

List of prescribing indicators related to mental health medications and conditions

PIM: Independent of Diagnoses or Conditions

Prescribing [Class/Medication] to a patient aged [Age]

Table 1: PIM: Independent of Diagnoses or Conditions (Antipsychotics)

Class/Medication	Age	References
Antipsychotics	≥ 65	[25, 34, 38, 42, 43]
	≥ 70	[95]
	0-5	[69]
	NH	[92]
<i>Atypical antipsychotics</i>	≥ 65	[31, 32]
<i>Aripiprazole</i>	≥ 65	[46, 91]
<i>Asenapine</i>	≥ 65	[91]
<i>Chlorpromazine</i>	≥ 65	[46, 47, 66, 84, 91, 116]
	≥ 70	[96]
	≥ 75	[87]
<i>Chlorprothixen</i>	≥ 65	[46]
	≥ 70	[96]
<i>Clozapine</i>	≥ 65	[45-47, 66, 77, 84, 90, 91, 116]
<i>Cyanemazine</i>	≥ 65	[46]
	≥ 75	[87]
<i>Droperidol</i>	≥ 65	[46]
<i>Flupentixol</i>	≥ 65	[46]
<i>Fluphenazine</i>	≥ 65	[45, 46, 90]
	≥ 75	[87]
<i>Haloperidol</i>	≥ 65	[84, 90, 91, 116]
	≥ 65	[46, 47, 66, 91]
	≥ 70	[96]
<i>Levomepromazine</i>	≥ 75	[87]
	≥ 65	[46, 66]
<i>Olanzapine</i>	≥ 65	[84, 90, 91, 116]
<i>Paliperidone</i>	≥ 65	[91]
<i>Perphenazine</i>	≥ 65	[45, 46, 90, 91]
	≥ 75	[87]
<i>Pimozide</i>	≥ 65	[46, 91]
<i>Pipotiazine</i>	≥ 65	[46, 91]
	≥ 75	[87]
<i>Prochlorperazine</i>	≥ 65	[46]
	≥ 70	[96]
<i>Propiciazine (periciazine)</i>	≥ 65	[46, 91]
	≥ 75	[87]
<i>Prothipendyl</i>	≥ 65	[90]
<i>Risperidone</i>	≥ 65	[84, 91, 116]
<i>Reserpine</i>	≥ 65	[41, 46, 66, 118]
	≥ 75	[87]
<i>Sertindole</i>	≥ 65	[46]
<i>Sulpiride</i>	≥ 75	[85]
<i>Thioridazine</i>	≥ 65	[46, 66, 91, 116]
<i>Trifluoperazine</i>	≥ 65	[46, 91]
<i>Ziprasidone</i>	≥ 65	[46, 91]
<i>Zuclopenthixol</i>	≥ 65	[46, 84]

Table 2: PIM: Independent of Diagnoses or Conditions (Antidepressants)

Class/Medication	Age	References
Antidepressants	≥ 65	[42]
	0-5	[69]
	NH	[92]
TCA	≥ 65	[32, 34, 38, 65]
	≥ 70	[95]
	≥ 75	[73, 85]
	≤ 18	[103]
<i>Amitriptyline</i>	≥ 65	[31, 34, 41, 45-47, 66, 77, 84, 90, 91, 93, 106, 108, 116, 118]
	≥ 70	[96]
	≥ 75	[87]

<i>Amoxapine</i>	≥ 65	[34, 46, 84]
	≥ 75	[87]
<i>Clomipramine</i>	≥ 65	[34, 45-47, 66, 77, 84, 90, 91]
	≥ 70	[96]
	≥ 75	[87]
<i>Desipramine</i>	≥ 65	[34, 46]
<i>Dosulepin</i>	≥ 65	[46, 47, 66]
	≥ 75	[87]
<i>Doxepin</i>	≥ 65	[41, 45, 46, 66, 77, 90, 106, 108, 116, 118]
	≥ 70	[96]
	≥ 75	[87]
<i>Imipramine</i>	≥ 65	[34, 45-47, 66, 77, 84, 91, 93, 116]
	≥ 75	[87]
<i>Maprotiline</i>	≥ 65	[45, 46, 77, 90]
	≥ 75	[87]
<i>Melitracen</i>	≥ 65	[66]
<i>Nortriptyline</i>	≥ 65	[34, 46, 84, 91]
<i>Protriptyline</i>	≥ 65	[34]
<i>Trimipramine</i>	≥ 65	[34, 45, 46, 77]
	≥ 70	[96]
	≥ 75	[87]
SSRI/SNRI	≥ 65	[34]
<i>SSRI other than fluoxetine</i>	≤ 18	[73, 103]
<i>Fluvoxamine</i>	≥ 65	[46, 90]
<i>Fluoxetine</i>	≥ 65	[31, 45-47, 77, 91]
	≤ 18	[73]
<i>Paroxetine</i>	≥ 65	[34, 46]
<i>Venlafaxine</i>	≥ 65	[46]
<i>NDRI (Bupropion)</i>	≥ 65	[46]
<i>NRI (Reboxetine)</i>	≥ 65	[46]
<i>MAOi (Tranlycypromine)</i>	≥ 65	[45, 46, 77, 91]
<i>MAOi (Bifemelane)</i>	≥ 65	[91]

MAOi: Monoamine oxidase inhibitor. NDRI: Norepinephrine–dopamine reuptake inhibitor. NRI: Norepinephrine reuptake inhibitor. SNRI: Serotonin and norepinephrine reuptake inhibitors. SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.

Table 3: PIM: Independent of Diagnoses or Conditions (Sedative, hypnotics and anxiolytics)

Class/Medication	Age	References
Long acting Hypnotics or anxiolytic	≥ 65	[38, 65]
Benzodiazepine	≥ 65	[25, 42, 43, 68]
	≥ 75	[85]
	NH	[92]
<i>long acting benzodiazepine</i>	≥ 65	[41, 48, 73, 74, 107, 108, 112]
	≥ 75	[87]
<i>short acting benzodiazepine</i>	≥ 65	[48]
	≥ 75	[73]
<i>Other than Temazepam or Zolpidem.</i>	≥ 65	[92]
<i>Alprazolam</i>	≥ 65	[34, 45, 46, 84, 91, 116]
<i>Brotizolam</i>	≥ 65	[90]
<i>Bromazepam</i>	≥ 65	[45, 46, 84, 90, 91]
<i>Chlordiazepoxide</i>	≥ 65	[34, 39, 45-47, 66, 84, 90, 91, 106, 116, 118]
<i>Clobazam</i>	≥ 65	[45-47, 66, 84, 90, 91]
<i>Clonazepam</i>	≥ 65	[34, 46, 66, 84, 90, 91]
<i>Clorazepate</i>	≥ 65	[34, 45, 46, 66, 90, 91]
<i>Diazepam</i>	≥ 65	[34, 39, 45-47, 66, 84, 90, 91, 106, 116, 118]
	≥ 70	[95, 96]
<i>Estazolam</i>	≥ 65	[34]
<i>Fludiazepam</i>	≥ 65	[66]
<i>Flunitrazepam</i>	≥ 65	[45, 46, 66, 84, 90, 91]
	≥ 70	[95, 96]
<i>Flurazepam</i>	≥ 65	[34, 39, 41, 45, 46, 66, 84, 106, 116, 118]
<i>Halazepam</i>	≥ 65	[46]
<i>Loflazepate</i>	≥ 65	[46]
<i>Lorazepam</i>	≥ 65	[34, 84, 90, 91, 116]
<i>Medazepam</i>	≥ 65	[45-47]
<i>Midazolam</i>	≥ 65	[46, 47]
<i>Nitrazepam</i>	≥ 65	[45, 46, 66, 90]
	≥ 70	[95, 96]
<i>Nordazepam</i>	≥ 65	[46, 66]
<i>Oxazepam</i>	≥ 65	[34, 90, 91]
<i>Oxazolam</i>	≥ 65	[66]
<i>Prazepam</i>	≥ 65	[45, 46, 90]

<i>Quazepam</i>	≥ 65	[34, 46]
<i>Temazepam</i>	≥ 65	[34, 45, 46, 84]
<i>Triazolam</i>	≥ 65	[34, 45, 46, 84, 90, 116]
Z-drugs	≥ 65	[25, 42]
	≥ 75	[73, 85]
<i>Eszopiclone</i>	≥ 65	[34, 91]
<i>Zaleplon</i>	≥ 65	[34, 91]
<i>Zolpidem</i>	≥ 65	[34, 84, 91]
<i>Zopiclone</i>	≥ 65	[91]
Barbiturates	≥ 65	[39, 118]
<i>Amobarbital</i>	≥ 65	[66]
<i>Butobarbital</i>	≥ 65	[34]
<i>Butalbital</i>	≥ 65	[34]
<i>Mephobarbital</i>	≥ 65	[34]
<i>Pentobarbital</i>	≥ 65	[34, 45, 66, 91]
<i>Phenobarbital</i>	≥ 65	[34, 41, 46, 48, 90, 91, 116]
<i>Secobarbital</i>	≥ 65	[34, 41, 66]
<i>Thiopental</i>	≥ 65	[91]
<i>Chloral hydrate</i>	≥ 65	[41, 45, 46]
<i>Clomethiazole</i>	≥ 65	[46]
	≥ 70	[95]
<i>Meprobamate</i>	≥ 65	[34, 39, 41, 46, 66, 118]
<i>First-generation antihistamines</i>	≥ 65	[25, 42, 43]
	≥ 70	[95]
<i>Sedating antihistamine</i>	≥ 65	[48]
<i>Alimemazine</i>	≥ 75	[87]
	≥ 70	[96]
	≥ 65	[46, 66, 108]
<i>Azatadine</i>	≥ 65	[66]
<i>Brompheniramine</i>	≥ 65	[34, 46, 66, 91]
	≥ 75	[87]
<i>Bucizine</i>	≥ 65	[46, 66]
	≥ 75	[87]
<i>Carbinoxamine</i>	≥ 65	[34, 46, 66, 91]
	≥ 75	[87]
<i>Chlorcyclizine</i>	≥ 65	[66]
<i>Chlorpheniramine</i>	≥ 65	[34, 46, 66, 84, 91, 118]
	≥ 75	[85, 87]
<i>Chlorphenoxamine</i>	≥ 65	[66]
<i>Clemastine</i>	≥ 65	[34, 46, 47, 66]
<i>Cyclizine</i>	≥ 65	[46, 66]
<i>Cyproheptadine</i>	≥ 65	[34, 46, 47, 66, 91, 118]
	≥ 75	[87]
<i>Dexbrompheniramine</i>	≥ 65	[34]
<i>Dexchlorpheniramine</i>	≥ 65	[34, 46, 66, 91]
	≥ 70	[96]
	≥ 75	[87]
<i>Dimenhydrinate</i>	≥ 65	[34, 46, 47, 84]
	≥ 75	[87]
<i>Dimetindene</i>	≥ 65	[46]
<i>Diphenhydramine</i>	≥ 65	[34, 45, 46, 66, 84, 91, 118]
	≥ 75	[85, 87]
<i>Diphenylpyraline</i>	≥ 65	[66]
<i>Doxylamine</i>	≥ 65	[34, 45, 46, 66, 91]
	≥ 75	[87]
<i>Ebastine</i>	≥ 65	[46]
<i>Homochlorcyclizine</i>	≥ 65	[66]
<i>Hydroxyzine</i>	≥ 65	[34, 46, 47, 77, 84, 91, 118]
	≥ 70	[96]
	≥ 75	[87]
<i>Ketotifen</i>	≥ 65	[66]
<i>Mebhydrolin</i>	≥ 65	[66]
<i>Meclizine</i>	≥ 65	[34, 46, 66]
<i>Mepyramine</i>	≥ 65	[66]
<i>Mequitazine</i>	≥ 65	[46, 66, 91]
	≥ 75	[87]
<i>Oxomemazine</i>	≥ 65	[46]
<i>Oxatomide</i>	≥ 65	[66]
<i>Phenindamine</i>	≥ 65	[66]
<i>Pheniramine</i>	≥ 65	[66]
	≥ 75	[87]

<i>Pimethixene</i>	≥ 65	[46]
<i>Promethazine</i>	≥ 65	[34, 46, 47, 66, 91, 108, 118]
	≥ 70	[96]
	≥ 75	[87]
<i>Propiomazine</i>	≥ 65	[46]
<i>Terfenadine</i>	≥ 65	[46]
<i>Tripelennamine</i>	> 65	[46, 66]
<i>Triprolidine</i>	≥ 65	[34, 46, 66, 84]
	≥ 75	[85]
<i>Aceprometazine</i>	≥ 65	[46]
	≥ 75	[87]
<i>Phenothiazine</i>	≤ 20	[73]
	≥ 65	[32]
<i>Propranolol</i>	≥ 65	[41, 46]

Table 4: PIM: Independent of Diagnoses or Conditions (Anti-dementia)

Class/Medication	Age	References
<i>Anticholinesterase inhibitors</i>	≥ 70	[95]
<i>Aniracetam</i>	≥ 65	[91]
<i>Citicoline</i>	≥ 65	[91]
<i>Cyclandelate</i>	≥ 65	[41, 46]
<i>Dihydroergocristine</i>	≥ 65	[46, 47, 77]
	≥ 75	[87]
<i>Dihydroergocryptine</i>	≥ 75	[87]
<i>Dihydroergotoxine</i>	≥ 65	[34, 41, 46, 47, 116]
	≥ 75	[87]
<i>Ginkgo biloba</i>	≥ 65	[46-48, 77, 91]
	≥ 75	[87]
<i>Idebenone</i>	≥ 65	[91]
<i>Isoxsuprine</i>	≥ 65	[34, 41]
<i>Moxisylyte</i>	≥ 65	[46]
<i>Nafidrofuryl</i>	≥ 65	[45-47]
	≥ 75	[87]
<i>Nicergoline,</i>	≥ 65	[45-47, 77]
	≥ 75	[87]
<i>Pentoxifylline</i>	≥ 65	[45-47, 77]
	≥ 75	[87]
<i>Piracetam</i>	≥ 65	[45-47, 77, 91]
	≥ 75	[87]
<i>Piribedil</i>	≥ 75	[87]
<i>Vinburnine</i>	≥ 65	[46, 77]
	≥ 75	[87]
<i>Vincamine</i>	≥ 65	[46, 77]
	≥ 75	[87]

Table 5: PIM: Independent of Diagnoses or Conditions (ADHD medications)

Class/Medication	Age	References
<i>All ADHD Meds</i>	< 6	[103]
<i>Atomoxetine</i>	0-4	[69]
<i>Clonidine</i>	≥ 65	[31, 34, 46, 48, 66, 91, 116]
	≥ 75	[87]
<i>Guanfacine</i>	≥ 65	[34, 46]
	≥ 75	[87]
<i>Methylphenidate</i>	≥ 65	[46, 91]
<i>Stimulants</i>	0-4	[69]

Table 6: PIM: Independent of Diagnoses or Conditions (Mood stabilisers)

Class/Medication	Age	References
<i>Carbamazepine</i>	≥ 65	[34, 46, 91]
<i>Lithium</i>	≥ 65	[46]

Table 7: PIM: Independent of Diagnoses or Conditions (Anticholinergics)

Class/Medication	Age	References
<i>Anticholinergics</i>	≥ 65	[38]
	≥ 75	[87]
	NH	[92]
<i>High anticholinergic Meds</i>	≥ 65	[64, 107]
<i>Atropine (excludes ophthalmic) ^a</i>	≥ 65	[34]
<i>Belladonna ^a</i>	≥ 65	[34, 41, 46, 66, 91, 116, 118]
	≥ 75	[87]
<i>Benzatropine ^a</i>	≥ 65	[34, 46, 84]
<i>Biperiden ^a</i>	≥ 65	[46, 90, 91]

	≥ 75	[85]
<i>Bornaprine</i> ^a	≥ 65	[84, 90]
<i>Clidinium-chlordiazepoxide</i> ^a	≥ 65	[34, 46]
	≥ 75	[87]
<i>Dicyclomine (Dicyclomine)</i> ^a	≥ 65	[34, 118]
<i>Dihexyverine</i> ^a	≥ 75	[87]
<i>Diphenoxylate-atropine</i> ^a	> 75	[87]
<i>Homatropine methylbromide</i> ^a	≥ 65	[91]
<i>Hyoscine</i> ^a	≥ 65	[34, 41, 46, 84, 91, 116]
	≥ 75	[87]
<i>Hyoscyamine</i> ^a	≥ 65	[34, 41, 46, 66, 118]
<i>Orphenadrine</i> ^a	≥ 65	[31, 34, 41, 46, 66, 116]
<i>Propantheline</i> ^a	≥ 65	[34, 118]
<i>Tiemonium</i> ^a	≥ 75	[87]
<i>Trihexyphenidyl</i> ^a	≥ 65	[34, 46, 84, 91]
	≥ 75	[85]
<i>Tropatepine</i> ^a	≥ 65	[46]

a. These medications were included because they can be used to treat some of the side effects caused by mental health medications.

PIM: considering diagnoses or conditions

Prescribing [Class/Medication] to a patient with [Condition] +/- and aged [Age]

Table 8: PIM: considering diagnoses or conditions (Antipsychotics)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Dementia or Cognitive Impairment	<i>Antipsychotics</i>	≥ 75	[62, 85]
	<i>Antipsychotics</i>	≥ 65	[34, 84]
	<i>Perphenazine</i>	≥ 65	[83]
	<i>Clozapine</i>	≥ 65	[83]
	<i>Haloperidol</i>	≥ 65	[83]
	<i>Olanzapine</i>	≥ 65	[83]
	<i>Antipsychotic other than risperidone and olanzapine</i>	≥ 75	[87]
Dementia but Not Psychosis	<i>Antipsychotics</i>		[73]
	<i>Risperidone</i>	≥ 65	[11]
	<i>Olanzapine</i>		[11]
Dementia and Psychosis	<i>Antipsychotic other than risperidone</i>	≥ 65	[73]
BPSD	<i>Antipsychotics</i>	≥ 65	[25, 34]
	<i>Antipsychotics</i>	≥ 70	[95]
	<i>Antipsychotic other than risperidone</i>	-	[15]
Advanced dementia	<i>Antipsychotics</i>	-	[86]
Advanced dementia (palliative)	<i>Antipsychotics</i>	-	[80]
Seizures or Epilepsy	<i>Antipsychotics</i>	≥ 65	[116]
	<i>Chlorpromazine</i>	≥ 65	[34]
	<i>Phenothiazines</i>	-	[71]
		≥ 65	[43, 47]
	<i>Haloperidol</i>	-	[71]
	<i>Clozapine</i>	≥ 65	[34]
	<i>Thioridazine</i>	≥ 65	[34]
	≥ 65	[34]	
	<i>Thiothixene</i>	≥ 65	[34]
	<i>Olanzapine</i>	≥ 65	[34]
Parkinson's Disease	<i>Antipsychotics</i>	≥ 65	[42]
	<i>Antipsychotics other than quetiapine or clozapine</i>	≥ 65	[25, 32, 48, 73, 92]
	<i>Antipsychotics other than aripiprazole, quetiapine, clozapine</i>	≥ 65	[34, 84]
	<i>Prochlorperazine</i>	-	[15]
		≥ 65	[25, 32, 34, 43]
	<i>Haloperidol</i>	≥ 65	[74, 83, 116]
	<i>Droperidol</i>	≥ 65	[74]
	<i>Perphenazine</i>	≥ 65	[83]
	<i>Clozapine</i>	≥ 65	[83]
	<i>Olanzapine</i>	≥ 65	[83]
History of prostatism or previous urinary retention or BPH	<i>Antipsychotics</i>	-	[71]
	<i>Chlorpromazine</i>		[25]
	<i>Clozapine</i>	≥ 65	[25]
	<i>Flupenthixol</i>		[25]
	<i>Fluphenazine</i>		[25]

	<i>Pipothiazine</i>		[25]
	<i>Promazine</i>		[25]
	<i>Zuclopenthixol</i>		[25]
Glaucoma	<i>Fluphenazine</i>	-	[71]
	<i>Perphenazine</i>	-	[71]
	<i>Trifluoperazine</i>		[71]
Syncope	<i>Antipsychotics</i>		[84]
	<i>Chlorpromazine</i>		[34]
	<i>Thioridazine</i>		[34]
	<i>Olanzapine</i>		[34, 83]
	<i>Haloperidol</i>		[83]
	<i>Clozapine</i>		[83]
Postural Hypotension	<i>Perphenazine</i>		[83]
	<i>Antipsychotics</i>		[84]
	<i>Thioridazine</i>	≥ 65	[88]
History of Falls	<i>Chlorpromazine</i>		[93]
	<i>Antipsychotics</i>		[34, 47, 84]
	<i>Conventional antipsychotics</i>		[88]
	<i>Perphenazine</i>	≥ 65	[83]
	<i>Clozapine</i>	≥ 65	[83]
Delirium	<i>Haloperidol</i>		[83]
	<i>Olanzapine</i>		[83]
	<i>Clozapine</i>	≥ 65	[83]
	<i>Perphenazine</i>	≥ 65	[83]
	<i>Chlorpromazine</i>		[34]
Depression	<i>Antipsychotics</i>		[34, 84]
	<i>Quetiapine</i>	≥ 65	[101]
ADHD without Hyperactivity	<i>Olanzapine</i>	≥ 65	[101]
Arrhythmia	<i>Antipsychotics</i>	Children	[103]
HTN	<i>Antipsychotics</i>	≥ 65	[116]
Swallowing Problems	<i>Clozapine</i>	-	[71]
Lewy Body Disease	<i>Antipsychotics</i>	≥ 65	[42]
Insomnia / Sleep Disorders	<i>Antipsychotics other than quetiapine or clozapine</i>	≥ 65	[25, 32]
	<i>Pipamperone</i>	≥ 65	[101]
DM	<i>Melperone</i>	≥ 65	[101]
Frail Adults with Limited Life Expectancy	<i>Antipsychotics</i>	-	[71]
Chronic constipation	<i>Antipsychotics</i>	-	[78]
	<i>Perphenazine</i>		[83]
	<i>Clozapine</i>	≥ 65	[83]
	<i>Haloperidol</i>	≥ 65	[83]
QTC > 450/470MS	<i>Olanzapine</i>	≥ 65	[83]
Absolute neutrophil count < 1.5*10⁹/L	<i>Haloperidol</i>	≥ 65	[104]
	<i>Clozapine</i>	≥ 65	[104]

ADHD: Attention deficit hyperactivity disorder. BPH: Benign prostatic hyperplasia. BPSD: Behavioural and Psychological Symptoms of Dementia. DM: Diabetes mellitus. HTN: Hypertension.

Table 9: PIM: Considering Diagnoses or Conditions (Antidepressants)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Heart block	<i>TCA</i>	≥ 65	[88, 93, 116]
	<i>Amitriptyline at dose >75mg</i>	-	[10]
Cardiac conduction abnormalities	<i>TCA</i>		[25, 43, 68]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>		[83]
	<i>Imipramine</i>		[83]
Cardiovascular risk factors or CVD	<i>TCA</i>	≥ 65	[92]
Heart failure	<i>Amitriptyline at dose >75mg</i>	-	[10]
	<i>TCA</i>	-	[11, 71, 73]
	<i>TCA</i>	≥ 65	[47, 84]
Arrhythmia	<i>TCA</i>	≥ 65	[84]
	<i>Amitriptyline at dose >75mg</i>	-	[10]
HTN	<i>Venlafaxine</i>	-	[71]
	<i>Duloxetine</i>	-	[71]
	<i>MAOIs</i>	-	[71]
Postural hypotension	<i>Amitriptyline at dose >75mg</i>	-	[10]
	<i>TCA</i>	≥ 65	[88, 92, 93]
Syncope	<i>TCA</i>	≥ 65	[47, 116]

	<i>Tertiary TCAs</i>		[34]
	<i>Amitriptyline</i>		[83]
	<i>Clomipramine</i>		[83]
	<i>Imipramine</i>		[83]
History of falls	<i>SSRI</i>		[34, 47, 88]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>		[83]
	<i>Imipramine</i>		[83]
Seizures or epilepsy	<i>SSRI</i>	-	[15, 71]
	<i>TCA</i>	-	[71]
	<i>Bupropion</i>	-	[10, 39, 71]
	<i>Bupropion</i>	≥ 65	[34, 88]
	<i>Maprotiline</i>	≥ 65	[34]
Dementia or cognitive impairment	<i>Antidepressants</i>	≥ 70	[95]
	<i>TCA</i>	≥ 65	[25, 43, 47, 68, 73, 88, 116]
	<i>TCA</i>	-	[15]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>	≥ 65	[83]
	<i>Imipramine</i>	≥ 65	[83]
Advanced dementia	<i>Selegiline</i>	≥ 65	[101]
	<i>TCA</i>	-	[86]
Advanced dementia (Palliative)	<i>Antidepressants other than TCA</i>	-	[86]
	<i>TCA</i>	-	[80]
BPSD: depression	<i>Antidepressants other than TCA</i>	-	[80]
	<i>Citalopram</i>		[101]
	<i>Escitalopram</i>		[101]
	<i>Sertraline</i>	≥ 65	[101]
	<i>Fluoxetine</i>		[101]
	<i>Venlafaxine</i>		[101]
Glaucoma	<i>Duloxetine</i>		[101]
	<i>TCA</i>	≥ 65	[25, 43, 47, 68, 92, 93, 116]
	<i>TCA</i>	-	[71]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>	≥ 65	[83]
	<i>Imipramine</i>	≥ 65	[83]
	<i>MAOI</i>	-	[71]
	<i>Citalopram</i>	-	[71]
	<i>Escitalopram</i>	-	[71]
	<i>Fluoxetine</i>	-	[71]
	<i>Fluvoxamine</i>	-	[71]
	<i>Mianserin</i>	-	[71]
	<i>Paroxetine</i>	-	[71]
	Depression	<i>Nortriptyline</i>	
<i>Mirtazapine</i>			[101]
<i>Venlafaxine</i>			[101]
<i>Duloxetine</i>			[101]
<i>Moclobemide</i>			[101]
<i>Bupropion</i>		≥ 65	[101]
<i>Vortioxetine</i>			[101]
<i>Agomelatine</i>			[101]
<i>Reboxetine</i>			[101]
<i>Trazodone</i>			[101]
<i>St. John's Wort</i>			[101]
Insomnia / sleep disorders	<i>Mirtazapine</i>		[101]
	<i>Doxepin</i>	≥ 65	[101]
	<i>Opipramol</i>		[101]
	<i>Fluoxetine</i>		[47]
Prostatism or history of urinary retention or BPH	<i>MAO</i>		[47]
	<i>TCA</i>	-	[71]
	<i>TCA</i>		[25, 43, 47, 68, 88, 92, 93]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>		[83]
Urinary incontinence	<i>Imipramine</i>		[83]
	<i>TCA</i>	≥ 65	[47, 116]
Constipation	<i>TCA</i>		[43, 47, 68, 88, 116]
	<i>Amitriptyline</i>	≥ 65	[83]
	<i>Clomipramine</i>		[83]
Current or recent significant hyponatraemia	<i>Imipramine</i>		[83]
	<i>SSRI</i>	≥ 65	[25, 43, 47, 92]
Renal failure	<i>SSRI</i>	-	[15]
	<i>Paroxetine</i>	-	[71]

Hepatic impairment or cirrhosis	TCA	-	[71]
Gastrointestinal haemorrhage	Paroxetine	≥ 75	[85]
	Sertraline	≥ 75	[85]
	Fluvoxamine	≥ 75	[85]
	Escitalopram	≥ 75	[85]
Peptic ulcer disease	SSRI	-	[71]
Bladder atony due to diabetes	Imipramine	≥ 65	[38]
Anorexia and malnutrition	Fluoxetine	≥ 65	[47]
Delirium	Amitriptyline		[83]
	Clomipramine	≥ 65	[83]
	Imipramine		[83]
Acute bipolar depression	TCA	Adults	[49]
Acute management of depressive bipolar disorder	paroxetine	Adults	[49]

BPH: Benign prostatic hyperplasia. BPSD: Behavioural and Psychological Symptoms of Dementia. CVD: Cardiovascular disease. HTN: Hypertension. MAOi: Monoamine oxidase inhibitor. SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.

Table 10: PIM: Considering Diagnoses or Conditions (Sedative, hypnotics, and anxiolytics)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Dementia or cognitive impairment	Benzodiazepines	≥ 75	[87]
	Benzodiazepines		[34, 66, 84, 88]
	Alprazolam		[83]
	Clorazepam		[83]
	Triazolam		[83]
	Chlorazepate		[83]
	Chlordiazepoxide	≥ 65	[83]
	Diazepam		[83]
	Flurazepam		[83]
	Eszopiclone		[34]
	Zolpidem		[34, 84]
	Zaleplon		[34]
	Barbiturates		[88]
History of falls or fractures	Sedative-hypnotics		[88]
	Benzodiazepines		[34, 47, 84, 88]
	Alprazolam		[83]
	Clorazepam		[83]
	Triazolam		[83]
	Chlorazepate		[83]
	Chlordiazepoxide		[83]
	Diazepam	≥ 65	[83]
	Flurazepam		[83]
	Eszopiclone		[34]
	Zolpidem		[34, 84]
	Zaleplon		[34]
	Chlorpheniramine		[83]
Clemastine		[83]	
Doxylamine		[83]	
Tripolidine		[83]	
Syncope	Benzodiazepines	≥ 65	[84]
	Zolpidem		[84]
Postural hypotension	Benzodiazepines	≥ 65	[84]
	Zolpidem		[84]
Acute or chronic respiratory failure	Benzodiazepines	≥ 65	[25]
Asthma	Benzodiazepines	≥ 65	[116]
	Propranolol	≥ 65	[85]
COPD	long-acting benzodiazepine	≥ 65	[47]
	medium to long-acting benzodiazepine	≥ 65	[38]
	Benzodiazepines	≥ 65	[64, 66, 116]
	Benzodiazepines	-	[15]
	Z-drugs	-	[15]
	Propranolol	≥ 65	[85]
Sleep apnoea syndrome	Benzodiazepines	≥ 65	[66, 116]
	Benzodiazepines		[34, 84]
Delirium	Sedative- hypnotics		[34]
	Alprazolam		[83]
	Clorazepam		[83]
	Triazolam	≥ 65	[83]
	Chlorazepate		[83]
	Chlordiazepoxide		[83]
	Diazepam		[83]
	Flurazepam		[83]

	<i>Zolpidem</i>		[84]
Depression	<i>long-acting benzodiazepine</i>		[38, 101]
	<i>Barbiturates</i>	≥ 65	[38]
	<i>Benzodiazepines</i>		[47, 101]
	<i>Short acting benzodiazepine</i>		[101]
Insomnia / sleep disorders	<i>Zopiclone</i>		[101]
	<i>Zolpidem</i>		[101]
	<i>Zaleplon</i>	≥ 65	[101]
	<i>Medium half-life Benzodiazepines</i>		[101]
	<i>Very short half-life Benzodiazepines</i>		[101]
	<i>Diphenhydramine</i>		[101]
Urinary incontinence	<i>Benzodiazepines</i>	≥ 65	[66]
Urinary retention	<i>Benzodiazepines</i>	≥ 65	[66]
BPH	<i>Antihistamine</i>	≥ 65	[116]
Advanced dementia	<i>Antihistamine 1st generation</i>	-	[86]
Parkinson disease	<i>Promethazine</i>	≥ 65	[34]
Hepatic impairment or cirrhosis	<i>Benzodiazepines</i>	-	[71]
	<i>Barbiturates</i>		[71]
Chronic constipation	<i>Chlorpheniramine</i>		[83]
	<i>Clemastine</i>		[83]
	<i>Doxylamine</i>	≥ 65	[83]
	<i>Tripolidine</i>		[83]
	<i>antihistamines</i>		[116]

BPH: Benign prostatic hyperplasia. COPD: Chronic Obstructive Pulmonary Disease

Table 11: PIM: Considering Diagnoses or Conditions (Mood stabilisers)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Heart failure	<i>Carbamazepine</i>	-	[71]
HTN	<i>Carbamazepine</i>	-	[71]
Bipolar disorder	<i>Carbamazepine</i>		[101]
	<i>Valproic acid</i>	≥ 65	[101]
	<i>Lamotrigine</i>		[101]
	<i>Lithium</i>		[101]
Renal failure	<i>Lithium</i>	-	[71]
Rheumatoid arthritis	<i>Lithium</i>	-	[71]
Thyroid disorders	<i>Lithium</i>	-	[71]
Epilepsy	<i>Lithium</i>	-	[71]

HTN: Hypertension.

Table 12: PIM: Considering Diagnoses or Conditions (Anti-dementia)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Persistent bradycardia	<i>Acetylcholinesterase inhibitors</i>	≥ 65	[25, 42]
Heart block	<i>Acetylcholinesterase inhibitors</i>	≥ 65	[25]
Recurrent unexplained syncope	<i>Acetylcholinesterase inhibitors</i>	≥ 65	[34]
Palliative care patients with advanced dementia	<i>Acetylcholinesterase inhibitors</i>	-	[80]
	<i>Memantine</i>		[80]
Frail adults with limited life expectancy	<i>Memantine</i>	-	[78]
	<i>Memantine</i>		[101]
Dementia	<i>Ginkgo biloba</i>	≥ 65	[101]
	<i>Ergoline derivatives</i>		[101]
	<i>Piracetam</i>		[101]
To treat dementia	<i>Nylidrin</i>		[93]
	<i>Niacin</i>	≥ 65	[93]
	<i>Pentoxifylline</i>		[93]

Table 13: PIM: Considering Diagnoses or Conditions (Anticholinergics)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Dementia or cognitive impairment	<i>Anticholinergics</i>	-	[39]
	<i>Anticholinergics</i>	≥ 65	[25, 32, 34, 42, 43, 47, 48, 64, 66, 68, 88, 93]
	<i>Anticholinergics</i>	≥ 75	[87]
	<i>Trihexyphenidyl</i>	≥ 75	[87]
	<i>Tropatepine</i>	≥ 75	[87]
	<i>Biperiden</i>	≥ 75	[87]
Delirium	<i>Anticholinergics</i>	≥ 65	[25, 32, 34, 42, 84]
Chronic constipation	<i>Anticholinergics</i>	≥ 65	[25, 42, 48, 66, 84, 88]
	<i>Anticholinergics</i>	≥ 75	[87]
	<i>Anticholinergics</i>	-	[71]
Glaucoma	<i>Anticholinergics</i>	≥ 75	[87]
	<i>Anticholinergics</i>		[25, 42, 47, 66, 84, 88]
	<i>Medication with high anticholinergic activity</i>	≥ 65	[107]

	<i>2 or more agents with low to moderate anticholinergic activity</i>		[107]
	<i>Orphenadrine^a</i>		[71]
	<i>Hyoscine^a</i>		[71]
History of urinary retention of BPH	<i>Anticholinergics</i>	≥ 65	[25, 38, 42, 47, 48, 66, 84, 88]
	<i>Anticholinergics</i>	≥ 75	[87]
	<i>Anticholinergics</i>	-	[50]
	<i>Strongly anticholinergic drugs, except antimuscarinics for urinary incontinence</i>	≥ 65	[34]
To treat extra-pyramidal side-effects of neuroleptic medications	<i>Anticholinergics</i>	≥ 65	[25, 43, 47, 93]
History of falls or fractures	<i>Anticholinergics</i>	≥ 65	[84]
Syncope	<i>Anticholinergics</i>	≥ 65	[84]
Postural hypotension	<i>Anticholinergics</i>	≥ 65	[84]

^a. These medications were included because they can be used to treat some of the side effects caused by mental health medications.
BPH: Benign prostatic hyperplasia

Table 14: PIM: Considering Diagnoses or Conditions (ADHD medications)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Anorexia	<i>Cyproheptadine</i>	Children	[103]
	<i>Clonidine</i>		[103]
HTN	<i>Clonidine</i>	-	[71]
	<i>Atomoxetine</i>		[71]
Palliative care patients with advanced dementia	<i>Clonidine</i>	-	[80]
Advanced dementia	<i>Clonidine</i>	-	[86]
Anorexia and malnutrition to treat depression	<i>Methylphenidate</i>	≥ 65	[47]
	<i>Methylphenidate</i>	≥ 65	[47, 93]
Epilepsy	<i>Methylphenidate</i>	-	[71]
Chronic constipation	<i>Clonidine</i>	≥ 75	[87]
	<i>Guanfacine</i>		[87]
Insomnia	<i>Amphetamine</i>	≥ 65	[34]
	<i>Methylphenidate</i>		[34, 47, 84]

HTN: Hypertension.

Table 15: PIM: Considering Diagnoses or Conditions (non-mental health medications with mental health conditions)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
Delirium	<i>Corticosteroids</i>	≥ 65	[34]
	<i>Cimetidine</i>		[34]
	<i>H2-receptor antagonists</i>		[84]
	<i>Famotidine</i>		[34]
	<i>Nizatidine</i>		[34]
	<i>Ranitidine</i>		[34]
Insomnia	<i>Meperidine (Pethidine)</i>	≥ 65	[34, 84]
	<i>Pseudoephedrine</i>		[34, 47, 84]
	<i>Phenylephrine</i>		[34, 47, 84]
	<i>Armodafinil</i>		[34]
	<i>Modafinil</i>		[34]
	<i>Theophylline</i>		[34, 84]
	<i>Caffeine</i>		[34, 84]
Depression	<i>Phenylpropanolamine</i>	≥ 65	[47]
	<i>PPI</i>		[47]
	<i>Methyl dopa</i>		[116]
Dementia	<i>Sympatholytic antihypertensive</i>	≥ 65	[38]
	<i>Moderate to high lipophilic beta-adrenergic blocking agent (e.g., propranolol, pindolol)</i>		[38]
	<i>Statins</i>		[101]
	<i>Nimodipine</i>		[101]
	<i>Pyritinol</i>		[101]
	<i>Antioxidants: vitamin e</i>		[101]
	<i>Antioxidants: vitamin c</i>		[101]
	<i>Antioxidants: selenium</i>		[101]
	<i>Phytotherapeutic agents, e.g. Ginseng</i>		[101]
	<i>Hormone preparations, e.g. DHEA (Dehydroepiandrosterone), testosterone</i>		[101]
	<i>Antiphlogistics, e.g. Indomethacin</i>		[101]
	<i>Desferrioxamine</i>		[101]
<i>H2-receptor antagonists</i>	[34, 84, 116]		
<i>Antispasmodic</i>	[47, 93, 116]		

Advanced dementia	<i>Meperidine</i>	[84]	
	<i>Colchicine</i>	[86]	
	<i>Digoxin</i>	[86]	
	<i>Antiarrhythmics class I and III</i>	[86]	
	<i>Hydralazine</i>	[86]	
	<i>Bisphosphonates</i>	[86]	
	<i>Antiplatelets excluding aspirin</i>	[86]	
	<i>VKA</i>	[86]	
	<i>Anticoagulants excluding VKA</i>	[86]	
	<i>Appetite stimulants</i>	[86]	
	<i>Bladder relaxants</i>	[86]	
	<i>Antispasmodics</i>	[86]	
	<i>Lipid-lowering medications</i>	[86]	
	<i>Leukotriene receptor antagonists</i>	[86]	
	<i>Antioestrogens</i>	[86]	
	<i>Sex hormones</i>	[86]	
	<i>Cytotoxic chemotherapy</i>	[86]	
	<i>Hormone antagonists</i>	[86]	
	<i>Immunomodulators</i>	[86]	
	<i>NSAIDs</i>	[86]	
	<i>Antidiarrheals</i>	[86]	
	<i>Laxatives</i>	[86]	
	<i>Antiemetics</i>	[86]	
	<i>Proton pump inhibitors</i>	[86]	
	<i>Beta-blockers</i>	[86]	
	<i>Calcium channel blockers</i>	[86]	
	<i>Diuretics</i>	[86]	
	<i>Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers</i>	[86]	
	<i>Nitrates/nitroglycerin</i>	[86]	
	<i>Antibacterials</i>	[86]	
	<i>Antivirals</i>	[86]	
	<i>Antiparasitic agents</i>	[86]	
	<i>Oral hypoglycaemics</i>	[86]	
	<i>Thyroid hormones</i>	[86]	
	<i>Antithyroid medications</i>	[86]	
	<i>Corticosteroids</i>	[86]	
	<i>Insulin</i>	[86]	
	<i>Antihistamine second generation</i>	[86]	
	<i>Electrolytes</i>	[86]	
	<i>Antiglaucoma drops</i>	[86]	
	<i>Anti-inflammatory eye drops</i>	[86]	
	<i>Allopurinol</i>	[86]	
	<i>Uroselective alpha blockers</i>	[86]	
	<i>Aspirin</i>	[86]	
	Advanced dementia (palliative)	<i>Bisphosphonates</i>	[80]
		<i>Hydralazine</i>	[80]
		<i>Antiarrhythmics</i>	[80]
		<i>Heparin and LMWH</i>	[80]
		<i>Antispasmodics</i>	[80]
		<i>Warfarin</i>	[80]
<i>Hormone antagonists</i>		[80]	
<i>Immunomodulators</i>		[80]	
<i>Sex hormones</i>		[80]	
<i>Antioestrogens</i>		[80]	
<i>Lipid-lowering medications</i>		[80]	
<i>Antiplatelets excluding aspirin</i>		[80]	
<i>Leukotriene receptor antagonists</i>		[80]	
<i>Cytotoxic chemotherapy</i>		[80]	
<i>Mineralocorticoids</i>		[80]	
<i>Tamsulosin</i>		[80]	
<i>Digoxin</i>		[80]	
<i>Bladder relaxants</i>		[80]	
<i>Alpha blockers</i>		[80]	
<i>Antiandrogens</i>		[80]	
<i>Appetite stimulants</i>		[80]	
<i>Proton pump inhibitors</i>		[80]	
<i>Histamine-2 receptor blockers</i>		[80]	
<i>Beta-blockers</i>		[80]	
<i>Calcium channel blockers</i>		[80]	
<i>Diuretics</i>	[80]		

	<i>ACEi and ARB</i>		[80]
	<i>Nitroglycerin</i>		[80]
	<i>Mucolytics</i>		[80]
	<i>Inhaled corticosteroids</i>		[80]
	<i>Antibacterials</i>		[80]
	<i>Antivirals</i>		[80]
	<i>Antiparasitic agents</i>		[80]
	<i>Antifungal creams</i>		[80]
	<i>Oral hypoglycaemics</i>		[80]
	<i>Thyroid hormones</i>		[80]
	<i>Antithyroid medications</i>		[80]
	<i>Corticosteroids</i>		[80]
	<i>Insulin</i>		[80]
	<i>Antihistamines</i>		[80]
	<i>Decongestants</i>		[80]
	<i>Electrolytes</i>		[80]
	<i>Nutritional supplements</i>		[80]
	<i>Antiglaucoma drops</i>		[80]
	<i>Anti-inflammatory eye drops</i>		[80]
	<i>Capsaicin</i>		[80]
	<i>Allopurinol</i>		[80]
	<i>Colchicine</i>		[80]
	<i>Fentanyl</i>	≥ 65	[47]
Dementia (non-palliative)	<i>Morphine</i>		[47]

ACEi: Angiotensin-converting-enzyme inhibitor. ARB: Angiotensin II receptor blockers. LMWH: Low-molecular-weight heparin. NSAID: Nonsteroidal anti-inflammatory drugs. PPI: Proton pump inhibitors. VKA: Vitamin K antagonists.

Table 16: PIM: Considering Diagnoses or Conditions (Non-specific psychotropics)

CONDITION	CLASS/MEDICATION	AGE	REFERENCE
History of falls	<i>psychotropics</i>	≥ 65	[64]

Drug-Drug Interactions

Prescribing [Class/Medication] with [Class/Medication] +/- to a patient aged [Age]

Table 17: Drug-Drug Interactions (Non-specific psychotropics)

Medication/Class	Medication/Class	Age	References
<i>More than one psychotropic drug from the same class</i>		≥ 75	[87]
<i>3 or more psychotropics</i>		≥ 70	[95, 96]
<i>Multiple psychotropics</i>		≥ 65	[107, 108]
<i>≥2 CNS-active drugs</i>	<i>Opioid receptor agonist</i>	≥ 65	[34]
<i>Tranquilizer</i>	<i>Tranquilizer</i>	≥ 65	[112]

CNS: Central nervous system

Table 18: Drug-Drug Interactions (Antipsychotics)

Medication/Class	Medication/Class	Age	References
<i>3 or more antipsychotics</i>		adults	[69]
	<i>≥2 CNS-active drugs</i>	≥ 65	[34]
<i>Antipsychotics</i>	<i>Antipsychotic</i>	≥ 65	[32, 41]
		-	[22, 71]
	<i>Antiparkinsonian agents</i>	≥ 65	[44]
<i>Atypical antipsychotic</i>	<i>Atypical antipsychotic</i>	-	[22]
<i>Pimozide</i>	<i>Macrolides antibiotics</i>	-	[89]
	<i>Azole antifungal</i>	-	[89]
<i>Phenothiazine antipsychotics</i>	<i>Antiparkinsonian agents</i>	≥ 65	[108]
<i>Aripiprazole</i>			[71]
<i>Quetiapine</i>	<i>Anti-HCV antivirals</i>	-	[71]
<i>Iloperidone</i>			[71]
<i>Quetiapine</i>	<i>CYP inhibitor</i>	-	[104]

CNS: Central nervous system. HCV: Hepatitis C virus

Table 19: Drug-Drug Interactions (Antidepressants)

Medication/Class	Medication/Class	Age	References
<i>Antidepressants</i>	<i>Antidepressants</i>		[32]
	<i>≥2 other CNS-active drugs</i>	≥ 65	[34]
<i>Any serotonergic drug (SSRI, SNRI, MAO-I, TCA, triptans)</i>	<i>Any serotonergic drug (SSRI, SNRI, MAO-I, TCA, triptans)</i>	-	[104]

	MAO	-	[15]
	Opiate	≥ 65	[43, 47, 68]
	Calcium channel blocker	≥ 65	[43, 47, 68]
	TCA	≥ 65	[41, 112]
TCA	Clonidine	≥ 65	[41]
		-	[111]
	Cimetidine	≥ 65	[116]
		-	[111]
	Fluoxetine	-	[111]
	Fluvoxamine	≥ 70	[96]
	Paroxetine	≥ 70	[96]
	Selegiline	-	[102]
SSRI	Tramadol	≥ 70	[95]
		-	[15]
	Aspirin (no protection)	≥ 65	[92]
		-	[15]
	medications that may contribute to serotonin toxicity	≥ 65	[64]
	MAOI	≥ 65	[93]
		-	[89]
	SSRI's	≥ 65	[25, 43, 68]
	NSAID	≥ 65	[48, 68]
	NSAID (no protection)	≥ 45	[70]
	Venlafaxine.	≥ 45	[70]
Vitamin K antagonists	-	[71]	
Selegiline	-	[111]	
SSRIs/SNRIs	NSAIDs	≥ 70	[95, 96]
	Warfarin	≥ 70	[95, 96]
MAOI	Tramadol	-	[15]
	Dextromethorphan	-	[89]
	Anorexians	-	[89]
	Amphetamine and derivatives	-	[102]
	Fluoxetine	-	[102]
	Narcotic analgesics	-	[102]
	Triptans	-	[102]
	Sympathomimetics	-	[89]
	Meperidine	-	[89]
	Bupropion	-	[104]
	Levodopa	-	[104]
	Levodopa	≥ 65	[41, 112]
	Meperidine	≥ 65	[41, 112]
	Antidepressants	≥ 65	[41, 112]
	MAOI	≥ 65	[41, 112]
Amitriptyline	Sertraline	children	[79]
	Trazodone	children	[79]
	Psycholeptic	≥ 65	[41]
	opiate	≥ 65	[83]
	Calcium channel blocker	≥ 65	[83]
Citalopram	QT-prolonging drugs	-	[15]
Citalopram			
Sertraline	Linezolid	children	[79]
Fluoxetine	Alprazolam	-	[111]
Fluvoxamine	Theophyllines	-	[89]
	Ramelteon	-	[102]
Paroxetine			[95]
Fluoxetine	Metoprolol	≥ 70	[95]
Bupropion			[95]
Trazodone			[71]
Escitalopram	anti-HCV antivirals	-	[71]
Tranylcypromine	Procarbazine	-	[102]
Clomipramine	Opiate	≥ 65	[83]
	Calcium channel blocker	≥ 65	[83]
Imipramine	Opiate	≥ 65	[83]
	Calcium channel blocker	≥ 65	[83]

CNS: Central nervous system. MAOI: Monoamine oxidase inhibitor. NSAID: Nonsteroidal anti-inflammatory drugs. SNRI: Serotonin and norepinephrine reuptake inhibitors. SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.

Table 20: Drug-Drug Interactions (Sedative, hypnotics and anxiolytics)

Medication/Class	Medication/Class	Age	References	
<i>Hypnotic or sedative</i>	<i>Hypnotic or sedative</i>	≥ 65	[32, 41, 112]	
<i>Benzodiazepine</i>	<i>Hypnotic or sedative</i>	≥ 65	[41, 112]	
	≥2 CNS-active drugs	≥ 65	[34]	
	<i>Azole antifungal agents</i>	-	[89]	
	<i>Cimetidine</i>	≥ 65	[116]	
	<i>Benzodiazepines</i>		≥ 45	[70]
			≥ 65	[41, 74, 108, 112, 114]
<i>Alprazolam</i>		-	[71]	
<i>Midazolam</i>	<i>Strong CYP3A4 inhibitor</i>	≥ 65	[48]	
<i>Triazolam</i>			[48]	
<i>Midazolam</i>	<i>Protease inhibitors</i>	-	[104]	
<i>Triazolam</i>	<i>Protease inhibitors</i>	-	[104]	
<i>Clonazepam</i>	<i>Clonazepam</i>	≥ 65	[112]	
	<i>Benzodiazepines</i>	≥ 65	[41, 112]	
<i>Clorazepate</i>	<i>Acepromazine</i>	≥ 65	[46]	
<i>Flurazepam</i>			[71]	
<i>Guazepam</i>	<i>Anti-HCV antivirals</i>	-	[71]	
<i>Triazolam</i>		-	[71]	
<i>Alprazolam</i>		-	[71]	
<i>Z-drugs</i>	≥2 CNS-active drugs	≥ 65	[34]	
<i>Zolpidem</i>	<i>Strong CYP3A4 inhibitor</i>	≥ 65	[48]	
<i>Zopiclone</i>			[48]	
<i>Zolpidem</i>	<i>Anti-HCV antivirals</i>	-	[71]	
	<i>Hypnotic or sedative</i>	≥ 65	[41, 112]	
<i>Barbiturates</i>	<i>Hormonal contraceptive or combination pills</i>	-	[111]	
	<i>Steroids</i>	-	[111]	
	<i>Barbiturates</i>	≥ 65	[41, 112]	
	<i>Warfarin</i>	-	[89, 111]	
	<i>Opioids</i>	≥ 65	[41, 112]	
	<i>Antidepressants</i>	≥ 65	[41, 112]	
<i>Phenobarbital</i>	<i>Rivaroxaban</i>	-	[71]	
	<i>Voriconazole</i>	children	[79]	
<i>Propranolol</i>	<i>Insulin</i>		[111]	
	<i>Rifampin</i>	-	[111]	
	<i>Verapamil</i>		[111]	

CNS: Central nervous system. CYP: Cytochrome P450. HCV: Hepatitis C virus.

Table 21: Drug-Drug Interactions (mood stabilisers)

Medication/Class	Medication/Class	Age	References	
<i>Valproic acid</i>	<i>Lamotrigine</i>	Children	[79]	
	<i>Meropenem</i>	Children	[79]	
	<i>Barbiturates</i>	-	[111]	
	<i>Carbapenem</i>	-	[104]	
<i>Carbamazepine</i>		-	[109]	
	<i>Clarithromycin</i>	≥ 45	[70]	
		≥ 70	[96]	
		≥ 45	[70]	
	<i>Erythromycin</i>	≥ 70	[96]	
		≥ 65	[116]	
		<i>oral or intravaginal contraceptives, patches or pure progestogen pills</i>	-	[71]
		<i>Warfarin</i>	-	[111]
		<i>Propoxyphene</i>	-	[89, 111]
		<i>Rivaroxaban</i>	-	[71]
<i>Lithium</i>	<i>ACEi</i>	≥ 65	[34]	
	<i>Loop diuretics</i>	≥ 65	[34]	
	<i>thiazide diuretic</i>	-	[10, 39, 41, 111]	
	<i>RAAS inhibitors</i>	≥ 65	[48]	
	<i>NSAID</i>	≥ 65	[48]	
	<i>Diuretics</i>	≥ 65	[48]	
	-	[49]		
<i>Lamotrigine</i>	<i>Hormonal contraceptive or combination pills</i>	-	[71]	

ACEi: Angiotensin-converting-enzyme inhibitor. NSAID: Nonsteroidal anti-inflammatory drugs. RAAS: Renin-angiotensin system.

Table 22: Drug-Drug Interactions (Anti-dementia)

Medication/Class	Medication/Class	Age	References
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<i>Anticholinesterase drugs</i>	<i>Anticholinergic</i>	≥ 75	[87]
	<i>Anticholinergic</i>	≥ 65	[77]
	<i>Anticholinesterase drugs</i>	-	[71]
	<i>Beta-blockers</i>	≥ 65	[25]
	<i>Digoxin</i>	≥ 65	[25]
	<i>Diltiazem</i>	≥ 65	[25]
	<i>Verapamil</i>	≥ 65	[25]

Table 23: Drug-Drug Interactions (Anticholinergics)

Medication/Class	Medication/Class	Age	References
<i>Two or more agents with low to moderate anticholinergic activity</i>		≥ 65	[107]
<i>Anticholinergic</i>	<i>Anticholinergic</i>	≥ 65	[25, 32, 34, 48]

Table 24: Drug-Drug Interactions (ADHD medications)

Medication/Class	Medication/Class	Age	References
<i>Clonidine</i>	<i>Propranolol</i>	-	[111]

Inappropriate Duration

Prescribing [Class/Medication] for [Duration] +/- to a patient with [Condition] +/- and aged [Age]

Table 25: Inappropriate Duration (Antipsychotics)

Class/Medication	Condition	Duration	Age	References
<i>Antipsychotics</i>	Dementia but not psychosis	>6 weeks	≥ 65	[10]
	Parkinsonism	>1 month	-	[15]
	as long-term hypnotics	>1 month	≥ 65	[43, 47, 77]
	non-psychotic indications	long term	≥ 65	[108]
	-	>1 month	≥ 65	[48]
<i>More than one Antipsychotics</i>	-	long term	≥ 65	[42]
	-	>2 month	Adults	[69]
<i>Risperidone</i>	-	45 days	6–17	[69]
	-	>6 weeks	≥ 65	[46]
<i>Perphenazine</i>	dementia and psychosis	≥ 12 weeks	≥ 65	[73]
	Parkinsonism	>1 month	≥ 65	[83]
<i>Clozapine</i>	as long-term hypnotics	>1 month	≥ 65	[83]
	Parkinsonism	>1 month	≥ 65	[83]
<i>Haloperidol</i>	as long-term hypnotics	>1 month	≥ 65	[83]
	Parkinsonism	>1 month	≥ 65	[83]
<i>Olanzapine</i>	as long-term hypnotics	>1 month	≥ 65	[83]
	as long-term hypnotics	>1 month	≥ 65	[83]

Table 26: Inappropriate Duration (Antidepressants)

Class/Medication	Condition	Duration	Age	References
<i>Antidepressants</i>	-	long term	≥ 65	[42]
	-	≥ 1 year	≥ 65	[48]
<i>Three or more Antidepressants</i>	-	>3 month	adults	[69]
<i>TCA</i>	-	>1 month	≥ 65	[73]
<i>More than one TCA</i>	-	>1 month	adults	[69]
<i>SSRI</i>	-	< 4 weeks (too short)	≥ 65	[92]
	single episode of depression	> 6 months	≥ 65	[92]
<i>More than one SSRI</i>	-	>2 month	adults	[69]
<i>SSRI and SNRI combination</i>	-	>2 month	adults	[69]

SNRI: Serotonin and norepinephrine reuptake inhibitors. SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.

Table 27: Inappropriate Duration (Sedative, hypnotics and anxiolytics)

Class/Medication	Condition	Duration	Age	References
<i>Hypnotics</i>	-	-	-	[71]
	-	long term	≥ 65	[92]
	-	>1 month	≥ 70	[95]
	-	>1 month	-	[115]
<i>Benzodiazepine</i>	not receiving on a long-term basis	≥21 days	≥ 65	[10]
	Depression	≥21 days	≥ 65	[10]
	-	>1 month	-	[15]
	-	>1 month	≥ 65	[25, 32, 64, 112]
	-	>1 month	-	[15, 99]
			≥ 45	[70]

		long term	≥ 65	[42, 92]
		>6 month	≥ 65	[75]
		>1 month	≥ 65	[43, 68, 77]
Long-acting Benzodiazepine	Agitation in dementia		≥ 65	[93]
	Anxiety	long term	≥ 65	[93]
	Insomnia		≥ 65	[93]
Intermediate acting benzodiazepine	-	>1 month	≥ 65	[48]
Short acting benzodiazepine	-	>1 month	≥ 65	[41, 73]
Alprazolam	-	>1 month	≥ 65	[41]
Oxazepam	-	>1 month	≥ 65	[41, 47]
Triazolam	-	>1 month	≥ 65	[41]
Triazolam	to treat insomnia	long term	≥ 65	[93]
Chlorazepate	-	>1 month	≥ 65	[83]
Chlordiazepoxide	-	>1 month	≥ 65	[83]
Diazepam	-	>1 month	≥ 65	[83]
Flurazepam	-	>1 month	≥ 65	[83]
Z-drugs	not receiving on a long-term basis	≥21 days	≥ 65	[10]
	Depression	≥21 days	≥ 65	[10]
		>1 month	-	[15]
		>1 month	-	[15]
		>1 month	≥ 45	[70]
			≥ 65	[48, 73]
		long term	≥ 65	[42]
Barbiturates	to treat insomnia	long term	≥ 65	[93]
Phenobarbital	-	long term	≥ 65	[47]
First-generation antihistamine	-	> 1 week	≥ 65	[43, 47]
Chlorpheniramine	-	> 1 week	≥ 65	[83]
Clemastine	-	> 1 week	≥ 65	[83]
Doxylamine	-	> 1 week	≥ 65	[83]
Tripolidine	-	> 1 week	≥ 65	[83]

Table 28: Inappropriate Duration (Non-specific psychotropics)

Class/Medication	Condition	Duration	Age	References
Four or more Psychotropics	-	>3 months	6–17	[69]

Table 29: Inappropriate Duration (non-mental health medication with mental health condition)

Class/Medication	Condition	Duration	Age	References
Opioids	Dementia (non-palliative)	long term	≥ 65	[43]

Table 30: Inappropriate Duration (Anticholinergics)

Class/Medication	Condition	Duration	Age	References
Belladonna alkaloids ^a	-	>3 months	≥ 65	[41]
Clidinium-chlordiazepoxide ^a	-	>3 months	≥ 65	[41]
Dicyclomine ^a	-	>3 months	≥ 65	[41]
Propantheline ^a	-	>3 months	≥ 65	[41]

^a. These medications were included because they can be used to treat some of the side effects caused by mental health medications.

Inappropriate dose

Prescribing [Medication] at a dose [Dose] +/- to a patient with [Condition] +/- and aged [Age]

Table 31: Inappropriate dose (Antipsychotics)

Medication (dose)	Condition	Age	References
Aripiprazole (2-15 mg/day)	BPSD: paranoia, hallucination	≥ 65	[101]
Clozapine (10-50 mg/day)	BPSD: paranoia, hallucination	≥ 65	[101]
Haloperidol (>2 mg)		≥ 65	[45-47]
Haloperidol (>3 mg/day)		≥ 65	[41]
Haloperidol (>5 mg/day)		≥ 65	[46]
Haloperidol (initially 0.5 mg/day, max. 3 mg/day)	BPSD: paranoia, hallucination	≥ 65	[101]
Melperone (25-150 mg/day)	BPSD: paranoia, hallucination	≥ 65	[101]
Melperone (25-150 mg/day)	BPSD: restlessness, agitation	≥ 65	[101]
Olanzapine (>10 mg)		≥ 65	[45, 46, 77]
Pipamperone (20-120 mg/day)	BPSD: restlessness, agitation	≥ 65	[101]
Quetiapine (25-200 mg/day)	BPSD: paranoia, hallucination	≥ 65	[101]
Quetiapine (25-200 mg/day)	BPSD: restlessness, agitation	≥ 65	[101]
Reserpine (>0.1 mg/day)		≥ 65	[34]

<i>Risperidone (initially 0.5-1 mg/day)</i>	BPSD: paranoia, hallucination	≥ 65	[101]
<i>Risperidone (initially 0.5-1 mg/day, Maximum 3 mg/day)</i>	BPSD: restlessness, agitation	≥ 65	[101]
<i>Risperidone (1 mg BID)</i>	Dementia and agitation	≥ 75	[107]
<i>Thioridazine (>30mg/day)</i>		≥ 65	[41]
High dose antipsychotics <i>total daily dose is above the maximum recommended by the British National Formulary (BNF).</i>		-	[22]

BID: twice a day. BPSD: Behavioural and Psychological Symptoms of Dementia

Table 32: Inappropriate dose (Antidepressants)

Medication (dose)	Condition	Age	References
<i>Citalopram (10-30mg)</i>	BPSD: restlessness, agitation	≥ 65	[101]
<i>Doxepin (>6 mg/day)</i>		≥ 65	[34, 84]
<i>Doxepin (25-50 mg)</i>	BPSD: sleep disorders	≥ 65	[101]
<i>Fluoxetine (>40 mg/day)</i>		≥ 65	[41]
<i>Imipramine (>100 mg/day)</i>		≥ 65	[41]
<i>Trazodone (50-200 mg/day)</i>	BPSD: restlessness, agitation	≥ 65	[101]
<i>Trimipramine (>100 mg/day)</i>		≥ 65	[41]
<i>Mirtazapine (15-45mg/day)</i>	BPSD: depression	≥ 65	[101]
<i>Mirtazapine (15-30mg/day)</i>	BPSD: sleep disorders	≥ 65	[101]

Table 33: Inappropriate dose (Mood stabilisers)

Medication (dose)	Age	References
<i>Valproate (<1 g/day)</i>	-	[22]
<i>Carbamazepine (< 600 mg/day)</i>	-	[22]

Table 34: Inappropriate dose (ADHD medications)

Medication (dose)	Age	References
<i>SR Methylphenidate two doses per day, rather than one dose</i>	Children	[103]

SR: sustained release

Table 35: Inappropriate dose (Sedatives, hypnotics and anxiolytics)

Medication (dose)	Condition	Age	References
<i>Alprazolam (>2 mg/day)</i>		≥ 65	[39, 47, 68]
<i>Alprazolam (>2 mg/day)</i>		≥ 75	[87]
<i>Alprazolam (>0.75 mg/day)</i>		≥ 65	[41]
<i>Bromazepam (> 1,5 mg)</i>		≥ 65	[47]
<i>Brotizolam (>0.125 mg/day)</i>		≥ 65	[45, 46]
<i>Clomethiazole (5-15 mg/day)</i>	BPSD: restlessness, agitation	≥ 65	[101]
<i>Clotiazepam (>5 mg/day)</i>		≥ 75	[87]
<i>Clotiazepam (>5 mg/day)</i>		≥ 65	[46]
<i>Gabapentin (>1400mg/day)</i>	CrCl 30-59 mL/min	-	[72]
<i>Gabapentin (>700mg/day)</i>	CrCl 15-29 mL/min	-	[72]
<i>Gabapentin (>300mg/day)</i>	CrCl 10-14 mL/min	-	[72]
<i>Gabapentin (>150mg/day)</i>	CrCl < 10 mL/min	-	[72]
<i>Loprazolam (>0.5 mg/day)</i>		≥ 75	[87]
<i>Loprazolam (>0.5 mg/day)</i>		≥ 65	[46]
<i>Lorazepam (>1 mg/day)</i>		≥ 65	[46]
<i>Lorazepam (> 2 mg/day)</i>		≥ 65	[45]
<i>Lorazepam (>3 mg/day)</i>		≥ 75	[87]
<i>Lorazepam (>3 mg/day)</i>		≥ 65	[39, 41, 68]
<i>Lormetazepam (>0.5 mg/day)</i>		≥ 75	[87]
<i>Lormetazepam (>0.5 mg/day)</i>		≥ 65	[45, 46]
<i>Melatonin SR (2-4 mg)</i>	BPSD: sleep disorders	≥ 65	[101]
<i>Oxazepam (>30 mg/day)</i>		≥ 70	[95, 96]
<i>Oxazepam (>30 mg/day)</i>		≥ 65	[47]
<i>Oxazepam (>60 mg/day)</i>		≥ 65	[39, 45, 46, 68]
<i>Oxazepam (>60 mg/day)</i>		≥ 75	[87]
<i>Oxazepam unit dose >30 mg</i>		≥ 65	[41]
<i>Pregabalin (>300mg/day)</i>	CrCl 30-59 mL/min	-	[72]
<i>Pregabalin (>150mg/day)</i>	CrCl 15-29 mL/min	-	[72]
<i>Pregabalin (>75mg/day)</i>	CrCl < 15 mL/min	-	[72]
<i>Temazepam (>15 mg/day)</i>		≥ 65	[39, 68]
<i>Temazepam (>15 mg/day)</i>		≥ 75	[87]
<i>Temazepam (>30 mg/day)</i>		≥ 65	[41]
<i>Triazolam (>0.25 mg/day)</i>		≥ 65	[39, 66, 68]
<i>Triazolam (>0.25 mg unit dose)</i>		≥ 65	[41]
<i>Triazolam (>0.25 mg/day)</i>		≥ 75	[87]
<i>Triazolam (>0.125 mg/day)</i>		≥ 65	[41]
<i>Zaleplon (>5 mg/day)</i>		≥ 65	[45, 46]

Zolpidem (>5 mg/day)		≥ 65	[45-47]
Zolpidem (>5 mg/day)		≥ 75	[87]
Zopiclone (>3.75 mg/day)		≥ 75	[87]
Zopiclone (>3.75 mg/day)		≥ 65	[45-47]
Zopiclone (>5 mg/day)		≥ 70	[95]
Zopiclone (>7.5mg/day)		≥ 70	[96]
Zopiclone (3.75-7.5 mg)	BPSD: sleep disorders	≥ 65	[101]

BPSD: Behavioural and Psychological Symptoms of Dementia. CrCl: Creatinine Clearance

Monitoring

Prescribing [Class/Medication] with monitoring [Test] [Frequency]

Table 36: Monitoring (Antipsychotics)

Medication/Class	Test	Age	Frequency	References
<i>Antipsychotics</i>	Glucose	-	Annually	[39]
		-	3-4 months after starting therapy	[49]
	Weight	-	Annual	[39]
		-	3-4 months after starting therapy	[49]
Lipid profile	-	3 months after starting therapy	[49]	
<i>Clozapine</i>	WBC	≥ 65	NR	[92]
		-	NR	[117]

Table 37: Monitoring (mood stabilisers)

Medication/Class	Test	Age	Frequency	References
<i>Carbamazepine</i>	AST, ALT	-	Baseline and annually	[113]
		-	Annually	[105]
	LFT	-	Annually	[81]
		-	Baseline, monthly for 3 months, and annually	[113]
	FBC	-	Annual	[81, 105]
		-	Baseline and periodically	[50]
		≥ 65	Weekly during the first month of therapy, at least monthly during the next 5 months of therapy, and at least every 6 months thereafter	[38]
		-	Annually	[81, 105]
	Carbamazepine level	≥ 65	Every 6 months	[38]
		-	2-4 weeks after initiation, with changing clinical status, and annually	[113]
-		Every 6 months	[50]	
<i>Valproate</i>	LFT	-	Every 3 months	[61]
		-	Annually	[81]
	AST of ALT	-	First 6 months of therapy	[49]
		-	Baseline, every 2 months for 6 months, and annually	[113]
	FBC	-	Annually	[81, 113]
		-	First 6 months of therapy	[49]
	Valproate level	-	Annually	[81]
		-	At 2-4 weeks After initiation, with changing clinical status, and annually	[113]
≥ 65		Every 6 months	[38]	
-		Every 6 months	[49, 50]	
<i>Lithium</i>	lithium level	-	Annually	[81, 105]
		-	Every 3 months	[17, 61]
		-	Every 6 months	[10, 49, 50]
		≥ 65	Every 3 months	[38]
		≥ 65	Every month	[38]
		≥ 65	NR	[92]
		-	2-4 weeks after initiation, with changing clinical status, and annually	[113]
	TFT	-	Annually	[61, 81]
		≥ 65	NR	[92]
		-	Every 6 months	[49]
		-	Baseline, 3 and 6 month and annually	[113]
		≥ 65	Every 6 months	[38]
		-	NR	[92]
TSH	-	Annually	[81]	
	-	Baseline, 1 month after stabilized, and annually	[113]	
	-	Annually	[105]	
	-	Baseline, 1 month after stabilized, and annually	[113]	
	-	Annual	[81, 105]	

	≥ 65	Every 3 months	[38]
Renal function	≥ 65	NR	[92]
Urinalysis	-	Annually	[81]

ALT: Alanine transaminase. AST: Aspartate transaminase. Ca: Calcium. FBC: Full blood count. K⁺: Potassium. Na: Sodium. LFT: Liver function test. NR: Not reported. TFT: Thyroid function test. TSH: Thyroid stimulating hormone.

Table 38: Monitoring (ADHD medications)

Medication/Class	Test	Age	Frequency	References
<i>Methylphenidate</i>	Growth chart (height and weight)	Children	NR	[103]

NR: not reported

Table 39: Monitoring (Sedative, hypnotics and anxiolytics)

Medication/Class	Test	Age	Frequency	References
<i>Phenobarbital</i>	AST of ALT	-	at Baseline and every 6 months	[113]
	CBC	-	at Baseline and every 6 months	[113]
	Phenobarbital Level	-	at 2-4 week After initiation, with changing clinical status, and yearly	[113]

Omission

Patient with [Condition +/- Age] NOT prescribed [Class/Medication]

Table 40: Omission

Medication/Class	Condition	Age	References
<i>Acetylcholinesterase inhibitor</i>	Mild- moderate Alzheimer's dementia	≥ 65	[25]
	Lewy Body dementia	≥ 65	[25]
<i>Antidepressants</i>	Moderate/severe depressive symptoms lasting at least three months	≥ 65	[43]
<i>Non-TCA Antidepressants</i>	Major depressive symptoms.	≥ 65	[25]
<i>SSRI</i>	Persistent severe anxiety that interferes with independent functioning.	≥ 65	[25]
<i>SSRI first line</i>	Depression	-	[71]
<i>Mood stabilisers</i>	on antidepressants for acute bipolar depression	Adult	[49]
<i>Lithium OR Valproate OR Carbamazepine</i>	on lamotrigine and SSRI in bipolar disorder	Adult	[49]

SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.

Other inappropriate prescribing indicators

Table 41: Other inappropriate prescribing indicators

Class	Indicator	Age	References
<i>Antidepressants</i>	TCA prescribed as first-line treatment of depression.	≥ 65	[25]
	TCA prescribed as first-line treatment of depression.	≥ 45	[70]
	Continued treatment for depression in spite of lacking indication.	≥ 65	[92]
	Discontinuation of antidepressant, which leads to withdrawal symptoms	≥ 65	[92]
	TCA in combination with anticholinergic agents in patient with nocturnal enuresis	children	[103]
	TCA prescribed as a first-line treatment with nocturnal enuresis	children	[103]
	TCA except in case of severe depression or in low dose for neuropathic pain	≥ 65	[42]
<i>Antipsychotics</i>	Patient diagnosed with acute bipolar depression is prescribed antidepressant monotherapy	Adult	[49]
	Risperidone continued following discharge without follow-up to a patient with dementia	≥ 75	[107]
	Phenothiazines as first-line treatment	≥ 65	[25]
	Neuroleptics as hypnotics, unless sleep disorder is due to psychosis or dementia	≥ 65	[25]
<i>Mood stabilisers</i>	Prescribing older antipsychotic to a patient with Parkinsonian and mild cognitive impairment and mild to moderate agitation in the evening	≥ 75	[107]
	Lithium dose not adjusted or omitted in a patient with a lithium concentration above the therapeutic range (>1. - mmol l-1)	-	[15]
	Lithium prescribed in conjunction with newly prescribed nonsteroidal anti-inflammatory drugs without dose adjustment or increased monitoring	-	[15]
	Lithium therapy prescribed in conjunction with newly prescribed loop or thiazide diuretics without dose adjustment or increased monitoring	-	[15]
	Patient treated with ECT in bipolar disorder and with lithium dose NOT stopped or reduced	Adult	[49]
	Patient treated with lithium in bipolar disorder does NOT have a serum level 0.8–1.1 mmol/L	Adult	[49]
Patient on lithium in bipolar disorder and with lithium serum level [1.5 mmol/L) has lithium not discontinued	Adult	[49]	

	In bipolar disorder, Patient who has discontinued lithium, does NOT have a recorded gradual reduction of lithium dose over at least 4 weeks	Adult	[49]
	Patient treated with divalproex in bipolar disorder does NOT have a serum level of 400–700 mmol/L	Adult	[49]
<i>Non-Specific Psychotropics</i>	Patient on a monotherapy regimen for the acute management of depressive bipolar disorder NOT taking Lithium OR Lamotrigine OR Quetiapine OR Divalproex OR Lurasidone OR Carbamazepine OR Olanzapine OR ECT	Adult	[49]
	Patient on a monotherapy regimen for the acute management of depressive bipolar disorder taking Gabapentin OR Aripiprazole OR Ziprasidone	Adult	[49]
	Patient on combination therapy for the Acute management of depressive bipolar disorder taking adjunctive Ziprasidone OR Levetiracetam	Adult	[49]
	Three or more psychotropic drugs on an as required (PRN) basis.	-	[22]
	Patient treated with lamotrigine and a second agent in bipolar disorder Is NOT prescribed Lithium OR Quetiapine OR Divalproex	Adult	[49]
	Patient treated with lithium and a second agent in bipolar disorder Is NOT prescribed Lamotrigine OR Quetiapine OR SSRI OR Bupropion OR Divalproex OR Olanzapine OR Risperidone OR MAOI OR Aripiprazole OR Ziprasidone OR Lurasidone OR Pramipexole OR Venlafaxine OR TCA"	Adult	[49]
	Patient treated with quetiapine and treated with a second agent in bipolar disorder Is NOT prescribed Lamotrigine OR SSRI OR Lithium OR Divalproex	Adult	[49]

ECT: Electroconvulsive therapy. SSRI: Selective serotonin reuptake inhibitor. TCA: Tricyclic antidepressants.