

Supplementary Table 1. Study Cohort Selection

	Step	N
1	Medicare Enrollees in 2016	12,139,198
2	Had two years continuous enrollment (2015-2016)	5,906,400
3	Chronic pain and anxiety diagnoses, 2016	364,567
4	Any use of opioid, benzo, SSRI/SNRI, or GABA, 2017	254,658
5	Combination use of opioid, benzo, SSRI/SNRI, or GABA	199,949
6	Combination use for at least 7 days	155,552
7	Age 65 or older at combination use	85,586
8	Prior Part D enrollment	84,706
9	No Prior combination use of opioid, benzo, SSRI/SNRI, or GABA	47,997
10	Had complete information (birth date, region)	47,964

^a55% of 2016 Medicare beneficiaries with chronic pain and anxiety disorders had a study combination prescription in 2017.

Supplementary Table 2. ICD-10 Codes for (A) Chronic Pain and (B) Anxiety Disorders

A				
Algorithms	Reference Period (# of Years) ¹	Valid ICD-9/MS DRG/HCPCS Codes	Valid ICD-10 Codes ²	Number/Type of Claims to Qualify ³
Fibromyalgia, Chronic Pain and Fatigue	2 Years	DX 338.2, 338.21, 338.22, 338.23, 338.29, 338.3, 338.4, 780.7, 780.71, 729.1, 729.2 (any DX on the claim)	DX G89.21, G89.22, G89.28, G89.29, G89.3, G89.4, M54.10, M54.11, M54.12, M54.13, M54.14, M54.15, M54.16, M54.17, M54.18, M60.80, M60.811, M60.812, M60.819, M60.821, M60.822, M60.829, M60.831, M60.832, M60.839, M60.841, M60.842, M60.849, M60.851, M60.852, M60.859, M60.861, M60.862, M60.869, M60.871, M60.872, M60.879, M60.88, M60.89, M60.9, M79.1, M79.10, M79.11, M79.12, M79.18, M79.2, M79.7, R53.82 (any DX on the claim)	At least one inpatient claim OR two other non-drug claims of any service type during the two-year period
<p>¹CCW data begins in 1999. When working with condition files prior to 2003, conditions with a reference period of 2–5 years will not have a sufficient length of data to fully meet the condition criteria in some years.</p> <p>²ICD-10 codes are effective 10/2015; effective dates for ICD-9 codes vary, but are valid through 09/2015. Researchers may be interested in confirming the code(s) of interest in the accompanying claims data files.</p> <p>³When two claims are required, they must occur at least one day apart. Note that the claims inclusion rules for these algorithms differ somewhat from the rules for the set of "CCW Chronic Condition Algorithms."</p>				
B				
Algorithms	Reference Period (# of Years) ¹	Valid ICD-9/MS DRG/HCPCS Codes	Valid ICD-10 Codes ²	Number/Type of Claims to Qualify ³
Anxiety Disorders	2 Years	DX 293.84, 300.00, 300.01, 300.02, 300.09, 300.10, 300.20, 300.21, 300.22, 300.23, 300.29, 300.3, 300.5, 300.89, 300.9, 308.0, 308.1, 308.2, 308.3, 308.4, 308.9, 309.81, 313.0, 313.1, 313.21, 313.22, 313.3, 313.82, 313.83 (any DX on the claim)	DX F06.4, F40.00, F40.01, F40.02, F40.10, F40.11, F40.210, F40.218, F40.220, F40.228, F40.230, F40.231, F40.232, F40.233, F40.240, F40.241, F40.242, F40.243, F40.248, F40.290, F40.291, F40.298, F40.8, F40.9, F41.0, F41.1, F41.3, F41.8, F41.9, F42, F42.2, F42.3, F42.4, F42.8, F42.9, F43.0, F43.10, F43.11, F43.12, F44.9, F45.8, F48.8, F48.9, F93.8, F99, R45.2, R45.5, R45.6, R45.7 (any DX on the claim)	At least 1 inpatient OR 2 other non-drug claims of any service type with DX codes
<p>¹CCW data begins in 1999. When working with condition files prior to 2003, conditions with a reference period of 2–5 years will not have a sufficient length of data to fully meet the condition criteria in some years.</p> <p>²ICD-10 codes are effective 10/2015; effective dates for ICD-9 codes vary, but are valid through 09/2015. Researchers may be interested in confirming the code(s) of interest in the accompanying claims data files.</p> <p>³When two claims are required, they must occur at least one day apart. Note that the claims inclusion rules for these algorithms differ somewhat from the rules for the set of "CCW Chronic Condition Algorithms."</p>				

Supplementary Table 3. Medications Comprising Study Drug Classes

<p><u>Benzodiazepines</u> ALPRAZOLAM, ALPRAZOLAM INTENSOL, ALPRAZOLAM XR, AMBIEN, AMBIEN CR, AMBIENPAK, ATIVAN, CENTRAX, CHLORDIAZEPOXIDE, CHLORDIAZEPOXIDE & CLIDINIUM, CHLORDIAZEPOXIDE AND CLIDINIUM, CHLORDIAZEPOXIDE HCL, CHLORDIAZEPOXIDE HCL-CLIDINIUM BROM, CHLORDIAZEPOXIDE HYDROCHLORIDE, CHLORDIAZEPOXIDE HYDROCHLORIDE & CL, CHLORDIAZEPOXIDE HYDROCHLORIDE AND, CHLORDIAZEPOXIDE HYDROCHLORIDE-CLID, CHLORDIAZEPOXIDE HYDROCHLORIDE/CLID, CHLORDIAZEPOXIDE W/CLID BROM, CHLORDIAZEPOXIDE W/CLIDINIUM BROM, CHLORDIAZEPOXIDE-CLIDINIUM, CHLORDIAZEPOXIDE/CLIDINIUM, CHLORDIAZEPOXIDE/CLIDINIUM BROMIDE, CHLORDIAZEPOXIDEHYDROCHLORIDE AND C, CHLORDINIUM, CLINDEX, CLINOXIDE, CLOBAZAM, CLONAZEPAM, CLORAZEPATE, CLORAZEPATE DIPOTASSIUM, D-VAL, DALMANE, DIASTAT, DIASTAT ACUDIAL, DIASTAT PEDIATRIC, DIASTAT UNIVERSAL, DIAZEPAM, DIAZEPAM INTENSOL, DIAZEPAM NOVAPLUS, DIAZEPAM RECTAL DELIVERY SYSTEM, DIZAC, DORAL, DUO SPAZ, EDLUAR, ESTAZOLAM, ESZOPICLONE, FLURAZEPAM, FLURAZEPAM HCL, FLURAZEPAM HYDROCHLORIDE, FLURZEPAM, GABAVAL-5, GABAZOLAMINE, GABAZOLAMINE-0.5, GABAZOLPIDEM-5, GEN-XENE, HALCION, INTERMEZZO, KLONOPIN, KLONOPIN WAFERS, LI-GEN, LIBRAX, LIBRITABS, LIBRIUM, LORAZEPAM, LORAZEPAM AMERINET, LORAZEPAM INTENSOL, LORAZEPAM NOVAPLUS, LORAZEPAM-DEXTROSE, LORAZEPAM-SODIUM CHLORIDE, LUNESTA, MIDAZOLAM, MIDAZOLAM HCL, MIDAZOLAM HCL AMERINET CHOICE, MIDAZOLAM HCL NOVAPLUS, MIDAZOLAM HCL NOVATION, MIDAZOLAM HCL-DEXTROSE, MIDAZOLAM HCL-SODIUM CHLORIDE, MIDAZOLAM HYDROCHLORIDE, MIDAZOLAM HYDROCHLORIDE-SODIUM CHLO, MIDAZOLAM-DEXTROSE, MIDAZOLAM-SODIUM CHLORIDE, MITRAN, NIRAVAM, NOVAPLUS LORAZEPAM, NOVAPLUS MIDAZOLAM, NOVAPLUS MIDAZOLAM HCL, NOVAPLUS MIDAZOLAM HYDROCHLORIDE, ONFI, OXAZEPAM, PAXIPAM, POXI, PRAZEPAM, PREMIERPRO RX LORAZEPAM, PREMIERPRO RX MIDAZOLAM, PROBATE, PROSOM, QUARZAN, QUAZEPAM, RESTORIL, SENTRAZOLPIDEM PM-5, SERAX, SONATA, SYMPAZAN, TEMAZEPAM, TRANXENE, TRANXENE T-TAB, TRANXENE-SD, TRIAZOLAM, VALIUM, VALRELEASE, VERSED, XANAX, XANAX XR, ZALEPLON, ZEBRAX, ZETRAN, ZOLPIDEM, ZOLPIDEM TART, ZOLPIDEM TARTRATE, ZOLPIMIST</p>
<p><u>Gabapentinoids</u> ACTIVE-PAC WITH GABAPENTIN, CONVENIENCE PAK, CYCLO/GABA 10/300 PACK, FUSEPAQ FANATREX, GABA-V, GABAPENTIN, GABAPENTIN AVPAK, GABAPENTIN TAB 600MG, GABARONE, GRALISE, GRALISE STARTER PACK, HORIZANT, LYRICA, LYRICA CR, NEURAPTINE, NEURONTIN, PREGABALIN, SMART RX GABA-V, SMARTRX GABA KIT, THERAPENTIN-60</p>
<p><u>Opioids</u> ABSTRAL, ACET W/ HYDROCODONE, ACETAMIN W/ CODEINE, ACETAMIN W/CODEINE, ACETAMIN/BUTAL/CAFF/COD, ACETAMINOPHEN & HYDROCODONE, ACETAMINOPHEN AND CODEINE PHOSPHATE, ACETAMINOPHEN AND TRAMADOL HYDROCHL, ACETAMINOPHEN W/ CODEINE, ACETAMINOPHEN W/CODEINE, ACETAMINOPHEN WITH CODEINE, ACETAMINOPHEN, CAFFEINE, AND DIHYDR, ACETAMINOPHEN-CAFFEINE-DIHYDROCODEI, ACETAMINOPHEN-CODEINE PHOSPHATE, ACETAMINOPHEN-HYDROCODONE BITARTRAT, ACETAMINOPHEN/BUTALBITAL/CAFFEINE/C, ACETAMINOPHEN/COD #4, ACETAMINOPHEN/CODEINE, ACETAMINOPHEN/CODEINE #2, ACETAMINOPHEN/CODEINE #3, ACETAMINOPHEN/CODEINE #4, ACETAMINOPHEN/CODEINE PHOSPHATE, ACETAMINOPHEN/HYDROCODONE BITARTRAT, ACETAMINOPHEN/OXYCODONE HYDROCHLORI, ACETAMINOPHEN/PENTAZOCINE HCL, ACETAMINOPHEN/TRAMADOL, ACETAMINOPHEN/TRAMADOL HYDROCHLORID, ACTIQ, ACTIVE-PREP KIT IV, ACTIVE-TRAMADOL KIT 8%, ALA-HIST AC, ALAHIST DHC, ALFENTA, ALFENTANIL, ALFENTANIL HCL, ALFENTANIL HCL NOVATION, ALFENTANIL NOVAPLUS, ALLAY, ALOR 5/500, ANEXSIA, ANODYNOS-DHC, ANOLOR DH 5, APAP AND CODEINE, APAP W/ CODEINE, APAP W/CODEINE, APAP W/HYDROCODONE, APAP W/OXYCODONE, APAP/CODEINE, APAP/HYDROCODONE, APAP/HYDROCODONE BITARTRATE, APAP/HYDROCODONE BITARTRATE HS, APAP/HYDROCODONE ES, APAP/OXYCODONE, APAP/PENTAZOCINE HCL, APAP/TRAMADOL, APAP/TRAMADOL HCL, APAP/TRAMADOL HYDROCHLORIDE, ARYMO ER, ASCOMP W/CODEINE, ASPIRIN W/CODEINE, ASPIRIN W/OXYCODONE, ASPIRIN, CAFFEINE, AND DIHYDROCODEI, ASPIRIN/BUTALBITAL/CAFFEINE/CODEINE, ASPIRIN/CARISOPRODOL/CODEINE, ASPIRIN/CODEINE, ASPIRIN/OXYCODONE, ASTRAMORPH, ASTRAMORPH PF, ASTRAMORPH/PF, ATROPINE AND DEMEROL, ATUSS HS, AVINZA, AZDONE, B & O SUPPRETTES 15A, B & O SUPPRETTES 16A, BANCAP H.C., BANCAP HC, BELLADONNA/OPIUM, BROVEX CB, BROVEX CBX, BROVEX PB C, BROVEX PB CX, BUPIV/FENTANYL CITR/SOD CL, BUPIV/HYDROMORPH/SOD CL, BUPIVACAINE HCL-FENTANYL CITRATE-SO, BUT/APAP/CAFF/COD, BUT/ASP/CAFF W/CODEINE, BUTAL/APAP/CAFF/COD, BUTALBITAL COMPOUND W/CODEINE, BUTALBITAL COMPOUND/CODEINE, BUTALBITAL, ACETAMINOPHEN AND CAFFE, BUTALBITAL, ASPIRIN, CAFFEINE & COD,</p>

BUTALBITAL,ASPIRIN,CAFFEINE, AND CO, BUTALBITAL-ACETAMINOPHEN-CAFFEINE-C, BUTALBITAL-APAP-CAFFEINE-CODEINE, BUTALBITAL-ASPIRIN-CAFFEINE-CODEINE, BUTALBITAL/APAP/CAFF/COD, BUTALBITAL/APAP/CAFFEINE/CODEINE, BUTALBITAL/ASA/CAFF/COD, BUTALBITAL/ASPIRIN/CAFFEINE W/CODEI, BUTALBITAL/ASPIRIN/CAFFEINE/CODEINE, BUTINAL W/CODEINE, CAPITAL W/CODEINE, CARBINOXAMINE-HYDROCODONE-PSEUDOEPH, CARBINOXAMINE/HYDROCODONE/PSE, CARISOPRODOL/ASPIRIN/CODEINE, CETA PLUS, CHLORPHENIRAMINE AND CODEINE, CO-GESIC, COCET, COCET PLUS, CODAR AR, CODAR D, CODAR GF, CODEGESIC, CODEINE, CODEINE PHOSPHATE, CODEINE PHOSPHATE & ACETAMINOPHEN, CODEINE SULFATE, CODITUSSIN DAC, COMBUNOX, CONZIP, COTAB A, COTAB AX, CYTUSS-HC NR, D-TANN HC, DAMASON-P, DAZIDOX, DEMEROL, DEMEROL APAP, DEMEROL HYDROCHLORIDE, DEPODUR, DEXTROSE/MORPHINE SULFATE, DHC PLUS, DILAUDID, DILAUDID-5, DILAUDID-HP, DISKETS DISPERSIBLE, DOLACET, DOLAGESIC, DOLFEN, DOLOPHINE HCL, DOLOREX FORTE, DONATUSS DC, DROPERIDOL/FENTANYL CITRATE, DSUVIA, DUOCET, DURADYNE DHC, DURAGESIC, DURAMORPH, DVORAH, DYTAN-HC, EMBEDA, EMPIRIN W/CODEINE, EN-PAIN, ENDACOF-C, ENDOCET, ENDOCODONE, ENDODAN, ENOVARX-TRAMADOL, ETH-OXYDOSE, EXALGO, EZ III, FEBRIDYNE, FENTANYL, FENTANYL CITRATE, FENTANYL CITRATE NOVAPLUS, FENTANYL CITRATE-DEXTROSE, FENTANYL CITRATE-ROPIVACAINE HCL-SO, FENTANYL CITRATE-SODIUM CHLORIDE, FENTANYL CITRATE/ROPIVACAINE HCL/SO, FENTANYL CITRATE/SODIUM CHLORIDE, FENTANYL NOVAPLUS, FENTANYL ORALET, FENTANYL TRANSDERMAL SYSTEM, FENTANYL TRANSDERMAL SYSTEM NOVAPLU, FENTANYL TROCHE, FENTANYL/BUPIVACAINE/EPINEPHRINE/SO, FENTANYL/BUPIVACAINE/SODIUM CHLORID, FENTANYL/ROPIVACAINE/SODIUM CHLORID, FENTORA, FIORICET W/CODEINE, FIORICET WITH CODEINE, FIORINAL W/CODEINE, FIORTAL W/CODEINE, FUSEPAQ SYNAPRYN, G-2, G-3, GESIC 5, H-C TUSSIVE-NR, HC/PE/DBROM, HISTEX HC, HISTUSS HC, HISTUSSIN HC, HY-PHEN, HYCET, HYCO-PAP, HYCOMED, HYCOTAB, HYDROCET, HYDROCOD BIT & ACET, HYDROCODONE BIT & ACET, HYDROCODONE BIT AND ACET, HYDROCODONE BITART/ACET, HYDROCODONE BITART/IBU, HYDROCODONE BITARTRATE & ACET, HYDROCODONE BITARTRATE & ACETAMINOP, HYDROCODONE BITARTRATE & IBUPROFEN, HYDROCODONE BITARTRATE AND ACETAMIN, HYDROCODONE BITARTRATE AND IBUPROFE, HYDROCODONE BITARTRATE-ACETAMINOPHE, HYDROCODONE BITARTRATE-IBUPROFEN, HYDROCODONE BITARTRATE/ACETAMINOPHE, HYDROCODONE BITARTRATE/APAP, HYDROCODONE BITARTRATE/IBUPROFEN, HYDROCODONE W/ APAP, HYDROCODONE W/APAP, HYDROCODONE-APAP, HYDROCODONE-CHLORPHENIRAMINE MALEAT, HYDROCODONE/ACET, HYDROCODONE/ACETAMINOPHEN, HYDROCODONE/APAP, HYDROCODONE/IBU, HYDROCODONE/IBUPROFEN, HYDROGESIC, HYDROMORPHONE, HYDROMORPHONE HCL, HYDROMORPHONE HCL-BUPIVACAINE HCL-S, HYDROMORPHONE HCL-DEXTROSE, HYDROMORPHONE HCL-ROPIVACAINE HCL-S, HYDROMORPHONE HCL-SODIUM CHLORIDE, HYDROMORPHONE HCL/SODIUM CHLORIDE, HYDROMORPHONE HYDROCHLORIDE, HYDROMORPHONE HYDROCHLORIDE-SODIUM, HYDROSTAT IR, HYSINGLA ER, IBUDONE, IBUPROFEN W/ HYDROCODONE, INFUMORPH, INFUMORPH 200, INFUMORPH 500, INNOVAR, IONSYS, ISOLLYL W/CODEINE, J-COF DHC, KADIAN, LAZANDA, LEVO-DROMORAN, LEVORPHANOL TARTRATE, LIQUICET, LORCET, LORCET 10/650, LORCET HD, LORCET PLUS, LORCET-HD, LORTAB, LORTAB 10/325, LORTAB 10/500, LORTAB 2.5/500, LORTAB 5/325, LORTAB 5/500, LORTAB 7.5/325, LORTAB 7.5/500, LORTAB ASA, LORTAB ELIXIR, LORTAB LIQUID, M-CLEAR, M-END MAX D, M-END PE, M-END WC, MAGNACET, MAR-COF BP, MARGESIC #3, MARGESIC-H, MAXIDONE, MEDIPAIN 5, MEGAGESIC, MEGAMOR, MEPEREDINE, MEPERGAN, MEPERGAN FORTIS, MEPERIDINE, MEPERIDINE HCL, MEPERIDINE HCL-PROMETHAZINE HCL, MEPERIDINE HCL-SODIUM CHLORIDE, MEPERIDINE HCL/PROMETHAZINE HCL, MEPERIDINE HCL/SODIUM CHLORIDE, MEPERIDINE HYDROCHLORIDE, MEPERIDINE HYDROCHLORIDE-SODIUM CHL, MEPERIDINE HYDROCHLORIDE/PROMETHAZI, MEPERIDINE-PROMETHAZINE, MEPERIDINE/PROMETHAZINE, MEPERITAB, Meprozone, METHADONE, METHADONE DISP, METHADONE HCL, METHADONE HCL CONCENTRATE, METHADONE HCL INTENSOL, METHADONE HCL-SODIUM CHLORIDE, METHADONE HYDROCHLORIDE, METHADOSE, METHADOSE DISP, MITIGO, MORPHABOND ER, MORPHINE, MORPHINE SULF, MORPHINE SULFATE, MORPHINE SULFATE CONTROLLED RELEASE, MORPHINE SULFATE CR, MORPHINE SULFATE ER, MORPHINE SULFATE IMMEDIATE RELEASE, MORPHINE SULFATE IN 5% DEXTROSE, MORPHINE SULFATE IN SODIUM CHLORIDE, MORPHINE SULFATE IR, MORPHINE SULFATE-BUPIVACAINE HCL-SO, MORPHINE SULFATE-SODIUM CHLORIDE, MORPHINE SULFATE/SODIUM CHLORIDE, MORPHINE-DEXTROSE, MORPHINE-SODIUM CHLORIDE, MS CONTIN, MS/L, MS/L CONCENTRATE, MS/S, MSIR, NALOCET, NALOXONE HCL/PENTAZOCINE, NALOXONE HYDROCHLORIDE/PENTAZOCINE, NALOXONE/PENTAZOCINE, NARVOX, NINJACOF-XG, NORCET, NORCO, NOTUSS-AC, NOTUSS-PE, NOVAPLUS ALFENTANIL, NOVAPLUS FENTANYL, NOVAPLUS FENTANYL TRANSDERMAL SYSTE, NUCYN TA, NUCYN TA ER, NUMORPHAN HCL, OMS, ONCET, ONSOLIS, OPANA, OPANA ER, OPIUM, ORAL TRANSMUCOSAL FENTANYL CITRATE, ORAMORPH SR, ORLAAM, OXAYDO, OXECTA, OXY IR, OXYCODONE, OXYCODONE AND ACETAMINOPHEN, OXYCODONE CR, OXYCODONE HCL, OXYCODONE HCL AND ACETAMINOPHEN, OXYCODONE

HCL CR, OXYCODONE HCL-ACETAMINOPHEN, OXYCODONE HCL-ACETAMINOPHEN AVPAK, OXYCODONE HCL-ASPIRIN, OXYCODONE HCL-IBUPROFEN, OXYCODONE HCL-OXYCODONE TEREPHTHALA, OXYCODONE HCL/OXYCODONE TEREPHTHALA, OXYCODONE HYDROCHLORIDE, OXYCODONE HYDROCHLORIDE AND IBUPROFEN, OXYCODONE HYDROCHLORIDE CR, OXYCODONE HYDROCHLORIDE/ACETAMINOPHEN, OXYCODONE W/APAP, OXYCODONE W/ASPIRIN, OXYCODONE-ACETAMINOPHEN, OXYCODONE-APAP, OXYCODONE-ASPIRIN, OXYCODONE/ACETAMINOPHEN, OXYCODONE/APAP, OXYCONTIN, OXYCONTIN CR, OXYCONTIN HYDROCHLORIDE ER, OXYFAST, OXYMORPHONE HCL, OXYMORPHONE HYDROCHLORIDE, PALLADONE, PANACET 5/500, PANASAL 5/500, PANLOR, PANLOR DC, PANLOR SS, PANLOR-DC, PANLOR-SS, PENTAZOCIN/NALOXONE, PENTAZOCINE AND NALOXONE HYDROCHLORIDE, PENTAZOCINE HCL-ACETAMINOPHEN, PENTAZOCINE HCL-NALOXONE HCL, PENTAZOCINE HYDROCHLORIDE/NALOXONE, PENTAZOCINE/APAP, PENTAZOCINE/NALOXONE, PERCOCET, PERCODAN, PERCODAN DEMI, PERCOLONE, PERLOXX, PHENAPHEN W/CODEINE, PHENAPHEN-650 W/CODEINE, PHENDACOF PLUS, PHRENILIN W/CAFFEINE/CODEINE, PHRENILIN WITH CAFFEINE AND CODEINE, PLURATUSS, POLY HIST DHC, POLY-TUSSIN, POLY-TUSSIN AC, POLY-TUSSIN EX, POLYGESIC, PREMIERPRO RX ALFENTANIL HCL, PRIMALEV, PRIMLEV, PROCET, PROPAIN HC, PYREGESIC-C, RELATUSS HC, REMIFENTANIL HCL-SODIUM CHLORIDE, REMIFENTANIL HYDROCHLORIDE, REPRESXAIN, RESCUDOSE, RID-A-PAIN W/CODEINE, RMS, RO-CODONE, ROXANOL, ROXANOL UD, ROXANOL-T, ROXICET, ROXICODONE, ROXICODONE INTENSOL, ROXIPRIN, ROXYBOND, RYBIX ODT, RYZOLT, SIMPLIST DILAUDID, SOMA COMPOUND W/CODEINE, STAGESIC, STAGESIC-10, SUBLIMAZE, SUBSYS, SUFENTA, SUFENTANIL CITRATE, SUFENTANIL CITRATE NOVAPLUS, SUFENTANIL CITRATE-BUPIVACAINE HCL-, SUFENTANIL CITRATE-ROPIVACAINE HCL-, SYMTAN, SYMTAN A, SYNALGOS-DC, T-GESIC, TALACEN, TALWIN, TALWIN COMPOUND, TALWIN LACTATE, TALWIN NX, THERACODOPHEN-325, THERACODOPHEN-750, THERACODOPHEN-LOW-90, THERATRAMADOL-60, THERATRAMADOL-90, TL-HIST CD, TL-HIST CM, TRAMADOL, TRAMADOL HCL, TRAMADOL HCL-ACETAMINOPHEN, TRAMADOL HCL/ACETAMINOPHEN, TRAMADOL HCL/ACETAMINOPHEN AVPAK, TRAMADOL HCL-HYDROCHLORIDE, TRAMADOL HYDROCHLORIDE & APAP, TRAMADOL HYDROCHLORIDE AND ACETAMIN, TRAMADOL HYDROCHLORIDE-ACETAMINOPHEN, TRAMADOL HYDROCHLORIDE/ACETAMINOPHEN, TRAMADOL HYDROCHLORIDE/APAP, TRAMADOL/ACETAMINOPHEN, TRAMADOL/APAP, TREZIX, TRI-VENT HC, TRICODE AR, TRICODE GF, TUSSPLEX, TUXARIN ER, TYLENOL W/CODEINE, TYLENOL W/CODEINE #1, TYLENOL W/CODEINE #2, TYLENOL W/CODEINE #3, TYLENOL W/CODEINE #4, TYLENOL W/CODEINE NO 4, TYLENOL WITH CODEINE, TYLENOL WITH CODEINE NO. 3, TYLENOL WITH CODEINE NO. 4, TYLOX, UGESIC, ULTIVA, ULTRACET, ULTRAM, ULTRAM ER, VANACET, VENDONE, VERDROCET, VICODIN, VICODIN ES, VICODIN HP, VICOPROFEN, VOPAC, XARTEMIS XR, XODOL, XODOL 5/300, XODOL 7.5/300, XOLOX, XTAMPZA ER, XYLON 10, Z-TUSS AC, Z-TUSS E, ZAMICET, ZERLOR, ZOXYDOL ER, ZOLVIT, ZUTRIPRO, ZYDONE

SSRI/SNRI

BRISDELLE, CELEXA, CITALOPRAM, CITALOPRAM HYDROBROMIDE, CYMBALTA, DERMACINRX DPN PAK, DESVENLAFAXINE, DULOXETINE, DULOXETINE HCL, DULOXETINE HCL AVPAK, DULOXETINE HYDROCHLORIDE, EFFEXOR, EFFEXOR XR, EFFEXOR-XR, ESCITALOPRAM, ESCITALOPRAM OXALATE, FETZIMA, FETZIMA TITRATION PACK, FLUOXETINE, FLUOXETINE HCL, FLUOXETINE HCL AVPAK, FLUOXETINE HYDROCHLORIDE, FLUVOXAMINE, FLUVOXAMINE MALEATE, GABOXETINE, IRENKA, KHEDEZLA, LEXAPRO, LUVOX, LUVOX CR, PAROXETIN, PAROXETINE, PAROXETINE HCL, PAROXETINE HCL AVPAK, PAROXETINE HYDROCHLORIDE, PAROXETINE MESYLATE, PAXIL, PAXIL CR, PEVEVA, PRISTIQ, PROZAC, PROZAC WEEKLY, RAPIFLUX, SARAFEM, SELFEMRA, SENTRAFLOX AM-10, SENTROXATINE, SERTRALINE, SERTRALINE HCL, SERTRALINE HYDROCHLORIDE, VENLAFAXINE, VENLAFAXINE HCL, VENLAFAXINE HCL AVPAK, VENLAFAXINE HCL XR, VENLAFAXINE HYDROCHLORIDE, VIIBRYD, VIIBRYD STARTER PACK, VIIBRYD TITRATION PACK, ZOLOFT

Supplementary Table 4. ICD-10 Diagnosis Codes for Falls and Fractures

Fall ICD-10-CM	Fracture ICD-10-CM							
W00.x	S02.0XXA	S06.336A	S14.101A	S32.810B	S42.493A	S62.123B	S72.453B	S92.109A
W01.x	S02.0XXB	S06.337A	S14.102A	S32.811A	S42.493B	S62.126A	S72.453C	S92.109B
W05.x-W19.x	S02.101A	S06.338A	S14.103A	S32.811B	S42.496A	S62.126B	S72.456A	S92.201A
V00.11	S02.101B	S06.339A	S14.104A	S32.82XA	S42.496B	S62.133A	S72.456B	S92.201B
V00.13	S02.102A	S06.360A	S14.105A	S32.82XB	S42.90XA	S62.133B	S72.456C	S92.202A
V00.14	S02.102B	S06.361A	S14.106A	S32.89XA	S42.90XB	S62.136A	S72.499A	S92.202B
V00.15	S02.109A	S06.362A	S14.107A	S32.89XB	S42.91XA	S62.136B	S72.499B	S92.209A
V00.31	S02.109B	S06.363A	S14.111A	S32.9XXA	S42.91XB	S62.143A	S72.499C	S92.209B
V00.32	S02.2XXA	S06.364A	S14.112A	S32.9XXB	S42.92XA	S62.143B	S72.90XA	S92.213A
	S02.2XXB	S06.365A	S14.113A	S34.131A	S42.92XB	S62.146A	S72.90XB	S92.213B
	S02.30XA	S06.366A	S14.114A	S34.132A	S52.009A	S62.146B	S72.90XC	S92.216A
	S02.30XB	S06.367A	S14.115A	S34.139A	S52.009B	S62.153A	S72.90XE	S92.216B
	S02.31XA	S06.368A	S14.116A	S34.3XXA	S52.009C	S62.153B	S72.91XA	S92.223A
	S02.31XB	S06.369A	S14.117A	S42.009A	S52.011A	S62.156A	S72.91XE	S92.223B
	S02.32XA	S06.4X0A	S14.121A	S42.009B	S52.012A	S62.156B	S72.92XA	S92.226A
	S02.32XB	S06.4X1A	S14.122A	S42.013A	S52.019A	S62.163A	S72.92XE	S92.226B
	S02.400A	S06.4X2A	S14.123A	S42.013B	S52.023A	S62.163B	S82.009A	S92.233A
	S02.400B	S06.4X3A	S14.124A	S42.016A	S52.023B	S62.166A	S82.009B	S92.233B
	S02.401A	S06.4X4A	S14.125A	S42.016B	S52.023C	S62.166B	S82.009C	S92.236A
	S02.401B	S06.4X5A	S14.126A	S42.019A	S52.026A	S62.173A	S82.101A	S92.236B
	S02.402A	S06.4X6A	S14.127A	S42.019B	S52.026B	S62.173B	S82.101B	S92.243A
	S02.402B	S06.4X7A	S14.131A	S42.023A	S52.026C	S62.176A	S82.102A	S92.243B
	S02.40AA	S06.4X8A	S14.132A	S42.023B	S52.043A	S62.176B	S82.102B	S92.246A
	S02.40AB	S06.4X9A	S14.133A	S42.026A	S52.043B	S62.183A	S82.109A	S92.246B
	S02.40BA	S06.5X0A	S14.134A	S42.026B	S52.043C	S62.183B	S82.109B	S92.253A
	S02.40BB	S06.5X1A	S14.135A	S42.033A	S52.046A	S62.186A	S82.109C	S92.253B
	S02.40CA	S06.5X2A	S14.136A	S42.033B	S52.046B	S62.186B	S82.161A	S92.256A
	S02.40CB	S06.5X3A	S14.137A	S42.036A	S52.046C	S62.233A	S82.162A	S92.256B
	S02.40DA	S06.5X4A	S14.151A	S42.036B	S52.099A	S62.233B	S82.169A	S92.301A
	S02.40DB	S06.5X5A	S14.152A	S42.109A	S52.099B	S62.236A	S82.201A	S92.301B
	S02.40EA	S06.5X6A	S14.153A	S42.109B	S52.099C	S62.236B	S82.201B	S92.302A
	S02.40EB	S06.5X7A	S14.154A	S42.113A	S52.109A	S62.309A	S82.201C	S92.302B
	S02.40FA	S06.5X8A	S14.155A	S42.113B	S52.109B	S62.309B	S82.202A	S92.309A
	S02.40FB	S06.5X9A	S14.156A	S42.116A	S52.109C	S62.319A	S82.202B	S92.309B
	S02.42XA	S06.6X0A	S14.157A	S42.116B	S52.111A	S62.319B	S82.209A	S92.403A
	S02.42XB	S06.6X1A	S22.019A	S42.123A	S52.112A	S62.329A	S82.209B	S92.403B
	S02.600A	S06.6X2A	S22.019B	S42.123B	S52.119A	S62.329B	S82.209C	S92.406A
	S02.600B	S06.6X3A	S22.029A	S42.126A	S52.123A	S62.339A	S82.311A	S92.406B
	S02.601A	S06.6X4A	S22.029B	S42.126B	S52.123B	S62.339B	S82.312A	S92.503A
	S02.601B	S06.6X5A	S22.039A	S42.133A	S52.123C	S62.349A	S82.319A	S92.503B
	S02.602A	S06.6X6A	S22.039B	S42.133B	S52.126A	S62.349B	S82.401A	S92.506A
	S02.602B	S06.6X7A	S22.049A	S42.136A	S52.126B	S62.359A	S82.401B	S92.506B
	S02.609A	S06.6X8A	S22.049B	S42.136B	S52.126C	S62.359B	S82.401C	S92.819A
	S02.609B	S06.6X9A	S22.059A	S42.143A	S52.133A	S62.369A	S82.402A	S92.819B
	S02.610A	S06.890A	S22.059B	S42.143B	S52.133B	S62.369B	S82.402B	S92.909A
	S02.610B	S06.891A	S22.069A	S42.146A	S52.133C	S62.399A	S82.409A	S92.909B
	S02.611A	S06.892A	S22.069B	S42.146B	S52.136A	S62.399B	S82.409B	S99.109A
	S02.611B	S06.893A	S22.079A	S42.153A	S52.136B	S62.509A	S82.409C	S99.109B
	S02.612A	S06.894A	S22.079B	S42.153B	S52.136C	S62.509B	S82.53XA	S99.119A
	S02.612B	S06.895A	S22.089A	S42.156A	S52.189A	S62.513A	S82.53XB	S99.119B
	S02.620A	S06.896A	S22.089B	S42.156B	S52.189B	S62.513B	S82.53XC	S99.129A

S02.620B	S06.897A	S22.20XA	S42.199A	S52.189C	S62.516A	S82.56XA	S99.129B
S02.621A	S06.898A	S22.20XB	S42.199B	S52.209A	S62.516B	S82.56XB	S99.139A
S02.621B	S06.899A	S22.39XA	S42.209A	S52.209B	S62.523A	S82.56XC	S99.139B
S02.622A	S06.9X0A	S22.39XB	S42.209B	S52.209C	S62.523B	S82.63XA	S99.149A
S02.622B	S06.9X1A	S22.49XA	S42.213A	S52.279A	S62.526A	S82.63XB	S99.149B
S02.630A	S06.9X2A	S22.49XB	S42.213B	S52.279B	S62.526B	S82.63XC	S99.199A
S02.630B	S06.9X3A	S22.5XXA	S42.216A	S52.279C	S62.609A	S82.66XA	S99.199B
S02.631A	S06.9X4A	S22.5XXB	S42.216B	S52.309A	S62.609B	S82.66XB	
S02.631B	S06.9X5A	S22.9XXA	S42.253A	S52.309B	S62.619B	S82.66XC	
S02.632A	S06.9X6A	S22.9XXB	S42.253B	S52.309C	S62.629A	S82.811A	
S02.632B	S06.9X7A	S24.101A	S42.256A	S52.509A	S62.629B	S82.812A	
S02.640A	S06.9X8A	S24.102A	S42.256B	S52.509B	S62.639A	S82.819A	
S02.640B	S06.9X9A	S24.103A	S42.293A	S52.509C	S62.639B	S82.821A	
S02.641A	S12.000A	S24.104A	S42.293B	S52.521A	S62.649A	S82.822A	
S02.641B	S12.000B	S24.111A	S42.295A	S52.522A	S62.649B	S82.829A	
S02.642A	S12.001A	S24.112A	S42.296A	S52.529A	S62.659A	S82.831A	
S02.642B	S12.001B	S24.113A	S42.296B	S52.539A	S62.659B	S82.831B	
S02.650A	S12.100A	S24.114A	S42.309A	S52.539B	S62.669A	S82.832A	
S02.650B	S12.100B	S24.131A	S42.309B	S52.539C	S62.669B	S82.832B	
S02.651A	S12.101A	S24.132A	S42.399A	S52.549A	S62.90XA	S82.839A	
S02.651B	S12.101B	S24.133A	S42.399B	S52.609A	S62.90XB	S82.839B	
S02.652A	S12.200A	S24.134A	S42.409A	S52.609B	S72.009A	S82.839C	
S02.652B	S12.200B	S24.151A	S42.409B	S52.609C	S72.009B	S82.843A	
S02.66XA	S12.2018	S24.152A	S42.413A	S52.621A	S72.009C	S82.843B	
S02.66XB	S12.201A	S24.153A	S42.413B	S52.622A	S72.309A	S82.843C	
S02.670A	S12.300A	S24.154A	S42.416A	S52.629A	S72.309B	S82.846A	
S02.670B	S12.300B	S32.10XA	S42.416B	S52.90XA	S72.309C	S82.846B	
S02.671A	S12.301A	S32.10XB	S42.433A	S52.90XB	S72.409A	S82.846C	
S02.671B	S12.301B	S32.2XXA	S42.436A	S52.90XC	S72.409B	S82.853A	
S02.672A	S12.400A	S32.2XXB	S42.443A	S52.91XA	S72.409C	S82.853B	
S02.672B	S12.400B	S32.309A	S42.446A	S52.91XB	S72.413A	S82.853C	
S02.69XA	S12.401A	S32.309B	S42.453A	S52.92XA	S72.413B	S82.856A	
S02.69XB	S12.401B	S32.409A	S42.453B	S52.92XB	S72.413C	S82.856B	
S02.91X6	S12.500A	S32.409B	S42.456A	S59.109A	S72.416A	S82.856C	
S02.91XA	S12.500B	S32.501A	S42.456B	S62.009A	S72.416B	S82.899A	
S02.92X6	S12.501A	S32.501B	S42.463A	S62.009B	S72.416C	S82.899B	
S02.92XA	S12.501B	S32.502A	S42.463B	S62.109A	S72.443A	S82.899C	
S06.330A	S12.600A	S32.502B	S42.466A	S62.109B	S72.443B	S82.90XA	
S06.331A	S12.600B	S32.509A	S42.466B	S62.113A	S72.443C	S82.90XB	
S06.332A	S12.601A	S32.509B	S42.473A	S62.113B	S72.446A	S82.91XA	
S06.333A	S12.601B	S32.609A	S42.473B	S62.116A	S72.446B	S82.91XB	
S06.334A	S12.8XXA	S32.609B	S42.476A	S62.116B	S72.446C	S82.92XA	
S06.335A	S12.9XXA	S32.810A	S42.476B	S62.123A	S72.453A	S82.92XB	

Supplementary Table 5. Stratified Hazard Ratios^a for the Association of Drug Combination and Fall, Stratifying by Alzheimer's/Non-Alzheimer's

Drug Combo		Alzheimer's	No Alzheimer's
	Benzo + Opioid	REF	REF
	≥3 combination	1.26 (0.99, 1.59)	1.71 (1.22, 2.39)
	Benzo + GABA	0.87 (0.72, 1.05)	1.53 (1.16, 2.02)
	Benzo + SSRI or SNRI	0.70 (0.54, 0.91)	1.30 (0.92, 1.85)
	GABA + SSRI or SNRI	1.00 (0.82, 1.22)	1.17 (0.86, 1.59)
	Opioid + GABA	1.10 (0.92, 1.32)	1.41 (1.07, 1.87)
	Opioid + SSRI or SNRI	1.04 (0.86, 1.26)	1.27 (0.93, 1.74)

^aBased off the fully adjusted multivariate model (model 3) from the main analysis.

Supplementary Table 6. Standardized Differences^a for all Pairwise Comparisons Before and After Inverse Probability of Treatment Weighting with Propensity Score

	Standardized Differences Compared to Benzo/Opioid Before IPTW with Propensity Score							Standardized Differences Compared to Benzo/Opioid After IPTW with Propensity Score - Falls Model							Standardized Differences Compared to Benzo/Opioid After IPTW with Propensity Score - Fractures Model							
	Benzo/ GABA	Benzo/ SSRI	Opioid/ GABA	Opioid/ SSRI	GABA/ SSRI	3+ Combo	Max Diff ^b	Benzo/ GABA	Benzo/ SSRI	Opioid/ GABA	Opioid/ SSRI	GABA/ SSRI	3+ Combo	MAX Diff ^b	Benzo/ GABA	Benzo/ SSRI	Opioid/ GABA	Opioid/ SSRI	GABA/ SSRI	3+ Combo	MAX Diff ^b	
	Sex	0.1464	0.0668	0.0807	-0.0297	0.071	0.0851	0.1464	-0.0054	-0.0075	-0.0036	-0.0083	0.0017	-0.0131	0.0131	-0.0051	-0.0067	-0.0031	-0.0083	0.0029	-0.0143	0.0143
Age	0.0302	0.0439	0.0287	0.0592	0.0561	0.1297	0.1297	0.0293	0	0	0.0218	0.0218	0.0218	0.0293	0.0293	0	0	0.0218	0.0218	0.0218	0.0218	0.0293
Race	0.2496	0.1511	0.0845	0.1222	0.095	0.0614	0.2496	0.044	0.0789	0	0	0	0.0642	0.0789	0.044	0.0789	0	0	0	0.044	0.0789	
Region	0.219	0.1665	0.073	0.0337	0.1315	0.0587	0.219	0	0.0289	0.0289	0.0289	0	0.0289	0.0289	0	0.0289	0.0289	0.0289	0	0.0289	0.0289	
Original Entitlement	0.2563	0.1666	0.0551	-0.0339	0.1263	-0.0683	0.2563	-0.0104	-0.0115	-0.0032	-0.0051	0.0095	-0.0018	0.0115	-0.0103	-0.0119	-0.0031	-0.0051	0.0095	-0.0037	0.0119	
Medicaid Dual Eligibility	-0.1911	-0.1131	0.0144	0.0911	-0.0116	0.079	0.1911	0.0108	0.0064	-0.0037	-0.0002	-0.0087	-0.0075	0.0108	0.0109	0.008	-0.0037	-0.0004	-0.0087	-0.0051	0.0109	
History of Fall	-0.0343	-0.0504	0.1333	0.0406	0.1054	0.1461	0.1461	0.0078	-0.0017	0.0013	-0.016	-0.0073	-0.0112	0.016	0	0	0	0	0	0	0	
History of Fracture	-0.0381	-0.0599	0.0804	0.0273	0.0392	0.1019	0.1019	0	0	0	0	0	0	0	0.0125	0.0136	0.0023	-0.0032	0.0007	0.0064	0.0136	
History of Hospitalization	-0.1479	-0.1045	0.0974	0.1497	0.0626	0.1776	0.1776	0.0241	0.0131	0.0038	0.0104	-0.0089	-0.0038	0.0241	0.024	0.0144	0.0034	0.0107	-0.0085	-0.0019	0.024	
Alcohol Use Disorders	-0.0122	0.0016	0.039	0.0436	0.0467	0.0321	0.0467	0.0146	0.0032	-0.0004	0.0092	0.0079	-0.0027	0.0146	0.0139	0.0037	-0.001	0.0091	0.0075	-0.0019	0.0139	
Alzheimer/Dementia	0.0994	0.4384	0.1967	0.0875	0.1852	0.1694	0.4384	0.017	0.0079	-0.0084	-0.0035	-0.002	-0.0092	0.017	0.0175	0.0092	-0.0078	-0.0023	-0.002	-0.0098	0.0175	
Arthritis	-0.2094	-0.083	0.1064	0.1546	-0.0055	0.0192	0.2094	-0.003	-0.0082	-0.0147	-0.0048	-0.0048	-0.0054	0.0147	-0.0029	-0.0082	-0.015	-0.0043	-0.0048	-0.0038	0.015	
Asthma	-0.0443	-0.0334	-0.0059	0.0327	0.0317	0.0278	0.0443	0.0002	-0.0039	-0.0203	-0.014	-0.0014	-0.0209	0.0209	0.0003	-0.0029	-0.02	-0.014	-0.0003	-0.0211	0.0211	
Cancer	-0.0218	0.0309	-0.0132	-0.0106	-0.0149	-0.0285	0.0309	-0.0017	-0.0008	-0.0049	0.004	-0.0016	0.0086	0.0086	-0.0026	-0.0013	-0.0051	0.0042	-0.0027	0.0106	0.0106	
CKD	-0.1258	-0.0386	0.0873	0.1805	0.1347	0.0999	0.1805	0.0114	0.0153	0.0053	0.0137	-0.0011	-0.002	0.0153	0.0113	0.0142	0.0056	0.0131	-0.0024	-0.0008	0.0142	
COPD	-0.1766	-0.1467	-0.0095	0.0445	-0.0413	0.0384	0.1766	0.0138	0.0069	0.0046	0.0047	-0.0036	-0.0085	0.0138	0.0139	0.0089	0.0045	0.0048	-0.0033	-0.0075	0.0139	
Depression	0.4736	0.1887	0.5993	0.181	0.6425	0.5622	0.6425	0.0229	0.0041	-0.0059	0.0105	0.0041	-0.0009	0.0229	0.0231	0.0061	-0.0064	0.0111	0.0051	-0.0009	0.0231	
Diabetes	-0.0601	0.0525	0.093	0.219	0.2556	0.1142	0.2556	-0.0002	0.0069	-0.0022	-0.0028	-0.0032	-0.0147	0.0147	-0.0007	0.0061	-0.0035	-0.0036	-0.0039	-0.0135	0.0135	
Drug Abuse	-0.2264	-0.165	-0.0042	0.0647	-0.1161	0.0578	0.2264	0.0167	0.019	0.0031	0.0016	0.0012	-0.0067	0.019	0.0178	0.0189	0.0026	0.0015	0.0014	-0.0055	0.0189	
Epilepsy	0.0042	0.032	0.0456	0.0379	0.0691	0.1023	0.1023	0.0184	0.0008	0.0006	-0.0042	-0.0031	-0.0047	0.0184	0.0189	0	0.0009	-0.0037	-0.0027	-0.005	0.0189	
Hearing Impairment	0.0747	0.05	0.0693	0.0545	0.0949	0.026	0.0949	-0.0112	-0.0077	-0.0069	-0.0001	0.0021	0.0029	0.0112	-0.0112	-0.0076	-0.0064	0	0.0012	0.0033	0.0112	
Hip/Pelvic Fracture	-0.0064	-0.0535	0.0673	0.0014	0.0078	0.0615	0.0673	0.0139	-0.0027	-0.0034	-0.0035	-0.0011	0.0049	0.0139	0.0148	0.0009	-0.0028	-0.0032	-0.0018	0.0068	0.0148	
Liver Disease	-0.0367	-0.0056	0.0033	0.0465	0.0243	0.0387	0.0465	-0.0127	0.0033	-0.0257	0.0101	-0.0315	0.0005	0.0315	-0.0135	0.0031	-0.0258	0.0096	-0.0309	0.0003	0.0309	
Migraine/Headache	0.0004	0.0534	-0.0144	-0.0193	0.0261	0.0542	0.0542	-0.0025	-0.0113	-0.005	0.0061	-0.0072	-0.0078	0.0113	-0.0025	-0.0098	-0.0035	0.0059	-0.008	-0.0082	0.0098	
Mobility Impairment	0.0101	0.0326	0.0845	0.1308	0.1654	0.1066	0.1654	0.0081	0.0018	-0.0059	-0.0084	-0.0108	-0.0063	0.0108	0.0065	0.0035	-0.0057	-0.0083	-0.011	-0.0065	0.011	
Obesity	-0.0384	0.0331	0.1365	0.1948	0.2336	0.1589	0.2336	0.0119	0.0144	0.008	0.0072	0.0069	0.0029	0.0144	0.0122	0.015	0.0076	0.0066	0.0068	0.0026	0.015	
Osteoporosis	-0.0125	-0.005	0.052	0.0088	-0.007	-0.0021	0.052	-0.0137	-0.012	-0.009	-0.005	-0.0056	-0.006	0.0137	-0.0135	-0.012	-0.0083	-0.004	-0.0058	-0.0041	0.0135	
Spine Injury	-0.0516	-0.0382	0.025	0.0232	0.0135	0.0484	0.0516	0.0127	0.0024	-0.002	-0.0015	0.002	-0.0034	0.0127	0.0124	0.0035	-0.0013	-0.0013	0.0027	-0.0025	0.0124	
Vision Impairment	0.1008	0.0973	-0.0147	-0.0037	0.0801	0.0324	0.1008	-0.0112	-0.0084	-0.0073	0.001	-0.0036	-0.0041	0.0112	-0.0108	-0.008	-0.0067	0.0011	-0.0035	-0.0034	0.0108	

^aStandardized differences across six pairwise comparisons between each drug combination group and the opioid/benzodiazepine group before IPTW with propensity score and after IPTW with propensity score for the falls and fractures models.

^bThe maximum difference is the absolute value of the maximum standardized difference across six pairwise comparisons between each drug combination group and the opioid/benzodiazepine group, presented to illustrate the covariate balance after IPTW with propensity score.

Supplementary Table 7. Sensitivity Analyses

Drug Combination	Excluding Cancer Patients ^a (n=41047)		3 Month Lookback ^a (n=25040)	
	Fall	Fracture	Fall	Fracture
Benzo + Opioid	REF	REF	REF	REF
≥3 drugs	1.41 (1.15, 1.73)	1.43 (1.04, 1.96)	1.21 (0.90, 1.62)	1.32 (0.86, 2.02)
Benzo + GABA	1.04 (0.88, 1.23)	0.75 (0.56, 0.99)	1.01 (0.82, 1.25)	0.76 (0.53, 1.08)
Benzo + SSRI/SNRI	0.90 (0.72, 1.12)	0.82 (0.57, 1.18)	0.77 (0.57, 1.03)	0.64 (0.39, 1.06)
GABA + SSRI/SNRI	1.00 (0.83, 1.20)	1.05 (0.79, 1.40)	1.02 (0.80, 1.30)	1.06 (0.73, 1.53)
Opioid + GABA	1.16 (0.99, 1.37)	1.21 (0.94, 1.56)	1.32 (1.08, 1.62)	1.44 (1.06, 1.95)
Opioid + SSRI/SNRI	1.07 (0.89, 1.28)	1.15 (0.87, 1.51)	1.17 (0.94, 1.46)	1.12 (0.80, 1.59)

^aThe sensitivity analyses were fully adjusted for all demographic and clinical characteristics, as in the fully adjusted multivariable model from the main analysis, but hazard ratios characteristics are not presented in this table for the sake of brevity.

Supplementary Table 8. Demographics Comparison the Cohorts from the Primary Analysis and the Sensitivity Analyses

		Primary Analysis		No Cancer		3 Month Lookback	
		N	%	N	%	N	%
Total		47,964	100%	41,047	100%	25,040	100%
Drug Combo	Benzo/Opioid	10,261	21.4%	8,750	21.3%	5,150	20.6%
	3+ Combo	5,499	11.5%	4,718	11.5%	2,644	10.6%
	Benzo + GABA	2,775	5.8%	2,394	5.8%	1,261	5.0%
	Benzo + SSRI or SNRI	9,541	19.9%	8,209	20.0%	5,215	20.8%
	GABA + SSRI or SNRI	4,420	9.2%	3,720	9.1%	2,313	9.2%
	Opioid + GABA	8,625	18.0%	7,395	18.0%	4,705	18.8%
	Opioid + SSRI or SNRI	6,843	14.3%	5,861	14.3%	3,752	15.0%
Sex	Male	10,570	22.0%	8,746	21.3%	5,651	22.6%
	Female	37,394	78.0%	32,301	78.7%	19,389	77.4%
Age (mean, SD)		75.9	7.1	75.8	7.2	76.4	7.3
Age Category	65-74	22,662	47.2%	19,775	48.2%	11,217	44.8%
	75-84	17,993	37.5%	15,134	36.9%	9,619	38.4%
	85+	7,309	15.2%	6,138	15.0%	4,204	16.8%
Race	White	42,008	87.6%	35,846	87.3%	21,690	86.6%
	Black	2,579	5.4%	2,226	5.4%	1,416	5.7%
	Hispanic	2,168	4.5%	1,929	4.7%	1,239	4.9%
	Other	1,209	2.5%	1,046	2.5%	695	2.8%
Region	MW	11,107	23.2%	9,571	23.3%	5,706	22.8%
	NE	8,204	17.1%	6,853	16.7%	4,524	18.1%
	SO	20,784	43.3%	17,907	43.6%	10,588	42.3%
	WE	7,869	16.4%	6,716	16.4%	4,222	16.9%
Original Entitlement	Disabled/ESRD	13,297	27.7%	11,603	28.3%	6,352	25.4%
Medicaid Dual Eligibility	Old Age	34,667	72.3%	29,444	71.7%	18,688	74.6%
Number of days on drug combo	No	35,329	73.7%	29,985	73.1%	18,491	73.8%
	Yes	12,635	26.3%	11,062	26.9%	6,549	26.2%
History of Fall	Mean, SD	32.0	32.3	32.4	32.5	28.2	26.4
	Median, Q1-Q3	26	14-30	26	14-30	23	13-30
History of Fracture		8,437	17.6%	7,090	17.3%	4,261	17.0%
History of Hospitalization		3,537	7.4%	2,921	7.1%	1,829	7.3%
		20,997	43.8%	17,213	41.9%	10,770	43.0%
Chronic Conditions	Alcohol Use Disorders	2,131	4.4%	1,830	4.5%	1,100	4.4%
	Alzheimer/Dementia	10,202	21.3%	8,748	21.3%	5,474	21.9%
	Arthritis	37,490	78.2%	32,155	78.3%	19,343	77.2%
	Asthma	6,543	13.6%	5,560	13.5%	3,391	13.5%
	Cancer	6,917	14.4%	0	0.0%	3,702	14.8%
	CKD	18,364	38.3%	15,378	37.5%	9,426	37.6%
	COPD	14,217	29.6%	11,790	28.7%	7,098	28.3%
	Depression	29,905	62.3%	25,512	62.2%	14,733	58.8%
	Diabetes	17,962	37.4%	15,305	37.3%	9,254	37.0%
	Drug Use Disorder	5,038	10.5%	4,302	10.5%	2,163	8.6%
	Epilepsy	2,075	4.3%	1,787	4.4%	1,061	4.2%
	Hearing Impairment	4,553	9.5%	3,823	9.3%	2,476	9.9%
	Hip/Pelvic Fracture	1,001	2.1%	807	2.0%	532	2.1%
	Liver Disease	3,870	8.1%	3,149	7.7%	2,000	8.0%
	Migraine/Headache	4,362	9.1%	3,799	9.3%	2,171	8.7%
	Mobility Impairment	2,744	5.7%	2,357	5.7%	1,445	5.8%
	Obesity	13,994	29.2%	11,994	29.2%	6,995	27.9%
	Osteoporosis	7,817	16.3%	6,466	15.8%	4,020	16.1%
	Spine Injury	1,154	2.4%	939	2.3%	573	2.3%
	Vision Impairment	14,508	30.2%	12,410	30.2%	7,713	30.8%