

# **WHO Model List of Essential Medicines for Children**

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## **Status of this document**

**This is a reprint of the text on the WHO Medicines  
web site**

<http://www.who.int/medicines/publications/essentialmedicines/en/index.html>

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# WHO Model List of Essential Medicines for Children

## Explanatory Notes

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**This Model List is intended for use for children up to 12 years of age.**

The **core list** presents a list of minimum medicine needs for a basic health care system, listing the most efficacious, safe and cost-effective medicines for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance, and potential for safe and cost-effective treatment.

The **complementary list** presents essential medicines for priority diseases, for which specialized diagnostic or monitoring facilities, and/or specialist medical care, and/or specialist training are needed. In case of doubt medicines may also be listed as complementary on the basis of consistent higher costs or less attractive cost-effectiveness in a variety of settings.

The **square box symbol** (□) is primarily intended to indicate similar clinical performance within a pharmacological class. The listed medicine should be the example of the class for which there is the best evidence for effectiveness and safety. In some cases, this may be the first medicine that is licensed for marketing; in other instances, subsequently licensed compounds may be safer or more effective. Where there is no difference in terms of efficacy and safety data, the listed medicine should be the one that is generally available at the lowest price, based on international drug price information sources.

Therapeutic equivalence is only indicated on the basis of reviews of efficacy and safety and when consistent with WHO clinical guidelines. National lists should not use a similar symbol and should be specific in their final selection, which would depend on local availability and price. Medicines are listed in alphabetical order, within sections.

The format and numbering of the 15th WHO Model List of Essential Medicines have been retained but, as indicated in the text, some sections have been deleted because they contain medicines that are not relevant for children.

In the List of Essential Medicines for Children, two additional symbols are used.

**a** indicates that there is an age restriction on use of the medicines; the details for each medicine are in Table 1.

**R** indicates that the Subcommittee has endorsed the medicine as essential but has requested a review of the efficacy and safety to confirm this decision, or to expand use to additional age groups.

The listing of a medicine on the Essential Medicines List carries no assurance as to pharmaceutical quality of an individual product. It is the responsibility of each local regulatory authority to ensure that each brand is of appropriate pharmaceutical quality (including stability) and that, when relevant, different brands are interchangeable.

Dosage forms of medicines are listed in alphabetical order and there is no implication of preference for one form over another. Standard treatment guidelines should be consulted for information on appropriate dosage forms.

Entries of the type *oral liquid* are intended to permit any solution, suspension or other form of liquid. Granules or powder for reconstitution as an oral liquid may substitute for oral liquids, and typically carry benefits in the form of better stability and lower transport costs. If more than one type of oral liquid is available on the same market (e.g. solution, suspension, granules or powder for reconstitution), they may be interchanged and in such cases should be bioequivalent. It is preferable that oral liquids do not contain sugar and that solutions for children do not contain alcohol.

Entries of the type *tablet* are intended to allow various forms of immediate-release tablet such as scored, uncoated, film-coated, crushable, chewable, dispersible etc. Enteric coating, on the other hand, modifies drug release, and enteric-coated products are a modified-release dosage form. Crushable, chewable and dispersible tablets may be easier to administer to paediatric populations and to the elderly.

<b>1. ANAESTHETICS</b>	
<b>1.1 General anaesthetics and oxygen</b>	
□ halothane <b>R</b>	<b>Inhalation.</b> <b>R</b> Review for alternative inhalational agents.
ketamine	<b>Injection:</b> 50 mg (as hydrochloride)/ml in 10-ml vial.
nitrous oxide	<b>Inhalation.</b>
oxygen	<b>Inhalation</b> (medicinal gas).
thiopental	<b>Powder for injection:</b> 0.5 g; 1.0 g (sodium salt) in ampoule.
<b>1.2 Local anaesthetics</b>	
□ bupivacaine	<b>Injection:</b> 0.25%; 0.5% (hydrochloride) in vial. <b>Injection for spinal anaesthesia:</b> 0.5% (hydrochloride) in 4-ml ampoule to be mixed with 7.5% glucose solution.
□ lidocaine	<b>Injection:</b> 1%; 2% (hydrochloride) in vial. <b>Injection for spinal anaesthesia:</b> 5% (hydrochloride) in 2-ml ampoule to be mixed with 7.5% glucose solution. <b>Topical forms:</b> 2% to 4% (hydrochloride).
lidocaine + epinephrine (adrenaline)	<b>Dental cartridge:</b> 2% (hydrochloride) + epinephrine 1:80 000. <b>Injection:</b> 1%; 2% (hydrochloride) + epinephrine 1:200 000 in vial.
<b>1.3 Preoperative medication and sedation for short-term procedures <b>R</b></b>	
<b>R</b> Review of appropriate preoperative medication and sedation in children.	
atropine	<b>Injection:</b> 1 mg (sulfate) in 1-ml ampoule.
□ diazepam	<b>Injection:</b> 5 mg/ml in 2-ml ampoule. <b>Tablet:</b> 5 mg.
morphine	<b>Injection:</b> 10 mg (sulfate or hydrochloride) in 1-ml ampoule.
<b>2. ANALGESICS, ANTIPYRETICS, NON-STEROIDAL ANTI-INFLAMMATORY MEDICINES (NSAIMs), MEDICINES USED TO TREAT GOUT AND DISEASE MODIFYING AGENTS IN RHEUMATOID DISORDERS (DMARDs)</b>	
<b>2.1 Non-opioids and non-steroidal anti-inflammatory medicines (NSAIMs)</b>	
ibuprofen <b>a</b> <b>R</b>	<b>Tablet:</b> 200 mg; 400 mg. <b>a</b> > 3 months. <b>R</b> Use in children, focusing on comparative analgesic and antipyretic efficacy and safety.
paracetamol*	<b>Oral liquid:</b> 125 mg/5 ml. <b>Suppository:</b> 100 mg. <b>Tablet:</b> 100 mg to 500 mg. * Not recommended for anti-inflammatory use due to lack of proven benefit to that effect.

<i>Complementary List</i>	
acetylsalicylic acid*	<p><b>Suppository:</b> 50 mg to 150 mg.</p> <p><b>Tablet:</b> 100 mg to 500 mg.</p> <p>* For use for rheumatic fever, juvenile arthritis, Kawasaki disease.</p>
<b>2.2 Opioid analgesics</b>	
codeine	<b>Tablet:</b> 15 mg (phosphate).
morphine	<p><b>Injection:</b> 10 mg (morphine hydrochloride or morphine sulfate) in 1-ml ampoule.</p> <p><b>Oral liquid:</b> 10 mg (morphine hydrochloride or morphine sulfate)/5 ml.</p> <p><b>Tablet:</b> 10 mg (morphine sulfate).</p> <p><b>Tablet (prolonged release):</b> 10 mg; 30 mg; 60 mg (morphine sulfate).</p>
<b>2.3 Medicines used to treat gout</b>	
<b>2.4 Disease modifying agents used in rheumatoid disorders (DMARDs) <sup>R</sup></b>	
<sup>R</sup> The Subcommittee noted that there is a need for medicines for the treatment of juvenile arthritis but did not endorse any of the currently listed medicines at this time, requesting a review of this section.	
<b>3. ANTIALLERGICS AND MEDICINES USED IN ANAPHYLAXIS</b>	
<input type="checkbox"/> chlorphenamine <sup>a</sup> <sup>R</sup>	<p><b>Injection:</b> 10 mg (hydrogen maleate) in 1-ml ampoule.</p> <p><b>Oral liquid:</b> 2 mg/5 ml.</p> <p><b>Tablet:</b> 4 mg (hydrogen maleate).</p> <p><sup>a</sup> &gt;1 year.</p> <p><sup>R</sup> Review of diphenhydramine to assess comparative efficacy and safety with chlorphenamine as a possible preferable alternative.</p>
dexamethasone	<b>Injection:</b> 4 mg dexamethasone phosphate (as disodium salt) in 1-ml ampoule.
epinephrine (adrenaline)	<b>Injection:</b> 1 mg (as hydrochloride or hydrogen tartrate) in 1-ml ampoule.
hydrocortisone	<b>Powder for injection:</b> 100 mg (as sodium succinate) in vial.
<input type="checkbox"/> prednisolone	<p><b>Oral liquid:</b> 5 mg/ml.</p> <p><b>Tablet:</b> 5 mg; 25 mg.</p>
<b>4. ANTIDOTES AND OTHER SUBSTANCES USED IN POISONINGS</b>	
<b>4.1 Non-specific</b>	
charcoal, activated	<b>Powder.</b>
<b>4.2 Specific</b>	
acetylcysteine	<p><b>Injection:</b> 200 mg/ml in 10-ml ampoule.</p> <p><b>Oral solution:</b> 10% and 20%</p>
atropine	<b>Injection:</b> 1 mg (sulfate) in 1-ml ampoule.
calcium gluconate	<b>Injection:</b> 100 mg/ml in 10-ml ampoule.

deferoxamine <b>R</b>	<b>Powder for injection:</b> 500 mg (mesilate) in vial. <b>R</b> Review use of oral iron and lead chelators in children.
dimercaprol	<b>Injection in oil:</b> 50 mg/ml in 2-ml ampoule.
naloxone	<b>Injection:</b> 400 micrograms (hydrochloride) in 1-ml ampoule.
penicillamine <b>R</b>	<b>Capsule or tablet:</b> 250 mg. <b>R</b> Comparative effectiveness and safety versus sodium calcium edetate.
sodium calcium edetate <b>R</b>	<b>Injection:</b> 200 mg/ml in 5-ml ampoule. <b>R</b> Comparative effectiveness and safety versus penicillamine.
<b>5. ANTICONVULSANTS/ANTIEPILEPTICS</b>	
carbamazepine	<b>Oral liquid:</b> 100 mg/5 ml. <b>Tablet (chewable):</b> 100 mg; 200 mg. <b>Tablet (scored):</b> 100 mg; 200 mg.
□ diazepam <b>R</b>	<b>Injection:</b> 5 mg/ml in 2-ml ampoule (intravenous or rectal). <b>R</b> Review of benzodiazepines as alternative to diazepam (specifically consider comparative efficacy and safety of lorazepam and midazolam in relation to diazepam).
phenobarbital	<b>Injection:</b> 200 mg/ml (phenobarbital sodium). <b>Oral liquid:</b> 15 mg/5 ml. <b>Tablet:</b> 15 mg to 100 mg (phenobarbital).
phenytoin	<b>Capsule:</b> 25 mg; 50 mg; 100 mg (sodium salt). <b>Injection:</b> 50 mg/ml in 5-ml vial (sodium salt). <b>Oral liquid:</b> 25 mg to 30 mg/5 ml.* <b>Tablet:</b> 25 mg; 50 mg; 100 mg (sodium salt). <b>Tablet (chewable):</b> 50 mg. * The presence of both 25 mg/5 ml and 30 mg/5 ml strengths on the same market would cause confusion in prescribing and dispensing and should be avoided.
valproic acid (sodium valproate)	<b>Oral liquid:</b> 200 mg/5 ml. <b>Tablet (crushable):</b> 100 mg. <b>Tablet (enteric-coated):</b> 200 mg; 500 mg (sodium salt).
<b>Complementary List</b>	
<i>ethosuximide</i>	<b>Capsule:</b> 250 mg. <b>Oral liquid:</b> 250 mg/5 ml.
<b>6. ANTI-INFECTIVE MEDICINES</b>	
<b>6.1 Anthelmintics <b>R</b></b>	
<b>R</b> Review evidence of efficacy and safety of use of anthelmintic/antifilarial/antischistosomal and antitrematode medicines in children below the specified age in current licences.	
<b>6.1.1 Intestinal anthelmintics <b>R</b></b>	
albendazole	<b>Tablet (chewable):</b> 400 mg.

levamisole	<b>Tablet:</b> 50 mg; 150 mg (as hydrochloride).
<input type="checkbox"/> mebendazole	<b>Tablet (chewable):</b> 100 mg; 500 mg.
niclosamide*	<b>Tablet (chewable):</b> 500 mg. * Niclosamide is listed for use when praziquantel treatment fails.
praziquantel	<b>Tablet:</b> 150 mg; 600 mg.
pyrantel	<b>Oral liquid:</b> 50 mg (as embonate)/ml. <b>Tablet (chewable):</b> 250 mg (as embonate).
<b>6.1.2 Antifilarials</b> <span style="border: 1px solid black; padding: 0 2px;">R</span>	
ivermectin	<b>Tablet (scored):</b> 3 mg; 6 mg.
<i>Complementary List</i>	
<i>diethylcarbamazine</i>	<b>Tablet:</b> 50 mg; 100 mg (dihydrogen citrate).
<b>6.1.3 Antischistosomal and antitrepatode medicine</b> <span style="border: 1px solid black; padding: 0 2px;">R</span>	
praziquantel	<b>Tablet:</b> 600 mg.
triclabendazole	<b>Tablet:</b> 250 mg.
<i>Complementary List</i>	
<i>oxamniquine</i> *	<b>Capsule:</b> 250 mg. <b>Oral liquid:</b> 250 mg/5 ml. * Oxamniquine is listed for use when praziquantel treatment fails.
<b>6.2 Antibacterials</b>	
<b>6.2.1 Beta Lactam medicines</b>	
amoxicillin	<b>Capsule or tablet:</b> 250 mg; 500 mg (anhydrous). <b>Powder for oral liquid:</b> 125 mg (anhydrous)/5 ml; 250 mg (anhydrous)/5 ml.
amoxicillin + clavulanic acid	<b>Oral liquid:</b> 125 mg amoxicillin + 31.25 mg clavulanic acid/5 ml AND 250 mg amoxicillin + 62.5 mg clavulanic acid/5 ml. <b>Tablet:</b> 500 mg + 125 mg.
ampicillin	<b>Powder for injection:</b> 500 mg; 1 g (as sodium salt) in vial.
benzathine benzylpenicillin	<b>Powder for injection:</b> 900 mg benzylpenicillin (=1.2 million IU) in 5-ml vial; 1.44 g benzylpenicillin (=2.4 million IU) in 5-ml vial.
benzylpenicillin	<b>Powder for injection:</b> 600 mg (= 1 million IU); 3 g (= 5 million IU) (sodium or potassium salt) in vial.
cefalexin	<b>Capsule or tablet:</b> 250 mg. <b>Powder for reconstitution with water:</b> 125 mg/5 ml; 250 mg/5ml.
<input type="checkbox"/> cefazolin* <span style="border: 1px solid black; padding: 0 2px;">a</span>	<b>Powder for injection:</b> 1 g (as sodium salt) in vial. * For surgical prophylaxis. <span style="border: 1px solid black; padding: 0 2px;">a</span> >1 month.

ceftriaxone* <sup>a</sup>	<p><b>Powder for injection:</b> 250 mg; 1 g (as sodium salt) in vial.</p> <p>* Do not administer with calcium and avoid in infants with hyperbilirubinemia.</p> <p><sup>a</sup> &gt; 41 weeks corrected gestational age.</p>
□ cloxacillin	<p><b>Capsule:</b> 500 mg; 1 g (as sodium salt).</p> <p><b>Powder for injection:</b> 500 mg (as sodium salt) in vial.</p> <p><b>Powder for oral liquid:</b> 125 mg (as sodium salt)/5 ml.</p>
phenoxymethylpenicillin	<p><b>Powder for oral liquid:</b> 250 mg (as potassium salt)/5 ml.</p> <p><b>Tablet:</b> 250 mg (as potassium salt).</p>
procaine benzylpenicillin*	<p><b>Powder for injection:</b> 1 g (=1 million IU); 3 g (=3 million IU) in vial.</p> <p>* Not recommended as first-line treatment for sepsis and/or meningitis.</p>
<b>Complementary List</b>	
cefotaxime*	<p><b>Powder for injection:</b> 250 mg per vial</p> <p>* 3<sup>rd</sup> generation cephalosporin of choice for use in hospitalized neonates.</p>
ceftazidime	<p><b>Powder for injection:</b> 250 mg or 1 g (as pentahydrate) in vial.</p>
imipenem* + cilastatin*	<p><b>Powder for injection:</b> 250 mg (as monohydrate) + 250 mg (as sodium salt); 500 mg (as monohydrate) + 500 mg (as sodium salt) in vial.</p> <p>* Only listed for the treatment of life-threatening hospital-based infection due to suspected or proven multidrug-resistant infection. Meropenem is indicated for the treatment of meningitis and is licensed for use in children over the age of 3 months.</p>
<b>6.2.2 Other antibacterials</b>	
azithromycin*	<p><b>Capsule:</b> 250 mg or 500 mg.</p> <p><b>Oral liquid:</b> 200 mg/5 ml.</p> <p>* Only listed for trachoma.</p>
chloramphenicol	<p><b>Capsule:</b> 250 mg.</p> <p><b>Oily suspension for injection*:</b> 0.5 g (as sodium succinate)/ml in 2-ml ampoule.</p> <p>* Only for the presumptive treatment of epidemic meningitis in children older than 2 years.</p> <p><b>Oral liquid:</b> 150 mg (as palmitate)/5 ml.</p> <p><b>Powder for injection:</b> 1 g (sodium succinate) in vial.</p>
ciprofloxacin	<p><b>Oral liquid:</b> 250 mg/5 ml.</p> <p><b>Solution for IV infusion:</b> 2 mg/ml.</p> <p><b>Tablet:</b> 250 mg (as hydrochloride).</p>

doxycycline <sup>a</sup>	<p><b>Capsule or tablet:</b> 50 mg; 100 mg (hydrochloride).</p> <p><b>Oral suspension:</b> 25 mg/5 ml; 50 mg/5 ml.</p> <p><sup>a</sup> Use in children &lt; 8 years of age only for life-threatening infections when no alternative exists.</p>
erythromycin	<p><b>Capsule or tablet:</b> 250 mg (as stearate or ethyl succinate).</p> <p><b>Powder for oral liquid:</b> 125 mg (as stearate or ethyl succinate).</p>
□ gentamicin	<b>Injection:</b> 10 mg; 40 mg (as sulfate)/ml in 2-ml vial.
metronidazole	<p><b>Injection:</b> 500 mg in 100-ml vial.</p> <p><b>Oral liquid:</b> 200 mg (as benzoate)/5 ml.</p> <p><b>Tablet:</b> 200 mg to 500 mg.</p>
nitrofurantoin	<p><b>Oral liquid:</b> 25 mg/5 ml.</p> <p><b>Tablet:</b> 100 mg.</p>
sulfamethoxazole + trimethoprim	<p><b>Injection:</b> 80 mg + 16 mg/ml in 5-ml and 10-ml ampoules.</p> <p><b>Oral liquid:</b> 200 mg + 40 mg/5 ml.</p> <p><b>Tablet:</b> 100 mg + 20 mg; 400 mg + 80 mg.</p>
trimethoprim <sup>a</sup>	<p><b>Oral liquid:</b> 50 mg/5 ml.</p> <p><b>Tablet:</b> 100 mg; 200 mg.</p> <p><sup>a</sup> &gt;6 months.</p>
<b>Complementary List</b>	
clindamycin	<p><b>Capsule:</b> 150 mg.</p> <p><b>Injection:</b> 150 mg (as phosphate)/ml.</p> <p><b>Oral liquid:</b> 75 mg/5 ml.</p>
vancomycin	<b>Powder for injection:</b> 250 mg (as hydrochloride) in vial.
<b>6.2.3 Antileprosy medicines</b>	
<p>Medicines used in the treatment of leprosy should never be used except in combination. Combination therapy is essential to prevent the emergence of drug resistance. Colour coded blister packs (MDT blister packs) containing standard two medicine (paucibacillary leprosy) or three medicine (multibacillary leprosy) combinations for adult and childhood leprosy should be used. MDT blister packs can be supplied free of charge through WHO.</p>	
clofazimine	<b>Capsule:</b> 50 mg; 100 mg.
dapsone	<b>Tablet:</b> 25 mg; 50 mg; 100 mg.
rifampicin	<b>Capsule or tablet:</b> 150 mg; 300 mg.
<b>6.2.4 Antituberculosis medicines <sup>R</sup></b>	
<p><sup>R</sup> The Subcommittee requested a review of medicines used for TB in children, including evidence regarding dose, and alternatives for streptomycin. The Subcommittee recommends and endorses the use of fixed-dose combinations and the development of appropriate new fixed-dose combinations, including modified dosage forms, non-refrigerated products and paediatric dosage forms with assured pharmaceutical quality. The Subcommittee also expressed concern that currently available FDCs proposed for use in children may not contain amounts of medicines that translate into effective doses for the treatment of TB in children.</p>	
ethambutol	<p><b>Oral liquid:</b> 25 mg/ml.</p> <p><b>Tablet:</b> 100 mg; 400 mg (hydrochloride).</p>

isoniazid	<b>Oral liquid:</b> 50 mg/5 ml. <b>Tablet:</b> 100 mg; 300 mg. <b>Tablet (scored):</b> 50 mg.
pyrazinamide	<b>Oral liquid:</b> 30 mg/ml. <b>Tablet:</b> 400 mg. <b>Tablet (dispersible):</b> 150 mg. <b>Tablet (scored):</b> 150 mg.
rifampicin	<b>Capsule or tablet:</b> 150 mg; 300 mg. <b>Oral liquid:</b> 20 mg/ml.
streptomycin <b>R</b>	<b>Powder for injection:</b> 1 g (as sulfate) in vial. <b>R</b> Review of safety and efficacy of streptomycin in childhood TB.
<b>Complementary List</b>	
<b>Reserve second-line drugs for the treatment of multidrug-resistant tuberculosis (MDR-TB) should be used in specialized centres adhering to WHO standards for TB control. <b>R</b></b> <b>R</b> The Subcommittee requests a review of the medicines for MDR-TB in children.	
<i>amikacin</i>	<b>Powder for injection:</b> 100 mg; 500 mg; 1 g in vial.
<i>capreomycin</i>	<b>Powder for injection:</b> 1000 mg in vial.
<i>cycloserine</i>	<b>Capsule or tablet:</b> 250 mg.
<i>ethionamide</i>	<b>Tablet:</b> 125 mg; 250 mg.
<i>kanamycin</i>	<b>Powder for injection:</b> 1 g in vial.
<i>ofloxacin*</i>	<b>Tablet:</b> 200 mg; 400 mg. <i>* Levofloxacin may be an alternative based on availability and programme considerations.</i>
<i>p-aminosalicylic acid</i>	<b>Granules:</b> 4 g in sachet. <b>Tablet:</b> 500 mg.
<b>6.3 Antifungal medicines</b>	
fluconazole	<b>Capsule:</b> 50 mg. <b>Injection:</b> 2 mg/ml in vial. <b>Oral liquid:</b> 50 mg/5 ml.
griseofulvin	<b>Capsule or tablet:</b> 125 mg; 250 mg. <b>Oral liquid:</b> 125 mg/5ml.
nystatin	<b>Lozenge:</b> 100 000 IU. <b>Oral liquid:</b> 50 mg/5 ml; 100 000 IU/ml. <b>Tablet:</b> 100 000 IU; 500 000 IU.
<b>Complementary List</b>	
<i>amphotericin B deoxycholate</i> <b>R</b>	<b>Powder for injection:</b> 50 mg in vial. <b>R</b> Review of liposomal amphotericin in the management of antifungal conditions.

<i>flucytosine</i>	<b>Capsule:</b> 250 mg. <b>Infusion:</b> 2.5 g in 250 ml.
<i>potassium iodide</i>	<b>Saturated solution.</b>
<b>6.4 Antiviral medicines</b>	
<b>6.4.1 Antiherpes medicines</b>	
aciclovir	<b>Oral liquid:</b> 200 mg/5 ml. <b>Powder for injection:</b> 250 mg (as sodium salt) in vial. <b>Tablet:</b> 200 mg.
<b>6.4.2 Antiretrovirals</b>	
<p>Based on current evidence and experience of use, medicines in the following three classes of antiretrovirals are included as essential medicines for treatment and prevention of HIV (prevention of mother-to-child transmission and post exposure prophylaxis). The Subcommittee emphasizes the importance of using these products in accordance with global and national guidelines. The Subcommittee recommends and endorses the use of fixed-dose combinations and the development of appropriate new fixed-dose combinations, including modified dosage forms, non-refrigerated products and paediatric dosage forms with assured pharmaceutical quality.</p> <p>The Subcommittee notes that scored tablets can be used in children and therefore can be considered for inclusion in the listing of tablets, provided adequate quality products are available.</p>	
<b>6.4.2.1 Nucleoside/Nucleotide reverse transcriptase inhibitors</b>	
abacavir (ABC)	<b>Oral liquid:</b> 100 mg (as sulfate)/5 ml. <b>Tablet:</b> 300 mg (as sulfate).
didanosine (ddI)	<b>Buffered powder for oral liquid:</b> 100 mg; 167 mg; 250 mg packets. <b>Capsule (unbuffered enteric-coated):</b> 125 mg; 200 mg; 250 mg; 400 mg. <b>Tablet (buffered chewable, dispersible):</b> 25 mg; 50 mg; 100 mg; 150 mg; 200 mg.
emtricitabine (FTC)* <sup>a</sup>	<b>Capsule:</b> 200 mg. <b>Oral liquid:</b> 10 mg/ml. * FTC is an acceptable alternative to 3TC, based on knowledge of the pharmacology, the resistance patterns and clinical trials of antiretrovirals. <sup>a</sup> >3 months.
lamivudine (3TC)	<b>Oral liquid:</b> 50 mg/5 ml. <b>Tablet:</b> 150 mg.
stavudine (d4T)	<b>Capsule:</b> 15 mg; 20 mg; 30 mg. <b>Powder for oral liquid:</b> 5 mg/5 ml.
zidovudine (ZDV or AZT)	<b>Capsule:</b> 100 mg; 250 mg. <b>Oral liquid:</b> 50 mg/5 ml. <b>Solution for IV infusion injection:</b> 10 mg/ml in 20-ml vial. <b>Tablet:</b> 300 mg.





<b>6.4.2.2 Non-nucleoside reverse transcriptase inhibitors</b>	
efavirenz (EFV or EFZ) <b>a</b>	<p><b>Capsule:</b> 50 mg; 100 mg; 200 mg.</p> <p><b>Oral liquid:</b> 150 mg/5 ml.</p> <p><b>Tablet:</b> 600 mg.</p> <p><b>a</b> &gt;3 years or &gt;10 kg weight.</p>
nevirapine (NVP)	<p><b>Oral liquid:</b> 50 mg/5 ml.</p> <p><b>Tablet:</b> 200 mg.</p>
<b>6.4.2.3 Protease inhibitors</b>	
<p>Selection of protease inhibitor(s) from the Model List will need to be determined by each country after consideration of international and national treatment guidelines and experience. Ritonavir is recommended for use in combination as a pharmacological booster, and not as an antiretroviral in its own right.</p> <p>This section will be reviewed. It is expected that an application for a heat-stable tablet formulation containing lopinavir + ritonavir will be submitted for the next meeting.</p>	
lopinavir + ritonavir (LPV/r) <b>R</b>	<p><b>Capsule:</b> 133.3 mg + 33.3 mg.</p> <p><b>Oral liquid:</b> 400 mg + 100 mg/5 ml.</p> <p><b>R</b> Application for heat stable protease inhibitors.</p>
nelfinavir (NFV)	<p><b>Oral powder:</b> 50 mg/g.</p> <p><b>Tablet:</b> 250 mg (as mesilate).</p>
ritonavir	<p><b>Oral liquid:</b> 400 mg/5 ml.</p> <p><b>Oral solid dosage form:</b> 100 mg.</p>
saquinavir (SQV) <b>a</b>	<p><b>Capsule:</b> 200 mg.</p> <p><b>a</b> &gt;25 kg weight.</p>
<b>FIXED-DOSE COMBINATIONS</b>	
lamivudine + nevirapine + stavudine	<p><b>Tablet:</b> 150 mg + 200 mg + 30 mg.</p> <p><b>Tablet (dispersible):</b> 30 mg + 50 mg + 6 mg; 60 mg + 100 mg + 12 mg.</p>
lamivudine + nevirapine + zidovudine	<p><b>Tablet:</b> 30 mg + 50 mg + 60 mg; 150 mg + 200 mg + 300 mg.</p>
lamivudine + zidovudine	<p><b>Tablet:</b> 30 mg + 60 mg; 150 mg + 300 mg.</p>
<b>6.4.3 Other antivirals</b>	
ribavirin*	<p><b>Injection for intravenous administration:</b> 800 mg and 1 g in 10-ml phosphate buffer solution.</p> <p><b>Oral solid dosage forms:</b> 200 mg; 400 mg; 600 mg.</p> <p>* For the treatment of viral haemorrhagic fevers only.</p>

<b>6.5 Antiprotozoal medicines</b>	
<b>6.5.1 Antiamoebic and anti giardiasis medicines</b>	
diloxanide <b>a</b> <b>R</b>	<b>Tablet:</b> 500 mg (furoate). <b>a</b> >25 kg weight. <b>R</b> Review of effectiveness and safety for amoebiasis, with emphasis on comparative efficacy, safety, and age limits compared with oral paromomycin.
<b>□</b> metronidazole	<b>Injection:</b> 500 mg in 100-ml vial. <b>Oral liquid:</b> 200 mg (as benzoate)/5 ml. <b>Tablet:</b> 200 mg to 500 mg.
<b>6.5.2 Antileishmaniasis medicines</b>	
liposomal amphotericin B	<b>Powder for injection:</b> 50 mg in vial.
paromomycin	<b>Solution for intramuscular injection:</b> 750 mg of paromomycin base present as the sulfate.
sodium stibogluconate or meglumine antimoniate <b>R</b>	<b>Injection:</b> 100 mg/ml, 1 vial = 30 ml or 30%, equivalent to approximately 8.1% antimony in 5-ml ampoule. <b>R</b> Review of comparative effectiveness and safety of antimonials for leishmaniasis, and whether they should be kept on the core list or moved to the complementary list.
<b>Complementary List</b>	
<i>amphotericin B deoxycholate</i>	<b>Powder for injection:</b> 50 mg in vial.
<b>6.5.3 Antimalarial medicines</b>	
<b>6.5.3.1 For curative treatment</b>	
Medicines for the treatment of <i>P. falciparum</i> malaria cases should be used in combination. The list currently recommends combinations according to treatment guidelines. The Subcommittee recognizes that not all of these FDCs exist and encourages their development and rigorous testing. The Subcommittee also encourages development and testing of rectal dosage formulations.	
amodiaquine*	<b>Tablet:</b> 153 mg or 200 mg (as hydrochloride). * To be used (a) in combination with artesunate 50 mg OR (b) may be used alone for the treatment of <i>P. vivax</i> , <i>P. ovale</i> and <i>P. malariae</i> infections.
artemether	<b>Oily injection:</b> 80 mg/ml in 1-ml ampoule. For use in the management of severe malaria.
artemether + lumefantrine*	<b>Tablet:</b> 20 mg + 120 mg. * Not recommended in the first trimester of pregnancy or in children below 5 kg.

artesunate*	<p><b>Injection:</b> ampoules, containing 60 mg anhydrous artesunic acid with a separate ampoule of 5% sodium bicarbonate solution.</p> <p>For use in the management of severe malaria.</p> <p><b>Rectal dosage form:</b> 50 mg; 200 mg capsules (for pre-referral treatment of severe malaria only; patients should be taken to an appropriate health facility for follow-up care).</p> <p><b>Tablet:</b> 50 mg.</p> <p>* To be used in combination with either amodiaquine, mefloquine or sulfadoxine + pyrimethamine.</p>
chloroquine*	<p><b>Oral liquid:</b> 50 mg (as phosphate or sulfate)/5 ml.</p> <p><b>Tablet:</b> 100 mg; 150 mg (as phosphate or sulfate).</p> <p>* For use only in central American regions, for use for <i>P.vivax</i>.</p>
doxycycline*	<p><b>Capsule:</b> 100 mg (as hydrochloride).</p> <p><b>Tablet (dispersible):</b> 100 mg (as monohydrate).</p> <p>* For use only in combination with quinine.</p>
mefloquine*	<p><b>Tablet:</b> 250 mg (as hydrochloride).</p> <p>* To be used in combination with artesunate 50 mg.</p>
primaquine*	<p><b>Tablet:</b> 7.5 mg; 15 mg (as diphosphate).</p> <p>* Only for use to achieve radical cure of <i>P.vivax</i> and <i>P.ovale</i> infections, given for 14 days.</p>
quinine*	<p><b>Injection:</b> 300 mg quinine hydrochloride/ml in 2-ml ampoule.</p> <p><b>Tablet:</b> 300 mg (quinine sulfate) or 300 mg (quinine bisulfate).</p> <p>* For use only in the management of severe malaria, and should be used in combination with doxycycline.</p>
sulfadoxine + pyrimethamine*	<p><b>Tablet:</b> 500 mg + 25 mg.</p> <p>* Only in combination with artesunate 50 mg.</p>
<b>6.5.3.2 For prophylaxis</b>	
chloroquine*	<p><b>Oral liquid:</b> 50 mg (as phosphate or sulfate)/5 ml.</p> <p><b>Tablet:</b> 150 mg (as phosphate or sulfate).</p> <p>* For use only in central American regions, for use for <i>P.vivax</i>.</p>
doxycycline <sup>a</sup>	<p><b>Capsule or tablet:</b> 100 mg (as hydrochloride).</p> <p><sup>a</sup> &gt;8 years.</p>
mefloquine <sup>a</sup>	<p><b>Tablet:</b> 250 mg (as hydrochloride).</p> <p><sup>a</sup> &gt;5 kg or &gt;3 months.</p>
proguanil*	<p><b>Tablet:</b> 100 mg (as hydrochloride).</p> <p>* For use only in combination with chloroquine.</p>
<b>6.5.4 Antipneumocystosis and antitoxoplasmosis medicines</b>	
pyrimethamine	<p><b>Tablet:</b> 25 mg.</p>

sulfamethoxazole + trimethoprim	<b>Injection:</b> 80 mg + 16 mg/ml in 5-ml ampoule; 80 mg + 16 mg/ml in 10-ml ampoule. <b>Oral liquid:</b> 200 mg + 40 mg/5 ml. <b>Tablet:</b> 100 mg + 20 mg; 400 mg + 80 mg.
sulfadiazine <b>R</b>	<b>Tablet:</b> 500 mg. <b>R</b> Review of comparative efficacy and safety of sulfadiazine and co-trimoxazole in treatment of toxoplasmosis.
<b>6.5.5 Antitrypanosomal medicines <b>R</b></b>	
<b>R</b> The Subcommittee requested a review of evidence for effectiveness and safety for medicines for trypanosomiasis in children for the next meeting.	
<b>6.5.5.1 African trypanosomiasis</b>	
Medicines for the treatment of 1 <sup>st</sup> stage African trypanosomiasis	
pentamidine*	<b>Powder for injection:</b> 200 mg (pentamidine isetionate) in vial. * To be used for the treatment of <i>Trypanosoma brucei gambiense</i> infection.
suramin sodium*	<b>Powder for injection:</b> 1 g in vial. * To be used for the treatment of the initial phase of <i>Trypanosoma brucei rhodesiense</i> infection.
Medicines for the treatment of 2 <sup>nd</sup> stage African trypanosomiasis	
eflornithine	<b>Injection:</b> 200 mg (hydrochloride)/ml in 100-ml bottle.
melarsoprol	<b>Injection:</b> 3.6% solution in 5-ml ampoule (180 mg of active compound).
<b>6.5.5.2 American trypanosomiasis</b>	
benznidazole	<b>Tablet:</b> 100 mg.
nifurtimox	<b>Tablet:</b> 30 mg; 120 mg; 250 mg.
<b>7. ANTIMIGRAINE MEDICINES</b>	
<b>7.1 For treatment of acute attack</b>	
ibuprofen	<b>Tablet:</b> 200 mg; 400 mg.
paracetamol	<b>Oral liquid:</b> 125 mg/5 ml. <b>Tablet:</b> 300 mg to 500 mg.
<b>7.2 For prophylaxis</b>	
propranolol	<b>Tablet:</b> 20 mg; 40 mg (hydrochloride).
<b>8. ANTINEOPLASTIC, IMMUNOSUPPRESSIVES AND MEDICINES USED IN PALLIATIVE CARE <b>R</b></b>	
<b>R</b> The Subcommittee noted that these immunosuppressives and cytotoxics are essential for children but requested that these medicines be reviewed for the next meeting.	
<b>8.1 Immunosuppressive medicines</b>	
<i>Complementary List</i>	
azathioprine	<b>Powder for injection:</b> 100 mg (as sodium salt) in vial. <b>Tablet:</b> 50 mg.

<i>cyclosporin</i>	<b>Capsule:</b> 25 mg. <b>Concentrate for injection:</b> 50 mg/ml in 1-ml ampoule for organ transplantation.
<b>8.2 Cytotoxic medicines</b>	
<b>Complementary List</b>	
<i>allopurinol</i>	<b>Tablet:</b> 100 mg to 300 mg.
<i>asparaginase</i>	<b>Powder for injection:</b> 10 000 IU in vial.
<i>bleomycin</i>	<b>Powder for injection:</b> 15 mg (as sulfate) in vial.
<i>calcium folinate</i>	<b>Injection:</b> 3 mg/ml in 10-ml ampoule. <b>Tablet:</b> 15 mg.
<i>chlorambucil</i>	<b>Tablet:</b> 2 mg.
<i>cisplatin</i>	<b>Powder for injection:</b> 10 mg; 50 mg in vial.
<i>cyclophosphamide</i>	<b>Powder for injection:</b> 500 mg in vial. <b>Tablet:</b> 25 mg.
<i>cytarabine</i>	<b>Powder for injection:</b> 100 mg in vial.
<i>dacarbazine</i>	<b>Powder for injection:</b> 100 mg in vial.
<i>dactinomycin</i>	<b>Powder for injection:</b> 500 micrograms in vial.
<i>daunorubicin</i>	<b>Powder for injection:</b> 50 mg (as hydrochloride).
<i>doxorubicin</i>	<b>Powder for injection:</b> 10 mg; 50 mg (hydrochloride) in vial.
<i>etoposide</i>	<b>Capsule:</b> 100 mg. <b>Injection:</b> 20 mg/ml in 5-ml ampoule.
<i>fluorouracil</i>	<b>Injection:</b> 50 mg/ml in 5-ml ampoule.
<i>mercaptopurine</i>	<b>Tablet:</b> 50 mg.
<i>methotrexate</i>	<b>Powder for injection:</b> 50 mg (as sodium salt) in vial. <b>Tablet:</b> 2.5 mg (as sodium salt).
<i>procarbazine</i>	<b>Capsule:</b> 50 mg (as hydrochloride).
<i>vinblastine</i>	<b>Powder for injection:</b> 10 mg (sulfate) in vial.
<i>vincristine</i>	<b>Powder for injection:</b> 1 mg; 5 mg (sulfate) in vial.
<b>8.3 Hormones and antihormones</b>	
<b>Complementary List</b>	
<i>dexamethasone</i>	<b>Injection:</b> 4 mg dexamethasone phosphate (as disodium salt) in 1-ml ampoule. <b>Oral liquid:</b> 2 mg/5 ml.
<i>hydrocortisone</i>	<b>Powder for injection:</b> 100 mg (as sodium succinate) in vial.
<i>prednisolone*</i>	<b>Oral liquid:</b> 5 mg/ml. <b>Tablet:</b> 5 mg; 25 mg.  * Prednisone should be considered equivalent to prednisolone.

<b>8.4 Medicines used in palliative care</b>	
amitriptyline	<b>Tablet:</b> 10 mg; 25 mg.
cyclizine	<b>Injection:</b> 50 mg/ml. <b>Tablet:</b> 50 mg.
dexamethasone	<b>Injection:</b> 4 mg/ml. <b>Tablet:</b> 2 mg.
diazepam	<b>Injection:</b> 5 mg/ml. <b>Oral liquid:</b> 2 mg/5 ml. <b>Rectal solution:</b> 2.5 mg; 5 mg; 10 mg. <b>Tablet:</b> 5 mg; 10 mg.
docusate sodium	<b>Capsule:</b> 100 mg. <b>Oral liquid:</b> 50 mg/5 ml.
hyoscine hydrobromide	<b>Injection:</b> 400 micrograms/ml; 600 micrograms/ml. <b>Transdermal patches:</b> 1 mg/72 hours.
ibuprofen* 	<b>Oral liquid:</b> 100 mg/5 ml. <b>Tablet:</b> 200 mg; 400 mg; 600 mg. * Specific use for management of bone pain.  Not in children less than 3 months of age.
midazolam	<b>Injection:</b> 1 mg/ml; 5 mg/ml.
morphine	<b>Granules (modified release) (to mix with water):</b> 20 mg; 30 mg; 60 mg; 100 mg; 200 mg. <b>Injection:</b> 10 mg/ml. <b>Oral liquid:</b> 10 mg/5 ml. <b>Tablet (controlled release):</b> 10 mg; 30 mg; 60 mg. <b>Tablet (immediate release):</b> 10 mg.
senna	<b>Oral liquid:</b> 7.5 mg/5 ml.
<b>9. ANTIPARKINSONISM MEDICINES</b>	
<b>10. MEDICINES AFFECTING THE BLOOD</b>	
<b>10.1 Antianaemia medicines </b>	
 The Subcommittee proposed a review of the evidence for appropriate dose combinations of iron and folic acid for children for consideration at its next meeting.	
ferrous salt	<b>Oral liquid:</b> equivalent to 25 mg elemental iron/ml. <b>Tablet:</b> equivalent to 60 mg iron.
folic acid	<b>Tablet:</b> 1 mg; 5 mg.
hydroxocobalamin	<b>Injection:</b> 1 mg in 1-ml ampoule.
<b>10.2 Medicines affecting coagulation</b>	
phytomenadione	<b>Injection:</b> 1 mg/ml; 10 mg/ml in 5-ml ampoule. <b>Tablet:</b> 10 mg.

<i>Complementary List</i>	
<i>heparin sodium</i>	<b>Injection:</b> 1000 IU/ml; 5000 IU/ml in 1-ml ampoule.
<i>protamine sulfate</i>	<b>Injection:</b> 10 mg/ml in 5-ml ampoule.
<input type="checkbox"/> <i>warfarin</i>	<b>Tablet:</b> 0.5 mg; 1 mg; 2 mg; 5 mg (sodium salt).
<b>11. BLOOD PRODUCTS AND PLASMA SUBSTITUTES</b>	
<b>11.1 Plasma substitutes</b> <b>R</b>	
<b>R</b> The Subcommittee requested a review to determine whether these medicines are essential for children.	
<b>11.2 Plasma fractions for specific use</b>	
All plasma fractions should comply with the WHO Requirements for the Collection, Processing and Quality Control of Blood, Blood Components and Plasma Derivatives (Revised 1992). (WHO Technical Report Series, No. 840, 1994, Annex 2).	
<i>Complementary List</i>	
<i>human normal immunoglobulin</i>	<b>Intramuscular administration:</b> 16% protein solution.* <b>Intravenous administration:</b> 5%; 10% protein solution.** <b>Subcutaneous administration:</b> 15%; 16% protein solution.* * Indicated for primary immune deficiency. **Indicated for primary immune deficiency and Kawasaki disease.
<input type="checkbox"/> <i>factor VIII concentrate</i>	<b>Dried.</b>
<input type="checkbox"/> <i>factor IX complex (coagulation factors, II, VII, IX, X) concentrate</i>	<b>Dried.</b>
<b>12. CARDIOVASCULAR MEDICINES</b>	
<b>12.1 Antianginal medicines</b>	
<b>12.2 Antiarrhythmic medicines</b> <b>R</b>	
<b>R</b> The Subcommittee noted the potential importance of these medicines in children and identified medicines for which applications were needed.	
<b>12.3 Antihypertensive medicines</b> <b>R</b>	
<b>R</b> The Subcommittee noted the potential importance of these medicines in children but requested a review of the section before endorsing any medicine as essential.	
<b>12.4 Medicines used in heart failure</b> <b>R</b>	
<b>R</b> The Subcommittee noted the potential importance of these medicines in children but requested a review of the section for the next meeting.	
<i>digoxin</i>	<b>Injection:</b> 250 micrograms/ml in 2-ml ampoule. <b>Oral liquid:</b> 50 micrograms/ml. <b>Tablet:</b> 62.5 micrograms; 250 micrograms.
<i>furosemide</i>	<b>Injection:</b> 10 mg/ml in 2-ml ampoule. <b>Oral liquid:</b> 20 mg/5 ml. <b>Tablet:</b> 40 mg.

<i>Complementary List</i>	
dopamine <b>R</b>	<i>Injection: 40 mg (hydrochloride) in 5-ml vial.</i> <b>R</b> Review of safety and efficacy of dopamine in children.
<b><del>12.5 Antithrombotic medicines</del></b>	
<b>12.6 Lipid-lowering agents <b>R</b></b>	
<b>R</b> The Subcommittee noted the potential importance of these medicines in children but requested a review of the section before endorsing any medicine as essential.	
<b>13. DERMATOLOGICAL MEDICINES (topical)</b>	
<b>13.1 Antifungal medicines</b>	
benzoic acid + salicylic acid	<b>Cream or ointment: 6% + 3%.</b>
<input type="checkbox"/> miconazole	<b>Cream or ointment: 2% (nitrate).</b>
<i>Complementary List</i>	
selenium sulfide	<b>Detergent-based suspension: 2%.</b>
<b>13.2 Anti-infective medicines</b>	
<b>R</b> The Subcommittee requested a review of safety of topical antibiotics including tetracycline ointment in neonates.	
<input type="checkbox"/> methyrosanilinium chloride (gentian violet) <b>R</b>	<b>Aqueous solution: 0.5%.</b> <b>Tincture: 0.5%.</b> <b>R</b> Review of safety and toxicity of gentian violet.
neomycin sulfate + <input type="checkbox"/> bacitracin	<b>Ointment: 5 mg neomycin sulfate + 250 IU bacitracin zinc/g.</b>
potassium permanganate	<b>Aqueous solution: 1:10 000.</b>
silver sulfadiazine <b>a</b>	<b>Cream: 1%</b> <b>a</b> >2 months.
<b>13.3 Anti-inflammatory and antipruritic medicines</b>	
<input type="checkbox"/> betamethasone <b>a</b>	<b>Cream or ointment: 0.1% (as valerate).</b> <b>a</b> Hydrocortisone preferred in neonates.
calamine lotion	<b>Lotion.</b>
hydrocortisone	<b>Cream or ointment: 1% (acetate).</b>
<b>13.4 Astringent medicines</b>	
<b>R</b> The Subcommittee requested a review to determine whether these medicines are essential for children.	
<b>13.5 Medicines affecting skin differentiation and proliferation</b>	
benzoyl peroxide	<b>Cream or lotion: 5%.</b>
coal tar	<b>Solution: 5%.</b>
<input type="checkbox"/> podophyllum resin	<b>Solution: 10% to 25%.</b>
salicylic acid	<b>Solution: 5%.</b>
urea	<b>Cream or ointment: 10%.</b>

<b>13.6 Scabicides and pediculicides</b>	
<input type="checkbox"/> benzyl benzoate <b>a</b> <b>R</b>	<b>Lotion:</b> 25%. <b>a</b> >2 years. <b>R</b> Review of alternatives to benzyl benzoate for use in younger children (possible role for sulfur-based preparations in younger children).
permethrin	<b>Cream:</b> 5%. <b>Lotion:</b> 1%.
<b>14. DIAGNOSTIC AGENTS</b>	
<b>14.1 Ophthalmic medicines</b>	
fluorescein	<b>Eye drops:</b> 1% (sodium salt).
<input type="checkbox"/> tropicamide	<b>Eye drops:</b> 0.5%.
<b>14.2 Radiocontrast media <b>R</b></b>	
<b>R</b> The Subcommittee requested a review of possible alternative contrast agents for use in children.	
<i>Complementary List</i>	
<i>barium sulfate</i>	<i>Aqueous suspension.</i>
<b>15. DISINFECTANTS AND ANTISEPTICS</b>	
<b>15.1 Antiseptics</b>	
<input type="checkbox"/> chlorhexidine	<b>Solution:</b> 20% digluconate aqueous solution (needs to be diluted prior to use for cord care); 5% (digluconate) as aqueous solution for dilution.
<input type="checkbox"/> ethanol	<b>Solution:</b> 70% (denatured).
<input type="checkbox"/> polyvidone iodine	<b>Solution:</b> 10%.
<b>15.2 Disinfectants</b>	
<input type="checkbox"/> chlorine base compound	<b>Powder:</b> (0.1% available chlorine) for solution.
<input type="checkbox"/> chloroxylenol	<b>Solution:</b> 4.8%.
glutaral	<b>Solution:</b> 2%.
<b>16. DIURETICS</b>	
furosemide	<b>Injection:</b> 10 mg/ml in 2-ml ampoule. <b>Oral liquid:</b> 20 mg/5 ml. <b>Tablet:</b> 10 mg; 20 mg; 40 mg.
<i>Complementary List</i>	
<input type="checkbox"/> hydrochlorothiazide	<b>Tablet (scored):</b> 25 mg.
mannitol <b>R</b>	<b>Injectable solution:</b> 10%; 20%. <b>R</b> Review of comparative efficacy, safety and place in therapy of mannitol in children.
spironolactone <b>R</b>	<b>Oral liquid:</b> 5 mg/5 ml; 10 mg/5 ml and 25 mg/5 ml. <b>Tablet:</b> 25 mg. <b>R</b> Review of comparative efficacy, safety and place in therapy of spironolactone in children.

<b>17. GASTROINTESTINAL MEDICINES</b>																					
<i>Complementary List</i>																					
<input type="checkbox"/> pancreatic enzymes	<i>Age-appropriate formulations and doses including lipase, protease and amylase.</i>																				
<b>17.1 Antacids and other antiulcer medicines</b>																					
aluminium hydroxide	<b>Oral liquid:</b> 320 mg/5 ml. <b>Tablet:</b> 500 mg.																				
magnesium hydroxide	<b>Oral liquid:</b> equivalent to 550 mg magnesium oxide/10 ml.																				
<input type="checkbox"/> ranitidine	<b>Injection:</b> 25 mg/ml in 2-ml ampoule. <b>Oral liquid:</b> 75 mg/5 ml. <b>Tablet:</b> 150 mg (as hydrochloride).																				
<b>17.2 Antiemetic medicines</b> <b>R</b>																					
<b>R</b> The Subcommittee requested reviews of antiemetics used for nausea and vomiting in the postoperative period and also, associated with chemotherapy.																					
metoclopramide <b>a</b>	<b>Injection:</b> 5 mg (hydrochloride)/ml in 2-ml ampoule. <b>Oral liquid:</b> 5 mg/5 ml. <b>Tablet:</b> 10 mg (hydrochloride). <b>a</b> Not in neonates.																				
promethazine <b>a</b>	<b>Injection:</b> 25 mg (hydrochloride)/ml in 2-ml ampoule. <b>Oral liquid:</b> 5 mg (hydrochloride)/5 ml. <b>Tablet:</b> 10 mg; 25 mg (hydrochloride). <b>a</b> >2 years.																				
<b>17.4 Laxatives</b> <b>R</b>																					
<b>R</b> The Subcommittee noted the potential importance of these medicines in children but requested a review of the section before endorsing any medicine as essential.																					
<b>17.5 Medicines used in diarrhoea</b>																					
<b>17.5.1 Oral rehydration</b>																					
oral rehydration salts	<table> <tbody> <tr> <td>glucose:</td> <td>75 mEq</td> </tr> <tr> <td>sodium:</td> <td>75 mEq or mmol/l</td> </tr> <tr> <td>chloride:</td> <td>65 mEq or mmol/l</td> </tr> <tr> <td>potassium:</td> <td>20 mEq or mmol/l</td> </tr> <tr> <td>citrate:</td> <td>10 mmol/l</td> </tr> <tr> <td>osmolarity:</td> <td>245 mOsm/l</td> </tr> <tr> <td>glucose:</td> <td>13.5 g/l</td> </tr> <tr> <td>sodium chloride:</td> <td>2.6 g/l</td> </tr> <tr> <td>potassium chloride:</td> <td>1.5 g/l</td> </tr> <tr> <td>trisodium citrate ehydrate+:</td> <td>2.9 g/l</td> </tr> </tbody> </table> <p>+ trisodium citrate ehydrate may be replaced by sodium hydrogen carbonate (sodium bicarbonate) 2.5 g/l. However, as the stability of this latter formulation is very poor under tropical conditions, it is only recommended when manufactured for immediate use.</p>	glucose:	75 mEq	sodium:	75 mEq or mmol/l	chloride:	65 mEq or mmol/l	potassium:	20 mEq or mmol/l	citrate:	10 mmol/l	osmolarity:	245 mOsm/l	glucose:	13.5 g/l	sodium chloride:	2.6 g/l	potassium chloride:	1.5 g/l	trisodium citrate ehydrate+:	2.9 g/l
glucose:	75 mEq																				
sodium:	75 mEq or mmol/l																				
chloride:	65 mEq or mmol/l																				
potassium:	20 mEq or mmol/l																				
citrate:	10 mmol/l																				
osmolarity:	245 mOsm/l																				
glucose:	13.5 g/l																				
sodium chloride:	2.6 g/l																				
potassium chloride:	1.5 g/l																				
trisodium citrate ehydrate+:	2.9 g/l																				

<b>17.5.2 Medicines for diarrhoea in children</b>	
zinc sulfate*	<p><b>Oral liquid:</b> in 10 mg per unit dosage forms.</p> <p><b>Tablet:</b> in 10 mg per unit dosage forms.</p> <p>* In acute diarrhoea zinc sulfate should be used as an adjunct to oral rehydration salts.</p>
<del><b>17.5.3 Antidiarrhoeal (symptomatic) medicines in adults</b></del>	
<b>18. HORMONES, OTHER ENDOCRINE MEDICINES AND CONTRACEPTIVES</b>	
<b>18.1 Adrenal hormones and synthetic substitutes</b>	
fludrocortisone	<b>Tablet:</b> 100 micrograms.
hydrocortisone	<b>Tablet:</b> 5 mg; 10 mg; 20 mg.
<del><b>18.2 Androgens</b></del>	
<del><b>18.3 Contraceptives</b></del>	
<del><b>18.3.1 Oral hormonal contraceptives</b></del>	
<del><b>18.3.2 Injectable hormonal contraceptives</b></del>	
<del><b>18.3.3 Intrauterine devices</b></del>	
<del><b>18.3.4 Barrier methods</b></del>	
<del><b>18.3.5 Implantable contraceptives</b></del>	
<del><b>18.4 Estrogens</b></del>	
<b>18.5 Insulins and other antidiabetic agents</b>	
insulin injection (soluble)	<b>Injection:</b> 100 IU/ml in 10-ml vial.
intermediate-acting insulin	<b>Injection:</b> 100 IU/ml in 10-ml vial (as compound insulin zinc suspension or isophane insulin).
<i>Complementary List</i>	
metformin	<b>Tablet:</b> 500 mg (hydrochloride).
<del><b>18.6 Ovulation inducers</b></del>	
<del><b>18.7 Progestogens</b></del>	
<b>18.8 Thyroid hormones and antithyroid medicines</b>	
levothyroxine	<b>Tablet:</b> 25 micrograms; 50 micrograms; 100 micrograms (sodium salt).
<i>Complementary List</i>	
Lugol's solution	<b>Oral liquid:</b> about 130 mg total iodine/ml.
potassium iodide	<b>Tablet:</b> 60 mg.
propylthiouracil <b>R</b>	<p><b>Tablet:</b> 50 mg.</p> <p><b>R</b> Review of use of propylthiouracil in children and appropriateness of carbimazole as an alternative.</p>

<b>19. IMMUNOLOGICALS</b>	
<b>19.1 Diagnostic agents</b>	
All tuberculin should comply with the WHO Requirements for Tuberculins (Revised 1985). WHO Expert Committee on Biological Standardization. Thirty-sixth report. (WHO Technical Report Series, No. 745, 1987, Annex 1).	
tuberculin, purified protein derivative (PPD)	<b>Injection.</b>
<b>19.2 Sera and immunoglobulins</b>	
All plasma fractions should comply with the WHO Requirements for the Collection, Processing and Quality Control of Blood, Blood Components and Plasma Derivatives (Revised 1992). WHO Expert Committee on Biological Standardization. Forty-third report. (WHO Technical Report Series, No. 840, 1994, Annex 2).	
antitetanus immunoglobulin (human)	<b>Injection:</b> 500 IU in vial.
antivenom immunoglobulin*	<b>Injection.</b> * Exact type to be defined locally.
diphtheria antitoxin	<b>Injection:</b> 10 000 IU; 20 000 IU in vial.
□ rabies immunoglobulin	<b>Injection:</b> 150 IU/ml in vial.
<b>19.3 Vaccines</b>	
<p>Selection of vaccines from the Model List will need to be determined by each country after consideration of international recommendations, epidemiology and national priorities. The list below details the vaccines for which there is either a recommendation from the Strategic Advisory Group of Experts on Immunization (SAGE) (<a href="http://www.who.int/immunization/sage_conclusions/en/index.html">http://www.who.int/immunization/sage_conclusions/en/index.html</a>) and/or a WHO position paper (<a href="http://www.who.int/immunization/documents/positionpapers/en/index.html">http://www.who.int/immunization/documents/positionpapers/en/index.html</a>). This site will be updated as new position papers are published and contains the most recent information and recommendations. All vaccines should comply with the WHO Requirements for Biological Substances.</p> <p>The Subcommittee noted the need for vaccines used in children to be polyvalent.</p>	
BCG vaccine	
cholera vaccine	
diphtheria vaccine	
hepatitis A vaccine	
hepatitis B vaccine	
<i>Haemophilus influenzae</i> type b vaccine	
influenza vaccine	
Japanese encephalitis vaccine	
measles vaccine	
meningococcal meningitis vaccine	
mumps vaccine	

pertussis vaccine	
pneumococcal vaccine	
poliomyelitis vaccine	
rabies vaccine	
rotavirus vaccine	
rubella vaccine	
tetanus vaccine	
typhoid vaccine	
varicella vaccine	
yellow fever vaccine	
<b>20. MUSCLE RELAXANTS (PERIPHERALLY-ACTING) AND CHOLINESTERASE INHIBITORS <sup>R</sup></b>	
<sup>R</sup> The Subcommittee recommended a review of the alternatives available for use in children.	
neostigmine	<b>Injection:</b> 500 micrograms in 1-ml ampoule; 2.5 mg (metilsulfate) in 1-ml ampoule. <b>Tablet:</b> 15 mg (bromide).
suxamethonium	<b>Injection:</b> 50 mg (chloride)/ml in 2-ml ampoule. <b>Powder for injection:</b> (chloride), in vial.
<input type="checkbox"/> vecuronium	<b>Powder for injection:</b> 10 mg (bromide) in vial.
<i>Complementary List</i>	
<i>pyridostigmine</i>	<i>Injection:</i> 1 mg in 1-ml ampoule. <i>Tablet:</i> 60 mg (bromide).
<b>21. OPHTHALMOLOGICAL PREPARATIONS <sup>R</sup></b>	
<sup>R</sup> The Subcommittee requested a review of newer medicines for potential additions to this list.	
<b>21.1 Anti-infective agents</b>	
aciclovir	<b>Ointment:</b> 3% W/W.
<input type="checkbox"/> gentamicin	<b>Solution (eye drops):</b> 0.3% (sulfate).
<input type="checkbox"/> tetracycline	<b>Eye ointment:</b> 1% (hydrochloride).
<b>21.2 Anti-inflammatory agents</b>	
<input type="checkbox"/> prednisolone	<b>Solution (eye drops):</b> 0.5% (sodium phosphate).
<b>21.3 Local anaesthetics</b>	
<input type="checkbox"/> tetracaine <sup>a</sup>	<b>Solution (eye drops):</b> 0.5% (hydrochloride). <sup>a</sup> Not in preterm neonates.
<b>21.4 Miotics and antiglaucoma medicines</b>	

<b>21.5 Mydriatics</b>	
atropine* <sup>a</sup>	<b>Solution (eye drops):</b> 0.1%; 0.5%; 1% (sulfate). * OR homatropine or cyclopentolate. <sup>a</sup> >3 months.
<i>Complementary List</i>	
epinephrine (adrenaline) <sup>R</sup>	<b>Solution (eye drops):</b> 2% (as hydrochloride). <sup>R</sup> Review of anti-infective eye drops, identifying which are most appropriate for use in children.
<b><del>22. OXYTOXICS AND ANTI-OXYTOXICS</del></b>	
<b><del>22.1 Oxytoxics</del></b>	
<b><del>22.2 Antioxytoxics (tocolytics)</del></b>	
<b>23. PERITONEAL DIALYSIS SOLUTION</b>	
<i>Complementary List</i>	
intraperitoneal dialysis solution (of appropriate composition)	<i>Parenteral solution.</i>
<b>24. PSYCHOTHERAPEUTIC MEDICINES <sup>R</sup></b>	
<sup>R</sup> The Subcommittee noted the potential importance of these medicines in children for a variety of disorders and requests a review of the entire section before endorsing any medicine as essential.	
<b>24.1 Medicines used in psychotic disorders</b>	
<i>Complementary List</i>	
chlorpromazine	<b>Injection:</b> 25 mg (hydrochloride)/ml in 2-ml ampoule. <b>Oral liquid:</b> 25 mg (hydrochloride)/5 ml. <b>Tablet:</b> 10 mg; 25 mg; 50 mg; 100 mg (hydrochloride).
haloperidol	<b>Injection:</b> 5 mg in 1-ml ampoule. <b>Oral liquid:</b> 2 mg/ml. <b>Oral solid dosage form:</b> 0.5 mg; 2 mg; 5 mg.
<b>24.2 Medicines used in mood disorders</b>	
<b>24.2.1 Medicines used in depressive disorders</b>	
<i>Complementary List</i>	
fluoxetine <sup>a</sup>	<b>Capsule or tablet:</b> 20 mg (present as hydrochloride). <sup>a</sup> >8 years.
<b>24.2.2 Medicines used in bipolar disorders <sup>R</sup></b>	
<b>24.3 Medicines used in generalized anxiety and sleep disorders <sup>R</sup></b>	
<b>24.4 Medicines used for obsessive compulsive disorders and panic attacks <sup>R</sup></b>	
<b>24.5 Medicines used in substance dependence programmes <sup>R</sup></b>	

<b>25. MEDICINES ACTING ON THE RESPIRATORY TRACT</b>	
<b>25.1 Antiasthmatic and medicines for chronic obstructive pulmonary disease</b>	
<input type="checkbox"/> budesonide	<b>Inhalation (aerosol):</b> 50 micrograms per dose (dipropionate); 250 micrograms (dipropionate) per dose.
epinephrine (adrenaline)	<b>Injection:</b> 1 mg (as hydrochloride or hydrogen tartrate) in 1-ml ampoule.
<input type="checkbox"/> salbutamol*	<p><b>Injection:</b> 50 micrograms (as sulfate)/ml in 5-ml ampoule.</p> <p><b>Metered dose inhaler (aerosol):</b> 100 micrograms (as sulfate) per dose.</p> <p><b>Oral liquid:</b> 2 mg/5 ml.</p> <p><b>Respirator solution for use in nebulizers:</b> 5 mg (as sulfate)/ml.</p> <p><b>Tablet:</b> 2 mg; 4 mg.</p> <p>* Oral salbutamol treatment should only be considered when inhaled asthma therapy is not feasible.</p>
<b>25.2 Other medicines acting on the respiratory tract</b>	
<b>26. SOLUTIONS CORRECTING WATER, ELECTROLYTE AND ACID-BASE DISTURBANCES</b>	
<b>26.1 Oral</b>	
oral rehydration salts	See section 17.5.1.
potassium chloride	<b>Powder for solution.</b>
<b>26.2 Parenteral</b>	
glucose	<b>Injectable solution:</b> 5% (isotonic); 10% (hypertonic); 50% (hypertonic).
glucose with sodium chloride	<b>Injectable solution:</b> 5% glucose, 0.9% sodium chloride (equivalent to 150 mmol/l Na <sup>+</sup> and 150 mmol/l Cl <sup>-</sup> ); 5% glucose, 0.45% sodium chloride (equivalent to 75 mmol/l Na <sup>+</sup> and 75 mmol/l Cl <sup>-</sup> ).
potassium chloride	<b>Solution for dilution:</b> 7.5% (equivalent to K 1 mmol/ml and Cl 1 mmol/ml); 15% (equivalent to K 2 mmol/ml and Cl 2 mmol/ml).
sodium chloride	<b>Injectable solution:</b> 0.9% isotonic (equivalent to Na <sup>+</sup> 154 mmol/l, Cl <sup>-</sup> 154 mmol/l).
sodium hydrogen carbonate	<p><b>Injectable solution:</b> 1.4% isotonic (equivalent to Na<sup>+</sup> 167 mmol/l, HCO<sub>3</sub><sup>-</sup> 167 mmol/l).</p> <p><b>Solution:</b> 8.4% in 10-ml ampoule (equivalent to Na<sup>+</sup> 1000 mmol/l, HCO<sub>3</sub><sup>-</sup> 1000 mmol/l).</p>
<input type="checkbox"/> sodium lactate, compound solution	<b>Injectable solution.</b>
<b>26.3 Miscellaneous</b>	
water for injection	2-ml; 5-ml; 10-ml ampoules.

## 27. VITAMINS AND MINERALS <sup>R</sup>

<sup>R</sup> The Subcommittee noted the need for a review of this section of the list to meet public health needs in children.

ascorbic acid	<b>Tablet:</b> 50 mg.
cholecalciferol*	<b>Capsule or tablet:</b> 400 IU; 1000 IU. <b>Oral liquid:</b> 400 IU/ml. * Ergocalciferol can be used as an alternative.
iodine	<b>As iodized oil:</b> <b>Ampoule (oral or injectable):</b> 1 ml (480 mg iodine); 0.5 ml (240 mg iodine). <b>Capsule:</b> 200 mg. <b>Dispenser bottle:</b> 0.57 ml (308 mg iodine).
pyridoxine	<b>Tablet:</b> 25 mg (hydrochloride).
retinol	<b>Capsule:</b> 100 000 IU; 200 000 IU (as palmitate). <b>Oral oily solution:</b> 100 000 IU (as palmitate)/ml in multidose dispenser. <b>Tablet (sugar-coated):</b> 10 000 IU (as palmitate). <b>Water-miscible injection:</b> 100 000 IU (as palmitate) in 2-ml ampoule.
riboflavin	<b>Tablet:</b> 5 mg.
sodium fluoride	In any appropriate topical formulation.
thiamine	<b>Tablet:</b> 50 mg (hydrochloride).
<i>Complementary List</i>	
<i>calcium gluconate</i>	<b>Injection:</b> 100 mg/ml in 10-ml ampoule.

## 28. EAR, NOSE AND THROAT CONDITIONS IN CHILDREN

<sup>R</sup> Review of role of leukotriene antagonists in the management of childhood allergic rhinitis.

acetic acid	<b>Topical:</b> 2%, in alcohol.
<input type="checkbox"/> budesonide	<b>Nasal spray:</b> 100 micrograms per dose.
<input type="checkbox"/> ciprofloxacin	<b>Topical:</b> 0.3% drops.
<input type="checkbox"/> xylometazoline <sup>a</sup>	<b>Nasal spray:</b> 0.05%. <sup>a</sup> Not in children less than 3 months of age.

## 29. SPECIFIC MEDICINES FOR NEONATAL CARE

caffeine citrate	<b>Injection:</b> 20 mg/ml (equivalent to 10 mg caffeine base/ml). <b>Oral liquid:</b> 20 mg/ml (equivalent to 10 mg caffeine base/ml).
<i>Complementary List</i>	
surfactant	<b>Suspension for intratracheal instillation:</b> 25mg/ml or 80mg/ml.
<input type="checkbox"/> prostaglandin E	<b>Solution for injection:</b> <b>Prostaglandin E1:</b> 0.5 mg/ml in alcohol. <b>Prostaglandin E2:</b> 1 mg/ml.
<input type="checkbox"/> ibuprofen	<b>Solution for injection:</b> 5 mg/ml.

Table 1: Medicines with age restrictions

atropine	> 3 months
amitryptilline	> 5 years
benzyl benzoate	> 2 years
betamethasone topical preparations	Hydrocortisone preferred in neonates
cefazolin	> 1 month
ceftriaxone	> 41 weeks corrected gestational age
chlorphenamine	> 1 year
diloxanide	> 25 kg weight
doxycycline	> 8 years (except for serious infections e.g. cholera)
efavirenz	> 3 years or >10 kg weight
emtricitabine	> 3 months
fluoxetine	> 8 years
ibuprofen	> 3 months (except IV form for patent <i>ductus arteriosus</i> )
mefloquine	> 5 kg or >3 months
metoclopramide	Not in neonates
promethazine	> 2 years
saquinavir	> 25 kg weight
silver sulfadiazine	> 2 months
tetracaine	Not in preterm neonates
trimethoprim	> 6 months
xylometazoline	> 3 months

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