Rubella immunization and surveillance of rubella in pregnant women in France

Isabelle Parent du Châtelet
Institut de veille sanitaire / French Institute for Public Health Surveillance France

Progress toward rubella elimination and CRS prevention in Europe
8-10 February 2012 – Rome, Italy

INSTITUT
DE VEILLE SANITAIRE

- Immunization and surveillance strategies
- Surveillance of rubella during pregnancy
- Rubella susceptibility in general population
- Perspective for rubella surveillance

Immunization and surveillance strategies in France

- 1970 : Selective rubella vaccination of adolescent females
- 1976 : National lab-based surveillance of rubella infection during pregnancy (« Renarub »)
- 1983 : Introduction of MR vaccine into the routine immunization program (MMR in 1986)
- 1992 : Mandatory antenatal rubella-IgG testing
  - Determine susceptibility
  - Post-partum vaccination
- 1996 : 2nd dose of MMR
- 2005 : National plan for elimination of measles and congenital rubella
  - MMR1 at 12 months of age - MMR2 before 24 months of age
  - Catch up : 2 doses for anyone born in 1980 and later
    - Women born before 1980 and not vaccinated against rubella: 1 dose MMR
    - Use any opportunity to vaccinate women of childbearing age
- No post-natal rubella surveillance in France

MMR coverage « 1 dose » and « 2 doses »

Children at 24 months of age

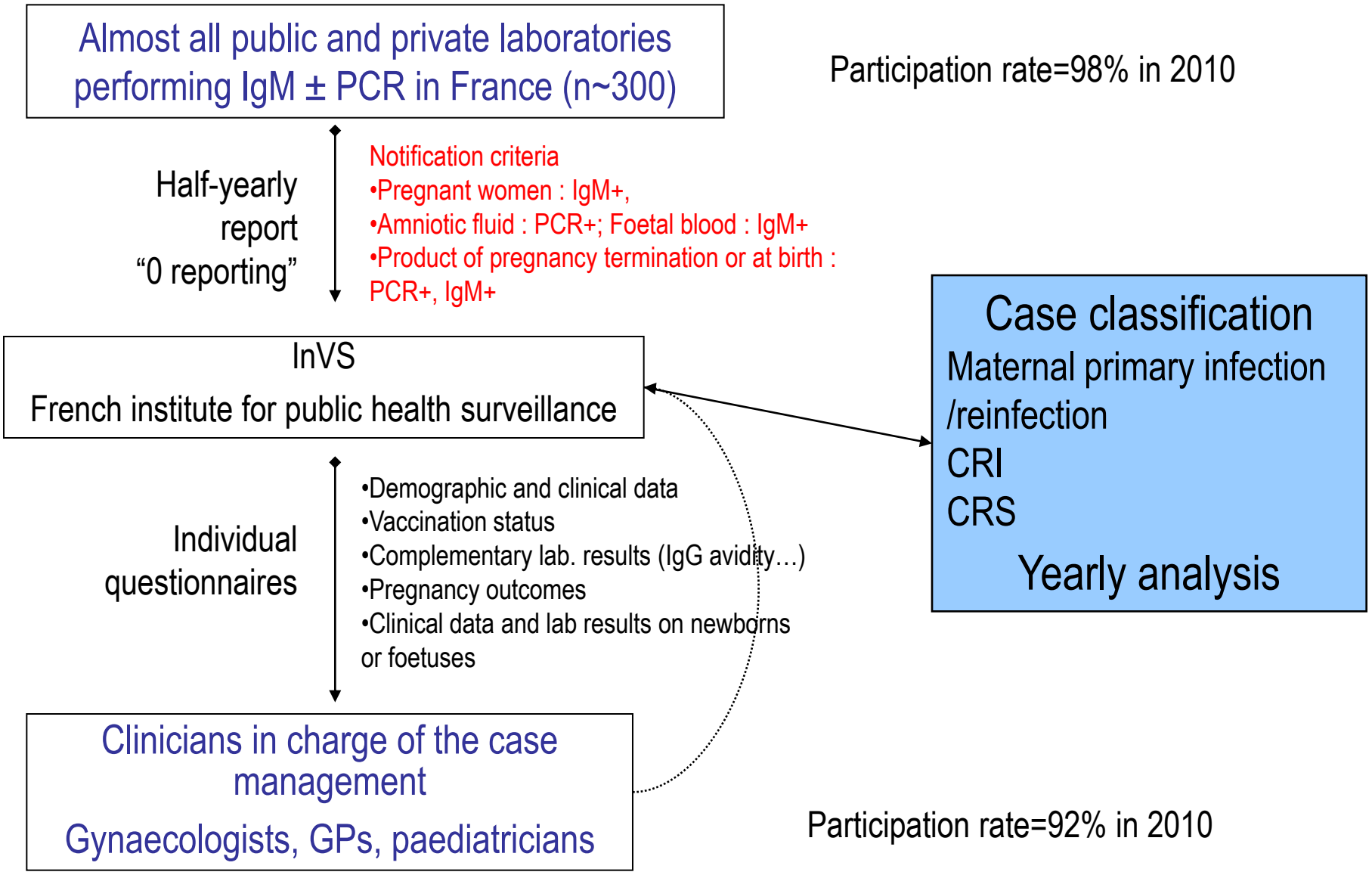
(Permanent sample of health insurance beneficiaries, CnamTS/InVS)

MMR1 = 89.9 % MMR2 = 52.1% for children born in 2008

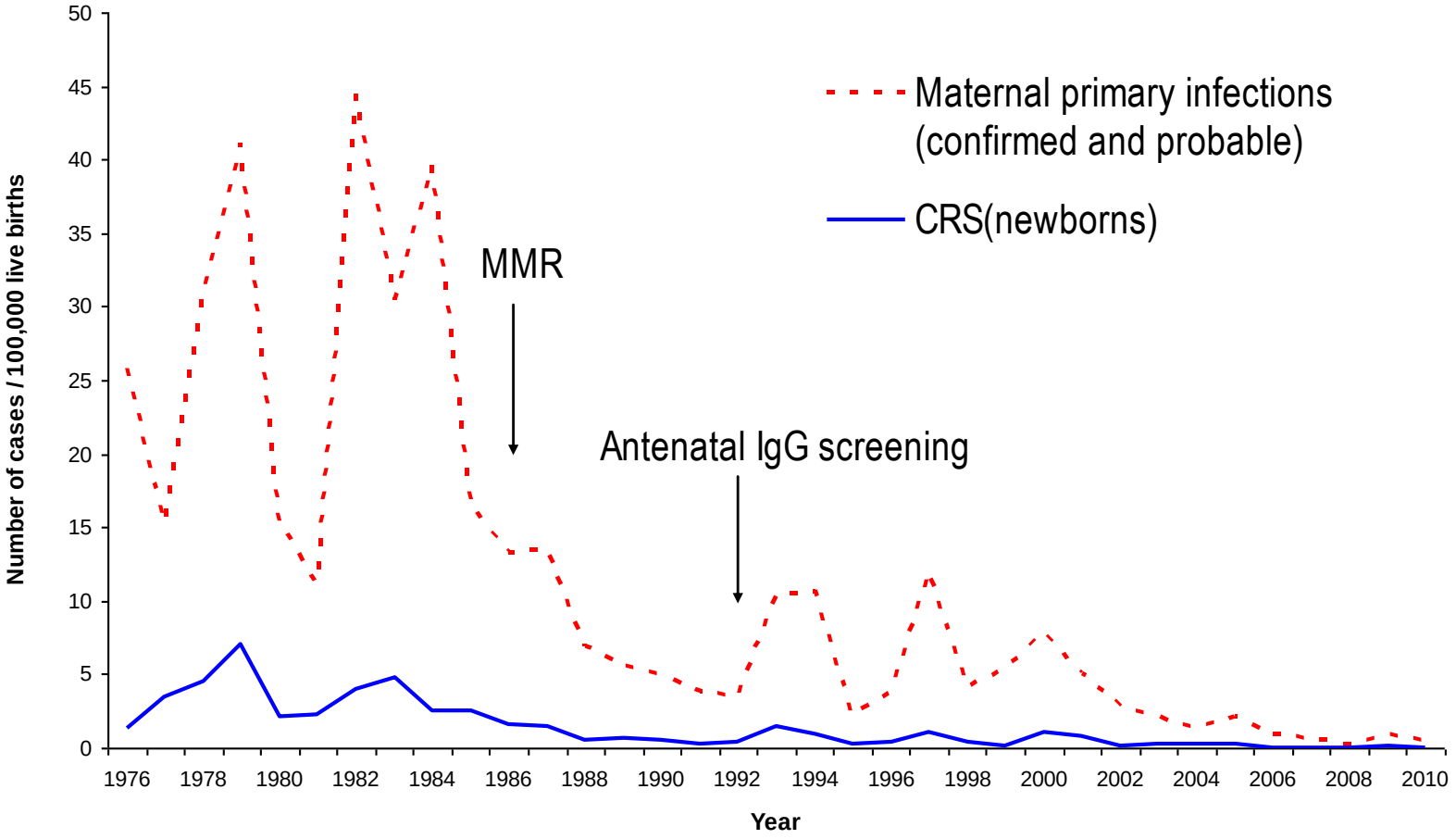
6 to 15 years old, school surveys

Date of survey	School grade	Birth cohorts	Coverage « 1 dose »	Coverage « 2 doses »
2001-2002	5th grade (11 yo)	1990-1991	**94%**	57%
2002-2003	Preschool (6 yo)	1996-1997	**93%**	28%
2003-2004	9th grade (15 yo)	1988-1989	**94%**	66%
2004-2005	5th grade (11 yo)	1993-1994	**96%**	74%
2005-2006	Preschool (6 yo)	1999-2000	**93%**	44%
2007-2008	**5th grade (11 yo)**	**1996-1997**	**97%**	**85%**

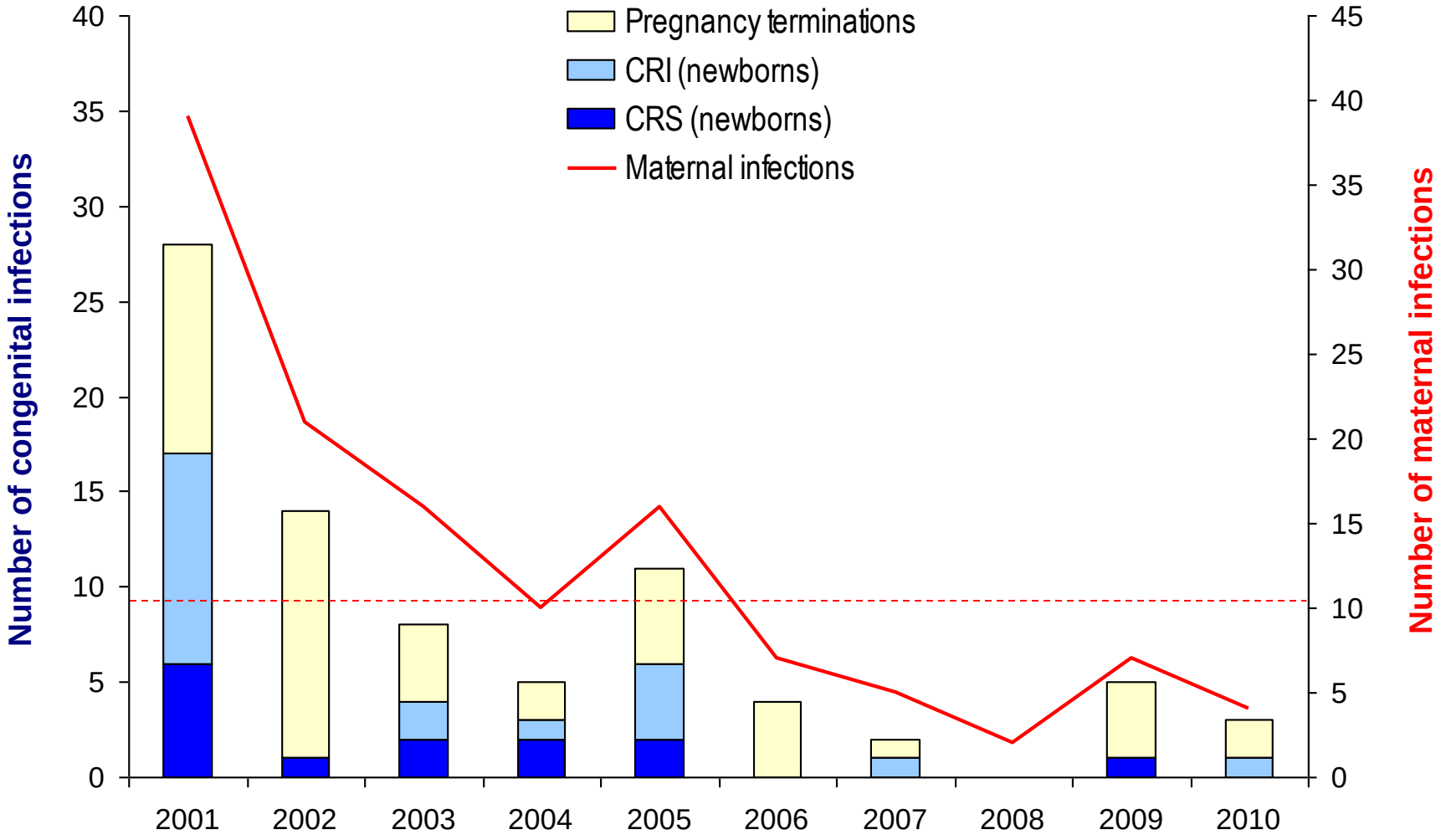
French laboratory-based surveillance (Renarub)



Ratio “primary infections/live births” and CRS in France from 1976 to 2010



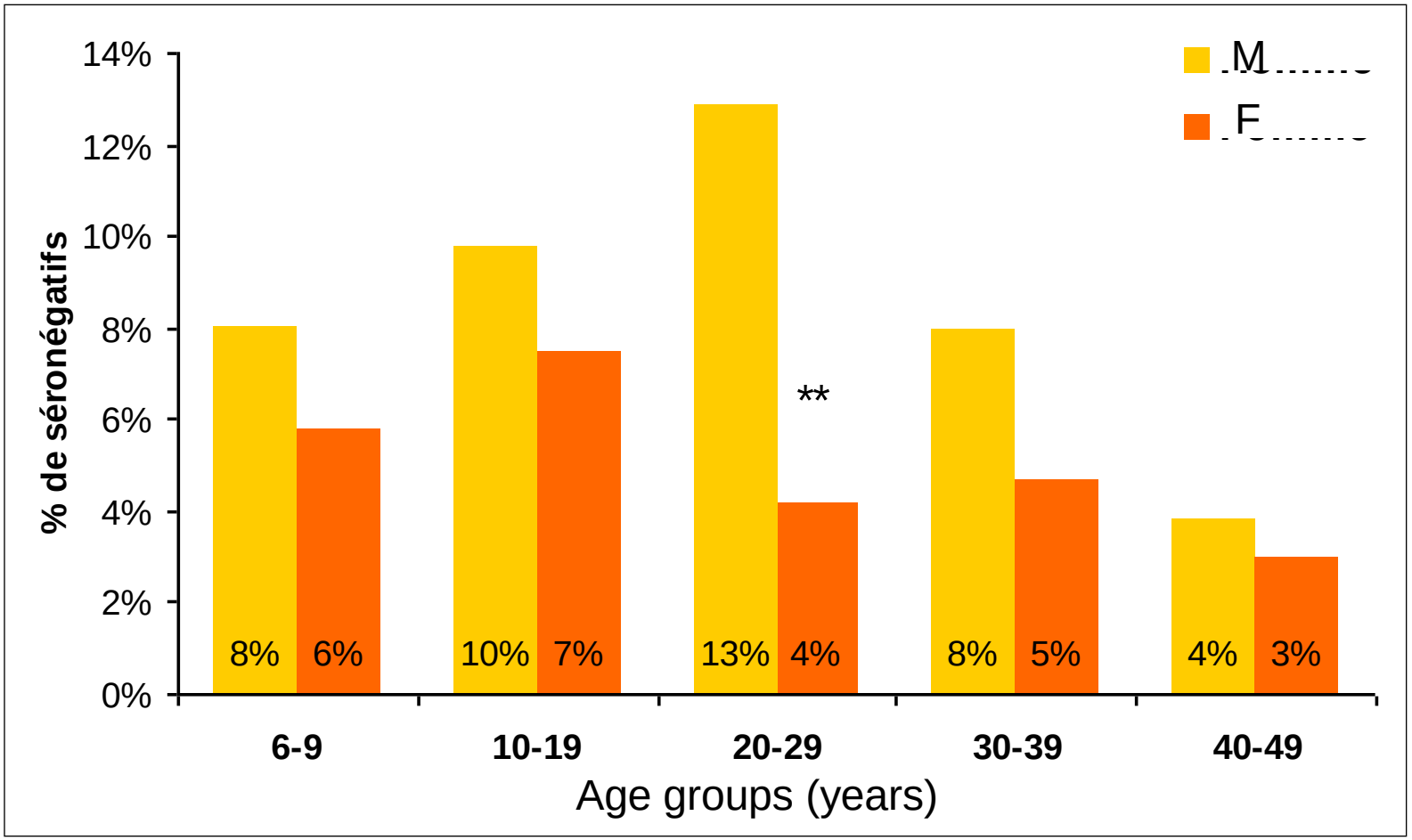
Number of rubella infections during pregnancy, CRS/CRI and rubella-associated terminations in France from 2001 to 2010



Circumstances of diagnosis of rubella infection during pregnancy, 2001-2010 (n=127)

Antenatal serological testing + follow-up	54 (42%)
Febrile rash	39 (31%)
Infectious contact and febrile rash illness	21 (16%)
Suspected infectious contact	5 (4%)
US abnormalities	6 (5%)
Infection not detected during pregnancy and CRS detected at birth	2 (2%)

Proportion of susceptible population by gender and age group in France Mainland, 2009-2010 (n=5,000)

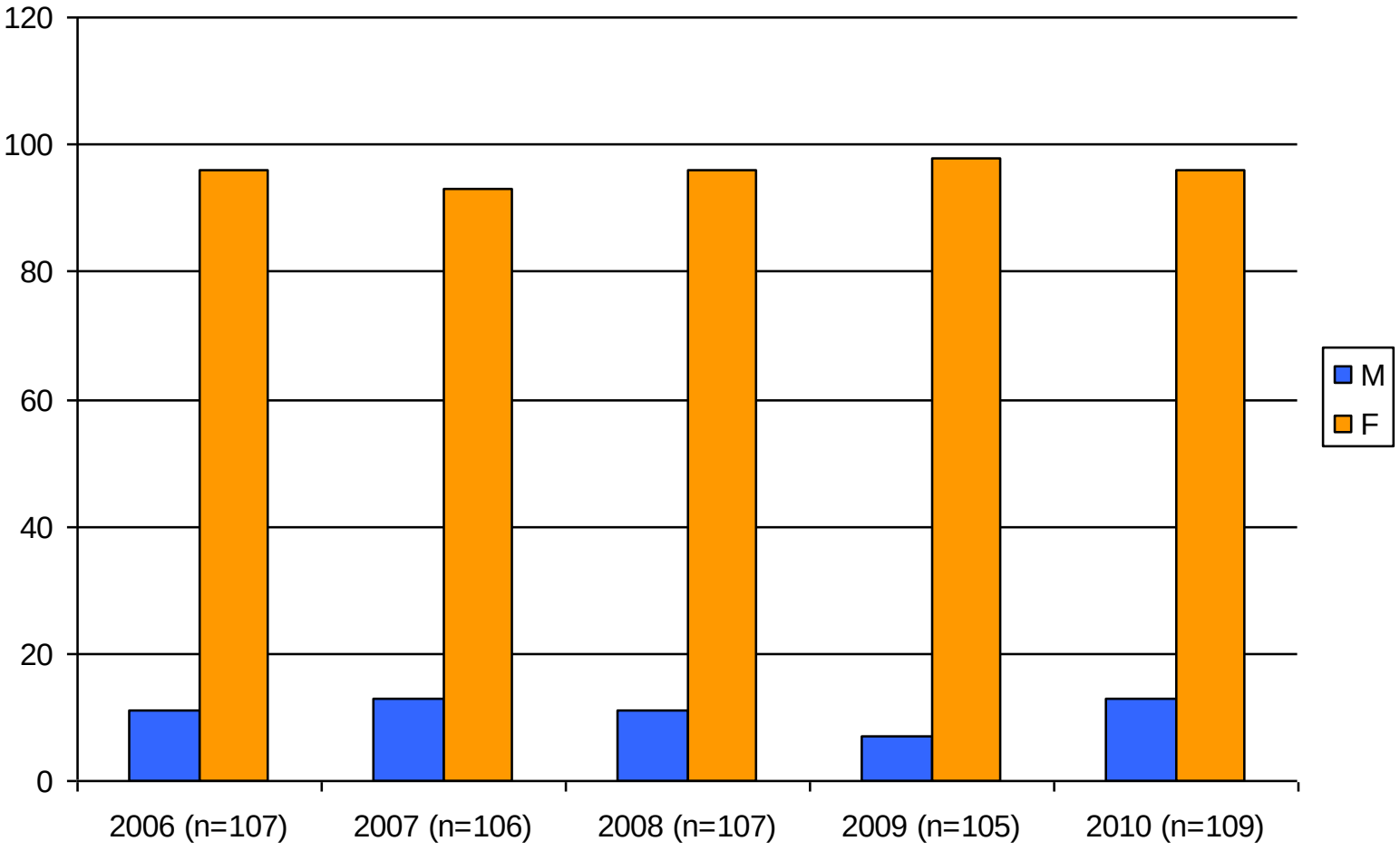


negative threshold : 10 IU / mL

Source = InVS

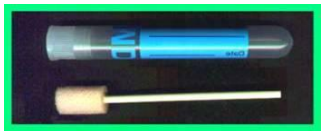
** : p< 0.05

Number of rubella IgM+ tests provided by two private laboratories, 2006-2010



Results from the measles National Reference Laboratory

Clinical suspicion of measles



95 % of the oral fluid samples are collected <7 days after rash onset

	# oral fluid samples	+ Measles	+ Rubella	Rubella cases Gender (age in years)
2009	588	316 (54%)	0	-
2010	1975	1357 (67%)	4 (0.2%)	M (39, 23, 20) F (18)
2011	3105	1990 (64%)	5 (0.2%)	M (34, 31, 23) F (60, 34)

Source: F Freymuth. Centre national de référence pour la rougeole – CHU Caen, France

Perspectives for the French rubella surveillance (1)

- Context
  - Commitment for rubella elimination and prevention of CRS by 2015
  - MMR1coverage at 24 months of age is 89% at 24 months and 97% at 11 years
  - 93% of the 6-49 years old population is protected against rubella

➢ The level of the rubella virus circulation is low

➢ But localised outbreaks could occur in specific susceptible population

  - Rubella benefited from the enhanced MMR immunization activities during the nationwide measles outbreak

Perspectives for the French rubella surveillance (2)

- A “National Reference Laboratory for maternal and congenital infections” has been nominated for 2012-2015
  - Network of laboratories involved in rubella and congenital rubella diagnosis
  - Microbiological expertise (eg. IgG avidity) and contribution to epidemiological surveillance in relationship with the Measles reference laboratory and InVS
- The surveillance of rubella among pregnant women is operational but
  - the low incidence of rubella leads to a high proportion of IgM+ reports that are not considered as maternal infections after investigation
  - is restricted to a sub-group population
  - CRS detected at birth only
  - will not allow for certification of rubella elimination (no case-based data in general pop)
- A mandatory notification system is being considered
  - Several steps have to be considered before a decision is taken

Thank you
for your attention