Vaccine Administration

General

If you are giving more than one vaccine, do not use the same syringe and do not use the same arm or leg for more than one injection. Do not give more than one dose of the same vaccine to a woman or child in one session. Give doses of the same vaccine at the correct intervals.

Infants above 1 year of age and who are not fully vaccinated, should still receive the missing doses (usually countries set 23 months as the upper limit, but this limit can be higher).

If the mother does not know if the infant has been immunized or there is no record in the immunization register, give doses of all eligible vaccines.

If the infant is eligible for more than one type of vaccine, the vaccines may all be given at the same session, but at different injection sites.

Never give more than one dose of the same vaccine at one time.
If the delay between doses exceeds the minimum delay, do not restart the schedule. Simply provide the next needed dose in the series.
If there is a delay in starting primary vaccination, immunize the infant while maintaining the recommended dosage intervals.
For practical reasons, most countries do not offer the primary series of routine immunization beyond 23 months (refer to national policy).
Immunization cards should be kept by the parents and not by the health staff.

WHO recommends intradermal application of the (BCG) vaccine, preferably on the deltoid region of the arm using syringe and needle, although other application methods such as the multiple puncture technique are practised in some countries. Newborn vaccinees normally receive half the dose given to older children. BCG vaccine can be given simultaneously with other childhood vaccines.

In most cases, diphtheria toxoid is administered in fixed combination with other vaccines. For childhood vaccination, DTwP or DTaP is generally used, often in combination with other antigens administered at the same time, such as Haemophilus influenzae type b, poliomyelitis, and hepatitis B vaccines, in order to reduce the number of injections. This is a positive development as long as adverse events remain infrequent and the immunogenicity of the individual components is ensured.
Vaccine Administration

**DPT**

In most cases, diphtheria toxoid is administered in fixed combination with other vaccines. For childhood vaccination, DTwP or DTaP is generally used, often in combination with other antigens administered at the same time, such as Haemophilus influenzae type b, poliomyelitis, and hepatitis B vaccines, in order to reduce the number of injections. This is a positive development as long as adverse events remain infrequent and the immunogenicity of the individual components is ensured.

**Hib conjugate vaccine** is administered by intramuscular or subcutaneous injection in the anterolateral aspect of the thigh (infants) or the deltoid muscle (older children). If given as a combination with DTP in the same syringe, it should be given intramuscularly.

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14 February 2008
Hepatitis A

Hepatitis A vaccine may be administered with all other vaccines included in the Expanded Programme on Immunization and with vaccines commonly given for travel. Concurrent administration of immune serum globulin does not appear to influence significantly the formation of protective antibodies.


Hepatitis B

Administration summary: HepB vaccine and Administration summary: DTP-HepB combination vaccine (see Appendix 2_12.)


See Appendix 6_19 for chart entitled, "Administering vaccines to infants" BCG, DTP, DTP-HepB, HepB, measles, yellow fever, OPV"

Vaccine Administration

The recommended dose (of hepatitis B vaccine) varies by product and with the age of the recipient. In most cases, infants and adolescents receive 50% of the adult dose. The vaccine is administered by intramuscular injection in the anterolateral aspect of the thigh (infants and children aged <2 years) or in the deltoid muscle (older children and adults). Administration in the buttock is not recommended because this route of administration has been associated with decreased protective antibody levels as well as injury to the sciatic nerve. Intradermal administration is not recommended because the immune response is less reliable, particularly in children.

The hepatitis B vaccine does not interfere with the immune response to any other vaccine, and vice versa. Specifically, the birth-dose of hepatitis B can be given safely together with bacillus Calmette-Guérin (BCG) vaccine; BCG does not interfere negatively with the response to hepatitis B vaccine. However, unless formulated as fixed combinations, hepatitis B vaccine and other vaccines administered during the same visit should be given at different injection sites.

Testing to determine antibody responses is not necessary after routine vaccination (with hepatitis B vaccine.) However, when feasible, knowledge of response to vaccination is important in the following groups: (i) persons at risk of occupationally acquired infection; (ii) infants born to HBsAg-positive mothers; (iii) immunocompromised persons; and (iv) sexual partners of HBsAg-positive persons.

Testing for anti-HBs should be performed by a method that allows determination of whether the anti-HBs concentration is protective (>10 mIU per ml). Adults should be tested 1-2 months after completion of the vaccination series. In settings where resources are available, infants born to HBsAg-positive mothers should be tested at 8-15 months of age, after completion of the vaccination series. Persons found to be antibody-negative after the primary series should be referred for appropriate follow-up.

Generally, it is easier to deliver hepatitis B vaccine at birth to infants who are born in health facilities. However, availability of monovalent hepatitis B vaccine in pre-filled singledose injection devices facilitates the administration of the vaccine by health care workers and birth attendants to infants born at home.
## Vaccine Administration

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<thead>
<tr>
<th>Database ID</th>
<th>Year</th>
<th>Source</th>
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Two types of hepatitis B vaccines are available: plasmaderived vaccines and recombinant vaccines. The two vaccines show no differences in terms of reactogenicity, efficacy or duration of protection. The two types of hepatitis B vaccine can be used interchangeably.

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
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<tbody>
<tr>
<td>2001</td>
<td>HepB vaccine is given by intramuscular injection in the anterolateral aspect of the thigh (infants) or deltoid muscle (older children). If HepB vaccine is given on the same day as another injectable vaccine, it is preferable to give the two vaccines in different limbs. Introducing hepatitis B vaccine into national immunization services WHO/V&amp;B/01.28 Page 2</td>
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<tbody>
<tr>
<td>2001</td>
<td>HepB vaccine can safely be given at the same time as other vaccines (e.g. DTP, Hib, measles, OPV, BCG, and yellow fever). Introducing hepatitis B vaccine into national immunization services WHO/V&amp;B/01.28 Page 2</td>
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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2001</td>
<td>For administering HepB vaccine: _ A 25 mm, 22 or 23 gauge needle is recommended. _ The standard paediatric dose is 0.5 ml. Introducing hepatitis B vaccine into national immunization services WHO/V&amp;B/01.28 Page 3</td>
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<tr>
<th>Year</th>
<th>Source</th>
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<tbody>
<tr>
<td>2001</td>
<td>If hepatitis B vaccine is administered on the same day as another injectable vaccine, it is preferable to give the two vaccines in different limbs. If more than one injection has to be given in the same limb, the thigh is the preferred site of injection because of the greater muscle mass, and the injection sites should be 2.5 cm to 5 cm apart so that any local reactions are unlikely to overlap. Introduction of hepatitis B vaccine into childhood immunization services. Management guidelines, including information for health workers and parents WHO/V&amp;B/01.31 Page 10</td>
</tr>
</tbody>
</table>

14 February 2008
Vaccine Administration

- Hepatitis B vaccine SHOULD NOT be given in the buttock as this route of administration has been associated with decreased protective antibody levels, probably because of inadvertent subcutaneous injection or injection into deep fat tissue. In addition there may be a risk of injury to the sciatic nerve.
- Hepatitis B vaccine SHOULD NOT be administered intradermally because this route of administration does not produce an adequate antibody response in children.
- Hepatitis B vaccine SHOULD NOT be mixed in the same syringe with other vaccines unless specifically recommended by the manufacturer. (Note: pentavalent DTP-HepB+Hib vaccine is supplied in two separate vials, one containing DTP-HepB vaccine (liquid), the other containing Hib vaccine (lyophilized). The manufacturer recommends mixing the contents of the two vials and giving DTP-HepB+Hib vaccine in the same syringe.)
**Vaccine Administration**

The injection equipment for Hib conjugate vaccine is the same type as that for DTP or hepatitis B:

- 0.5 ml (auto-disable), 1.0ml or 2.0ml syringe
- 25mm, 22 or 23 gauge needle
- Sterile auto-disable (AD) injection devices are recommended.
- The standard paediatric dose is 0.5 ml.

*Introducing Haemophilus influenzae type b (Hib) conjugate vaccine into national immunization services*  
WHO/V&B/01.29  Page 2

Hib vaccine is given by intramuscular injection in the anterolateral aspect of the thigh (infants) or deltoid muscle (older children).

- The interval between (Hib vaccine) doses is not less than one month.
- The size of a dose is 0.5 ml.

*Introduction of Haemophilus influenzae type b vaccine into immunization programmes*  
WHO/V&B/00.05  Page 6

The (Hib) vaccine may be given at the same time as DTP, OPV, and (if applicable) HepB vaccines. It can be given at the same time as DTP, OPV, IPV, and HepB vaccines without ill effect. However, if used as a monovalent vaccine, it should not be injected in the same limb at the same time as other vaccines.

*Introduction of Haemophilus influenzae type b vaccine into immunization programmes*  
WHO/V&B/00.05  Page 6

Types and formulations of Hib vaccines can be interchanged, so vaccines from different manufacturers can be used for each dose that a child receives.

Diluents, both in saline form and made from other vaccines, are produced to go with specific Hib vaccines and are not interchangeable.

*Introduction of Haemophilus influenzae type b vaccine into immunization programmes*  
WHO/V&B/00.05  Page 4
Vaccine Administration

Introduction of Haemophilus influenzae type b vaccine into immunization programmes

Influenza

TIVs (trivalent, inactivated influenza vaccines) are injected into the deltoid muscle (vaccinees aged >1 year) or the antero-lateral aspect of the thigh (vaccinees aged between 6 and 12 months). Inactivated influenza vaccines will not interfere with concomitantly administered diphtheria/tetanus/pertussis (DTP) or other childhood vaccines.

Japanese encephalitis vaccines (WHO position paper)
Vaccine Administration

The mouse brain-derived JE vaccine is given subcutaneously in doses of 0.5 or 1 ml (with some vaccines: 0.25 ml or 0.50 ml) the lower dose being for children aged <3 years.

Current experience, primarily from Taiwan (China) and Thailand, does not suggest reduced seroconversion rates or an increase in adverse events when mouse brain-derived JE vaccine is given simultaneously with vaccines against measles, diphteria-tetanus-pertussis (DPT) and polio as part of the Expanded Programme Immunization (EPI) programme. However, the possible impact of co-administration of the mouse brain-derived vaccine with other vaccines of the childhood immunization programme has not been systematically studied.

Measles

Do not use childhood immunization cards to record doses of measles vaccine given during SIAs.

For the countries where yellow fever is endemic, the vaccine can be routinely administered at the time of measles vaccination. If yellow fever vaccine is not administered at the same time as measles vaccine, to assure an optimal immune response, it is generally recommended that there is at least a one month interval between measles and yellow fever vaccination.
**Vaccine Administration**

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**Database ID** 6_19  
**Year** 2004

See Appendix 6_19 for chart entitled, "Administering vaccines to infants" BCG, DTP, DTP-HepB, HepB, measles, yellow fever, OPV"

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**Database ID** 58_1  
**Year** 2004

The live, attenuated measles vaccines that are now internationally available are safe, effective and relatively inexpensive and may be used interchangeably in immunization programmes.

*Measles vaccines (WHO position paper)*

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**Database ID** 58_13  
**Year** 2004

Measles vaccine is generally injected subcutaneously but is also effective when administered intramuscularly.

*Measles vaccines (WHO position paper)*

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**Database ID** 58_19  
**Year** 2004

Administration of immunoglobulins or other antibody-containing blood products may interfere with the immune response to the vaccine. Vaccination should be delayed for 3-11 months after administration of blood or blood products, depending on the dose of measles antibody. Following measles vaccination, administration of such blood products should be avoided for 2 weeks, if possible.

*Measles vaccines (WHO position paper)*

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**Meningococcal**

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**Database ID** 2_16  
**Year** 2004

Administration summary: Meningococcal vaccine (see Appendix 2_16.)

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*14 February 2008*
MMR

Database ID  2_39  

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

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

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)*

Mumps

Database ID  60_5  

Assumed susceptible persons may be vaccinated (with mumps vaccine) without prior laboratory testing.

*Mumps virus vaccines (WHO position paper)*

Database ID  60_10  

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)*
Pentavalent and Hexavalent

Administration summary: HepB vaccine and Administration summary: DTP-HepB combination vaccine (see Appendix 2_12.)

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

- Hepatitis B vaccine SHOULD NOT be given in the buttock as this route of administration has been associated with decreased protective antibody levels, probably because of inadvertent subcutaneous injection or injection into deep fat tissue. In addition there may be a risk of injury to the sciatic nerve.
- Hepatitis B vaccine SHOULD NOT be administered intradermally because this route of administration does not produce an adequate antibody response in children.
- Hepatitis B vaccine SHOULD NOT be mixed in the same syringe with other vaccines unless specifically recommended by the manufacturer. (Note: pentavalent DTP-HepB+Hib vaccine is supplied in two separate vials, one containing DTP-HepB vaccine (liquid), the other containing Hib vaccine (lyophilized). The manufacturer recommends mixing the contents of the two vials and giving DTP-HepB+Hib vaccine in the same syringe.)
**Vaccine Administration**

**Pertussis**

The standard (pertussis) vaccine dose is 0.5 ml, which is administered intramuscularly in the anterolateral thigh in infants or in the deltoid muscle in older age groups. wP or aP vaccines are offered in fixed-dose combinations with other antigens, and may be administered with other vaccines simultaneously administered at different injection sites.

*Pertussis vaccines (WHO position paper)*  

In principle, the same type of aP vaccine should be given throughout the primary course of vaccination. However, if the previous type of vaccine is unknown, any aP vaccine may be used.

*Pertussis vaccines (WHO position paper)*  

**Pneumococcal**

Consistent with WHO’s position on new vaccines, PCV-7 (7-serotype conjugate pneumococcal vaccine) can be easily integrated into routine vaccination schedules, and it may be administered at the same time, though at a different site, as other vaccines in infant immunization programmes, including DTP, hepatitis B, Hib and polio vaccines. Routine immunization with PCV-7 should be initiated before the age of 6 months to maximize the benefits of the vaccine and may start as early as 6 weeks of age.

*Conclusions and recommendations from the meeting of the immunization Strategic Advisory Group of Experts (SAGE) - November 2006*

Vaccine Administration

PCV-7 should not be mixed in the same syringe with other vaccines.

The vaccine may be administered concomitantly with other vaccines in the Expanded Programme on Immunization provided that separate syringes and sites of injection are used.

(Page 103) - (PCV-7) may be administered concurrently with, though at a different site from, other vaccines in infant immunization programmes, including DTP, hepatitis B, H. influenzae type b and polio vaccines.


Polio

Administration summary: OPV (see Appendix 2_5)


See Appendix 6_19 for chart entitled, "Administering vaccines to infants" BCG, DTP, DTP-HepB, HepB, measles, yellow fever, OPV"

Rabies

Following exposure to a suspected rabid animal, prevention of human rabies consists of prompt wound cleansing and administration of a modern CCV and, in cases of severe (category III) exposure, of rabies immunoglobulin (RIG).

Pre-exposure immunization is recommended for anyone at increased risk of exposure to rabies virus, either by nature of their residence or occupation, or when travelling.

it is strongly recommended that the production and use of NTVs for humans be discontinued and replaced by modern CCVs as soon as possible.
Vaccine Administration

Countries are encouraged to implement control programmes to ensure coordination between all public sectors involved in rabies control.

Pre-exposure vaccination using any of the modern CCVs is recommended for anyone at increased risk of exposure to rabies virus. This recommendation includes laboratory staff, veterinarians, animal handlers, wildlife officers with frequent exposure to potentially infected animals, as well as visitors to areas with high risk of rabies.

For adults, the vaccine should always be administered in the deltoid area of the arm; for children aged <2 years, the anterolateral area of the thigh is recommended. Rabies vaccine should not be administered in the gluteal area, where the induction of an adequate immune response may be less reliable.
**Vaccine Administration**

ID administration of 0.1 ml volumes on days 0, 7, and 28 (day 28 preferable, but administration may be advanced towards day 21 if time is limited) is an acceptable alternative to the standard IM route. However, ID administration is technically more demanding and requires appropriate staff training and qualified supervision.

**Weekly epidemiological record**

Periodic booster injections are recommended only for people whose occupation puts them at continuous or frequent risk of rabies exposure. In such cases, a booster dose should be given at intervals ideally dictated by regular testing for antirabies antibodies. Potential laboratory exposures to high concentrations of rabies virus motivates testing as often as every 6 months; VNA titres of at least 0.5 IU/ml indicate protection. Where serological testing is unavailable, booster vaccination every 5 years may be an acceptable alternative.
The indication for post-exposure prophylaxis with or without RIG depends on the type of contact with the suspected rabid animal:

- Category I – touching or feeding animals, licks on the skin (i.e. no exposure);
- Category II – nibbling of uncovered skin, minor scratches or abrasions without bleeding, licks on broken skin;
- Category III – single or multiple transdermal bites or scratches, contamination of mucous membrane with saliva from licks, exposures to bats.

For category I exposures, no prophylaxis is required; whereas for category II, immediate vaccination, and for category III, immediate vaccination and administration of RIG are recommended. For categories II and III, thorough (for ~15 minutes) washing and flushing with soap/detergent and copious amounts of water of all bite wounds and scratches should be done immediately, or as early as possible.
Vaccine Administration

Post-exposure prophylaxis can be discontinued if the suspect animal is proved by appropriate laboratory examination to be free of rabies, or, in the case of domestic dogs or cats, the animal remains healthy throughout a 10-day observation period. Factors that should be taken into consideration when deciding whether or not to initiate post-exposure prophylaxis include the likelihood of the concerned animal being rabid, category of exposure (I–III), clinical features of the animal, as well as its availability for observation and laboratory testing. In most situations in developing countries, the vaccination status of the offending animal should not be taken into consideration to withhold prophylaxis.
Intramuscular administration
The post-exposure vaccination schedule is based on IM doses of 1 ml or 0.5 ml, depending on the manufacturer. The recommended regimen consists of either a 5-dose or a 4-dose schedule.
(i) The 5-dose regimen prescribes 1 dose injected into the deltoid muscle (or anterolateral thigh in children aged <2 years) on each of days 0, 3, 7, 14 and 28.
(ii) The 4-dose regimen prescribes 2 doses on day 0 (1 in each of the 2 deltoid/thigh sites) followed by 1 dose on each of days 7 and 21.

Intradermal administration
Either the 8-site or the 2-site regimen should be used, as recommended by the respective vaccine manufacturer.
(i) The 8-site ID regimen prescribes on day 0, injections of 0.1 ml given at 8 sites (1 in each upper arm, 1 in each lateral thigh, 1 on each side of the suprascapular region, and 1 on each side of the lower quadrant region of the abdomen); on day 7, 1 injection in each upper arm and each lateral thigh; and on each of days 30 and 90, 1 injection in one upper arm. The 1 dose on day 90 may be replaced by 2 ID injections on day 30.
(ii) The 2-site ID regimen prescribes 1 injection of 0.1 ml at 2 sites on days 0, 3, 7 and 28.

For rabies-exposed patients who have previously undergone complete pre-exposure vaccination or postexposure prophylaxis with a CCV, 2 IM or ID doses of such a vaccine administered on days 0 and 3 are sufficient. RIG is not necessary in such cases. The same rules apply to people vaccinated against rabies who have demonstrated VNA titres of at least 0.5 IU/ml. Vaccination cards carefully recording previous immunizations are invaluable for correct decision-making.
Rabies immunoglobulin for passive immunization

RIG should be administered in all category III exposures and in category II exposures involving immunodeficient individuals. Given its relatively slow clearance, human rabies immunoglobulin (HRIG) is the preferred product, particularly in cases of multiple severe exposures. However, HRIG is in short supply and available mainly in industrialized countries. Where HRIG is not available or affordable, purified equine immunoglobulin (ERIG) or F(ab′)2 products of ERIG should be used. Most of the new ERIG preparations are potent, highly purified, safe and considerably less expensive than HRIG. However, they are of heterologous origin and carry a small risk of hypersensitivity reactions. There are no scientific grounds for performing a skin test prior to administration of ERIG because testing does not predict reactions, and ERIG should be given whatever the result of the test. RIG for passive immunization should not be injected later than 7 days after the initiation of post-exposure vaccination. The dose for HRIG is 20 IU/kg body weight, and for ERIG and F(ab′)2 products 40 IU/kg body weight. All of the RIG, or as much as anatomically possible (cave compartment syndrome), should be administered into or around the wound site(s). Any remaining RIG should be injected IM at a site distant from the site of vaccine administration.
**Vaccine Administration**

If post-exposure (rabies) treatment must be given to immunocompromised individuals, HIV-positive persons, people under malaria chemoprophylaxis or people under anaesthesia, intramuscular vaccine and rabies immune globulin are mandatory and their antibody responses should be monitored serologically.

Rabies vaccines (WHO position paper)  
Page 119

In order to reduce the cost of post-exposure (rabies) treatment, intradermal multisite regimens using a fraction of the intramuscular volume per intradermal inoculation site have been developed. Only the cell-derived vaccines that meet the WHO requirements regarding safety, potency and efficacy for this application may be considered for intradermal use. (Where rabies poses a significant health problem and money and vaccines are in short supply, the use of the intradermal route for post-exposure treatment should be considered - page 110.)

For details on intradermal application of human rabies vaccines, see documents WHO/EMC/ZOO.96.6 and WHO/CDS/CSR/APH/2000.5).

Rabies vaccines (WHO position paper)  
Page 117

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**Rubella**

As there is no harm in vaccinating already immune individuals, serological testing before (rubella) immunization is not necessary.

Rubella vaccines (WHO position paper)  
Page 167

Each dose of this (RA27/3 rubella) vaccine, which is given by the subcutaneous route, contains a defined number of active virus particles (>1 000 TCID 50).

Rubella antibodies present in blood products may interfere with rubella vaccination. Therefore, persons who received blood products should wait at least 3 months before vaccination and if possible, blood products should be avoided for up to 2 weeks postvaccination.

Rubella vaccines (WHO position paper)  
Page 166
**Tetanus**

Administration of adsorbed tetanus toxoid is by intramuscular injection.

To assess a woman’s eligibility for TT immunization:
- First ask if the woman has a TT vaccination card. If she has, give the dose required according to the national TT schedule. If the woman does not have a record, ask her if she has ever had a dose of TT in the past:
  - If she says NO: give the first dose of TT and an appointment for the second dose one month later, and give her an immunization card.
  - If she says YES: ask how many doses she has received in the past and give the next doses in series. Take into account any dose given in SIAs.
  - If she cannot remember or does not know, you should give her a dose of TT and a follow-up appointment for the next dose.

**Typhoid**

The Vi polysaccharide vaccine is administered subcutaneously or intramuscularly as 1 dose of 25 mg to individuals aged > 2 years. The vaccine confers protection 7 days after injection.
**Vaccine Administration**

The (Ty21a typhoid) vaccine is usually administrated orally as enteric-coated capsules and is registered for use from 6 years of age.

A liquid formulation of the Ty21a (Ty21a typhoid) vaccine can be taken by children as young as 2 years and has proved more immunogenic than the capsular formulation.

*Typhoid vaccines (WHO position paper)*

Ty21a (Ty21a typhoid) is remarkably well tolerated. The vaccine may be given simultaneously with other vaccines, including live vaccines against polio, cholera and yellow fever, or the measles, mumps and rubella (MMR) combination. Proguanil or antibiotics should be avoided during the 3 days before and after vaccination.

*Typhoid vaccines (WHO position paper)*

(The Vi polysaccharide typhoid vaccine) can be given simultaneously with other vaccines relevant for international travelers such as the vaccines against yellow fever and hepatitis A.

*Typhoid vaccines (WHO position paper)*

**Varicella**

When given at separate sites and with separate syringes, simultaneous vaccination of varicella with other vaccines is as safe and immunogenic as when the vaccines are given at intervals of several weeks.

*Varicella vaccines (WHO position paper)*
Vaccine Administration

Due to the theoretical risk of Reye syndrome, the use of salicylates is discouraged for 6 weeks following varicella vaccination.

Varicella vaccines (WHO position paper)

Vitamin A

To avoid delays during SIAs, (vitamin A) screening should be limited to asking the age of the child to ensure that the correct dose is given. It is not necessary to screen for previous doses of vitamin A.

Global field guide for planning and implementing measles supplementary immunization activities

If vitamin A was distributed during NIDs in your program area within the past four months:
_ Assume that all infants and children 6-59 months of age have received a dose (or 12-59 months in countries where infants under 12 months are not given vitamin A with NIDs).
_ Do not give another dose unless the caretaker says the child did not participate in NIDs.
_ Do not look for records as vitamin A doses given at NIDs are not meant to be recorded due to the difficulty of recording at mass campaigns.

**Yellow Fever**

For the countries where yellow fever is endemic, the vaccine can be routinely administered at the time of measles vaccination. If yellow fever vaccine is not administered at the same time as measles vaccine, to assure an optimal immune response, it is generally recommended that there is at least a one month interval between measles and yellow fever vaccination.

For convenience and improved coverage, the YF vaccine should be administered simultaneously with the measles vaccine at approximately 9-12 months of age, but in a separate syringe and at a different injection site.

The YF (yellow fever) vaccine is given as a single subcutaneous or intramuscular injection (0.5 ml per dose), although the subcutaneous route is preferred.
Vaccine Administration

Since there is no interference between YF (yellow fever) vaccine and other vaccines, YF vaccine may be administered simultaneously, but in different syringes and at different sites, with the following vaccines: measles, polio (oral polio vaccine), diphtheria-tetanus-pertussis, hepatitis B, hepatitis A, oral cholera and oral or parenteral typhoid. When not given simultaneously, live vaccines should be administered at least one month before or one month after the YF vaccination. This recommendation is based on the assumption that interferon released in response to the first vaccine may have a temporary inhibitory effect on other live virus vaccines.

Yellow fever vaccine (WHO position paper)