

Supplementary Online Content

Hampton LM, Daubresse M, Chang HY, Alexander GC, Budnitz DS. Emergency department visits by adults for psychiatric medication adverse events. Published online July 9, 2014. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2014.436.

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Psychiatric Medications by Category and Class

Antidepressants	Antipsychotics	Lithium Salts	Sedatives/Anxiolytics	Stimulants
<i>Selective Serotonin Reuptake Inhibitors (SSRIs)</i>	<i>Atypical Antipsychotics</i>	<i>Lithium Salts</i>	<i>Short-Acting Benzodiazepines</i>	<i>Amphetamines</i>
Citalopram	Aripiprazole	Lithium	Alprazolam	Amphetamine
Escitalopram	Clozapine		Clobazam	Amphetamine / Dextroamphetamine
Fluoxetine	Fluoxetine/Olanzapine		Clonazepam	
Fluoxetine/Olanzapine	Olanzapine		Estazolam	Dexmethylphenidate
Fluvoxamine	Paliperidone		Lorazepam	Dextroamphetamine
Paroxetine	Quetiapine		Midazolam	Lisdexamfetamine
Sertraline	Risperidone		Oxazepam	Dimesylate
SSRIs, NOS	Ziprasidone		Temazepam	Methamphetamine
			Triazolam	Methylphenidate
<i>Serotonin/Norepinephrine Reuptake Inhibitors (SNRIs)</i>	<i>Typical Antipsychotics</i>		<i>Non-Benzodiazepines</i>	Amphetamines, NOS
Desvenlafaxine	Chlorpromazine		Buspirone	<i>Miscellaneous</i>
Duloxetine	Fluphenazine		Butabarbital	<i>Stimulants</i>
Milnacipran	Haloperidol		Chloral Hydrate	Armodafinil
Venlafaxine	Haloperidol/Fluphenazine		Eszopiclone	Atomoxetine
	Loxapine		Meprobamate	Modafinil
<i>Triazolopyridines</i>	Perphenazine		Phenobarbital	Stimulants, NOS
Trazodone	Amitriptyline/Perphenazine		Ramelteon	
	Thioridazine		Secobarbital	
<i>Aminoketones</i>	Thiothixene		Zaleplon	
Bupropion	Trifluoperazine		Zolpidem	
			Barbituric Acid Derivatives, NOS	

eTable 1. Psychiatric Medications by Category and Class

Antidepressants	Antipsychotics	Lithium Salts	Sedatives/Anxiolytics	Stimulants
<i>Tricyclic Antidepressants</i>	<i>Miscellaneous Antipsychotics</i>		<i>Long-Acting Benzodiazepines</i>	
Amitriptyline	Pimozide		Chlordiazepoxide	
Amitriptyline/Chlordiazepoxide	Antipsychotics, NOS		Amitriptyline/Chlordiazepoxide	
Amitriptyline/Perphenazine			Clorazepate	
Amoxapine			Diazepam	
Clomipramine			Flurazepam	
Desipramine			Quazepam	
Doxepin				
Imipramine			<i>Miscellaneous</i>	
Nortriptyline			<i>Sedatives/Anxiolytics</i>	
Protriptyline			Benzodiazepine	
Trimipramine			Derivatives, NOS	
Tricyclic Antidepressants, NOS			Sedatives/Anxiolytics, NOS	
<i>Tetracyclic Antidepressants</i>				
Maprotiline				
Mirtazapine				
<i>Monoamine Oxidase Inhibitors (MAOIs)</i>				
Isocarboxazid				
Phenelzine Sulfate				
Selegiline				
Tranlycypromine				
MAOI, NOS				
<i>Miscellaneous Antidepressants</i>				
Nefazodone				
Antidepressants, NOS				
			NOS - Not otherwise specified	

eTable 2. Adverse Drug Effect by Category

Abnormal Behavior or Mood	Disturbance In Consciousness	Muscular
Abnormal Behavior	Depressed Level Of Consciousness	Asthenia
Aggression	Encephalopathy	Dysarthria
Agitation	Lethargy	Dysphonia
Anger	Loss Of Consciousness	Facial Paresis
Anxiety	Sedation	Hypotonia
Bruxism	Somnolence	Muscle Atrophy
Crying	Stupor	Muscle Strain
Decreased Activity	Unresponsive To Stimuli	Muscle Tightness
Decreased Appetite		Muscular Weakness
Delusion	Fall Or Head Injury	Paresis
Depression	Fall	
Disturbance In Attention	Head Injury	Pain
Drooling		Abdominal Discomfort
Emotional Disorder	Gastrointestinal	Abdominal Pain
Euphoric Mood	Constipation	Arthralgia
Excessive Masturbation	Diarrhoea	Back Pain
Homicidal Ideation	Dry Mouth	Burning Sensation
Insomnia	Dyspepsia	Chest Discomfort
Irritability	Dysphagia	Chest Pain
Listless	Epigastric Discomfort	Dysuria
Logorrhoea	Gastritis	Ear Pain
Mania	Gastrooesophageal Reflux Disease	Eye Irritation
Mood Altered	Nausea	Eye Pain
Mood Swings	Stomach Discomfort	Facial Pain
Nervousness	Vomiting	Flank Pain
Oral Intake Reduced		Headache
Panic Attack	Hypersensitivity Reaction	Migraine
Paranoia	Anaphylactic Reaction	Musculoskeletal Chest Pain
Psychomotor Hyperactivity	Angioneurotic Oedema	Musculoskeletal Stiffness
Psychomotor Retardation	Dermatitis	Myalgia
Restlessness	Dermatitis Allergic	Neck Pain

eTable 2. Adverse Drug Effect by Category

Abnormal Behavior or Mood (cont.)	Hypersensitivity Reaction (cont.)	Pain (cont.)
Screaming	Dermatitis Contact	Oral Pain
Self Injurious Behaviour	Dermatitis Exfoliative Generalised	Pain In Extremity
Self Mutilation	Drug Eruption	Pain In Jaw
Sluggishness	Drug Hypersensitivity	Pharyngolaryngeal Discomfort
Suicidal Ideation	Erythema	Photophobia
Tearfulness	Eye Pruritus	Throat Irritation
	Face Oedema	Toothache
	Lip Swelling	
Abnormal Drug Level	Oedema Mouth	Respiration
Anticonvulsant Drug Level Abnormal	Oedema Peripheral	Apnoea
Anticonvulsant Drug Level Above Therapeutic	Oral Pruritus	Cough
Antidepressant Drug Level Above Therapeutic	Oropharyngeal Swelling	Dyspnoea
Antidepressant Drug Level Increased	Periorbital Oedema	Hyperventilation
Antipsychotic Drug Level Above Therapeutic	Pharyngeal Oedema	Hypoxia
Antipsychotic Drug Level Increased	Photosensitivity Allergic Reaction	Oxygen Saturation Decreased
	Pruritus	Respiratory Acidosis
Altered Mental Status	Pruritus Generalized	Respiratory Depression
Akinaesthesia	Rash	Respiratory Distress
Amnesia	Rash Generalised	Respiratory Failure
Aphasia	Rash Maculo-Papular	Respiratory Rate Decreased
Aphonia	Rash Papular	Wheezing
Confusional State	Rash Pruritic	
Delirium	Rash Vesicular	Sensory
Disorientation	Swelling	Aphasia
Formication	Swelling Face	Aphonia
Hallucination	Swollen Tongue	Balance Disorder
Hallucination, Auditory	Tongue Eruption	Diplopia
Hallucination, Visual	Tongue Oedema	Dizziness
Incoherent	Urticaria	Dysgeusia
Memory Impairment	Urticaria Generalized	Feeling Abnormal
Mental Disorder		Feeling Drunk
Mental Impairment		Feeling Hot
Mental Status Changes		

eTable 2. Adverse Drug Effect by Category

Cardiovascular	Movement Disorder or Spasticity	Sensory (cont.)
Blood Pressure Decreased	Akathisia	Feeling Jittery
Blood Pressure Increased	Blepharospasm	Hypoaesthesia
Bradycardia	Coordination Abnormal	Hypoaesthesia Facial
Cardiac Arrest	Dyskinesia	Hypoaesthesia Oral
Electrocardiogram QRS Complex Prolonged	Dystonia	Oral Dysaesthesia
Electrocardiogram QT Prolonged	Extrapyramidal Disorder	Paraesthesia
Extrasystoles	Gait Disturbance	Paraesthesia Oral
Heart Rate Abnormal	Hemiparesis	Sensation Of Heaviness
Heart Rate Increased	Hypertonia	Skin Burning Sensation
Hypertension	Laryngospasm	Tinnitus
Hypertensive Emergency	Motor Dysfunction	Vertigo
Hypotension	Movement Disorder	Vision Blurred
Palpitations	Muscle Contractions Involuntary	Visual Acuity Reduced
Presyncope	Muscle Rigidity	Visual Disturbance
Sinus Tachycardia	Muscle Spasms	
Syncope	Muscle Spasticity	
Tachycardia	Muscle Twitching	
	Myoclonus	
	Oesophageal Spasm	
	Parkinsonism	
	Tardive Dyskinesia	
	Tic	
	Tongue Spasm	
	Torticollis	
	Tremor	
	Trismus	

eTable 3. Numbers of Cases and National Estimates of Annual Emergency Department (ED) Visits for Psychiatric Medication Adverse Drug Events, by Patient Sex, Patient Age, and Medication Category—United States, 2009-2011

Sex, Age Group, and Psychiatric Medication	ED Visits for Adverse Drug Events ^a				Hospitalization Rate (%)	Est. Annual ED Visits per 10,000 Outpatient Prescription Visits ^b	
	No. of Cases	Est. Annual No. of Visits	Proportion of Age Group Visits			No.	(95% CI)
			%	(95% CI)			
Females							
<i>19 to 44 years old</i>							
Sedatives/Anxiolytics	306	6,849	25.5	(22.4-28.7)	11.8	4.8	(4.1-5.5)
Antidepressants	400	9,710	36.2	(32.5-40.0)	5.5	4.5	(3.8-5.1)
Antipsychotics	306	6,861	25.6	(22.4-28.8)	8.0	16.2	(13.7-18.7)
Lithium Salts	41	773	2.9	(1.6-4.2)	^c	13.1	(9.0-17.1)
Stimulants	50	1,143	4.3	(3.0-5.5)	^c	4.0	(3.1-4.8)
Two drugs from different psychiatric medication categories	71	1,474	5.5	(3.8-7.2)	^c	Not applicable	
<i>45 to 64 years old</i>							
Sedatives/Anxiolytics	309	6,818	37.8	(34.4-41.2)	25.0	3.0	(2.5-3.4)
Antidepressants	215	5,218	28.9	(24.9-32.9)	11.8	1.7	(1.4-1.9)
Antipsychotics	143	3,048	16.9	(13.8-19.9)	24.0	6.2	(5.0-7.3)
Lithium Salts	66	1,157	6.4	(3.3-9.6)	55.0	20.7	(13.7-27.8)
Stimulant	5	^c	^c	^c	^c	^c	^c
Two drugs from different psychiatric medication categories	68	1,725	9.6	(7.4-11.7)	33.6	Not applicable	
<i>≥65 years old</i>							
Sedatives/Anxiolytics	238	5,370	52.0	(46.4-57.6)	34.7	3.0	(2.6-3.5)
Antidepressants	136	3,122	30.2	(25.0-35.5)	25.2	1.6	(1.3-1.9)
Antipsychotics	56	1,329	12.9	(9.7-16.0)	30.0	6.2	(4.9-7.6)
Lithium Salts	15	^c	^c	^c	^c	^c	^c
Stimulants	1	^c	^c	^c	^c	^c	^c
Two drugs from different psychiatric medication categories	9	^c	^c	^c	^c	Not applicable	
Males							
<i>19 to 44 years old</i>							
Sedatives/Anxiolytics	190	4,053	23.5	(19.6-27.4)	15.3	5.1	(4.2-6.0)
Antidepressants	161	3,721	21.6	(17.5-25.7)	11.5	3.8	(3.1-4.5)
Antipsychotics	376	6,917	40.1	(34.4-45.9)	11.9	19.9	(16.7-23.1)
Lithium Salts	20	^c	^c	^c	^c	^c	^c
Stimulants	57	1,334	7.7	(4.7-10.8)	^c	4.9	(3.5-6.4)
Two drugs from different psychiatric medication categories	35	931	5.4	(3.7-7.1)	^c	Not applicable	

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	No. of Cases	Est. Annual No. of Visits	Proportion of Age Group Visits		Hospitalization Rate (%)	No.	(95% CI)
			%	(95% CI)			
Males							
<i>45 to 64 years old</i>							
Sedatives/Anxiolytics	186	4,494	38.6	(33.7-43.5)	30.4	3.4	(2.8-3.9)
Antidepressants	122	2,663	22.9	(17.8-28.0)	21.0	1.8	(1.5-2.2)
Antipsychotics	141	2,813	24.2	(20.5-27.8)	18.6	7.6	(6.2-9.0)
Lithium Salts	43	949	8.1	(5.6-10.7)	69.7	27.3	(18.9-35.7)
Stimulant	11	^c		^c	^c		^c
Two drugs from different psychiatric medication categories	33	499	4.3	(2.4-6.1)	^c	Not applicable	
<i>≥65 years old</i>							
Sedatives/Anxiolytics	142	3,123	61.8	(55.8-67.9)	27.4	3.9	(3.3-4.6)
Antidepressants	42	942	18.7	(13.1-24.2)	^c	1.0	(0.8-1.3)
Antipsychotics	33	610	12.1	(7.1-17.1)	^c	4.3	(3.0-5.6)
Lithium Salts	12	^c		^c	^c		^c
Stimulants	0	^c		^c	^c		^c
Two drugs from different psychiatric medication categories	9	^c		^c	^c	Not applicable	
^a Number of cases and national estimates of ED visits from the National Electronic Injury Surveillance System—Cooperative Adverse Drug Event Surveillance (NEISS-CADES) project. The hospitalization rate is the ratio of ED visits resulting in admission, observation, or transfer to total ED visits for adverse drug events involving the specified medication category. ^b Estimated annual numbers of outpatient prescription visits for each medication category are from the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS) for 2009 and 2010 and include outpatient prescription visits in which multiple psychiatric medications were prescribed at a single visit. ^c Statistically unreliable estimate							