

**Table 1: Recommended Routine Immunization - Summary of WHO Position Papers**

Antigen	Children (see Table 2 for details)	Adolescents	Adults	Considerations (see footnotes for details)
<b>Recommendations for all</b>				
BCG <sup>1</sup>	1 dose			Exceptions HIV
Hepatitis B <sup>2</sup>	3-4 doses (see footnote for schedule options)	3 doses (for high-risk groups if not previously immunized) (see footnote)		Birth dose Premature and low birth weight Co-administration and combination vaccine Definition high-risk
Polio <sup>3</sup>	3 doses, with DTP			OPV birth dose Transmission and importation risk criteria Type of vaccine
DTP <sup>4</sup>	3 doses	Booster (DTP) 1-6 years of age	Booster (Td) (see footnote)	Booster (Td) in early adulthood or pregnancy
<i>Haemophilus influenzae</i> type b <sup>5</sup>	3 doses, with DTP			Delayed/interrupted schedule Combination vaccine
Pneumococcal (Conjugate) <sup>6</sup>	3 doses, with DTP			Single dose if >12 months of age Delayed/interrupted schedule Co-administration
Rotavirus <sup>7</sup>	<i>Rotarix</i> : 2 doses with DTP <i>RotaTeq</i> : 3 doses with DTP			Maximum age limits for starting/completing vaccination; Rotarix with DTP1 and DTP2.
Measles <sup>8</sup>	2 doses			Combination vaccine; HIV early vaccination
HPV <sup>9</sup>		3 doses (girls)		Vaccination of males for prevention of cervical cancer is not recommended at this time
<b>Recommendations for certain regions</b>				
Japanese Encephalitis <sup>10</sup>	<i>Live attenuated vaccine</i> : 1 dose Booster after 1 year <i>Mouse brain-derived vaccine</i> : 2 doses Booster after 1 year, then every 3 years	<i>Mouse brain-derived vaccine</i> : booster every 3 years up to 10-15 years of age		Vaccine options
Yellow Fever <sup>11</sup>	1 dose, with measles			Co-administration
<b>Recommendations for some high-risk populations</b>				
Typhoid <sup>12</sup>	<i>Vi polysaccharide vaccine</i> : 1 dose; <i>Ty21a live oral vaccine</i> : 3-4 doses. Booster dose 3-7 years after primary series			Definition of high-risk Vaccine options
Cholera <sup>13</sup>	<i>Dukoral (WC-rBS)</i> : 3 doses $\geq$ 2-5 yrs, booster every 6 months; 2 doses adults/children > 6 yrs, booster dose every 2 <sup>nd</sup> year <i>Shanchol &amp; mORCVAX</i> : 2 doses $\geq$ 1 yrs, booster dose after 2 years			Minimum age Definition of high-risk
Meningococcal (polysaccharide) <sup>14</sup>	1 dose			Definition of high-risk Conjugate vaccine
Hepatitis A <sup>15</sup>	2 doses			Definition of high-risk
Rabies <sup>16</sup>	3 doses			Definition of high-risk & booster
<b>Recommendations for immunization programmes with certain characteristics</b>				
Mumps <sup>17</sup>	2 doses, with measles			Coverage criteria > 80% Combination vaccine
Rubella <sup>18</sup>	1 dose (see footnote)	1 dose (alternative strategy adolescent girls & child bearing age women) (see footnote)		Coverage criteria > 80% Combination vaccine
Influenza <sup>19</sup> (inactivated)	First vaccine use: 2 doses. Revaccinate annually: 1 dose only (see footnote)	1 dose from 9 years of age. Revaccinate annually (see footnote)		Priority targets Definition of high-risk Lower dosage for children

Refer to <http://www.who.int/immunization/documents/positionpapers/> for most recent version of this table and position papers.

This table summarizes the WHO child vaccination recommendations. It is designed to assist the development of country specific schedules and is not intended for direct use by health care workers. Country specific schedules should be based on local epidemiologic, programmatic, resource and policy considerations. While vaccines are universally recommended, some children may have contraindications to particular vaccines.

**Summary Table 1 Notes**

- The attached table summarizes the recommendations for vaccine administration found in the WHO position papers which are published in the Weekly Epidemiological Review. Its purpose is to assist planners to develop an appropriate immunization schedule. Health care workers should refer to their national immunization schedules.
- Vaccines can generally be co-administered (i.e. more than one vaccine given at different sites during the same visit). Recommendations that explicitly endorse co-administration are indicated in the table, however, lack of an explicit co-administration recommendation does not imply that the vaccine cannot be co-administered; further, there are no recommendations against co-administration.
- Doses administered by campaign may or may not contribute to a child's routine immunization schedule depending on type and purpose of campaign (e.g. supplemental versus routine/pulse campaign for access reasons).
- For some antigens, recommendations for the age of initiation of primary immunization series and/or booster doses are not available. Instead, the criteria for age at first dose must be determined from local epidemiologic data.
- If a catch-up schedule for interrupted immunization is available, it is noted in the footnotes.
- Other vaccines, such as varicella and pneumococcal polysaccharide vaccines, may be of individual benefit but are not recommended for routine immunization. See the specific position papers for more details.
- For further background on immunization schedules refer to "Immunological Basis for Immunization" series which is available at [http://www.who.int/immunization/documents/immunological\\_basis\\_series/en/index.html](http://www.who.int/immunization/documents/immunological_basis_series/en/index.html)
- Refer to <http://www.who.int/immunization/documents/positionpapers/> for the most recent version of the tables and position papers.

**<sup>1</sup> BCG**

- Position paper reference: [Weekly Epid. Record \(2004, 79: 27-38\) \[pdf 468kb\]](#)
- Recommended for children living in countries with a high-disease burden and for high-risk children living in countries with low-disease burden. See position paper for details.
- While BCG vaccination is especially important in countries with significant HIV prevalence, children who are HIV positive or unknown HIV status with symptoms consistent with HIV should not be vaccinated Reference: [Weekly Epid. Record \(2007, 82: 193-196\) \[pdf 167kb\]](#)

**<sup>2</sup> Hepatitis B**

- Position paper reference: [Weekly Epid. Record \(2009, 84: 405-420\) \[pdf 830kb\]](#)
- Since perinatal or early postnatal transmission is an important cause of chronic infections globally, all infants should receive their first dose of hepatitis B vaccine as soon as possible (<24 hours) after birth even in low-endemicity countries.
- The primary hepatitis B immunization series conventionally consists of 3 doses of vaccine (1 mono-valent birth dose followed by 2 monovalent or combined vaccine doses at the time of DTP1 and DTP3 vaccine doses). However, 4 doses may be given for programmatic reasons (e.g. 1 monovalent birth-dose followed by 3 monovalent or combined vaccine doses with DTP vaccine doses), according to the schedules of national routine immunization programmes.
- Premature low birth weight (<2000g) may not respond well to vaccination at birth. However, by 1 month of chronological age, premature infants, regardless of their initial weight or gestational age at birth, are likely to respond adequately. Therefore, doses given to infants <2000g should not be counted towards the primary series.
- Additional target groups for vaccination include people with risk factors for acquiring HBV infection, such as those who frequently require blood or blood products, dialysis patients, recipients of solid organ transplantations, people interned in prisons, injecting drug users, household and sexual contacts of people with chronic HBV infection, people with multiple sexual partners, as well as health-care workers and others who may be exposed to blood and blood products through their work.

**<sup>3</sup> Polio**

- Reference: [Weekly Epid. Record \(2010, 85: 213-228\) \[pdf 815.1kb\]](#)
- The primary series of 3 OPV vaccinations should be administered according to the respective national immunization schedule, for example at 6, 10 and 14 weeks, or 2, 4, and 6 months of age. The interval between doses should be at least 4 weeks.
- Where the potential for poliovirus importation is very high (i.e. in countries bordering endemic countries or countries that have recurrent outbreaks) or high (i.e. country with a history of importation plus high traffic across the border), and the transmission potential high (e.g. <90% DTP3 coverage, low socio-economic status, majority of areas with open sewage) or moderate (e.g. <90% DTP3 coverage, all states/provinces with moderate socio-economic status, only secondary sewage treatment) an OPV birth dose should be given as soon as possible after birth.
- OPV alone, including a birth dose, is recommended in all polio-endemic countries and those at high risk for importation and subsequent spread. A birth dose is not considered necessary in countries where the risk of polio virus transmission is low, even if the potential for importation is high/very high.
- Where the risk of wild polio virus importation is high/very high, the transmission potential should be low (>90-95% DTP3 coverage, high socio-economic status, tertiary sewage treatment) before alternatives to OPV alone may be considered.
- In countries with very high risk of wild polio virus importation, a sequential IPV/OPV schedule should not be introduced unless immunization coverage is approximately 95%, or, with low importation risk, approximately 90%. Where sequential IPV/OPV is used, the initial administration of 1 or 2 doses of IPV should be followed by 2 or more doses of OPV to ensure both sufficient levels of protection in the intestinal mucosa and a decrease in the burden of VAPP. For IPV/OPV sequential schedules WHO recommends that IPV be administered at 2 months of age (e.g. an IPV-OPV-OPV schedule) or at 2 months and 3-4 months of age (e.g. a 4-dose schedule of IPV-IPV-OPV-OPV). Each dose of the primary series, whether IPV or OPV, should be separated by an interval of 4-8 weeks, depending on the risk of exposure to polio in early childhood.
- IPV alone can be considered as an alternative to OPV alone (or an IPV/OPV sequential schedule) only in countries with the lowest risk of both wild polio importation and WPV transmission. IPV may be offered as a component of combination vaccines. A primary series of 3 IPV doses should be administered beginning at 2 months of age. If the primary series begins earlier (e.g. with a 6, 10, and 14 week schedule) then a booster dose should be administered with an interval of at least 6 months (4-dose IPV schedule).
- Switching from OPV to IPV for routine vaccination during the pre-eradication era is not cost-effective based on the existing economic analyses and current IPV costs.

**<sup>4</sup> DTP (Diphtheria, Tetanus and Pertussis)**

- Position paper reference: Diphtheria- [Weekly Epid. Record \(2006, 81: 24-32\) \[pdf 214kb\]](#); Tetanus- [Weekly Epid. Record \(2006, 81: 198-208\) \[pdf 229kb\]](#); Pertussis- [Weekly Epid. Record \(2005, 80: 31-39\) \[pdf 285kb\]](#)
- Recommended for three doses during the first year of life. In areas where pertussis is of particular risk to young infants, DTP should be started at 6 weeks with 2 subsequent doses at least 4 weeks apart.
- The duration of immunological protection will be extended in many instances if an additional booster is given later.
- Diphtheria booster dose - to compensate for the loss of natural diphtheria boosting in some areas, childhood boosters should be given. The optimal timing of and number of diphtheria-containing booster doses should be based on epidemiological surveillance as well as on immunological and programmatic considerations.
- Tetanus booster doses may use either DTP or Td vaccines depending on the child's age. Td should be used for tetanus and diphtheria booster doses after the age of 7 years. In addition to the childhood tetanus immunization schedule of 5 doses, an extra tetanus toxoid-containing dose to adults will assure long-lasting, possibly life long protection. See the position paper for details.
- Where maternal neonatal tetanus (MNT) remains a public health problem special attention should be given to immunizing women of childbearing age. All eligible pregnant women should be given tetanus-toxoid containing vaccination at their first antenatal visit or other health service. Pregnant women with inadequate or unknown immunization history should always receive 2 doses of tetanus toxoid-containing vaccine: the first dose as early as possible in the pregnancy and the second dose a minimum of 4 weeks later.
- Pertussis vaccine: Use of acellular (aP) or whole cell pertussis (wP) component in the combination vaccine is considered to be equivalent for administration to children, but whole cell vaccine is not recommended for adolescents or adults. DTwP or DTaP may be used for children less than 7 years of age.
- Pertussis containing booster - A booster should be administered 1-6 years after the completion of the primary series, but before the child is 7 years of age. Need for additional pertussis booster doses should be assessed by the individual national immunization programmes.
- Delayed or interrupted DTP series - For children 1 to less than 7 years of age with no previous immunization: Three doses should be given, with an interval of 2 months between the first and second dose and an interval of 6-12 months between the second and third. Children whose vaccination series has been interrupted should have their series resumed, without repeating previous doses. For unvaccinated individuals 7 years of age and older, Td combination vaccine can be administered, 2 doses 1-2 months apart and a third dose after 6-12 months can be used with subsequent boosters at least 1 year apart for a total of 5 appropriately spaced doses to obtain same long term protection. See position paper for details of interrupted immunization schedules.

**<sup>5</sup> Haemophilus influenzae type b**

- Position paper reference: [Weekly Epid. Record \(2006, 81: 210-20\) \[pdf 209kb\]](#)
- Immunization should start as early as possible after the age of 6 weeks.
- The 3-dose primary series is given at the same time as the DTP primary series often in combination vaccines.
- The vaccine is not generally offered to children aged >24 months owing to the limited burden of Hib disease among children older than that age.
- Delayed series- if a child 12-24 months of age has not received their primary vaccination series, a single dose of the vaccine is sufficient.
- Booster dose may be administered to children aged between 12- 18 months although there is no WHO recommendation on this yet.

**<sup>6</sup> Pneumococcal (Conjugate)**

- Position paper reference: [Weekly Epid. Record \(2007, 82: 93-104\) \[pdf 324kb\]](#)
- A three dose schedule compatible with DTP, Hepatitis B, Hib and OPV administration should be initiated before 6 months of age to maximize benefits of vaccination.
- Maximized individual and community-level protection at the time of introduction of the vaccine can be achieved by providing a single catch-up dose to unvaccinated children aged 12-24 months and to children aged 2-5 years who are at high risk.
- Booster - the additional benefit of administering an additional dose in the second year of life requires further investigation in developing country settings.
- Co-administration- may be administered concurrently with, though at a different injection site from, other vaccines in infant immunization programmes, including DTP, hepatitis B, *H. influenzae* type b and polio vaccines.
- For polysaccharide pneumococcal vaccine see position paper: [Weekly Epid. Record \(2008, 83: 373-384\) \[pdf 308kb\]](#)
- Use of pneumococcal vaccine should be seen as complementary to the use of other pneumonia-control measures, including appropriate case management and the reduction of exposure to known risk factors, such as indoor pollutants, tobacco smoke, premature weaning and nutritional deficiencies.

**<sup>7</sup> Rotavirus**

- Position paper reference: [Weekly Epid. Record \(2009, 84: 533-540\) \[pdf 764kb\]](#)
- Recommended to be included in all national immunization programmes.
- Rotarix vaccine is administered orally in a 2-dose schedule with the first and second doses of DTP. RotaTeq requires a 3-dose schedule with DTP1, DTP2, and DTP3 with an interval of 4-10 weeks between doses.
- First dose of either RotaTeq or Rotarix be administered at age 6-15 weeks. The maximum age for administering the last dose of either vaccine should be 32 weeks.
- The use of rotavirus vaccines should be part of a comprehensive strategy to control diarrhoeal diseases and should include, among other interventions, improvements in hygiene and sanitation, zinc supplementation, community-based administration of oral rehydration solution and overall improvements in case management.

**<sup>8</sup> Measles**

- Position paper reference: [Weekly Epid. Record \(2009, 84: 349-360\) \[pdf 724kb\]](#)
- Reaching all children with two doses of measles vaccine should be the standard for all national immunization programmes.
- Delivery of the second dose (MCV2) may occur either at a scheduled age through routine services or periodically through mass campaigns, depending on which strategy achieves the higher coverage. A MCV2 dose may be added to the routine immunization schedule in countries that have achieved  $\geq 80\%$  coverage of measles first dose (MCV1) at the national level for 3 consecutive years as determined by the most accurate means available (e.g. survey or WHO/UNICEF estimates). In general, countries that do not meet this criterion should prioritize improving MCV1 coverage and conducting high-quality follow-up SIAs, rather than adding MCV2 to their routine schedule.
- In countries with ongoing transmission in which the risk of measles mortality remains high, MCV1 should be given at age 9 months. MCV2 should be given between 12-18 months, as providing MCV2 in the 2<sup>nd</sup> year of life reduces the rate of accumulation of susceptible children and the risk of an outbreak.
- In countries with low rates of measles transmission (that is, those that are near elimination) and where there is a low risk of measles infection among infants, the first dose may be administered at age 12 months to take advantage of the higher seroconversion rates achieved at this age ( $>90\%$  seroconversion). In these countries the optimal age for delivering a routine 2<sup>nd</sup> dose of measles is based on programmatic considerations that achieve the highest coverage and hence the highest population immunity. Administration of the second dose at age 15-18 months ensures early protection of the individual, slows accumulation of susceptible young children and may correspond with other routine immunizations (for example, DTP booster). If first dose coverage is high ( $>90\%$ ) and school enrolment is high ( $>95\%$ ), giving the second dose at school entry may be an effective strategy for achieving high coverage and preventing outbreaks in schools.
- Combined vaccines (Measles and Rubella or Measles, Mumps and Rubella) may not be optimal for use in countries where vaccine coverage for measles vaccine of at least 80% cannot be achieved or maintained.
- In areas where there is a high incidence of both HIV infection and measles, MCV1 may be offered as early as age 6 months. Two additional doses of measles vaccine should be administered to these children according to the national immunization schedule

**<sup>9</sup> Human Papillomavirus (HPV)**

- Position paper reference: [Weekly Epid. Record \(2009, 84: 118-131\) \[pdf 267kb\]](#)
- Two vaccines are currently available. Quadrivalent (HPV types 6,11,16 and 18) licensed for use in females as young as 9 years of age to prevent cervical precancers and cancers. In addition, the quadrivalent vaccine is licensed for prevention of vulvar and vaginal precancers and cancers as well as of anogenital warts in females. In some countries, the vaccine is also licensed for the prevention of anogenital warts in males. Bivalent (HPV types 16 and 18) has been licensed for use in females as young as 10 years of age to prevent cervical precancers and cancers.
- Both vaccines are intended for females before the onset of sexual activity, i.e. before first exposure to HPV infection. A three-dose schedule is recommended. The quadrivalent is given at baseline and after 2 and 6 months. A minimum interval of 4 weeks between the first and second dose, and a minimum interval between the second and third doses of 12 weeks is recommended by the manufacturer. The bivalent vaccine is given at baseline and after 1 and 6 months. If flexibility in the schedule is necessary the manufacturer recommends that the second dose is administered between 1 and 2.5 months after the first dose.
- For both vaccines alternative schedules are being explored. Restarting the 3-dose series is not necessary if interrupted, but remaining doses should be administered as close to the schedule intervals as possible.
- Currently, the manufacturers do not recommend any booster dose following completion of the primary series.
- HPV vaccination of males for prevention of cervical cancer is not recommended at this time because vaccination strategies that achieve high coverage ( $>70\%$ ) in the primary target population of young adolescent girls are expected to be more cost-effective in reducing cervical cancer than including vaccination of males.

**<sup>10</sup> Japanese encephalitis (JE)**

- Position paper reference: [Weekly Epid. Record \(2006, 81: 331-340\) \[pdf 192kb\]](#)
- JE vaccine should be given in all areas where JE constitutes a public health problem.
- Vaccine options - Three types of vaccines are available: (1) a cell-culture based live attenuated, (2) a cell-culture-based inactivated and (3) an inactivated mouse brain-derived. The WHO position paper provides recommendations for the mouse brain-derived and live attenuated vaccines.
- Booster - If administering cell-culture based live-attenuated vaccine, a booster dose is currently recommended after an interval of one year, even though observational studies suggest long-term protection after a single dose. If using mouse brain-derived vaccine, a booster dose should be administered after an interval of one year then every 3 years until 10-15 years of age.

**<sup>11</sup> Yellow Fever**

- Position paper reference: [Weekly Epid. Record \(2003, 78: 349-359\) \[pdf 339kb\]](#)
- Recommended for use in countries at risk of Yellow Fever.
- For convenience and improved coverage, Yellow Fever vaccine should be administered simultaneously with the measles vaccine, but in a separate syringe and at a different injection site.
- Yellow Fever vaccine should be offered to all travellers to and from at-risk areas, unless they belong to the group of individuals for whom Yellow Fever vaccination is contraindicated.
- In addition to the introduction of Yellow Fever vaccine for routine childhood vaccination, WHO recommends the implementation of mass preventive vaccination campaigns to protect susceptible older age groups. In the event of limited resources, assessment of the degree of risk can help prioritize areas for mass preventive campaigns.

**<sup>12</sup> Typhoid**

- Position paper reference: [Weekly Epid. Record \(2008, 83: 49-59\) \[pdf 297kb\]](#)
- Recommended for school-age and/or preschool-age children in areas where typhoid fever in these age groups is shown to be a significant public health problem, particularly where antibiotic-resistant *S. Typhi* is prevalent.

- Vaccine option- Vi polysaccharide typhoid vaccine requires one parenterally administered dose which maybe given after the age of 2 years; the liquid form of Ty21a live oral vaccine (for use in individuals from the age of 2 years) is no longer available; the capsule form of Ty21a (for use in individuals from the age of 5 years) requires 3 or 4 orally administered doses. See position paper for further details.
- Booster- In most endemic settings, a booster dose of the concerned vaccine 3 to 7 years after the primary immunization seems appropriate.

### 13 Cholera

- Position paper reference: [Weekly Epid. Record \(2010, 85, 117-128\) \[pdf 283kb\]](#)
- In cholera-endemic countries, vaccinating the entire population is not warranted. Rather, vaccination should be targeted a high-risk area and population groups. The primary targets for cholera vaccination in many endemic areas are preschool-aged and school aged children. Other groups that are especially vulnerable to severe diseases and for which the vaccines are not contraindicated may also be targeted, such as pregnant women and HIV-infected individuals. Consider vaccinating older age groups if funding is available.
- Two types of oral cholera vaccines are available: (i) Dukoral (WC-rBS) and (ii) Sanchol and mORCVAX. The live attenuated single-dose vaccine (CVD 103-HgR) is no longer produced. The injectable vaccine is still manufactured in a few countries but its use is not recommended mainly because of its limited efficacy and short duration of protection.
- Dukoral is not licensed for children < 2 years. Children aged 2-5 years should receive 3 doses  $\geq 7$  days apart (but not more than 6 weeks). Intake of food and drink should be avoided for 1 hour before and after vaccination. If the interval between doses is delayed >6 weeks, primary vaccination should be restarted. One booster dose is recommended every 6 months, and if the interval between primary immunization, and the booster is >6 months, primary immunization must be restarted.
- Adults and children  $\geq 6$  years should receive 2 doses of Dukoral  $\geq 7$  days apart (but not more than 6 weeks). Intake of food and drink should be avoided for 1 hour before and after vaccination. If the interval between doses is delayed >6 weeks, primary vaccination should be restarted. A booster dose every 2 years is recommended. If the interval between the primary series and booster immunization is > 2 years, primary immunization must be repeated.
- Sanchol and mORCVAX: two liquid doses orally 14 days apart for individuals  $\geq 1$  year. A booster dose is recommended after 2 years.

### 14 Meningococcus

- Position paper reference: [Weekly Epid. Record \(2002, 77: 331-339\) \[pdf 127kb\]](#)
- Recommended for high-risk groups (e.g. those in armed forces units, training camps, or boarding schools, and travellers to epidemic areas) and for persons with immunological predisposition to meningococcal disease (such as persons with asplenia and inherited immunological deficiencies).
- Polysaccharide and conjugate vaccines are available for group C disease. Inclusion of a conjugated group C vaccine should be considered in areas where group C meningococcal disease is a substantial public health problem among young children. Where disease in children above 2 years of age is the main concern or where resources are limited, several years of protection may be achieved with a single injection of the combined groups A and C polysaccharide vaccine. Choice of vaccine (conjugate or polysaccharide) depends on local epidemiology and availability of sufficient resources to acquire and administer vaccine. See position paper for details.

### 15 Hepatitis A

- Position paper reference: [Weekly Epid. Record \(2000, 75: 38-44\) \[pdf 193kb\]](#)
- Minimum age of administration is specified by the manufacturer and found on the product label.
- Suggested for persons at high-risk in countries with low endemicity of hepatitis A as well as those populations living in countries of intermediate endemicity. High-risk groups include certain ethnic or religious groups. See position paper for details.

### 16 Rabies

- Position paper reference: [Weekly Epid. Record \(2007, 82: 425-436\) \[pdf 312kb\]](#)
- Recommended for anyone at increased risk of exposure, including children living in rabies enzootic-regions.
- Age for initiation of the series is based on epidemiologic and programmatic considerations. The series is given at 0, 7, and 21 days.
- Timing of booster dose is based upon neutralizing antibody titre. If testing is not available, booster doses may be given every 5 years to people with occupations that put them at continuous risk.

### 17 Mumps

- Position paper reference: [Weekly Epid. Record \(2007, 82: 49-60\) \[pdf 311kb\]](#)
- Recommended for use in high performing immunization programs with the capacity to maintain coverage over 80% and where mumps reduction is a public health priority.
- If implemented, a combination vaccine of measles, mumps and rubella is recommended.

### 18 Rubella

- Position paper reference: [Weekly Epid. Record \(2000, 75: 161-169\) \[pdf 227kb\]](#)
- Recommended for countries wishing to prevent the occurrence of congenital rubella infection including congenital rubella syndrome (CRS). Two approaches are recommended: (a) prevention of CRS only, through immunization of adolescent girls and/or women of childbearing age; or, (b) if high coverage can be achieved and maintained, elimination of rubella as well as CRS through universal vaccination of infants, surveillance and assuring immunity in women of childbearing age. Unless high coverage (>80%) can be achieved, large-scale childhood vaccination programmes against rubella are not recommended. See position paper for details.
- The rubella schedule is based on the measles schedule as administration of rubella and measles vaccine should occur using a combined vaccine.

<sup>19</sup> **Seasonal Influenza (Inactivated Vaccine)**

- Position paper reference: [Weekly Epid. Record \(2005, 33: 279-287\) \[pdf 220kb\]](#)
- The World Health Assembly recommended increased immunization coverage of high-risk groups including the elderly, in those countries where influenza vaccination policies exist (Reference: WHA56.19, 2003). See position paper for detailed description of high-risk groups.
- Dose- If a child under 9 years of age requires vaccination and has not previously received influenza vaccine, a two-dose series with doses one-month apart should be administered. Annual re-vaccination in all individuals and initial vaccination in individuals 9 years of age or older require only a single dose. For children aged 6-36 months should receive half the adult dose.