to the WHO global elimination plan.

**Methods:** We performed a descriptive analysis of congenital rubella infections, infections occurred in pregnancy and their outcomes notified between 2005 and 2012. The system uses case definitions compatible with the 2008 EU definitions.

**Results:** Sixty-one confirmed cases of congenital rubella infection, three probable cases, 23 voluntary interruption of pregnancy, and a stillbirth were notified. Incidence peaks occurred in 2008 and 2012. In 2012, 16 confirmed congenital infections were notified (3.0 per 100 000 newborns), 88% of them by a single Region.

Ninety-seven confirmed infections in pregnancy were recorded; only 28% of cases had performed a rubella antibody test before pregnancy, and 43% have had previous pregnancies.

Outcomes of the pregnancy are unknown for 18% (17/97) of confirmed infections in pregnancies, and 47% (57/121) of suspected cases of congenital rubella were not followed up for a final case classification, indicating a possible underestimation of cases.

**Conclusion:** The incidence of congenital rubella is still high in Italy and it could also be underestimated. Strengthening surveillance systems is necessary and an evaluation of the system completeness using alternative sources, such as hospital records, could be useful to assess underreporting.

In order to protect susceptible child-bearing women from rubella infection, routine use of the currently recommended rubella blood test before pregnancy and vaccination of women of childbearing age should be encouraged further. Information campaigns should be used to increase awareness of the risk of acquiring rubella infection during pregnancy.

Status: Completed

## Outbreaks

### **Congenital rubella outbreak in Campania Region**

During February 2013, rumours regarding an increase of congenital rubella cases in one Italian Region (Campania Region) during the last months of 2012 arrived at ISS. In order to verify what happened, the local and regional representatives of this Region were contacted for case-finding. A total of 14 confirmed cases were detected, 12 of them (86%) occurred between September and December 2012. Twelve cases could not be classified due to insufficient information; monitoring of cases continued in order to classify the other suspected cases. Preventive measures were planned by the regional authorities.

Status: Completed

## Research

### **VALORE: Local and regional evaluation of HPV vaccination campaigns in Italy**

This project (2011–2013), funded by the Italian Ministry of Health, explored several crucial aspects of HPV vaccination campaigns in Italy. VALORE produced a technical document to support the Regions and local health units (LHUs) in the running of HPV vaccination campaigns<sup>7</sup> and a training package for healthcare professionals on HPV vaccination. The project also included the following activities:

- A survey addressed at the parents of an unvaccinated girl in order to investigate reasons for non-vaccination.
- A web-based survey, conducted at the local level, addressed at regional and local HPV representatives for HPV campaigns in order to identify factors potentially associated with high vaccination coverage.
- Establishment of a focus group with adolescent girls to understand their attitude toward HPV vaccination
- Online survey and focus group with healthcare workers to explore their attitude toward HPV vaccination

Cristina Giambi designed the study, prepared the tools for collecting information, coordinated activities, collected and analysed data, produced the final document, developed the training package, and disseminated the results.

#### *Abstract*

Reasons for non-vaccination against human papilloma virus (HPV) in a sample of Italian girls (results from VALORE project), 2012<sup>8</sup>

**Background:** In Italy, free-of-charge human papillomavirus (HPV) vaccination has been actively offered to 11-year-old girls since 2008. National vaccination coverage for three doses is 65% (range: 25–82%, depending on the Region). We explored the reasons for non-vaccination.

**Methods:** We recruited non-vaccinated girls (birth cohort 1997/1998 who were offered vaccination in 2008 and 2009, respectively), identified through the immunisation registries by LHUs. Between January and March 2012, LHUs sent a standardised questionnaire by mail to parents of the identified girls, including closed questions on reasons/barriers for non-vaccination, knowledge on HPV, source of information, attitude towards vaccinations. We performed a descriptive analysis of variables.

**Results:** We received 2015 (14.2%) questionnaires from 56 LHUs in 10 Italian Regions and included 1701 valid questionnaires in the analysis. Main reasons for non-vaccination were: fear of adverse events (79.6%); lack of trust in a 'new' vaccine (76.0%); discordant (64.5%) and scarce (53.4%) information on HPV vaccination; cervical cancer prevention by pap test (52.7%); parents considered their daughter too young to be at risk (45.4%). The most reported sources of information were: general practitioners/paediatricians (44.9%), family/friends (37.4%), internet (31.6%), gynaecologists (28.0%). General practitioners/paediatricians (73.3%) and gynaecologists (57.4%) were reported as the best sources to receive adequate information. Most girls (98.9%) had received other paediatric vaccinations; most families (80.9%) considered vaccinations fundamental for the health of their children, but 47.7% also considered them dangerous.

**Conclusion:** Our results suggest that a more complete and transparent communication process may help to reduce fear and increase trust in vaccination among parents. Sensitising and training healthcare workers is essential to

provide clear and homogeneous information to facilitate the decision-taking process of parents regarding HPV vaccination.

Status: Completed

### **Analytical study to evaluate mortality attributable to carbapenem-resistant *Klebsiella pneumoniae* in Italian hospitals**

Italy is one of the European countries most affected by antibiotic resistance. In November 2012, we designed a prospective cohort study to estimate the mortality rate in carbapenem-resistant *Klebsiella pneumoniae* (CRKP) infections in patients of a sample of Italian hospitals. Mortality rates of adult patients ( $\geq 18$  years) admitted to hospitals with CRKP isolation in blood or respiratory tract (bronchial aspirate and protected bronchial alveolar lavage) and adult patients admitted to the same hospitals with CSKP (carbapenems-susceptible *Klebsiella pneumoniae*) isolation in blood or respiratory tract during the study period will be compared; clinical characteristics of patients with CRKP and CSKP will be described.

Cristina Giambi designed the study, wrote the protocol and coordinated hospital activities.

Status: Ongoing. The period study has been extended due to difficulties; data analysis is ongoing.

### **Pilot programme for collecting immunisation coverage data from EU/EEA Member States (EVACO)**

The EVACO project was conducted within the VENICE II (Venice European New Integrated Collaboration Effort) project, a European project funded by ECDC, which has been working since 2008 to create a network of European experts working in immunisation programmes and to collect, share and disseminate updated data on vaccination through web-based surveys and collaboration among Member States. EVACO developed and pilot-tested an electronic system to collect and transmit vaccination coverage data from EU/EEA countries to ECDC.

Cristina Giambi was involved in the design the system, collected and analysed data, evaluated the system, and prepared the final report for ECDC.

Status: Completed

## **Scientific communication**

- Two posters<sup>2,5</sup>
- Two oral communications at international conferences
  - See 'References' below<sup>8</sup>
  - 'Surveillance systems for congenital rubella and rubella in pregnancy in EU/EEA countries: the state of the art', EUROVACCINE 2012; 21–23 November, Barcelona.
- Five oral communications at national conferences:
  - See 'References' below<sup>9,10,11,12</sup>
  - 'HPV vaccination strategies and coverage in Italy'. Presented at training event: 'HPV vaccination campaign in Tuscany Region: strategies for improvement'. Azienda Sanitaria Firenze, Italy, 4 Nov 2011.
  - 'HPV vaccination campaigns: vaccination coverage data at 31 Dec 2011 and vaccination strategies'. At Conference 'HPV infection: from the early diagnosis to primary prevention', Roma ISS, 27 Jun 2012
- Submission of the scientific publication 'Exploring reasons for non-vaccination against human papillomavirus, Italy, 2012'. This paper reports the results of a survey of parents of unvaccinated daughters to explore barriers to HPV vaccination (part of the VALORE project). The paper is under evaluation at BMC Infectious Diseases.

Status: completed

## **Teaching experience**

### **One-day training course: HPV vaccination campaign in Tuscany Region: strategies for improvement**

One-day training course addressed at regional and local public health staff in order to assist with the implementation of the HPV campaign at the regional and national level and to discuss future actions to maintain/improve adherence to the programme.

Cristina Giambi developed, together with the Tuscany Regional Authorities, the schedule and contents of the course and presented national HPV coverage data and vaccination strategies.

### Training package: HPV, vaccination, immunisation and communication strategies

Within the VALORE project (see Research project session), a training package was developed to support Regions and LHUs for training of health care professionals working with HPV vaccination, including general practitioners, paediatricians, gynaecologists, obstetrics, nurses and vaccination centres operators.

Cristina Giambi prepared the training package, which consisted of four modules: 1) Epidemiology of HPV and cervical cancer; 2) HPV vaccination; 3) immunisation strategies and HPV vaccination monitoring; 4) and planning of a communication strategies: methods and tools for effective communication. Each module consists of a set of slides, accompanied by explanatory text for each slide.

Cristina Giambi designed schedule and contents of the course, developed the materials for modules 1–3, and promoted the dissemination of the training package.

Status: Completed

## Other

- Participation:
  - Current situation and future perspectives in vaccinations. 11th National Meeting. Rome, 23/05/2013
  - Eurovaccine 2012. Barcelona, 21–23 November 2012
  - Training course 'Laboratory Hazards: Identification and prevention'. Istituto Superiore di Sanità.
  - Workshop 'Human papillomavirus infection: from primary prevention to early detection'. Istituto Superiore di Sanità.
  - CNESPS (ISS) meeting 'BCoDE – Burden of Communicable Diseases in Europe'
  - CNESPS (ISS) meeting 'Carbapenem-resistant Klebsiella pneumonia'
  - CNESPS (ISS) meeting 'Introduction to Zotero'
- Evaluation of inter-/national recommendations and literature regarding the use of measles-mumps-rubella-varicella (MMRV) vaccine and preparation of a final document reporting the CNESPS opinion on this topic, as requested by the Prevention Department of the Italian Ministry of Health.
- Periodical (every six months) descriptive analysis of HPV vaccination coverage data by Region, birth cohort and number of doses; preparation of a periodical report dissemination of results to public health authorities through the CNESPS portal<sup>13,14</sup>.

## Supervisor's conclusions

During her Member-States-track fellowship, Cristina maintained a high level of enthusiasm for field epidemiology while at the same time displaying a high a degree of professionalism. Cristina is an excellent project manager and demonstrated her ability to work efficiently and independently, both in a team and on her own.

She was able to take advantage of the fellowship to reinforce her knowledge. As an EPIET fellow, Cristina continued working in the same institute, which she took as a challenge: she actively engaged in learning-by-doing projects and other activities, never falling prey to routine.

Cristina and her EU-track fellow assigned to Istituto Superiore di Sanità, Carmen Montaña Remacha, worked well together, both personally and professionally, generating a positive synergy which encouraged cooperation.

Public health is a priority for Cristina. She managed several public health projects, spanning the entire project cycle from the initial identification of the problem to making decisions and taking actions at the national level. Her involvement in large European projects helped her to identify the differences among the systems in each country and describe them. The EPIET fellowship not only improved Cristina's skills and knowledge, but also increased her confidence in her own abilities so that she can work to her full potential.

Based on her personal and professional skills, I can highly recommend Cristina Giambi for any public health position at the national or international level that requires creativity, originality, the ability to work independently, excellent field epidemiology skills, and an in-depth understanding of public health.

## Next steps

Cristina Giambi will continue to work as an epidemiologist in the field of vaccination and public health at Communicable Infectious Diseases Epidemiology (CNESPS, ISS) in Rome.

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