World Health Organization

Summary of Key Points

Rubella vaccines: WHO position paper – July 2020

Rubella vaccines
WHO position paper

- Rubella is of public health importance because of the teratogenic potential of infections acquired during pregnancy.
- Rubella virus is generally recognized as the most common infectious cause of birth defects, accounting for an estimated 100 000 infants born with congenital rubella syndrome (CRS) each year worldwide.
- Before the introduction of rubella vaccine, the reported incidence of CRS was 0.1–0.2/1000 live births during endemic periods and 0.8–4/1000 live births during rubella epidemics

Rubella vaccines
WHO position paper

- In light of the global burden of CRS, the proven efficacy, effectiveness and safety of rubella containing vaccines (RCVs) and regional elimination goals, WHO recommends that countries introduce RCVs into their national immunization programmes.

- Countries that have not yet introduced RCV into their immunization programmes should do so if they can achieve a coverage level of 80% or greater, through either routine immunization or campaigns. While opportunities should not be missed, the decision to introduce rubella vaccine in combination with measles containing vaccine (MCV) needs careful consideration related to the sustainability of maintaining high RCV coverage into the future.

Strategies for implementation

- Introduction of RCV into childhood immunization programmes implies a long-term commitment to achieving and maintaining sufficient immunization coverage to ensure sustained population immunity and thereby avoid a paradoxical epidemiological effect.
- Low coverage of rubella vaccination of infants and young children can reduce but not interrupt the circulation of rubella virus, ultimately resulting in increased susceptibility of women of reproductive age (WRA). This may increase the risk of CRS above that which existed before introduction of the vaccine.
- If vaccination coverage is sufficiently high (generally estimated to be ≥80% in each birth cohort), rubella transmission will be markedly reduced or interrupted, thereby reducing the risk of exposure of pregnant women.
- However, as it is recommended that RCV be provided in combination with measles vaccine, and measles elimination requires ≥95% coverage, the goal for rubella vaccination coverage should also be ≥95%.
- Countries that are planning to introduce RCVs should have ≥80% coverage with the first dose of measles vaccine during routine immunization and/or campaigns to demonstrate their ability to achieve these levels of RCV coverage and thereby avoid the previously mentioned paradoxical effect.

Strategies for implementation

- The recommended vaccination strategy is to begin with an MR vaccination campaign targeting both sexes and a wide age range (e.g. 9 months–15 years), based on the susceptibility profile by birth cohort when possible, followed immediately by introduction of MR or MMR vaccine into the routine immunization programme.
- The campaign should target males as well as females in order to reduce the likelihood of creating immunity gaps.
- The first dose of RCV can be delivered at 9 or 12 months, depending on the level of measles virus transmission. RCV should be used in all subsequent follow-up campaigns.
- The precise target age for follow-up campaigns will depend on the country's susceptibility profile, operational feasibility and measles epidemiology.

World Health Organization

Strategies for implementation

- WHO recommends that, in order to provide direct protection against rubella, all non-pregnant women of reproductive age who are not already vaccinated or who are seronegative for rubella receive 1 dose of RCV. This can be done by vaccinating women at premarital screening, post partum or at the time of other contacts with the health system.

- Rubella is less infectious than measles, and the effectiveness of 1 dose of RCV is ≥95%, even at the age of 9 months of age. Therefore, if high coverage is achieved, only 1 dose of RCV is required to achieve rubella elimination.

- For programmatic reasons, however, it is recommended that all countries implement a 2-dose RCV schedule with the same combined MCV vaccine for both doses. Administration of more than 1 dose of RCV is safe.

Outbreaks

- During outbreaks of measles, RCVs may be administered to infants as young as 6 months as an off-label indication. Because of the possibility of lower levels of seroconversion, the dose administered at 6 months should not be counted as a valid first dose, and the child should be vaccinated with subsequent dose(s) of RCVs according to the national immunization schedule.
  - .

World Health Organization

Co-administration

- RCVs can be administered concurrently with inactivated vaccines. Live vaccines should be given either simultaneously or at least 4 weeks apart.
- An exception to this rule is oral poliovirus vaccine, which can be given at any time before, at the same time as or after RCV without interfering in the response to either vaccine.
- WHO recommends co-administration of RCV and YF vaccines. Although there may be immunological interference between the 2 vaccines when they are administered simultaneously, resulting in somewhat lower titres of rubella and YF antibodies, the seroconversion rates were found to be the same.

Precautions and contraindications

- RCVs should not be given to anyone who has experienced a severe allergic reaction after a previous vaccine dose or vaccine component. It is recommended not to provide the vaccine to those with active TB or severe immunodeficiency (including individuals with symptomatic HIV infection, AIDS, congenital immune disorders, malignancies or aggressive immunosuppressive therapy).

- Rubella vaccination should be avoided in pregnancy because of a theoretical (but never demonstrated) risk of teratogenic outcomes. Women planning a pregnancy are advised to avoid pregnancy for 1 month after rubella vaccination. Inadvertent vaccination with RCV during pregnancy is not an indication for terminating the pregnancy.

- WHO recommends that people who receive blood products wait at least 3 months before vaccination with RCV, and, if possible, avoid administration of blood products for 2 weeks after vaccination.

Vaccination of health workers and travellers

- Vaccination of health workers with RCV is recommended, and documentation of immunity or vaccination with RCV should be required for health workers.
- Rubella vaccine should be offered to all unvaccinated individuals independent of destination of travel (endemic or non-endemic country) to avoid individual risk of exposure to rubella virus as well as to reduce the risk of international spread.

Surveillance

- All countries should aim to establish preferably integrated, elimination-standard surveillance for measles and rubella.
- As rubella control progresses towards elimination, for which some regions have established targets, the sensitivity and specificity of surveillance systems must be increased. Therefore, WHO recommends strengthening integrated measles and rubella case-based surveillance of fever and rash and introduction of CRS surveillance.