

# Using dried blood samples of universal newborn screening for detection of congenital rubella syndrome—Taiwan, 2016–2017

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## Background

Congenital rubella syndrome (CRS) can occur in fetus of rubella-infected pregnant women and cause multiple disabilities. Progress toward rubella elimination should be supported by sensitive CRS surveillance. In Taiwan, passive surveillance of CRS has been implemented for >20 years, but reporting rate is low. To document absence of indigenous case, Taiwan Centers for Disease Control started using residual dried blood samples collected from universal newborn screening for detection of CRS since 2014. We compared the reporting rate and explored the benefit of this active surveillance.

## Methods

We collected data from the passive national notifiable disease surveillance system (NNDSS) during 2006–2015. For the active surveillance, we selected infants with CRS-associated congenital defects, including hearing impairment, purpura, specific heart and ophthalmic diseases, from National Birth Registry, National Newborn Hearing Screening and National Health Insurance Database. We tested their dried blood samples for rubella IgM. We calculated the reporting rate and age of suspected cases from the active surveillance during 2016–2017.

## Results

During 2006–2015, 13 suspected CRS cases (0.07 per 10000 live births) were reported to NNDSS, and one case was confirmed. The median reported age was 18 days (range 2–612 days). After implementation of active surveillance, 2250 infants were selected (56.1 per 10000 live births) during 2016–2017. One was tested positive for rubella IgM using dried blood sample. This laboratory-confirmed CRS case who presented with hearing impairment and congenital cataract was not reported to NNDSS during 2016–2017. However, the median reported age of the active surveillance was older (approximately 150 days).

## Conclusions

Active surveillance using dried blood samples of universal newborn screening for detection of CRS could increase the reporting rate but need longer time to report. To enhance identification of suspected CRS cases, the active surveillance could effectively complement the existing passive surveillance system.