

Disclaimer

The FDA chose a specific outcome algorithm that met its need for a given medical product-outcome assessment. The use of a specific outcome algorithm in a Sentinel assessment should not be interpreted as an endorsement from FDA to use the algorithm for all safety assessments. Investigators should always consider the objective, study design, analytic approach, and data source of a given medical product safety assessment when choosing the outcome algorithm. The suitability of an outcome algorithm may change when applied to different scenarios. For additional information, please refer to the [Best Practices for Conducting and Reporting Pharmacoepidemiologic Safety Studies Using Electronic Healthcare Data](#) guidance document provided by the FDA.

Overview

Title	Outpatient Depressive Disorder Algorithm Defined in "Neuropsychiatric Events following Montelukast Use: A Propensity Score Matched Analysis"
Request ID	cdcr_mpl2r_wp010
Description	<p>This report lists International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes, generic and brand drug names, Current Procedural Terminology, Fourth Edition (CPT-4) procedure codes, and algorithms used to define outpatient depressive disorder in this request.</p> <p>For additional information about the algorithm and how it was defined relative to the cohort and exposures of interest in the inferential analysis, see the analysis page here: https://www.sentinelinitiative.org/drugs/assessments/neuropsychiatric-events-following-montelukast-use-propensity-score-matched</p>
Outcome	Outpatient depressive disorder
Algorithm to Define Outcome	Evidence of an ICD-9-CM diagnosis code used to define depression in the ambulatory or other ambulatory care setting in any diagnosis position AND evidence of <i>either</i> an antidepressant dispensing OR a CPT-4 or ICD-9-CM procedure code used to define psychotherapy in the ambulatory or other ambulatory care setting in any position.
Query Period	January 1, 2000 - September 30, 2015
Request Send Date	July 17, 2019

Glossary

Care Setting - type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or missing (U)

Outcome - outcome of interest (either primary or secondary)

Principal Diagnosis (PDX) - diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

Query Period - period in which the modular program looks for exposures and outcomes of interest

Request Send Date - date the request was sent to Sentinel Data Partners

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Diagnosis Codes Used to Define Outpatient Depressive Disorder in this Request

Codes	Description	Code Type	Code Category
311	Depressive disorder, not elsewhere classified	ICD-9-CM	Diagnosis
293.83	Mood disorder in conditions classified elsewhere	ICD-9-CM	Diagnosis
296.2	Major depressive disorder, single episode	ICD-9-CM	Diagnosis
296.20	Major depressive disorder, single episode, unspecified	ICD-9-CM	Diagnosis
296.21	Major depressive disorder, single episode, mild	ICD-9-CM	Diagnosis
296.22	Major depressive disorder, single episode, moderate	ICD-9-CM	Diagnosis
296.23	Major depressive disorder, single episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.24	Major depressive disorder, single episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.25	Major depressive disorder, single episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.26	Major depressive disorder, single episode in full remission	ICD-9-CM	Diagnosis
296.3	Major depressive disorder, recurrent episode	ICD-9-CM	Diagnosis
296.30	Major depressive disorder, recurrent episode, unspecified	ICD-9-CM	Diagnosis
296.31	Major depressive disorder, recurrent episode, mild	ICD-9-CM	Diagnosis
296.32	Major depressive disorder, recurrent episode, moderate	ICD-9-CM	Diagnosis
296.33	Major depressive disorder, recurrent episode, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.34	Major depressive disorder, recurrent episode, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.35	Major depressive disorder, recurrent episode, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.36	Major depressive disorder, recurrent episode, in full remission	ICD-9-CM	Diagnosis
296.5	Bipolar I disorder, most recent episode (or current), depressed	ICD-9-CM	Diagnosis
296.50	Bipolar I disorder, most recent episode (or current) depressed, unspecified	ICD-9-CM	Diagnosis
296.51	Bipolar I disorder, most recent episode (or current) depressed, mild	ICD-9-CM	Diagnosis
296.52	Bipolar I disorder, most recent episode (or current) depressed, moderate	ICD-9-CM	Diagnosis
296.53	Bipolar I disorder, most recent episode (or current) depressed, severe, without mention of psychotic behavior	ICD-9-CM	Diagnosis
296.54	Bipolar I disorder, most recent episode (or current) depressed, severe, specified as with psychotic behavior	ICD-9-CM	Diagnosis
296.55	Bipolar I disorder, most recent episode (or current) depressed, in partial or unspecified remission	ICD-9-CM	Diagnosis
296.56	Bipolar I disorder, most recent episode (or current) depressed, in full remission	ICD-9-CM	Diagnosis
296.90	Unspecified episodic mood disorder	ICD-9-CM	Diagnosis
298.0	Depressive type psychosis	ICD-9-CM	Diagnosis
300.4	Dysthymic disorder	ICD-9-CM	Diagnosis
301.12	Chronic depressive personality disorder	ICD-9-CM	Diagnosis
309.0	Adjustment disorder with depressed mood	ICD-9-CM	Diagnosis
309.1	Prolonged depressive reaction as adjustment reaction	ICD-9-CM	Diagnosis
309.28	Adjustment disorder with mixed anxiety and depressed mood	ICD-9-CM	Diagnosis

Generic and Brand Drug Names Used to Define Antidepressant Dispensings in this Request

Generic Name	Brand Name
amitriptyline HCl	Elavil
amitriptyline HCl	amitriptyline
amitriptyline HCl	Vanatrip
AMITRIPTYLINE HCL	EnovaRx-Amitriptyline
amitriptyline HCl/chlordiazepoxide	Limbitrol
amitriptyline HCl/chlordiazepoxide	Limbitrol DS
amitriptyline HCl/chlordiazepoxide	amitriptyline-chlordiazepoxide
amoxapine	amoxapine
bupropion HBr	Aplenzin
bupropion HCl	bupropion HCl
bupropion HCl	Budeprion XL
bupropion HCl	Budeprion SR
bupropion HCl	Buproban
bupropion HCl	Wellbutrin SR
bupropion HCl	Wellbutrin
bupropion HCl	Zyban
bupropion HCl	Wellbutrin XL
bupropion HCl	bupropion HCl (smoking deter)
bupropion HCl	Forfivo XL
bupropion HCl/dietary supplement combination no.15	Appbutamone-D
bupropion HCl/dietary supplement combination no.16	Appbutamone
citalopram hydrobromide	citalopram
citalopram hydrobromide	Celexa
clomipramine HCl	Anafranil
clomipramine HCl	clomipramine
desipramine HCl	desipramine
desipramine HCl	Norpramin
desvenlafaxine	desvenlafaxine
desvenlafaxine	Khedeza
desvenlafaxine fumarate	desvenlafaxine fumarate
desvenlafaxine succinate	Pristiq
desvenlafaxine succinate	desvenlafaxine succinate
doxepin HCl	doxepin
doxepin HCl	Sinequan
doxepin HCl	Silenor
doxepin HCl	Prudoxin
doxepin HCl	Zonalon
duloxetine HCl	Cymbalta
duloxetine HCl	duloxetine
duloxetine HCl	Irenka
escitalopram oxalate	escitalopram oxalate
escitalopram oxalate	Lexapro
fluoxetine HCl	Prozac Weekly
fluoxetine HCl	Sarafem
fluoxetine HCl	Prozac

Generic and Brand Drug Names Used to Define Antidepressant Dispensings in this Request

Generic Name	Brand Name
fluoxetine HCl	fluoxetine
fluoxetine HCl	Selfemra
fluoxetine HCl	Rapiflux
fluoxetine HCl/dietary supplement no.17	Gaboxetine
fluoxetine HCl/dietary supplement no.8	Sentroxatine
fluvoxamine maleate	Luvox
fluvoxamine maleate	fluvoxamine
fluvoxamine maleate	Luvox CR
imipramine HCl	Tofranil
imipramine HCl	imipramine HCl
imipramine pamoate	Tofranil-PM
imipramine pamoate	imipramine pamoate
isocarboxazid	Marplan
levomilnacipran HCl	Fetzima
maprotiline HCl	Ludiomil
maprotiline HCl	maprotiline
mirtazapine	Remeron
mirtazapine	Remeron SolTab
mirtazapine	mirtazapine
naltrexone HCl/bupropion HCl	Contrave
nefazodone HCl	nefazodone
nefazodone HCl	Serzone
nortriptyline HCl	Aventyl
nortriptyline HCl	Pamelor
nortriptyline HCl	nortriptyline
olanzapine/fluoxetine HCl	Symbyax
olanzapine/fluoxetine HCl	olanzapine-fluoxetine
paroxetine HCl	Paxil CR
paroxetine HCl	Paxil
paroxetine HCl	paroxetine HCl
paroxetine mesylate	paroxetine mesylate(menop.sym)
paroxetine mesylate	Pexeva
paroxetine mesylate	Brisdelle
perphenazine/amitriptyline HCl	Etrafon 2-10
perphenazine/amitriptyline HCl	Etrafon 2-25
perphenazine/amitriptyline HCl	Etrafon Forte 4-25
perphenazine/amitriptyline HCl	perphenazine-amitriptyline
perphenazine/amitriptyline HCl	Duo-Vil 2-10
perphenazine/amitriptyline HCl	Duo-Vil 2-25
perphenazine/amitriptyline HCl	Triavil 2-10
perphenazine/amitriptyline HCl	Triavil 2-25
perphenazine/amitriptyline HCl	Triavil 4-25
phenelzine sulfate	Nardil
phenelzine sulfate	phenelzine
selegiline	Emsam

Generic and Brand Drug Names Used to Define Antidepressant Dispensings in this Request

Generic Name	Brand Name
selegiline HCl	Zelapar
selegiline HCl	selegiline HCl
selegiline HCl	Eldepryl
selegiline HCl	Carbex
sertraline HCl	Zoloft
sertraline HCl	sertraline
tranylcypromine sulfate	Parnate
tranylcypromine sulfate	tranylcypromine
trazodone HCl/dietary supplement no.8	Trazamine
trimipramine maleate	Surmontil
trimipramine maleate	trimipramine
venlafaxine HCl	Effexor
venlafaxine HCl	Effexor XR
venlafaxine HCl	venlafaxine
vilazodone HCl	Viibryd
vortioxetine hydrobromide	Brintellix
vortioxetine hydrobromide	Trintellix

Current Procedural Terminology, Fourth Edition (CPT-4) and International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Procedure Codes Used to Define Psychotherapy in this Request

Codes	Description	Code Type	Code Category
90810	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 20 to 30 minutes face-to-face with the patient;	CPT-4	Procedure
90811	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 20 to 30 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure
90812	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 45 to 50 minutes face-to-face with the patient;	CPT-4	Procedure
90813	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 45 to 50 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure
90814	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 75 to 80 minutes face-to-face with the patient;	CPT-4	Procedure
90815	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an office or outpatient facility, approximately 75 to 80 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure
90823	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 20 to 30 minutes face-to-face with the patient;	CPT-4	Procedure
90824	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 20 to 30 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure
90826	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 45 to 50 minutes face-to-face with the patient;	CPT-4	Procedure
90827	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 45 to 50 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure

Current Procedural Terminology, Fourth Edition (CPT-4) and International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Procedure Codes Used to Define Psychotherapy in this Request

Codes	Description	Code Type	Code Category
90828	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 75 to 80 minutes face-to-face with the patient;	CPT-4	Procedure
90829	Individual psychotherapy, interactive, using play equipment, physical devices, language interpreter, or other mechanisms of non-verbal communication, in an inpatient hospital, partial hospital or residential care setting, approximately 75 to 80 minutes face-to-face with the patient; with medical evaluation and management services	CPT-4	Procedure
90832	Psychotherapy, 30 minutes with patient	CPT-4	Procedure
90833	Psychotherapy, 30 minutes with patient when performed with an evaluation and management service (List separately in addition to the code for primary procedure)	CPT-4	Procedure
90834	Psychotherapy, 45 minutes with patient	CPT-4	Procedure
90836	Psychotherapy, 45 minutes with patient when performed with an evaluation and management service (List separately in addition to the code for primary procedure)	CPT-4	Procedure
90837	Psychotherapy, 60 minutes with patient	CPT-4	Procedure
90838	Psychotherapy, 60 minutes with patient when performed with an evaluation and management service (List separately in addition to the code for primary procedure)	CPT-4	Procedure
90839	Psychotherapy for crisis; first 60 minutes	CPT-4	Procedure
90840	Psychotherapy for crisis; each additional 30 minutes (List separately in addition to code for primary service)	CPT-4	Procedure
90845	Psychoanalysis	CPT-4	Procedure
90853	Group psychotherapy (other than of a multiple-family group)	CPT-4	Procedure
90857	Interactive group psychotherapy	CPT-4	Procedure
94.31	Psychoanalysis	ICD-9-CM	Procedure
94.32	Hypnotherapy	ICD-9-CM	Procedure
94.33	Behavior therapy	ICD-9-CM	Procedure
94.35	Crisis intervention	ICD-9-CM	Procedure
94.36	Play psychotherapy	ICD-9-CM	Procedure
94.37	Exploratory verbal psychotherapy	ICD-9-CM	Procedure
94.38	Supportive verbal psychotherapy	ICD-9-CM	Procedure
94.39	Other individual psychotherapy	ICD-9-CM	Procedure
94.43	Psychodrama	ICD-9-CM	Procedure
94.44	Other group therapy	ICD-9-CM	Procedure