

NATIONAL ESSENTIAL MEDICINES LIST 2018



Drug Regulatory Authority of Pakistan
Ministry of National Health Services,
Regulations and Coordination
Government of Pakistan



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Acronyms

3TC	lamivudine
ABC	abacavir
API	active pharmaceutical ingredient
ATRA	all-trans retinoid acid
D4T	stavudine
DRAP	Drug Regulatory Authority of Pakistan
EML	Essential Medicines List
FDC	fixed-dose combination
GHSC-PSM	Global Health Supply Chain Management Program – Procurement and Supply Management Project
MNCH	maternal, neonatal, and child health
NEML	National Essential Medicines List
NTP	National TB Control Program
P	primary health care level
S	secondary health care level
T	tertiary health care level
TDF	tenofovir disoproxil fumarate
USAID	United States Agency for International Development
U.S.P.	United States Pharmacopeia
WHO	World Health Organization

Message from Federal Minister for National Health Services, Regulations & Coordination

National Essential Medicine List (NEML) is an important element of National Health system policies and practices and has proven to be a useful tool to help country in selecting quality, safe, efficacious and affordable medicines. Availability of NEML is an important task and quality assurance systems benchmark at the national level. The NEML is a critical document that provides a list of essential medicines for primary secondary and tertiary level health facilities. The NEML is based on disease prevalence, evidence of efficacy and safety, comparative cost-effectiveness and parameters adapted by WHO in its latest edition of Model List of Essential Medicines.



Pakistan is committed to aligning its domestic laws and policies with its obligations enshrined in the international treaties and is aspirant to ensure compliance with international best practices. Access to Essential Medicines is part of right to health and important tool to provide access of quality medicines to the people of Pakistan. Cost effectiveness is an important concern for the poor masses. The NEML at hand is also envisaged to take stock of this aspect as well.

I congratulate Drug Regulatory Authority of Pakistan (DRAP), USAID Pakistan, World Health Organization (WHO) and health experts who managed to develop this national document of public importance.

The Government of Pakistan is committed to ensure equity and quality through the delivery of essential preventative and curative care services to every citizen of Pakistan, aligned with the National Health Vision 2016 - 2025.

A handwritten signature in green ink, appearing to read 'Aamer Kiani', written in a cursive style.

Mr. Aamer Mehmood Kiani

Federal Minister

National Health Services, Regulations and Coordination, Islamabad

National Commitment on Essential Medicines

October 2018

Essential Medicines are an indispensable component of healthcare system of a country. Pakistan is committed that its domestic law and policies are consistent with its obligations as per international treaties.



Access to essential medicines is a human right. A sizeable population in the developing world lacks access to essential medicines. The availability of affordable and effective essential drugs is, therefore, one of the most visible indicators of the quality of health services. Drug shortages and quality issues continue to undermine the performance of health systems throughout the developing world. Development and implementation of Essential Drugs list plays a vital role in ensuring access of essential medicines to public. We are determined to put our all efforts to ensure the availability of essential medicines.

Development of National Essential Medicines List 2018 is an ongoing tool to provide guidance in the selection of medicines satisfying the criteria of access to safe, quality, and affordable medicines for the people of Pakistan.

Capt Zahid Saeed (Retd)

Secretary

Ministry of National Health Services, Regulations & Coordination
Government of Pakistan

Preface

Under the 18th Constitutional Amendment, health services delivery has been transferred to provinces, whereas Pakistan Vision 2016 – 2025 provides an overarching roadmap for the country which primarily includes reducing the widespread prevalence of communicable diseases, addressing inadequacies in primary, secondary healthcare facilities, improving the pharmaceutical sector to ensure the availability, affordability and quality of drugs and to promote rational use of drugs in the country.



Among the fundamental human rights, vision of essential medicines is one of essential building blocks of health systems. The list of essential medicines is aimed at satisfying the primary healthcare needs of the population. These are intended to be available within the context of functioning of health system at all times, in adequate amounts, in the appropriate dosage form with assured quality, and at a price that the individuals and community can afford.

Careful selection of a limited range of essential medicines of high quality can provide better management towards judicious use of health resources.

National standard treatment guidelines navigate selection of essential medicine with the expectation to ensure their availability with reference to proper use of medicine within the healthcare system while reducing its cost.

National Essential Medicine List NEML, 2018 is a critical document which provides and supports quality of health services across the country.

Department of Pharmacy services, Drug Regulatory Authority of Pakistan was assigned with the responsibility of revising & updating National Essential Medicine List. The Drug Regulatory Authority of Pakistan, Ministry of National Health Services, Regulations & Coordination was assisted by USAID to finalize this National Essential Medicine List for the primary, secondary and tertiary level health facilities. An essential medicines list thus developed is based on disease prevalence, evidence on efficacy and safety, comparative cost-effectiveness and parameters adapted by W.H.O in its latest edition

of Model List of Essential Medicines. WHO's criteria for inclusion and exclusion of medicines was adapted for the purpose. The NEML 2018 includes the medicines needed for adequately addressing the priority health problems as identified in National & Provincial Health strategies.

Health sector in general and Pharmaceutical sector in particular is expected to seriously consider adopting this list as a way forward to guide government in Medicine & Pharmaceutical sector policies, the determinants of medicines access and availability. Pharmacoeconomics parameters in drug selection will guide in drafting health reimbursement strategy and devising reimbursement lists. The Provincial Governments can play a pivotal role to encourage procurement and supply chain management policies based on essential medicine concepts to promote rational use of scarce public resources. Drug Regulatory authority will make all efforts to improve patient health through availability of cost efficacious, safe & quality medicines in country.

The Drug Regulatory Authority of Pakistan, acknowledges and appreciates the contribution of Mr. Sheikh Ansar Ahmad, Director Pharmacy Services Division, DRAP, Prof. Dr. Javed Akram, Ex – Vice Chancellor, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad and Dr. Muhammad Tariq, Country Director, USAID Global Health Supply Chain Program – Procurement and Supply Management (GHSC-PSM) Project, being implemented by Chemonics International Inc. for his tangible support in upgrading/review and development of NEML 2018 for ensuring governance and accountability within the health system. The Drug Regulatory Authority of Pakistan also acknowledges the technical core committee on NEML, specially the efforts of the Pharmacy Services Division for their human resource and technical input. National list will increase transparency and best value for money in procurement thus leading to increased medicine access and availability in Pakistan.



Dr. Sheikh Akhter Hussain,

Chief Executive Officer,

Drug Regulatory Authority of Pakistan,

Ministry of National Health Services, Regulations and Coordination,

Government of Pakistan.

Executive Summary

Since its inception the WHO Model Essential Medicines List (EML) has evolved and matured into a critically important element of national health system policies and practices and has proven to be a useful tool to help countries in selecting essential medicines. WHO recommends the selection of essential drugs as one of the core principles of a national drug policy because it helps set priorities for all aspects of the pharmaceutical systems shown in Figure 1.



WHO defines essential medicines as comprising those “that satisfy the needs of the majority of the population” (http://www.who.int/medicines/services/essmedicines_def/en/).



Key Policy Issues:

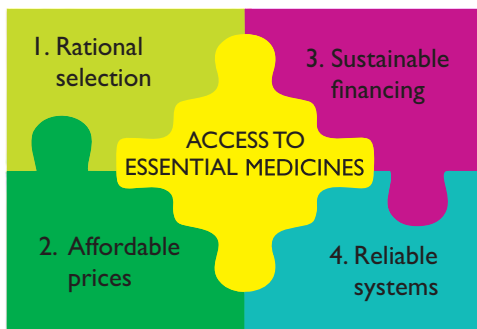
Drug selection, preferably linked to national clinical guidelines, is a crucial step in ensuring access to essential drugs and in promoting rational drug use, because no public sector or health insurance system can afford to supply or reimburse all drugs that are available on the market. Key policy issues are:

1. the adoption of the essential drugs concept to identify priorities for government involvement in the pharmaceutical sector, and especially for drug supply in the public sector and for reimbursement schemes;
2. procedures to define and update the national list(s) of essential drugs; selection mechanisms for traditional and herbal medicines. Selection mechanisms for traditional and herbal medicines.

Figure 1: Drug Selection

Every country defines its own list of essential medicines in accordance with the health status and requirements of its population. The list is revised periodically to take into account the changing prevalence of new, emerging or re-emerging diseases and new therapeutic developments; ensures drug quality and provides for the continued development of better medicines that also meet changing resistance patterns.

According to WHO Access to Medicine Framework (Figure 2) by virtue of the fact that the majority of the population in developing countries lacks access to essential medicines, therefore the EML can be used as an advocacy tool for governments to draw up their national lists to make medicines accessible, spending their resources on those medicines that are most needed and offer the best value for money.



Significance

Essential medicines are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality and at a price the individuals and the community can afford. Essential Medicine List is a tool for national health system policy towards selection of essential medicines and to ensure drug quality; and the need for continued development of better medicines for emerging diseases as well as to meet changing resistance patterns. Proper use of essential medicines improves patient safety and limits unnecessary medical spending. Lists of essential medicines also guide the procurement and supply of medicines in the public sector. WHO recommends revision of EML after every two years. NEML 2018 is being reviewed after the latest NEML that was developed in 2016.

Rationale

NEML 2018 is being developed considering the **WHO Model List 2017**, containing essential medicines with respect to global requirements, and has been customized per local requirements and priorities, Provincial essential medicine priorities and recommendations of healthcare experts.

The criteria for selection of essential medicines was based on disease prevalence, public health relevance, evidence of clinical efficacy and safety, comparative cost-effectiveness and new interventions emerging as a result of research and development in pharmaceutical industry to address the challenges of new diseases emerging globally. This is especially important for Pakistan where availability of medicines in public sector facilities is reported to be 39% (World Health Organization country office; Pakistan, 2014).

The National Essential Medicines (Drugs) List (NEML) of Pakistan was first prepared in 1994 after consultation with experts in the field. The list was reviewed in 1995, 2000, 2003, 2007 & 2013 by Ministry of Health (defunct). After devolution and

promulgation of DRAP (Drug Regulatory Authority of Pakistan) ACT 2012; Pharmacy Services Division was established under the Drug Regulatory Authority of Pakistan and assigned the responsibility to develop and periodically review NEML based on the Pakistan's disease burden, priority health conditions and affordability concerns. In this regard, the last edition of the NEML was published in 2016 which now has been reviewed and current edition of NEML 2018 has been published comprising of 428 molecules under 30 categories and 78 sub-categories.

Explanatory Note

The following symbols are used throughout the National Essential Medicine List of Pakistan 2018.

The NEML 2018 presents a list of minimum medicine needed for a basic healthcare 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 square box symbol ($\square$) 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 indicated only on the basis of reviews of efficacy and safety and when consistent with WHO clinical guidelines.

The [**a**] symbol indicates that there is an age or weight restriction on use of the medicine; details for each medicine can be found in Table I

The [**D**] symbol represents that molecules have been listed in duplicate against various therapeutic categories.

The [**c**] symbol is placed next to an individual medicine or strength of medicine it signifies that there is a specific indication for restricting its use to children.

The (**P**) symbol is placed next to an individual medicine which was part of the complementary list in the previous edition and now has been included in the core list of NEML, 2018.

The presence of an entry on the Essential Medicines List carries no assurance as to pharmaceutical quality. It is the responsibility of the relevant national or regional drug

regulatory authority to ensure that each product is of appropriate pharmaceutical quality (including stability) and that, when relevant, different products are interchangeable. 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.

The current publication of National Essential Medicine List 2018 is a guide for healthcare professionals to promote and increase the acceptability of concept and envision to promote national health strategies and reduce the disease burden in the country.



Sheikh Ansar Ahmad,
Director,
Pharmacy Services Division,
Drug Regulatory Authority of Pakistan,
Islamabad.

Alphabetical List NEML 2018

- | | | | |
|-----|--|-----|--|
| 1. | abacavir (ABC) | 30. | artemether + lumefantrine |
| 2. | acetazolamide | 31. | artesunate |
| 3. | acetic acid | 32. | artesunate + sulphadoxine
and pyrimethamine |
| 4. | acetylcysteine | 33. | ascorbic acid |
| 5. | acetylsalicylic acid | 34. | asparaginase |
| 6. | aciclovir | 35. | atazanavir |
| 7. | adenosine | 36. | atazanavir + ritonavir |
| 8. | albendazole | 37. | atenolol |
| 9. | alcohol-based hand rub | 38. | atorvastatin |
| 10. | allopurinol | 39. | atracurium |
| 11. | all-trans retinoid acid
(ATRA) | 40. | atropine |
| 12. | aluminium hydroxide +
magnesium trisilicate | 41. | azathioprine |
| 13. | amidotrizoate | 42. | azithromycin |
| 14. | amikacin | 43. | aztreonam |
| 15. | amiloride | 44. | B complex (B1/ B6 and B12) |
| 16. | aminophylline | 45. | barium sulfate |
| 17. | amiodarone | 46. | BCG vaccine |
| 18. | amitriptyline | 47. | beclomethasone |
| 19. | amlodipine | 48. | bedaquiline |
| 20. | amoxicillin | 49. | bendamustine |
| 21. | amoxicillin + clavulanic acid | 50. | benzathine benzylpenicillin |
| 22. | amphotericin B | 51. | benzoyl peroxide |
| 23. | ampicillin | 52. | benzyl benzoate |
| 24. | anastrozole | 53. | benzylpenicillin |
| 25. | anti-D immunoglobulin | 54. | betamethasone |
| 26. | anti-hepatitis B
immunoglobulin | 55. | bevacizumab |
| 27. | anti-rabies immunoglobulin | 56. | bicalutamide |
| 28. | anti-tetanus immunoglobulin | 57. | biperiden |
| 29. | anti-venom immunoglobulin | 58. | bisacodyl |
| | | 59. | bisoprolol |
| | | 60. | bleomycin |

- | | | | |
|-----|------------------------|------|--------------------------|
| 61. | budesonide | 100. | cloxacillin + ampicillin |
| 62. | bupivacaine | 101. | clozapine |
| 63. | caffeine citrate | 102. | coagulation factor VIII |
| 64. | calamine | 103. | coagulation factor IX |
| 65. | calcium | 104. | coal tar |
| 66. | calcium folinate | 105. | codeine |
| 67. | calcium gluconate | 106. | condoms |
| 68. | capecitabine | 107. | copper-containing device |
| 69. | capreomycin | 108. | cyclizine |
| 70. | carbamazepine | 109. | cyclophosphamide |
| 71. | carboplatin | 110. | cycloserine |
| 72. | cefalexin | 111. | cytarabine |
| 73. | cefazolin | 112. | dacarbazine |
| 74. | cefixime | 113. | daclatasvir |
| 75. | ceftazidime | 114. | dactinomycin |
| 76. | ceftriaxone | 115. | darunavir |
| 77. | charcoal/ activated | 116. | dasabuvir |
| 78. | chlorambucil | 117. | daunorubicin |
| 79. | chloramphenicol | 118. | deferoxamine |
| 80. | chlorhexidine | 119. | delamanid |
| 81. | chlorine base compound | 120. | desmopressin |
| 82. | chloroquine | 121. | dexamethasone |
| 83. | chloroxylenol | 122. | dextran 40 |
| 84. | chlorpheniramine | 123. | dextran 70 |
| 85. | chlorpromazine | 124. | diaphragm |
| 86. | cholecalciferol | 125. | diazepam |
| 87. | cholera vaccine | 126. | diclofenac sodium |
| 88. | ciclosporin | 127. | diethylcarbamazine |
| 89. | cinnarizine | 128. | digoxin |
| 90. | ciprofloxacin | 129. | dihydroartemisinin + |
| 91. | cisplatin | | piperquine |
| 92. | clarithromycin | 130. | diloxanide |
| 93. | clindamycin | 131. | dimenhydrinate |
| 94. | clofazimine | 132. | diphtheria antitoxin |
| 95. | clomifene | 133. | diphtheria vaccine |
| 96. | clomipramine | 134. | dobutamine |
| 97. | clopidogrel | 135. | docetaxel |
| 98. | clotrimazole | 136. | dolutegravir |
| 99. | cloxacillin | 137. | dopamine |

138.	doxorubicin	170.	fluorouracil
139.	doxycycline	171.	fluoxetine
140.	efavirenz (EFV or EFZ)	172.	fluphenazine
141.	enalapril	173.	folic acid
142.	enoxaparin	174.	fresh–frozen plasma
143.	entecavir	175.	furosemide
144.	ephedrine	176.	gemcitabine
145.	ephedrine	177.	gentamicin
146.	epinephrine (adrenaline)	178.	glibenclamide
147.	ergocalciferol	179.	gliclazide
148.	ergometrine	180.	glucagon
149.	erythromycin	181.	glucose
150.	estradiol cypionate + medroxyprogesterone acetate	182.	glucose with sodium chloride
151.	estrogen	183.	glutaral
152.	ethambutol	184.	glycerin
153.	ethambutol + isoniazid	185.	glyceryl trinitrate
154.	ethambutol + isoniazid + pyrazinamide + rifampicin	186.	glycopyrrolate
155.	ethambutol + isoniazid + rifampicin	187.	griseofulvin
156.	ethanol	188.	Haemophilus influenzae type b vaccine
157.	ethinylestradiol + levonorgestrel	189.	haloperidol
158.	ethinylestradiol + norethisterone	190.	heparin sodium
159.	ethionamide	191.	hepatitis A vaccine
160.	etonogestrel-releasing implant	192.	hepatitis B vaccine
161.	etoposide	193.	HPV vaccine
162.	ferrous salt	194.	hydralazine
163.	ferrous salt + folic acid	195.	hydrochlorothiazide
164.	filgrastim	196.	hydrocortisone
165.	fluconazole	197.	hydroxocobalamin
166.	flucytosine	198.	hydroxycarbamide
167.	fludarabine	199.	hydroxychloroquine
168.	fludrocortisone	200.	ibuprofen
169.	fluorescein	201.	ifosfamide
		202.	imatinib
		203.	influenza vaccine (seasonal)
		204.	insulin injection (soluble)
		205.	intermediate-acting insulin
		206.	Intraperitoneal dialysis solution

207.	iodine	241.	lugol's solution
208.	iohexol	242.	maggot oil (turpentine oil)
209.	ipratropium bromide	243.	magnesium oxides and hydroxides
210.	irinotecan	244.	magnesium sulfate
211.	iron sucrose	245.	mannitol
212.	isoflurane	246.	measles vaccine
213.	isoniazid	247.	mebendazole
214.	isoniazid + pyrazinamide + rifampicin	248.	medroxyprogesterone acetate
215.	isoniazid + rifampicin	249.	mefloquine
216.	isoniazid+pyridoxine+sulfame thoxazole+trimethoprim	250.	meglumine antimoniate
217.	isoprenaline	251.	meglumine iotroxate
218.	isosorbide dinitrate	252.	meningococcal meningitis vaccine
219.	itraconazole	253.	mercaptapurine
220.	ivermectin	254.	meropenem
221.	kanamycin	255.	mesna
222.	ketamine	256.	metformin
223.	labetalol	257.	methadone
224.	lamivudine (3TC)	258.	methotrexate
225.	latanoprost	259.	methylated spirit
226.	ledipasvir + sofosbuvir	260.	methyldopa
227.	leuporelin	261.	methylprednisolone
228.	levamisole	262.	methylthioninium chloride (methylene blue)
229.	levofloxacin	263.	metoclopramide
230.	levonorgestrel	264.	metronidazole
231.	levonorgestrel-releasing implant	265.	miconazole
232.	levonorgestrel-releasing intrauterine system	266.	midazolam
233.	levothyroxine	267.	miltefosine
234.	lidocaine	268.	misoprostol
235.	lidocaine + epinephrine (adrenaline)	269.	montelukast
236.	linezolid	270.	morphine
237.	lithium carbonate	271.	moxifloxacin
238.	loperamide	272.	multiple micronutrients
239.	loratadine	273.	multivitamins
240.	losartan potassium	274.	mumps vaccine
		275.	mupirocin

276.	nalbuphine HCL	312.	phenytoin
277.	naloxone	313.	phloroglucinol
278.	naproxen	314.	phytomenadione
279.	natamycin	315.	pilocarpine
280.	neostigmine	316.	piperacillin + tazobactam
281.	nevirapine (NVP)	317.	platelets
282.	nicotinamide	318.	pneumococcal vaccine
283.	nicotine replacement therapy (NRT)	319.	podophyllum resin
284.	nifedipine	320.	poliomyelitis vaccine
285.	nitrofurantoin	321.	polymyxin B (sulphate)+ bacitracin zinc
286.	nitrous oxide	322.	potassium chloride
287.	norethisterone enantate	323.	potassium iodide
288.	normal immunoglobulin	324.	potassium permanganate
289.	nystatin	325.	povidone iodine
290.	ofloxacin	326.	praziquantel
291.	olanzapine	327.	prednisolone
292.	ombitasvir + paritaprevir + ritonavir	328.	pregabalin
293.	omeprazole	329.	primaquine
294.	ondansetron	330.	procaine benzyl penicillin
295.	oral rehydration salts	331.	procarbazine
296.	oxaliplatin	332.	progesterone vaginal ring
297.	oxygen	333.	proguanil
298.	oxytocin	334.	proparacaine (hydrochloride)
299.	paclitaxel	335.	propofol
300.	p-aminosalicylic acid	336.	propranolol
301.	pancreatic enzymes	337.	propylthiouracil
302.	pancuronium	338.	prostaglandin E
303.	paracetamol	339.	protamine sulfate
304.	paromomycin	340.	pyrantel
305.	pegylated interferon alfa (2a or 2b)	341.	pyrazinamide
306.	penicillamine	342.	pyridostigmine
307.	permethrin	343.	pyridoxine
308.	pertussis vaccine	344.	rabies vaccine
309.	pheniramine	345.	raltegravir
310.	phenobarbital	346.	ranitidine
311.	phenoxymethylpenicillin	347.	red blood cells
		348.	retinol
		349.	ribavirin

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|------|------------------------------|------|-------------------------------|
| 350. | riboflavin | 386. | sulfadoxine + pyrimethamine |
| 351. | rifabutin | | co-blister / combined |
| 352. | rifampicin | | therapy (For Falciparum) |
| 353. | rifapentine | 387. | sulfamethoxazole + |
| 354. | risovastatin | | trimethoprim |
| 355. | risperidone | 388. | sulfasalazine |
| 356. | ritonavir | 389. | sumatriptan |
| 357. | rituximab | 390. | surfactant |
| 358. | rotavirus vaccine | 391. | suxamethonium |
| 359. | rubella vaccine | 392. | tamoxifen |
| 360. | salbutamol | 393. | tears natural |
| 361. | salicylic acid | 394. | tenofovir disoproxil fumarate |
| 362. | salicylic acid + | | (TDF) |
| | betamethasone | 395. | terbinafine |
| 363. | selenium sulfide | 396. | testosterone |
| 364. | senna | 397. | tetanus immunoglobulin |
| 365. | sevoflurane | | (human) |
| 366. | silver sulfadiazine | 398. | tetanus vaccine |
| 367. | simeprevir | 399. | tetracaine |
| 368. | simvastatin | 400. | tetracycline |
| 369. | sodium biphosphate | 401. | thiamine |
| 370. | sodium chloride | 402. | thioguanine |
| 371. | sodium cromoglycate | 403. | timolol |
| 372. | sodium fluoride | 404. | tirofiban |
| 373. | sodium hydrogen carbonate | 405. | tobramycin + |
| 374. | sodium lactate/ compound | | dexamethasone |
| | solution | 406. | tramadol |
| 375. | sodium nitrite | 407. | tranexamic acid |
| 376. | sodium nitroprusside | 408. | trastuzumab |
| 377. | sodium polystyrene sulfonate | 409. | tropicamide |
| 378. | sodium stibogluconate | 410. | tuberculin/ purified protein |
| 379. | sodium thiosulfate | | derivative (PPD) |
| 380. | sodium thiosulphate | 411. | typhoid vaccine |
| 381. | sofosbuvir | 412. | urea |
| 382. | spectinomycin | 413. | valproic acid (sodium |
| 383. | spironolactone | | valproate) (D) |
| 384. | streptokinase | 414. | vancomycin |
| 385. | streptomycin | 415. | varicella vaccine |
| | | 416. | vecuronium |

- 417. verapamil
- 418. vinblastine
- 419. vincristine
- 420. vinorelbine
- 421. vitamin K1 (phytonadione)
- 422. warfarin (D)
- 423. water for injection
- 424. whole blood
- 425. xylometazoline
- 426. yellow fever vaccine
- 427. zidovudine (ZDV or AZT).
- 428. zinc sulfate

National Essential Medicine List of Pakistan 2018

Therapeutic Category	Generic Name	Formulations	Service Level Category
I. Anesthetics			
I.1 General anesthetics and oxygen			
I.1.1 Inhalational medicines	isoflurane	inhalation	S, T
	sevoflurane (P)	inhalation	T
	nitrous oxide	inhalation	P, S, T
I.1.2 Injectable medicines	oxygen	inhalation (medicinal gas)	P, S, T
	ketamine	injection containing ketamine hydrochloride: 50 mg/ml in 10-ml vial	P, S, T
	propofol	injection: 10 mg/ml; 20 mg/ml	P, S, T
	glycopyrrolate (P)	Injection: 0.2 mg/ml	S, T
I.2. Local anesthetics			
	☐ bupivacaine	injection: 0.25%; 0.5% (hydrochloride) in vial	S, T
		injection for spinal anesthesia: 0.5% (hydrochloride) in 4-ml ampoule to be mixed with 7.5% glucose solution	S, T
		injection: 1%; 2% (hydrochloride) in vial	P, S, T
	☐ lidocaine (D)	injection for spinal anesthesia: 5% (hydrochloride) in 2-ml ampoule mixed with 7.5% glucose solution	P, S, T
		gel lidocaine HCL 2% w/v 15 gm tube	P, S, T
		dental cartridge: 2% (hydrochloride) + epinephrine 1:80 000	P, S, T
		injection: 1%; 2% (hydrochloride or sulfate) + epinephrine 1:200 000 in vial	P, S, T
	ephedrine	injection: 30 mg (hydrochloride)/ml in 1-ml ampoule (for use in spinal anesthesia during delivery, to prevent hypotension)	S, T
I.3. Preoperative medication and sedation for short-term procedures			
	atropine (D)	injection: 1 mg (sulfate) in 1-ml ampoule	P, S, T
		injection: 1 mg/ml	P, S, T
	☐ midazolam	oral liquid: 2 mg/ml [c]	P, S, T
		tablet: 7.5 mg, 15 mg	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
2. Medicines for Pain and Palliative Care			
2.1. Non-opioids analgesics, antipyretics, and non-steroidal anti-inflammatory medicine (NSAIM)			
	acetylsalicylic acid (D)	suppository: 50 mg to 150 mg	P, S, T
		tablet: aspirin 75 mg enteric coated tab/blister	P, S, T
		suspension: ibuprofen 100 mg/5 ml bottle	P, S, T
	ibuprofen (a) (D)	tablet: ibuprofen 400 mg blister	P, S, T
		(not for children less than 3 months old)	P, S, T
	paracetamol(D)	syrup: paracetamol 120 mg/5 ml bottle	P, S, T
		suppository: 100 mg	P, S, T
		injection: 150 mg/ml	P, S, T
		tablet: paracetamol 500 mg blister	P, S, T
	diclofenac sodium	*not recommended for anti-inflammatory use; has no proven benefit	P, S, T
		tablet: 50 mg	S, T
		injection: 75 mg/5 ml	S, T
	naproxen	tablets:250, 500 mg	S, T
2.2. Opioid analgesics			
	codeine (D)	tablet: 30 mg (phosphate)	T
	nalbuphine HCL	injection: 10mg/ml	T
	□ morphine (D)*	granules (slow release; mix with water): 20 mg–200 mg (morphine sulfate)	S, T
		injection: 10 mg (morphine hydrochloride or morphine sulphate in 1 ml ampoule)	
		oral liquid: 10 mg (morphine hydrochloride or morphine sulfate)/5 ml	
		tablet (slow release): 10 mg–200 mg (morphine hydrochloride or morphine sulfate)	
		tablet (immediate release): 10 mg (morphine sulfate)	
		*Alternatives limited to hydromorphone and oxycodone.	
2.3. Medicines for other common symptoms in palliative care			
	amitriptyline	tablet: amitriptyline HCl 10 mg, 25 mg	T
	cyclizine	injection: 50 mg/ml	P, S, T
		tablet: 50 mg	P, S, T
	dexamethasone (D)	injection: 4 mg/ml in 1-ml ampoule (as disodium phosphate salt)	P, S, T
		oral liquid: 2 mg/5 ml	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		tablet: 2 mg [c]; 4 mg	P, S, T
		injection: 5 mg/ml	P, S, T
	diazepam (D)	oral liquid: 2 mg/5 ml	P, S, T
		rectal solution: 2.5 mg, 5 mg, 10 mg	P, S, T
		tablet: 5 mg, 10 mg	P, S, T
		injection: 5 mg in 1-ml ampoule	S, T
	haloperidol (D)	oral liquid: 2 mg/ml	S, T
		solid oral dosage form: 0.5 mg, 2 mg, 5 mg	S, T
	loperamide	solid oral dosage form: 2 mg	P, S, T
		injection: 5 mg (hydrochloride)/ml in 2-ml ampoule	P, S, T
	metoclopramide	oral liquid: 5 mg/5 ml	P, S, T
		solid oral form: 10 mg (hydrochloride)	P, S, T
		injection: 2 mg base/ml in 2-ml ampoule (as hydrochloride)	S, T
		oral liquid: 4 mg base/5 ml, [c]	S, T
	ondansetron [c] (a)	solid oral dosage form: equivalent to 4 mg base; equivalent to 8 mg base; (a) > 1 month	S, T
	bisacodyl	tablet: 5 mg	P, S, T
	pregabalin (P)	capsules: 75 mg, 150 mg, 300 mg.	S, T
	tramadol (P)	capsules: 50 mg.	S, T
		injection: 50 mg/ml.	S, T
3. Anti-Allergics and Medicines Used in Anaphylaxis			
	chlorpheniramine	tablets: 4 mg (hydrogen maleate)	P, S, T
		injection: 10 mg/ml (hydrogen maleate in 1-ml ampoule)	P, S, T
	dexamethasone (D)	injection: 4 mg/ml in 1-ml ampoule (as disodium phosphate salt)	P, S, T
	epinephrine (adrenaline) (D)	injection: 1 mg (as hydrochloride or hydrogen tartrate) in 1-ml ampoule	P, S, T
	hydrocortisone (D)	powder for injection: 100 mg, 250 mg, 1 gram (as sodium succinate) in vial	P, S, T
		oral liquid: 1 mg/ml	P, S, T
	☐ loratadine *	tablet: 10 mg	P, S, T
		*There may be a role for sedating antihistamines for limited indications (EMLC)	P, S, T
	☐ prednisolone (D)	oral liquid: 5 mg/ml [c]	P, S, T
		tablet: 5 mg, 25 mg	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	pheniramine (P)	injection: pheniramine (maleate): 22.7 mg/ml in 2 ml ampoule equivalent to 25 mg pheniramine salicylate.	P, S, T
		tablet: 25 mg. 50 mg.	P, S, T
		elixir/syrup: 15 mg/5 ml.	P, S, T
4. Antidotes and Other Substances Used in Poisoning			
4.1. Non-specific			
	charcoal, activated	powder	P, S, T
4.2. Specific			
	acetyl/cysteine	injection: 200 mg/ml in 10-ml ampoule	P, S, T
	atropine	oral liquid: 10% [c]; 20% [c]	
	calcium gluconate (D)	injection: 1 mg (sulfate) in 1-ml ampoule	P, S, T
	methylthioninium chloride (methylene blue)	injection: 100 mg/ml in 10-ml ampoule	P, S, T
		injection: 10 mg/ml in 10-ml ampoule	S, T
	naloxone	injection: 400 micrograms (hydrochloride) in 1-ml ampoule	P, S, T
	sodium nitrite	injection: 30 mg/ml in 10-ml ampoule	S, T
	deferoxamine	powder for injection: 500 mg (mesilate) in vial	S, T
5. Anticonvulsants/Antiepileptics			
	carbamazepine (D)	oral liquid: 100 mg/5 ml	P, S, T
		tablet (chewable): 100 mg, 200 mg	P, S, T
		tablet (scored): 100 mg, 200 mg	P, S, T
	diazepam (D)	gel or rectal solution: 5 mg/ml in 0.5-ml, 2-ml, 4-ml tubes	P, S, T
	magnesium sulfate*	injection: 0.5g/ml in 2-ml ampoule (equivalent to 1 gram in 2-ml; 50% weight/volume); 0.5g/ml in 10-ml ampoule (equivalent to 5 grams in 10-ml; 50% weight/volume) *For use in eclampsia and severe pre-eclampsia, but not for other convulsant disorders.	P, S, T
	phenobarbital	injection: 200 mg/ml (sodium)	P, S, T
		oral liquid: 15 mg/5 ml	P, S, T
		tablet: 15 mg to 100 mg	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		injection: 50 mg/ml in 5-ml vial (sodium salt)	P, S, T
		oral liquid: 25 mg to 30 mg/5 ml.*	P, S, T
		solid oral dosage form: 25 mg, 50 mg, 100 mg (sodium salt)	P, S, T
	phenytoin	tablet (chewable): 50 mg	
		<i>*having both 25 mg/5 ml and 30 mg/5 ml strengths in the same market would be confusing in prescribing and dispensing and should be avoided</i>	P, S, T
		oral liquid: 200 mg/5 ml	P, S, T
	valproic acid (sodium valproate) (D)	tablet (enteric coated): 200 mg, 500 mg as sodium valproate	P, S, T
		injection: 100 mg/ml in 4-ml ampoule; 100 mg/ml in 10-ml ampoule	T
6. Anti-Infective Medicines			
6.1. Anthelmintics			
6.1.1 Intestinal anthelmintics	albendazole (D)	tablet (chewable): 400 mg	P, S, T
		oral liquid: 100 mg/5ml	P, S, T
	mebendazole	tablet (chewable): 100 mg, 500 mg	P, S, T
	pyrantel	oral liquid: 50 mg (as embonate or pamoate)/ml	P, S, T
		tablet (chewable): 250 mg (as embonate or pamoate)	P, S, T
	ivermectin	tablet: 3 mg	T
6.1.2 Antifilarials	levamisole	tablet: 50 mg, 150 mg (as hydrochloride)	T
	diethylcarbamazine	tablet: 50 mg, 100 mg (dihydrogen citrate)	P, S, T
6.1.3 Antischistosomes and other antitrematode medicines	praziquantel (D)	tablet: 150 mg, 600 mg	S, T
6.2. Antibacterials			
6.2.1 Beta-lactam medicines			
Key Access Antibiotics			
	amoxicillin	powder for oral liquid: 125 mg (as trihydrate)/5 ml; 250 mg (as trihydrate)/5 ml [c]	P, S, T
		injection 250 mg, 500 mg	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		solid oral dosage form: 250 mg, 500 mg (as trihydrate)	P, S, T
	amoxicillin + clavulanic acid	oral liquid: 125 mg amoxicillin + 31.25 mg clavulanic acid/5 ml and 250 mg amoxicillin + 62.5 mg clavulanic acid/5 ml [C]	S, T
		tablet: 500 mg (as trihydrate) + 125 mg (as potassium salt)	S, T
	ampicillin	powder for injection: 500 mg, 1 gram (as sodium salt) in vial	P, S, T
		capsules: 250 mg, 500 mg	P, S, T
		syrups: 125 mg, 250 mg/ml	P, S, T
	benzathine benzylpenicillin	powder for injection: 900 mg benzylpenicillin (= 1.2 million IU) in 5-ml vial [C]; 1.44 g benzylpenicillin (= 2.4 million IU) in 5-ml vial	P, S, T
	benzylpenicillin	powder for injection: 600 mg (= 1 million IU); 3 grams (= 5 million IU) (sodium or potassium salt) in vial	P, S, T
	phenoxymethylpenicillin	powder for oral liquid: 250 mg (as potassium salt)/5 ml	P, S, T
		tablet: 250 mg (as potassium salt)	P, S, T
		powder for injection: 1 gram (= 1 million IU); 3 grams (= 3 million IU) in vial	P, S, T
	procaine benzyl penicillin*	*procaine benzylpenicillin is not recommended as first-line treatment for neonatal sepsis, except in settings with high neonatal mortality, and when given by trained health workers if hospital care is not possible	P, S, T
	cefalexin [C]	powder for reconstitution with water: 125 mg/5 ml, 250 mg/5 ml (anhydrous)	P, S, T
	☐ cefazolin (a)*	solid oral dosage form: 250 mg (as monohydrate)	P, S, T
		powder for injection: 1 g (as sodium salt) in vial	P, S, T
		*for surgical prophylaxis. (a) > 1 month.	
	☐ cloxacillin	capsule: 500 mg; 1 gram (as sodium salt)	P, S, T
		powder for injection: 500 mg (as sodium salt) in vial	P, S, T
		powder for oral liquid: 125 mg (as sodium salt)/5 ml	P, S, T
	cloxacillin + ampicillin	powder for suspension @:125 mg & 250 mg /5ml	S, T
Watch Group Antibiotics			
		powder for injection: 250 mg, 500 mg, 1 gram (as sodium salt) in vial	S, T
	ceftriaxone (a)*	*do not administer with calcium and avoid in infants with hyperbilirinaemia.	
		(a) >41 weeks corrected gestational age	
	cefixime*	capsule: 400 mg (as trihydrate)	S, T
		*listed only for single-dose treatment of uncomplicated anogenital gonorrhea	

Therapeutic Category	Generic Name	Formulations	Service Level Category
		suspension: 100 mg/5 ml, 200 mg/5 ml.	S, T
		(a) >41 weeks corrected gestational age	
	piperacillin + tazobactam	powder for injection 2 g (as sodium salt) + 250 mg (as sodium salt) : 4 g (as sodium salt) + 500 mg (as sodium salt) in vial	
	cefazidime	powder for injection: 250 mg/500 mg/1 gram (as pentahydrate) in vial	S, T
	meropenem	injection: 500 mg in vial	T
6.2.2 Other antibacterials			
Key Access Antibiotics			
	chloramphenicol	capsule 250 mg	T
		oral liquid 150 mg (as palmitate)/ 5 ml	T
	amikacin (sulphate) (Reserved 2nd line)	powder for injection 1 g (sodium succinate) in vial	T
		injection: 100mg; 250mg	T
	clindamycin	capsule: 150 mg/300 mg (as hydrochloride)	S, T
		injection: 150 mg (as phosphate)/ml	S, T
		oral liquid: 75 mg/5 ml (as palmitate) [c]	S, T
		oral liquid: 25 mg/5 ml [c]; 50 mg/5 ml (anhydrous) [c]	P, S, T
	doxycycline (a) (D)	solid oral dosage form: 50 mg [c]; 100 mg (as hyclate)	P, S, T
		(a) use in children <8 years only for life-threatening infections when there is no alternative	P, S, T
		oral liquid: 250 mg/5 ml (anhydrous) [c]	S, T
		solution for iv infusion: 2 mg/ml (as hyclate) [c]	S, T
	☐ ciprofloxacin* [c] (D)	tablet: coated, 250 mg/500 mg (as hydrochloride)	S, T
		*square box is for adults only	
	moxifloxacin (P)	tablet: 200 mg/400 mg.	S, T
Watch Group Antibiotics			
	azithromycin*	capsule: 250 mg; 500 mg (anhydrous)	P, S, T
		oral liquid: 200 mg/5 ml	
		*only listed for single-dose treatment of genital chlamydia trachomatis and trachoma	
		oral liquid: 125 mg/5ml	S, T
	clarithromycin*	solid oral dosage form: 500 mg	S, T
		*for use in combination regimens to eradicate h. pylori in adults	

Therapeutic Category	Generic Name	Formulations	Service Level Category
	doxycycline (a) (D)	oral liquid: 25 mg/5 ml [c]; 50 mg/5 ml (anhydrous) [c] solid oral dosage form: 50 mg [c]; 100 mg (as hydrate) (a) use in children <8 years only for life-threatening infections when there is no alternative	P, S, T P, S, T
	☐ gentamicin (D)	injection: 10 mg, 40 mg (as sulfate)/ml in 2-ml vial	P, S, T
		injection: 500 mg in 100-ml vial	P, S, T
	☐ metronidazole (D)	oral liquid: 200 mg (as benzoate)/5 ml	P, S, T
		tablet: 400 mg	P, S, T
	nitrofurantoin	oral liquid: 25 mg/5 ml [c] tablet: 100 mg	P, S, T
	sulfamethoxazole + trimethoprim (D)	injection: 80 mg + 16 mg/ml in 5-ml ampoule, 80 mg + 16 mg/ml in 10-ml ampoule	P, S, T
		oral liquid: 200 mg + 40 mg/5ml	P, S, T
		tablet: 100 mg + 20 mg, 400 mg + 80 mg, 800 mg + 160 mg	P, S, T
	spectinomycin	powder for injection 2 g (as hydrochloride) in vial	T
	vancomycin	powder for injection: 250 mg/500 mg (as hydrochloride) in vial	T
	aztreonam (P)	injection: contains aztreonam 500 mg, 1g vial.	T
6.2.3 Antituberculosis medicines	WHO 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 pediatric dosage forms of assured pharmaceutical quality.		
	ethambutol	oral liquid: 25 mg/ml [c] tablet: 100 mg to 400 mg (hydrochloride)	As per NTP guidelines.
		tablet: 400 mg + 150 mg	
	ethambutol + isoniazid	tablet: 275 mg + 75 mg + 400 mg + 150 mg	
	ethambutol + isoniazid + pyrazinamide + rifampicin	tablet: 275 mg + 75 mg + 150 mg	
	ethambutol + isoniazid + rifampicin	oral liquid: 50 mg/5 ml [c] tablet: 100 mg to 300 mg	
	isoniazid	tablet (scored): 50 mg	
	isoniazid + pyrazinamide + rifampicin	tablet: 75 mg + 400 mg + 150 mg, 150 mg + 500 mg + 150 mg (for intermittent use three times weekly)	As per NTP guidelines.
		tablet: 75 mg + 150 mg, 150 mg + 300 mg	
	isoniazid + rifampicin	60 mg + 60 mg (for intermittent use three times a week)	

Therapeutic Category	Generic Name	Formulations	Service Level Category
		150 mg + 150 mg (for intermittent use three times a week)	
		oral liquid: 30 mg/ml [c]	
	pyrazinamide	tablet: 400 mg	
		tablet (dispersible): 150 mg	
		tablet (scored): 150 mg	
		capsule: 150 mg.*	
	rifabutin	*only use in patients who are receiving protease inhibitors.	
		oral liquid: 20 mg/ml [c]	
	rifampicin (D)	solid oral dosage form: 150 mg, 300 mg	
		tablet: 150 mg	
	rifapentine*	*for treatment of latent TB infection (LTBI) only	
	streptomycin	powder for injection: 1 gram (as sulfate) in vial	
	amikacin	powder for injection: 100 mg, 500 mg, 1 gram (as sulfate) in vial	S, T
	bedaquiline	tablet: 100 mg	
	capreomycin	powder for injection: 1 gram (as sulfate) in vial	
	cycloserine	solid oral dosage form: 250 mg	
		*can use terizidone as an alternative	
	delamanid	tablet: 50 mg	
	ethionamide*	tablet: 125 mg, 250 mg	
		*can use protonamide as an alternative	
	kanamycin	powder for injection: 1 gram (as sulfate) in vial	
	levofloxacin*	tablet: 250 mg/500 mg/750 mg	
		*can use ofloxacin and moxifloxacin as alternatives, depending on availability and program considerations	S, T
		injection for intravenous administration: 2 mg/ml in 300 ml bag	
	linezolid	powder for oral liquid: 100 mg/5 ml	
		tablet: 400 mg, 600 mg	
	p-aminosalicylic acid	granules: 4 grams in sachet	
		tablet: 500 mg	
	dofazimine	capsules: 50mg; 100mg	As per NTP guidelines.

Therapeutic Category	Generic Name	Formulations	Service Level Category
6.3. Antifungal medicines			
	amphotericin B (D)	powder for injection: 50 mg in vial (as sodium deoxycholate or liposomal complex)	S, T
	clotrimazole	vaginal cream: 1%, 10% vaginal tablet: 100 mg, 500 mg with applicator capsule: 50 mg, 150 mg, 200 mg injection: 2 mg/ml in vial oral liquid: 50 mg/5 ml capsule: 250 mg	P, S, T P, S, T P, S, T S, T P, S, T P, S, T
	☐ fluconazole*	infusion: 2.5 grams in 250 ml oral liquid: 125 mg/5 ml [c] solid oral dosage form: 125 mg, 250 mg lozenge: 100 000 IU	P, S, T P, S, T P, S, T P, S, T
	flucytosine	oral liquid: 50 mg/5 ml [c]; 100 000 IU/ml [c] pessary: 100 000 IU tablet: 100 000 IU; 500 000 IU capsule: 100 mg oral liquid: 10 mg/ ml	P, S, T P, S, T P, S, T S, T S, T
	griseofulvin		
	nystatin		
	itraconazole		
6.4. Antiviral medicines			
Based on current evidence and experience, 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). WHO emphasizes the importance of following the global and national guidelines for these products. WHO recommends and endorses the use of fixed-dose combinations (FDCs) and the development of appropriate new FDCs, including modified dosage forms, non-refrigerated products, and pediatric dosage forms of assured pharmaceutical quality.			
Scored tablets can be used for children; they can be included in the list of tablets, if adequate quality products are available.			
6.4.1 Anti-herpes medicines	☐ aciclovir [c] (D)	oral liquid: 200 mg/5 ml powder for injection: 250 vial (as sodium salt) in vial tablet: 200 mg	P, S, T P, S, T P, S, T
6.4.2.1 Nucleoside/nucleotide reverse	abacavir (ABC)	oral liquid: 100 mg as sulfate/5 ml	S, T
	lamivudine (3TC)	oral liquid: 50 mg/5 ml tablet: 150 mg	S, T S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
transcriptase inhibitors	entecavir	tablet: 0.5 mg, 1 mg	S, T
		capsule: 100 mg	S, T
	zidovudine (ZDV or AZT).	oral liquid: 50 mg/5 ml	S, T
		solution for iv infusion: 10 mg/ml in 20 ml vial	S, T
6.4.2.2 Non-nucleoside reverse transcriptase inhibitors		tablet: 300 mg	S, T
	efavirenz (EFV or EFZ) (a)	tablet: 200 mg (scored), 600 mg	S, T
		(a) >3 years or >10 kg weight	
	nevirapine (NVP)	oral liquid: 50 mg/5 ml	S, T
6.4.2.3 Protease inhibitors		tablet: 50 mg (dispersible), 200 mg	S, T
	atazanavir (a)		
	atazanavir + ritonavir	solid oral dosage form: 100 mg, 150 mg, 300 mg (as sulfate). (a) >25 kg	S, T
	darunavir (a)	tablet: 300 mg (as sulphate) + 100 mg	S, T
6.4.2.3 Protease inhibitors		tablet: 75 mg, 400 mg, 600 mg, 800 mg	S, T
		(a) >3 years	
	ritonavir*	oral liquid: 400 mg/5 ml	S, T
		*Ritonavir is recommended for use in combination as a pharmacological booster, not as an antiretroviral. All other protease inhibitors should be used in boosted forms (e.g., with ritonavir).	
6.4.3 Other antivirals		tablet (heat stable): 25 mg, 100 mg	S, T
	dolutegravir	tablet: 50 mg	T
	raltegravir	tablet: 400 mg	T
	isoniazid+pyridoxine+sulfamethoxazole+trimethoprim	tablet: 300 mg+25 mg+800 mg+160 mg	T
6.4.3 Other antivirals	ribavirin*	injection for intravenous administration: 800 mg and 1 gram in 10-ml phosphate buffer solution	S, T
		solid oral dosage form: 200 mg, 400 mg, 600 mg	
		*For treatment of viral hemorrhagic fevers.	T
6.4.4 Antihepatitis medicines			
6.4.4.1 Medicines for hepatitis B			
	entecavir	oral liquid: 0.05 mg/ml	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
6.4.4.1.1 Nucleoside/nucleotide reverse transcriptase inhibitors		tablet: 0.5 mg, 1 mg	S, T
	tenofovir disoproxil fumarate (TDF)	tablet: 300 mg (tenofovir disoproxil fumarate—equivalent to 245 mg tenofovir disoproxil)	S, T
6.4.4.2 Medicines for hepatitis C			
<i>Based on current evidence, medicines in the following classes of direct acting antiviral medicines are included as essential medicines for treatment of hepatitis C virus infections. WHO guidelines recommend specific combination therapy using medicines from different classes.</i>			
6.4.4.2.1 Nucleotide polymerase inhibitors	sofosbuvir	tablet: 400 mg	S, T
6.4.4.2.2 Protease inhibitors	simeprevir	capsule: 150 mg	S, T
6.4.4.2.3 NS5A inhibitors	daclatasvir	tablet: 30 mg; 60 mg (as hydrochloride)	S, T
6.4.4.2.4 Non-nucleoside polymerase inhibitors	dasabuvir	tablet: 250 mg	S, T
6.4.4.2.5 Other antivirals		injection for intravenous administration: 800 mg and 1 gram in 10-ml phosphate buffer solution	S, T
	ribavirin*	solid oral dosage form: 200 mg, 400 mg, 600 mg	S, T
		*To treat hepatitis C, in combination with peginterferon and/or direct acting antiviral medicines.	
	pegylated interferon alfa (2a or 2b) *	vial or pre-filled syringe: 180 micrograms (peginterferon alfa-2a), 80 micrograms, 100 micrograms (peginterferon alfa-2b)	T
		*Use in combination with ribavirin.	
	ledipasvir + sofosbuvir	tablet: 90 mg + 400 mg	T
	ombitasvir + paritaprevir + ritonavir	tablet: 12.5 mg + 75 mg + 50 mg	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
6.5. Antiprotozoal medicines			
6.5.1 Antiamoebic and anti giardiasis medicines	diloxanide (a)	tablet: 500 mg (furoate); (a) >2.5 kg injection: 500 mg in 100-ml vial	P, S, T
	□ metronidazole (D)	oral liquid: 200 mg (as benzoate)/5 ml	P, S, T
		tablet: 400 mg	P, S, T
6.5.2 Anti-leishmaniasis medicines	amphotericin B (D)	powder for injection: 50 mg in vial (as sodium deoxycholate or liposomal complex)	S, T
	miltefosine	solid oral dosage form: 10 mg, 50 mg	P, S, T
	paromomycin*	solution for intramuscular injection: 750 mg of paromomycin base (as the sulfate)	P, S, T
	meglumine antimoniate	injection 30%, equivalent to approximately 8.1 % antimony (pentavalent) in 5-ml ampoule	S, T
	sodium stibogluconate	injection: 100 mg/ml, 1 vial = 30 ml	S, T
	Use medicines in combination to treat <i>P. falciparum</i> malaria cases. The list currently recommends combinations based on treatment guidelines. WHO recognizes that not all the FDCs are listed in the WHO treatment guidelines. They encourage the development and rigorous testing for new FDCs. WHO also encourages the development and testing of rectal dosage formulations.		
6.5.3 Antimalarial medicines	artemether + lumefantrine*	tablet: 20 mg + 120 mg tablet (dispersible): 20 mg + 120 mg [c] *Not recommended in the first trimester of pregnancy or in children below 5 kg.	As per malaria control program guidelines.
		Injection: ampoules, containing 60 mg anhydrous artesunic acid with a separate ampoule of 5% sodium bicarbonate solution.	
		Use to manage severe malaria.	
	artesunate*	Rectal dosage form: 50 mg [c], 200 mg capsules (for pre-referral treatment of severe malaria only; take patients to an appropriate health facility for follow-up care) [c].	
		tablet: 50 mg	
		*Use in combination with either amodiaquine, mefloquine, or sulfadoxine + pyrimethamine.	
	primaquine*	tablet: 7.5 mg, 15 mg (as diphosphate). *Use only to achieve radical cure of <i>P. Vivax</i> and <i>P. Ovale</i> infections; give for 14 days.	

Therapeutic Category	Generic Name	Formulations	Service Level Category	
6.5.3.2 For prophylaxis	artesunate + sulphadoxine and pyrimethamine*	co-blister of (6 + 2) tablets; 2 large tablets; each large tablet contains sulfadoxine 500 mg U.S.P. + pyrimethamine 25 mg U.S.P and 6 small tablets. Each small tablet contains artesunate 50 mg U.S.P.		
		co-blister of (6 + 3) tablets; 3 large tablets, each contains sulfadoxine 500 mg U.S.P. + pyrimethamine 25 mg U.S.P.; 6 small tablets; each tablet contains artesunate 100 mg U.S.P.		
		tablets 500mg + 25 mg		
		sulfadoxine + pyrimethamine co-blister / combined therapy (For Falciparum) (P)	oral liquid: 50 mg (as phosphate or sulfate)/5 ml tablet: 150 mg (as phosphate or sulfate)	P, S, T
		chloroquine (D)*	*For use only in central American regions, for P. Vivax infections.	P, S, T
		doxycycline (a)	solid oral dosage form: 100 mg (as hydrochloride or hyclate) (a) >8 years.	P, S, T
		mefloquine (a) (D)	tablet: 250 mg (as hydrochloride)	
			(a) >5 kg or >3 months	
		proguanil*	tablet: 100 mg (as hydrochloride)	
			*Use only in combination with chloroquine.	As per malaria control program guidelines.
	dihydroartemisinin + piperquine (P)	film-coated tablet: contains piperquin tetraphosphate (as tetrahydrate + dihydroartemisinin; 320 + 40 mg and 160 mg + 20 mg.		
7. Antimigraine Medicines				
7.1. For treatment of acute attack				
	acetylsalicylic acid	tablet: 300 mg to 500 mg	P, S, T	
	ibuprofen [c] (D)	tablet: 200 mg, 400 mg	P, S, T	
	paracetamol	oral liquid: 125 mg/5 ml [c]	P, S, T	
		tablet: 300 mg to 500 mg	P, S, T	
	cinnarizine (P)	tablets: contains cinnarizine 25 mg.	S, T	
		injection: 6 mg.	S, T	
	sumatriptan (P)	tablets: 50 mg.	S, T	
7.2. For prophylaxis				
	☐ propranolol	tablet: 20 mg, 40 mg (hydrochloride)	P, S, T	

Therapeutic Category	Generic Name	Formulations	Service Level Category
8. Anti-Neoplastic and Immunosuppressives			
<i>Use the medicines listed below only according to the protocols for treating the diseases.</i>			
8.1. Immunosuppressive medicines			
	azathioprine (D)	powder for injection: 100 mg (as sodium salt) in vial tablet (scored): 50 mg	T
	cidospirin	capsule: 25 mg concentrate for injection: 50 mg/ml in 1-ml ampoule for organ transplantation	T
8.2. Cytotoxic and adjuvant medicines			
	all-trans retinoid acid (ATRA)	capsule: 10 mg o- acute promyelocytic leukemia.	T
	allopurinol [c] (D)	tablet: 100 mg, 300 mg	S, T
	asparaginase	powder for injection: 10 000 IU in vial o- acute lymphoblastic leukemia.	T
	bendamustine	injection: 45 mg/0.5 ml, 180 mg/2 ml o- chronic lymphocytic leukemia -follicular lymphoma.	T
	bleomycin	powder for injection: 15 mg (as sulfate) in vial -Hodgkin lymphoma -Kaposi sarcoma -Ovarian germ cell tumor o -Testicular germ cell tumor.	T
	calcium folinate	injection: 3 mg/ml in 10-ml ampoule tablet: 15 mg -early stage colon cancer -early stage rectal cancer -early stage breast cancer -gestational trophoblastic neoplasia -metastatic colorectal cancer o-osteosarcoma o-Burkitt lymphoma	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	capecitabine	tablet: 150 mg, 500 mg	T
		-early stage colon cancer	
		-early stage rectal cancer	
		-metastatic breast cancer	
	carboplatin	-metastatic colorectal cancer	T
		injection: 50 mg/5 ml, 150 mg/15 ml, 450 mg/45 ml, 600 mg/60 ml	
		-early stage breast cancer	
		-epithelial ovarian cancer	
	chlorambucil	- nasopharyngeal cancer, non-small cell lung cancer	T
		- osteosarcoma	
		- retinoblastoma.	
		tablet: 2 mg	
	cisplatin	-chronic lymphocytic leukemia.	T
		injection: 50 mg/50 ml, 100 mg/100 ml	
		-cervical cancer (as a radiosensitizer)	
		-head and neck cancer (as a radiosensitizer)	
	cyclophosphamide	-nasopharyngeal cancer (as a radio-sensitizer)	T
		-non-small cell lung cancer	
		-osteosarcoma	
		-ovarian germ cell tumor	
	cyclophosphamide	-testicular germ cell tumor	T
		powder for injection: 500 mg in vial	
		tablet: 25 mg	
		- chronic lymphocytic leukemia	
		- diffuse large b-cell lymphoma	
		- early stage breast cancer	
		- gestational trophoblastic neoplasia	
		- hodgkin lymphoma	
		- follicular lymphoma	
		- rhabdomyosarcoma	
		- ewing sarcoma	
		-acute lymphoblastic leukemia	

Therapeutic Category	Generic Name	Formulations	Service Level Category
		- burkitt lymphoma - metastatic breast cancer. powder for injection: 100 mg in vial	
	cytarabine	o -acute myelogenous leukemia o- acute lymphoblastic leukemia o- acute promyelocytic leukemia o- burkitt lymphoma. powder for injection: 100 mg in vial	T
	dacarbazine	o -hodgkin lymphoma. powder for injection: 500 micrograms in vial	T
	dactinomycin	- gestational trophoblastic neoplasia - rhabdomyosarcoma - wilms tumor. powder for injection: 50 mg (hydrochloride) in vial	T
	daunorubicin	- acute lymphoblastic leukemia - acute myelogenous leukemia - acute promyelocytic leukemia. injection: 20 mg/ml, 40 mg/ml	T
	docetaxel	o -early stage breast cancer o -metastatic breast cancer o -metastatic prostate cancer. powder for injection: 10 mg, 50 mg (hydrochloride) in vial	T
	doxorubicin	o -diffuse large b-cell lymphoma o -early stage breast cancer o -hodgkin lymphoma o -kaposi sarcoma, - follicular lymphoma o -metastatic breast cancer - osteosarcoma o -ewing sarcoma	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		o -acute lymphoblastic leukemia -wilm's tumor o -burkitt lymphoma	
		capsule: 100 mg. injection: 20 mg/ml in 5-ml ampoule: -testicular germ cell tumor o -gestational trophoblastic neoplasia o -hodgkin lymphoma o -non-small cell lung cancer o -ovarian germ cell tumor o -retinoblastoma o -ewing sarcoma o -acute lymphoblastic leukemia o -burkitt lymphoma.	
	etoposide	powder for injection: 50 mg (phosphate) in vial tablet: 10 mg o -chronic lymphocytic leukemia.	T
	fludarabine	injection: 50 mg/ml in 5-ml ampoule o -early stage breast cancer o -early stage colon cancer o -early stage rectal cancer o -metastatic colorectal cancer -nasopharyngeal cancer.	T
	fluorouracil (D)	injection: 120 micrograms/0.2 ml; 300 micrograms/0.5 ml; 480 micrograms/0.8 ml in pre-filled syringe; 300 micrograms/ml in 1-ml vial; 480 mg/1.6 ml in 1.6-ml vial. - as primary prophylaxis in patients at high risk for developing febrile neutropenia associated with myelotoxic chemotherapy. - as secondary prophylaxis for patients who experienced neutropenia following prior myelotoxic chemotherapy.	T
	filgrastim	- to facilitate administration of dose-dense chemotherapy regimens.	

Therapeutic Category	Generic Name	Formulations	Service Level Category
	gemcitabine	powder for injection: 200 mg in vial, 1 g in vial o -epithelial ovarian cancer o -non-small cell lung cancer.	T
	hydroxycarbamide	solid oral dosage form: 200 mg, 250 mg, 300 mg, 400 mg, 500 mg, 1 gram o -chronic myeloid leukemia.	T
	ifosfamide	powder for injection: 500 mg vial, 1-gram vial, 2-gram vial o-ovarian and testicular germ cell tumor o-osteosarcoma o -rhabdomyosarcoma o -ewing sarcoma.	T
	imatinib	tablet: 100 mg, 400 mg -chronic myeloid leukemia -gastrointestinal stromal tumor.	T
	irinotecan	injection: 40 mg/2 ml in 2-ml vial; 100 mg/5 ml in 5-ml vial: 500 mg/25 ml in a 25-ml vial o -metastatic colorectal cancer.	T
	mercaptopurine	tablet: 50 mg o- acute lymphoblastic leukemia o -acute promyelocytic leukemia.	T
	mesna	injection: 100 mg/ml in 4-ml and 10-ml ampoules tablet: 400 mg, 600 mg o -testicular germ cell tumor o -ovarian germ cell tumor o -osteosarcoma o -rhabdomyosarcoma o -ewing sarcoma.	T
	methotrexate (D)	powder for injection: 50 mg (as sodium salt) in vial tablet: 2.5 mg (as sodium salt) o- early stage breast cancer o -gestational trophoblastic neoplasia -osteosarcoma	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		-acute lymphoblastic leukemia o- acute promyelocytic leukemia. injection: 50 mg/10 ml in 10-ml vial, 100 mg/20 ml in 20-ml vial, 200 mg/40 ml in 40-ml vial	T
	oxaliplatin	o -early stage colon cancer o -metastatic colorectal cancer. powder for injection: 6 mg/ml - epithelial ovarian cancer o-early stage breast cancer o- metastatic breast cancer o- kaposi sarcoma o-nasopharyngeal cancer o-non-small cell lung cancer -ovarian germ cell tumor. capsule: 50 mg (as hydrochloride) injection: 100 mg/10 ml in 10-ml vial; 500 mg/50 ml in 50-ml vial - diffuse large b-cell lymphoma o- chronic lymphocytic leukemia o-follicular lymphoma.	T
	paditaxel	solid oral dosage form: 40 mg o -acute lymphoblastic leukemia. powder for injection: 60 mg; 40 mg in vial o -early stage HER2 positive breast cancer o -metastatic HER2 positive breast cancer.	T
	procarbazine	powder for injection: 10 mg (sulfate) in vial o -hodgkin lymphoma o -kaposi sarcoma o -testicular germ cell tumor. -ovarian germ cell tumor.	T
	rituximab	powder for injection: 1 mg, 5 mg (sulfate) in vial o -diffuse large b-cell lymphoma	T
	thioguanine [c]		
	trastuzumab		
	vinblastine		
	vincristine		

Therapeutic Category	Generic Name	Formulations	Service Level Category
		o -gestational trophoblastic neoplasia	
		o -hodgkin lymphoma	
		o -kaposi sarcoma	
		o -follicular lymphoma	
		o -retinoblastoma	
		o -rhabdomyosarcoma,	
		o -ewing sarcoma	
		o -acute lymphoblastic leukemia	
		o -wilms tumor	
		o -burkitt lymphoma.	
	vinorelbine	injection: 10 mg/ml in 1-ml vial; 50 mg/5 ml in 5-ml vial	T
		- non-small cell lung cancer.	
		- metastatic breast cancer	
8.3. Hormones and antihormones			
	☐ anastrozole	tablet: 1 mg - early stage breast cancer - metastatic breast cancer	T
	☐ bicalutamide	tablet: 50 mg - metastatic prostate cancer	T
	dexamethasone (D)	injection: 4 mg/ml in 1-ml ampoule (as disodium phosphate salt) oral liquid: 2 mg/5 ml [c] -acute lymphoblastic leukemia	P, S, T
	☐ leuprorelin	Dose form: - early stage breast cancer - metastatic prostate cancer	T
	hydrocortisone (D)	powder for injection: 100 mg (as sodium succinate) in vial - acute lymphoblastic leukemia	P, S, T
	methylprednisolone [c]	Injection: 40 mg/mL (as sodium succinate) in 1-mL single-dose vial and 5-mL multi-dose vials; 80 mg/mL (as sodium succinate) in 1-mL single-dose vial. o - acute lymphoblastic leukemia.	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	☐ prednisolone (D)	oral liquid: 5 mg/ml [c]	S, T
		tablet: 5 mg, 25 mg	
		- chronic lymphocytic leukemia	
		- diffuse large b-cell lymphoma	
		- hodgkin lymphoma	
		- follicular lymphoma	
		- acute lymphoblastic leukemia	
	tamoxifen	- burkitt lymphoma.	T
		tablet: 10 mg, 20 mg (as citrate)	
		- early stage breast cancer	
		- metastatic breast cancer.	
9. Anti Parkinsonism Medicines			
	☐ biperiden	injection: 5 mg (lactate) in 1-ml ampoule	S, T
		tablet: 2 mg (hydrochloride)	S, T
10. Medicines Affecting the Blood			
10.1. Antianaemia medicines			
	ferrous salt	oral liquid: equivalent to 25 mg iron (as sulfate)/ml	P, S, T
		tablet: equivalent to 60 mg iron	P, S, T
	ferrous salt + folic acid	tablet: equivalent to 60 mg iron + 400 micrograms folic acid (nutritional supplement for use during pregnancy)	P, S, T
		tablet: 400 micrograms*, 1 mg, 5 mg. *use for periconceptual to prevent the first occurrence of neural tube defects.	P, S, T
	hydroxocobalamin	injection: 1 mg (as acetate, as hydrochloride or as sulfate) in 1-ml ampoule	P, S, T
	tirofiban (P)	injection: 0.25 mg/ml.	T
	iron sucrose (P)	injection: 20 mg/ml.	S, T
10.2. Medicines affecting coagulation			
	☐ enoxaparin*	injection: ampoule or pre-filled syringe 20 mg/0.2 ml; 40 mg/0.4 ml; 60 mg/0.6 ml; 80 mg/0.8 ml; 100 mg/1 ml; 120 mg/0.8 ml; 150 mg/1 ml	T
		*alternatives are limited to nadroparin and dalteparin.	
	clopidogrel	tablet: 75 mg	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	heparin sodium (D)	injection: 1000 IU/ml; 5000 IU/ml; 20 000 IU/ml in 1-ml ampoule	S, T
	phytomenadione	injection: 1 mg/ml ampoule; [c] 10 mg/ml in 5-ml tablet: 10 mg	P, S, T
	protamine sulfate (D)	injection: 10 mg/ml in 5-ml ampoule	P, S, T
	tranexamic acid	injection: 100 mg/ml in 10-ml ampoule	S, T
		capsules: 250 mg; 500 mg	P, S, T
	□ warfarin (D)	tablet: 1 mg; 2 mg; 5 mg (sodium salt)	P, S, T
	desmopressin	injection: 4 micrograms/ml (as acetate) in 1-ml ampoule	S, T
		nasal spray: 10 micrograms (as acetate) per dose	T
10.3. Other medicines for haemoglobinopathies			
	deferoxamine*	powder for injection: 500 mg (mesilate) in vial	S, T
		*deferasirox oral form may be an alternative, depending on cost and availability.	
	hydroxycarbamide	solid oral dosage form: 200 mg; 500 mg; 1 gram	S, T
11. Blood Products of Human Origin and Plasma Substitutes			
11.1. Blood and blood components			
In accordance with the World Health Assembly resolution (WHA63.12), WHO recognizes that achieving self-sufficiency—unless special circumstances prevent it—in the supply of safe blood components, based on voluntary, non-remunerated blood donation; and the security of that supply, are important national goals to prevent blood shortages and to meet the transfusion requirements for the patient population. All preparations should comply with the WHO requirements.			
	fresh-frozen plasma		T
	platelets		T
	red blood cells		S, T
	whole blood		T
11.2. Plasma-derived medicines			
All human plasma-derived medicines should comply with WHO requirements			
11.2.1 Human immunoglobulins	anti-D immunoglobulin	injection: 250 micrograms in a single-dose vial	S, T
	anti-rabies immunoglobulin	injection: 150 IU/ml in vial	S, T
	anti-tetanus immunoglobulin	injection: 500 IU in vial	S, T
		intramuscular administration: 16% protein solution	S, T
	normal immunoglobulin	* indicated for primary immune deficiency.	
		intravenous administration: 5%, 10% protein solution	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		*indicated for primary immune deficiency and Kawasaki disease subcutaneous administration: 15%, 16% protein solution	
		* indicated for primary immune deficiency.	T
11.2.2 Blood coagulation factors	☐ coagulation factor VIII	powder for injection: 500 IU/vial	S, T
	☐ coagulation factor IX	powder for injection: 500 IU/vial, 1000 IU/vial	S, T
11.3. Plasma substitutes			
	☐ dextran 70*	injectable solution: 6%	
	dextran 40 (P)	*polygeline, injectable solution; 3.5% is considered as equivalent. injection: 10%.	P, S, T
12. Cardiovascular Medicines			
12.1. Antianginal medicines			
	☐ atenolol (D)	tablet: 50 mg and 100 mg.	P, S, T
	glyceryl trinitrate	tablet (sublingual): 500 micrograms.	P, S, T
	☐ isosorbide dinitrate	tablet (sublingual): 5 mg.	P, S, T
	losartan potassium	tablet: 50mg	S
	propranolol	tablets: 10mg, 40mg, 80 mg	S
	verapamil (D)	tablet: 40 mg, 80 mg (hydrochloride).	S, T
12.2. Antiarrhythmic medicines			
	☐ bisoprolol (D)	tablet: 1.25 mg, 5 mg.	P, S, T
		* includes metoprolol and carvedilol as alternatives.	
		injection: 250 micrograms/ml in 2-ml ampoule.	S, T
	digoxin (D)	oral liquid: 50 micrograms/ml.	S, T
		tablet: 62.5 micrograms, 250 micrograms.	S, T
	epinephrine (adrenaline) (D)	injection: 100 micrograms/ml (as acid tartrate or hydrochloride) in 10-ml ampoule.	P, S, T
	lidocaine	injection: 20 mg (hydrochloride)/ml in 5-ml ampoule.	P, S, T
	verapamil (D)	injection: 2.5 mg (hydrochloride)/ml in 2-ml ampoule.	S, T
		tablet: 40 mg, 80 mg (hydrochloride).	S, T
	amiodarone	injection: 50 mg/ml in 3-ml ampoule (hydrochloride).	S, T
		tablet: 100 mg, 200 mg, 400 mg (hydrochloride).	S, T
	adenosine (P)	injection: 3 mg/ml.	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	labetalol (P)	intravenous injection: 5 mg/ml.	P, S, T
12.3. Antihypertensive medicines			
	☐ amlodipine	tablet: 5 mg (as maleate, mesylate, or besylate). tablet: 1.25 mg, 5 mg.	P, S, T
	☐ bisoprolol (D)*	*includes atenolol, metoprolol, and carvedilol as alternatives. do not use atenolol as a first line agent in uncomplicated hypertension in patients >60 years.	P, S, T
	propranolol	tablets: 10 mg, 40 mg, 80 mg.	P, S, T
	hydralazine (hydrochloride) (For severe PIH only)	Injection: 20 mg	S, T
	☐ enalapril (D)	tablet: 2.5 mg, 5 mg (as hydrogen maleate). powder for injection: 20 mg (hydrochloride) in ampoule.	P, S, T P, S, T
	hydralazine*	tablet: 25 mg, 50 mg (hydrochloride). *Use hydralazine only for acute management of severe pregnancy-induced hypertension. Using it to treat essential hypertension is not recommended because other medicines have shown evidence of greater efficacy and safety.	S, T
	☐ hydrochlorothiazide(D)	oral liquid: 50 mg/5 ml. solid oral dosage form: 12.5 mg, 25 mg.	P, S, T P, S, T
		injection: 20 mg.	P, S, T
		tablet: 250 mg.	P, S, T
	methyldopa*	injection: 250 mg. *Use methyldopa only to manage pregnancy-induced hypertension. Using it to treat essential hypertension is not recommended because other medicines have shown greater efficacy and safety.	P, S, T
	sodium nitroprusside	powder for infusion: 50 mg in ampoule.	T
	isoprenaline (P)	injection 1mg/ml (iv):	T
12.4. Medicines used in heart failure			
	☐ bisoprolol* (D)	tablet: 1.25 mg, 5 mg. *includes metoprolol and carvedilol as alternatives.	P, S, T
		injection: 250 micrograms/ml in 2-ml ampoule.	S, T
	digoxin (D)	oral liquid: 50 micrograms/ml.	S, T
		tablet: 62.5 micrograms, 250 micrograms.	S, T
	☐ enalapril (D)	tablet: 2.5 mg, 5 mg (as hydrogen maleate).	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		injection: 10 mg/ml in 2-ml ampoule.	S, T
	☐ furosemide (D)	oral liquid: 20 mg/5 ml [c]. tablet: 40 mg.	P, S, T P, S, T
	☐ hydrochlorothiazide (D)	oral liquid: 50 mg/5 ml. solid oral dosage form: 25 mg. tablet: 25 mg.	P, S, T P, S, T P, S, T
	spironolactone	injection: 40 mg/ml(hydrochloride) in 5-ml vial 250 mg injection.	P, S, T S, T
	dopamine	injection: 30 mg/ml.	S, T
	dobutamine		S, T
	ephedrine (P)		S, T
12.5. Antithrombotic medicines			
12.5.1 Anti-platelet medicines	acetylsalicylic acid	tablet: 100 mg.	P, S, T
	clopidogrel	tablet: 75 mg, 300 mg.	T
12.5.2 Thrombolytic medicines	streptokinase	powder for injection: 1.5 million IU in vial.	S, T
12.6. Lipid-lowering agents			
	☐ simvastatin*	tablet: 5 mg, 10 mg, 20 mg, 40 mg. *use in high-risk patients.	T
	atorvastatin (P)	tablet: 10 mg, 20 mg, 40 mg.	S, T
	risovastatin (P)	tablet: 10 mg, 20 mg, 40 mg.	S, T
13. Dermatological Medicines (topical)			
13.1. Antifungal medicines			
	☐ miconazole	cream or ointment: 2% (nitrate).	P, S, T
	selenium sulfide	detergent-based suspension: 2%.	P, S, T
	sodium thiosulfate	solution: 15%.	P, S, T
	terbinafine	cream: 1% or ointment: 1% terbinafine hydrochloride.	P, S, T
13.2. Anti-infective medicines			
	mupirocin	cream (as mupirocin calcium): 2%. ointment: 2%.	P, S, T P, S, T
	potassium permanganate	aqueous solution: 1:10 000.	P, S, T
	silver sulfadiazine (a)	cream: 1%.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		(a) >2 months.	
13.3. Anti-inflammatory and antipruritic medicines			
	☐ betamethasone (a)	cream or ointment: 0.1% (as valerate). a hydrocortisone is preferred for neonates.	P, S, T
	☐ calamine	lotion.	P, S, T
	☐ hydrocortisone	cream or ointment: 1% (acetate).	P, S, T
13.4. Medicines affecting skin differentiation and proliferation			
	benzoyl peroxide	cream or lotion: 5%.	P, S, T
	coal tar	solution: 5%.	P, S, T
	fluorouracil (D)	ointment: 5%.	S, T
	☐ podophyllum resin	solution: 10% to 25%.	S, T
	salicylic acid	solution: 5%.	P, S, T
	salicylic acid + betamethasone	lotion: 3% + 0.5 % w/v	S, T
	urea	cream or ointment: 5%, 10%.	P, S, T
13.5. Scabicides and pediculicides			
	☐ benzyl benzoate (a)	lotion: 25%. (a) >2 years.	P, S, T
		cream: 5%.	P, S, T
	permethrin	lotion: 1%.	P, S, T
13.6. Skin treatment			
	silver sulfadiazine	cream: 1%.	P, S, T
	sodium thiosulfate	solution: 15%.	P, S, T
14. Diagnostic Agents			
14.1. Ophthalmic medicines			
	fluorescein	eye drops: 1% (sodium salt).	S, T
	☐ tropicamide	eye drops: 0.5%.	S, T
14.2. Radio-contrast media			
	☐ amidotrizoate	injection: 140 mg to 420 mg iodine (as sodium or meglumine salt)/ml in 20-ml ampoule.	S, T
	barium sulfate	aqueous suspension.	S, T
	☐ iohexol	injection: 140 mg to 350 mg iodine/ml in 5-ml; 10ml, 20-ml ampoules.	S, T
	barium sulfate [c]	aqueous suspension.	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	☐ meglumine iotroxate	solution: 5 grams to 8 grams iodine in 100 ml to 250 ml.	S, T
15. Disinfectants and Antiseptics			
15.1. Antiseptics			
	☐ chlorhexidine	solution: 5% digluconate.	P, S, T
	☐ ethanol	solution: 70% (denatured).	P, S, T
	☐ povidone iodine	solution: 10% (equivalent to 1% available iodine).	P, S, T
15.2. Disinfectants			
	alcohol-based hand rub	solution containing ethanol 80% volume /volume. solution containing isopropyl alcohol 75% volume/volume.	P, S, T
	☐ chlorine base compound	powder: (0.1% available chlorine) for solution.	P, S, T
	☐ chloroxylenol	solution: 4.8%.	P, S, T
	glutaral	solution: 2%.	P, S, T
	methylated spirit	solution	P, S, T
16. Diuretics			
	amiloride	tablet: 5 mg (hydrochloride).	S, T
		injection: 10 mg/ml in 2-ml ampoule.	P, S, T
	☐ furosemide (D)	oral liquid: 20 mg/5 ml [c].	P, S, T
		tablet: 10 mg [c], 20 mg [c], 40 mg.	P, S, T
	☐ hydrochlorothiazide (D)	solid oral dosage form: 25 mg.	P, S, T
		injection: 20 mg.	P, S, T
	mannitol (D)	injectable solution: 10%, 20%.	P, S, T
	spironolactone	oral liquid: 5 mg/5 ml, 10 mg/5 ml, 25 mg/5 ml.	P, S, T
		tablet: 25 mg.	P, S, T
	sodium polystyrene sulfonate (P)	powder	T
17. Gastrointestinal Medicines			
	☐ pancreatic enzymes	Age-appropriate formulations and doses including lipase, protease, and amylase.	T
17.1. Antiulcer medicines			
		powder for injection: 40 mg in vial.	P, S, T
	☐ omeprazole	powder for oral liquid: 20 mg, 40 mg sachets	P, S, T
		solid oral dosage form: 10 mg, 20 mg, 40 mg.	P, S, T
	☐ ranitidine	injection: 25 mg/ml (as hydrochloride) in 2-ml ampoule.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
		oral liquid: 75 mg/5 ml (as hydrochloride). tablet: 150 mg (as hydrochloride).	P, S, T P, S, T
17.2. Antiemetic medicines			
	dexamethasone (D)	injection: 4 mg/ml in 1-ml ampoule (as disodium phosphate salt). oral liquid: 0.5 mg/5 ml, 2 mg/5 ml. solid oral dosage form: 0.5 mg, 0.75 mg, 1.5 mg, 4 mg. injection: 5 mg (hydrochloride)/ml in 2-ml ampoule. oral liquid: 5 mg/5 ml [c]. tablet: 10 mg (hydrochloride). (a) Do not use in neonates.	P, S, T P, S, T P, S, T P, S, T P, S, T P, S, T
	metoclopramide (a)	injection: 2 mg base/ml in 2-ml ampoule (as hydrochloride). oral liquid: 4 mg base/5 ml. solid oral dosage form: equivalent to 4 mg base, equivalent to 8 mg base, equivalent to 24 mg base. (a) >1 month.	S, T S, T S, T
	ondansetron (a)		
17.3. Anti-inflammatory medicines			
	☐ sulfasalazine (D)	retention enema. suppository: 500 mg. tablet: 500 mg.	S, T P, S, T P, S, T
	☐ hydrocortisone	retention enema. suppository: 25 mg (acetate). (the ☐ only applies to hydrocortisone retention enema.)	S, T S, T
17.4. Laxatives			
	☐ senna	tablet: 7.5 mg (sennosides) (or traditional dosage forms).	P, S, T
17.5. Medicines used in diarrhea			
	oral rehydration salts (D)	dry mixture (low osmolality formula) in sachet for 1 liter of solution; each sachet contains glucose anhydrous 13.5gm B.P., trisodium citrate dihydrate 2.9 gm B.P., potassium chloride 1.5gm B.P., sodium chloride 2.6gm B.P. solid oral dosage form: 20 mg. *For acute diarrhea, use zinc sulfate as an adjunct to oral rehydration salts.	P, S, T P, S, T
	zinc sulfate*		P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
17.6. Other Medicines	16		
	aluminium hydroxide + magnesium trisilicate	suspension: 215mg + 80mg / 5ml	P, S, T
	bisacodyl	tablet: 5 mg	P, S, T
	dimenhydrinate	injection: 40mg	P, S, T
		tablet: 50 mg	P, S, T
	glycerin	suppository	P, S, T
	magnesium oxides and hydroxides	suspension: 7.9 %w/v	P, S, T
	phloroglucinol	Injection: 10mg /ml	P, S, T
	sodium biphosphate	Enema: 7.2g / 120ml	P, S, T
18. Hormones, other Endocrine Medicines and Contraceptives			
18.1. Adrenal hormones and synthetic substitutes			
	fludrocortisone	tablet: 100 micrograms (acetate).	T
	hydrocortisone (D)	tablet: 5 mg, 10 mg, 20 mg.	S, T
18.2. Androgens			
	testosterone	injection: 200 mg (enanthate) in 1-ml ampoule.	S, T
18.3. Contraceptives			
18.3.1 Oral hormonal	☐ ethinylestradiol + ☐ levonorgestrel	tablet: 30 micrograms + 150 micrograms.	P, S, T
	☐ ethinylestradiol + ☐ norethisterone	tablet: 35 micrograms + 1 mg.	P, S, T
	levonorgestrel (D)	tablet: 30 micrograms, 750 micrograms (pack of 2), 1.5 mg.	P, S, T
18.3.2 Injectable hormonal contraceptives	estradiol cypionate + medroxyprogesterone acetate (D)	injection: 5 mg + 25 mg.	S, T
	norethisterone enantate	depot injection: 150 mg/ml in 1-ml vial.	S, T
18.3.3 Intrauterine devices	copper-containing device	oil solution: 200 mg/ml in 1-ml ampoule.	S, T
	levonorgestrel-releasing intrauterine system		P, S, T
18.3.4 Barrier methods	condoms	intrauterine system with reservoir with 52 mg of levonorgestrel.	T
	diaphragm		P, S, T
	etonogestrel-releasing implant	single-rod etonogestrel-releasing implant with 68 mg of etonogestrel.	P, S, T
			S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
18.3.5 Implantable contraceptives	levonorgestrel-releasing implant (D)	two-rod levonorgestrel-releasing implant; each rod contains 75 mg of levonorgestrel (150 mg total).	S, T
18.3.6 Intravaginal contraceptive	progesterone vaginal ring*	progesterone-releasing vaginal ring with 2.074 grams of micronized progesterone. *use for women actively breastfeeding at least 4 times per day.	S, T
18.4. Estrogen	estrogen		
18.5. Insulin and other medicines used for diabetes			
	☐ gliclazide*	solid oral dosage form: (controlled release tablets) 30 mg, 60 mg, 80 mg. *glibenclamide not suitable above 60 years.	S, T
	glucagon	injection: 1 mg/ml.	T
	insulin injection (soluble)	injection: 40 iu/ml in 10-ml vial, 100 iu/ml in 10-ml vial.	P, S, T
	intermediate-acting insulin	injection: 40 iu/ml in 10-ml vial, 100 iu/ml in 10-ml vial (as compound insulin zinc suspension or isophane insulin).	P, S, T
	metformin	tablet: 500 mg (hydrochloride).	P, S, T
	glibenclamide	tablet: 5 mg	P, S, T
18.6. Ovulation inducer			
	clomifene	tablet: 50 mg (citrate).	S, T
18.7. Progestogen	☐ medroxyprogesterone	tablet: 5 mg acetate.	P, S, T
18.8. Thyroid hormone and antithyroid medicine			
	levothyroxine	tablet: 25 micrograms [c], 50 micrograms, 100 micrograms (sodium salt)	P, S, T
	potassium iodide	tablet: 60 mg.	P, S, T
	☐ propylthiouracil	tablet: 50 mg.	S, T
	Lugol's solution	oral liquid: about 130 mg total iodine/ml.	P, S, T
	propylthiouracil	tablet: 50 mg.	P, S, T
19. Immunologicals			
19.1. Diagnostic agents			
	tuberculin, purified protein derivative (PPD)	injection All tuberculins should comply with the WHO requirements for tuberculins.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
19.2. Sera and immunoglobulins			
<i>All plasma fractions should comply with the WHO requirements.</i>	anti-D immunoglobulin (human)	injection: 250 microgram in single-dose vial.	P, S, T
	anti-venom immunoglobulin*	injection: *exact type to be defined locally.	P, S, T
	anti-hepatitis B immunoglobulin	injection	P, S, T
	anti-rabies immunoglobulin (human)	injection: 150 IU/ml in vial.	P, S, T
	anti-tetanus immunoglobulin (human)	injection: 500 IU in vial.	P, S, T
19.3. Vaccines	diphtheria antitoxin	injection: 10 000 IU, 20 000 IU in vial.	S, T
All vaccines under the Expanded Program on Immunization (EPI) of Pakistan will be included in the NEML. All vaccines must comply with the WHO requirements for biological substances and should be administered under WHO guidelines. WHO stated that vaccines used in children should be polyvalent. The new vaccines, which the National Technical Advisory Group on Immunization (NTAGI) approved, and planned to be given under the EPI, will be included in the NEML as and when listed in the EPI. In the future, the vaccines under consideration, if and when they are included in the EPI, will also be included in the NEML, from the date of inclusion.			
	BCG vaccine		Recommendations for all
	diphtheria vaccine		
	Haemophilus influenzae type b vaccine		
	hepatitis B vaccine		
	HPV vaccine		
	measles vaccine		
	pertussis vaccine		
	pneumococcal vaccine		
	poliomyelitis vaccine		
	rotavirus vaccine		
	rubella vaccine		
	tetanus vaccine		
	tetanus immunoglobulin (human)	injection: 500 IU in vial	
	meningococcal meningitis vaccine		P, S, T
	yellow fever vaccine		S, T
	cholera vaccine		Recommendations for certain regions
	hepatitis A vaccine		Recommendations for some high-risk populations
	meningococcal meningitis vaccine		

Therapeutic Category	Generic Name	Formulations	Service Level Category
	rabies vaccine	vial: 150 IU/ml	
	typhoid vaccine		Recommendations for immunization programs with certain characteristics
	influenza vaccine (seasonal)		
	mumps vaccine		
	varicella vaccine		
20. Muscle Relaxants			
	☐ atracurium	injection: 10 mg/ml (besylate).	S, T
	neostigmine	injection: 500 micrograms in 1-ml ampoule, 2.5 mg (metilsulfate) in 1-ml ampoule.	S, T
		tablet: 15 mg (bromide).	S, T
	suxamethonium	injection: 50 mg (chloride)/ml in 2-ml ampoule.	S, T
		powder for injection (chloride) in vial.	S, T
	☐ vecuronium [c]	powder for injection: 10 mg (bromide) in vial.	P, S, T
	pyridostigmine	injection: 1 mg in 1-ml ampoule. tablet: 60 mg (bromide).	S, T
	pancuronium	injection: contains pancuronium bromide 2mg/ml, 2 ml.	S, T
21. Ophthalmological Preparations			
21.1. Anti-infective agents			
	aciclovir (D)	ointment: 3% w/w.	S, T
	sodium cromoglycate	eye drop 4% w/v.	S, T
	☐ gentamicin (D)	solution (eye drops): 0.3% (sulfate).	P, S, T
	☐ ofloxacin	solution (eye drops): 0.3%.	P, S, T
	☐ tetracycline	eye ointment: 1% (hydrochloride).	P, S, T
	azithromycin	solutionn:1.50%	T
	erythromycin*	ointment:0.50%	T
	natamycin	suspension:5%	T
	ciprofloxacin	eye drops: 0.3 %w/v	T
	dexamethasone	eye drops: 0.1 %w/v	T
	miconazole (nitrate)	eye ointment:0.02	T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	polymyxin B (sulphate) + bacitracin	eye ointment: 10000IU/g + 500IU/g	T
	zinc		
	proparacaine (hydrochloride)	drops: 0.005	T
	tears natural	eye drops	T
	tobramycin + dexamethasone	eye drops: 0.3 % + 0.1% w/v	T
	tropicamide	eye drops: 1 %w/v	T
	timolol (hydrogen maleate)	eye drops: 0.25%; 0.5%	T
21.2. Anti-inflammatory agents			
	☐ prednisolone	solution (eye drops): 0.5% (sodium phosphate).	P, S, T
21.3. Local anesthetics			
	☐ tetracaine (a)	solution (eye drops): 0.5% (hydrochloride). (a) not in preterm neonates.	P, S, T
21.4. Miotics and antiglaucoma medicines			
	acetazolamide	tablet: 250 mg.	S, T
	latanoprost	solution (eye drops): latanoprost 50 micrograms/ml.	S, T
	☐ pilocarpine	solution (eye drops): 2%, 4% (hydrochloride or nitrate).	S, T
	☐ timolol	solution (eye drops): 0.25%, 0.5% (as hydrogen maleate).	P, S, T
21.5. Mydriatics			
	atropine (a)*	solution (eye drops): 0.1%, 0.5%, 1% (sulfate). *[c] or homatropine (hydrobromide), or cyclopentolate (hydrochloride). (a) >3 months.	P, S, T
	epinephrine (adrenaline) (D)	Solution (eye drops): 2% (as hydrochloride).	P, S, T
21.6. Anti-vascular endothelial growth factor (VEGF) preparations			
	bevacizumab	injection: 25 mg/ml.	T
22. Oxytocics and Anti-Oxytocics			
22.1. Oxytocics			
	☐ ergometrine	injection: 200 micrograms (hydrogen maleate) in 1ml ampoule.	P, S, T
	misoprostol	tablet: 200 micrograms. - to manage incomplete abortion and miscarriage. - to prevent and treat postpartum hemorrhage if oxytocin is not available or cannot be safely used. vaginal tablet: 25 micrograms *	S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	oxytocin	*only use to induce labor if appropriate facilities are available. injection: 10 IU in 1-ml.	S, T
22.2. Antioxytotics (tocolytics)			
	nifedipine	capsule: immediate release, 10 mg. tablet: slow release, 20 mg.	S, T T
23. Peritoneal Dialysis Solution			
	intrapertitoneal dialysis solution (of appropriate composition).	parenteral solution.	S, T
24. Medicines for Mental and Behavioral Disorder			
24.1. Medicines used in psychotic disorders			
	☐ chlorpromazine (D)	injection: 25 mg (hydrochloride)/ml in 2-ml ampoule. oral liquid: 25 mg (hydrochloride)/5 ml. tablet: 10 mg, 25 mg, 50 mg, 100 mg (hydrochloride).	P, S, T P, S, T P, S, T
	☐ fluphenazine	injection: 25 mg (decanoate or enantate) in 1-ml ampoule. injection: 5 mg in 1-ml ampoule. oral liquid: 2 mg/ml. tablet: 0.5 mg, 2 mg, 5 mg.	S, T S, T S, T S, T
	☐ haloperidol (D)	solid oral dosage form: 0.25 mg to 6.0 mg. solid oral dosage form: 25 to 200 mg.	S, T S, T
	risperidone		S, T
	clozapine		S, T
24.2. Medicines used in mood disorders			
24.2.1 Medicines used in depressive disorders	☐ amitriptyline fluoxetine (D) (a)	tablet: amitriptyline hcl 10 mg, 25 mg. solid oral dosage form: 20 mg (as hydrochloride). (a) >8 years	P, S, T P, S, T
24.2.2 Medicines used in bipolar disorders	carbamazepine (D) lithium carbonate	tablet (scored): 100 mg, 200 mg. syrup: 100 mg/5 ml. solid oral dosage form: 300 mg.	P, S, T P, S, T T
24.2.3 Others	valproic acid (sodium valproate) (D) olanzapine	tablet (enteric-coated): 200 mg, 500 mg (sodium valproate). tablets: 5mg, 10 mg	S, T S, T
24.3. Medicines for anxiety disorders	☐ diazepam	tablet (scored): 2 mg, 5 mg.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
24.4.	Medicines used for obsessive compulsive disorders		
	clomipramine	capsule: 10 mg, 25 mg (hydrochloride).	P, S, T
24.5.	Medicines for disorders due to psychoactive substance use		
	nicotine replacement therapy (NRT)	chewing gum: 2 mg, 4 mg (as polacrilex).	T
		transdermal patch: 5 mg to 30 mg/16 hours, 7 mg to 21 mg/24 hours.	
		concentrate for oral liquid: 5 mg/ml, 10 mg/ml (hydrochloride).	
		oral liquid: 5 mg/5 ml, 10 mg/5 ml (hydrochloride).	
	☐ methadone*	*the square box is added to include buprenorphine. use the medicines only within an established support program.	T
25.	Medicines Acting on the Respiratory Tract		
25.1.	Anti-asthmatic and medicines for chronic obstructive pulmonary disease		
	☐ beclomethasone	inhalation (aerosol): 50 micrograms	S, T
		(dipropionate) per dose, 100 micrograms	
		(dipropionate) per dose (as cfc free forms).	
	☐ budesonide [c] (D)	respirator solution for use in nebulizers: 800 micrograms /2 ml.	S, T
		inhalation (aerosol): 100 micrograms per dose, 200 micrograms per dose.	
		injection: 1 mg (as hydrochloride or hydrogen tartrate) in 1-ml ampoule.	
	☐ salbutamol	inhalation (aerosol): 20 micrograms/metered doses.	P, S, T
		inhalation (aerosol): 100 micrograms (as sulfate) per dose.	P, S, T
		injection: 50 micrograms (as sulfate)/ml in 5-ml ampoule.	P, S, T
		metered dose inhaler (aerosol): 100 micrograms (as sulfate) per dose.	P, S, T
		respirator solution for use in nebulizers: 5 mg (as sulfate)/ml.	P, S, T
		tablets: 100 mg.	P, S, T
	montelukast	sachet: 4 mg/sachet.	P, S, T
		tablet: 4 mg, 5 mg, 10 mg.	P, S, T
		injection: 25 mg/ml.	P, S, T
	aminophylline	tablets: 100 mg, 200 mg.	P, S, T
		syrup: 32 mg/5 ml	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
26. Solution Correcting, Water, Electrolyte, and Acid Base Balance			
26.1. Oral			
	oral rehydration salts	powder for solution.	P, S, T
26.2. Parenteral			
	glucose	injectable solution: 5% (isotonic), 10% (hypertonic), 50% (hypertonic). Injectable solution: 4% glucose, 0.18% sodium chloride (equivalent to Na+ 30 mmol/L, Cl- 30 mmol/L). Injectable solution: 5% glucose, 0.9% sodium chloride (equivalent to Na+ 150 mmol/L and Cl- 150 mmol/L), 5% glucose, 0.45% sodium chloride (equivalent to Na+ 75 mmol/L and Cl- 75 mmol/L) [c].	P, S, T
	glucose with sodium chloride	solution: 11.2% in 20-ml ampoule (equivalent to K+ 1.5 mmol/ml, Cl- 1.5 mmol/ml).	P, S, T
	potassium chloride (D)	solution for dilution: 7.5% (equivalent to K+1 mmol/ml and Cl mmol/ml) [c]. 15% (equivalent to K2 mmol/ml and Cl2 mmol/ml) [c]	P, S, T
	sodium chloride	injectable solution: 0.9% isotonic (equivalent to Na+ 154 mmol/l, Cl- 154 mmol/l).	P, S, T
	sodium hydrogen carbonate	injectable solution: 1.4% isotonic (equivalent to Na+ 167 mmol/l, HCo3- 167 mmol/l).	P, S, T
	sodium lactate, compound solution (o)	solution: 8.4% in 10-ml ampoule (equivalent to Na+ 1000 mmol/l, HCo3- 1000 mmol/l).	P, S, T
	sodium lactate, compound solution	injectable solution	P, S, T
	mannitol	injectable solution: 20% w/v (500 ml).	P, S, T
26.3. Miscellaneous			
	water for injection	2-ml, 5-ml, 10-ml ampoules.	
27. Vitamins and Minerals			
	ascorbic acid	tablet: 50 mg.	P, S, T
	calcium	tablet: 500 mg (elemental). oral liquid: 400 IU/ml.	P, S, T
	cholecalciferol* [c]	solid oral dosage form: 400 IU, 1000 IU. *use ergocalciferol as an alternative.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	☐ ergocalciferol	oral liquid: 250 micrograms/ml (10 000 IU/ml). solid oral dosage form: 1.25 mg (50 000IU).	P, S, T
	iodine	capsule: 200 mg. iodized oil: 1 ml (480 mg iodine), 0.5 ml (240 mg iodine) in ampoule (oral or injectable), 0.57 ml (308 mg iodine) in dispenser bottle.	P, S, T
	☐ nicotinamide	tablet: 50 mg.	P, S, T
	pyridoxine	tablet: 25 mg (hydrochloride).	P, S, T
		capsule: 50 000 IU, 100 000 IU, 200 000 IU (as palmitate).	P, S, T
	retinol	oral oily solution: 100 000 IU (as palmitate)/ml in multidose dispenser. tablet (sugar-coated): 10 000 IU (as palmitate).	P, S, T
		water-miscible injection: 100 000 IU (as palmitate) in 2-ml ampoule.	P, S, T
	riboflavin	tablet: 5 mg.	P, S, T
	sodium fluoride	in any appropriate topical formulation.	P, S, T
	thiamine	tablet: 50 mg (hydrochloride).	P, S, T
	calcium gluconate (D)	injection: 100 mg/ml in 10-ml ampoule.	P, S, T
	B complex (B1, B6 and B12)	tablets (DRAP approved)	S,T
		syrup (DRAP approved)	S,T
	vitamin K1 (phytonadione)	injection:10 mg	S,T
	zinc sulfate (for acute diarrhea with ORS)	dispersible tablets:20 mg	S,T
	ferrous salt	tablets equivalent to 60 mg iron injection (sucrose salt) 20mg /ml	S,T
		syrup equivalent to 25 mg/ml iron	S,T
	folic acid	tablets: 5mg	S,T
	ferrous salt + folic acid (Nutritional supplement for use during pregnancy)	tablet, equivalent to 60 mg iron + 400 mcg folic acid	S,T
	hydroxocobalamin	ampoule:1 mg in 1ml	S,T
	multiple micronutrients	sachet (UNICEF approved)	S,T
	multivitamins	tablets	S,T
28. Ear, Nose, and Throat Medicines [c]			
	acetic acid	topical: 2%, in alcohol.	P, S, T

Therapeutic Category	Generic Name	Formulations	Service Level Category
	☐ budesonide (D)	nasal spray: 100 micrograms per dose.	P, S, T
	☐ ciprofloxacin (D)	topical: 0.3% drops (as hydrochloride).	P, S, T
	☐ xylometazoline (a)	nasal spray: 0.05%.	S, T
		(a) Do not use in children less than 3 months old.	
29. Specific Medicines for Neonatal Care			
29.1. Medicines administered to the neonate [c]			
	caffeine citrate	injection: 20 mg/ml (equivalent to 10 mg caffeine base/ml).	S, T
		oral liquid: 20 mg/ml (equivalent to 10 mg caffeine base/ml).	S, T
	chlorhexidine	solution or gel: 7.1% (digluconate) delivering 4% chlorhexidine (for umbilical cord care) [c].	P, S, T
	☐ ibuprofen (D)	solution for injection: 5 mg/ml.	P, S, T
	☐ prostaglandin E	solution for injection: prostaglandin E1: 0.5 mg/ml in alcohol.	S, T
		prostaglandin E 2: 1 mg/ml.	S, T
	surfactant	suspension for intratracheal instillation: 25 mg/ml or 80 mg/ml.	S, T
29.2. Medicines administered to the mother			
	dexamethasone (D)	injection: 4 mg/ml dexamethasone phosphate (as disodium salt).	P, S, T
30. Medicines for Diseases of the Joint			
30.1. Medicines used to treat gout			
	allopurinol	tablet: 50 mg.	S, T
30.2. Disease-modifying agents used in rheumatoid disorders (DMARDs)			
	azathioprine (D)	tablet: 50 mg.	S, T
	hydroxychloroquine [c]	solid oral dosage form: 200 mg (as sulfate).	S, T
	methotrexate (D)	tablet: 2.5 mg (as sodium salt).	S, T
	penicillamine (D)	solid oral dosage form: 250 mg.	S, T
	sulfasalazine (D)	tablet: 500 mg.	S, T
30.3. Juvenile joint diseases			
	acetylsalicylic acid ^{isr} (acute or chronic use)	suppository: 50 mg to 150 mg. tablet: 100 mg to 500 mg. *use for rheumatic fever, juvenile arthritis, kawasaki disease.	S, T
			S, T

Medicines with Age and Weight Restriction

Table 1: Medicines with Age and Weight Restriction

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

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Application Procedure for Inclusion, Deletion or Modification of a Medicine in the Next Edition of National Essential Medicine List, 2020

Applications, recommendation and suggestions for inclusion, deletion, change i.e addition or modification of an indication of a medicine in the next edition of National Essential Medicine List (NEML, 2020) should be forwarded to the Division of Pharmacy Services, Drug Regulatory Authority of Pakistan, Islamabad, in a format as prescribed below;

Information to be included with an application for inclusion, deletion or modification of a medicine in the National Essential Medicine List (NEML).

1. Summary statement of the proposal for inclusion, change or deletion
2. Name of the technical expert(s) consulted (if applicable)
3. Name of the organization(s) consulted and/or supporting the application
4. International Nonproprietary Name (INN, generic name) of the medicine
5. Formulation proposed for inclusion; including adult and paediatric (if appropriate)
6. International and local availability including name of manufacturers and trade names
7. Whether listing is requested as an individual medicine or as an example of a therapeutic group
8. Information supporting the public health relevance (epidemiological information on disease burden, assessment of current use, target population)
9. Treatment details (dosage regimen, duration; reference to existing WHO and other clinical guidelines; need for special diagnostics, treatment or monitoring facilities and skills)

10. Summary of comparative effectiveness in a variety of clinical settings:
 - Identification of clinical evidence (search strategy, systematic reviews identified, reasons for selection/exclusion of particular data)
 - Summary of available data (appraisal of quality, outcome measures, summary of results)
 - Summary of available estimates of comparative effectiveness
11. Summary of comparative evidence on safety:
 - Estimate of total patient exposure to date
 - Description of the adverse effects/reactions and estimates of their frequency
 - Identification of variation in safety that may relate to health systems and patient factors
 - Summary of comparative safety against comparators
12. Summary of available data on comparative cost and cost-effectiveness within the pharmacological class or therapeutic group:
 - range of costs of the proposed medicine
 - resource use and comparative cost-effectiveness presented as range of cost per routine outcome
13. Summary of regulatory status of the medicine (in various countries)
14. Availability of pharmacopoeial standards (British Pharmacopoeia, International Pharmacopoeia, United States Pharmacopoeia, European Pharmacopoeia)
15. Proposed (new/adapted) text that could be included in the revised version.

For further information, please contact:

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