2021

NATIONAL LIST OF ESSENTIAL MEDICINES NEPAL

SIXTH REVISION

Government of Nepal
Ministry of Health and Population
Department of Drug Administration

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MESSAGE

It gives me a great pleasure to know that Department of Drug Administration, Ministry of Health and Population is bringing out the Sixth edition of "**National List of Essential Medicines, 2021.**" I hope that this edition will reflect positively on the efforts to enhance the quality of health care services in public health facilities through good drug supply management.

The use of the NLEM is expected to improve healthcare and to contribute to the attainment of the Constitutional right to health. I wish that all health professionals will fully benefit from the revised list of essential medicines and the objective of making efficacious and quality medicine matching the prevailing disease pattern, available at affordable price would be fulfilled by implementation of the list. I therefore strongly encourage government health institutions to make the best use of this NLEM in government drug procurement and practice.

I appreciate all the medical and pharmacy experts involved in different therapeutic categories for their valuable contribution for this revision.

I congratulate DDA and all those involved in the revision and publication of this list.

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Dr. Roshan Pokhrel
Secretary
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PREFACE

Essential medicines have been defined by World Health Organization (WHO) as "those that satisfy the priority health care needs of the population. These medicines are selected with regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. Careful and prudent selection of limited range of essential medicines help in higher quality of care, better drug management, value added supply chain, rational use, availability and cost effectiveness of health resources.

Government of Nepal/DDA first published National List of Essential Medicines (NLEM) in 1986. The list was revised in 1992, 1997, 2002, 2011 and 2016 AD. Department of Drug Administration (DDA) has brought out this sixth revision of National List of Essential medicine, 2021 approved by Ministry of Health and Population, Government of Nepal dated on April, 21, 2021.

The list has been approved and published and is aligned with the main objectives of the National Drug Policy 1995 i.e., to ensure the availability and affordability of efficacious, safe and good quality medicines relevant to the quality healthcare needs and service of the people in a sustainable and equitable manner and to promote the rational use of medicines by healthcare professionals and consumers.

Based on the current version of WHO Model List of Essential medicines 2019, DDA has revised the National List of Essential Medicines (NLEM). The NLEM, 2021 contains 398 drug molecules in different therapeutic category. Current revision has been done in consultation with various experts from different specialities and faculties. I would like to thank all experts involved in different therapeutic groups for their valuable contribution for this revision. Without their dedication, it might have not been possible to bring out this publication. Once again, we express our heartfelt gratitude to their generous support given by each and every one of the team.

I am also thankful to the World Health Organization country office Nepal for technical and financial support in the revision and printing of the NLEM, 2021.

I hope that all health care providers would embrace this document as an important tool for management of medicines and rationalizing prescription in the country as envisioned by the National Health Policy, 2076.

The health system in general and public health sector in particular is requested to seriously consider in adopting this list for better healthcare output considering public healthcare relevance.

Narayan Prasad Dhakal
Director General
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TABLE OF CONTENTS

Message		i
Preface		iii
Acknowledgment		iv
National List of Essential Medicines Nepal (2021) Explanatory notes		vii
1	Anaesthetics, Perioperatve Medicines and Medical Gases	1
2	Medicines for Pain and Palliative Care	3
3	Antiallergics and Medicines used in Anaphylaxis	4
4	Antidotes and other Substances used In Poisonings	5
5	Anticonvulsants/Antiepileptics	6
6	Anti-Infective Medicines	7
7	Antimigraine Medicines	22
8	Immunomodulators, Antineoplastic and Medicines used in Palliative Care	22
9	Antiparkinsonism Medicines	25
10	Medicines Affecting the Blood	25
11	Blood Products of Human Origin and Plasma Substitutes	26
12	Cardiovascular Medicines	26
13	Dermatological Medicines (Topical)	28
14	Diagnostic Agents	29
15	Disinfectants and Antiseptics	30
16	Diuretics	30
17	Gastrointestinal Medicines	30
18	Medicines for Endocrine Disorders	32
19	Immunologicals	33
20	Muscle Relaxants (Peripherally Acting) and Cholinesterase Inhibitors)	35
21	Ophthalmological Preparations	35
22	Medicines for Reproductive Health and Perinatal Care	36
23	Peritoneal Dialysis Solution	38
24	Medicines for Mental and Behavioural Disorder	38

25 Medicines Acting on the Respiratory Tract 39
26 Solution Correcting Water, Electrolyte and Acid Base Disturbances 40
27 Vitamins and Minerals 40
28 Ear, Nose and Throat Preparations and Dental Preparations 41
29 Medicines for Diseases of Joints 41

ANNEX I Comparative table for addition and deletion of molecules 42
ANNEX II Medicines with age or weight restrictions 55
ANNEX III Explanation of dosage forms 56
ANNEX IV Consulted Experts 58

National List of Essential Medicines Nepal (2021)

Explanatory notes

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

Where the [c] symbol is placed next to an individual medicine or strength of medicine on the core list it signifies that there is a specific indication for restricting its use to children.

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

Where the [c] symbol is placed next to an individual medicine or strength of medicine on the complementary list it signifies that the medicine(s) require(s) specialist, diagnostic or monitoring facilities, and/or specialist medical care, and/or specialist training for their use in children.

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 Annex II

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 main terms used for dosage forms in the Essential Medicines List can be found in Annex III

1 ANAESTHETICS, PERIOPERATVE MEDICINES AND MEDICAL GASES

1.1 General anaesthetics and oxygen		
1.1.1	**Inhalational medicines**	
	halothane	Inhalation
	isoflurane	Inhalation
	nitrous oxide	Inhalation
	oxygen	Inhalation (medical gas)
	Complementary list	
	sevoflurane	Inhalation
1.1.2	**Injectable medicines**	
	ketamine	Injection: 50 mg (as hydrochloride)/ ml in 10 ml vial
	propofol	Injection: 10 mg/ ml in 20 ml ampoule
1.2 Local anaesthetics		
	bupivacaine	Injection: 0.25%, 0.5% (hydrochloride) in vial Injection for spinal anesthesia: bupivacaine 5 mg (hydrochloride)/ ml (0.5%) in 4 ml ampoule to be mixed with 7.5% glucose solution
	lidocaine (lignocaine)	Injection: 1%, 2% (hydrochloride) in vial Injection for spinal anaesthesia: 5% (as hydrochloride) in 2 ml ampoule to be mixed with 7.5% glucose solution Topical (sterile): 2% w/w
	lidocaine (lignocaine) + epinephrine (adrenaline)	Injection: 2% (as hydrochloride or sulfate) + epinephrine 1: 200 000 in vial
	Complementary list	
	ephedrine *	Injection: 30 mg (hydrochloride)/ ml in 1 ml ampoule * For use in spinal anaesthesia during delivery, to prevent hypotension

1.3 Preoperative medication and sedation for short-term procedures		
	atropine [a]	Injection: 0.6 mg (as sulfate)/ ml in 1 ml ampoule, 30 ml vial [a] > 3 months
	diazepam	Injection: 5 mg/ ml in 2 ml ampoule
	glycopyrrolate	Injection: 0.2 mg/ ml in ampoule
	midazolam	Injection: 1 mg/ ml, 5 mg/ ml
	morphine	Injection: 10 mg (sulfate or hydrochloride) in 1 ml ampoule Oral liquid: 10 mg (sulfate or hydrochloride)/ 5 ml

2 MEDICINES FOR PAIN AND PALLIATIVE CARE

2.1 Non-opioid analgesics and non-steroidal anti-inflammatory medicines (NSAIMs)		
	ibuprofen [c] [a]	Oral liquid: 200 mg/ 5 ml Tablet: 200 mg, 400 mg [a] not in children less than 3 months (except IV form for patent ductus arteriosus)
	paracetamol *	Injection: 150 mg/ ml in 2 ml ampoule, 10 mg/ ml in 100 ml bottle Oral liquid: 125 mg/ 5 ml [c] as suspension, 100 mg/ ml as drops Suppository: 125 mg, 250 mg Tablet: 500mg * Not recommended for anti-inflammatory use due to lack of proven benefit to that effect.
	Complementary list	
	acetylsalicylic acid (aspirin)	Tablet: 500 mg
	diclofenac sodium	Injection:75 mg/ ml Tablet: 50 mg, 100 mg
2.2 Opioid analgesics		
	codeine	Tablet: 30 mg (phosphate)
	fentanyl *	Injection: 50 mcg/ ml * For the management of cancer pain, intraoperative and post-operative pain management
	morphine	Injection: 10 mg (morphine sulfate or morphine hydrochloride) in 1 ml ampoule Oral liquid: 10 mg (hydrochloride or sulfate)/ 5 ml Tablet (immediate release): 10 mg (sulfate) Tablet (prolonged release): 10 mg, 30 mg, 60 mg (hydrochloride or sulfate)
	pethidine	Injection: 50 mg (hydrochloride) in 1 ml ampoule

3 ANTIALLERGICS AND MEDICINES USED IN ANAPHYLAXIS

	levocetirizine	Tablet: 5 mg
	dexamethasone	Injection: 4 mg (as disodium phosphate salt)/ ml in 1 ml ampoule * Also used in palliative care, hydrocortisone preferred in neonates
	epinephrine (adrenaline)	Injection: 1 mg (as hydrochloride or hydrogen tartrate) in 1 ml ampoule (1:1000)
	hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial with water for injection
	pheniramine	Injection: 22.75 mg (maleate)/ ml Tablet: 25mg, 50 mg
	prednisolone	Tablet: 5mg, 10 mg, 20 mg
	Complementary list	
	fexofenadine	Oral solution: 30mg/ 5 ml

4 ANTIDOTES AND OTHER SUBSTANCES USED IN POISONINGS

4.1 Non-specific		
	charcoal, activated	Powder: 10 g in sachet (oral liquid as sorbitol-base slurry)
4.2 Specific		
	acetylcysteine	Injection: 200 mg/ ml in 10 ml ampoule Tablet (effervescent): 600 mg
	atropine [a]	Injection: 0.6 mg/ ml in 1 ml ampoule, 30 ml vial [a] >3 months
	calcium gluconate	Injection: 100 mg/ ml in 10 ml ampoule
	methylthioninium chloride (methylene blue)	Injection: 10 mg/ ml in 10 ml ampoule
	naloxone	Injection: 400 mcg (hydrochloride) in 1 ml ampoule
	potassium ferric hexacyanoferrate (II).2H_2O (Prussian blue)	Powder :For oral administration
	pralidoxime	Injection: 500 mg , 1 g (mesilate, chloride or iodide) in ampoule
	sodium nitrite	Injection: 30 mg/ ml in 10 ml ampoule
	Complementary list	
	deferoxamine	Powder for injection: 500 mg (mesilate) in vial
	dimercaprol	Injection in oil: 50 mg/ ml in 2 ml ampoule
	fomipezole	Injection: 5 mg (sulfate)/ ml in 20 mL ampoule
	sodium calcium edetate	Injection: 200 mg/ ml in 5 ml ampoule

5 ANTICONVULSANTS/ ANTIEPILEPTICS

carbamazepine	Oral liquid: 100 mg/ 5 ml Tablet: 100 mg, 200 mg, 400 mg
diazepam	Injection: 5mg/ ml in 2 ml ampoule (intravenous or rectal)
magnesium sulfate *	Injection: 500 mg/ ml in 2 ml ampoule, in 10 ml ampoule * For use in eclampsia and severe pre-eclampsia and not for other convulsant disorders
phenobarbital	Injection: 200mg (sodium)/ ml Tablet: 15 mg, 30 mg, 60 mg
phenytoin	Solid oral dosage form: 25 mg, 50 mg, 100 mg (sodium salt); Injection: 50 mg (sodium salt)/ ml in 5 ml vial
valproic acid	Oral liquid: 200 mg/5 ml Tablet (enteric coated): 200 mg, 500 mg (sodium salt)

6 ANTI-INFECTIVE MEDICINES

6.1 Anthelminthics		
6.1.1	**Intestinal anthelminthics**	
	albendazole	Tablet: (chewable) 400 mg Oral liquid: 400 mg/ 10 ml
	ivermectin	Tablet: 3 mg
	mebendazole	Tablet: 100 mg
	niclosamide	Tablet: (chewable) 500 mg
	praziquantel	Tablet: 150 mg, 600 mg
6.1.2	**Antifilarials**	
	albendazole	Tablet: (chewable) 400 mg
	diethylcarbamazine	Tablet: 50 mg, 100 mg, 150 mg (dihydrogen citrate)

6.2 Antibacterials

To assist in the development of tools for antibiotic stewardship at primary, secondary and tertiary level hospitals to reduce antimicrobial resistance, the Access, Watch, Reserve (AWaRe) classification of antibiotics was developed – where antibiotics are classified into different groups to emphasize the importance of their appropriate use.

ACCESS GROUP ANTIBIOTIC

This group includes antibiotics that have activity against a wide range of commonly encountered susceptible pathogens while also showing lower resistance potential than antibiotics in the other group. Selected Access group antibiotics are recommended as essential first or second choice empiric treatment options for infectious syndromes as reviewed by the WHO EML Expert Committee. They are listed as individual medicines in the National List of Essential Medicines to improve access and promote appropriate use. They are essential antibiotics that should be widely available, affordable and quality assured.

WATCH GROUP ANTIBIOTICS

This group includes antibiotic classes that have higher resistance potential and includes most of the highest priority agents among the Critically Important Antimicrobials for Human Medicine and/or antibiotics that are at relatively high risk of selection of bacterial resistance. These medicines should be prioritized as key targets of stewardship programs and monitoring. Selected Watch group antibiotics are recommended as essential first or second choice empiric treatment options for a limited number of specific infectious syndromes as reviewed by the WHO EML Expert Committee.

RESERVE GROUP ANTIBIOTICS

This group includes antibiotics and antibiotic classes that should be reserved for treatment of confirmed or suspected infections due to multi-drug-resistant organisms. Reserve group antibiotics should be treated as "last resort" options. Selected Reserve group antibiotics are listed as individual medicines in the National List of Essential Medicines when they have a favourable risk-benefit profile and proven activity against "Critical Priority" or "High Priority" pathogens identified by the WHO Priority Pathogens List. These antibiotics should be accessible, but their use should be tailored to highly specific patients and settings, when all alternatives have failed or are not suitable. These medicines could be protected and prioritized as key targets of stewardship programs involving monitoring and utilization reporting, to preserve their effectiveness.

Disclaimer: The empiric treatment options for infectious syndromes for access group and watch group are adapted from WHO EML model list 21st edition. The empiric treatment may be modified according to the local sensitivity pattern or hospital cumulative Antibiotic Sensitivity Test.

Bibliography:

World Health Organization Model List of Essential Medicines, 21st List, 2019. Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO.

6.2.1 Access group antibiotics			
	amoxicillin	Powder for injection: 250 mg, 500 mg, 1 g (as sodium) in vial Powder for oral liquid:125 mg (as trihydrate)/ 5 ml [c] Solid oral dosage form: 250 mg, 500 mg (as trihydrate) Tablet (dispersible): 125 mg, 250 mg (as trihydrate)	
		FIRST CHOICE - *community acquired pneumonia (mild to moderate)* - *community acquired pneumonia (severe) [c]* - *complicated severe acute malnutrition [c]* - *exacerbations of COPD* - *lower urinary tract infections* - *otitis media* - *pharyngitis* - *sepsis in neonates and children [c]* - *sinusitis* - *uncomplicated severe acute malnutrition [c]* - *progressive apical dental abscess*	SECOND CHOICE - *acute bacterial meningitis*
	ampicillin	Powder for injection: 500 mg (as sodium salt) in vial Capsule: 500 mg	
		FIRST CHOICE - *community acquired pneumonia (severe)* [c] - *complicated severe acute malnutrition* [c] - *sepsis in neonates and children* [c]	SECOND CHOICE - *acute bacterial meningitis*
	benzathine benzylpenicillin	Powder for injection: 60 000 IU, 1200 000 IU [c], 2400 000 IU in vial	
		FIRST CHOICE - *syphilis*	SECOND CHOICE
	benzylpenicillin (penicillin G)	Powder for injection: 300 mg (= 0.5 million IU), 600 mg (=1 million IU) (as sodium or potassium salt) in vial	
		FIRST CHOICE - *community acquired pneumonia (severe)* [c] - *complicated severe acute malnutrition* [c] - *sepsis in neonates and children* [c] - *syphilis*	SECOND CHOICE - *acute bacterial meningitis*[c]

	cephalexin	Capsule: 250 mg (as monohydrate) Oral Powder for reconstitution with water: 125 mg/ 5 ml, 250 mg/ 5 ml (anhydrous)	
		FIRST CHOICE	SECOND CHOICE - *exacerbations of COPD* - *pharyngitis* - *skin and soft tissue infections*
	chloramphenicol	Capsule:250 mg, 500 mg Powder for injection: 1g (as sodium succinate) in vial Oral liquid: 125 mg (as palmitate)/ 5 ml	
		FIRST CHOICE	SECOND CHOICE - *acute bacterial meningitis*
	cloxacillin	Capsule: 250 mg, 500 mg (as sodium salt) Powder for injection: 500 mg (as sodium salt) in vial Powder for oral liquid:125 mg (as sodium salt)/ 5 ml	
		FIRST CHOICE - *bone and joint infections* - *skin and soft tissue infections*	SECOND CHOICE - *sepsis in neonates and children* [c]
	doxycycline [a]	Powder for injection: 100 mg in vial Oral liquid:25 mg/ 5 ml [c], 50 mg/ 5 ml [c] (anhydrous) Solid oral dosage form:50 mg [c], 100 mg (hyclate); Capsule:100 mg (as hydrochloride) [a] Use in children <8 years only for life threatening infections when no alternative exists	
		FIRST CHOICE - *sexually transmitted infection due to Chlamydia trachomatis* - *cholera*	SECOND CHOICE - *cholera* [c] - *community acquired pneumonia (mild to moderate)* - *exacerbations of COPD*
	gentamicin	Injection:10 mg, 40 mg (as sulfate)/ ml in 2 ml vial	
		FIRST CHOICE - *community acquired pneumonia (severe)* [c] - *complicated severe acute malnutrition* [c] - *sepsis in neonates and children* [c]	SECOND CHOICE - *gonorrhoea* - *surgical prophylaxis*

	metronidazole	Injection: 500 mg in 100 ml vial Oral liquid:100 mg/ 5 ml, 200 mg (as benzoate)/ 5 ml Tablet: 200 mg, 400 mg	
		FIRST CHOICE *- C. difficile infection* *-complicated intraabdominal infections (mild to moderate)* *-complicated intrabdominal infections (severe)* *- trichomoniasis* *- surgical prophylaxis*	SECOND CHOICE *-complicated intraabdominal infections (mild to moderate)*
	nalidixic acid	Tablet: 250 mg, 500 mg	
	nitrofurantoin	Oral liquid: 25 mg/ 5 ml [c] Tablet: 100 mg	
		FIRST CHOICE *- lower urinary tract infections*	SECOND CHOICE
	phenoxymethylpenicillin (penicillin V)	Powder for oral liquid: 250 mg (as potassium salt)/ 5 ml Tablet: 250 mg (as potassium salt)	
		FIRST CHOICE *- community acquired pneumonia (mild to moderate)* *- pharyngitis* *-progressive apical dental abscess*	SECOND CHOICE
	procaine benzylpenicillin *	Powder for injection: 300 000 IU in vial * Procaine benzylpenicillin is not recommended as first line treatment for neonatal sepsis except in setting with high neonatal mortality, when given by trained health workers in cases where hospital care is not achievable	
		FIRST CHOICE *- syphilis* [c]	SECOND CHOICE *- syphilis*
	sulfamethoxazole + trimethoprim *	Injection: 80 mg + 16 mg / ml in 5 ml ampoule 80 mg +16 mg/ ml in 10 ml ampoule Oral liquid:200 mg + 40 mg /5 ml Tablet: 100 mg + 20 mg (DT), 400 mg +80 mg, 800 mg + 160 mg * Single agent trimethoprim may be an alternative for lower urinary tract infection	
		FIRST CHOICE *- lower urinary tract infections*	SECOND CHOICE *-acute invasive diarrhoea/ bacterial dysentery*
	Complementary list		

	cefazolin [a]	Powder for injection: 1g (as sodium salt) in vial [a] > 1 month	
		FIRST CHOICE *- surgical prophylaxis*	SECOND CHOICE *- bone and joint infections*
6.2.2	**Watch group antibiotics**		
	amikacin	Injection: 250 mg (as sulfate)/ ml in 2 ml vial	
		FIRST CHOICE -pyelonephritis or prostatitis (severe) - high-risk febrile neutropenia	SECOND CHOICE - sepsis in neonates and children [c]
	amoxicillin + clavulanic acid	Powder for injection: 500 mg (as sodium) + 100 mg (as potassium salt); 1000 mg (as sodium) + 200 mg (as potassium salt) in vial Tablet: 500 mg (as trihydrate) + 125 (as potassium salt)mg, 875 mg (as trihydrate) + 125 (as potassium salt) mg	
		FIRST CHOICE - community acquired pneumonia (severe) [c] - complicated intraabdominal infections (mild to moderate) - exacerbations of COPD - hospital acquired pneumonia - low-risk febrile neutropenia - lower urinary tract infections - sinusitis - skin and soft tissue infections	SECOND CHOICE - bone and joint infections - community-acquired pneumonia (mild to moderate) - community acquired pneumonia (severe) - otitis media - surgical prophylaxis
	azithromycin	Oral liquid: 200 mg/ 5 ml Solid oral dosage form: 250 mg, 500 mg (anhydrous)	
		FIRST CHOICE - *sexually transmitted infection due to Chlamydia trachomatis* - *cholera* **[c]** - *gonorrhoea*	SECOND CHOICE - *acute invasive bacterial diarrhoea / dysentery* - *gonorrhoea*
	cefixime	Powder for oral liquid: 100 mg/ 5 ml [c] Solid oral dosage form: 200 mg, 400 mg (as trihydrate)	
		FIRST CHOICE	SECOND CHOICE - *acute invasive bacterial diarrhoea / dysentery* - *gonorrhoea*

	ciprofloxacin*	Oral liquid: 250 mg / 5 ml (anhydrous) [c] Tablet: 250 mg, 500 mg (as hydrochloride) * For adults only	
		FIRST CHOICE - *acute invasive bacterial diarrhoea / dysentery* - *low-risk febrile neutropenia* **- -** *pyelonephritis or prostatitis (mild to moderate)* - *enteric fever*	SECOND CHOICE - *cholera* - *complicated intraabdominal infections (mild to moderate)*
	clindamycin	Capsule: 150mg (as hydrochloride) Injection: 150 mg (as phosphate)/ ml Oral liquid: 75 mg (as palmitate)/5 ml [c]	
		FIRST CHOICE	SECOND CHOICE - *bone and joint infections*
	erythromycin	Oral liquid: 250 mg (as stearate)/ 5 ml Tablet: 250 mg (as stearate)	
		FIRST CHOICE - *community acquired pneumonia (severe)*	SECOND CHOICE - *pharyngitis*
	Complementary list		
	cefotaxime *	Powder for injection: 250 mg, 500 mg, 1g (as sodium salt) per vial * 3rd generation cephalosporin of choice for use in hospitalized neonates	
		FIRST CHOICE - *acute bacterial meningitis* - *community acquired pneumonia (severe)* - *complicated intraabdominal infections (mild to moderate)* - *complicated intrabdominal infections(severe)* - *hospital acquired pneumonia* - *pyelonephritis or prostatitis (severe)*	SECOND CHOICE - *bone and joint infections* - *pyelonephritis or prostatitis (mild to moderate)* - *sepsis in neonates and children* [c]

<table>
<tr><td rowspan="10">6.2.3</td><td rowspan="2">ceftriaxone* [a]</td><td colspan="2">Powder for injection: 250 mg, 1 g (as sodium salt) in vial
* Do not administer with calcium and avoid in infants with hyperbilirubinemia
[a] use in infants >41 weeks corrected gestational weeks</td></tr>
<tr><td>FIRST CHOICE
- acute bacterial meningitis
- community acquired pneumonia (severe)
- complicated intraabdominal infections (mild to moderate)
- complicated intrabdominal infections(severe)
- hospital acquired pneumonia
- gonorrhoea
- pyelonephritis or prostatitis (severe)
- enteric fever</td><td>SECOND CHOICE
- acute invasive bacterial diarrhoea/ dysentery
- bone and joint infections
- pyelonephritis or prostatitis (mild to moderate)
- sepsis in neonates and children [c]</td></tr>
<tr><td rowspan="2">ciprofloxacin *</td><td colspan="2">Solution for IV infusion: 2 mg/ ml [c] in 100 bottle
* For adults only</td></tr>
<tr><td>FIRST CHOICE
- acute invasive bacterial diarrhoea / dysentery
- low-risk febrile neutropenia
- pyelonephritis or prostatitis (mild to moderate)
- enteric fever</td><td>SECOND CHOICE
- cholera
- complicated intraabdominal infections (mild to moderate)</td></tr>
<tr><td rowspan="2">clarithromycin†</td><td colspan="2">Powder for oral liquid: 125 mg/5 mL; 250 mg/5 mL
Powder for injection: 500 mg in vial
Solid oral dosage form: 500 mg
†clarithromycin is also listed for use in combination regimens for eradication of H. pylori in adults.</td></tr>
<tr><td>FIRST CHOICE
-community acquired pneumonia (severe)</td><td>SECOND CHOICE
- pharyngitis</td></tr>
<tr><td colspan="3">Reserve group antibiotics</td></tr>
<tr><td>meropenem</td><td colspan="2">Powder for injection: 500mg, 1 g (as trihydrate) in vial</td></tr>
<tr><td>polymyxin B</td><td colspan="2">Powder for injection: 500,000 IU in vial</td></tr>
<tr><td>piperacillin + tazobactam</td><td colspan="2">Powder for injection: 2g (as sodium salt) + 250 mg (as sodium salt); 4 g (as sodium salt) + 500 mg (as sodium salt) in vial</td></tr>
</table>

	vancomycin	**P**owder for injection: 250 mg (as hydrochloride) in vial
	Complementary list	
	colistin	Powder for injection: 1 million I.U. (as colistemethate sodium) in vial
	linezolid	Injection for intravenous administration: 2 mg/ mL in 300 mL bag Powder for oral liquid: 100 mg/5 mL Tablet: 400 mg, 600 mg

6.2.4	**Antileprosy medicines**	
	Medicines used in the treatment of leprosy should never be used except in combination. Combination therapy is essential to prevent the emergence of drug resistance.	
	clofazimine	Capsule:50 mg, 100 mg
	dapsone	Tablet: 50 mg, 100 mg
	rifampicin	Solid oral dosage form:150 mg, 300 mg
6.2.5	**Antituberculosis medicines**	
	ethambutol	Tablet:100 mg, 400 mg, 600 mg (hydrochloride) Tablet (dispersible): 100 mg [c]
	ethambutol + isoniazid + pyrazinamide + rifampicin	Tablet: 275 mg + 75 mg + 400 mg + 150mg
	ethambutol + isoniazid + rifampicin	Tablet: 275 mg + 75 mg + 150 mg
	isoniazid	Tablet: 50 mg, 100 mg, 300 mg
	isoniazid + pyrazinamide +rifampicin	Tablet: 75 mg + 400 mg+ 150 mg Tablet (dispersible): 50 mg + 150 mg+ 75mg [c]
	isoniazid + rifampicin	Tablet: 75 mg + 150 mg, 150 mg + 300 mg Tablet (dispersible): 50 mg + 75 mg [c]
	pyrazinamide	Tablet: 150 mg, 400 mg, 500 mg Tablet (dispersible): 150 mg
	rifabutin *	Tablet: 150 mg * For use only in patients with HIV receiving protease inhibitors.
	rifampicin	Capsule or Tablet: 150 mg, 300 mg, 450 mg

	Complementary list	
	Medicines for the treatment of multidrug-resistant tuberculosis (MDR-TB) should be used in specialized centers adhering to standard treatment protocol	
	amikacin	Powder for injection: 100 mg, 500 mg, 1 g (as sulfate) in vial
	amoxicillin + clavulanic acid *	Tablet: 500 mg (as trihydrate) + 125 mg (as potassium salt), 875 mg (as trihydrate) + 125 mg (as potassium salt) * For use only in combination with meropenem
	bedaquiline [a]	Tablet: 100 mg [a] ≥ 6 years of age
	clofazimine	Capsule: 100 mg
	cycloserine	Capsule: 250 mg
	delamanid [a]	Tablet: 50 mg [a] ≥ 6 years of age
	ethionamide	Tablet: 125 mg, 250 mg
	levofloxacin	Tablet: 250 mg, 500 mg,750 mg Tablet (dispersible): 100 mg [c]
	linezolid	Tablet: 300 mg, 600 mg
	meropenem	Powder for injection: 500 mg, 1 g (as trihydrate) in vial
	moxifloxacin	Tablet: 400 mg
	p-aminosalicylic acid	Oral granules: 4 g, 9.2 g in sachet Tablet: 500 mg
	streptomycin [c]	Powder for injection: 1 g (as sulfate) in vial
6.3	**Antifungal medicines**	
	amphotericin B	Powder for injection: 50 mg in vial (as deoxycholate or liposomal complex)
	clotrimazole	Cream: 1% w/w Vaginal tablet (pessary): 100 mg Mouth paint: 1 % w/v
	fluconazole	Solid oral dosage form: 150 mg , 200 mg

	flucytosine	Capsule: 500 mg
	itraconazole	Capsule: 100 mg Oral liquid: 10 mg/ml * For treatment of chronic pulmonary aspergillosis, histoplasmosis, sporotrichosis, paracoccidiodomycosis, mycoses caused by T. marneffei and chromoblastomycosis; and prophylaxis of histoplasmosis and infections caused by T. marneffei in AIDS patients.
	nystatin	Oral liquid:50 mg/ 5 ml [c], mouth paint: 100 000 IU/ ml [c]
6.4	**Antiviral medicines**	
6.4.1	**Antiherpes medicines**	
	Complementary list	
	aciclovir	Powder for Injection:250 mg (as sodium salt) in vial Tablet: 200 mg, 400 mg, 800 mg
6.4.2	**Antiretroviral**	
6.4.2.1	Nucleoside/Nucleosite reverse transcriptase inhibitors	
	abacavir (ABC)	Tablet:300 (as sulfate)
	lamivudine (3TC)	Oral liquid: 50 mg/ 5 ml [c] Tablet: 150 mg
	tenofovir disoproxil fumarate * (TDF)	Tablet: 300 mg (equivalent to 245 mg tenofovir disoproxil) * Also indicated for pre-exposure prophylaxis
	zidovudine (ZDV or AZT)	Oral liquid: 50 mg/ 5 ml Tablet: 300 mg
6.4.2.2	Non-nucleoside reverse transcriptase inhibitors	
	efavirenz (EFV or EFZ) [a]	Tablet: 200 mg, 600 mg [a] >3 years of age OR > 10 kg of weight
	nevirapine (NVP) [a]	Oral liquid: 50 mg/ 5 ml, 10 mg/ ml Tablet: 50 mg, 200 mg [a] > 6 weeks of age
6.4.2.3	Protease inhibitors	

	Ritonavir is recommended for use in combination as a pharmacological booster, and not as an antiretroviral in its own right.	
	atazanavir + ritonavir [a]	Tablet (heat stable): 300 mg (as sulfate) + 100 mg [a] > 25 kg
	darunavir [a]	Tablet: 600 mg [a] > 3 years of age
	lopinavir + ritonavir (LPV/r)	Solid oral dosage form: 40mg + 10 mg [c]; Tablet (heat stable): 100 mg + 25 mg, 200mg + 50 mg
	ritonavir	Tablet (heat stable): 100 mg [c]
6.4.2.4	Integrase inhibitor	
	dolutegravir [a]	Tablet: 50 mg [a] >25 kg weight
	raltegravir *	Tablet: 100 mg, 400 mg * For use in pregnant women and in second-line regimens in accordance with national treatment guidelines.
6.4.2.5	Fixed-dose combinations	
	abacavir + lamivudine	Tablet (dispersible, scored): 120 mg (as sulfate) + 60 mg. Tablet: 600 mg + 300 mg
	dolutegravir + lamivudine + tenofovir	Tablet: 50 mg + 300 mg + 300 mg (disoproxil fumarate equivalent to 245 mg tenofovir disoproxil)
	efavirenz + lamivudine + tenofovir	Tablet: 600 mg + 300 mg + 300 mg (disoproxil fumarate equivalent to 245 mg tenofovir disoproxil)
	emtricitabine + tenofovir *	Tablet: 200mg + 300 mg (disoproxil fumarate equivalent to 245 mg tenofovir disoproxil) Emtricitabine (FTC) is an acceptable alternative to 3TC, based on knowledge of the pharmacology, the resistance patterns and clinical trials of antiretrovirals. * Combination also indicated for pre-exposure prophylaxis.
	lamivudine + tenofovir	Tablet: 300 mg + 300 mg

	lamivudine + nevirapine + zidovudine	Tablet: 30 mg + 50 mg + 60 mg [c], 150 mg + 200 mg + 300 mg
	lamivudine + zidovudine	Tablet: 30 mg + 60 mg [c], 150 mg +300 mg
6.4.3	**Other antivirals**	
	oseltamivir *	Capsule: 30 mg,45 mg, 75 mg (as phosphate) Oral powder: 6 mg/ ml * Severe illness due to confirmed or suspected influenza virus infection in critically ill hospitalized patients
	Complementary list	
	ganciclovir	Powder for injection: 500 mg in vial
	valganciclovir [c] *	Tablet: 450 mg * For the treatment of cytomegalovirus retinitis (CMVr)
6.4.4	**Antihepatitis medicines**	
6.4.4.1	Medicines for hepatitis B	
6.4.4.1.1	Nucleoside/Nucleotide reverse transcriptase inhibitors	
	entecavir	Oral liquid: 0.05 mg/ ml Tablet: 0.5 mg; 1 mg
	tenofovir disoproxil fumarate (TDF)	Tablet: 300 mg (tenofovir disoproxil fumarate – equivalent to 245 mg tenofovir disoproxil).
	tenofovir alafenamide	Tablet: 25 mg
6.4.4.2	Medicines for hepatitis C	
	WHO guidelines recommend the use of pangenotypic direct-acting antiviral (DAA) regimens for the treatment of persons with chronic HCV infection aged 18 years and above. WHO recommended treatment regimens for adolescents aged 12-17 years or weighing at least 35 kg with chronic HCV infection are genotype-specific	
6.4.4.2.1	Pangenotypic direct-acting antiviral combinations	
	sofosbuvir + velpatasvir	Tablet: 400 mg + 100 mg
6.4.4.2.2	Non-pangenotypic direct-acting antiviral combinations	

	ledipasvir + sofosbuvir	Tablet: 90 mg + 400 mg
	sofosbuvir	Tablet: 400 mg
6.4.4.2.3	Other antivirals for hepatitis C	
	ribavirin *	Injection for intravenous administration: 800 mg and 1 g in 10ml phosphate buffer solution. Solid oral dosage form: 200 mg, 400 mg * For the treatment of hepatitis C, in combination with direct acting anti-viral medicines
6.5	**Antiprotozoal medicines**	
6.5.1	Antiamoebic and antigiardiasis medicines	
	metronidazole	Oral liquid: 200 mg (as benzoate)/ 5 ml Tablet: 200 mg, 400 mg
	Complementary list	
	secnidazole	Oral granules: 2 gm * For single dose in the treatment of amoebiasis
	tinidazole	Tablet: 500 mg
6.5.2	Antileishmaniasis medicines	
	miltefosine	Capsule: 50 mg
	Complementary list	
	amphotericin B	Powder for Injection: 50 mg in vial (as sodium deoxyxholate or liposomal complex)
	paromomycin	Injection: 375 mg (base as sulfate)/ ml in 2 ml ampoule
6.5.3	Antimalarial medicines	
6.5.3.1	For curative treatment	
	artemether *	Injection (oil): 80 mg/ ml in 1 ml ampoule * For use in the management of severe malaria
	artemether + lumefantrine [a]	Tablet: 20 mg + 120 mg [a] Not recommended in the first trimester of pregnancy or in children below 5 kg weight

	chloroquine *	Injection: 40 mg (as phosphate, sulfate or hydrochloride)/ ml in 5ml ampoule Oral liquid:50 mg (as phosphate or sulfate)/ 5 ml Tablet:150 mg base (as phosphate or sulfate) * For use only for the treatment of P. vivax infection
	dihydroartemisinin + piperaquine phosphate [a]	Tablet: 40 mg + 320 mg [a] > 5 kg
	primaquine [a]*	Tablet: 7.5 mg, 15 mg (as diphosphate) * Only for use to achieve radical cure of P.vivax and P.ovale infections, given for 14 days. [a] not to be used in pregnant women, infants aged < 6 months and women breastfeeding infants < 6 months
	sulfadoxine + pyrimethamine *	Tablet: 500 mg + 25 mg * Only in combination with artesunate 50 mg
	Complementary list	
	artesunate *	Injection: 60 mg (anhydrous artesunic acid) ampoule with separate ampoule of 5 % sodium bicarbonate solution. For use in the management of severe malaria Rectal (suppository) form: 100 mg [c] * To be used in combination with sulfadoxine + pyrimethamine
	quinine *	Injection: 300 mg (as dihydrochloride)/ ml in 2 ml ampoule Tablet:300 mg (as bisulfate or sulfate) * For use only in the management of severe malaria and should be used in combination with doxycycline
6.5.3.2	**For chemoprevention**	
	atovaquone + proguanil	Tablet: 62.5+ 25 mg, 250 mg + 100 mg

	chloroquine *	Tablet:300 mg base (as phosphate or sulfate) * Recommended for prophylaxis to areas with only P. vivax transmission
	doxycycline [a] *	Solid oral dosage form: 100 mg (as hydrochloride or hyclate) [a] >8 years. * For chemoprophylaxis, not necessary for in-country travel within Nepal
	mefloquine [a] *	Tablet: 250 mg (as hydrochloride) [a] >5 kg or >3 months * For chemoprophylaxis, not necessary for in-country travel within Nepal
7	**ANTIMIGRAINE MEDICINES**	
7.1	**For treatment of acute attack**	
	paracetamol	Tablet: 500 mg
7.2	**For prophylaxis**	
	propranolol	Tablet: 20 mg, 40 mg (hydrochloride)
8	**IMMUNOMODULATORS, ANTINEOPLASTIC AND MEDICINES USED IN PALLIATIVE CARE**	
8.1	**Immunomodulators for non-malignant diseases**	
	Complementary list	
	azathioprine	Tablet: 25 mg, 50 mg
	ciclosporin (cyclosporine)	Capsule:25 mg
8.2	**Antineoplastic and supportive medicines**	
	Medicines listed below should be used according to protocols for treatment of the diseases.	
8.2.1	**Cytotoxic medicines**	
	Complementary list	
	bleomycin	Powder for injection:15mg (as sulfate) in vial
	bendamustine	Injection: 2.5 mg (hydrochloride as lyophilized powder)/ ml in 10 ml vial
	calcium folinate (calcium leucovorin)	Tablet: 15 mg
	capecitabine	Tablet: 500 mg
	carboplatin	Injection: 150 mg, 450 mg in vial

	chlorambucil	Tablet: 2 mg, 5 mg
	cisplatin	Injection: 10 mg, 50 mg in vial
	cyclophosphamide	Powder for injection: 200 mg, 500 mg, 1 g in vial Tablet: 50 mg
	cytarabine	Powder for injection: 100 mg, 500 mg in vial
	dacarbazine	Powder for injection: 100 mg in vial
	dactinomycin	Powder for injection: 500 mcg in vial
	daunorubicin	Powder for injection: 20 mg (hydrochloride) in vial
	docetaxel	Injection: 20 mg/ ml, 40 mg/ ml
	doxorubicin	Powder for injection: 10 mg, 50 mg in vial
	epirubicin	Injection: 10 mg, 50 mg
	etoposide	Capsule: 100 mg Injection: 20 mg/ ml in 5ml ampoule
	fluorouracil	Injection: 50 mg/ ml in 5 ml, 10 ml ampoule
	gemcitabine	Powder for injection: 200 mg, 1 g in vial.
	hydroxyurea (hydroxycarbamide)	Capsule: 500 mg
	ifosfamide + mesna	Injection:1g + 200 mg in vial
	l-asparaginase	Powder for injection: 5 000 IU, 10 000 IU in vial
	melphalan	Powder for injection: 50 mg in vial Tablet: 2 mg, 5 mg
	mercaptopurine	Tablet: 50 mg
	methotrexate	Powder for injection: 15 mg, 50 mg (as sodium salt) in vial Tablet: 2.5 mg, 5 mg, 10 mg (as sodium salt)
	mitomycin	Powder for injection: 2mg, 10mg, 20mg in vial
	paclitaxel	Powder for injection: 6 mg/ ml in 5 ml, 17 ml
	procarbazine [c]	Capsule: 50 mg (as hydrochloride)
	vinblastine	Powder for injection:10 mg (sulfate) in vial
	vincristine	Powder for injection:1 mg (sulfate) in vial
8.2.2	**Targeted therapies**	

	Complementary list	
	all-trans retinoid acid	Capsule: 10 mg
	gefitinib	Tablet: 250 mg
	imatinib	Tablet: 100 mg, 400 mg
8.2.3	**Immunomodulators**	
	Complementary list	
	filgrastim	Injection: 300 mcg/ 0.5 ml in prefilled syringe, 300 mcg/ ml in 1 ml vial
	lenalidomide	Capsule: 25 mg
8.2.4	**Hormones and antihormones**	
	Complementary list	
	bicalitumide	Tablet or capsule: 50 mg
	dexamethasone *	Injection: 4 mg (as diphosphate sodium salt)/ ml [c] in 1 ml ampoule * Also used in palliative care
	hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial
	letrozole *	Tablet: 2.5 mg * Not to be used with tamoxifen
	methylprednisolone [c]	Injection: 40 mg (as sodium succinate)/ ml in 1 ml single vial; 80 mg (as sodium succinate)/ ml in 1 ml single dose vial
	prednisolone	Tablet: 5 mg, 10 mg, 20 mg
	tamoxifen	Tablet: 20 mg (as citrate)
8.2.5	**Supportive medicines**	
	Complementary list	
	allopurinol [c]	Tablet: 100 mg, 300 mg
	mesna	Injection:100 mg/ ml in 4 ml ampoule
	ondansetron [c] [a]	Injection: 2 mg (as hydrochloride)/ ml in 2 ml, 4 ml vial Oral liquid: 4 mg base/5 ml Tablet: 2 mg, 4 mg (as hydrochloride) [a] not in infants ≤ 1 month
	zoledronic acid	Solution for infusion: 4 mg/ 100 ml in 100 ml bottle

9	**ANTIPARKINSONISM MEDICINES**	
	levodopa + carbidopa	Tablet: 100 mg + 10 mg, 250 mg + 25 mg
	trihexyphenidyl (benzhexol)	Tablet: 2 mg (hydrochloride)
10	**MEDICINES AFFECTING THE BLOOD**	
10.1	**Antianaemia medicines**	
	cyanocobalamin	Injection: 30 mcg/ ml
	ferrous salt	Oral liquid: equivalent to 25 mg iron/ ml Tablet: equivalent to 60 mg iron
	ferrous salt + folic acid	Tablet: equivalent to 60 mg iron+ 400 mcg folic acid (nutritional supplement for use during pregnancy)
	folic acid *	Tablet: 5mg * Periconceptual use for prevention of first occurrence of neural tube defects
	iron dextran	Injection: equivalent to 50 mg iron/ ml in 2 ml ampoule
10.2	**Medicines affecting coagulation**	
	enoxaparin	Injection: 20 mg/ 0.2 ml, 60 mg/ 0.6 ml, 80 mg/ 0.8 ml
	heparin sodium [c]	Injection: 1000 IU/ ml, 5000 IU/ ml, 20 000 IU/ ml in 1 ml ampoule
	phytomenadione	Injection: 1mg/ml, 10 mg / ml in 5 ml ampoule Tablet: 10 mg
	protamine sulfate [c]	Injection: 10 mg/ ml in 5 ml ampoule
	warfarin [c]	Tablet: 1mg, 2 mg, 5 mg (sodium salt)
	tranexamic acid	Injection: 100 mg/ ml in 5 ml ampoule Tablet: 500 mg
10.3	**Other medicines for haemoglobinopathies**	
	Complementary List	
	deferasirox	Solid oral dosage form: 250 mg, 500 mg
	deferiprone	Tablet: 500 mg
	deferoxamine	Powder for injection: 500 mg (mesilate) in vial
	hydroxyurea (hydroxycarbamide)	Capsule: 200mg, 500 mg

11	**BLOOD PRODUCTS OF HUMAN ORIGIN AND PLASMA SUBSTITUTES**	
11.1	**Plasma-derived medicines**	
11.1.1	**Human immunoglobulins**	
	Anti-D immunoglobulin	Injection: 250 mcg in single dose vial
	Anti-rabies hyperimmune serum	Injection: 1000 IU in 5 ml ampoule
	Anti-tetanus immunoglobulin	Injection: 500 IU, 1000 IU/ ml, 3000 IU/ ml in vial
11.2	**Blood coagulation factor**	
	Complementary list	
	coagulation factor VIII	Powder for injection: 500 IU/ vial
	coagulation factor IX	Powder for injection: 500 IU/ vial, 1000 IU/ vial
11.3	**Plasma substitutes**	
	albumin, human	Injectable solution: 20% or 25%
	polygeline	Injectable solution: 3.5%
12	**CARDIOVASCULAR MEDICINES**	
12.1	**Antianginal medicines**	
	bisoprolol	Tablet: 5 mg
	glyceryl trinitrate	Tablet (sublingual): 500 mcg
	isosorbide dinitrate	Tablet (sublingual): 5 mg, 10 mg
	metoprolol	Tablet: 12.5 mg, 25 mg, 50 mg (as tartarate), 12.5 mg (as succinate)
	verapamil	Injection: 2.5 mg/ ml in 2 ml ampoule Tablet: 40 mg, 80 mg (hydrochloride)
12.2	**Antiarrhythmic medicines**	
	Complementary list	
	amiodarone	Injection: 50 mg (hydrochloride)/ ml in 3 ml ampoule Tablet: 100 mg, 200 mg
	digoxin	Injection: 250 mcg/ ml in 2 ml ampoule Oral liquid: 50 mcg/ ml Tablet: 62.5 mcg, 125 mg,250 mcg

	epinephrine (adrenaline)	Injection: 100 mcg (as acid tartrate or hydrochloride)/ ml in 10 ml ampoule
	isoprenaline	Injection: 1 mg (hydrochloride)/ ml in vial
	lidocaine (lignocaine preservative free)	Injection: 20 mg (hydrochloride)/ ml in vial
	metoprolol	Tablet: 12.5 mg, 25 mg, 50 mg
	verapamil	Injection: 2.5 mg / ml in 2 ml ampoule
12.3	**Antihypertensive medicines**	
	amlodipine	Tablet: 2.5 mg, 5 mg (as maleate, mesylate or besylate)
	amlodipine + losartan	Tablet: 5 mg + 25 mg, 5 mg + 50 mg
	enalapril	Tablet: 2.5 mg, 5 mg, 10 mg, 20 mg (as hydrogen maleate)
	hydralazine *	Powder for injection: 20 mg (hydrochloride) in ampoule * Hydralazine is listed for use only in the acute management of severe pregnancy-induced hypertension. Its use in the treatment of essential hypertension is not recommended in view of the evidence of greater efficacy and safety of other medicines.
	hydrochlorothiazide	Tablet: 12.5 mg, 25 mg
	labetalol	Injection: 5 mg/ ml in 20 ml Tablet: 50 mg
	losartan	Tablet:25 mg, 50 mg
	methyldopa *	Tablet: 250 mg * Methyldopa is listed for the use in the management of pregnancy induced hypertension only. Its use in the treatment of essential hypertension is not recommended in view of the evidence of greater efficacy and safety of other medicines.
	nifedipine	Tablet (sustained release): 10 mg, 20 mg
	prazosin	Tablet (sustained release): 500 mcg, 1 mg (mesilate)
	Complementary List	
	sodium nitroprusside	Powder for infusion: 50 mg in ampoule
12.4	**Medicines used in heart failure**	

	digoxin	Injection: 250 mcg/ ml in 2 ml ampoule Oral liquid: 50 mcg/ ml Tablet: 62.5 mcg, 250 mcg
	furosemide [c]	Injection:10 mg/ ml in 2 ml ampoule Tablet: 20 mg, 40 mg
	losartan	Tablet:25 mg, 50 mg
	ramipril	Tablet: 2.5 mg, 5 mg
	spironolactone	Tablet: 12.5 mg 25 mg
	Complementary list	
	dobutamine	Injection: 12.5 mg (as hydrochloride)/ ml in 20 ml ampoule
	dopamine	Injection: 40 mg (hydrochloride)/ ml in 5 ml vial
	norepinephrine (noradrenaline)	Injection: 1 mg/ ml in 2 ml ampoule
12.5	**Antithrombotic medicines**	
12.5.1	**Anti-platelet medicines**	
	acetylsalicylic acid (aspirin)	Tablet: 50 mg, 75 mg, 150 mg, 300 mg
	clopidogrel	Tablet: 75 mg
12.5.2	**Thrombolytic medicines**	
	Complementary List	
	streptokinase	Injection: 750 000 IU, 1 500 000 IU in vial
12.6	**Lipid lowering agent**	
	atorvastatin	Tablet: 10 mg, 20 mg (as calcium trihydrate)
	fenofibrate	Tablet: 80 mg, 160 mg
13	**DERMATOLOGICAL MEDICINES (TOPICAL)**	
13.1	**Antifungal medicines**	
	benzoic acid + salicylic acid	Ointment or cream: 6% + 3% w/w
	clotrimazole	Cream: 1% w/w
13.2	**Anti-infective medicines**	
	povidone iodine	Solution: 5% w/v

	silver sulfadiazine [a]	Cream: 0.2%, 1% [a] Not in neonates ≤ 2 months
	Complementary list	
	mupirocin	Cream or ointment: 2%
	fusidic acid	Cream: 2%
13.3	**Anti-inflammatory and antipruritic medicines**	
	calamine	Lotion: 15% w/v
	Complementary list	
	betamethasone [a]	Ointment or cream: 0.1% (as valerate) [a] Hydrocortisone preferred in neonates
	hydrocortisone	Ointment or cream: 1% w/w (acetate)
13.4	**Medicines affecting skin differentiation and proliferation**	
	benzoyl peroxide	Cream or lotion: 5%
	salicylic acid	Cream: 10%
	Complementary list	
	podophyllotoxin	Solution: 0.5% w/v in 3.5 ml bottle
13.5	**Scabicides and pediculicides**	
	permethrin	Lotion: 1%, 5%
	benzyl benzoate [a]	Lotion: 25% w/v [a] not in children ≤ 2 years
14	**DIAGNOSTIC AGENTS**	
14.1	**Ophthalmic medicines**	
	fluorescein	Eye drops: 1%, 2% (sodium salt) Injection: 10%, 20% (sodium salt) in 5 ml ampoule
14.2	**Radiocontrast media**	
	Complementary list	
	amidotrizoate	Injection: 140-420 mg iodine (as sodium or meglumine salt)/ ml in 20 ml, 50 ml ampoule
	barium sulfate [c]	Aqueous suspension: 100-250% w/v
	iohexol	Injection: 140-350 mg iodine/ ml in 10 ml, 20 ml ampoule or 50 ml vial

	Complementary list	
	meglumine iotroxate	Solution: 5 g- 8 g iodine in 100-250 ml
15	**DISINFECTANTS AND ANTISEPTICS**	
15.1	**Antiseptics**	
	chlorhexidine	Solution: 5% (digluconate)
	ethanol (rectified spirit)	Liquid: 70% (denatured)
	povidone iodine	Solution: 10 % w/v (equivalent to 1% available iodine)
15.2	**Disinfectants**	
	alcohol based hand rub	Solution: containing ethanol 80% v/v Solution: containing isopropyl alcohol 75% v/v
	chlorine based compound	Powder for solution: 0.1% available chlorine
	glutaraldehyde	Solution: 2%
16	**DIURETICS**	
	furosemide	Injection:10 mg/ ml in 2 ml ampoule Tablet: 40 mg
	hydrochlorothiazide	Solid oral dosage form: 25mg [c], 50 mg
	mannitol [c]	Injectable solution: 10%, 20%
	spironolactone [c]	Tablet:25 mg, 100 mg
17	**GASTROINTESTINAL MEDICINES**	
17.1	**Antacids and antiulcer medicines**	
	omeprazole	Capsule:20 mg Powder for oral liquid: 20 mg; 40 mg sachet
	ranitidine	Injection: 25 mg (as hydrochloride)/ ml in 2 ml ampoule Tablet: 150 mg, 300 mg (as hydrochloride)
17.2	**Antiemetic medicines**	
	domperidone	Suspension: 1 mg/ ml Tablet: 10 mg

	ondansetron [c] [a]	Injection:2 mg (as hydrochloride)/ ml in 2 ml, 4 ml vial Oral liquid: 4 mg base/5 ml Tablet: 2 mg, 4 mg (as hydrochloride) [a] not in infants ≤ 1 month
	metoclopramide [a] *	Injection: 5 mg (hydrochloride)/ ml in 2 ml ampoule Tablet: 10 mg (hydrochloride) * Also used in palliative care [a] not in neonates
	promethazine	Injection: 25 mg (hydrochloride)/ ml in 2 ml ampoule Oral liquid: 5 mg (hydrochloride)/ 5 ml Tablet: 25 mg (theoclate)
17.3	**Anti-inflammatory medicines**	
	sulfasalazine	Tablet: 500 mg
17.4	**Laxatives**	
	lactulose [c] *	Solution: 3.35 mg / 5 ml * Also used in palliative care
	magnesium sulfate	Powder: 500 g
	Complementary list	
	bisacodyl	Tablet: 5 mg , 10 mg
	ispaghula husk	Oral powder
17.5	**Medicines used in diarrhea**	
17.5.1	Oral rehydration	
	oral rehydration salts *	ORS Powder for dilution in 1 L (as per WHO recommended formula)
17.5.2	Medicine for diarrhoea	
	zinc sulfate *	Tablet (dispersible): equivalent to zinc 10 mg, 20 mg (scored) * In acute diarrhoea, zinc sulfate should be used as an adjunct to oral rehydration salts
17.6	**Antispasmodic medicines**	
	hyoscine butylbromide [c] *	Injection: 20 mg/ ml in 1 ml ampoule Tablet: 10 mg, 20 mg * Also used in palliative care

	Complementary list	
	drotaverine hydrochloride	Tablet: 40 mg, 80 mg
	hyoscine hydrobromide *	Injection:400 mcg/ ml, 600 mcg/ ml * Also used in palliative care
18	**MEDICINES FOR ENDOCRINE DISORDERS**	
18.1	**Adrenal hormones and synthetic substitutes**	
	dexamethasone *	Injection: 4 mg (as disodium phosphate salt)/ ml in 1 ml ampoule Tablet: 500 mcg, 4 mg * Also used in palliative care
	hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial Tablet:10 mg, 20 mg
	prednisolone	Tablet: 5 mg, 10 mg, 20 mg
	Complementary list	
	fludrocortisone	Tablet:100 mcg (acetate)
18.2	**Androgens**	
	Complementary list	
	testosterone	Injection:200 mg in 1 ml ampoule
18.3	**Estrogens**	
	ethinylestradiol	Tablet: 50 mcg
18.4	**Progestogens**	
	norethisterone	Tablet: 5 mg
	medroxyprogesterone acetate	Tablet: 5 mg
18.5	**Medicines for diabetes**	
18.5.1	**Insulins**	
	insulin (soluble)	Injection: 40 IU / ml in 10 ml vial
	intermediate acting insulin (NPH)	Injection: 40 IU/ ml in 10 ml vial (as compound insulin zinc suspension or isophane insulin)
18.5.2	**Oral hypoglycemic agent**	
	gliclazide	Tablet: 40 mg, 80 mg

	metformin [c]	Tablet: 500 mg, 850 mg, 1 g(hydrochloride)
	Complementary list	
	glipizide	Tablet: 2.5 mg, 5 mg
18.6	**Thyroid hormones and antithyroid medicines**	
	carbimazole [c]	Tablet: 5 mg
	levothyroxine	Tablet: 25 mcg [c], 50 mcg, 75 mcg, 100 mcg (sodium salt)
	lugol's iodine [c]	Oral solution: iodine 5% + potassium iodide 10%
18.7	**Posterior pituitary hormone**	
	desmopressin [c]	Injection: 4 mcg/ ml Nasal spray: 10 mcg /metered spray
19	**IMMUNOLOGICALS**	
19.1	**Diagnostic agents**	
	tuberculin, purified protein derivative (PPD)	Injection
19.2	**Sera and immunoglobulins**	
	diphtheria antitoxin (immunoglobulin)	Injection: 10000 IU, 20000 IU in vial
	polyvenom anti-snake serum	Injection in vial
	tetanus antitoxin (immunoglobulin)	Injection: 1000 IU/ ml, 3000 IU/ ml in vial
19.3	**Vaccines**	
19.3.1	For universal immunization	

	BCG	Vaccine
	diphtheria, tetanus, pertussis, hepatitis B, haemophilus influenzae type b	Vaccine (pentavalent)
	japanese encephalitis SA 14-14-2 strain	Vaccine
	measles rubella (MR)	Vaccine
	poliomyelitis (oral)	Vaccine
	poliomyelitis (inactivated)	Vaccine
	pneumococcal	Vaccine
	rotavirus	Vaccine
	tetanus diphtheria (Td)	Vaccine
19.3.2	**For specific groups of individuals**	
	Complementary list	
	hepatitis A	Vaccine
	hepatitis B	Vaccine
	human papiloma vaccine (HPV)	Vaccine
	Haemophilus influenzae type b	Vaccine
	influenza (seasonal)	Vaccine
	meningococcal meningitis	Vaccine
	measles	Vaccine
	mumps	Vaccine
	rubella	Vaccine
	tetanus toxoid	Vaccine
	typhoid	Vaccine
	yellow fever	Vaccine
	rabies vaccine, freeze-dried	Vaccine

20	**MUSCLE RELAXANTS (PERIPHERALLY ACTING) AND CHOLINESTERASE INHIBITORS)**	
	neostigmine	Injection: 500 micrograms in 1 mL ampoule; 2.5 mg (metilsulfate) in 1 mL ampoule Tablet: 15 mg (bromide)
	suxamethonium (succinylcholine)	Injection: 50 mg (chloride)/ ml in 10 vial
	vecuronium [c]	Powder for injection: 4 mg, 10 mg (bromide) in vial
	Complementary list	
	atracurium	Powder for injection: 10 mg (besylate)/ ml
21	**OPHTHALMOLOGICAL PREPARATIONS**	
21.1	**Anti-infective agents**	
	aciclovir	Ointment: 3% W/W
	ciprofloxacin	Eye ointment: 0.3% Solution (eye/ ear drops): 0.3% (as hydrochloride)
	natamycin	Suspension (eye drop): 5%
	Complementary list	
	chloramphenicol	Eye ointment: 1% w/w Solution (eye drop): 0.5%
	fluconazole	Solution (eye drop): 0.3%
	ofloxacin	Solution (eye drop): 0.3%
	tetracycline	Ointment (eye): 1% (hydrochloride)
21.2	**Anti-inflammatory agents**	
	prednisolone	Solution (eye drops): 0.5% (sodium phosphate)
21.3	**Local anaesthetics**	
	lidocaine (lignocaine)	Injection(topical): 2%, 4%
	proparacaine	Solution (eye drops): 0.5%
	Complementary list	
	tetracaine [a]	Solution (eye drops): 0.5% [a] Not in neonates
21.4	**Miotics and antiglaucoma medicines**	

	acetazolamide	Tablet: 250 mg
	pilocarpine	Solution (eye drops): 2%, 4% (hydrochloride)
	timolol	Solution (eye drops): 0.5 % (maleate)
21.5	**Mydriatics**	
	atropine [a]	Solution (eye drops): 1% (sulfate) [a] >3 months
	tropicamide	Solution (eye drop): 0.5%
22	**MEDICINES FOR REPRODUCTIVE HEALTH AND PERINATAL CARE**	
22.1	**Contraceptives**	
22.1.1	Oral hormonal contraceptives	
	ethinylestradiol + levonorgestrel	Tablet: 30 mcg + 150 mcg, 20 mcg + 1.0 mg
	ethinylestradiol + norethisterone	Tablet: 35 mcg + 1 mg
	levonorgestrel	Tablet: 750 mcg (pack of two), 1.5 mg
22.1.2	Injectable hormonal contraceptive	
	medroxyprogesterone acetate	Injection (Depot intramuscular): 150 mg / ml in 1 ml vial
22.1.3	Intrauterine devices	
	copper-containing devices	
22.1.4	Barrier methods	
	condoms	
22.1.5	Implantable contraceptives	
	intrauterine device with progesterone	
	levonorgestrel-releasing implant	Two-rod levonorgestrel-releasing implant: each rod containing 75 mg of levonorgestrel (150 mg total)
22.1.6	Miscellaneous	
	ring pessary	
	silicon ring pessary	
22.2	**Ovulation inducers**	
	clomifene	Tablet: 50 mg (citrate)
22.3	**Uterotonics**	

	methylergometrine	Injection: 200 mcg (maleate)/ ml in ampoule
	oxytocin	Injection: 5 IU/ ml, 10 IU/ ml in 1 ml ampoule
	Complementary list	
	mifepristone * - misoprostol	Tablet: 200 mg – tablet: 200 mcg * Copackage containing: [1] tablet of mifepristone and [4] tablet of misoprostol. Requires close medical supervision. Approved for abortion services only in listed sites.
	misoprostol *	Tablet: 200 mcg, 600 mcg - Management of incomplete abortion and miscarriage - Prevention and treatment of postpartum haemorrhage where oxytocin is not available or cannot be safely used Tablet (vaginal): 25 mcg * Only for used for induction of labour where appropriate facilities are available.
22.4	**Antioxytocics (tocolytics)**	
	nifedipine	Capsule(immediate release): 10 mg
	Complementary list	
	terbutaline	Injection: 0.5 mg / ml
22.5	**Other medicines administered to the mother**	
	dexamethasone	Injection: 4 mg (as disodium phosphate salt)/ ml in 1 ml ampoule
	tranexamic acid	Injection: 100 mg/ ml in 10 ml ampoule
22.6	**Medicines administered to the neonate [c]**	
	caffeine citrate [c]	Injection: 20mg/ ml (equivalent to 10 mg caffeine base/ ml) Oral liquid: 20 mg/ ml (equivalent to 10 mg caffeine base/ ml)
	chlorhexidine [c]	Solution or gel: 7.1% (digluconate) delivering 4% chlorhexidine (for umbilical cord care)
	Complementary list	
	ibuprofen [c]	Solution for Injection: 5 mg/ ml
	surfactant [c]	Suspension for intratracheal instillation: 25 mg/ ml

23	**PERITONEAL DIALYSIS SOLUTION**	
	intraperitoneal dialysis solution (of appropriate composition)	Parenteral solution
24	**MEDICINES FOR MENTAL AND BEHAVIOURAL DISORDER**	
24.1	**Medicines used in psychotic disorders**	
	chlorpromazine	Injection: 25 mg (hydrochloride)/ mL in 2 ml ampoule Oral liquid: 25 mg (hydrochloride)/ 5ml Tablet: 50 mg, 100 mg (hydrochloride)
	fluphenazine	Injection:25 mg (decanoate or enantate) in 1 ml ampoule
	haloperidol *	Injection: 5 mg/ ml in 1 ml ampoule Tablet: 0.5 mg, 2 mg, 5 mg * Also used in palliative care
	olanzapine	Tablet: 2.5 mg, 5 mg, 10 mg
	Complementary list	
	risperidone	Tablet: 1 mg, 2 mg, 4 mg
24.2	**Medicines used in mood disorders**	
24.2.1	Medicines used in depressive disorders	
	amitriptyline *	Tablet: 10 mg, 25 mg , 75 mg (hydrochloride) * Also used in palliative care
	fluoxetine [c] [a]	Solid oral dosage form: 20 mg (as hydrochloride) [a] >8 years
24.2.2	Medicines used in bipolar disorders	
	carbamazepine	Tablet (scored): 100 mg, 200 mg
	lithium carbonate	Solid oral dosage form:300 mg (sustained release)
	valproic acid (sodium valproate)	Oral liquid: 200 mg/5 ml Tablet (enteric coated): 200 mg, 500 mg (sodium salt)
24.3	**Medicines used in generalized anxiety and sleep disorders**	

	chlordiazepoxide	Tablet: 10 mg, 25 mg
	diazepam	Tablet: 2 mg, 5 mg
	lorazepam	Tablet: 0.5 mg, 1 mg, 2 mg
24.4	**Medicines used for obsessive compulsive disorders**	
	fluoxetine [c] [a]	Solid oral dosage form:20 mg (as hydrochloride) [a] > 8 years
24.5	**Medicines used in disorders due to psychoactive substance use**	
	methadone	Concentrate for oral liquid:5 mg/ ml, 10 mg/ ml (hydrochloride) Oral liquid:5 mg / 5 ml, 10 mg/ 5 ml Tablet: 5 mg
	nicotine replacement therapy (NRT)	Chewing gum: 2 mg; 4 mg (as polacrilex).
	Complementary list	
	buprenorphine *	Sublingual Tablet: 200 mcg * The medicines should only be used within an established support programme.
	disulfiram	Tablet: 200 mg
	nicotine replacement therapy (NRT)	Transdermal patch: 5 mg to 30 mg/16 hrs; 7 mg to 21 mg/ 24 hrs
25	**MEDICINES ACTING ON THE RESPIRATORY TRACT**	
25.1	**Antiasthmatic and medicines for chronic obstructive pulmonary disease**	
	aminophylline	Injection: 25 mg/ ml
	epinephrine (adrenaline)	Injection: 1 mg (as hydrochloride or acid tartrate) in 1 ml ampoule
	hydrocortisone	Injection (sodium succinate): 100 mg, 200 mg in vial Tablet: 10 mg
	ipratropium bromide	Inhalation(aerosol): 20 mcg/ metered dose
	salbutamol	Inhalation: 100 mcg/dose Injection: 50 mcg / ml in 5 ml ampoule Metered dose inhaler (aerosol): 200 mcg (as sulfate) per dose Oral liquid: 2mg (as sulfate)/5ml Tablet: 2 mg, 4 mg (as sulfate)
	Complementary list	
	beclometasone	Inhalation (aerosol): 50 mcg (as dipropionate) per dose (CFC free forms)

26	**SOLUTION CORRECTING WATER, ELECTROLYTE AND ACID BASE DISTURBANCES**	
26.1	**Oral**	
	oral rehydration salts	ORS Powder for dilution in 1 L (as per WHO recommended formula)
26.2	**Parenteral**	
	compound solution of sodium lactate (ringer's lactate)	Injectable solution
	glucose	Injectable solution: 5% isotonic, 25% hypertonic, 50% hypertonic
	glucose with sodium chloride	Injectable solution: 5% glucose + 0.9% sodium chloride
	potassium chloride	Injection: 15% in 20 ml ampoule
	sodium chloride	Injectable solution: 0.9% isotonic (normal saline)
	sodium bicarbonate (sodium hydrogen carbonate)	Injectable solution: 7.5 % solution in 10 ml ampoule [c]
26.3	**Miscellaneous**	
	water for injection	Injection: 5 ml, 10 ml ampoule
27	**VITAMINS AND MINERALS**	
	ascorbic acid	Tablet: 500 mg
	calcium	Tablet: 500 mg (elemental)
	colecalciferol [c]	Capsule: 1 000 IU Oral liquid (drops): 400 IU/ ml Tablet (chewable): 60 000 IU
	pyridoxine	Tablet: 25 mg (hydrochloride)
	retinol	Capsule: 20 000 IU (as palmitate) Injection (water miscible): 100 000 IU (as palmitate) in 2 ml ampoule Oral solution (oil): 100 000 IU (as palmitate)/ ml in multi-dose dispenser Tablet (sugar coated): 10 000 IU (as palmitate)
	riboflavin	Tablet: 5 mg
	thiamine	Tablet: 100 mg (as hydrochloride)
	Complementary	
	calcium gluconate	Injection:100 mg/ ml in 10 ml ampoule

28	**EAR, NOSE AND THROAT PREPARATIONS AND DENTAL PREPARATIONS**	
28.1	Ear, nose and throat preparations	
	betamethasone	Ear drop or cream: 0.05 %
	chloramphenicol	Ear drop: 5%
	ciprofloxacin [c]	Ear drop:0.3% (as hydrocholoride)
	clotrimazole	Ear drop: 1%
	lidocaine (lignocaine)	Topical (viscous): 2%, 4%
	oxymetazoline [c] [a]	Solution (nasal drops): 0.025%, 0.05% [a] > 6 years
	sodium bicarbonate + glycerin	Ear drop: 1% + 5%
28.2	Dental	
	benzocaine	Ointment: 0.2% Solution: 20%
	chlorhexidine	Solution: 0.2% (gluconate)
	zinc oxide	Powder
29	**MEDICINES FOR DISEASES OF JOINTS**	
29.1	Medicines used to treat gout	
	allopurinol	Tablet: 100 mg, 300 mg
	colchicine	Tablet: 500 mcg
29.2	Disease modifying agents used in rheumatic disorders (DMARDs)	
	methotrexate	Tablet: 2.5 mg, 5 mg, 10 mg (as sodium salt)
	Complementary list	
	azathioprine	Tablet: 25 mg, 50 mg
	hydroxychloroquine	Solid oral dosage form: 200 mg

ANNEX I

Comparative Table for Addition and Deletion of Molecules in National List of Essential Medicines, 2021

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
1	Anaesthetics, perioperatve medicines and medical gases	propofol	Injection	10 mg/ ml in 20 ml ampoule	M	Shifted				
		thiopental	Injection	0.5 mg, 1.0 g in ampoule	M	Deleted	1	1	2	Safer alternate available
		bupivacaine	Injection	5 mg/ ml + 80mg/ ml in 4 ml ampoule	M	Added	0	0	1	Used for spinal anesthesia, safer
		ephedrine	Injection	30 mg / ml in 1 ml ampoule	C	Added	1	1	1	for use in spinal anaesthesia during delivery to prevent hypotension
		glycopyrrolate	Injection	0.2 mg/ ml in ampoule	M	Added	1	1	1	Used as preoperative medication
		atropine	Injection	1mg/ ml	M	Replaced	0	0	1	Replaced by more widely used strength of 0.6 mg/ ml
		morphine	Oral liquid	10 mg/ 5 ml	M	Added	0	1	1	For pain management in burn patient
2.	Medicines for Pain and Palliative Care	paracetamol	Suppository	125 mg, 250 mg	M	Added	0	1	2	To address pediatric patients
		diclofenac	Injection	25 mg/ ml	C	Deleted	0	0	1	More practical dosage strength available
		diclofenac	Injection	75 mg/ ml	C	Added	0	0	1	Practical dosage strength
3.	Antiallergics and medicines used in anaphylaxis	cetirizine	Tablet	10 mg	M	Deleted	1	1	1	Better alternative available
		levocetirizine	Tablet	5 mg	M	Added	1	1	1	Safer alternative

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
4.	Antidotes and other substances used in poisonings	acetylcysteine	Effervescent tablet	600 mg	M	Added	0	1	1	Lower cost than injection
		atropine	Powder for injection	50 mg	M	Deleted	0	1	1	Dosage form not available
		fomipezole	Injection	5 mg/ ml	C	Added	1	1	1	For the treatment of methanol or ethylene glycol poisoning
5.	Anti-infective medicines	albendazole	Oral liquid	400 mg/ 10 ml	M	Added	0	1	1	To address national programme
		mebendazole	Tablet	100 mg	C	Added	1	1	1	To address national programme
		diethylcarba-mazine	Tablet	600 mg	M	Replaced	0	0	0	Replaced by available strength of 150 mg
		amikacin	Injection	250 mg/ml	M	Added	1	1	1	Used as first line in hospitalized patients, less incidence of resistance
		ampicillin	Capsule	500 mg	M	Added	0	1	1	Used in many types infections
		amoxicillin	Powder for injection, Dispersible tablet	250 mg, 500 mg, 1 g	M	Added	0	1	3	To address the antibiotic need
		amoxicillin + clavulanic acid	Powder for injection	500 mg + 100 mg, 1000 mg + 200 mg	M	Added	0	1	2	To address the antibiotic need

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		tetracycline	Capsule	250 mg, 500 mg	C	Deleted	0	1	2	Safer and less resistant alternative available
		metronidazole	Injection	500 mg/ 100 ml	M	Shifted				
		ciprofloxacin	Injection	200mg/ 100 ml	C	Shifted				
		piperacillin +tazobactam	Injection	2 g + 250 mg; 4 g + 500 mg in vial	M	Added	1	1	2	Used as first line in hospitalized patients, less resistance
		cefotaxime	Powder for injection	250 mg, 500 mg, 1 g	C	Added	1	1	3	For hospitalized neonates
		clindamycin	Capsule, injection, oral liquid	150 mg, 150mg/ ml, 75 mg/5ml	M	Added	1	3	3	Less incidence of resistance
		clarithromycin	Tablet/ capsule, oral liquid, injection	500 mg; 125 mg/5 ml, 250 mg/5 ml, 500 mg	C	Added	1	3	3	To address antibiotic need
		meropenem	Injection	500 mg, 1 g	M	Added	1	1	2	To address antibiotic need
		polymyxin B	Injection	500 000 I.U.	M	Added	1	1	2	To address antibiotic need
		colistin	Powder for Injection	1 million I.U.	C	Added	1	1	1	To address antibiotic need
		linezolid	Injection, Powder for oral liquid	2 mg/ mL, 100 mg/5 mL	C	Added	0	2	2	To address antibiotic need

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		ethambutol + isoniazid	Tablet	400 mg + 150 mg	M	Deleted	1	1	1	Phased out
		pyrazinamide	Tablet	150 mg, 400 mg, 500 mg	M	Shifted				
		rifabutin	Tablet	150 mg	M	Added	1	1	1	To address vertical programme (STI/OI)
		ofloxacin	Tablet	200 mg	C	Deleted	0	1	1	To address national TB program
		itraconazole	Capsule, Oral liquid	100 mg, 10 mg/ml	M	Added	1	2	2	To address the need of antifungal medicine
		indinavir (IDV)	Capsule	400 mg	M	Deleted	1	1	1	To address national HIV/ AIDS program
		nelfinavir (NFV)	Tablet	250 mg	M	Deleted	1	1	1	To address national HIV/ AIDS program (phased out)
		saquinavir + ritonavir	Oral dosage form	1 g + 100 mg	M	Deleted	1	1	1	To address national HIV/ AIDS program (phased out)
		fluconazole	Capsule	200 mg	M	Added	0	0	1	Practical dosage strength
		flucytosine	Capsule	500 mg	M	Added	1	1	1	To address national programme
		stavudine (d4)	Capsule, Powder for oral liquid	15 mg, 20 mg, 30 mg; 5 mg/ 5 ml	M	Deleted	1	2	4	Phased out
		atazanavir + ritonavir	Tablet	300 mg + 100 mg	M	Added	1	1	1	To address national programme

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		darunavir	Tablet	600 mg	M	Added	1	1	1	To address national programme
		abacavir + lamivudine	Dispersible tablet, ,	120 mg + 60 mg	M	Added	0	1	2	To address national programme
		lamivudine + stavudine	Tablet	150 mg + 30 mg	M	Deleted	1	1	1	Phased out
		dulotegravi + lamivudine + tenofovir	Tablet	50 mg + 300 mg + 300 mg	M	Added	1	1	1	To address national programme
		lamivudine + tenofovir	Tablet	300 mg + 300 mg	M	Added	1	1	1	To address national programme
		stavudine + lamivudine + nevirapine	Tablet	30 mg + 150 mg + 200 mg	M	Deleted	1	1	1	Phased out
		ganciclovir	Powder for injection	500 mg	C	Added	1	1	1	To address vertical programme (STI/OI)
		valganciclovir	Tablet	450 mg	C	Added	1	1	1	To address vertical programme (STI/OI)
		sofosbuvir	Tablet	400 mg	M	Shifted				
		entecavir	Oral liquid, Tablet	0.05 mg/ml, 0.5 mg, 1 mg	M	Shifted				
		tenofovir disoproxil fumarate (TDF)	Tablet	300 mg	M	Shifted				

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		tenofovir alafenamide	Tablet	25 mg	M	Added	1	1	1	For the treatment of hepatitis
		sofosbuvir + velpatasvir	Tablet	400 mg + 100 mg	M	Added	1	1	1	For the treatment of hepatitis
		ledipasvir + sofosbuvir	Tablet	90 mg + 400 mg.	M	Added	1	1	1	For the treatment of hepatitis
		ribavirin	Injection, solid oral dosage form	800 mg/ml, 1 g/ml, 200 mg; 400 mg	M	Added	1	2	4	For the treatment of hepatitis
		secnidazole	Oral	2 gm	C	Added	1	1	1	Better safety and cost effectiveness than metronidazole in certain condition
		atovaquone + proguanil	Tablet	62.5+ 25 mg, 250 mg + 100 mg	C	Added	1	1	2	To address national programme
		dihydroar-temisinin + piperaquine phosphate	Tablet	40 mg + 320 mg	M	Added	1	1	1	To address national programme
		mefloquine	Tablet	250 mg	M	Added	1	1	1	To address national programme
		doxycycline	Powder for injection, oral liquid	100 mg, 25 mg/ 5 ml, 50 mg/ 5 ml	M	Added	0	2	3	To address national programme

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		sodium stibo-gluconate	Injection	100mg/ ml	C	Deleted	1	1	1	Phased out
8.	Immunomodulators, antineoplastic and medicines used in palliative care	azathioprine	Tablet	25 mg, 50 mg	C	Added	1	1	2	Widely used immunosuppressive in autoimmune diseases and suppression of transplant rejection
		capecitabine	Tablet	500 mg	C	Added	1	1	1	Used in breast cancer
		lomustine	Capsule	40 mg	C	Deleted	1	1	1	Problem with availability
		bendamustine	Injection	2.5 mg/ ml	C	Added	1	1	1	Readily available
		docetaxel	Injection	20 mg/ ml, 40 mg/ ml	C	Added	1	1	2	Used in breast cancer
		gemcitabine	Powder for injection	200 mg, 1 g	C	Added	1	1	2	Used in lung cancer
		paclitaxel	Powder for injection	6 mg/ ml	C	Added	1	1	1	Used in breast cancer
		mitoxantrone	Injection	2 mg/ ml	C	Deleted	1	1	1	Better alternates available
		all-trans retinoic acid	Capsule	10 mg	C	Added	1	1	1	Used in Acute Promyelocytic Leukemia
		gefitinib	Tablet	250 mg	C	Added	1	1	1	Used in lung cancer
		imatinib	Tablet	100 mg, 400 mg	C	Added	1	1	2	Used in CML, AML, GIST
		granulocyte colony stimulating factor (G-CSF)	Injection	30 million unit in vial	M	Deleted	1	1	1	Safer alternate available

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		filgrastim	Injection	300 mcg/ 0.5 ml, 300 mcg/ 1 ml	C	Added	1	1	2	Prophylaxis for chemotherapy induced neutropenia, safer alternate
		lenalidomide	Capsule	25 mg	C	Added	1	1	1	Used in Multiple myeloma
		letrozole	Tablet	2.5 mg	C	Added	1	1	1	Used in breast cancer
		methylpred-nisolone	Injection	40 mg/ ml, 80 mg/ ml	C	Added	1	1	2	Used in Acute lymphoblastic leukemia
		mesna	Injection	100 mg/ ml	C	Added	1	1	1	Prevention of haemorrhagic cystitis
		interferon alfa 2b	Injection	5 million units/ ml	C	Deleted	1	1	1	Safer and more targeted therapy available
		granisetron	Tablet	1mg, 2 mg	M	Deleted	1	1	2	More cost effective alternate availbable
		zoledronic acid	Infusion	4 mg/ 100 ml	C	Added	1	1	1	For hormone therapy induced bone resorption
10	Medicines affecting the blood	cyanocobal-amin	Injection	30 mcg/ ml	M	Shifted	0	0	0	
		acenocou-marol	Tablet	1mg	C	Deleted	1	1	1	Problem with availability
		phytomena-dione	Injection	2 mg/ ml	M	Added	0	0	1	To address national program
		tranexamic acid	Tablet, injection	500 mg; 100 mg/ml	M	Added	1	2	2	For acute bleeding especially in gynaecology

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
		deferasirox	Solid oral dosage form	250 mg, 500 mg	C	Added	1	1	2	To address the issues of chronic iron overload in patients with hemoglobinopathies
		deferiprone	Tablet	500 mg	C	Added	1	1	1	To address the issues of chronic iron overload in patients with hemoglobinopathies
12.	Cardiovascular medicines	atenolol	Tablet	25 mg, 50 mg, 100 mg	M	Deleted	1	1	3	Not preferred choice of drug
		bisoprolol	Tablet	5 mg	M	Added	1	1	1	More cardioselective drug than alternate drug
		metoprolol	Tablet	12.5 mg (succinate)	M	Added	0	0	1	Increase compliance, extended release
		disopyramide	Capsule	100 mg, 150 mg	C	Deleted	1	1	2	Safer alternate present Problem with availability
		procainamide	Tablet, Injection	250 mg, 100 mg/ ml	C	Deleted	1	2	2	Safer alternate present Problem with availability
		amiodarone	Tablet	200 mg	C	Added	0	0	1	Practical dosage strength
		enalapril	Tablet	2.5 mg	M	Added	0	0	1	Pediatric dose
		amlodipine + losartan	Tablet	5 mg+ 25 mg	M	Added	1	1	1	Increases compliance, practical formulation

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
13.	Dermatological medicines (topical)	mupirocin	Cream or ointment	0.02	C	Shifted				
		benzyl benzoate	Lotion	25%	M	Added	1	1	1	To address national programme
		silver sulfadiazine	Cream	1%	M	Added	0	0	1	Effective antibacterial in burn injury
		betametha-sone	Ointment or cream	0.1	C	Shifted				
		hydrocorti-sone	Ointment or cream	1% w/w	C	Shifted				
		podophyllo-toxin	Solution	0.5% w/v	C	Added	1	1	1	To address national programme
15.	Disinfectants and antiseptics	gentian violet (meth-ylrosanilinium chloride)	Aqueous solution	1%	M	Deleted	1	1	1	Impractical, better alternate available
		alcohol based hand rub	Solution	ethanol 80% v/v, isopropyl alcohol 75% v/v	M	Added	0	1	2	Practical dosage form

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
17.	Gastrointestinal medicines	dried aluminium hydroxide gel + magnesium hydroxide *	Tablet	250 mg + 250 mg	M	Deleted	1	1	1	Variation in formulation
		domperidone	Tablet, suspension	10 mg, 1 mg/ ml	M	Added	1	2	2	To address national programme
		hyoscine hydrobromide	Injection	400 mcg/ ml, 600 mcg/ ml	M	Added	1	1	1	To address national programme
18.	Medicines for endocrine disorders	metformin	Tablet	1 g	M	Added	0	0	1	Commonly used strength
		dexametha-sone	Tablet	4 mg	M	Added	0	0	1	Practical dosage strength
		prednisolone	Tablet	20 mg	M	Added	0	0	1	Practical dosage strength
19.	Immunologicals	diphtheria, tetanus, pertussis, hepatitis B	Vaccine		M	Deleted	1	1	1	Phased out, replaced by pentavalent
		measles rubella (MR)	Vaccine		M	Added	1	1	1	To address EPI schedule
		poliomyelitis (inactivated)	Vaccine		M	Added	1	1	1	To address EPI schedule
		pneumococcal	Vaccine		M	Added	1	1	1	To address EPI schedule
20.	Muscle relaxants (peripherally acting) and cholinesterase inhibitors)	pancuronium bromide	Injection	2 mg / ml	M	Deleted	1	1	1	Safer alternate present Problem with availability
		vecuronium bromide	Powder for injection	4 mg	M	Added	0	0	1	Practical dosage strength

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
21.	Ophthalmological preparations	natamycin	Suspension	5%	M	Added	1	1	1	More efficacious
		ciprofloxacin	Solution; ointment	0.3%	M	Shifted				
		fluconazole	Solution	0.3%	C	Shifted				
		gentamicin	Solution	0.3% (sulfate)	M	Deleted	0	1	1	High antimicrobial resistance
22.	Medicines for reproductive health and perinatal care	dexametha-sone	Injection	4 mg/ml	M	Added (repeated)	0	0	1	For antenatal use in anticipated preterm delivery
		ibuprofen	Injection	5 mg/ ml	C	Added	0	0	1	For closure of ductus arteriosus
		surfactant	Suspension	25 mg/ ml	C	Added	1	1	1	For Respiratory distress syndrome in premature infants
24.	Medicines for mental and behavioural disorders	haloperidol	Tablet	0.5 mg	M	Added	0	0	1	Anxiolytic dosage strength
		lorazepam	Tablet	0.5 mg	M	Added	0	0	1	Anxiolytic dosage strength
		thioridazine	Tablet	10 mg, 25 mg, 100 mg	C	Deleted	1	1	1	Safer alternate present Problem with availability
		clomipramine	Capsules	10 mg, 25 mg	M	Deleted	1	1	1	Safer alternate present Problem with availability
		nicotine replacement therapy (NRT)	Chewing gum Transdermal patch	2 mg, 4 mg, 5 mg to 30mg/16 hrs, 7 mg to 21 mg/24 hrs	M, C	Added	1	2	4	To decrease nicotine dependence

S.No.	Group	Name	Dosage form	Strength	List	Added/ Deleted	Molecule	Dosage form	Strength	Reason
27.	Vitamins and minerals	colecalciferol	Capsule, oral liquid (drops), tablet	1 000 IU, 400 IU/ ml, 60000 IU	M	Added	1	1	1	To address national program
		ergocalciferol	Solid oral dosage form, Oral solution	1.25 mg (50 000 IU) , 250 mcg/ ml) (10000 IU/ ml)	M	Deleted	1	2	2	Safer alternate present Problem with availability
28.	Ear, nose and throat preparations and dental preparations	benzocaine	Ointment	0.2%	M	Added	0	1	1	Practical dosage form and strength
		bismuth iodoform paraffin	Solution	70%	M	Deleted	1	1	1	Better alternates available
		ichthammol + glycerin	Ear drop:	10% + 5%	M	Deleted	1	1	1	Better alternates available
		clove oil	Oil		M	Deleted	1	1	1	An obsolete molecule
29.	Medicines for diseases of joints	hydroxychlo-roquine	Solid oral dosage form	20 mg	C	Added	1	1	1	Safe and cost effective drug

M= core (main) list, C= complementary list, Shifted – shifted to new category or shifted to main or complimentary list

ANNEX II

Medicines with age or weight restrictions

artemether + lumefantrine	> 5 kg weight
atazanavir + ritonavir	> 25 kg
atropine	>3 months
bedaquiline	≥ 6 years
benzyl benzoate	> 2 years
betamethasone topical preparations	hydrocortisone preferred in neonates
cefazolin	> 1 month
ceftriaxone	> 41 weeks corrected gestational age
darunavir	> 3 years
delamanid	≥ 6 years
dolutegravir	≥ 25 kg
doxycycline	> 8 years (except for serious infections e.g. cholera when no alternative exists)
efavirenz	>3 years or > 10 kg
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
primaquine	> 6 months
silver sulfadiazine	> 2 months
tetracaine	Not in neonates

ANNEX III

Explanation of dosage forms

A. Principal dosage forms used in EML - oral administration

Term	Definition
Solid oral dosage form	Refers to tablets or capsules or other solid dosage forms such as 'melts' that are immediate-release preparations. The term 'solid oral dosage form' is never intended to allow any type of modified-release tablet
Tablets	Refers to: • uncoated or coated (film-coated or sugar-coated) tablets that are intended to be swallowed whole • unscored and scored (Scored tablets may be divided for ease of swallowing, provided that dose is a whole number of tablets) • tablets that are intended to be chewed before being swallowed • tablets that are intended to be dispersed or dissolved in water or another suitable liquid before being swallowed • tablets that are intended to be crushed before being swallowed. The term 'tablet' without qualification is never intended to allow any type of modified-release tablet.
Tablets (qualified)	Refers to a specific type of tablet: chewable - tablets that are intended to be chewed before being swallowed dispersible - tablets that are intended to be dispersed in water or another suitable liquid before being swallowed soluble - tablets that are intended to be dissolved in water or another suitable liquid before being swallowed crushable - tablets that are intended to be crushed before being swallowed scored - tablets bearing a break mark or marks where sub-division is intended in order to provide doses of less than one tablet sublingual - tablets that are intended to be placed beneath the tongue. The term 'tablet' is always qualified with an additional term (in parentheses) in entries where one of the following types of tablet is intended: gastroresistant (such tablets may sometimes be described as enteric-coated or as delayed-release), prolonged-release or another modified-release form
Capsules	Refers to hard or soft capsules. The term 'capsule' without qualification is never intended to allow any type of modified-release capsule.
Capsules (qualified)	The term 'capsule' with qualification refers to gastro-resistant (such capsules may sometimes be described as enteric-coated or as delayedrelease), prolonged-release or another modified-release form

Term	Definition
Granules	Preparations that are issued to patient as granules to be swallowed without further preparation, to be chewed, or to be taken in or with water or another suitable liquid. The term 'granules' without further qualification is never intended to allow any type of modified-release granules.
Oral powder	Preparations that are issued to patient as powder (usually as single-dose) to be taken in or with water or another suitable liquid.
Oral liquid	Liquid preparations intended to be swallowed i.e. oral solutions, suspensions, emulsions and oral drops, including those constituted from powders or granules, but not those preparations intended for oromucosal administration e.g. gargles and mouthwashes. Oral liquids presented as powders or granules may offer benefits in the form of better stability and lower transport costs. If more than one type of oral liquid is available on the same market (e.g. solution, suspension, granules for reconstitution), they may be interchanged. It is preferable that oral liquids do not contain sugar and that solutions for children do not contain alcohol.

B. Principal dosage forms used in EML – parenteral administration

Term	Definition
Injection	Refers to solutions, suspensions and emulsions including those constituted from powders or concentrated solutions.
Injection (qualified)	Route of administration is indicated in parentheses where relevant.
Injection (oily)	The term `injection' is qualified by `(oily)' in relevant entries
Intravenous infusion	Refers to solutions and emulsions including those constituted from powders or concentrated solutions

C. Other dosage forms

Term	Definition
Mode of administration	Term to be used
To the eye	Eye drops, eye ointments...
Topical	For liquids: lotions, paints For semi-solids: cream, ointment
Rectal	Suppositories, gel or solution.
Vaginal	Pessaries or vaginal tablets
Inhalation	Powder for inhalation, pressurized inhalation, nebulizer

ANNEX IV
Consulted Experts

S. N.	Name of the experts	Designation	Organization
1.	Mr. Narayan Prasad Dhakal	Director General	Department of Drug Administration
2.	Mr. Bharat Bhattarai	Director	National Medicines Laboratory
3.	Mr. Pan Bahadur Kshetry	Senior Drug Administrator	Ministry of Health and Population
4.	Mrs. Shiwani Khadgi	Senior Drug Administrator	Department of Drug Administration
5.	Mr. Santosh KC	Senior Drug Administrator	Department of Drug Administration
6.	Mrs. Usha Tandukar	Senior Drug Administrator	Department of Drug Administration
7.	Mrs. Sangita Shah	Senior Quality Controller	National Medicines Laboratory
8.	Mr. Shiva Bhattarai	Senior Pharmacy Officer	Department of Drug Administration
9.	Mr. Kiran Bajracharya	Senior Pharmacy Officer	Department of Drug Administration
10.	Ms. Binala Joshi	Pharmacy Officer	Department of Drug Administration
11.	Mrs. Sushma Shakya	National Professional Officer	WHO Nepal
12.	Dr. Akritee Pokharel	Clinical Pharmacologist	-
13.	Prof. Dr. Bhagwan Koirala	President, Senior Consultant Cardiothoracic surgeon	Nepal Medical Council, Manmohan Cardiothoracic vascular and transplant center
14.	Prof. Ratna Mani Gajurel	Senior Consultant Cardiologist	Manmohan Cardiothoracic vascular and transplant center
15.	Dr. Chandramani Adhikari	Consultant Senior Cardiologist	Gangalal Hospital, Bansbari
16.	Prof. Dr. Buddhi Paudyal	Senior Consultant Rheumatologist	Patan Academy of Health Sciences, Patan
17.	Prof. Dr. Saroj Prasad Ojha	Senior Consultant Psychiatrist	TUTH- MMC, Institute of Medicine, Maharajgunj
18.	Dr. Ananta Adhikari	Senior Consultant Psychiatrist	Mental Hospital, Patan
19.	Dr. Jyoti Bhattarai	Senior Consultant Endocrinologist	Kathmandu Metro Hospital, Maharajgunj, Chakrapath

S. N.	Name of the experts	Designation	Organization
20.	Dr. Santa Kumar Das	Asso. Prof. and Senior Consultant Pulmonologist	TUTH- MMC, Institute of Medicine, Maharajgunj
21.	Dr. Surya Devkota	Asst. Prof and Consultant Cardiologist	Manmohan Cardiothoracic vascular and transplant center
22.	Dr. Bhoj Raj Luitel	Asst. Prof. and Consultant Urosurgeon	TUTH- MMC, Institute of Medicine, Maharajgunj
23.	Dr. Ranjan Sapkota	Asso. Prof. and Consultant Cardiothoracic surgeon	Manmohan Cardiothoracic vascular and transplant center
24.	Dr. Arun Sharma	Asso. Prof. and Consultant Pediatrician	TUTH- MMC, Institute of Medicine, Maharajgunj
25.	Dr. Ramhari Chapagain	Asso. Prof and Consultant Pediatrician	Nepal Academy of Health sciences
26.	Prof. Dr. Aarati Shah	Director and Senior Consultant Oncologist	Nepal Academy of Health sciences, Medical Education Commision
27.	Dr. Sudip Shrestha	President, Consultant oncologist	Nepal Cancer Hospital, Harisiddhi
28.	Dr. Susmita Sharma	Senior Medical Oncologist	Nepal Cancer Hospital, Harisiddhi
29.	Dr. Jitendra Pariyar	Consultant Oncologist and gynecologist	Civil Hospital, Baneshwor
30.	Dr. Binod Aryal	Senior gynecologist and Obstetrician	Karnali Academy of Health Sciences
31.	Dr. Navin Poudel	Asst. Prof. and Consultant anesthetist	Nepal Academy of Health sciences
32.	Prof. Dr. Anil Shrestha	Senior Consultant Anesthetist	TUTH- MMC, Institute of Medicine, Maharajgunj
33.	Prof. Dr. Dinesh Kafle	Senior Consultant Orthopedic surgeon	TUTH- MMC, Institute of Medicine, Maharajgunj
34.	Dr. Santosh Paudel	Consultant Orthopedic Surgeon	Nepal Academy of Health sciences
35.	Dr. Naramaya Thapa	Senior Consultant Otorhinolaryngologist	TUTH- MMC, Institute of Medicine, Maharajgunj
36.	Prof. Dr. Kumud Kumar Kafle	Senior Consultant Clinical Pharmacologist	Nepal army institute of health science, Sano Bharyang

S. N.	Name of the experts	Designation	Organization
37.	Prof. Dr. Sangha Ratna Bajracharya	Director and Senior Consultant Clinical Pharmacologist	Medical Education Commision, TUTH- MMC, Institute of Medicine, Maharajgunj
38.	Dr. Satish Kumar Deo	Senior Consultant Clinical Pharmacologist	TUTH- MMC, Institute of Medicine, Maharajgunj
39.	Prof. Dr. Bal Mukunda Regmi	Head of department, Pharmacy department	TUTH- MMC, Institute of Medicine, Maharajgunj
40.	Raj Kumar Thapa	Pharmacy Chief	Patan Hospital
41.	Dr. Sudip Parajuli	Consultant Dermatologist	TUTH- MMC, Institute of Medicine, Maharajgunj
42.	Prof. Dr. Dwarika Shrestha	Senior Consultant Dermatologist	TUTH- MMC, Institute of Medicine, Maharajgunj
43.	Prof Dr. Yagya Laxmi Shakya	Senior Consultant Emergency and Family Medicine	TUTH- MMC, Institute of Medicine, Maharajgunj
44.	Dr. Ramesh Kumar Maharjan	Asso. Prof. Senior Consultant Emergency Medicine and Family Medicine	TUTH- MMC, Institute of Medicine, Maharajgunj
45.	Dr. Krishna KC	Asso. Prof. and Senior Consultant Dentist	TUTH- MMC, Institute of Medicine, Maharajgunj
46.	Dr. Prenit Pokhrel	Asst. Prof. and Consultant Dentist	Kantipur Dental College
47.	Dr. Sanduk Ruit	Senior Consultant Ophthalmologist	Tilaganga Eye Hospital
48.	Dr. Jyoti Baba Shrestha	Asso. Prof. And senior Consultant Ophthalmologist	TUTH- MMC, Institute of Medicine, Maharajgunj
49.	Dr. Pratap Karki	Asst. Prof. and consultant Ophthalmologist	TUTH- MMC, Institute of Medicine, Maharajgunj
50.	Prof. Dr. Ram Kumar Ghimire	Senior consultant Radiologist	Nepal Mediciti Hospital
51.	Mr. Keshav Dhoj Joshi	Nepal Pharmacy Council	President
52.	Dr. Jyoti Tara Manandhar	Asso. Prof. and Consultant senior Clinical Pharmacologist	Kathmandu university School of health sciences
53.	Dr. Anish Mudvari	Asst. Prof. and Consultant senior Clinical Pharmacologist	TUTH- MMC, Institute of Medicine, Maharajgunj
54.	Dr. Rakesh Ghimire	Asst. Prof. and Consultant senior Clinical Pharmacologist	TUTH- MMC, Institute of Medicine, Maharajgunj
55.	Dr. Pravin Prasad	Asst. Prof. and Consultant senior Clinical Pharmacologist	TUTH- MMC, Institute of Medicine, Maharajgunj

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