

## Supplementary Online Content

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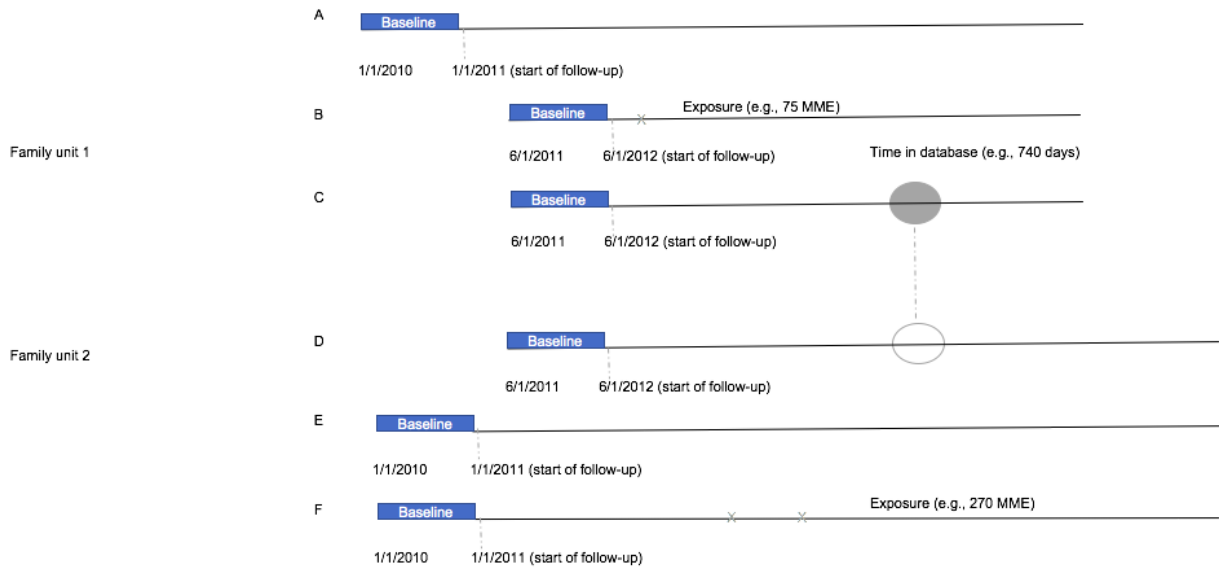
**eTable 4.** Immediate-release/short-acting (IR/SA) non-steroidal anti-inflammatory drugs.

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

**eFigure 1. Matched case-control study design for an exposed case and exposed control**



<sup>a</sup>A case from family unit 1 is matched to a control from family unit 2 by time in the database, calendar time, age at the start of follow-up, sex, and number of individuals in the family unit at the start of follow-up. In this scenario, family member opioid dispensings are assessed in the calendar time preceding the matched index date.

**eTable 1. Opioid drugs list**

<b>Parent drug class</b>	<b>Name</b>
Natural opium alkaloids	Morphine
	Hydromorphone
	Nicomorphine
	Oxycodone
	Dihydrocodeine
	Oxycodone combination
	Dihydrocodeine, combinations
	Morphine, combinations
Phenylpiperidine derivatives	Codeine, combinations excluding psycholeptics
	Ketobemidone
	Pethidine/meperidine
	Fentanyl
Diphenylpropylamine derivatives	Pethidine, combinations excluding psycholeptics
	Dextromoramide
	Piritramide
	Dextropropoxyphene
	Bezitramide
	Methadone, combinations excluding psycholeptics
Benzomorphan derivatives	Dextropropoxyphene, combinations excluding psycholeptics
	Pentazocine
Oripavine derivatives	Phenazocine
	Buprenorphine
Morphinan derivatives	Butorphanol
	Nalbuphine
Other opioids	Tilidine
	Tapendatol
	Tramadol
	Dezocine
	Meptazinol
Tramadol, combinations	

**eTable 2. ICD-9-CM code definitions of comorbidities**

<b>Variable</b>	<b>ICD-9 codes</b>
Alcohol abuse	291.xx, 303.0x - 303.9x, 305.0x, 357.5x, 425.5x, 535.30, 535.31, 571.0x - 571.3x, 571.3x, 305.0x, V11.3, E860.0
Tobacco	305.1x, 649.0x, 989.84, V15.82
Depression/anxiety	311, 296.2x, 296.3x
Bipolar disorder	296.0x, 296.4x
Schizophrenia	295.x
HIV	042, V08, V01.79, 795.71, V65.44
Hepatitis B	070.22 70.23, 070.3x
Hepatitis C	V02.60, V02.62, V02.69, 070.41, 070.44, 070.51, 070.54, 070.70, 070.71
Tuberculosis	011.x
Marijuana use	305.2x, 304.3x
Cocaine use	305.6x, 304.2x, 970.81
Other substance abuse	304.1x, 304.4x-304.6x, 304.8x, 304.9x, 305.3x, 305.4x, 305.7x-305.9x, 648.3x
Opioid dependence	304.0x, 305.5x

**eTable 3. Other drug dispensings**

<b>Drug class</b>	<b>Drugs</b>
Antidepressants	Fluoxetine, paroxetine, sertraline, fluvoxamine, citalopram, escitalopram, nefazodone, venlafaxine, mirtazapine, duloxetine, desvenlafaxine, nomifensine, trazodone, bupropion, ilazodone, desipramine, nortriptyline, protriptyline, amitriptyline, clomipramine, doxepin, imipramine, trimipramine, amoxapine, maprotiline, isocarboxazid, phenelzine, moclobemide, tranylcypromine
Smoking cessation drugs	Varenicline, bupropion, nicotine replacement therapy
Sedative hypnotics	Zolpidem tartrate, butabarbital sodium, pentobarbital and carbromal, flurazepam hydrochloride, quazepam, triazolam, eszopiclone, ethchlorvynol, estazolam, temazepam, ramelteon, secobarbital sodium, doxepin hydrochloride, zaleplon
Central nervous system stimulants	Methylphenidate, amphetamine, dextroamphetamine, dexmethylphenidate, lisdexamfetamine
Antipsychotics	Atypical antipsychotics: Aripiprazole, asenapine, clozapine, iloperidone, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, ziprasidone Typical antipsychotics: Chlorpromazine, chlorprothixene, fluphenazine, haloperidol, loxapine, mesoridazine, molindone, perphenazine, pimozide, promazine, propiomazine, thioridazine, thiothixene, trifluoperazine, triflupromazine

**eTable 4. Immediate-release/short-acting (IR/SA) non-steroidal anti-inflammatory drugs**

<b>Compound</b>	<b>Included combinations</b>
Diclofenac	Diclofenac, diclofenac/misoprostol
Etodolac	Etodolac
Fenoprofen	Fenoprofen
Ibuprofen	Ibuprofen
Indomethacin	Indomethacin
Ketoprofen	Ketoprofen
Ketorolac	Ketorolac
Meclofenamate	Meclofenamate
Mefenamic acid	Mefenamic acid
Tolmetin	Tolmetin

**eTable 5. Extended-release/long-acting (ER/LA) non-steroidal anti-inflammatory drugs**

<b>Compound</b>	<b>Included combinations</b>
Celecoxib	Celecoxib
Diclofenac ER	Diclofenac epolamine, diclofenac sodium
Diflunisal	Diflunisal
Etodolac ER	Etodolac
Indomethacin ER	Indomethacin
Ketoprofen ER	Ketoprofen
Meloxicam	Meloxicam
Nabumetone	Nabumetone
Naproxen	Naproxen, naproxen/lansoprazole, naproxen/esomeprazole magnesium, naproxen sodium, naproxen sodium/pseudoephedrine hydrochloride, naproxen sodium/sumatriptan succinate
Oxaprozin	Oxaprozin
Piroxicam	Piroxicam
Rofecoxib	Rofecoxib
Sulindac	Sulindac
Valdecoxib	Valdecoxib

**eTable 6. ICD-9-CM code definitions of pain diagnoses**

<b>Variable</b>	<b>ICD-9 codes</b>
Musculoskeletal	354.0, 715.X, 716.90, 719.4X, 726.X, 728.85, 729.5, 733.90, 836.0, 845.X, 959.7
Neck	721.0X, 721.1X, 722.0X, 722.4X, 722.81, 723.X (except 723.4), 739.1, 847.0, 920
Headache	307.81, 346.X, 784.0
Back	720.X, 721.X (except 721.0, 721.1), 722.X (except 722.0, 722.4, 722.81), 724.X, 737.30, 738.4, 739.2, 739.3, 846.0, 847.1, 847.2
Neuropathic	355.X, 356.X, 357.X, 723.4, 729.2
Abdomen	535.00, 535.50, 555.9, 577.0, 577.1, 620.2, 789.0X
Other	413.9, 786.5, 959.19, 338.29, 338.4, 710.0, 714.0, 592.0, 307.89, 338.18, 338.19, 729.1