

## Vaccine Handling

Database ID 81\_1

Year 2006

The recommended conditions for storing vaccines used in immunization programmes are shown in Appendix 81\_1. This diagram also indicates the maximum times and temperatures in each case. At the higher levels of the cold chain, i.e., at national (primary), and regional or province level, OPV must be kept frozen between -15°C and -25°C. Freeze-dried vaccines (i.e., BCG, measles, MMR and yellow fever) may also be kept frozen at -15°C to -25°C if cold chain space permits, but this is neither essential nor recommended. At other levels of the cold chain (intermediate vaccine stores and health facilities), these vaccines should be stored between +2°C and +8°C. All other vaccines should be stored at between +2°C and +8°C at all levels of the cold chain. Liquid formulations of vaccines containing diphtheria, pertussis, tetanus, hepatitis B, Haemophilus influenzae type b, IPV and their combinations should not be frozen.

*Temperature sensitivity of vaccines*

WHO/IVB/06.XX Page 2

Database ID 81\_13

Year 2006

There is a serious risk when reconstituted (measles, mumps, and rubella vaccines and their combinations are) stored at any temperature for longer than six hours or above 8°C for any period. This is not only because of the lack of potency, but also because of the possibility of contamination of the product, which could cause serious adverse consequences in those being vaccinated. When used, measles vaccine should be protected from elevated temperature and from light (light may inactivate the virus). Reconstituted vaccines must be discarded at the end of each immunization session and should NEVER be kept for use in subsequent sessions.

After reconstitution, measles and MMR vaccine rapidly lose their potency when kept at temperatures above 2-8°C. Reconstituted measles and MMR vaccines should be kept cold during immunization procedures, must be discarded at the end of each immunization session and must never be kept for use in subsequent sessions.

*Temperature sensitivity of vaccines*

WHO/IVB/06.XX Page 27

Database ID 17\_3

Year 2005

WHO recommended vaccine storage conditions (Appendix 17\_3).

*WHO-UNICEF effective vaccine store management initiative: Modules 1 - 4*

WHO/IVB/04.16-20 Page 1:3

# MMR

Database ID 2\_2

Year 2004

Measles vaccine (including MR and MMR - page 8):

- \_ It is essential that only the diluent supplied with the vaccine be used.
- \_ After reconstitution measles vaccine should be kept at 2°C-8°C.
- \_ Any remaining reconstituted vaccine must be discarded after six hours or at the end of the immunization session, whichever comes first.

*Immunization in practice: a practical resource guide for Health workers – 2004 update* \_\_\_\_\_ *Module 2: The vaccines*

WHO/IVB/04.06 Page 6

Database ID 3\_20

Year 2004

BCG, measles, MR, MMR and rubella vaccines are equally sensitive to light (as well as to heat). Normally, these vaccines are supplied in vials made from dark brown glass, which gives them some protection against light damage, but care must still be taken to keep them covered and protected from strong light at all times.

*Immunization in practice: a practical resource guide for Health workers – 2004 update* \_\_\_\_\_ *Module 3: The cold chain*

WHO/IVB/04.06 Page 28

Database ID 31\_33

Year 2002

At the higher levels of the cold chain, i.e. at the national (central) and regional or provincial levels, OPV must be kept frozen between -15°C and -25°C.

Freeze-dried vaccines, i.e. BCG, measles, MMR and yellow fever vaccines, may also be kept in this temperature range (-15°C and -25°C) if there is sufficient space in the cold chain, but this is neither essential nor recommended. At other levels of the cold chain these vaccines should be stored between +2°C and +8°C. All other national immunization service vaccines should be stored between +2°C and +8°C at all levels of the cold chain.

*Ensuring the quality of vaccines at country level: Guidelines for health staff*

WHO/V&B/02.16 Page 13

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## Schedule

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Database ID 1\_5

Year 2004

Mumps vaccine should be given in combination with measles and rubella vaccines (MMR).

*Immunization in practice: a practical resource guide for Health workers – 2004 update* \_\_\_\_\_ *Module 1: Target diseases*

WHO/IVB/04.06 Page 11

## MMR

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Database ID 66\_9

Year 2000

Rubella vaccine is usually administered at age 12-15 months, but can also be administered to children as young as 9 months of age. In most countries, the vaccine is given as MR or MMR, and the age of administration is chosen based on the appropriate age for measles vaccination. It may also be administered to older children, adolescents, students, child care personnel, health care workers, military personnel and adult men in contact with women of childbearing age.

*Rubella vaccines (WHO position paper)*

*Weekly Epid. Record (2000, 75: 161-169) Page 166*

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## Vaccine Administration

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Database ID 2\_39

Year 2004

Administration summary: MR/MMR (see Appendix 2\_39.)

*Immunization in practice: a practical resource guide for Health workers – 2004 update* \_\_\_\_\_ *Module 2: The vaccines*

*WHO/IVB/04.06 Page 9*

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Database ID 60\_10

Year 2001

Primary mumps vaccination, especially in the recommended combination with rubella and measles vaccines, is easily adapted to the national vaccination programmes and does not interfere significantly with simultaneously-administered vaccines.

*Mumps virus vaccines (WHO position paper)*

*Weekly Epid. Record (2001, 76: 345-356) Page 354*

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## Adverse Event

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Database ID 58\_3

Year 2004

Several carefully conducted studies have been unable to confirm preliminary reports alleging an association between receipt of live attenuated measles vaccine or MMR and the occurrence of autism or chronic bowel inflammation.

*Measles vaccines (WHO position paper)*

*Weekly Epid. Record (2004, 79: 130-142) Page 131*

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## MMR

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Database ID 79\_6

Year 2004

The attention of the Committee was drawn to the unavailability of a monovalent rubella vaccine in some countries and to the need to provide a rubella-containing combination vaccine to postpartum women seronegative for rubella. GACVS is not aware of any safety issues that would restrict the provision of a rubella-containing combination vaccine in place of single rubella vaccine in those circumstances.

*Global Advisory Committee on Vaccine Safety, 3–4 December 2003*

*Weekly Epid. Record (2004, 79: 16-20) Page 19*

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## Outbreak Control

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Database ID 39\_17

Year 2005

While many countries have readily replaced single-antigen measles vaccine with measles–mumps–rubella (MMR) or measles–rubella (MR) vaccines, to prevent a potential gradual increase in rubella susceptibility among women of childbearing age and a paradoxical increase in congenital rubella syndrome (CRS) incidence, efforts are needed to assure that women of childbearing age are also protected against rubella.

- A strong laboratory-based surveillance mechanism is a must for identification of rubella outbreaks following the introduction of MMR or MR into the NIP.
- A screening programme should be available for females entering childbearing age because, once the vaccine is introduced into the NIP, the susceptibility of adults getting rubella will be increased.

*Vaccine introduction guidelines. Adding a vaccine to a national immunization programme: decision and implementation*

*WHO/IVB/05.18 Page 47*

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## Surveillance of Vaccine Preventable Disease

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Database ID 39\_17

Year 2005

While many countries have readily replaced single-antigen measles vaccine with measles–mumps–rubella (MMR) or measles–rubella (MR) vaccines, to prevent a potential gradual increase in rubella susceptibility among women of childbearing age and a paradoxical increase in congenital rubella syndrome (CRS) incidence, efforts are needed to assure that women of childbearing age are also protected against rubella.

- A strong laboratory-based surveillance mechanism is a must for identification of rubella outbreaks following the introduction of MMR or MR into the NIP.
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*Vaccine introduction guidelines. Adding a vaccine to a national immunization programme: decision and implementation*

*WHO/IVB/05.18 Page 47*

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Where (mumps) vaccine is used and high coverage is achieved the monitoring of vaccine-associated mumps meningitis and its differentiation from meningitis due to other causes can be an important issue. The monitoring of mumps meningitis, whether related to vaccine or natural disease, can be integrated into overall meningitis surveillance activities.

The vast majority of mumps vaccine is used in combination with measles and rubella vaccines (MMR), and surveillance strategies for mumps should take surveillance for measles, rubella and congenital rubella syndrome into consideration.

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## Introduction of Vaccines

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While many countries have readily replaced single-antigen measles vaccine with measles–mumps–rubella (MMR) or measles–rubella (MR) vaccines, to prevent a potential gradual increase in rubella susceptibility among women of childbearing age and a paradoxical increase in congenital rubella syndrome (CRS) incidence, efforts are needed to assure that women of childbearing age are also protected against rubella.

- A strong laboratory-based surveillance mechanism is a must for identification of rubella outbreaks following the introduction of MMR or MR into the NIP.
- A screening programme should be available for females entering childbearing age because, once the vaccine is introduced into the NIP, the susceptibility of adults getting rubella will be increased.

Where measles vaccine has been combined with rubella vaccine (MR) or mumps and rubella vaccine (MMR), the protective immune response to the individual components remains unchanged. The use of such combined vaccines is logistically and programmatically sound and is recommended in areas where the disease burden of mumps and rubella disease burden is high, when the vaccine is affordable and, in the case of rubella, where vaccine coverage rates can be sustained at >80%.

## MMR

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Database ID 58\_16

Year 2004

Mumps-containing measles vaccine (MMR) is generally not recommended for large-scale measles SIAs in countries with limited resources.

*Measles vaccines (WHO position paper)*

*Weekly Epid. Record (2004, 79: 130-142)* [Page 138](#)

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Database ID 58\_30

Year 2004

(W)hen affordable, the MR combination should be considered in countries with a persistently high (>80%) routine measles vaccination coverage, where prevention of congenital rubella syndrome is a public health priority and where an immunization programme has been established for women of childbearing age.

*Measles vaccines (WHO position paper)*

*Weekly Epid. Record (2004, 79: 130-142)* [Page 138](#)

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Database ID 60\_1

Year 2001

Large-scale mumps vaccination is recommended in countries with an efficient childhood vaccination programme and sufficient resources to maintain high-level vaccination coverage, and where reduction of mumps is a public health priority. Because WHO considers measles elimination and control of congenital rubella syndrome to be higher priorities than mumps control, it recommends that the introduction of mumps immunization should be considered only in countries that have or are establishing adequate vaccination programmes for measles elimination and control of the congenital rubella syndrome. In countries which decide to use mumps vaccine, the combination of mumps vaccine with measles and rubella vaccines is thus recommended.

National decisions to implement large-scale mumps vaccination should be based on careful cost-benefit analyses, including comparative analyses of mumps control versus control of other vaccine-preventable diseases in the country.

*Mumps virus vaccines (WHO position paper)*

*Weekly Epid. Record (2001, 76: 345-356)* [Page 346](#)

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Database ID 60\_14

Year 2001

Introduction of routine mumps immunization should be prioritized along with other potential prevention options. Introduction of mumps vaccine into national childhood immunization programmes should be considered only in countries that have or are establishing adequate vaccination programmes for measles elimination and control of the congenital rubella syndrome.

*Mumps virus vaccines (WHO position paper)*

*Weekly Epid. Record (2001, 76: 345-356)* [Page 354](#)

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## MMR

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Database ID 60\_16

Year 2001

The addition of mumps vaccine to the measles and rubella vaccination programmes using the MMR combined vaccine is logistically sound, and the MMR combination is strongly encouraged where affordable and where vaccine supply is sufficient.

*Mumps virus vaccines (WHO position paper)*

*Weekly Epid. Record (2001, 76: 345-356)* Page 355

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