

NATIONAL ESSENTIAL MEDICINES LIST

FIFTH EDITION



PHARMACEUTICAL SERVICES PROGRAMME

MINISTRY OF HEALTH MALAYSIA

**NATIONAL ESSENTIAL MEDICINES LIST 5TH EDITION
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THE NATIONAL ESSENTIAL MEDICINES LIST (NEML)

BACKGROUND

The Malaysian National Essential Medicines List (NEML) was first approved by the Ministry of Health (MOH) in January 2000. Since then, the NEML has been updated in 2008, 2012 and 2014. The main goal was to safeguard the accessibility and affordability of essential medicines to the Malaysian population. In addition, this list aims to rationalise the procurement of medicines and encourage the rational use of medicines.

The NEML is a list of basic medicines that satisfy the health care needs of the majority of the population. The medicines in the appropriate dosage forms should be made accessible to individuals or the communities, in appropriate quantities with guaranteed quality and at affordable prices. Adapted from the World Health Organization (WHO) Model List of Essential Medicines, the NEML consists of locally registered medicines based on national needs. This NEML aims to act as a guide for facilities in formulating their essential lists according to their needs.

The NEML is regularly reviewed and updated to ensure the availability, accessibility, affordability and quality of medicines for the population. The NEML review process involves gathering feedbacks and opinions from healthcare professionals including consultants, specialists, doctors and pharmacists from the Ministry of Health, other ministries and private sector.

HOW TO USE THE NATIONAL ESSENTIAL MEDICINES LIST

NEML 5th edition comprises 359 chemical entities and categorises the medicines into two lists:

- **Core list:** Minimum medicine needs for a basic health care system, listing the most efficacious, safe and cost-effective medicines for priority conditions¹.
- **Complementary list:** Essential medicines for which specialised diagnostic or monitoring facilities, and/or specialist medical care, and/or specialist training are needed¹.

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

Dosage forms for each chemical entity listed are defined as below:

Term	Definition
Oral	All forms of tablet: immediate release and modified release preparation, uncoated or coated, unscored and scored, chewable, dispersible, soluble, crushable, sublingual or others; All forms of capsule: hard or soft capsule, modified release preparation, capsule-shaped tablet or caplet or others; All forms of granule; Oral powder: powder to be taken in or with water or another suitable liquid or others; Oral liquid: oral solution, syrup, suspension, emulsion and oral drop or others
Injection	All forms of injection: solution, suspension, emulsion including those constituted from powder or solution or others
Topical	All forms of topical: cream, ointment, lotion, paint or others
Eye preparation	All forms of eye preparation: drop, ointment or others
Ear preparation	All forms of ear preparation: drop, ointment or others
Inhalation	All forms of inhalation
Miscellaneous*	Other forms: enema, implant, intrauterine device, irrigation, transdermal patch, suppository, parenteral solution, pessary or others

*The specific dosage form will be stated in the list.

The **[a]** symbol indicates that there is an age or weight restriction on the use of the medicine.

¹ World Health Organization Model List of Essential Medicines, 21st List, 2019. Geneva: World Health Organization; 2019.

THE NEML 5TH EDITION

1. ANAESTHETICS, PREOPERATIVE MEDICINES AND MEDICAL GASES

Chemical Entity	Dosage Form	Notes
1.1. General anaesthetics and oxygen		
1.1.1 Inhalational medicines		
Isoflurane	Inhalation	
Nitrous oxide	Inhalation	
1.1.2 Injectable medicines		
Ketamine	Injection	
Propofol*	Injection	* Thiopental may be used as an alternative depending on availability and cost
1.2 Local anaesthetics		
Bupivacaine	Injection	
Lignocaine	Injection	
Lidocaine + epinephrine	Injection	
Complementary list		
<i>Ephedrine</i>	<i>Injection</i>	
1.3 Preoperative medications and sedation for short-term procedures		
Atropine	Injection	
Midazolam	Injection Oral	
Morphine	Injection	
1.4 Medical Gases		
Oxygen*	Inhalation	* No more than 30% oxygen should be used to initiate resuscitation of neonates less than or equal to 32 weeks of gestation

2. MEDICINES FOR PAIN AND PALLIATIVE CARE

Chemical Entity	Dosage Form	Notes
2.1 Non-opioids and non-steroidal anti-inflammatory medicines		
Acetylsalicylic acid	Oral	
Ibuprofen [a]	Oral	[a] > 3 months
Paracetamol *	Oral Suppository	* Not recommended for anti-inflammatory use due to lack of proven benefit to that effect
2.2 Opioid analgesics		
Fentanyl *	Transdermal patch	* For the management of cancer pain
Morphine	Injection Oral	
Complementary lists		
<i>Oxycodone</i>	<i>Oral</i>	<i>*Alternative to morphine for patient with severe morphine intolerance</i>
<i>Tramadol [a]</i>	<i>Injection Oral</i>	<i>[a] > 12 years</i>
<i>Dihydrocodeine tartrate</i>	<i>Oral</i>	
2.3 Medicines for other common symptoms in palliative care		
Amitriptyline	Oral	
Dexamethasone	Injection Oral	
Diazepam	Injection Oral Rectal solution	
Fluoxetine [a]	Oral	[a] > 8 years old
Haloperidol	Injection Oral	
Hyoscine butylbromide	Injection	
hyoscine hydrobromide	Injection	
Lactulose	Oral	
Loperamide	Oral	
Lorazepam	Oral	
Metoclopramide [a]	Injection Oral	[a] Not for neonates
Midazolam	Injection Oral	
Ondansetron [a]	Injection Oral	[a] > 1 month
Complementary list		
<i>Gabapentin</i>	<i>Oral</i>	

3. ANTIALLERGICS AND MEDICINES USED IN ANAPHYLAXIS

Chemical Entity	Dosage Form	Notes
Chlorpheniramine [a]	Injection Oral	[a] > 2 years
Dexamethasone	Injection	
Epinephrine (adrenaline)	Injection	
Hydrocortisone	Injection	
Loratadine	Oral	
Prednisolone	Oral	

4. ANTIDOTES AND OTHER SUBSTANCES USED IN POISONINGS

Chemical Entity	Dosage Form	Notes
4.1 Non-specific		
Charcoal, activated	Oral	
4.2 Specific		
Acetylcysteine	Injection	
Atropine	Injection	
Calcium gluconate	Injection	
Flumazenil	Injection	
Methylthioninium chloride (methylene blue)	Injection	
Naloxone	Injection	
Penicillamine	Oral	
Pralidoxime	Injection	
Sodium nitrite	Injection	
Sodium thiosulfate	Injection	
Complementary list		
<i>Deferoxamine</i>	<i>Injection</i>	
<i>Dimercaprol</i>	<i>Injection</i>	

5. ANTICONVULSANTS/ANTIEPILEPTICS

Chemical Entity	Dosage Form	Notes
Carbamazepine	Oral	
Diazepam	Injection Rectal solution	
Lamotrigine*	Oral	* As adjunctive therapy for treatment-resistant partial or generalised seizures
Magnesium sulphate*	Injection	* For use in eclampsia or severe pre-eclampsia and not for other convulsant disorders
Phenobarbital	Injection Oral	
Phenytoin	Injection Oral	
Valproic acid (sodium valproate)	Oral	
Complementary list		
<i>Valproic acid (sodium valproate)</i>	<i>Injection</i>	

6. ANTI-INFECTIVE MEDICINES

Chemical Entity	Dosage Form	Notes
6.1 Anthelmintics		
6.1.1 Intestinal anthelmintics		
Albendazole	Oral	
6.1.2 Antifilarials		
Diethylcarbamazine	Oral	

6.2 Anti-bacterials

6.2.1 Antibiotics

Antibiotics are divided into three different categories namely **ACCESS, WATCH and RESERVE groups** to facilitate the development of tools for antibiotic stewardship at local and national levels and to reduce antimicrobial resistance. These groups were made to emphasize the importance of their proper use.

ACCESS GROUP ANTIBIOTICS :

- Antibiotics that have activity against a wide range of commonly encountered susceptible pathogens
 - Antibiotics that also show lower resistance potential than antibiotics in the other groups
- These are essential antibiotics that should be widely available in Malaysian health facilities.

WATCH GROUP ANTIBIOTICS:

- Antibiotics with higher resistance potential when compared with the Access group which includes antibiotics such as third generation cephalosporins, fluoroquinolones and carbapenems
 - These antibiotics should be prescribed only for specific indications
- These medicines should be prioritised as key targets of stewardship programs and monitoring.

RESERVE GROUP ANTIBIOTICS

- Antibiotic classes that should be reserved for treatment of confirmed or suspected infections due to multi-drug-resistant organisms
- These antibiotics should be treated as “last resort” options

Chemical Entity	Dosage Form	Notes
6.2.1.1 Access group antibiotics		
Amikacin	Injection	
Amoxycillin	Injection Oral	
Amoxycillin + clavulanic acid	Injection Oral	
Ampicillin	Injection	
Benzathine benzylpenicillin	Injection	
Benzylpenicillin	Injection	
Cefazolin [a]	Injection	[a] > 1 month
Cephalexin	Oral	
Cloxacillin	Injection Oral	
Doxycycline [a]	Oral	[a] Use in children < 8 years only for life-threatening infections when no alternative exists
Erythromycin	Oral	
Gentamicin	Injection	
Metronidazole	Injection Oral Suppository	

Chemical Entity	Dosage Form	Notes
Nitrofurantoin	Oral	
Phenoxymethylpenicillin	Oral	
Procaine benzylpenicillin*	Injection	* Not recommended as first-line treatment for neonatal sepsis except in settings with high neonatal mortality, when given by trained health workers in cases where hospital care is not achievable.
Sulphamethoxazole + trimethoprim	Injection Oral	
6.2.1.2 Watch group antibiotics		
Azithromycin	Injection Oral	
Cefotaxime	Injection	
Ceftriaxone* [a]	Injection	*Do not administer with calcium and avoid in infants with hyperbilirubinaemia [a] >41 weeks corrected gestational age
Cefuroxime	Injection	
Ciprofloxacin	Injection Oral	
Piperacillin + tazobactam	Injection	
Complementary list		
<i>Ceftazidime</i>	<i>Injection</i>	
<i>Meropenem</i>	<i>Injection</i>	[a] > 3 months
<i>Vancomycin</i>	<i>Injection</i>	
6.2.1.3 Reserve group antibiotics		
Complementary list		
<i>Cefepime</i>	<i>Injection</i>	
<i>Colistin</i>	<i>Injection</i>	
<i>Linezolid</i>	<i>Injection</i> <i>Oral</i>	
<i>Polymycin B</i>	<i>Injection</i>	

Chemical Entity	Dosage Form	Notes
6.2.2 Antileprosy medicines		
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.		
Clofazimine	Oral	
Dapsone	Oral	
Rifampicin	Oral	
6.2.3 Antituberculosis medicines		
Ethambutol	Oral	
Ethambutol + isoniazid + pyrazinamide + rifampicin	Oral	
Isoniazid	Oral	
Isoniazid + rifampicin	Oral	
Pyrazinamide	Oral	
Rifampicin	Oral	
Complementary list		
<i>Amikacin</i>	<i>Injection</i>	
<i>Cycloserine</i>	<i>Oral</i>	
<i>Ethionamide</i>	<i>Oral</i>	
<i>Kanamycin</i>	<i>Injection</i>	
<i>Streptomycin</i>	<i>Injection</i>	

Chemical Entity	Dosage Form	Notes
6.3 Antifungal medicines		
Amphotericin B	Injection	
Clotrimazole	Pessary	
Fluconazole	Injection Oral	
Griseofulvin	Oral	
Itraconazole	Oral	
Nystatin	Oral	
Voriconazole*	Injection Oral	*For treatment of chronic pulmonary aspergillosis and acute invasive aspergillosis.
6.4 Antiviral medicines		
6.4.1 Antiherpes medicines		
Acyclovir	Injection Oral	
6.4.2 Antiretrovirals		
6.4.2.1 Nucleoside/Nucleotide reverse transcriptase inhibitors		
Lamivudine (3TC)	Oral	
Tenofovir disoproxil fumarate (TDF)	Oral	
Zidovudine (ZDV or AZT)	Injection Oral	
6.4.2.2 Non-nucleoside reverse transcriptase inhibitors		
Efavirenz (EFV or EFZ) [a]	Oral	[a] > 3 years or > 10 kg weight
Nevirapine (NVP) [a]	Oral	[a] > 6 weeks
6.4.2.3 Protease inhibitors		
Atazanavir [a]	Oral	[a] >25kg
Lopinavir + ritonavir (LPV/r)	Oral	
Ritonavir	Oral	
6.4.2.4 Integrase inhibitors		
Dolutegravir [a]	Oral	[a] ≥25kg
Raltegravir*	Oral	*For use in pregnant women and second-line regimens following international and national treatment guidelines.
FIXED-DOSE COMBINATIONS		
Abacavir + lamivudine	Oral	
Emtricitabine + tenofovir	Oral	
Lamivudine + zidovudine	Oral	
Lamivudine + nevirapine + stavudine	Oral	
6.4.3 Other antivirals		
Ribavirin	Oral	
Complementary list		
Oseltamivir	Oral	

Chemical Entity	Dosage Form	Notes
6.4.4 Antihepatitis medicines		
6.4.4.1 Medicines for hepatitis B		
6.4.4.1.1 Nucleoside/Nucleotide reverse transcriptase inhibitors		
Entecavir	Oral	
Tenofovir disoproxil fumarate (TDF)	Oral	
6.4.4.2 Medicines for hepatitis C		
Ribavirin*	Oral	* For the treatment of hepatitis C, in combination with peginterferon and/or direct acting anti-viral medicines
Complementary list		
<i>Pegylated interferon alfa 2a</i>	<i>Injection</i>	
6.5 Antiprotozoal medicines		
6.5.1 Antiamoebic and anti giardiasis medicines		
Metronidazole	Injection Oral	
6.5.2 Antimalarial medicines		
6.5.2.1 For curative treatment		
Artemether + lumefantrine*	Oral	* Not recommended in the first trimester of pregnancy or children < 5 kg.
Artesunate*	Injection	* To be used in combination with either amodiaquine, mefloquine or sulfadoxine + pyrimethamine.
Artesunate + mefloquine	Oral	
Chloroquine*	Oral	* Only for the treatment of <i>P.vivax</i> infection.
Doxycycline*	Oral	* Only in combination with quinine
Primaquine*	Oral	* Only for use to achieve radical cure of <i>P.vivax</i> and <i>P.ovale</i> infections.
Quinine*	Injection Oral	* Only for severe malaria, and should be used in combination with doxycycline.
Sulfadoxine + pyrimethamine	Oral	
6.5.2.2 For prophylaxis		
Doxycycline [a]	Oral	[a] > 8 years
Mefloquine [a]	Oral	[a] >5kg or >3 months
6.5.3 Antipneumocystosis and anti-toxoplasmosis medicines		
Sulfamethoxazole + trimethoprim	Oral	
Complementary list		
<i>Pentamidine</i>	<i>Injection</i>	

7. ANTIMIGRAINE MEDICINES

Chemical Entity	Dosage Form	Notes
7.1 For treatment of an acute attack		
Ibuprofen	Oral dosage form	
Paracetamol	Oral dosage form	
7.2 For prophylaxis		
Propranolol	Oral dosage form	

8. IMMUNOMODULATORS AND ANTINEOPLASTICS

Chemical Entity	Dosage Form	Notes
8.1 Immunomodulators for non-malignant disease		
Complementary list		
<i>Adalimumab*</i>	<i>Injection</i>	<i>* Etanercept, Golimumab and Infliximab are alternatives and including quality assured biosimilars</i>
<i>Azathioprine</i>	<i>Oral</i>	
<i>Ciclosporin</i>	<i>Injection</i> <i>Oral</i>	
8.2 Antineoplastics and supportive medicines		
8.2.1 Cytotoxic medicines		
Complementary list		
<i>Asparaginase</i>	<i>Injection</i>	
<i>Bendamustine</i>	<i>Injection</i>	
<i>Bleomycin</i>	<i>Injection</i>	
<i>Calcium folinate</i>	<i>Injection</i> <i>Oral</i>	
<i>Capecitabine</i>	<i>Oral</i>	
<i>Carboplatin</i>	<i>Injection</i>	
<i>Chlorambucil</i>	<i>Oral</i>	
<i>Cisplatin</i>	<i>Injection</i>	
<i>Cyclophosphamide</i>	<i>Injection</i> <i>Oral</i>	
<i>Cytarabine</i>	<i>Injection</i>	
<i>Dacarbazine</i>	<i>Injection</i>	
<i>Dactinomycin</i>	<i>Injection</i>	
<i>Daunorubicin</i>	<i>Injection</i>	
<i>Docetaxel</i>	<i>Injection</i>	
<i>Doxorubicin</i>	<i>Injection</i>	
<i>Etoposide</i>	<i>Injection</i> <i>Oral</i>	
<i>Fludarabine</i>	<i>Injection</i> <i>Oral</i>	
<i>Fluorouracil</i>	<i>Injection</i>	
<i>Gemcitabine</i>	<i>Injection</i>	
<i>Ifosfamide</i>	<i>Injection</i>	
<i>Irinotecan</i>	<i>Injection</i>	
<i>Mercaptopurine</i>	<i>Oral</i>	
<i>Methotrexate</i>	<i>Injection</i> <i>Oral</i>	
<i>Oxaliplatin</i>	<i>Injection</i>	

Chemical Entity	Dosage Form	Notes
<i>Paclitaxel</i>	<i>Injection</i>	
<i>Procarbazine</i>	<i>Oral</i>	
<i>Tioguanine</i>	<i>Oral</i>	
<i>Vinblastine</i>	<i>Injection</i>	
<i>Vincristine</i>	<i>Injection</i>	
8.2.2 Targeted therapies		
Complementary list		
<i>All-trans retinoid acid (ATRA)</i>	<i>Oral</i>	
<i>Bortezomib</i>	<i>Injection</i>	
<i>Erlotinib*</i>	<i>Oral</i>	<i>* Gefitinib as alternatives</i>
<i>Imatinib</i>	<i>Oral</i>	
<i>Nilotinib</i>	<i>Oral</i>	
<i>Rituximab*</i>	<i>Injection</i>	<i>* Including quality assured biosimilars</i>
<i>Trastuzumab*</i>	<i>Injection</i>	<i>* Including quality assured biosimilars</i>
8.2.3 Immunomodulators		
Complementary list		
<i>Filgrastim</i>	<i>Injection</i>	<i>* Including quality assured biosimilars</i>
<i>Thalidomide</i>	<i>Oral</i>	
8.2.4 Hormones and antihormones		
Complementary list		
<i>Abiraterone</i>	<i>Oral</i>	
<i>Anastrozole</i>	<i>Oral</i>	
<i>Bicalutamide</i>	<i>Oral</i>	
<i>Dexamethasone</i>	<i>Injection</i> <i>Oral</i>	
<i>Hydrocortisone</i>	<i>Injection</i>	
<i>Leuprorelin</i>	<i>Injection</i>	
<i>Methylprednisolone</i>	<i>Injection</i>	
<i>Prednisolone</i>	<i>Oral</i>	
<i>Tamoxifen</i>	<i>Oral</i>	
8.2.5 Supportive medicines		
Complementary list		
<i>Allopurinol</i>	<i>Oral</i>	
<i>Mesna</i>	<i>Injection</i> <i>Oral</i>	
<i>Zoledronic acid</i>	<i>Injection</i>	

9. ANTIPARKINSONISM MEDICINES

Chemical Entity	Dosage Form	Notes
Levodopa + carbidopa	Oral	

10. MEDICINES AFFECTING THE BLOOD

Chemical Entity	Dosage Form	Notes
10.1 Antianaemia medicines		
Ferrous salt	Oral Injection	
Folic acid	Oral	
Complementary list		
<i>Erythropoiesis-stimulating agents</i>	<i>Injection</i>	<i>* Including quality assured biosimilars.</i>
10.2 Medicines affecting coagulation		
Dabigatran	Oral	*Apixaban and Rivaroxaban are alternatives
Enoxaparin	Injection	
Heparin sodium	Injection	
Phytomenadione	Injection	
Protamine sulfate	Injection	
Tranexamic acid	Injection Oral	
Warfarin	Oral	
Complementary list		
<i>Desmopressin</i>	<i>Injection</i>	
10.3 Other medicines for haemoglobinopathies		
Complementary list		
<i>Desferrioxamine*</i>	<i>Injection</i>	<i>*Also known as Deferoxamine **Deferasirox oral form may be an alternative, depending on cost and availability</i>

11. BLOOD PRODUCTS OF HUMAN ORIGIN AND PLASMA SUBSTITUTES

Chemical Entity	Dosage Form	Notes
11. 1 Blood and blood components		
Fresh frozen plasma	Transfusion bag	
Platelets	Transfusion bag	
Red blood cells	Transfusion bag	
Whole blood	Transfusion bag	
11.2 Plasma-derived medicines		
11.2.1 Human immunoglobulins		
Anti-D immunoglobulin	Injection	
Anti-rabies immunoglobulin	Injection	
Anti-tetanus immunoglobulin	Injection	
Complementary list		
<i>Normal immunoglobulin</i>	<i>Injection</i>	
11.2.2 Blood coagulation factors		
Complementary list		
<i>Coagulation factor VIII</i>	<i>Injection</i>	
<i>Coagulation factor IX</i>	<i>Injection</i>	
11.3 Plasma substitutes		
Human Albumin	Injection	
Modified fluid gelatin	Injection	

12. CARDIOVASCULAR MEDICINES

Chemical Entity	Dosage Form	Notes
12.1 Antianginal medicines		
Bisoprolol*	Oral	*Includes Metoprolol and Carvedilol as alternatives
Glyceryl trinitrate	Oral	
Isosorbide dinitrate	Oral	
Verapamil	Oral	
Complementary lists		
<i>Glyceryl trinitrate</i>	<i>Injection</i>	
<i>Isosorbide dinitrate</i>	<i>Injection</i>	
12.2 Antiarrhythmic medicines		
Bisoprolol*	Oral	*Includes Metoprolol and Carvedilol as alternatives
Digoxin	Injection Oral	
Epinephrine (adrenaline)	Injection	
Lignocaine	Injection	
Verapamil	Injection Oral	
Complementary list		
<i>Amiodarone</i>	<i>Injection</i> <i>Oral</i>	
<i>Norepinephrine (Noradrenaline)</i>	<i>Injection</i>	
12.3 Antihypertensive medicines		
Amlodipine	Oral	
Bisoprolol*	Oral	*Includes Atenolol, Metoprolol and Carvedilol as alternatives
Enalapril	Oral	
Hydralazine*	Injection	* Use only in the acute management of severe pregnancy-induced hypertension.
Hydrochlorothiazide	Oral	
Losartan	Oral	
Labetalol	*Oral **Injection	* for pregnancy **for hypertension crisis
Methyldopa*	Oral	* Use only in the management of pregnancy-induced hypertension.
12.4 Medicines used in heart failure		

Chemical Entity	Dosage Form	Notes
Bisoprolol*	Oral	*Includes Metoprolol and Carvedilol as alternatives
Digoxin	Injection Oral	
Enalapril	Oral	
Furosemide	Injection Oral	
Losartan	Oral	
Spirolactone	Oral	
Complementary list		
<i>Dopamine</i>	<i>Injection</i>	
12.5 Antithrombotic medicines		
12.5.1 Anti-platelet medicines		
Acetylsalicylic acid	Oral	
Clopidogrel	Oral	
12.5.2 Thrombolytic medicines		
Complementary list		
<i>Alteplase</i>	<i>Injection</i>	
<i>Streptokinase</i>	<i>Injection</i>	
12.6 Lipid-lowering agents		
Gemfibrozil	Oral	
Simvastatin	Oral	

13. DERMATOLOGICAL MEDICINES (TOPICAL)

Chemical Entity	Dosage Form	Notes
13.1 Antifungal medicines		
Miconazole	Topical	
13.2 Anti-infective medicines		
Mupirocin	Topical	
Potassium permanganate	Miscellaneous	
Silver sulfadiazine [a]	Topical	[a] > 2 months
Neomycin	Topical	
13.3 Anti-inflammatory and antipruritic medicines		
Betamethasone [a]	Topical	[a] not preferred in neonates
Calamine	Topical	
Hydrocortisone*	Topical	*preferred in neonates
13.4 Medicines affecting skin differentiation and proliferation		
Aqueous cream	Topical	
Benzoyl peroxide	Topical	
Coal tar	Topical	
Salicylic acid	Topical	
13.5 Scabicides and pediculicides		
Benzyl benzoate [a]	Topical	[a] > 2 years
Permethrin	Topical	

14. DIAGNOSTIC AGENTS

Chemical Entity	Dosage Form	Notes
14.1 Ophthalmic medicines		
Fluorescein	Miscellaneous	
Tropicamide	Eye Preparation	
14.2 Radiocontrast media		
Amidotrizoate*	Injection	*As sodium or meglumine salt
Barium sulfate	Oral	
Iohexol	Injection	

15. ANTISEPTICS

Chemical Entity	Dosage Form	Notes
Acridflavin	Topical	
Alcohol	Topical	
Chlorhexidine	Topical	
Povidone iodine	Topical	

16. DIURETICS

Chemical Entity	Dosage Form	Notes
Furosemide	Injection Oral	
Hydrochlorothiazide	Oral	
Spironolactone	Oral	

17. GASTROINTESTINAL MEDICINES

Chemical Entity	Dosage Form	Notes
17.1 Antiulcer medicines and Antacid		
Omeprazole	Injection Oral	
Ranitidine	Injection Oral	
Magnesium trisilicate	Oral	
17.2 Antiemetic medicines		
Metoclopramide [a]	Injection Oral	[a] not in neonates
Ondansetron [a]	Injection Oral	[a] > 1 month
Complementary list		
<i>Aprepitant</i>	<i>Oral</i>	
17.3 Laxatives		
Bisacodyl	Oral Suppository	
Glycerin 25% and Sodium Chloride 15% Enema	Enema	
Lactulose	Oral	
17.4 Medicines used in diarrhoea		
Oral rehydration salts	Oral	
17.5 Antispasmodic Medicines		
Hyoscine	Injection Oral	

18. MEDICINES FOR ENDOCRINE DISORDERS

Chemical Entity	Dosage Form	Notes
18.1 Adrenal hormones and synthetic substitutes		
Dexamethasone	Injection Oral	
Fludrocortisone	Oral	
Hydrocortisone	Oral	
18.2 Androgens		
<i>Complementary list</i>		
<i>Testosterone</i>	<i>Injection</i>	
18.3 Estrogens		
18.4 Progestogens		
Medroxyprogesterone acetate	Oral	
18.5 Medicines for diabetes		
18.5.1 Insulins		
Insulin injection (soluble)	Injection	
Intermediate-acting insulin	Injection	
18.5.2 Oral hypoglycaemic agents		
Gliclazide	Oral	
Metformin	Oral	
18.6 Thyroid hormones and antithyroid medicines		
Carbimazole	Oral	
Levothyroxine	Oral	
Propylthiouracil	Oral	
Lugol's solution	Oral	

19. IMMUNOLOGICALS

Chemical Entity	Dosage Form	Notes
19.1 Diagnostic agents		
Tuberculin, purified protein derivative (PPD)	Injection	
19.2 Sera and immunoglobulins		
Antirabies Immunoglobulin (Human)	Injection	
Antivenene Cobra Injection	Injection	
Antivenene Pit Viper Injection	Injection	
Antivenene Serum (Sea snake) 1000 units Injection	Injection	
Diphtheria antitoxin	Injection	
Hemato Polyvalent Snake Antivenene Injection		
Neuro Polyvalent Snake Antivenene Injection	Injection	
Tetanus Immunoglobulin Human	Injection	
19.3 Vaccines		
National Immunisation Policy recommendations are determined by MOH Malaysia. Immunisation schedule is updated periodically and be accessed www.myhealth.gov.my/jadual-imunisasi/ . The following list of vaccines is in accordance with immunisation schedule 2019. All vaccines should comply to MOH requirements.		
BCG vaccine	Injection	
Diphtheria + tetanus vaccine	Injection	
Diphtheria, Tetanus, Acellular Pertussis, Inactivated Polio Virus, Haemophilus Influenza Type B Vaccine [DTaP-IPV- Hib]	Injection	
Haemophilus influenzae type b vaccine	Injection	
Hepatitis B vaccine	Injection	
HPV vaccine	Injection	
Japanese encephalitis vaccine*	Injection	*Only applicable for Sarawak
Measles vaccine	Injection	
Measles, Mumps & Rubella Vaccine (Live)	Injection	
Pneumococcal vaccine	Injection	
Poliomyelitis vaccine	Injection	
Tetanus vaccine	Injection	

20. MUSCLE RELAXANTS (PERIPHERALLY-ACTING) AND CHOLINESTERASE INHIBITORS

Chemical Entity	Dosage Form	Notes
Atracurium	Injection	
Neostigmine	Injection	
Suxamethonium	Injection	
Complementary list		
<i>Pyridostigmine</i>	<i>Oral</i>	

21. OPHTHALMOLOGICAL PREPARATIONS

Chemical Entity	Dosage Form	Notes
21.1 Anti-infective agents		
Acyclovir	Eye Preparation	
Chloramphenicol	Eye Preparation	
Gentamicin	Eye Preparation	
21.2 Anti-inflammatory agents		
Prednisolone	Eye preparation	
21.3 Local anaesthetics		
Proparacaine	Eye preparation	
21.4 Miotics and antiglaucoma medicines		
Acetazolamide	Injection Oral	
Latanoprost	Eye Preparation	
Pilocarpine	Eye Preparation	
Timolol	Eye Preparation	
21.5 Mydriatics		
Atropine [a]	Eye Preparation	[a] >3 months.
Complementary lists		
<i>Phenylephrine</i>	<i>Eye Preparation</i>	

22. MEDICINES FOR REPRODUCTIVE HEALTH AND PERINATAL CARE

Chemical Entity	Dosage Form	Notes
22.1 Contraceptives		
22.1.1 Oral hormonal contraceptive		
Ethinylestradiol + levonorgestrel	Oral	
levonorgestrel	Oral	
22.1.2 Injectable hormonal contraceptives		
Medroxyprogesterone acetate	Injection	
Norethisterone enanthate	Injection	
22.1.3 Intrauterine devices		
Copper-containing device	Intrauterine Device	
Levonorgestrel-releasing intrauterine system	Intrauterine Device	
22.1.4 Implantable contraceptive		
Etonogestrel-releasing implant	Implant	
22.2 Ovulation inducers		
<i>Complementary list</i>		
<i>Clomifene</i>	<i>Oral</i>	
22.3 Uterotonics		
Oxytocin	Injection	
Oxytocin + Ergometrine maleate	Injection	
22.4 Medicines administered to the mother		
Dexamethasone	Injection	
Tranexamic acid	Injection	
22.5 Medicines administered to the neonate		
*Chlorhexidine	Topical Solution	*Chlorhexidine 2% in 70% alcohol for umbilical cord care
<i>Complementary list</i>		
<i>Surfactant</i>	<i>Injection</i>	

23. PERITONEAL DIALYSIS SOLUTION

Chemical Entity	Dosage Form	Notes
Complementary lists		
<i>Intraperitoneal dialysis solution (of appropriate composition)</i>	<i>Parenteral solution</i>	

24. MEDICINES FOR MENTAL AND BEHAVIOURAL DISORDERS

Chemical Entity	Dosage Form	Notes
24.1 Medicines used in psychotic disorders		
Chlorpromazine	Oral	
Fluphenazine	Injection	
Haloperidol	Injection Oral	
Risperidone	Oral	
Complementary list		
<i>Clozapine</i>	<i>Oral</i>	
24.2 Medicines used in mood disorders		
24.2.1 Medicines used in depressive disorders		
Amitriptyline	Oral	
Fluoxetine [a]	Oral	[a] > 8 years
Sertraline	Oral	
24.2.2 Medicines used in bipolar disorders		
Lithium carbonate	Oral	
Valproic acid (sodium valproate)	Oral	
24.3 Medicines for anxiety disorders		
Diazepam	Oral	
Clonazepam	Oral	
24.4 Medicines used for obsessive-compulsive disorders		
Clomipramine	Oral dosage form	
24.5 Medicines for disorders due to psychoactive substance use		
Nicotine replacement therapy (NRT)	Oral Patch	
Complementary list		
<i>Methadone*</i>	<i>Oral</i>	<i>*The medicines should only be used within an established support programme.</i>

25. MEDICINES ACTING ON THE RESPIRATORY TRACT

Chemical Entity	Dosage Form	Notes
25.1 Antiasthmatic and medicines for chronic obstructive pulmonary disease		
Aminophylline	Injection	
Beclomethasone	Inhalation	
Budesonide	Inhalation	
Budesonide + formoterol	Inhalation	
Epinephrine (adrenaline)	Injection	
Ipratropium bromide	Inhalation	
Prednisolone	Oral	
Salbutamol	Injection Inhalation	
Theophylline	Oral	
25.2 Antitussives		
Diphenhydramine Hydrochloride	Oral	[a] > 2 years
25.3 Mucolytics		
Bromhexine	Oral	

26. SOLUTIONS CORRECTING WATER, ELECTROLYTE AND ACID-BASE DISTURBANCES

Chemical Entity	Dosage Form	Notes
26.1 Oral		
Oral rehydration salts	Oral	
Potassium chloride	Oral	
26.2 Parenteral		
Glucose	Injection	
Glucose with sodium chloride	Injection	
Potassium chloride	Injection	
Sodium bicarbonate	Injection	
Sodium chloride	Injection	
Sodium lactate, compound solution	Solution	
26.3 Miscellaneous		
Water for injection	Injection Irrigation	

27. VITAMINS AND MINERALS

Chemical Entity	Dosage Form	Notes
Ascorbic acid	Oral	
Calcium	Oral	
Pyridoxine	Oral	
Thiamine	Oral	
Complementary list		
<i>Calcium gluconate</i>	<i>Injection</i>	

28. EAR, NOSE AND THROAT MEDICINES

Chemical Entity	Dosage Form	Notes
Budesonide	Nasal spray	
Chloramphenicol	Ear drops	
Oxymetazoline	Nasal spray/nasal drops	[a] > 6 years

29. MEDICINES FOR DISEASES OF THE JOINTS

Chemical Entity	Dosage Form	Notes
29.1 Medicines used to treat gout		
Allopurinol	Oral dosage form	
Colchicine	Oral dosage form	
Indomethacin	Oral dosage form	
29.2 Disease-modifying agents used in rheumatoid disorders (DMARDs)		
Chloroquine	Oral dosage form	
Complementary list		
<i>Azathioprine</i>	<i>Oral dosage form</i>	
<i>Hydroxychloroquine</i>	<i>Oral dosage form</i>	
<i>Methotrexate</i>	<i>Oral dosage form</i>	
<i>Sulfasalazine</i>	<i>Oral dosage form</i>	

APPENDIXES

NEML STATISTICS

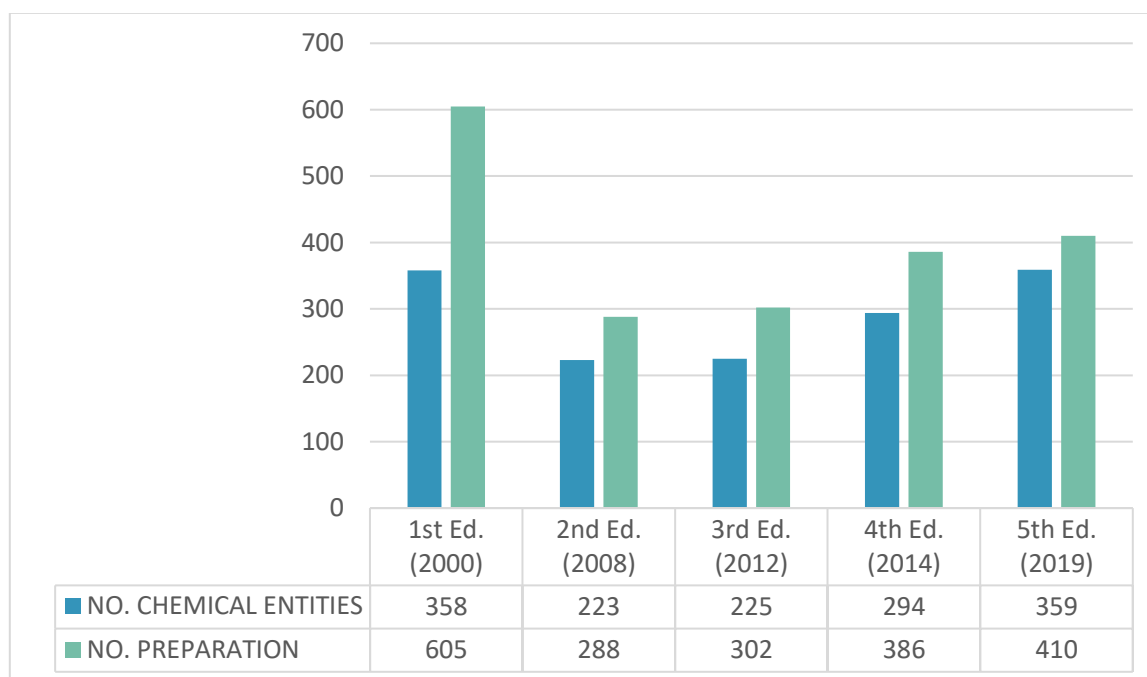


Chart 1: Number of chemical entities and number of preparations in NEML

THERAPEUTIC GROUP	NO OF CHEMICAL ENTITIES
Antidotes And Other Substances Used In Poisonings	13
Anaesthetics, Preoperative Medicines And Medical Gases	12
Antiallergics And Medicines Used In Anaphylaxis	4
Anticonvulsants/Antiepileptics	8
Anti-Infective Medicines	89
Antimigraine Medicines	3
Antiparkinsonism Medicines	1
Antiseptics	4
Blood Products Of Human Origin And Plasma Substitutes	12
Cardiovascular Medicines	32
DERMATOLOGICAL MEDICINES (Topical)	14
Diagnostic Agents	4
Diuretics	3
Ear, Nose And Throat Medicines	3
Gastrointestinal Medicines	33
Immunologicals	20
Immunomodulators And Antineoplastics	53
Medicines Acting On The Respiratory Tract	11
Medicines Affecting The Blood	12
Medicines For Diseases Of Joints	7
Medicines For Endocrine Disorders	13
Medicines For Mental And Behavioural Disorders	15
Medicines For Pain And Palliative Care	21
Medicines For Reproductive Health And Perinatal Care	14
Muscle Relaxants (Peripherally-Acting) And Cholinesterase Inhibitors	4
Ophthalmological Preparations	11
Peritoneal Dialysis Solution	1
Solutions Correcting Water, Electrolyte And Acid–Base Disturbances	9
Vitamins And Minerals	5

Table 1: Number of chemical entities for each therapeutic groups

*Note: One chemical entity may be listed in more than one group.

INDEX

- Abacavir + lamivudine, 11
 Acetazolamide, 25
 Acetylcysteine, 6
 Acetylsalicylic acid, 5, 19
 Acriflavin, 21
 Acyclovir, 11, 25
Adalimumab, 14
 Albendazole, 7
 Alcohol, 21
Allopurinol, 15, 29
All-trans retinoid acid (ATRA), 15
Alteplase, 19
 Amidotrizoate, 21
 Amikacin, 8, 10
 Aminophylline, 28
Amiodarone, 18
 Amitriptyline, 5, 27
 Amlodipine, 18
 Amoxicillin, 8
 Amoxicillin + clavulanic acid, 8
 Amphotericin, 11
 Ampicillin, 8
Anastrozole, 15
 Anti-D immunoglobulin, 17
 Anti-rabies immunoglobulin, 17
 Antirabies Immunoglobulin (Human), 24
 Anti-tetanus immunoglobulin, 17
 Antivenene Cobra Injection, 24
 Antivenene Pit Viper Injection, 24
 Antivenene Serum (Sea snake) 1000 units
 Injection, 24
 Apixaban, 16
Aprepitant, 22
 Aqueous cream, 20
 Artemether + lumefantrine, 12
 Artesunate, 12
 Ascorbic acid, 29
Asparaginase, 14
 Atazanavir, 11
 Atenolol, 18
 Atracurium, 25
 Atropine, 4, 6
Azathioprine, 14, 29
 Azithromycin, 9
 Barium sulfate, 21
 BCG vaccine, 24
 Beclomethasone, 28
Bendamustine, 14
 Benzathine benzylpenicillin, 8
 Benzoyl peroxide, 20
 Benzyl benzoate, 20
 Benzylpenicillin, 8
 Betamethasone, 20
Bicalutamide, 15
 Bisacodyl, 22
 Bisoprolol, 18, 19
Bleomycin, 14
Bortezomib, 15
 Bromhexine, 28
 Budesonide, 28, 29
 Budesonide + formoterol, 28
 Bupivacaine, 4
 Calamine, 20
 Calcium, 29
Calcium folinate, 14
 Calcium gluconate, 6, 29
Capecitabine, 14
 Carbamazepine, 7
 Carbimazole, 23
Carboplatin, 14
 Carvedilol, 18, 19
 Cefazolin, 8
Cefepime, 9
 Cefotaxime, 9
Ceftazidime, 9
 Ceftriaxone, 9
 Cefuroxime, 9
 Charcoal, activated, 6
Chlorambucil, 14
 Chloramphenicol, 25, 29
 Chlorhexidine, 21, 26
 Chloroquine, 12
 Chlorpheniramine, 6
 Chlorpromazine, 27
Ciclosporin, 14
 Ciprofloxacin, 9
Cisplatin, 14
 Clofazimine, 10
Clomifene, 26
 Clomipramine, 27
 Clonazepam, 27
 Clopidogrel, 19
 Clotrimazole, 11
 Cloxacillin, 8
Clozapine, 27
Coagulation factor IX, 17

Coagulation factor VIII, 17
 Coal tar, 20
 Colchicine, 29
Colistin, 9
 Copper-containing device, 26
Cyclophosphamide, 14
Cycloserine, 10
Cytarabine, 14
Dacarbazine, 14
Dactinomycin, 14
 Dapsone, 10
Daunorubicin, 14
Deferoxamine, 6, 16
Desmopressin, 16
 Dexamethasone, 5, 6, 15, 23, 26
 Diazepam, 5, 7, 27
 Diethylcarbamazine, 7
 Digoxin, 18, 19
Dihydrocodeine tartrate, 5
Dimercaprol, 6
 Diphenhydramine Hydrochloride, 28
 Diphtheria + tetanus vaccine, 24
 Diphtheria antitoxin, 24
 Diphtheria, Tetanus, Acellular Pertussis,
 Inactivated Polio Virus, Haemophilus
 Influenza Type B Vaccine [DTaP-IPV- Hib],
 24
Docetaxel, 14
 Dolutegravir, 11
Dopamine, 19
Doxorubicin, 14
 Doxycycline, 8, 12
 Efavirenz (EFV or EFZ), 11
 Emtricitabine + tenofovir, 11
 Enalapril, 18, 19
 Enoxaparin, 16
 Entecavir, 12
Ephedrine, 4
 Epinephrine, 6
 Epinephrine (adrenaline), 18, 28
Erlotinib, 15
 Erythromycin, 8
Erythropoiesis-stimulating agents, 16
Etanercept, 14
 Ethambutol, 10
 Ethambutol + isoniazid + pyrazinamide +
 rifampicin, 10
 Ethinylestradiol + levonorgestrel, 26
Ethionamide, 10
Etoposide, 14
 Fentanyl, 5
 Ferrous salt, 16
Filgrastim, 15
 Fluconazole, 11
Fludarabine, 14
 Fludrocortisone, 23
 Flumazenil, 6
 Fluorescein, 21
Fluorouracil, 14
 Fluoxetine, 5, 27
 Fluphenazine, 27
 Folic acid, 16
 Fresh frozen plasma, 17
 Furosemide, 19, 21
Gabapentin, 5
Gefitinib, 15
Gemcitabine, 14
 Gemfibrozil, 19
 Gentamicin, 8, 25
 Gliclazide, 23
 Glucose, 28
 Glucose with sodium chloride, 28
 Glycerin 25% and Sodium Chloride 15%
 Enema (Ravin enema), 22
 Glyceryl trinitrate, 18
Golimumab, 14
 Griseofulvin, 11
 Haemophilus influenzae type b vaccine, 24
 Haloperidol, 5, 27
 Hemato Polyvalent Snake Antivenene
 Injection, 24
 Heparin sodium, 16
 Hepatitis B vaccine, 24
 HPV vaccine, 24
 Human Albumin, 17
 Hydralazine, 18
 Hydrochlorothiazide, 18, 21
 Hydrocortisone, 6, 15, 20, 23
Hydroxychloroquine, 29
 Hyoscine, 22
 Hyoscine butylbromide, 5
 Ibuprofen, 5, 13
Ifosfamide, 14
Imatinib, 15
 Indomethacin, 29
Infliximab, 14
 Insulin injection (soluble), 23
 Intermediate-acting insulin, 23
Intraperitoneal dialysis solution, 27
 Iohexol, 21
 Ipratropium bromide, 28
Irinotecan, 14
 Isoflurane, 4
 Isoniazid, 10

Isoniazid + rifampicin, 10
 Isosorbide dinitrate, 18
 Itraconazole, 11
 Japanese encephalitis vaccine, 24
Kanamycin, 10
 Ketamine, 4
 Labetalol, 18
 Lactulose, 5, 22
 Lamivudine, 11
 Lamivudine + zidovudine, 11
 Lamotrigine, 7
 Latanoprost, 25
Leuprorelin, 15
 Levodopa + carbidopa, 16
 levonorgestrel, 26
 Levonorgestrel-releasing intrauterine system, 26
 Levothyroxine, 23
 Lidocaine + epinephrine, 4
 Lignocaine, 4, 18
Linezolid, 9
 Lithium carbonate, 27
 Loperamide, 5
 Lopinavir + ritonavir (LPV/r), 11
 Loratadine, 6
 Lorazepam, 5
 Losartan, 18, 19
 Lugol's solution, 23
 Magnesium trisilicate, 22
 Measles vaccine, 24
 Measles, Mumps & Rubella Vaccine (Live), 24
 Medroxyprogesterone acetate, 23, 26
 Mefloquine, 12
Mercaptopurine, 14
Meropenem, 9
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 Metformin, 23
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 Methyl dopa, 18
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 Methylthionium chloride (methylene blue), 6
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 Neostigmine, 25
 Neuro Polyvalent Snake Antivenene Injection, 24
 Nevirapine (NVP), 11
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Nilotinib, 15
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 Nitrous oxide, 4
Norepinephrine (Noradrenaline), 18
 Norethisterone enanthate, 26
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 Nystatin, 11
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Oseltamivir, 11
Oxaliplatin, 14
Oxycodone, 5
 Oxygen, 4
 Oxymetazoline, 29
 Oxytocin, 26
 Oxytocin + Ergometrine maleate, 26
Paclitaxel, 15
 Paracetamol, 5
 Paracetamol, 13
Pegylated interferon alfa 2a, 12
 Penicillamine, 6
Pentamidine, 12
 Permethrin, 20
 Phenobarbital, 7
 Phenoxymethylpenicillin, 9
Phenylephrine, 25
 Phenytoin, 7
 Phytomenadione, 16
 Pilocarpine, 25
 Piperacillin + tazobactam, 9
 Platelets, 17
 Poliomyelitis vaccine, 24
Polymycin B, 9
 Potassium chloride, 28
 Potassium permanganate, 20
 Povidone iodine, 21
 Pralidoxime, 6
 Prednisolone, 6, 15, 25, 28
 Primaquine, 12
 Procaine benzylpenicillin, 9
Procarbazine, 15
 Proparacaine, 25
 Propofol, 4
 Propranolol, 13
 Propylthiouracil, 23

Protamine sulfate, 16
 Pyrazinamide, 10
Pyridostigmine, 25
 Pyridoxine, 29
 Quinine, 12
 Raltegravir, 11
 Ranitidine, 22
 Red blood cells, 17
 Ribavirin, 11, 12
 Rifampicin, 10
 Risperidone, 27
 Ritonavir, 11
Rituximab, 15
 Rivaroxaban, 16
 Salbutamol, 28
 Salicylic acid, 20
 Sertraline, 27
 Silver sulfadiazine, 20
 Simvastatin, 19
 Sodium bicarbonate, 28
 Sodium chloride, 28
 Sodium lactate, compound solution, 28
 Sodium nitrite, 6
 Sodium thiosulfate, 6
 Spironolactone, 19, 21
Streptokinase, 19
Streptomycin, 10
 Sulfadoxine + pyrimethamine, 12
 Sulfamethoxazole + trimethoprim, 12
Sulfasalazine, 29
 Sulphamethoxazole + trimethoprim, 9
Surfactant, 26
 Suxamethonium, 25
Tamoxifen, 15
 Tenofovir disoproxil fumarate (TDF), 11, 12
Testosterone, 23
 Tetanus Immunoglobulin Human, 24
 Tetanus vaccine, 24
Thalidomide, 15
 Theophylline, 28
 Thiamine, 29
 Timolol, 25
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Tramadol, 5
 Tranexamic acid, 16
Trastuzumab, 15
 Tropicamide, 21
 Tuberculin, purified protein derivative (PPD),
 24
 Valproic acid (sodium valproate), 7, 27
Vancomycin, 9
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 Voriconazole, 11
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 Water for injection, 28
 Whole blood, 17
 Zidovudine (ZDV or AZT), 11
Zoledronic acid, 15