14 Medications for mental health problems

14.1 Choosing the right medication: cost and efficacy

Throughout the world, the cost of health care is rising. Particularly in low- and middle-income countries, this means making hard choices about which medications to prescribe. Many newer medications are protected by international patent laws. This means that only one company is allowed to produce that medication for a certain period of time. These medications are almost always much more expensive than older medications. When making a decision on whether to use an older, cheaper medication or a newer, more expensive medication, you must consider these issues:

- the cost of the medication
- the efficacy of the medication (how good it is)
- the side-effects
- the income bracket of the family.

Thus, a newer medication, which may be no better than an older medication in reducing the symptoms of mental health problems, may have lesser side-effects. This could be very important for some people. For example, older antipsychotic medications produce more stiffness and restlessness than newer ones. A person taking an older medication many feel so restless that they cannot work and, therefore, cannot earn any money. On the other hand, a person taking a newer antipsychotic medication may spend more money on the medications, but because they can work, they can more readily afford the treatment than would have been the case with the older medication.

In choosing medications, the following situations may arise.

- The older, cheaper medication is more effective or just as good as the newer, expensive medication, and there are no differences in side-effects. Recommend the older, cheaper medication. A good example from medications for mental health problems is the choice between amitriptyline and nortriptyline, two tricyclic antidepressants. Whereas the former is cheaper than the latter, both are equally effective and have similar side-effects. Therefore, you should choose amitriptyline. Many of the newest psychiatric medications are no different from the ones produced a few years earlier in terms of both side-effects and efficacy. Do not recommend them.
- The older, cheaper medication is more effective or just as good as the newer, expensive medication, but there is a greater risk of side-effects with the older medication. A good example of such a choice is that between older antidepressants, such as amitriptyline, and newer antidepressants, such as fluoxetine. The former is just as good as the latter but has more side-effects. More people using amitriptyline will drop out of treatment because of the side-effects. Another example of such a choice is that between older antipsychotic medications, such as haloperidol, and newer antipsychotic medications, such as risperidone. Two options are available to you. For those people who can afford the newer medication, you can offer both options and explain the pros and cons of each. Let the person make the choice. If, on the other hand, the person cannot afford the more expensive medication, recommend the older medication. Monitor the person's progress; if severe side-effects appear, switch to the newer medication.
- The newer, more expensive medication is more effective than the older medication. In this situation, you should ideally recommend the newer medication. However, if the person

cannot afford the new medication, the older medication may be given a trial. If it works well, there is no need for a change. If it does not work well, then the newer medication may be the only choice left. An example of such a choice is between using carbamazepine to prevent relapse in bipolar disorder compared with using valproate. Thus, lithium or valproate may produce better results in people with bipolar disorder than carbamazepine.

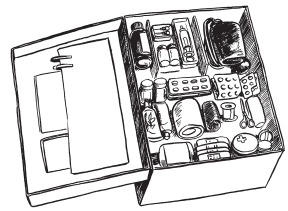
14.2 A quick reference guide to medications for mental health problems

Tables 14.1 to 14.6 contain summaries of medications in common use for treatment of mental health problems. You should enter the local trade names and costs of the medications where there is space under the generic names in the tables. The list of medications is not exhaustive – only the most commonly used or well-recognised medications are included. However, space is provided at the end of each table for you to enter any other medications available in your region. Box 14.1 lists the medications that are essential to have available for the treatment of mental health problems.

BOX 14.1. THE ESSENTIAL MEDICATION LIST FOR MENTAL HEALTH PROBLEMS

- Fluoxetine* or sertraline (if neither is available, amitriptyline* or imipramine)
- Chlorpromazine* or haloperidol* (in tablet form or short-acting injection)
- Biperiden* or procyclidine or benzhexol or benztropine
- Risperidone* or olanzapine
- A long-acting antipsychotic (depot), for example, fluphenazine decanoate*
- Sodium valproate* or lithium*
- Phenobarbitone* or phenytoin* or carbamazepine*
- Diazepam*
- Thiamine*

*Listed in WHO (2015) (☞Chapter 18).



14.3 Cautions when using medications for mental health problems

- Many medications interact with alcohol. In particular, medications that cause sedation will worsen the drowsiness felt after drinking alcohol.
- **The doses given in the tables are for healthy adults unless specific child doses are given** (e.g. for epilepsy). Where only adult doses are given, use a third to a half for people over the age of 60, for children aged under 16 years and for people with chronic medical illness.
- Many medications for mental health problems produce drowsiness, weight gain and sexual side-effects. Be aware of that. Advise people taking them to diet and exercise regularly to control weight gain. Drowsiness is often temporary and goes away as the person continues taking the medication, but warn people to take care when driving or operating machinery until they get used to the medication. Sexual problems may be tackled as described in Chapter 8 (☞8.5).
- Avoid the following medications during pregnancy: lithium, carbamazepine, valproate, benzodiazepines, and medications for side-effects of antipsychotics (e.g. benzhexol).
- Medications recommended in the World Health Organization's Mental Health Gap Action Programme (mhGAP) *Intervention Guide* are presented in shaded boxes with **bold** font.
- Medications recommended in mhGAP and requiring specialist oversight are in ***bold italics***.
- There are some medications (or doses of medications) for mental health problems included in the tables that should not be initiated by a general health worker. These medications are in *italic* font. They are included here so that you are aware of the monitoring requirements and side-effects if the person comes to see you while they are being treated by a specialist.

Table 14.1 Antidepressant medications

Tricyclic antidepressants (TCAs)

General cautions

- Can easily be fatal in overdose, so take care if person is suicidal
- Do not use to treat depression in children under 18 years of age
- In elderly people and people with other medical conditions, side-effects may not be tolerated
- Try to avoid in ischaemic heart disease, prostate enlargement, seizure disorder, hyperthyroidism, glaucoma or bipolar disorder
- Advise the person to avoid alcohol, take care when driving or operating machinery owing to sedative effects, not to take more than the prescribed dose, and to keep the medication stored safely so that children cannot access it

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Amitriptyline	Common mental disorders Night-time bed-wetting in children	Starting dose: 25 mg at night time Minimum dose: 75 mg Increase by 25–50 mg/week to usual dose of 75–150 mg Maximum dose (only with specialist support): *300 mg* Dose for bed-wetting 25 mg	Common: dry mouth, sedation, postural hypotension (blood pressure falls when standing up suddenly), constipation, difficulty passing urine, dizziness, blurred vision, nausea, weight gain Rare: cardiac arrhythmia, increased risk of seizure In overdose can lead to seizures, cardiac arrhythmias, low blood pressure, coma or death Drug–drug interactions: levels can be increased by antimalarials (e.g. quinine)
Dosulepin (or dothiepin)	Common mental disorders	As for amitriptyline	As for amitriptyline
Doxepin	Common mental disorders	As for amitriptyline but maximum 100 mg in one dose	As for amitriptyline
Clomipramine	Common mental disorders, but also useful for obsessive–compulsive disorder	As for amitriptyline	As for amitriptyline

Cont.

Imipramine	Common mental disorders Bed-wetting in children	As for amitriptyline, but maximum 100 mg in one dose	As for amitriptyline but less sedating
Lofepramine	Common mental disorders Relatively safer in overdose so useful for people who are suicidal	Starting dose: 70 mg/day Minimum dose: 140 mg/day Maximum dose: 210 mg/day	As for amitriptyline but less sedating, fewer cardiac effects, less dry mouth, blurred vision or problems passing urine, more problems with constipation
Nortriptyline	Common mental disorders	As for amitriptyline, but maximum 100 mg in one dose	As for amitriptyline, but less sedating, less dizziness, less dry mouth, blurred vision or passing urine, more problems with constipation and postural hypotension when starting
Trimipramine	Common mental disorders	As for amitriptyline	As for amitriptyline, but more sedating

SSRI antidepressants

General cautions

- Do not use in children under 12 years of age
- Start with low dose in adolescents, elderly people and people with medical conditions
- If the person is agitated or has high levels of anxiety, also prescribe a benzodiazepine (e.g. diazepam) for the first 5 days
- Advise the person to take in the morning and after food

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Fluoxetine	Common mental disorders	Starting dose: 10 mg in the morning, with or after food (if only 20 mg capsule available then can be taken every other day) Minimum dose: 20 mg Maximum dose: 60 mg	Common: restlessness, nervousness, sleep problems, nausea, headache, sexual dysfunction, rash Rare: bleeding abnormalities in people taking long-term aspirin or non-steroidal anti-inflammatory medications (e.g. ibuprofen) and restlessness (akathisia) Drug–drug interactions: avoid combination with warfarin

Cont.

Citalopram	As for fluoxetine	Starting dose and minimum dose: 20 mg/day Maximum dose: 40 mg/day	As for fluoxetine, but less insomnia and agitation
Escitalopram	As for fluoxetine	Starting dose and minimum dose 10 mg/day Maximum dose: 20 mg/day	As for fluoxetine, but less insomnia and agitation
Fluvoxamine	As for fluoxetine	Starting dose: 100 mg/day Up to 300 mg/day (divided doses)	As for fluoxetine, but increased risk of nausea and many interactions with other medications
Paroxetine	As for fluoxetine	Starting dose: 20 mg/day Up to 50 mg/day for depression and 60 mg/day for panic or obsessive–compulsive disorder	As for fluoxetine, but more sedating, more weight gain and sexual problems, can cause movement side-effects Discontinuation symptoms common
Sertraline	As for fluoxetine, but short half-life means useful in breastfeeding women and people with medical illness	Starting dose and minimum dose: 50 mg Maximum dose: 200 mg	As for fluoxetine

Monoamine oxidase inhibitors (MAOIs)

MAOIs can only be prescribed by mental health specialists

The MAOIs are: *phenelzine*, *moclobemide*, *isocarboxazid* and *tranylcypromine*

If a person being prescribed these medications is under your care, be aware of the following.

- You should avoid prescribing opioids, other antidepressants, levodopa or adrenaline-like medications
- The dietary advice for people prescribed MAOIs is to avoid foods containing tyramine (e.g. cheese, fermented, smoked or pickled foods, aged meats, meat extracts, alcohol, ripe avocados and fava beans)
- Common side-effects are: high blood pressure, low blood pressure on standing, dizziness, sleep problems, headache, nervousness
- MAOIs can affect the liver and white cells

Cont.

Other antidepressants

These newer antidepressants have no increased benefit in terms of effectiveness but may have more tolerable side-effects than TCAs and SSRI antidepressants. However, availability and affordability may limit use. Specialist oversight is preferred.

Medication, trade name and cost	Special note	Dosage	Side-effects, interactions and monitoring
Duloxetine	Take care with alcohol	60–120 mg/day Minimum dose: 60 mg/day	Common: nausea, sleeping problems, headache, dizziness, dry mouth, sleepiness, constipation, reduced appetite, small increase in pulse rate and blood pressure Rare: hypertensive crisis (very high blood pressure)
Mirtazapine	Uncommon to get nausea or problems with sexual dysfunction	15–45 mg/day Minimum dose: 30 mg/day	Common: increased appetite, weight gain, sleepiness, swelling, dizziness, headache Rare: blood cell abnormalities
Reboxetine	Uncommon to get sexual dysfunction Do not prescribe with erythromycin or ketoconazole	8–12 mg/day (split doses) Minimum dose: 8 mg/day	Common: sleeping problems, sweating, dizziness, dry mouth, constipation, nausea, fast heart rate, difficulty passing urine, headache Rare: problems with erections
Trazodone	Not anticholinergic Not as much cardiac toxicity as for TCAs Take care when prescribing with sedative medications Take care when prescribing with digoxin or phenytoin	150–300 mg/day Minimum dose: 150 mg/day	Common: sedation, dizziness, headache, nausea, vomiting, postural hypotension, fast heart rate Rare: erection that won't stop

Cont.

Venlafaxine	Avoid in people at risk of a cardiac arrhythmia Stop gradually to avoid symptoms Take care when prescribing with cimetidine, clozapine or warfarin	75–225 mg/day Minimum therapeutic dose: 75 mg/day	Common: nausea, sleep problems, dry mouth, sleepiness, dizziness, sweating, nervousness, headache, sexual problems, constipation Increased blood pressure at higher doses
Other locally available antidepressants:			

Table 14.2 Antipsychotic medications

First-generation ('typical') oral antipsychotics

General cautions

- Ideally prescribe in consultation with a mental health specialist, or arrange review at the earliest opportunity
- Take care when prescribing to people with cardiac disease, kidney disease or liver disease

* indicates the maximum allowable dose.

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Haloperidol	Psychosis Mania Second-line prevention of relapse in bipolar disorder	Starting dose: 1.5–3 mg Minimum dose: 2 mg Maximum dose: 20 mg oral (12 mg i.m.)	Common: stiffness, tremor, restlessness (akathisia), problems passing urine, ECG changes, long-term involuntary muscle movements (dyskinesia) Rare: sudden contraction of muscles (dystonia), rare complication of fever, muscle rigidity and high blood pressure (neuroleptic malignant syndrome) Drug–drug interactions: levels may be increased by antimalarials including quinine
Chlorpromazine	As for haloperidol	Starting dose: 25–50 mg Minimum dose: 75 mg Maximum dose: *1000 mg/day** but 300 mg maximum without specialist support	Common: sedation, weight gain, light-headed on standing, increased risk of sunburn (advise wearing a hat), blurred vision, dry mouth, constipation, difficulty passing urine, fast pulse rate, sexual dysfunction, effects of raised prolactin (breast enlargement in men, milk production and reduced menstruation in women) Rare: as for haloperidol, and jaundice
Flupentixol	As for haloperidol	Minimum dose: 3 mg twice daily Maximum dose: *18 mg/day**	As for haloperidol
Perphenazine	As for haloperidol	Minimum dose: 12 mg/day (in three divided doses) Maximum dose: *24 mg/day**	As for haloperidol
Sulpiride	As for haloperidol	Minimum dose: 200–400 mg twice daily Maximum dose: *2400 mg/day*	As for haloperidol

Cont.

Trifluoperazine	As for haloperidol	Starting dose 5 mg Minimum dose: 10 mg Maximum dose: *20 mg**	As for haloperidol
Zuclopenthixol	As for haloperidol	Minimum dose: 20–30 mg in divided doses Maximum dose: *150 mg/day**	As for haloperidol

Second-generation ('atypical') oral antipsychotics

General cautions

- Ideally prescribe in consultation with a mental health specialist, or arrange review at the earliest opportunity
- If risk of weight gain, monitor weight. If possible, also monitor blood levels of cholesterol and lipids, as well as fasting blood glucose
- Caution in people with cardiac disease

Medication trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Risperidone	Psychosis Bipolar disorder (manic phase and to prevent relapse)	Starting and minimum dose: 2 mg/day Maximum dose: 6 mg/day	Common: headache, lightheaded on standing, restlessness, drowsiness, effects of raised prolactin (breast enlargement in men, milk production and reduced menstruation in women)
Olanzapine	As for risperidone	Starting and minimum dose: 5 mg/day (average dose: 10 mg) Maximum dose: 20 mg/day	Common: weight gain, raised cholesterol and lipids, increased fasting blood glucose, sedation
Amisulpride	Psychosis	Minimum dose: 400 mg/day (estimate) Maximum dose: *1200 mg/day**	Common: effects of raised prolactin (see risperidone) Rare: weight gain, restlessness (akathisia) and movement side-effects
Aripiprazole	Psychosis	Minimum dose: 10 mg/day Maximum dose: *30 mg/day**	Rare: restlessness (akathisia)
Paliperidone	Psychosis	Minimum dose: 3 mg/day Maximum dose: 12 mg/day	Common: effects of raised prolactin (see risperidone), low blood pressure and weight gain Rare: sedation, restlessness, movement side-effects and anticholinergic side-effects (dry mouth, blurred vision, constipation, difficulty passing urine)

Cont.

Quetiapine	As for risperidone. Can be used as monotherapy for bipolar depression	Minimum dose: 150 mg/day Maximum dose: 750 mg/day (schizophrenia), 800 mg/day (bipolar disorder)	Common: weight gain, sedation and low blood pressure Rare: anticholinergic side-effects (see paliperidone)
Clozapine	Potent medication useful for people who do not respond to other antipsychotics	Start with 12.5 mg at night, increase by 25 mg every 2 to 3 days up to 250 mg for women or 350 mg for men (higher in tobacco smokers)	Common: drowsiness, weight gain, drooling saliva, constipation (can be severe) Rare: drop in white blood cell count can cause fatal infections, myocarditis (fever, palpitations, chest pain), blood clots Monitor blood count weekly Use only in consultation with a specialist

Long-acting injectable antipsychotic medications

General cautions

- Always give a test dose (the lowest dose of the range) and wait 5 to 7 days before starting regular treatment
- Administer by deep intramuscular (i.m.) injection in the gluteal (buttock) region (☞ Box 5.9, p. 61)
- Avoid in people with cardiac disease, kidney disease or liver disease
- Avoid in women who are pregnant or breastfeeding
- Do not use in children or adolescents

Medication trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Fluphenazine depot	Long-term treatment of psychosis or bipolar disorder in people with non-adherence to oral medication	Test dose 12.5 mg i.m. Therapeutic dose: 12.5–75 mg i.m. every 4 weeks	As for haloperidol
Flupentixol depot	As for fluphenazine decanoate	12.5 to 200 mg i.m. every 4 weeks	As for haloperidol

Cont.

Haloperidol depot	As for fluphenazine decanoate	12.5 to 100 mg i.m. every 4 weeks	As for haloperidol
Zuclopenthixol depot	As for fluphenazine decanoate	Test dose 100 mg i.m. 200–500 mg every 1 to 4 weeks	As for haloperidol
Pipotiazine depot	As for fluphenazine decanoate	50–200 mg i.m. every 4 weeks	As for haloperidol, although may have lower chance of movement side-effects
Aripiprazole depot	As for fluphenazine decanoate	300–400 mg i.m. monthly	As for oral preparation
Olanzapine pamoate	As for fluphenazine decanoate	150 mg i.m. every 4 weeks to 300 mg every 2 weeks	As for oral preparation Rarely associated with post-injection syndrome: delirium or sedation
Paliperidone depot	As for fluphenazine decanoate	50–150 mg i.m. monthly	As for oral preparation
Risperidone long-acting injection	As for fluphenazine decanoate	25–50 mg i.m. every 2 weeks	As for oral preparation Medication release is delayed for 2 to 3 weeks, so oral medication needs to be continued
Other locally available antipsychotics:			

Table 14.3 Mood stabiliser medications

General cautions
- Caution is required in pregnant women (and all women of reproductive potential); avoid valproate
- Mood stabiliser medications have many interactions with other medications (and also with one another)

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring and cautions
Lithium	Bipolar disorder (treatment of mania and prevention of relapse) As an add-on treatment for depression that does not improve with antidepressants alone	Starting dose: *300 mg* Typical effective dose: *600–1200 mg* Target blood level: 0.6–1.0 mEq/l (0.8–1.0 mEq/l in mania; 0.6–0.8 mEq/l for maintenance)	Common: sedation, tremor, weight gain, coordination problems, passing lots of urine, drinking more liquids, heart rhythm abnormality and ECG changes, thyroid problems, hair loss, nausea, diarrhoea, rash Rare: lithium toxicity can cause seizures, delirium, coma and death Contraindicated in people with severe cardiac or kidney disease. Can only be prescribed when laboratory monitoring is available Advice for people taking lithium: ○ avoid getting dehydrated ○ seek medical advice if you get diarrhoea and vomiting ○ watch out for signs of toxicity: bad tremor, nausea/vomiting, unsteady, confused or sedated – get urgent medical advice ○ be careful with over-the-counter medications, especially painkillers, and other prescribed medications ○ take special care to keep lithium away from children Drug–drug interactions: NSAIDs, ACE inhibitors, thiazide diuretics, metronidazole and tetracycline can increase lithium levels Check blood level after 1 week, increase the dose and re-check the blood level after another week. Continue until the level is therapeutic, and then every 3 months At baseline, measure thyroid function, renal function and full blood count; repeat once per year as routine Do an ECG if possible

Cont.

Valproate	Bipolar disorder (treatment of mania and prevention of relapse) Preferred choice in people living with HIV/AIDS owing to drug–drug interactions	Usually split the dose to give 2 or 3 times/day Starting dose 500 mg (total)/day in divided doses Typical effective dose: 1000–2000 mg	Common: nausea, drowsiness, diarrhoea, tremor, temporary hair loss (can last 6 months), weight gain, headache, coordination problems Rare: liver problems, low platelets, low white cell count Caution in people with liver disease Monitor liver function tests and platelets if possible
Carbamazepine	Bipolar disorder (treatment of mania and prevention of relapse)	Starting dose: 200 mg (at bedtime), increase by 100–200 mg every 2 weeks Typical effective dose: 400–600 mg After 2 weeks, a further dose increase may be needed because carbamazepine induces enzymes which make the plasma level drop	Common: skin rash (can be severe), blurred vision, double vision, difficulty walking, nausea, sedation, tremor, weight gain, liver problems Rare: bone marrow suppression (low platelets, low white cell count)
Risperidone	As for lithium Preferred for pregnant women	☞Table 14.2	☞Table 14.2
Olanzapine	As for lithium Preferred for pregnant women	☞Table 14.2	☞Table 14.2

Cont.

Quetiapine	As for lithium Preferred for pregnant women	☞Table 14.2	☞Table 14.2
Lamotrigine	Depression in bipolar disorder	Starting dose: 25 mg/day for 14 days. Then increase to 50 mg/day for another 14 days. After that, increase in steps of up to 100 mg every 7–14 days Usual maintenance dose 100–200 mg/day (can split the dose)	Common: blurred vision, double vision, joint and back pain, nausea, diarrhoea, sleep problems, headache, rash, tremor, difficulty walking, drowsiness, aggression or restlessness Rare: severe rash, blood disorders, confusion, liver failure, hallucinations
Other locally available mood stabilisers:			

ACE, angiotensin-converting enzyme; ECG, electrocardiogram; NSAIDs, nonsteroidal anti-inflammatory drugs.

Table 14.4 Antiepileptic medications

General cautions

- Caution is required in pregnant women (and all women of reproductive potential); avoid valproate
- Caution in people with liver or kidney disease: lower doses required
- Antiepileptic medications have many interactions with other medications (and also with one another), for instance, reducing the effect of the oral contraceptive pill and some forms of antiretroviral treatments

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Phenobarbitone	All types of epilepsy in adults and children	Starting dose 60 mg/day in one or two divided doses If poor response after 2 weeks, increase to 120 mg/day If poor response after 2 months, increase to 180 mg/day In children: start 2–3 mg/kg daily in two divided doses, increase weekly by 1–2 mg/kg daily depending on tolerance (maximum 6 mg/kg daily)	Common: drowsiness, restlessness, confusion, problems with coordination, depression, sexual problems Rare: skin rash, bone marrow depression, liver failure
Carbamazepine	All types of epilepsy in adults and children	Split the dose to twice per day Starting dose: 100–200 mg (total)/day, increase by maximum 200 mg/week Maintenance dose: 400–1400 mg (total)/day In children: start 5 mg/kg daily in two–three divided doses, increase by 5 mg/kg daily each week (maximum 40 mg/kg daily or 1400 mg daily	☞Table 14.3

Cont.

Phenytoin	All types of epilepsy in adults and children	Starting dose: 150–200 mg/day in two divided doses If poor response, increase with small doses (25–30 mg) – can lead to big changes in blood concentration Maintenance dose: 200–400 mg/day In children: start 3–4 mg/kg daily in two divided doses, increase by 5 mg/kg daily every 3–4 weeks (maximum 300 mg per day)	Common: drowsiness, difficulty walking, confusion, twitching muscles, tremor, headache, nausea or loss of appetite, features of face become coarser, gums increase in size Rare: anaemia or other blood abnormalities, rash, liver abnormalities, hair growing on face and body, increase in suicidal ideation
Sodium valproate	All types of epilepsy in adults and children Preferred for people living with HIV/AIDS	Starting dose: 400 mg (total)/day in divided doses (usually 2 or 3 times/day), increase by 500 mg/day each week Maintenance dose: 600–2000 mg (total)/day In children: start 15–20 mg/kg daily in 2–3 divided doses, increase each week by 15 mg/kg daily (maximum 15–40 mg/kg daily)	☞Table 14.3
Primidone	All types of epilepsy in adults	Starting dose: 125 mg at night Increase in steps up to 500 mg twice daily	Common: drowsiness, restlessness, confusion

Cont.

Lamotrigine	All types of epilepsy in adults Can be used as add-on treatment for epilepsy that is resistant to one medication alone	☞Table 14.3	☞Table 14.3
Antiepileptic medications for people with HIV on protease inhibitors or non-nucleoside reverse transcriptase inhibitors			
Levetiracetam	Can be used as add-on treatment for epilepsy that is resistant to one medication alone	Starting dose: 250 mg/day. After 1–2 weeks increase to 250 mg twice daily, then increase in steps of 250 mg twice daily (maximum dose: 1.5 g twice daily) every 2 weeks as needed	Common: abdominal pain, aggression, reduced appetite, anxiety or depression, unsteady walking, cough, diarrhoea, dizziness, headache, sleep problems, irritability, nausea, rash, tremor Rare: suicidal ideation, psychosis, rash, low blood count, liver failure
Lacosamide	Add-on treatment of focal seizures	Starting dose: 50 mg twice daily by infusion administered over 15–60 min for up to 5 days. After that, increase every week in steps of 50 mg twice daily, adjusted according to response Maintenance dose: 100 mg twice daily	Common: difficulty walking, blurred vision, difficulty thinking clearly, constipation, depression, dizziness, drowsiness, fatigue, headache, nausea, itching and tremor Rare: allergic reactions, suicidal ideation, psychosis, cardiac problems, low blood count
Topiramate	Second-line treatment for tonic–clonic seizures	Starting dose: 25 mg/day (at night) for 1 week, increase in steps of 25–50 mg every 1– 2 weeks (split into two doses) Usual maintenance dose: 100–200 mg daily (split into two doses)	Common: gastrointestinal disturbance, weight loss, mental health problems (irritability, anxiety, depression), confusion, hair loss, low blood count, drowsiness, dizziness, renal stones, tremor Rare: rash (severe), liver failure, acute angle closure glaucoma

Cont.

Gabapentin	Starting dose: 300 mg/day (day 1), then 300 mg twice daily for day 2, then 300 mg 3 times a day for day 3 Usual maintenance dose: 900–3600 mg daily in 3 divided doses	Common: gastrointestinal disturbance, mental health symptoms (anxiety, abnormal thoughts, depression, hostility), forgetfulness, confusion, headache, difficulty walking, drowsiness, dizziness, joint pains, acne, fever, sleep problems, low blood count, rash, tremor, visual problems, weight gain Rare: severe rash, liver failure, change in blood glucose, hallucinations
Pregabalin	Initially 25 mg twice daily, increased in steps of 50 mg daily at 7-day intervals, to 300 mg daily in 2–3 divided doses for 7 days and, if necessary, up to 600 mg daily in 2–3 divided doses	Common: gastrointestinal disturbance, visual problems, confusion, memory problems, sleep problems, sexual problems, drowsiness, weight gain, irritability Rare: cardiac problems, blood pressure changes, renal failure, low blood count
Other locally available antiepileptic medications:		

Table 14.5 Benzodiazepines

General cautions
- Advise to avoid use of heavy machinery and to take care driving until the person is used to the medication
- Advise the person not to drink alcohol while taking benzodiazepines

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Diazepam	For severe distress states and acute sleep problems	Start with 5mg at night; increase up to 10mg twice daily	Drowsiness, dizziness, dependence (if used longer than 3 to 4 weeks), suppresses breathing
	Alcohol withdrawal	☞Chapter 9 for regimen	
	Acute seizures	10 mg i.v. (preferred) or p.r.	
Lorazepam	For severe distress states and acute sleep problems	Start with 1 mg at night, increase up to 4 mg (split in two doses)	Same as diazepam
	Acute seizures	4 mg i.v. or i.m. can be used	
Midazolam	Acute seizures	Buccal, intranasal or p.r. preparations can be used	Same as diazepam
Chlordiazepoxide	Same as diazepam, but preferred for alcohol withdrawal	☞Chapter 9 for regimen	Same as diazepam
Clonazepam	Same as diazepam, but also useful in epilepsy	Start with 0.5 mg at night; increase up to 2 mg twice daily	Same as diazepam
Alprazolam	Same as diazepam	Start with 0.25 mg; increase up to 1 mg twice a day	Same as diazepam
Oxazepam	Same as diazepam, but preferred for alcohol withdrawal when liver problems	Start with 7.5 mg at night; increase up to 40 mg twice a day	Same as diazepam

Cont.

Triazolam	Same as diazepam	Start with 0.125 mg at night; increase up to 0.25 mg at night	Same as diazepam
Other locally available benzodiazepines:			
i.v., intravenous; p.r., per rectum (in an emergency when i.v. access not possible).			

Table 14.6 Other medications for mental health problems

Medications for alcohol and drug problems			
Medication, trade name and cost	**Special uses**	**Dosage**	**Side-effects, interactions and monitoring and cautions**
Thiamine	For drinking problems and alcohol withdrawal	100 mg/day In delirium in context of withdrawal, give 100–500 mg i.v. or i.m. 3 times daily for 5 days	Rarely reported
Naloxone	To treat opioid overdose	0.4-2 mg i.v., i.m., intranasal or subcutaneous. Repeat as needed	Side effects: can cause opioid withdrawal symptoms
Acamprosate	To maintain abstinence from alcohol by reducing the urge to drink Commence immediately after detoxification	2 tablets of 333 mg three times/day (if weight <60 kg should be 666 mg twice/day) Continue for 12 months	Common: diarrhoea, flatulence, nausea, vomiting, abdominal pain, itching, depression, anxiety Rare: serious skin rash, suicidality
Naltrexone	As for acamprosate	Starting dose: 50 mg/day Maintenance dose: 50–100 mg/day for 6–12 months Must not be taken within 8 days of an opioid medication If possible, check liver function before starting	Common: nausea, vomiting, abdominal pain, anxiety, sleeping difficulties, headache, reduced energy, joint and muscle pain Rare: liver toxicity Caution: naltrexone blocks the action of opioid analgesia
Bupropion	Smoking cessation aid	150 mg once daily for 6 days, then increase to 150 mg twice daily	Common: headache, dry mouth, nausea, insomnia, dizziness, constipation Caution: do not prescribe if person has history of seizures or bipolar disorder
Varenicline	Smoking cessation aid	Days 1 to 3: 0.5 mg once/day, days 4 to 7: 0.5 mg twice/day, days 8 to end of treatment: 1 mg twice/day p.o.	Common: nausea, headaches, dizziness, fatigue, sleep disturbances Caution: do not prescribe <18 years, monitor closely for depression and suicidality

Cont.

Disulfiram	To maintain abstinence from alcohol owing to fear of unpleasant interaction Commence immediately after detoxification	200 mg/day	Common: drowsiness, fatigue, nausea, vomiting, reduced interested in sexual activity Rare: psychosis, allergic rash, liver damage, inflammation of peripheral nerves Cautions: ○ avoid if history of cardiac disease, stroke, high blood pressure, psychosis or suicide risk ○ the person must be motivated to remain abstinent and well informed about the risk (1 in 15 000 people will die because of an interaction between alcohol and disulfiram, although this is lower than the risk of death from untreated alcohol dependence) ○ do not use in women who are pregnant or breastfeeding ○ tricyclic antidepressants, monoamine oxidase inhibitors, antipsychotics and some antihypertensive medications make the disulfiram–alcohol reaction more serious ○ sensitisation to alcohol continues 6–14 days after taking disulfiram, even if in small amounts
Methadone	For opioid withdrawal or as a safer alternative to injecting/ illegal opioid use ('substitution')	Starting dose: 15 to 20 mg, increasing up to 30 mg/day if needed. Then taper off over 3 to 10 days	Common: sedation Caution: methadone should only be prescribed in consultation with specialists There is a potential for misuse and diversion; therefore, prescribing programmes must have measures in place to minimise this (e.g. supervised daily dosing) There is a risk of opioid overdose if a person uses illicit opioids in addition to methadone. Take care if prescribing with other sedative medications

Cont.

Buprenorphine	As for methadone	Starting dose: 4–16 mg/day administered under the tongue. Continue for 3 to 14 days	Caution: the person should not be given buprenorphine within 8 h of using an opioid or within 24 to 48 h of methadone as it will precipitate withdrawal When using as substitution treatment, the same safeguards need to be in place as described for methadone
Clonidine	For opioid withdrawal	0.1–0.15 mg three times daily	Common: lightheadedness and sedation Monitor blood pressure closely
Lofexidine	For opioid withdrawal	As for clonidine	As for clonidine
Medications for child mental health problems			
Medication, trade name and cost	**Special uses**	**Dosage**	**Side-effects, interactions and monitoring**
Methylphenidate	For ADHD in children	Starting dose: 5 mg once or twice daily Over 4 to 6 weeks, gradually increase up to a maximum of 60 mg total/day (divided into 2 to 3 doses/day), depending on when symptoms are controlled	Common: sleeping problems, decreased appetite, mood changes Rarer: abdominal pain, headache, nausea, temporary growth retardation and low weight (consider a break in treatment over school holidays to allow catch-up growth), changes in heart rate and blood pressure, vomiting (give with food), tics Monitor and record height, weight, blood pressure, reported side-effects, and changes in behaviour. Consult specialist if failure to make expected gains in weight and height, increased blood pressure, agitation, anxiety or severe insomnia
Medications to reduce cognitive decline in dementia			
Medication, trade name and cost	**Special uses**	**Dosage**	**Side-effects, interactions and monitoring**
Donepezil	Mild to moderate Alzheimer's disease	Starting dose: 5 mg daily Usual treatment dose: 10 mg daily (wait 4 weeks between dose increases)	Common: diarrhoea, nausea, headache, common cold, hallucinations, reduced appetite, aggressive behaviour, abnormal dreams, dizziness and fainting, sleep problems, rash, itching, urinary incontinence, fatigue, muscle cramps, pain

Cont.

Rivastigmine	As for donepezil	Starting dose: 1.5 mg twice/day Usual treatment dose: 6 mg twice/day (wait 2 weeks before increasing by up to 1.5 mg twice/day)	Common: reduced appetite, dizziness, nausea, vomiting, diarrhoea, agitation, confusion, anxiety, headache, drowsiness, tremor, sweating, fatigue and weight loss
Galantamine	As for donepezil	Starting dose: 4 mg twice/day Usual treatment dose: 12 mg twice/day (wait for 4 weeks before increasing dose by up to 4 mg twice/day)	Common: nausea, vomiting, decreased appetite, hallucinations, depression, dizziness and fainting, tremor, headache, drowsiness, high blood pressure, slow heart rate, abdominal disturbance, sweating, muscle spasms, weight loss, falls
Memantine	Moderate to severe Alzheimer's disease and vascular dementia	Starting dose: 5 mg daily Usual treatment dose: 20 mg daily (can be in divided doses)	Common: medication hypersensitivity, drowsiness, dizziness, balance problems, high blood pressure, breathlessness, constipation, headache, abnormal liver tests
Medications for antipsychotic side-effects			
Medication, trade name and cost	**Special uses**	**Dosage**	**Side-effects, interactions and monitoring**
Biperiden	For stiffness and sudden muscle spasm caused by antipsychotic medications	1 mg twice daily, increasing up to 3 to 12 mg/day p.o. or i.m.	Common: dry mouth, constipation, blurred vision, urinary retention, confusion, sedation Rare: glaucoma, gastrointestinal obstruction, myasthenia gravis Potential for dependence
Benzhexol	As for biperiden	1 mg once daily; increase up to 4–12 mg daily in three to four divided doses	As for biperiden
Benztropine	As for biperiden	0.5 mg at night; increase up to 2 mg at night	As for biperiden

Cont.

Procyclidine	As for biperiden	2.5 mg twice daily; increase up to 5 mg three times daily	As for biperiden

Other medications for mental health problems

Medication, trade name and cost	Special uses	Dosage	Side-effects, interactions and monitoring
Promethazine	Night sedation without risk of dependence	Start with 25 mg/night. Can increase up to 50 mg/night Advise to take 1 to 2 h before bedtime	Common: morning hangover, blurred vision, drowsiness, dry mouth, gastrointestinal disturbance, restlessness, coordination problems, urinary retention
Other locally available medications:			

ADHD, attention-deficit hyperactivity disorder; i.m., intramuscular; i.v., intravenous; p.o., orally.