**Core Drugs List**

**QMUL MBBS Year 3, Year 4 and Year 5**

The GMC requires that graduating doctors must be able to ‘prescribe medications safely, appropriately, effectively and economically and be aware of the common causes and consequences of prescribing errors’.

As FY1 doctors, you will regularly prescribe medicines for common symptoms /conditions, for example, pain, constipation, nausea. You will also come to recognise the groups of drugs that tend to travel together in certain situations, for example, in cardiovascular diagnoses, asthma, COPD, Parkinson’s Disease. These recurrent encounters lead prescribers to develop their personal formularies, drugs the prescriber knows instantly – indication, treatment schedule, minimum dose, maximum dose, titration schedule, frequency of use, side effects, interactions, contra-indications, and so on. Having your personal formulary puts you in control of your prescribing.

During the three clinical years of MBBS, you lay the foundations of your personal formulary. It will develop further and expand after graduation when you work in different specialties, clinical settings and with different colleagues. Healthcare providers also have formularies from which we generally select the drugs we prescribe.

**SIX STEPS TO CONSIDER IN RATIONAL PRESCRIBING AND TREATMENT**

In prescribing new treatment or in reviewing existing treatments or prescriptions, it is wise to have a systematic approach. The following six steps, based on the WHO guide to Good Prescribing, permit a rational, systematic approach to treatment selection and/or to review existing treatments or prescriptions.

1. **Define the patient's problem**
2. **Specify the therapeutic objective** (What do you & your patient want to achieve with treatment?)
3. **Verify the suitability of your treatment** (Check effectiveness and safety for this patient)
4. **Start the treatment – write your prescription**
5. **Give information, instructions and warnings**
6. **Monitor (and stop?) treatment** – **know &** **record the outcome/s of treatment.**

**The QMUL MBBS Core Drugs List**

The core drugs list outlined here is *indicative.* Specialty / expert recommendations change over time, some quite frequently, so cross check, especially with the BNF - its ‘Treatment Summary’ section is very helpful for many common situations. The list is intended to *guide* you during your MBBS clinical years as you work in your placements and begin to develop your own *personal formulary*. Your clinical supervisors and tutors, especially in specialty placements, are likely to suggest additional or alternative options in particular situations - this list provides you with some core options on which to build. During the three clinical MBBS years, you will regularly review your patients’ medicines. As newly graduated FY1 doctors, you will continue to do this with the added FY1, Day 1 professional responsibility of changing / continuing / commencing drugs for them. Start learning how - **now** - because for all medicines prescribed on your patients’ drug charts, either electronic on the hospital or GP clinical record system (CRS), or paper (in some hospitals & in all hospitals during web/internet failures), whether you originally prescribed them or not, **you must make it your business to be aware of**:

* Indication/s
	+ Some drugs will have more than one indication
	+ You may find no obvious indication – So why is the drug prescribed? **You** need to find out so that you can appropriately continue / cease / review with the team.
* Dosing
	+ Know the dose / frequency ranges for commonly encountered drugs
	+ Note:
		- There may be different doses for different indications with the same drug
		- Some drugs need dose adjustment for renal and hepatic impairment
		- Be aware of certain drugs that require specific timing of dosing
* Side effects
	+ Know the common and severe side effects of commonly encountered drugs
* Know about
	+ Common interactions (Is it likely to interact with other medications the patient is taking?)
	+ Contraindications
	+ Pre-treatment screening (if at all)
	+ Monitoring required (if at all)
	+ Specific advice that needs to be given to the patient / carer
	+ Advice for contraception, pregnancy and breast feeding
	+ Advice on sick-days and surgery
	+ What to do in case of overdose
* Understand basic benefit-harm balance of the drug / therapy and have an approach for giving this due consideration in the individual patient situation
* Understand START/STOPP criteria; practice their application in your patient medication reviews <https://bnf.nice.org.uk/guidance/prescribing-in-the-elderly.html>

When there are multiple options for one condition, it is important to understand the rationale (and if available, algorithms/pathways) to prioritise which drug to choose, e.g., asthma, heart failure, hypertension, depression, and so on.

It is not possible to remember all this information in detail, but it **is** important that you are able to find it confidently when it is needed. When prescribing, being able to navigate the British National Formulary (BNF), web versions as well as App / print, is an enormous help. The BNF is the reference source used by clinicians in the UK as well as your reference source for the national Prescribing Safety Assessment in MBBS Year 5.

For clinical pharmacology background and reading, Kumar and Clarke’s Clinical Medicine and your SCRIPT modules are both highly valuable resources. Your QM+ CPT area for each MBBS year has multiple targeted materials to assist and direct your learning. Specialty area guidelines, e.g., NICE, Microbiology, Respiratory, Cardiology and others, available through Trust / hospital intranet and on medical specialty-area websites are also helpful in some cases.

Use our QM+ CPT resources as you work

* Year 3: <https://qmplus.qmul.ac.uk/course/view.php?id=24918>
* Year 4: <https://qmplus.qmul.ac.uk/course/view.php?id=24920>
* Year 5: <https://qmplus.qmul.ac.uk/course/view.php?id=24919>

***NOTE***

* *Shorter Core drugs list for Year 3; Year 3 exclusions are highlighted in grey*
* *Year 4 and Year 5 include the full list*

**CORE DRUGS LIST – Symptom control**

**Analgesics**

Understand the analgesic ladder, as well as contraindications and complications of individual agents, to enable optimal choice

* Paracetamol (including common paracetamol-codeine combinations, both high and low-dose codeine; and paracetamol-ibuprofen combinations)
* Non-steroidal anti-inflammatory drugs (NSAIDs) – commonly-used agents, e.g., ibuprofen, naproxen, celecoxib, diclofenac; know which NSAIDs are available Over-the-Counter (OTC)
* Opioid analgesics, including morphine, codeine, oxycodone, fentanyl
	+ Difference between immediate-acting and modified-release
	+ Difference between routes/ formulations
	+ Know where to find information on dosing when switching between routes & formulations
* Neuropathic pain agents, e.g., gabapentin, pregabalin

**Anti-nausea drugs** (understand differences between them to facilitate choice)

* Metoclopramide; Prochlorperazine; Cyclizine
* Domperidone; Ondansetron

**Secretions**

* Antimuscarinic agents, e.g., hyoscine hydrobromide, hyoscine butylbromide, glycopyrronium bromide

**Restlessness**

* Antipsychotics, e.g., haloperidol, levomepromazine

**Dyspnoea**

* Therapy should be guided by experienced clinicians. Depending on the cause, non-drug options such as face fans may help relieve distress; oral morphine may be helpful is certain cases.

**Raised intracranial pressure / cerebral oedema relating to malignancy, nerve compression**

* e.g., Dexamethasone (specialist guidance)

**Other medicines in “Prescribing for Palliative Care”**

* Be aware of principles of optimal prescribing in palliative care;
* Know where to find prescribing / switching information in BNF

**CORE DRUGS LIST - Gastrointestinal system disease**

**Anti-Ulcer drugs** (and how to choose between them)

* Proton pump inhibitor (e.g., omeprazole, lansoprazole)
* Histamine H2 blocker (e.g., ranitidine)
* Antacids

**Helicobacter pylori treatment regimen** – refer NICE guideline options

**Clostridium difficile treatment -** refer NICE guideline options

* Oral agents: vancomycin; metronidazole; fidaxomicin
* Understand which antibiotics are most likely to cause *C. difficile* colitis

**Inflammatory bowel disease**

* Amino-salicylates (e.g., sulfasalazine, mesalazine)
* Immunosuppressants, incl methotrexate (and folic acid)
* Understand the principles of immune-therapies, biologics, non-biologic small molecule therapies

**Laxatives**

* Stimulant (e.g., senna)
* Osmotic (e.g., lactulose)
* Bulk-forming (e.g., ispaghula husk)
* Bowel cleansing agents (e.g., macrogols, phosphates)

**Anti-motility** e.g., loperamide

**Decompensated Liver Cirrhosis Care Bundle (i.e. think about…)**

* If history of alcohol excess, consider:
	+ IV Pabrinex© (thiamine + ascorbic acid) and alcohol withdrawal protocol
* Consider spontaneous bacterial peritonitis / other cause of sepsis and treat according to guidance
* Consider prophylactic low molecular weight heparin (LMWH, know when appropriate or not)
* If acute kidney injury / hyponatraemia
	+ With-hold diuretics and nephrotoxic drugs
	+ Review re fluid resuscitation requirement - crystalloid
* If GI bleeding
	+ Fluid resuscitate
	+ [terlipressin, prophylactic antibiotics, vitamin K with specialist guidance]
* Reduce risk of encephalopathy
	+ Lactulose (20-30ml QDS – note higher dose c/w laxative indication)

**CORE DRUGS LIST - Anti-infectives**

**Antibiotics**

* In practice, use your hospital guidelines – know where/how to find on your hospital intranet
	+ **Barts Health Trust Microguide**
	+ Also check national guidance: <https://www.gov.uk/search/all?keywords=anti-microbial+guidance&order=relevance>
* Be aware of **Barts Health Trust and** BNF guidance on empirical antibiotic therapy, including for sepsis – BNF Treatment Summaries are very helpful
* Know differences in therapy choice for hospital-acquired versus community-acquired infection
* Be able to risk-manage commonly-used antibiotics: side effects, interactions
* Be aware of how to make the second-line choices in the context of antibiotic allergies
* Understand the necessity for antibiotic stewardship, factors driving resistance, and the risks of resistance (population and individual)

**Anti-virals**

* Herpes zoster (shingles) in particular (e.g., acyclovir, valaciclovir)
* You should not be asked to manage treatments for HIV, HCV, HBV but you should be able to recognise the drugs that are used

**Anti-fungals**

* for oral (e.g., nystatin vs fluconazole indications) and genital (e.g., clotrimazole) candida in particular

**Vaccines for common infections, including COVID**

**Antimalarials**

Understand the difference between prophylactic (and when to start) vs. treatment course

Know where in the BNF to find the appropriate choice of prophylaxis

* E.g., mefloquine, Malarone®, doxycycline, chloroquine.

**CORE DRUGS LIST – Cardiovascular system drugs**

**Acute Coronary Syndrome**

* Aspirin, + clopidogrel / ticagrelor (NICE guidance)
* Treatment-dose low-molecular weight heparin (choice depends on Trust formulary)
* High-dose (80 mg) atorvastatin
* ACE inhibitors (or angiotensin receptor antagonists if ACEi-induced cough)
* Beta-blockers

**Know which therapies are continued long-term to improve prognosis**

**Anti-anginals**

* Beta-blockers
* Calcium channel blockers (know which to use)
* Long-acting nitrates
* [Specialist care – nicorandil, ivabradine, ranolazine]

**Atrial Fibrillation**

* Consider “**rate-control**” drugs (e.g., beta-blockers, rate-limiting calcium channel blockers, digoxin, amiodarone – and know how to choose between them)
	+ Consider IV therapy in the acute setting if require urgent control
* Understand who should have **anticoagulation** (e.g., warfarin or direct oral anticoagulants - and how to choose between them)
* Know “**rhythm-control**” drugs such as flecanide, sotalol and amiodarone

**Anti-platelet drugs (and recognise the difference in use/durations for ACS/MI and TIA/stroke)**

* Aspirin
* Clopidogrel, ticagrelor
* Dipyridamole

**Acute heart failure**

* oxygen, loop diuretics (typically intravenous furosemide), IV GTN, opiates for dyspnoea – and understand when to use them

**Chronic heart failure**

* Medications that improve prognosis in HFrEF
	+ ACE inhibitors / Angiotensin receptor antagonists
	+ beta-blockers
	+ mineralocorticoid antagonists such as spironolactone, eplerenone
	+ SGLT inhibitors, e.g., empagliflozin; and others
* Medications that improve / control symptoms of overload e.g., oral loop diuretics
	+ Others, typically initiated by a specialist, include Angiotensin Receptor-Neprolysin inhibitors (ARNi); hydralazine/ISDN combination (for those who cannot tolerate ACEi); digoxin for improvement of symptom control;
* Treatment differences in HFrEF and HFpEF

**Supraventricular tachycardia**

* **Non drug options; Also adenosine** – understand when to use, and how to communicate with patient prior to prescribing

**Antihypertensives**

* Understand when to treat, what are targets, current NICE guidance and when to choose
* Also be aware of 4th-6th line drugs such as spironolactone, alpha-blockers and beta-blockers
* Be aware of evidence / discussions on polypill – combination product containing multiple low-dose agents

**Lipid-regulating drugs**

Know when to treat for primary prevention (and what targets are)

* Statins
* Ezetimibe (less-used, e.g., for those who cannot tolerate statins or as adjunct to statin)
* Fibrates (less-used, e.g., for those who cannot tolerate statins or hypertriglyceridemia)
* PCSK9 inhibitors, e.g., alirocumab, evolocumab; PCSK9 siRNA agents, e.g., inclisiran; place in therapy – NICE guidance

Understand that typically only one dose of statin is used for secondary CVD prevention (atorvastatin 80mg nightly, but lower dose for patients taking some CYP enzyme inhibitors, e.g., ritonavir, a protease inhibitor used in treating HIV infection)

**CORE DRUGS LIST – Anti-coagulation / thrombolysis**

**Anti-coagulant agents (and how to choose between them)**

* Low molecular weight heparin and unfractionated heparin
* Direct Oral Anti-Coagulants, e.g., apixaban, dabigatran
* Warfarin

Understand which of these drugs can be **monitored/reversed (if / how /when)**

**Thromboprophylaxis**

* Know the options, when to use them (indications / contra-indications) and any renal adjustments
* Indications for oral anti-coagulants in thromboprophylaxis

**Alteplase and thrombolysis**

* Used in specialist care, but understand when it may be appropriate to use, and contraindications.

**CORE DRUGS LIST – Respiratory system drugs**

Know the drugs in both acute and chronic management pathways for asthma and COPD

Understand NICE guidance for chronic asthma (and differences with British Thoracic Society guidance)

Understand the different inhaler devices: metered dose inhaler (MDI), dry powder inhaler (DPI), soft mist inhaler and the suitability (or not) of each type for different patients

**Drugs, delivery and devices**

* Oxygen and its doses and delivery methods
* Steroid (oral prednisolone, inhaled steroids, intravenous hydrocortisone)
* Inhalers/Nebulisers: (beta-agonist and muscarinic antagonists)
* Short- and long-acting beta-agonists
* Short- and long -acting muscarinic antagonists
* Leukotriene receptor antagonists, inhaled sodium cromoglycate, or inhaled nedocromil sodium
* Theophylline (oral and IV)
* Immune therapies
* Devices – know about patient selection for & the differences between devices
	+ Metered Dose inhalers (& Spacer use)
	+ Dry powder inhalers
	+ Soft mist inhalers
	+ Combination inhalers (e.g., LABA + inhaled corticosteroid)
	+ Nebulisers

**Steroids**

* Oral prednisolone for allergy, asthma, exacerbation of COPD
* Intravenous hydrocortisone for anaphylaxis (less commonly for allergy, asthma, COPD exacerbation)
* Know the advice on long-term steroid use & the associated risks

**Oxygen**

Acute use: Understand the difference in patients who should receive high-concentration vs. low-concentration oxygen therapy

Long-term: Understand the criteria for long-term oxygen therapy (LTOT, “home oxygen”)

**CORE DRUGS LIST – Psychiatry**

**Anti-depressants**

* Selective serotonin reuptake inhibitor (SSRI)
* Tricyclic anti-depressant (TCA)
* Serotonin Noradrenalin Reuptake inhibitor (SNRI)

**Anti-psychotic drugs**

* First generation – e.g., haloperidol, chlorpromazine, promethiazine, flupentixol
* Second (atypical) generation – e.g., clozapine, risperidone, amisulpiride, aripiprazole, olanzapine
* Know the broad differences between the two groups, and monitoring / safety requirements

**Anti-mania drugs**

* Lithium; Carbamazepine; Valproate; know their risks, contraindications, monitoring

**Sedatives**

* Agitation / acute sedation (e.g., lorazepam, haloperidol; route; how to choose between them)
* (Rarely benzodiazepines as anxiolytics – not for F1 prescribing)
* Night sedation (e.g., zopiclone, temazepam)

**Other CNS-active agents used in psychiatry**

* Mirtazepine
* Mono-amine oxidase inhibitors

**Drugs for withdrawals or substance dependence**

* Nicotine replacement therapy, e.g., patches; varenicline; e-cigarettes
* Nicotine dependence – e.g., bupropion
* Alcohol withdrawal – e.g., chlordiazepoxide (or diazepam in some NHS Trusts)
	+ Parenteral thiamine + ascorbic acid – prophylaxis of Wernecke’s encephalopathy
* Opioid dependence – e.g., methadone; naltrexone

**CORE DRUGS LIST – Neurology**

**Drugs for epilepsy**

Status epilepticus

* Lorazepam (intravenous); diazepam (rectal, intravenous)
* Phenytoin IV

Chronic management

* Carbamazepine; phenytoin; valproate; lamotrigine; levetiracetam, topirimate; others

**Drugs for Parkinson’s Disease**

* L-DOPA/DOPA decarboxylase inhibitor combinations
* Monoamine-oxidase-B inhibitors
* Dopamine agonists
* Catechol-O-Methyl Transferase (COMT) inhibitors
* NOTE: be aware of medications contra-indicated in Parkinson’s Disease

**Migraine**

Acute migraine treatment

* Simple analgesia (paracetamol / NSAIDs); Anti-emetics; 5HT1-receptor agonist (e.g sumatriptan)

Prophylaxis

* Beta blockers (e.g., propranolol)

**Dementia / memory drugs**

* Acetylcholinesterase inhibitors (e.g., donepezil, galantamine)
* Glutamate receptor antagonist (memantine)

**Multiple sclerosis**

* Fingolimod; glatiramer; interferon beta; natalizumab; terifluonomide; others

**CORE DRUGS LIST – Endocrinology - Diabetes mellitus**

**Understand current guidance (especially choice of drug in Type II diabetes mellitus)**

* Oral agents
	+ Metformin
	+ Sulphonylureas
	+ DDP4 inhibitors
	+ GLP1 agonists (and their widening indications outside of diabetes)
	+ SGLT2 inhibitors (and their widening indications outside of diabetes)
	+ Glitazones
* Insulins: rapid/short/medium/long acting; Insulin mixes

**Diabetic emergencies (DKA, HHS)**

* know how to manage (re: fluids / potassium / insulin)
* know how to monitor

**Hypoglycaemia treatment:** Oral glucose, IM Glucagon, IV glucose (and know when to choose the varying options)

**CORE DRUGS LIST – Endocrine and related**

**Thyroid drugs**

* L-thyroxine
* Carbimazole / propylthiouracil
* (Beta-blocker; propranolol)

**Gout treatment**

NOTE: be aware of other drugs that can increase risk of acute gout

Acute gout

* NSAIDs; Colchicine; Steroids
* Canakinumab [specialist care]

Chronic management of gout

* Allopurinol, febuxostat

Chemotherapy-induced hyperuricaemia (tumour lysis syndrome)

* Rasburicase

**Fludro/hydrocorticoid replacement**

[Started in specialist care, but be aware of side effects, monitoring and advice e.g., sick day rules]

**Bone protection**

* Bisphosphonates

**Treatment of calcium / vitamin D deficiency**

* Calcium with Vitamin D (eg. Colecalciferol with calcium phosphate)

**CORE DRUGS LIST – Electrolyte abnormalities**

**Acute severe hyperkalaemia**

* IV calcium gluconate
* IV infusion of soluble insulin with dextrose
* Salbutamol nebulisers
* Ion-exchange resins (e.g., calcium polystyrene sulfonate / calcium resonium)

**Hypokalaemia**

* Understand when to use oral potassium and when to use IV (and maximum safe limits)

**Hypercalcaemia**

* IV 0.9% sodium chloride
* IV bisphosphonates (e.g., pamidronate)

**CORE DRUGS LIST – Haematology**

**Anaemia (iron/B12/folate) management**

Recognise the difference between prophylactic / treatment doses

* Iron compounds (e.g., ferrous fumarate, ferrous gluconate etc.); intravenous iron & indications for use
* Hydroxycobalamin (vitamin B12)
* Folic acid (and also be aware of differing doses for prevention of neural tube defects in pregnancy e.g., those at low vs. high risk)
* [Erythropoetins in specialist use]

**CORE DRUGS LIST – Rheumatology and immunosuppressive drugs**

**Rheumatoid arthritis drugs**

* Methotrexate (and folic acid)
* Azathioprine
* Steroids
* Penicillamine; sulfasalazine, biologics / monoclonal antibodies

**CORE DRUGS LIST – Obstetrics/Gynaecology and Urology**

**Contraception**

* Know difference between combined oral contraceptive pill vs oral progestogen only contraceptives; contraindications; use while breastfeeding
* Know about parenteral progestogen-only contraceptives and intra-uterine devices
* Know about drug-drug interactions
* Know about emergency contraception

**Hormone replacement therapy**

* Know about oestrogens and progestogens (uterus vs none); contraindications
* Know about interrupted and continuous use / products
* Understand associated risks of various disorders (e.g., cancers, VTE, stroke, CHD)
* Know reasons to stop & what to do for surgery

**Hypertension in pregnancy**

Management of chronic hypertension in pregnancy or pregnancy-induced hypertension

* Labetalol; methydopa; nifedipine modified release

Pre-eclampsia / eclampsia

* [Specialist care - Control blood pressure, likely intravenous; IV magnesium sulfate ]

**Benign prostatic hyperplasia**

* Alpha-blockers (e.g., tamsulosin)
* 5α-reductase inhibitor (e.g., finasteride)

**CORE DRUGS LIST – Drugs in Emergencies**

**Adrenaline**

* Know difference between use & dosing in anaphylaxis vs cardiopulmonary resuscitation

(Anaphylaxis – also oxygen, steroids, anti-histamines, IV fluids)

**Drugs for poisoning / antidotes**

* Activated charcoal
* N-acetylcysteine
* Naloxone
* Flumazenil
* Sodium bicarbonate (e.g., tricyclics overdose or aspirin overdose)
* Procyclidine (for drug-induced dystonia, e.g., from metoclopramide)

**CORE DRUGS LIST - IV fluids**

Know guideline advice on fluid use – e.g., NICE, <https://www.nice.org.uk/guidance/cg174>

* Daily electrolyte requirements and optimal fluid choice to cover these
* K+ addition and rate of administration
* Fluid resuscitation / challenge