

Appendix A

Priority Fall Risk Factors, Locations of Data Extraction, and Coding

Factor	Location	Coding
Age ≥65	Demographics	Age categories calculated from date of birth
Cognitive impairment	ICD-9 codes	Cognitive disorder 294.1 - 294.9; Senile dementia 290.0 - 290.3; Vascular dementia 290.4; Dementia with Parkinson's disease 331.82; Mild cognitive impairment 331.83
	Medicin findings	AGE-RELATED COGNITIVE DECLINE 312268.00; COGNITIVE DISORDER 312247.00; Cognitive Functions Current Level Impaired 203821.00; Cognitive Functions Current Level Impaired Mild 297368.00; Cognitive Functions Current Level Superior 203819.00; Cognitive Functions Current Level Totally Dependent 242551.00; Cognitive Functions Decreased 203809.00; Cognitive Functions Decreased From Premorbid Estimate 203810.00; Cognitive Mini-Mental Status Exam Abnormal 296520.00; LATE CVD EFFECTS - COGNITIVE DEFICITS 98682.00; MILD COGNITIVE IMPAIRMENT 335113.00; No Cognitive Function 8369.00; URINARY INCONTINENCE DUE TO COGNITIVE IMPAIRMENT 313474.00; DEMENTIA 272570.00; DEMENTIA KNOWN (AXIS III) ETIOLOGY WITH BEHAVIOR DISTURBANCE 214080.00; DEMENTIA OF ALZHEIMER'S TYPE 278232.00; DEMENTIA OF ALZHEIMER'S TYPE WITH BEHAVIOR DISTURBANCE 278234.00; DEMENTIA OF ALZHEIMER'S TYPE WITH EARLY ONSET 312241.00; DEMENTIA OF ALZHEIMER'S TYPE WITH LATE ONSET 312242.00; DEMENTIA OF KNOWN (AXIS III) ETIOLOGY 35732.00; DEMENTIA OF UNKNOWN (AXIS III) ETIOLOGY 35733.00; DEMENTIA OF UNKNOWN (AXIS III) ETIOLOGY WITHOUT BEHAVIORAL DISTURBANCE 314928.00; DEMENTIA WITH BEHAVIORAL DISTURBANCE 318503.00; DEMENTIA WITH LEWY BODIES 272878.00; DEMENTIA, PATCHY 350856.00; FRONTOTEMPORAL DEMENTIA 272877.00; HEAD INJURY WITH DEMENTIA WITHOUT BEHAVIORAL DISTURBANCE 312231.00; PARKINSON DISEASE W/ DEMENTIA W/O BEHAVIORAL DISTURBANCE 312237.00; PARKINSON DISEASE WITH DEMENTIA 38397.00; PRESENILE DEMENTIA 312345.00; PRESENILE DEMENTIA UNCOMPLICATED 312420.00; PRESENILE DEMENTIA WITH DELIRIUM 312421.00; PRESENILE DEMENTIA WITH DEPRESSED MOOD 312423.00; SENILE DEMENTIA 312559.00; SENILE DEMENTIA WITH DELUSIONAL FEATURES 312561.00; VASCULAR DEMENTIA 32694.00; VASCULAR DEMENTIA UNCOMPLICATED 38381.00; VASCULAR DEMENTIA

		WITH DELUSIONS 38383.00; VASCULAR DEMENTIA WITH DEPRESSED MOOD 38384.00
	General notes	Like "*Cognitive*" Or Like "*Dementia*" And Not Like "*flexibility*" And Not Like "*anxiety management*" And Not Like "*therapy*" And Not Like "*education*" And Not Like "*average*" And Not Like "*guided practice*" And Not Like "*normal*"
Dizziness-vertigo	ICD-9 codes	Dizziness and giddiness, Light-headedness, Vertigo NOS 780.4; Vertigo 438.85
	Medicin findings	anxiety with dizziness or unsteady feelings 1179.00; BENIGN PAROXYSMAL POSITIONAL VERTIGO 32046.00; BENIGN PAROXYSMAL POSITIONAL VERTIGO BOTH EARS 312213.00; BENIGN PAROXYSMAL POSITIONAL VERTIGO LEFT EAR 312212.00; BENIGN PAROXYSMAL POSITIONAL VERTIGO RIGHT EAR 312211.00; BENIGN PAROXYSMAL VERTIGO OF CHILDHOOD 95303.00; CHLAMYDIAL INFECTIONS EPIDEMIC VERTIGO 97497.00; dizziness 650.00; dizziness episodes are recurrent 654.00; dizziness preceded 281450.00; dizziness preceded by chest pain 281455.00; dizziness preceded by flushing 281460.00; dizziness preceded by nausea 281461.00; dizziness preceded by sudden or severe headache 281451.00; dizziness preceded by sweating 281459.00; dizziness upon bending over 652.00; dizziness upon rolling over 2099.00; dizziness upon standing up 653.00; dizziness upon turning the head 116398.00; dizziness when walking up stairs 2100.00; dizziness while using hands or arms 651.00; headache preceded by everything spinning around (vertigo) 74.00; LATE CVD EFFECTS – VERTIGO 272323.00; PERIPHERAL VERTIGO 98368.00; spinning dizziness (vertigo) 655.00; spinning dizziness after rolling over 282960.00; spinning dizziness after turning the head 282961.00; spinning dizziness caused by noise 2009.00; spinning dizziness upon lying down 656.00; spinning dizziness with sudden changes in position 657.00; VERTIGO 275474.00; VERTIGO AURAL 275475.00; VERTIGO OF CENTRAL ORIGIN 96984.00; VERTIGO OF CENTRAL ORIGIN WITH MALIGNANT POSITIONAL VERTIGO 275478.00; VERTIGO OF CENTRAL ORIGIN WITH POSITIONAL NYSTAGMUS 275477.00; VERTIGO OTOGENIC 275476.00
	General notes	Like "*Dizzi*" Or Like "*Dizzy*" Or Like "*Vertigo*"
Fear of falling	General notes	Like "fall" And Like "*fear*" Or Like "*afraid*" Or Like "*worri*" Or Like "*scare*" Or Like "*fright*" Or Like "*concern*"
Gait/balance impairment	ICD-9 codes	Abnormality of gait 781.2; Difficulty in walking 719.7; Lack of coordination 781.3; Other musculoskeletal symptoms referable to

		limbs 729.89
	Medcin findings	ATAXIC GAIT 278528.00; Ataxic Gait - Staggering Or Falling To The Right 9038.00; Balance Limited While Shifting Weight 208797.00; difficulty with balance 743.00; DISTURBANCE OF GAIT 278527.00; Gait – Antalgic 66733.00; Gait – Ataxic 9037.00; Gait - Ataxic, Wide-Based 9040.00; Gait – Hemiparetic 11143.00; Gait - Hemiparetic, Left Side 11145.00; Gait - Hemiparetic, Right Side 11144.00; Gait - Insufficient For Exercise Testing 155110.00; Gait – Limping 9036.00; Gait – Scissoring 262002.00; Gait – Shuffling 9800.00; Gait – Spastic 9043.00; Gait - Spastic, Right-Sided 9044.00; Gait – Stooped 240147.00; Gait - Swing Phase Foot Drop Left 8095.00; Gait - Swing Phase Foot Drop Right 8094.00; Gait - Toe Walk 11875.00; Gait - Waddling (Trendelenburg) 9048.00; Limited Balance 132533.00; PARALYTIC GAIT 278529.00; Sensation Romberg's Sign (balance lost without visual clues) 8909.00; SPASTIC GAIT 278530.00; STAGGERING GAIT 278531.00; Tandem Gait Test Off-Balance To Left 261242.00; waddling gait 736.00
	General notes	Like "*Balance*" Or Like "Gait*" And Not Like "*Electrolyte*" And Not Like "*Denies*" And Not Like "*Meal*" And Not Like "*Outstanding*" And Not Like "*previous*" And Not Like "*revious*" And Not Like "*Food*" And Not Like "*Chemical*"
Gender	Demographics	Patient gender: F Female; M Male
Hearing impairment	ICD-9 codes	Hearing loss 389.0 - 389.9
	Medcin findings	CENTRAL HEARING LOSS 37605.00; CONDUCTIVE HEARING LOSS 34074.00; CONDUCTIVE HEARING LOSS BOTH EARS 312207.00; CONDUCTIVE HEARING LOSS LEFT EAR 312206.00; CONDUCTIVE HEARING LOSS RIGHT EAR 312205.00; CONDUCTIVE HEARING LOSS, TYMPANIC MEMBRANE 37599.00; CONGENITAL EAR DEFORMITY CAUSING IMPAIRMENT OF HEARING 211210.00; difficulty hearing over background noise 282644.00; Hearing Difficulties 1002433.00; HEARING LOSS 34076.00; Hearing Loss 6676.00; Hearing Loss Bilaterally 6677.00; Hearing Loss Bilaterally Total 9445.00; Hearing Loss Left Only 6679.00; hearing loss left side only 145.00; Hearing Loss Right Only 6678.00; hearing loss right side only 144.00; Hearing Reception Threshold Whispered Voice Not Heard 155103.00; Hearing Services Hearing Aid Currently Being Worn 4055.00; loss of hearing 141.00; loss of hearing fluctuates 111726.00; loss of hearing for a month or more 1620.00; loss of hearing getting progressively worse 142.00; loss of hearing on both sides 1614.00; loss of hearing on one side only 143.00; loss of hearing

		<p>which was sudden 111986.00; loss of hearing which was temporary 1619.00; MIXED CONDUCTIVE AND SENSORINEURAL HEARING LOSS 34077.00; NEURAL HEARING LOSS 37604.00; NOISE INDUCED HEARING LOSS 30788.00; Problems With Hearing 1003645.00; Problems With Hearing (on neurological exam) 11760.00; reported hearing problems using hearing aid both ears 127789.00; reported hearing problems using hearing aid right ear 127787.00; SENSORINEURAL HEARING LOSS 34075.00; SENSORINEURAL HEARING LOSS ASYMMETRICAL 311919.00; SENSORINEURAL HEARING LOSS BILATERAL 311925.00; SENSORINEURAL HEARING LOSS LEFT EAR 311924.00; SENSORINEURAL HEARING LOSS OF COMBINED TYPES 37606.00; SENSORINEURAL HEARING LOSS OF COMBINED TYPES BILATERAL 311922.00; SENSORINEURAL HEARING LOSS RIGHT EAR 311923.00; SENSORY HEARING LOSS 37603.00; SENSORY HEARING LOSS BILATERAL 311912.00; SENSORY HEARING LOSS UNILATERAL 312658.00; SPEECH AND LANGUAGE DEVELOPMENTAL DELAY DUE TO HEARING LOSS 312640.00; SUDDEN HEARING LOSS OF UNKNOWN ETIOLOGY 37597.00; total loss of hearing on both sides 1678.00</p>
	General notes	<p>Like "*Hearing*" Or Like "*Hear*" And Not Like "*voices*" And Not Like "*test*" And Not Like "*exam*" And Not Like "*check*" And Not Like "*screen*" And Not Like "*inquiry*" And Not Like "*evaluation*" And Not Like "*black lung*"</p>
History of falls	ICD-9 codes	<p>Accidental fall E880.0 - E888.9; Late effects of accidental fall E929.3; History of fall or at-risk for falling V15.88</p>
	Medicin findings	<p>a fall 4363.00; a fall due to slipping, tripping, or stumbling 124608.00; a fall from a bed 4955.00; a fall from a structure 124407.00; a fall from furniture 120562.00; a fall from stairs 4657.00; a fall into a hole 120194.00; a fall, striking an object 122430.00; Assess/Interv Future Risk Document 2+ Falls In Past Year 303647.00; Ataxic Gait - Staggering Or Falling To The Right 9038.00; fall due to ice and snow 128644.00; fall in shower or empty bathtub 128697.00; fall on same level from slipping, tripping and stumbling 128645.00; INJURY DUE TO UNDETERMINED INTENT FALL 95832.00; INJURY DUE TO UNDETERMINED INTENT FALL HOUSE 212627.00; LATE EFFECTS OF ACCIDENTAL FALL 38136.00</p>
	General notes	<p>Like "*fall*" And Not Like "*asleep*" And Not Like "*this fall at*" And Not Like "*fallen asleep*" And Not Like "*earlier this fall*" And Not Like "*last fall*" And Not Like "*date falls*" And Not Like "*falls on Sun*" And Not Like "*of last fall*" And Not Like "*filling fall*" And Not Like "*in fall*" And Not Like "*hair fall*" And Not Like "*tooth to fall*" And Not Like</p>

		"*tonsils*" And Not Like "*going to fall*" And Not Like "*cap fall*" And Not Like "*fall 20*" And Not Like "*did not fall*" And Not Like "*preschool for fall*" And Not Like "*this falls on*" And Not Like "*fallopian*" And Not Like "*in the fall*" And Not Like "*falls on a weekend*" And Not Like "*falling asleep*" And Not Like "*fall off on the*" And Not Like "*cancer last fall*" And Not Like "*tsh is falling*" And Not Like "*f/p on mobility*" And Not Like "*falling on a week*" And Not Like "*fall season*" And Not Like "*falling apart*" And Not Like "*falls in this dosage*" And Not Like "*falls rsik low*" Or Like "*fell*"
Parkinson's disease	ICD-9 codes	Parkinson's disease 332.0
	Medcin findings	PARKINSON DISEASE 32004.00; PARKINSON DISEASE W/ DEMENTIA W/O BEHAVIORAL DISTURBANCE 312237.00; PARKINSON DISEASE WITH DEMENTIA 38397.00
	General notes	Like "*Parkinson*" And Not Like "*Parkinsonism*" And Not Like "*Parkinsonian*" And Not Like "*Wolff*" And Not Like "*Not Positive*"
Polypharmacy	Medications	Calculated based on current prescriptions for four or more medications
Prescription for antihypertensive	Medications	Accuretic; Aldactazide; Aldoclor; Aldoclor-150; Aldoclor-250; Aldoril 15; Aldoril 25; Aldoril D30; Aldoril D50; Aldoril; Aliskiren; Amiloride; Amlobenz; amlodipine; Amturnide; Apresazide; Atacand HCT; atenolol; atorvastatin; Avalide; azilsartan medoxomil; Azor; benazepril; bendroflumethiazide; Benicar HCT; BiDil; Bisoprolol; Caduet; candesartan; Capozide 25/15; Capozide 25/25; Capozide 50/15; Capozide 50/25; Capozide; captopril; chlorothiazide; Chlorthalidone ; Clorpres; Corzide 40/5; Corzide 80/5; Corzide; Demi-Regroton; deserpidine; Diltiazem; Diovan HCT; Diupres; Diupres-250; Diupres-500; Diuretic Ap-Es; Dutoprol; Dyazide; Edarbyclor; Enalapril; Enduronyl; eprosartan; Esimil; Exforge HCT; Exforge; Felodipine; Fosinopril; guanethidine; hydralazine; Hydrap-ES; Hydra-Zide; hydrochlorothiazide; Hydropres; Hydropres-25; Hydropres-50; Hydroserpine; Hyzaar; Inderide; Irbesartan; Lexxel; Lisinopril; Lopressor HCT; losartan; Lotensin HCT; Lotrel; Maxzide; Maxzide-25; methyl dopa; Metoprolol; Micardis HCT; Minizide; Moduretic 5-50; Moduretic; moexipril; Monopril HCT; Nadolol; Olmesartan; polythiazide; Prazosin; Prinzide; propranolol; quinapril; Quinaretic; Regroton; Renese-R; reserpine; Ser-Ap-Es; Serpazide; spironolactone; Tarka; Teczem; Tekamlo; Tekturna HCT; telmisartan; Tenoretic 100; Tenoretic 50; Tenoretic; Teveten HCT; Timolide 10-25; Timolide; Timolol; trandolapril; triamterene; Tribenzor; Tri-Hydroserpine; Twynsta; Uni Serp; Uniretic; valsartan; Valturna; Vaseretic; Vaseretic 10-25; Vaseretic 5-12.5; Vaseretic; verapamil; Zestoretic; Ziac

Prescription for antiepileptic	Medications	Acetazolamide; Carbamazepine; Carbogen modified release; Clobazam; Clonazepam; Convulex; Desitrend; Diacomit; Diamox SR; Emeside; Epanutin; Epilim; Epilim Chrono; Epilim Chronosphere; Episenta prolonged release; Epival; Eslicarbazepine acetate; Ethosuximide; Frisium; Fycompa; Gabapentin; Gabitril; Inovelon; Keppra; Lacosamide; Lamictal; Lamotrigine; Levetiracetam; Lyrica; Neurontin; Nitrazepam; Nootropil; Oxcarbazepine; Perampanel; Phenobarbital; Phenytoin; Phenytoin Sodium Flynn; Piracetam; Pregabalin; Primidone; Retigabine; Rivotril; Rufinamide; Sabril; Sodium valproate; Stiripentol; Tapclob; Tegretol; Tegretol Prolonged Release; Tiagabine; Topamax; Topiramate; Trileptal; Trobalt; Vigabatrin; Vimpat; Zarontin; Zebinix; Zonegran; Zonisamide
Prescription for sedative	Medications	Adgan; Anergan 50; Antinaus 50; Aquachloral Suppnettes; Atarax; Ativan; butabarbital; Butisol Sodium; chloral hydrate; Desyrel Dividose; Desyrel; dexmedetomidine; fentanyl; fospropofol; hydroxyzine; Hyzine; lorazepam; Lorazepam Intensol; Luminal; Lusedra; Mebaral; mephobarbital; Nembutal Sodium Nembutal; pentazocine; pentobarbital; Phenadoz; Phenergan; phenobarbital; Precedex; promethazine; Promethegan; secobarbital; Seconal Sodium; Seconal; Solfoton; Somnote; Sublimaze; Talwin; trazodone; Vistaril
Use of walking aid/device	General notes	Like "*wheeled walker*" Or Like "*wheel walker*" Or Like "*a walker*" Or Like "*using walker*" Or Like "*has walker*" Or Like "*new walker*" Or Like "*requested walker*" Or Like "*of walker*" Or Like "*about walker*" Or Like "*use walker*" Or Like "*uses walker*" Or Like "*give walker*" Or Like "*uses cane*" Or Like "*a cane*" Or Like "*has cane*" Or Like "*new cane*" Or Like "*used cane*" Or Like "*for cane*" Or Like "*of cane*" Or Like "*using cane*" Or Like "*requested cane*" Or Like "*give cane*" Or Like "*walking aid*" Or Like "*walking device*"
Vision impairment	ICD-9 codes	Blindness and low vision 369.0 - 369.9
	Medicin findings	BINOCULAR VISION DISORDER 36625.00; blind spot (scotoma) 105.00; blurry vision 113.00; blurry vision as if looking through a glass of water 2016.00; blurry vision binocular 110203.00; blurry vision left 110202.00; blurry vision right 110201.00; COLOR BLINDNESS 30415.00; DAY BLINDNESS 318157.00; foggy vision 111364.00; foggy vision binocular 111367.00; foggy vision right 111365.00; headache preceded by double vision 68.00; headache preceded by loss of all vision in both eyes 66.00; headache preceded by loss of all vision in one eye (anopsia) 65.00; LATE CVD EFFECTS - VISION DISTURBANCES 272320.00; LEGALLY BLIND (USA DEFINITION) 36662.00; LEGALLY BLIND (USA DEFINITION) BOTH EYES 311746.00; LEGALLY BLIND

		<p>(USA DEFINITION) RIGHT EYE 311744.00; loss of part of field of vision 104.00; ONE EYE: PROFOUND IMPAIRMENT; OTHER EYE: NEAR-NORMAL VISION 92938.00; ONE EYE: TOTAL IMPAIRMENT; OTHER EYE: NORMAL VISION 92933.00; Problems With Sight (on neurological exam) 11759.00; seeing insects at the edge of one's vision 1240.00; total loss of vision 1603.00; total vision loss left 2546.00; total vision loss unilaterally 1604.00; TRAUMATIC BLINDNESS - LEFT EYE 39760.00; Vision Assessment 6577.00; vision distortion 128.00; vision problems 111363.00; VISION SENSITIVITY DEFICIENCY 335352.00; vision worsens during the day 281502.00; Visual Acuity - Cortical Blindness 6592.00; white / light spots in field of vision 111376.00; worsening distance and near vision 111313.00; worsening distance and near vision right 111847.00; worsening distance vision 2904.00; worsening distance vision left 111842.00; worsening distance vision right 111841.00; worsening near vision 2905.00; worsening peripheral vision right 94.00; worsening vision 91.00; worsening vision occurring briefly (for a few minutes) 97.00; worsening vision progressing slowly 98.00; worsening vision right 102.00; worsening vision started suddenly 100.00; worsening vision sustained 111322.00; worsening vision worse in the morning 112172.00</p>
	General notes	<p>Like “*Blind*” Or Like “*Vision Imp*” Or Like “*Impaired Vision*” Or Like “*low vis*” Or Like “*vision*” Or Like “*sight*” And Not Like “*exam*” And Not Like “*milestone*” And Not Like “*guidance*” And Not Like “*supervision*” And Not Like “*oversight*” And Not Like “*religious*” And Not Like “*test*” And Not Like “*provision*” And Not Like “*television*” And Not Like “*insight*” And Not Like “*Revision*” And Not Like “*20/_*” And Not Like “*plus_*” And Not Like “*not obscuring*” And Not Like “*confrontation*”</p>