

Supplemental materials for:

Hsu W, Wen Y, Chen L, Hsiao F. Comparative Associations Between Measures of Anticholinergic Burden and Adverse Clinical Outcomes. *Ann Fam Med*. 2017;15:561-569.

Appendix 1. Catastrophic illnesses under Taiwan's National Health Insurance

Disease category	ICD-9-CM code
1. Malignant neoplasm	140.x-208.xx
2. Congenital deficiency of clotting factors	286.x
3. Hereditary or acquired hemolytic anemias and aplastic anemias	282.xx-284.x
4. Systemic autoimmune diseases	136.1, 443.1, 446.0-446.7, 555.xx, 556.0-556.6, 556.8-556.9, 694.4, 710.0-710.4, 714.0-714.33
5. Congenital disorders of metabolism	243, 253.5, 255.2, 270, 271.0, 271.1, 272.1, 272.6, 272.7, 272.9, 275.1, 275.40-275.42, 275.49, 277.2, 277.5, 277.8, 277.9
6. Severe burn	940.x, 941.5x, 948.2x-948.9x
7. Transplantation	V42.0, V42.1, V42.6, V42.7, V42.81-V42.83, 996.81-996.86
8. Paralytic syndromes	045.1x, 343.x, 344.xx
9. Major trauma	959.99
10. Long-term mechanical ventilation	518.85
11. Decompression sickness and air embolism	993.3
12. Air embolism	958.0
13. Myasthenia gravis	358.0
14. Congenital disorders of immune system	279.00, 279.06, 279.08, 279.1x-279.3, 279.8

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15.	Occupational diseases	500-505
16.	Multiple sclerosis	340
17.	Congenital muscular dystrophy	359.0, 359.1
18.	Congenital anomalies integument	757.1, 757.39, 757.9
19.	Leprosy	030.x
20.	Toxic effect of arsenic and its compounds	985.1
21.	Motor neuron disease	335.2x
22.	Creutzfeldt-jakob disease	046.1

Appendix 2. Medications listed in Anticholinergic Risk Scale (ARS); WHO ATC code and Defined daily dose (DDD)

1 point	ATC code	DD D (mg)	2 points	ATC code	DD D (mg)	3 points	ATC code	DD D (mg)
Carbidopa-levodopa ★	N04BA02	600	Amantadine HCl	N04BB01	200	Amitriptyline HCl	N06AA09	75
Entacapone	N04BX02	1000	Baclofen	M03BX0 1	50	Atropine products	A03BA01	1.5
Haloperidol	N05AD01	8	Cetirizine HCl	R06AE07	10	Benzatropine mesylate*	N04AC01	2
Methocarbamol	M03BA03	3000	Cimetidine	A02BA01	800	Carisoprodol	M03BA02	1400
Metoclopramide HCl	A03FA01	30	Clozapine	N05AH0 2	300	Chlorpheniramine maleate	R06AB02	6
Mirtazapine	N06AX11	30	Cyclobenzaprine HCl	M03BX0 8	-	Chlorpromazine HCl	N05AA01	300
Paroxetine HCl	N06AB05	20	Desipramine*	N06AA0 1	100	Cyproheptadine HCl	R06AX02	12
Pramipexole 2HCl	N04BC05	2.5	Loperamide	A07DA0 3	10	Dicyclomine HCl	A03AA07	80
Quetiapine fumarate	N05AH04	400	Loratadine	R06AX13	10	Diphenhydramine	R06AA02	200
Ranitidine HCl	A02BA02	300	Nortriptyline*	N06AA1 0	75	Fluphenazine HCl	N05AB02	10

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Risperidone	N05AX08	5	Olanzapine	N05AH0	10	Hydroxyzine HCl/ pamoate	N05BB01	75
Selegiline HCl	N04BD01	5	Prochlorperazine maleate	N05AB04	100	Hyoscyamine products	A03BA03	1.2
Trazodone HCl	N06AX05	300	Pseudoephedrine HCl-triprolidine HCl	R01BA52	240	Imipramine HCl	N06AA02	100
Ziprasidone HCl	N05AE04	80	★ Tolterodine tartrate	G04BD07	4	Meclizine HCl	R06AE05	50
						Oxybutynin Cl	G04BD04	15
						Perphenazine	N05AB03	30
						Promethazine HCl	R06AD02	25
						Thioridazine HCl	N05AC02	300
						Thiothixene (tiotixene)	N05AF04	30
						Tizanidine HCl	M03BX02	12
						Trifluoperazine HCl	N05AB06	20

*Not reimbursed by Taiwan's National Health Insurance ★Parenteral or combination products

All medications were coded according to the WHO Anatomical Therapeutic Chemical (ATC)/Defined Daily Dose (DDD) classification system²³.

Defined Daily Dose (DDD): the average maintenance dose per day for a drug used for its main indication in adults

Appendix 3. Medications listed in Anticholinergic Cognitive Burden Scale (ACB); WHO ATC code and defined daily dose

1 point	ATC code	DDD (mg)	2 points	ATC code	DDD (mg)	3 points	ATC code	DDD (mg)
Alimemazine	R06AD01	30	Amantadine	N04BB01	200	Amitriptyline	N06AA09	75
Alverine	A03AX08	-	Belladonna alkaloids★	A03BA04	1	Amoxapine*	N06AA17	150
Alprazolam	N05BA12	1	Carbamazepine	N03AF01	1000	Atropine	S01FA01	1.5
Atenolol	C07AB03	75	Cyclobenzaprine	M03BX08	-	Benzatropine*	N04AC01	2
Brompheniramine maleate	R06AB01	24	Cyproheptadine	R06AX02	12	Brompheniramine	R06AB01	24
Bupropion HCl	N06AX12	300	Empracet*	-	-	Carbinoxamine	R06AA08	16
Captopril	C09AA01	50	Loxapine	N05AH01	100	Chlorpheniramine	R06AB02	6
Chlorthalidone	C03BA04	25	Meperidine (Pethidine)	N02AB02	400	Chlorpromazine	N05AA01	300
Cimetidine HCl	A02BA01	800	Methotrimeprazine	N05AA02	300	Clemastine	R06AA04	2
Ranitidine	A02BA02	300	Molindone*	N05AE02	50	Clomipramine	N06AA04	100
Clorazepate	N05BA05	20	Oxcarbazepine	N03AF02	1000	Clozapine	N05AH02	300
Codeine	R05DA04	100	Pethidine HCl	N02AB02	400	Darifenacin*	G04BD10	7.5
Colchicine	M04AC01	1	Pimozide	N05AG02	4	Desipramine*	N06AA01	100
Coumadin	B01AA03	7.5				Dicyclomine	A03AA07	80
Diazepam	N05BA01	10				Dimenhydrinate	-	-
Digoxin	C01AA05	0.25				Diphenhydramine	R06AA02	200
Dipyridamole	B01AC07	400				Doxepin	N06AA12	100
Disopyramide phosphate	C01BA03	400				Flavoxate	G04BD02	800
Fentanyl★	N02AB03	-				Hydroxyzine	N05BB01	75

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Furosemide	C03CA01	40	Hyoscyamine	A03BA03	1.2
Fluvoxamine	N06AB08	100	Imipramine	N06AA02	100
Haloperidol	N05AD01	8	Meclizine	R06AE05	50
Hydralazine	C02DB02	100	Nortriptyline*	N06AA10	75
Hydrocortisone★	H02AB09	30	Olanzapine	N05AH03	10
Isosorbide mononitrate	C01DA14	40	Orphenadrine	M03BC01	120
Isosorbide dinitrate	C01DA08	60	Oxybutynin	G04BD04	15
Loperamide	A07DA03	10	Paroxetine	N06AB05	20
Metoprolol	C07AB02	150	Perphenazine	N05AB03	30
Morphine	N02AA01	100	Procyclidine*	N04AA04	25
Nifedipine	C08CA05	30	Promazine*	N05AA03	300
Prednisone*	H02AB07	10	Promethazine	R06AD02	25
Quinidine	C01BA01	1200	Propentheline	A03AB05	60
Risperidone	N05AX08	5	Pyrilamine★	R06AC01	200
Theophylline	R03DA04	400	Quetiapine	N05AH04	400
Trazodone	N06AX05	300	Scopolamine	A04AD01	-
Triamterene	C03DB02	100	Thioridazine	N05AC02	300
			Tolterodine	G04BD07	4
			Trifluoperazine	N05AB06	20
			Trihexyphenidyl	N04AA01	10
			Trimipramine	N06AA06	150

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