

Search method and strategies (full)

1. Values and Preferences (p.4-6)
2. Effectiveness and harms of opioids
 - 2010 systematic review (p. 7-9)
 - 2016 search for guideline (p. 9-24)
3. Predictors of adverse outcomes (p.25-39)
 - Motor Vehicle Accidents (p.39-52)
4. Changing the dose of opioids (p.52-58)
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 - Naloxone (p. 75-78)
 - Patch exchange
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 - Hypogonadism (p.85-89)
 - Other AEs (p.89-92)
7. Economic Evaluation (p.92-109)

Search Method

We performed 7 comprehensive literature searches for the guideline: patient values and preferences, effectiveness and harms, predictors of adverse outcomes, dosing strategies, risk mitigation, adverse events, and economic evaluation. The first search for the guideline was for the review of patient values and preferences, for which we used brief search blocks for the concepts of chronic pain and opioids, and combined these concepts using the AND operator. We adapted the search filter for patients' perspectives and preferences developed and validated by Hielkema and Wessels and applied it to the set of results. We ran this search in MEDLINE, EMBASE PsycInfo and CINAHL first in October 2015 and again in November 2016.

For the rest of the literature searches, we used comprehensive search blocks for the concepts of chronic pain and opioids. For the chronic pain concept, we used the set of included studies from our 2010 systematic review search for use of opioids in chronic pain (66 in MEDLINE and 23 in EMBASE) to develop a comprehensive block of terms for the concept of chronic pain or painful chronic conditions. For the opioid concept we combined the terms we used in 2010 with additional opioid terms found in the 2015 AHRQ evidence review¹, using the OR operator. We combined the concepts of opioids and chronic pain using the AND operator. This search block comprising our two primary concepts was reviewed by the team, submitted for peer review and revised according to feedback. We thank Wichor Bramer of Erasmus University Medical Centre, Dr. Brian Alper of DynaMed and Neera Bhatnagar, MLS, of

¹ Chou R, Deyo R, Devine B, Hansen R, Sullivan S, Jarvik JG, Blazina I, Dana T, Bougatsos C, Turner J. The Effectiveness and Risks of Long-Term Opioid Treatment of Chronic Pain. Evidence Report/Technology Assessment No. 218. (Prepared by the Pacific Northwest Evidence-based Practice Center under Contract No. 290-2012-00014-I.) AHRQ Publication No. 14-E005-EF. Rockville, MD: Agency for Healthcare Research and Quality; September 2014.

McMaster University Health Sciences Library for peer review of the MEDLINE search strategy. We adapted the strategy to the other databases and used it for all of the subsequent literature reviews.

For the concept of benefits and harms, we built on the results of our 2010 systematic review search. To do this, we searched observational studies and systematic reviews from database inception through April 2016, and for randomized controlled trials published since 2010. We adapted and used the SIGN Observational studies filter, the HIRU therapy filters, the Cochrane RCT filter, and publication date limiters to accomplish this, and a filter was used to exclude animal studies. Because we heard from the panel that adverse events sleep apnea and opioid induced androgen deprivation were of particular interest (had their own PICO), we added an unrestricted search for these two conditions to the primary search blocks, using the AND operator. We searched for the concept of benefits and harms in MEDLINE, EMBASE, Cochrane, CINAHL, PsycInfo, AMED and PubMed.

We wanted to review studies that performed an adjusted analysis of risk factors for adverse outcomes to determine whether separate recommendations for vulnerable or high-risk populations would be warranted. For this predictors of adverse events review, we developed a prognosis filter to find studies that performed an adjusted analysis of risk factors, and we developed a broad set of terms to capture the adverse outcomes of interest. We thank Li Wang for developing and reviewing the prognosis filter. We combined the prognosis concept and the adverse outcomes concept with the chronic pain and opioids blocks using the AND operator, and applied a filter to exclude animal studies. We searched for the concept of predictors of adverse events in MEDLINE, EMBASE, PsycInfo, CINAHL and PubMed.

To develop the next set of literature searches for our remaining PICO questions, we consulted the search strategies used for Key Question 3 and 4 of the AHRQ report, which addressed the concepts of dosing and risk mitigation. Christina Bougatsos of the Oregon Health Sciences University helpfully sent us a word document with the set of excluded studies from the AHRQ literature searches, which we used to develop an appreciation of the scope of this evidence and to inform our decision to search for direct evidence in chronic pain patients, while acknowledging the importance of indirect evidence from opioid use disorder populations for many of our questions. We developed a search strategy for dosing that captured the concept of weaning, changing or adjusting the dose of opioid medication. We thank Vahid Ashoorion for developing and reviewing the change in dosing block. We combined this change in dosing concept with the chronic pain and opioids blocks using the AND operator, applied a filter to exclude animal studies, and ran this dosing search in MEDLINE, EMBASE and PubMed.

For our review of the risk mitigation literature, we developed a block of search terms in MEDLINE to capture the concept of monitoring for opioid abuse of opioid in general, along with specific concepts of urine drug screening and treatment agreements. We combined this search with the chronic pain and opioids blocks using the AND operator, and applied filters to exclude animal studies and limit the search to observational or clinical trial papers. We adapted this search to EMBASE, CINAHL, PsycInfo and PubMed. In addition, we reviewed the literature for two other opioid risk mitigation strategies, naloxone and patch exchange. Making naloxone available to patients mitigates the risk of opioid overdose, and requiring patients to return their used transdermal opioid patches in exchange for new ones mitigates the risk of diversion. For

the use of naloxone, we updated the literature search performed by the European Monitoring Centre for Drugs and Drug Addiction in 2013². For patch exchange, we consulted the Researched Abuse, Diversion and Addition-Related Surveillance System (RADARs) publication list and conducted a search of health technology assessment, health economics, clinical practice guidelines and websites using the CADTH Grey Matters practical tool for searching health-related grey literature.³ We thank Yvgeny Oparin for his support with this search.

To address the concept of treatment of adverse events, we searched for systematic reviews and found results for the treatment of opioid-induced nausea and vomiting, pruritis, drowsiness in mixed populations (including acute, post-surgical, and cancer patients). We searched within the included studies of these reviews for evidence about treatment of opioid adverse events in chronic non-cancer pain patients. We performed a focused search for studies of treatment of opioid-induced xerostomia in MEDLINE and EMBASE, and a systematic review for for treatment of opioid induced hypogonadism in MEDLINE, EMBASE, PsycInfo, CINAHL and PubMed. We updated the Reddy et al 2014 systematic review searches for treatment of opioid-induced sleep apnea⁴ in MEDLINE, EMBASE, Cochrane, CINAHL and PubMed.

Finally, for our review of the economic evaluation literature related to the use of opioids for chronic non-cancer pain, we applied an economic evaluation studies filters adapted from SIGN and CADTH to our two primary search blocks in MEDLINE, EMBASE, CINAHL and Web of Science, and searched using our two primary concepts in economic databses NHS EED, HTA database, EconLit and Tufts CEA registry.

² European Monitoring Centre for Drugs and Drug Addiction (2015), Preventing fatal overdoses: a systematic review of the effectiveness of take-home naloxone, EMCDDA Papers, Publications Office of the European Union, Luxembourg.

³ We found no studies of this approach but information about the initiative in Ontario is available at <http://patch4patch.ca/news/> Operated and maintained by the Office of Vic Fedeli, Member of Provincial Parliament for Nipissing, ON

⁴ Reddy R, Adamo D, Kufel T, Porhomayon J, El-Solh AA. Treatment of opioid-related central sleep apnea with positive airway pressure: a systematic review. *J Opioid Manag.* 2014;10(1):57-62.

1. Values and Preferences

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Values and Preferences

- 1 (patient adj3 (value* or preference*)).ti,ab. (11770)
- 2 exp Consumer Participation/ or "Patient Acceptance of Health Care"/ or exp Attitude to Health/
or *exp consumer satisfaction/ or patient preference/ or cooperative behavior/ or exp self efficacy/ or self-efficacy.ti,ab. or exp Adaptation, Psychological/ or exp health education/ or patient education as topic/ or exp attitude to health/ or health knowledge, attitudes, practice/ or *"Quality of Life"/ or "Quality of Life"/px or Personal Autonomy/ or self concept/ or consumer advocacy/ or freedom/ or Needs Assessment/ or Patient Advocacy/ or Self-Help Groups/ or Life Change Events/ or Attitude to Death/ or Patient-Centered Care/ or exp Professional-Patient Relations/ or Self Care/ or focus groups/ or narration/ (888015)
- 3 (((patient or consumer*) adj3 (participat* or decisi* or decid*)) or patient-focused or (patient-centred or patient-centered) or (patient adj3 (attitude? or preference))).ti,ab. or "patient satisfaction".ti. or coping.ti,ab. or ("self perception" or "self concept").ti,ab. or self-efficacy.ti,ab. or ("informed choice" or "shared decision making").ti,ab. or empowerment.ti,ab. or ("focus group*" adj3 (patient* or parent* or famil* or spouse*)).ti,ab. or (QoL or "Quality of life").ti. or self-management.ti. or ((patient* or consumer* or parent* or famil* or spouse*) adj (attitude* or involvement or desir* or perspective* or activation or view* or preference*)).ti,ab. or "expert patient".ti,ab. or "focus group".ti,ab. or qualitative.ti. (229270)
- 4 (exp Decision Making/ or exp Communication/ or Stress, Psychological/ or Emotions/ or vignette*.ti,ab.) and (exp Patients/px or patient*.ti. or consumer*.ti.) (51939)
- 5 (patient* adj5 (report* or relate*) adj5 (outcome* or measure* or assess*)).mp. (22881)
- 6 or/1-5 (1012430)
- 7 Chronic Pain/ (7177)
- 8 Pain, Intractable/ (5944)
- 9 Pain Management/ (24744)
- 10 exp Back Pain/ (32924)
- 11 Chronic Disease/ and pain.mp. (25915)
- 12 ((chronic* or persist* or refractor* or intract* or manag* or back) adj3 pain).mp. (137682)
- 13 or/7-12 (146926)
- 14 6 and 13 (18584)
- 15 exp *Analgesics, Opioid/ (68630)
- 16 exp Pharmaceutical Preparations/ and pain.mp. (19152)
- 17 ((medication* or opioid*) and pain).mp. (55317)
- 18 or/15-17 (120693)

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

- 19 14 and 18 (3127)
- 20 limit 19 to ed=20151001-20161007 (291)
- 21 limit 19 to yr="2015 -Current" (401)
- 22 20 or 21 (435)

Database: Embase <1974 to 2016 October 06>

Search Strategy: Values and Preferences

- 1 chronic pain/ (50212)
- 2 Chronic Disease/ and pain.mp. (15245)
- 3 exp backache/ (87699)
- 4 ((chronic* or persist* or refractor* or intract* or manag* or back) adj3 pain).mp. (180624)
- 5 or/1-4 (211360)
- 6 exp *narcotic analgesic agent/ (140997)
- 7 exp drug/ and pain.mp. (60066)
- 8 ((medication* or opioid*) and pain).mp. (79050)
- 9 or/6-8 (247608)
- 10 5 and 9 (39514)
- 11 patient participation/ or doctor patient relation/ or nurse patient relationship/ or patient attitude/ or patient preference/ or patient satisfaction/ or patient compliance/ or patient decision making/ (410232)
- 12 (patient* adj3 (prefer* or participat* or involve* or perspective* or view* or activat* or empower* or collaborate)).mp. (171077)
- 13 (patient* adj2 (attitude* or decision* or needs*)).mp. (93090)
- 14 or/11-13 (555265)
- 15 10 and 14 (4149)
- 16 limit 15 to yr="2015 -Current" (745)
- 17 limit 15 to em=201540-201640 (3553)
- 18 limit 17 to exclude medline journals (490)
- 19 16 or 18 (1151)

Database: PsycINFO <1987 to October Week 1 2016>

Search Strategy: Values and Preferences

- 1 chronic pain/ (10747)
- 2 chronic illness/ and pain.mp. (723)
- 3 back pain/ (3055)
- 4 ((chronic* or persist* or refractor* or intract* or manag* or back) adj3 pain).mp. (27159)
- 5 or/1-4 (27563)
- 6 exp opiates/ (18404)
- 7 pain management/ (8153)

- 8 exp analgesic drugs/ (14347)
- 9 exp narcotic drugs/ (20661)
- 10 ((medication* or opioid*) and pain).mp. (9995)
- 11 5 and 10 (5000)
- 12 client attitudes/ or client satisfaction/ (17498)
- 13 values/ or personal values/ or social values/ (14060)
- 14 (patient* adj3 (prefer* or participat* or involve* or perspective* or view* or activat* or empower* or collaborate)).mp. (20095)
- 15 (patient* adj2 (attitude* or decision* or needs*)).mp. (8020)
- 16 or/12-15 (53895)
- 17 11 and 16 (336)
- 18 limit 17 to yr="2015 -Current" (34)

CINAHL Values and Preferences

#	Query	Results
S17	S16 Limiters - Published Date: 20150101-20161231	57
S16	S9 AND S15	817
S15	S10 OR S11 OR S12 OR S13 OR S14	127,348
S14	(patient* N2 (attitude* or decision* or needs*))	43,574
S13	(patient* N3 (prefer* or participat* or involve* or perspective* or view* or activat* or empower* or collaborate))	25,858
S12	(MH "Medication Compliance")	9,127
S11	(MH "Attitude to Health") OR (MH "Health Beliefs") OR (MH "Patient Satisfaction") OR (MH "Attitude to Risk")	54,387
S10	(MH "Consumer Participation")	10,957
S9	S5 AND S8	6,513
S8	S6 OR S7	23,442
S7	((medication* or opioid*) and pain)	12,920
S6	(MH "Analgesics, Opioid+")	15,715
S5	S1 OR S2 OR S3 OR S4	47,143
S4	((chronic* or persist* or refractor* or intract* or manag* or back) N3 pain)	45,789
S3	(MH "Failed Back Surgery Syndrome") OR (MH "Low Back Pain")	10,707
S2	(MH "Chronic Disease") AND pain	3,404
S1	(MH "Chronic Pain")	11,334

PubMed: Values and Preferences

Search (((((((((((((chronic pain) AND (opioid OR opiate OR narcotic)))) AND (((publisher[sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))))))))) AND ((patient (value* or preference*))) Sort by: PublicationDate 58

2. Effectiveness and harms

2010 MEDLINE search effectiveness and harms

1. exp Analgesics, Opioid/
2. opioid\$.mp.
3. (Asimadoline or Alvimopam or Fedotzine or Fentanyl). mp.
4. Hydrocodone.mp.
5. (Hydromorphone or Levorphanol or Meperidine or Morphine).mp.
6. (Oxycodone or Oxymorphone or Pentazocine or Propoxyphene).mp.
7. (Sufentanil or Tramadol).mp.
8. exp Codeine/
9. Codeine.mp.
10. or/1-9
11. exp Morphine/
12. morphine.tw.
13. morphia.mp.
14. ms contin.rn,mp.
15. oramorph sr.mp.
16. duramorph.mp.
17. 57-27-2.rn.
18. morphinene.mp.
19. anpec.mp.
20. duromorph.mp.
21. epimorph.mp.
22. miro.mp.
23. morfin.mp.
24. morfine.mp.
25. morphin.mp.
26. morphinium.mp.
27. morphium.mp.
28. opso.mp.
29. skenan.mp.
30. trama.mp.
31. (n-methylmorphine or n methylmorphine or isocodeine or ardinex).mp.
32. (phentanyl or fentanest or sublimaze or fentora).mp.
33. (duragesic or durogesic).mp.
34. (hydrocodon or dihydrocodeinone or dicodid or robidone or hydrocodeinonebitartrate or hydrocon).mp.
35. (dihydromorphinone or hydromorphon or palladone or laudacon or dilaudid).mp.
36. (codinovo or hycodan or hycon).mp.
37. (dihydromorphinone or hydromorphon or palladone or laudacon or dilaudid).mp.
38. (levodroman or levorphan or levo-dromoran or levodromoran).mp.
39. l dromoran.mp.

40. (pethidine or isonipeccain or dolsin or dolosal or dolin or dolantin).mp.
41. (dolargan or lidol or lydol or Demerol or dolcontral). mp.
42. (dihydrohydroxycodone or oxycodone or dinarkon or eucodal).mp.
43. (hydroxycodone or oxycodone or oxy- contin).mp.
44. (pancodine or theocodin or dihydrone).mp.
45. (numorphan or talwin or lexir or fortral).mp.
46. (sulfentanyl or sulfentanil or sufenta).mp.
47. (tramadolhameln or tramadol or tramadura or tramagetic or tramagit).mp.
48. (tramake or tramal or tramex or tramundin or trasedal). mp.
49. (ultram or zamudol or zumalgic or zydol or zytram). mp.
50. (adolonta or contramal or amadol or biodalgic or jutadol or nobligan or prontofort or takadol).mp.
51. (theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol).mp.
52. (tramadorsch or biokanol or tramadin or tramadoc). mp.
53. exp narcotics/
54. or/11-53
55. 10 or 54
56. (chronic adj6 pain\$).mp.
57. Chronic Disease/
58. exp Pain/
59. Low back pain.mp. or exp Back Pain/
60. backache\$.mp.
61. Fibromyalgia.mp. or exp Fibromyalgia/
62. exp Whiplash Injuries/ or Whiplash.mp.
63. Irritable bowel syndrome.mp. or exp Irritable Bowel Syndrome/
64. Irritable colon.mp.
65. Temporomandibular joint syndrome.mp. or exp Temporomandibular Joint Dysfunction Syndrome/
66. Tension headache\$.mp. or exp Tension-Type Headache/
67. Headache/
68. exp Cumulative Trauma Disorders/ or Repetitive strain syndrome.mp.
69. Osteoarthritis.mp. or exp Osteoarthritis/
70. Rheumatoid arthritis.mp. or exp Arthritis, Rheumatoid/
71. exp Diabetic Neuropathies/
72. diabetic neuropath\$.mp.
73. Post herpetic neuralgia.mp. or exp Neuralgia, Postherpetic/
74. Postherpetic neuralgia.mp.
75. exp Phantom Limb/ or Phantom limb pain.mp.
76. exp Brachial Plexus Neuritis/ or cervicobrachial pain syndrome.mp.
77. globus syndrome.mp.
78. exp Headache Disorders/
79. neuropathic pain\$.mp.
80. neuralgia.mp. or exp Neuralgia/

81. Pain Measurement/
82. diabetic neuropath\$.mp.
83. polyneuropathies.mp. or exp Polyneuropathies/
84. polyneuropathy.mp. 85. or/56-84
86. randomized controlled trial\$.mp.
87. randomized controlled trial.pt.
88. random allocation/
89. double-blind method/
90. single-blind method/
91. randomi?ed controlled trial\$.mp.
92. controlled clinical trial.pt.
93. randomized controlled trial.pt.
94. ((singl\$ or double\$ or trebl\$ or tripl\$) adj25 (blind\$ or mask\$)).mp.
95. random\$.mp.
96. placebo\$.mp.
97. cross-over studies.sh.
98. latin square:.tw.
99. clinical trial.pt.
100. exp evaluation studies/
101. Retrospective Studies/ or follow up studies/ or prospective studies/
102. or/86-101
103. animals/ not humans/ 104. 102 not 103
105. 55 and 85 and 104
106. 105 not ((acute or postoperative).ti,ab. not chronic. mp.)
107. 55 and 85 and comparative study/ and chronic.mp. 108. 107 not 103
109. 108 not ((acute or postoperative).ti,ab. not chronic. mp.)
110. 109 or 106
111. 110 not (exp neoplasms/ not chronic.mp.)

2016 search Effectiveness and harms

MEDLINE	6810
EMBASE	11344
Cochrane	2329
CINAHL	839
PsycInfo	1408
AMED	486
PubMed	974
Subtotal	24190
-dupes	-5229
Total	18961

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Effectiveness and harms

- 1 (chronic adj4 pain*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (48145)
- 2 Chronic Pain/ (6110)
- 3 exp Osteoarthritis/ (49104)
- 4 osteoarthrit*.mp. (65405)
- 5 osteo-arthritis.mp. (355)
- 6 degenerative arthrit*.mp. (1141)
- 7 exp Arthritis, Rheumatoid/ (98873)
- 8 exp Neuralgia/ (15836)
- 9 Diabetic Neuropathies/ (12833)
- 10 (neuropath* adj5 (pain* or diabet*)).mp. (32046)
- 11 neuralg*.mp. (20988)
- 12 zoster.mp. (17741)
- 13 Irritable Bowel Syndrome/ (5176)
- 14 (IBS or irritable colon or irritable bowel).mp. (12262)
- 15 Migraine Disorders/ (21570)
- 16 migraine.mp. (31099)
- 17 Fibromyalgia/ (6923)
- 18 fibromyalg*.mp. (9049)
- 19 complex regional pain syndromes/ or exp causalgia/ or exp reflex sympathetic dystrophy/ (4991)
- 20 (complex regional pain syndromes or causalgia).mp. (1920)
- 21 Pain, Intractable/ (5860)
- 22 Phantom Limb/ (1632)
- 23 Hyperalgesia/ (8807)
- 24 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (14182)
- 25 or/1-24 (334472)
- 26 exp back pain/ or exp failed back surgery syndrome/ or exp low back pain/ (31702)
- 27 Radiculopathy/ or radiculopathy.mp. (7068)
- 28 musculoskeletal pain/ or headache/ (25783)
- 29 exp Arthralgia/ (9417)
- 30 exp Headache Disorders/ (28983)
- 31 headache*.mp. (74849)
- 32 Temporomandibular Joint Dysfunction Syndrome/ (4780)
- 33 ((TMJ or TMJD) and pain*).mp. (2131)
- 34 whiplash.mp. or exp whiplash injury/ (3513)

- 35 exp Cumulative Trauma Disorders/ (11813)
- 36 exp Peripheral Nervous System Diseases/dt [Drug Therapy] (11635)
- 37 Pain Measurement/de [Drug Effects] (5942)
- 38 (backache* or backpain* or dorsalgia* or arthralgia* or polyarthralgia* or arthrodynia* or myalgia* or fibromyalgia* or myodynia* or neuralgia* or ischialgia* or crps or rachialgia*).ab,ti. (35130)
- 39 ((back or discogen* or bone or musculoskeletal* or muscle* or skeletal* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachia* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (123135)
- 40 or/26-39 (264406)
- 41 (acute or emergency or preoperative or postoperative).ti,ab. (1508266)
- 42 40 not 41 (224114)
- 43 25 or 42 (475987)
- 44 exp Analgesics, Opioid/ (97643)
- 45 (opioid* or opiate*).mp. (101772)
- 46 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (134667)
- 47 or/44-46 (182807)
- 48 exp Narcotics/ (105430)
- 49 narcotic*.mp. (54208)
- 50 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfina or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolol or tramadura or tramagetic or tramagit or

tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (8524)

51 or/44-50 (209682)

52 43 and 51 (19726)

53 epidemiologic studies/ (7094)

54 exp Case-Control Studies/ (773578)

55 exp Cohort Studies/ (1524265)

56 Case control.tw. (92493)

57 (cohort adj (study or studies)).tw. (114057)

58 Cohort analy\$.tw. (4723)

59 (Follow up adj (study or studies)).tw. (40863)

60 ((observational or epidemiol*) adj (study or studies)).tw. (129070)

61 Longitudinal.tw. (166627)

62 Retrospective.mp. or prospective.tw. (1049522)

63 Cross sectional.tw. (214860)

64 Cross-sectional studies/ (212714)

65 or/53-64 (2341252)

66 exp animals/ not humans.sh. (4228993)

67 65 not 66 (2279603)

68 52 and 67 (3039)

69 randomized controlled trial.pt. (413993)

70 controlled clinical trial.pt. (90561)

71 randomized.ab. (343581)

72 placebo.ab. (168912)

73 drug therapy.fs. (1847398)

74 randomly.ab. (247235)

75 trial.ab. (355655)

76 groups.ab. (1543312)

77 or/69-76 (3718876)

78 clinical trial.mp. or clinical trial.pt. or random:.mp. or tu.xs. (4517931)

79 randomized controlled trial.pt. or randomized controlled trial.mp. (427922)

80 randomized controlled trial.pt. or randomized.mp. or placebo.mp. (693562)

81 or/78-80 (4531040)

82 77 or 81 (5830044)

83 exp animals/ not humans.sh. (4228993)

84 82 not 83 (4967401)

85 43 and 51 and 84 (12766)

86 limit 85 to yr="2010 -Current" (4701)

87 68 or 86 (6476)

88 (MEDLINE or systematic review or literature search).tw. or meta analysis.mp,pt. (192218)

89 43 and 51 and 88 (697)

90 87 or 89 (6772)

- 91 exp Sleep Apnea Syndromes/ (27016)
- 92 sleep apn?ea.mp. (32903)
- 93 sleep-disordered breathing.mp. (4702)
- 94 hypogonadism.mp. or Hypogonadism/ (11843)
- 95 ((testosterone or androgen) and (deprivation or deficiency)).mp. (10407)
- 96 OPIAD.mp. (8)
- 97 or/91-96 (55321)
- 98 52 and 97 (115)
- 99 90 or 98 (6810)

Database: Embase <1974 to 2016 April 22>

Search Strategy: Effectiveness and harms

-
- 1 (chronic adj4 pain*).mp. (80098)
 - 2 chronic pain/ (41500)
 - 3 exp osteoarthritis/ (97132)
 - 4 osteoarthrit*.mp. (104634)
 - 5 osteo-arthritis.mp. (438)
 - 6 degenerative arthrit*.mp. (1405)
 - 7 exp rheumatoid arthritis/ (169616)
 - 8 exp neuralgia/ (83264)
 - 9 diabetic neuropathy/ (19456)
 - 10 (neuropath* adj5 (pain* or diabet*)).mp. (55976)
 - 11 neuralg*.mp. (27106)
 - 12 zoster.mp. (31836)
 - 13 irritable colon/ (18667)
 - 14 (Irritable Bowel Syndrome or IBS).mp. (17490)
 - 15 exp migraine/ (49631)
 - 16 migraine.mp. (55192)
 - 17 fibromyalgia/ (15475)
 - 18 fibromyalg*.mp. (16530)
 - 19 reflex sympathetic dystrophy.mp. (2276)
 - 20 (complex regional pain syndromes or causalgia).mp. (1392)
 - 21 intractable pain/ (4035)
 - 22 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (7888)
 - 23 hyperalgesia/ (15763)
 - 24 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp.
(20169)
 - 25 or/1-24 (575431)
 - 26 exp backache/ (80374)
 - 27 radiculopathy.mp. or exp radiculopathy/ (30704)
 - 28 musculoskeletal pain/ (6826)

- 29 exp arthralgia/ (43347)
30 headache/ (162761)
31 headache*.mp. (214384)
32 temporomandibular joint disorder/ (11540)
33 ((TMJ or TMJD) and pain*).mp. (2906)
34 whiplash.mp. or whiplash injury/ (4588)
35 exp cumulative trauma disorder/ (16016)
36 or/26-35 (373336)
37 (acute or emergency or preoperative or postoperative).ti,ab. (2017603)
38 36 not 37 (318364)
39 25 or 38 (810343)
40 exp narcotic analgesic agent/ (274200)
41 (opioid* or opiate*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] (149544)
42 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (247655)
43 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (44997)
44 or/40-43 (348594)
45 39 and 44 (43194)

- 46 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or
 animal cell/ or nonhuman/ (23033858)
- 47 human/ or normal human/ or human cell/ (17175865)
- 48 46 and 47 (17129101)
- 49 46 not 48 (5904757)
- 50 45 not 49 (39162)
- 51 animals/ not humans/ (1158982)
- 52 nonhuman/ (4734978)
- 53 exp Animal Experiment/ (1927356)
- 54 exp Experimental Animal/ (510527)
- 55 animal model/ (866826)
- 56 exp Rodent/ (3201004)
- 57 (rat or rats or mouse or mice).ti. (1387843)
- 58 or/51-57 (6969854)
- 59 50 not 58 (34989)
- 60 clinical study/ (121073)
- 61 case control study/ (104657)
- 62 longitudinal study/ (87070)
- 63 intervention study/ (27529)
- 64 prospective study/ (330950)
- 65 retrospective study/ (460584)
- 66 cohort analysis/ (239640)
- 67 ((cohort or case control or follow up or observational or epidemiologic* or cross sectional)
adj
 (study or studies)).mp. (741666)
- 68 clinical trial/ (861468)
- 69 exp controlled clinical trial/ (542728)
- 70 observational study/ (88415)
- 71 or/60-70 (2531806)
- 72 59 and 71 (9188)
- 73 (MEDLINE or systematic review or literature search).tw. or meta analysis.mp,pt. (267690)
- 74 59 and 73 (1655)
- 75 72 or 74 (10024)
- 76 double-blind:.mp. or placebo:.tw. or blind:.tw. or random*.ab. (1286767)
- 77 59 and 76 (5557)
- 78 limit 77 to yr="2010 -Current" (2683)
- 79 75 or 78 (11005)
- 80 exp sleep disordered breathing/ (24842)
- 81 sleep apn?ea.mp. (50143)
- 82 hypogonadism/ (13443)
- 83 hypogonadism.mp. (19840)
- 84 ((testosterone or androgen) adj2 (deficiency or deprivation)).mp. (13867)

- 85 OPIAD.mp. (13)
- 86 androgen deficiency/ (2202)
- 87 or/80-86 (88785)
- 88 59 and 87 (487)
- 89 79 or 88 (11344)

Cochrane Library

Search Name: 2016-04-21 Chronic Pain_opioids_CDSR_DARE_Central since 2010

Date Run: 21/04/16 20:39:08.345

Description: Effectiveness and harms

ID	Search Hits	
#1	chronic near/3 pain	7594
#2	MeSH descriptor: [Chronic Pain] explode all trees	708
#3	MeSH descriptor: [Osteoarthritis] explode all trees	4125
#4	osteoarthritis*	8208
#5	osteo-arthritis	67
#6	degenerative arthrit*	295
#7	MeSH descriptor: [Arthritis, Rheumatoid] explode all trees	4488
#8	MeSH descriptor: [Neuralgia] explode all trees	887
#9	MeSH descriptor: [Diabetic Neuropathies] explode all trees	1271
#10	neuropath* near/5 (pain* or diabet*)	3574
#11	neuralg*	1511
#12	zoster	1274
#13	MeSH descriptor: [Irritable Bowel Syndrome] explode all trees	583
#14	irritable (colon or bowel)	1770
#15	IBS	1107
#16	MeSH descriptor: [Migraine Disorders] explode all trees	1836
#17	migraine	3889
#18	MeSH descriptor: [Fibromyalgia] explode all trees	760
#19	fibromyalg*	1656
#20	MeSH descriptor: [Complex Regional Pain Syndromes] explode all trees	223
#21	complex regional pain syndromes or causalgia	161
#22	MeSH descriptor: [Pain, Intractable] explode all trees	256
#23	MeSH descriptor: [Phantom Limb] explode all trees	68
#24	MeSH descriptor: [Hyperalgesia] explode all trees	396
#25	((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) near/3 pain)	1655
#26	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25	32727

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

#27	MeSH descriptor: [Back Pain] explode all trees	3317	
#28	MeSH descriptor: [Radiculopathy] explode all trees	251	
#29	radiculopathy	665	
#30	MeSH descriptor: [Musculoskeletal Pain] explode all trees	264	
#31	MeSH descriptor: [Arthralgia] explode all trees	1082	
#32	MeSH descriptor: [Headache Disorders] explode all trees	2245	
#33	MeSH descriptor: [Headache] explode all trees	1706	
#34	headache*	20688	
#35	MeSH descriptor: [Temporomandibular Joint Dysfunction Syndrome] explode all trees	169	
#36	((TMJ or TMJD) and pain*)	206	
#37	MeSH descriptor: [Whiplash Injuries] explode all trees	181	
#38	whiplash	398	
#39	MeSH descriptor: [Cumulative Trauma Disorders] explode all trees	599	
#40	backache* or backpain* or dorsalgia* or arthralgia* or polyarthralgia* or arthrodyni* or myalgia* or fibromyalgia* or myodynii* or neuralgia* or ischialgia* or crps or rachialgia*	9802	
#41	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachii* or orofacial or somatic or shoulder* or knee* or hip or hips) near/3 pain)	22005	
#42	#27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41	46214	
#43	acute or emergency or preoperative or postoperative	162986	
#44	42 not 43	49805	
#45	#26 or #44	80704	
#46	opioid* or opiate*	14791	
#47	narcotic*	5668	
#48	MeSH descriptor: [Analgesics, Opioid] explode all trees	5744	
#49	MeSH descriptor: [Narcotics] explode all trees	6492	
#50	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol		28087

#51	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexic or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	4662
#52	#46 or #47 or #48 or #49 or #50 or #51	36290
#53	#45 and #52 Publication Year from 2010 to 2016, in Trials	1567
#54	#45 and #52 in Cochrane Reviews (Reviews and Protocols), Other Reviews and Economic Evaluations	762
#55	#53 or #54	2329
CINAHL Effectiveness and harms		
S98	Limit S97 to Academic Journals, Dissertations	839
S97	S88 OR S96	919
S96	S52 AND S95	40
S95	S89 OR S90 OR S91 OR S92 OR S93 OR S94	8,274
S94	((testosterone or androgen) and (deprivation or deficiency)).	746
S93	(MH "Hypogonadism") OR "hypogonadism"	653
S92	"sleep-disordered breathing"	934
S91	"sleep apnoea"	459
S90	"sleep apnea"	6,627
S89	(MH "Sleep Apnea Syndromes+")	6,067
S88	S63 OR S87	891
S87	S86 Limiters - Published Date: 20100101-20161231	512
S86	S52 AND S85	1,136
S85	S83 NOT S84 475,663	
S84	(MH "Animals+") 32,072	

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S83 S70 OR S75 OR S82 479,223	
S82 S76 OR S77 OR S78 OR S79 OR S80 OR S81 424,226	
S81 (MH "Prospective Studies+") 182,455	
S80 (MH "Evaluation Research+") 19,942	
S79 (MH "Comparative Studies") 74,830	
S78 "latin square"	118
S77 (MH "Study Design") OR (MH "Crossover Design") OR (MH "Experimental Studies+") 178,801	
S76 (MH "Random Sample+") 60,698	
S75 S71 OR S72 OR S73 OR S74 172,799	
S74 "random*" 165,274	
S73 "placebo*" 27,677	
S72 (MH "Placebos")	7,579
S71 (MH "Placebo Effect")	1,057
S70 S64 OR S65 OR S66 OR S67 OR S68 OR S69 164,274	
S69 "triple-blind"	98
S68 "single-blind"	7,334
S67 "double-blind" 25,889	
S66 clinical W3 trial 107,737	
S65 "randomized controlled trial*" 49,785	
S64 (MH "Clinical Trials+") 134,210	
S63 S54 OR S62	634
S62 S52 AND S61	455
S61 S55 OR S56 OR S57 OR S58 OR S59 OR S60 302,570	
S60 (observational N2 (study or studies)) 15,048	
S59 (cohort N2 (study or studies)) 28,629	
S58 (MH "Cross Sectional Studies") 73,820	
S57 (MH "Correlational Studies") 17,408	
S56 (MH "Case Control Studies+") 34,630	
S55 (MH "Prospective Studies+") 182,455	
S54 S52 AND S53	193
S53 ((TI meta analys* or AB meta analys* or MW meta analy*) or 58,481 (TI systematic review or AB systematic review or PT systematic review))	
S52 S43 AND S51	4,559
S51 S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 30,116	
S50 adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrono or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon	1,414

	or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	
S49	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or 14,926 carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	
S48	"narcotic*"	9,136
S47	(MH "Narcotics+") 18,104	
S46	"opiate*"	1,811
S45	"opioid*" 12,431	
S44	(MH "Analgesics, Opioid+") 15,237	
S43	S26 OR S42 107,900	
S42	S40 NOT S41 59,707	
S41	acute or emergency or preoperative or postoperative 257,553	
S40	S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 69,053 OR S37 OR S38 OR S39	
S39	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or 40,753 spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) N3 pain)	
S38	backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or 11,225 arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*	
S37	(MH "Peripheral Nervous System+/DE")	1,481
S36	(MH "Cumulative Trauma Disorders+")	3,867
S35	(MH "Whiplash Injuries") OR "whiplash"	1,303

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S34 ((TMJ or TMJD) and pain*)	422
S33 (MH "Temporomandibular Joint Syndrome")	362
S32 "headache*"14,823	
S31 (MH "Headache")	7,122
S30 (MH "Arthralgia+")	3,887
S29 "musculoskeletal pain"	1,464
S28 (MH "Radiculopathy") OR "radiculopathy"	1,370
S27 (MH "Back Pain+") 16,632	
S26 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 69,027 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25	
S25 ((noncancer* or non-cancer*or chronic* or recurrent or persist* or non-malign*) N3 pain)	2,757
S24 (MH "Hyperalgesia")	972
S23 (MH "Phantom Limb") OR (MH "Phantom Pain")	529
S22 "intractable pain"	206
S21 "causalgia"	68
S20 (MH "Complex Regional Pain Syndromes+")	1,067
S19 "fibromyalg*"	3,623
S18 (MH "Fibromyalgia")	3,198
S17 "migraine"	9,169
S16 (MH "Migraine")	7,592
S15 "IBS"	773
S14 (irritable (bowel or colon))	2,362
S13 (MH "Irritable Bowel Syndrome")	2,011
S12 "zoster"	2,141
S11 "neuralg*"	2,644
S10 (neuropath* N5 (pain* or diabet*))	5,851
S9 (MH "Diabetic Neuropathies")	2,680
S8 (MH "Neuralgia+")	2,537
S7 (MH "Arthritis, Rheumatoid+") 13,581	
S6 "degenerative arthrit*"	146
S5 "osteo-arthritis"	32
S4 "osteoarthrit*" 13,577	
S3 (MH "Osteoarthritis+") 11,493	
S2 chronic N4 pain 18,272	
S1 (MH "Chronic Pain") 10,936	

Database: PsycINFO <1806 to April Week 3 2016>

Search Strategy: Effectiveness and harms

-
- 1 (chronic adj4 pain*).mp. (17478)
 - 2 chronic pain/ (10834)

- 3 exp arthritis/ (3503)
- 4 osteoarthrit*.mp. (1504)
- 5 osteo-arthritis.mp. (7)
- 6 degenerative arthrit*.mp. (15)
- 7 exp neuralgia/ (820)
- 8 exp neuropathy/ (5117)
- 9 (neuropath* adj5 (pain* or diabet*)).mp. (5439)
- 10 neuralg*.mp. (1418)
- 11 zoster.mp. (499)
- 12 irritable bowel syndrome/ (946)
- 13 (IBS or irritable colon or irritable bowel).mp. (1635)
- 14 migraine headache/ (8070)
- 15 migraine.mp. (10731)
- 16 fibromyalgia/ (1514)
- 17 fibromyalg*.mp. (2695)
- 18 complex regional pain syndromes.mp. (53)
- 19 "complex regional pain syndrome (type i)"/ (122)
- 20 (complex regional pain syndromes or causalgia).mp. (103)
- 21 somatosensory disorders/ (1128)
- 22 hyperalgesi*.mp. (3548)
- 23 somatoform pain disorder/ (762)
- 24 somatoform disorders/ (7257)
- 25 conversion disorder/ (945)
- 26 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (2662)
- 27 or/1-26 (52924)
- 28 back pain.mp. or exp Back Pain/ (4747)
- 29 radiculopathy.mp. (169)
- 30 musculoskeletal pain.mp. (1200)
- 31 Arthralgia.mp. (77)
- 32 headache.mp. or exp HEADACHE/ (17636)
- 33 ((TMJ or TMJD) and pain*).mp. (126)
- 34 WHIPLASH/ or whiplash.mp. (526)
- 35 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (4898)
- 36 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (16078)
- 37 or/28-36 (35778)
- 38 (acute or emergency or preoperative or postoperative).ti,ab. (98467)
- 39 37 not 38 (31573)

- 40 27 or 39 (64332)
- 41 exp opiates/ (20808)
- 42 (opioid* or opiate*).mp. (24697)
- 43 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (25745)
- 44 exp narcotic drugs/ (24763)
- 45 narcotic*.mp. (5518)
- 46 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodeid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogestic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodeinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (834)
- 47 or/41-46 (43941)
- 48 37 and 47 (1831)
- 49 animals/ not humans/ (6354)
- 50 animal models/ (24683)
- 51 animal research/ (338)
- 52 exp rodents/ (182542)
- 53 (rat or rats or mouse or mice).ti. (101936)
- 54 or/49-53 (204090)
- 55 48 not 54 (1408)

Database: AMED (Allied and Complementary Medicine) <1985 to April 2016>
Search Strategy: Effectiveness and harms

-
- 1 analgesics opioid/ (273)

- 2 (opioid* or opiate*).mp. (1356)
- 3 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (1053)
- 4 narcotics/ (177)
- 5 narcotic*.mp. (337)
- 6 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodoinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (107)
- 7 or/1-6 (2161)
- 8 (chronic adj4 pain).mp. (4429)
- 9 exp arthritis/ (5150)
- 10 arthralgia/ (149)
- 11 fibromyalgia/ (1610)
- 12 neuralgia/ (138)
- 13 diabetic neuropathies/ (244)
- 14 (neuropath* adj5 (pain* or diabet*)).mp. (926)
- 15 neuralg*.mp. (313)
- 16 osteoarthrit*.mp. (2959)
- 17 irritable bowel syndrome/ (119)
- 18 (IBS or irritable colon or irritable bowel).mp. (281)
- 19 fibromyalg*.mp. (1796)
- 20 Migraine/ or migraine.mp. (626)
- 21 complex regional pain syndromes/ or reflex sympathetic dystrophy/ (181)
- 22 (complex regional pain syndromes or causalgia).mp. (70)
- 23 pain intractable/ (422)

- 24 hyperalgesia/ or phantom limb/ (169)
- 25 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (637)
- 26 or/8-25 (14299)
- 27 exp backache/ (5905)
- 28 radiculopathy.mp. (282)
- 29 exp Headache/ or headache.mp. (1637)
- 30 Temporomandibular joint syndrome/ (62)
- 31 ((TMJ or TMJD) and pain*).mp. (25)
- 32 Whiplash injuries/ or whiplash.mp. (577)
- 33 repetition strain injury/ (307)
- 34 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (2358)
- 35 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (12180)
- 36 or/27-35 (16843)
- 37 (acute or emergency or preoperative or postoperative).ti,ab. (11950)
- 38 36 not 37 (15538)
- 39 26 or 38 (23845)
- 40 7 and 39 (504)
- 41 (rat or rats or mouse or mice).ti. (5183)
- 42 animals/ not humans/ (5659)
- 43 exp Rodents/ (6806)
- 44 41 or 42 or 43 (8674)
- 45 40 not 44 (486)

PubMed Effectiveness and harms

Search ((chronic pain) AND (opioid OR opiate OR narcotic)) AND (((publisher [sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))) Sort by: PublicationDate

974

3. Predictors of Adverse outcomes

MEDLINE	1802
EMBASE	4776
PsycInfo	714
CINAHL	694
PubMed	154
Subtotal	8140
-dupes	-2269

total	5871
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Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: predictors of adverse outcomes

-
- 1 (chronic adj4 pain*).mp. (48652)
 - 2 Chronic Pain/ (6322)
 - 3 exp Osteoarthritis/ (49526)
 - 4 osteoarthrit*.mp. (66042)
 - 5 osteo-arthritis.mp. (357)
 - 6 degenerative arthrit*.mp. (1143)
 - 7 exp Arthritis, Rheumatoid/ (99336)
 - 8 exp Neuralgia/ (15943)
 - 9 Diabetic Neuropathies/ (12902)
 - 10 (neuropath* adj5 (pain* or diabet*)).mp. (32321)
 - 11 neuralg*.mp. (21113)
 - 12 zoster.mp. (17815)
 - 13 Irritable Bowel Syndrome/ (5245)
 - 14 (IBS or irritable colon or irritable bowel).mp. (12365)
 - 15 Migraine Disorders/ (21723)
 - 16 migraine.mp. (31309)
 - 17 Fibromyalgia/ (6977)
 - 18 fibromyalg*.mp. (9130)
 - 19 complex regional pain syndromes/ or exp causalgia/ or exp reflex sympathetic dystrophy/ (5007)
 - 20 (complex regional pain syndromes or causalgia).mp. (1938)
 - 21 Pain, Intractable/ (5870)
 - 22 Phantom Limb/ (1643)
 - 23 Hyperalgesia/ (8879)
 - 24 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (14300)
 - 25 or/1-24 (336828)
 - 26 exp back pain/ or exp failed back surgery syndrome/ or exp low back pain/ (31869)
 - 27 Radiculopathy/ or radiculopathy.mp. (7122)
 - 28 musculoskeletal pain/ or headache/ (25977)
 - 29 exp Arthralgia/ (9518)
 - 30 exp Headache Disorders/ (29208)
 - 31 headache*.mp. (75322)
 - 32 Temporomandibular Joint Dysfunction Syndrome/ (4787)
 - 33 ((TMJ or TMJD) and pain*).mp. (2139)
 - 34 whiplash.mp. or exp whiplash injury/ (3527)

- 35 exp Cumulative Trauma Disorders/ (11864)
- 36 exp Peripheral Nervous System Diseases/dt [Drug Therapy] (11723)
- 37 Pain Measurement/de [Drug Effects] (5978)
- 38 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (35374)
- 39 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (124197)
- 40 ((medication* or opioid* or opiate* or narcotic*) and pain).mp. (60609)
- 41 or/26-40 (311659)
- 42 (acute or emergency or preoperative or postoperative).ti,ab. (1518990)
- 43 41 not 42 (256708)
- 44 25 or 43 (503073)
- 45 exp Analgesics, Opioid/ (98123)
- 46 (opioid* or opiate*).mp. (102484)
- 47 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorpin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (135256)
- 48 or/45-47 (183769)
- 49 exp Narcotics/ (105921)
- 50 narcotic*.mp. (54389)
- 51 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or

tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or
ultram or zamudol or zumalgic or zydol or zytram).mp. (8594)
52 or/45-51 (210728)
53 prognosis/ (404770)
54 ep.fs. and (opioid or opiate or narcotic).mp. [mp=title, abstract, original title, name of
substance word, subject heading word, keyword heading word, protocol supplementary
concept word, rare disease supplementary concept word, unique identifier] (7498)
55 survival analysis/ or kaplan-meier estimate/ or proportional hazards models/ (181055)
56 exp risk/ (944982)
57 exp Regression Analysis/ (337016)
58 "analysis of variance"/ or multivariate analysis/ (298175)
59 exp Probability/ (1078052)
60 or/53-59 (1815140)
61 (prognosis or prognostic or predict* or risk*).mp. 3204928)
62 ((univariate or covariate or variance or covariance or multivariate or regression or
adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (834614)
63 (logistic adj2 regress*).mp. (177397)
64 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or
kaplan-meier or estimate* or ANOVA or ANCOVA).mp. (1980099)
65 or/53-64 (4810289)
66 exp Prescription Drug Misuse/ (9309)
67 exp opioid-related disorders/ (20696)
68 "Drug and Narcotic Control"/ (7896)
69 substance abuse detection/ (7583)
70 or/66-69 (43048)
71 Drug-Seeking Behavior/ (753)
72 Behavior, Addictive/ (6699)
73 Substance Withdrawal Syndrome/ (19819)
74 Poisoning/ (21131)
75 "Drug-Related Side Effects and Adverse Reactions"/ (25332)
76 accidents/ or accidental falls/ or accidents, traffic/ (69956)
77 exp Death/ (129505)
78 exp Suicide/ (52278)
79 substance-related disorders/ (83793)
80 or/71-79 (390326)
81 (Opioid* or opiate* or narcotic* or analges* or prescription*).mp. (306403)
82 80 and 81 (22946)
83 70 or 82 (58171)
84 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or
misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or
death or suicide or coroner or (prob* adj2 "drug use"))).mp. (10366)
85 83 or 84 (61565)
86 44 and 52 and 65 and 85 (1856)

- 87 animals/ not humans/ (4213415)
- 88 exp Animals, Laboratory/ (773053)
- 89 exp Animal Experimentation/ (7934)
- 90 exp Models, Animal/ (466625)
- 91 exp Rodentia/ (2876575)
- 92 (rat or rats or mouse or mice).ti. (1192306)
- 93 or/87-92 (4976539)
- 94 86 not 93 (1802)

EMBASE

Database: Embase <1974 to 2016 May 24>

Search Strategy: predictors of adverse outcomes

- 1 (chronic adj4 pain*).mp. (80662)
- 2 chronic pain/ (41823)
- 3 exp osteoarthritis/ (97518)
- 4 osteoarthrit*.mp. (105102)
- 5 osteo-arthritis.mp. (439)
- 6 degenerative arthrit*.mp. (1409)
- 7 exp rheumatoid arthritis/ (170242)
- 8 exp neuralgia/ (83701)
- 9 diabetic neuropathy/ (19546)
- 10 (neuropath* adj5 (pain* or diabet*)).mp. (56361)
- 11 neuralg*.mp. (27224)
- 12 zoster.mp. (31957)
- 13 irritable colon/ (18780)
- 14 (Irritable Bowel Syndrome or IBS).mp. (17600)
- 15 exp migraine/ (49960)
- 16 migraine.mp. (55559)
- 17 fibromyalgia/ (15561)
- 18 fibromyalg*.mp. (16621)
- 19 reflex sympathetic dystrophy.mp. (2276)
- 20 (complex regional pain syndromes or causalgia).mp. (1395)
- 21 intractable pain/ (4054)
- 22 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (7915)
- 23 hyperalgesia/ (15840)
- 24 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (20287)
- 25 or/1-24 (578202)
- 26 exp backache/ (80802)
- 27 radiculopathy.mp. or exp radiculopathy/ (30860)
- 28 musculoskeletal pain/ (6900)
- 29 exp arthralgia/ (43632)

- 30 headache/ (163856)
31 headache*.mp. (215684)
32 temporomandibular joint disorder/ (11581)
33 ((TMJ or TMJD) and pain*).mp. (2959)
34 whiplash.mp. or whiplash injury/ (4602)
35 exp cumulative trauma disorder/ (16075)
36 ((medication* or opioid* or opiate* or narcotic*) and pain).mp. (100266)
37 or/26-36 (457597)
38 (acute or emergency or preoperative or postoperative).ti,ab. (2028270)
39 37 not 38 (378944)
40 25 or 39 (853031)
41 exp narcotic analgesic agent/ (275212)
42 (opioid* or opiate*).mp. (150223)
43 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or dextorphan or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (248492)
44 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (45179)
45 or/41-44 (349856)
46 prognosis/ (488537)
47 ep.fs. and (opioid or opiate or narcotic).mp. (6205)
48 epidemiology/ or pharmacoepidemiology/ (213409)
49 epidemiological data/ or survival/ (298334)

- 50 statistical analysis/ or "analysis of covariance"/ or "analysis of variance"/ or kaplan meier method/ or maximum likelihood method/ or exp multivariate analysis/ or exp regression analysis/ or univariate analysis/ (858339)
- 51 proportional hazards model/ (62529)
- 52 risk/ or risk assessment/ or risk factor/ (1422711)
- 53 probability/ (64800)
- 54 prediction/ (258868)
- 55 statistical model/ (123726)
- 56 disease association/ (404568)
- 57 disease duration/ (103677)
- 58 (prognosis or prognostic or predict* or risk*).mp. (4351242)
- 59 ((univariate or covariate or variance or covariance or multivariate or regression or adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (917333)
- 60 (logistic adj2 regress*).mp. (256197)
- 61 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-meier or estimate or ANOVA or ANCOVA).mp. (2069210)
- 62 or/46-61 (6437458)
- 63 opiate addiction/ (12113)
- 64 narcotic dependence/ or morphine addiction/ (3934)
- 65 prescription drug diversion/ (150)
- 66 or/63-65 (15895)
- 67 drug abuse/ or analgesic agent abuse/ or drug misuse/ (52423)
- 68 drug control/ (11591)
- 69 drug monitoring/ (45380)
- 70 substance abuse/ (45791)
- 71 drug urine level/ (31891)
- 72 drug dose regimen/ (30208)
- 73 drug overdose/ (18578)
- 74 drug seeking behavior/ (1604)
- 75 drug dependence/ (42695)
- 76 addiction/ (47614)
- 77 drug withdrawal/ (129741)
- 78 withdrawal syndrome/ (26665)
- 79 intoxication/ (181266)
- 80 accident/ or falling/ or home accident/ or traffic accident/ (101973)
- 81 exp death/ (558998)
- 82 suicide/ or suicidal behavior/ or suicide attempt/ (73010)
- 83 or/67-82 (1235545)
- 84 dt.fs. (3283288)
- 85 to.fs. (494338)
- 86 84 or 85 (3686503)
- 87 (Opioid* or opiate* or narcotic* or analges* or prescription*).ti,ab. (323820)
- 88 (Opioid* or opiate* or narcotic* or analges* or prescription*).ti. (113367)

- 89 83 and 87 (45153)
- 90 86 and 88 (33234)
- 91 66 or 89 or 90 (80004)
- 92 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or death or suicide or coroner or (prob* adj2 "drug use"))).mp. (22963)
- 93 91 or 92 (83146)
- 94 40 and 45 and 62 and 93 (5311)
- 95 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or animal cell/ or nonhuman/ (23121560)
- 96 human/ or normal human/ or human cell/ (17248652)
- 97 95 and 96 (17201888)
- 98 95 not 97 (5919672)
- 99 animals/ not humans/ (1159356)
- 100 nonhuman/ (4755486)
- 101 exp Animal Experiment/ (1934809)
- 102 exp Experimental Animal/ (512413)
- 103 exp Rodent/ (3210733)
- 104 (rat or rats or mouse or mice).ti. (1391108)
- 105 99 or 100 or 101 or 102 or 103 or 104 (6976253)
- 106 94 not 98 (5155)
- 107 106 not 105 (4776)

Database: PsycINFO <1806 to May Week 3 2016>

Search Strategy: predictors of adverse outcomes

-
- 1 (chronic adj4 pain*).mp. (17558)
 - 2 chronic pain/ (10888)
 - 3 exp arthritis/ (3526)
 - 4 osteoarthritis*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (1515)
 - 5 osteo-arthritis.mp. (7)
 - 6 degenerative arthrit*.mp. (15)
 - 7 exp neuralgia/ (824)
 - 8 exp neuropathy/ (5149)
 - 9 (neuropath* adj5 (pain* or diabet*)).mp. (5474)
 - 10 neuralg*.mp. (1425)
 - 11 zoster.mp. (502)
 - 12 irritable bowel syndrome/ (952)
 - 13 (IBS or irritable colon or irritable bowel).mp. (1645)
 - 14 migraine headache/ (8112)
 - 15 migraine.mp. (10783)
 - 16 fibromyalgia/ (1521)

- 17 fibromyalg*.mp. (2702)
- 18 complex regional pain syndromes.mp. (53)
- 19 "complex regional pain syndrome (type i)"/ (123)
- 20 (complex regional pain syndromes or causalgia).mp. (104)
- 21 somatosensory disorders/ (1136)
- 22 hyperalgesi*.mp. (3573)
- 23 somatoform pain disorder/ (766)
- 24 somatoform disorders/ (7265)
- 25 conversion disorder/ (948)
- 26 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (2672)
- 27 or/1-26 (53162)
- 28 back pain.mp. or exp Back Pain/ (4762)
- 29 radiculopathy.mp. (169)
- 30 musculoskeletal pain.mp. (1204)
- 31 Arthralgia.mp. (77)
- 32 headache.mp. or exp HEADACHE/ (17710)
- 33 ((TMJ or TMJD) and pain*).mp. (126)
- 34 WHIPLASH/ or whiplash.mp. (529)
- 35 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (4909)
- 36 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (16160)
- 37 ((medication* or opioid* or opiate* or narcotic*) and pain).mp. (10982)
- 38 or/28-37 (44114)
- 39 (acute or emergency or preoperative or postoperative).ti,ab. (98932)
- 40 38 not 39 (38569)
- 41 27 or 40 (69319)
- 42 exp opiates/ (20893)
- 43 (opioid* or opiate*).mp. (24785)
- 44 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (25818)
- 45 exp narcotic drugs/ (24850)
- 46 narcotic*.mp. (5529)

- 47 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicotid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogenic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (834)
- 48 or/42-47 (44065)
- 49 prognosis/ (7778)
- 50 epidemiology/ (42932)
- 51 risk assessment/ or risk factors/ (69275)
- 52 exp statistical regression/ (5266)
- 53 "analysis of variance"/ (2354)
- 54 exp multivariate analysis/ (17579)
- 55 exp variability measurement/ (4570)
- 56 exp "ANALYSIS OF COVARIANCE"/ (1260)
- 57 exp statistical probability/ (5425)
- 58 maximum likelihood/ or "goodness of fit"/ (2322)
- 59 (prognosis or prognostic or predict* or risk*).mp. (617233)
- 60 ((univariate or covariate or multivariate or variance or covariance or regression or adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (132688)
- 61 (ANOVA or ANCOVA).mp. (20774)
- 62 (logistic adj2 regress*).mp. (38180)
- 63 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-meier or estimate).mp. (114158)
- 64 adjust*.ti,ab. (119376)
- 65 or/49-64 (874768)
- 66 drug dependency/ (11456)
- 67 drug abuse/ (40676)
- 68 drug rehabilitation/ (18932)
- 69 "substance use disorder"/ (4324)
- 70 self-medication/ (606)
- 71 prescription drugs/ (3184)

- 72 drug overdoses/ (1210)
- 73 exp drug addiction/ (12488)
- 74 or/66-73 (71119)
- 75 drug seeking/ (707)
- 76 addiction/ (7846)
- 77 drug withdrawal/ (5327)
- 78 toxic disorders/ (1261)
- 79 "side effects (drug)"/ (23559)
- 80 drug tolerance/ (4204)
- 81 exp accidents/ (11091)
- 82 exp "death and dying"/ (27635)
- 83 suicide/ or self-destructive behavior/ or attempted suicide/ or self-injurious behavior/ or suicidal ideation/ or suicide prevention/ (36267)
- 84 or/75-83 (113344)
- 85 (Opioid* or opiate* or narcotic* or analges* or prescription*).mp. (51603)
- 86 84 and 85 (5977)
- 87 74 or 86 (75018)
- 88 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or death or suicide or coroner or (prob* adj2 "drug use"))).mp. (5327)
- 89 87 or 88 (76117)
- 90 41 and 48 and 65 and 89 (714)

CINAHL predictors of adverse outcomes

#	Query	Results
S94	S52 AND S60 AND S76 AND S93	694
S93	S91 AND S92	10,840
S92	Opioid* or opiate* or narcotic* or analges* or prescription*	61,538
S91	S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88 OR S89 OR S90	121,007
S90	(MH "Suicide+")	14,524
S89	(MH "Death+")	27,634
S88	(MH "Accidents") OR (MH "Accidental Falls") OR (MH "Accidents, Home") OR (MH "Accidents, Traffic")	22,083
S87	(MH "Adverse Drug Event+")	13,175
S86	(MH "Poisoning")	2,233
S85	(MH "Substance Withdrawal Syndrome")	1,640
S84	(MH "Behavior, Addictive")	2,264
S83	(MH "Substance Abuse Detection")	2,145
S82	(MH "Drug and Narcotic Control")	1,577

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S81	(MH "Drug Toxicity")	3,197
S80	(MH "Overdose")	2,988
S79	(MH "Substance Use Disorders")	12,102
S78	(MH "Substance Dependence")	6,129
S77	(MH "Substance Abuse")	18,678
S76	S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75	756,727
S75	proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-meier or estimate* or ANOVA or ANCOVA	234,346
S74	logistic N2 regress*	84,378
S73	((univariate or covariate or variance or covariance or multivariate or regression or adjusted or unadjusted or logistic or diagnostic) N2 (analys* or model*)).	216,895
S72	prognosis or prognostic or predict* or risk*	492,669
S71	(MH "Probability")	5,975
S70	(MH "Analysis of Variance+") OR (MH "Analysis of Covariance+")	134,730
S69	(MH "Regression+")	150,920
S68	(MH "Risk Factors")	69,019
S67	(MH "Risk Assessment")	39,320
S66	(MH "Survival Analysis+")	37,773
S65	TX narcotic* AND MW "EP"	755
S64	TX opiate* AND MW "EP"	270
S63	TX opioid* AND MW "EP"	1,103
S62	(MH "Dose-Response Relationship") OR (MH "Epidemiology") OR (MH "Postexposure Follow-Up")	6,434
S61	(MH "Prognosis")	24,527
S60	S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59	30,431
S59	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodine or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora	1,433

	or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodoinon or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodoinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	
S58	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	15,090
S57	"narcotic*"	9,188
S56	(MH "Narcotics+")	18,197
S55	"opiate*"	1,835
S54	"opioid*"	12,597

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S53	(MH "Analgesics, Opioid+")	15,353
S52	S43 OR S51	114,364
S51	S50 NOT S41	10,544
S50	S48 AND S49	15,095
S49	"pain*"	143,888
S48	S44 OR S45 OR S46 OR S47	80,190
S47	"narcotic*"	9,188
S46	"opiate*"	1,835
S45	"opioid*"	12,597
S44	"medication*"	63,196
S43	S26 OR S42	108,549
S42	S40 NOT S41	60,074
S41	acute or emergency or preoperative or postoperative	261,437
S40	S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39	69,526
S39	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) N3 pain)	41,011
S38	backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*	11,312
S37	(MH "Peripheral Nervous System+/DE")	1,485
S36	(MH "Cumulative Trauma Disorders+")	3,871
S35	(MH "Whiplash Injuries") OR "whiplash"	1,318
S34	((TMJ or TMJD) and pain*)	423
S33	(MH "Temporomandibular Joint Syndrome")	365
S32	"headache*"	14,946
S31	(MH "Headache")	7,165
S30	(MH "Arthralgia+")	3,910
S29	"musculoskeletal pain"	1,474
S28	(MH "Radiculopathy") OR "radiculopathy"	1,383
S27	(MH "Back Pain+")	16,678
S26	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR	69,435

	S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25	
S25	((noncancer* or non-cancer*or chronic* or recurrent or persist* or non-malign*) N3 pain)	2,778
S24	(MH "Hyperalgesia")	978
S23	(MH "Phantom Limb") OR (MH "Phantom Pain")	533
S22	"intractable pain"	205
S21	"causalgia"	68
S20	(MH "Complex Regional Pain Syndromes+")	1,070
S19	"fibromyalg*"	3,637
S18	(MH "Fibromyalgia")	3,205
S17	"migraine"	9,223
S16	(MH "Migraine")	7,635
S15	"IBS"	779
S14	(irritable (bowel or colon))	2,371
S13	(MH "Irritable Bowel Syndrome")	2,018
S12	"zoster"	2,158
S11	"neuralg*"	2,663
S10	(neuropath* N5 (pain* or diabet*))	5,877
S9	(MH "Diabetic Neuropathies")	2,685
S8	(MH "Neuralgia+")	2,552
S7	(MH "Arthritis, Rheumatoid+")	13,642
S6	"degenerative arthrit*"	149
S5	"osteo-arthritis"	32
S4	"osteoarthrit*"	13,654
S3	(MH "Osteoarthritis+")	11,540
S2	chronic N4 pain	18,412
S1	(MH "Chronic Pain")	11,015

PubMed, predictors of adverse outcomes

Search (((((((((chronic pain) AND (opioid OR opiate OR narcotic)))) AND (((publisher [sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))))) AND (((prognosis or prognostic or predict* or risk)) OR (((univariate or covariate or variance or covariance or multivariate or regression or adjusted or unadjusted or logistic or diagnostic) AND (analysis or model)))))) AND ((abuse or addict* or misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or death or suicide or coroner)) Sort by: PublicationDate 154

3.a Predictors of adverse outcomes MVAs

MEDLINE	161
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EMBASE	180
PsycInfo	64
CINAHL	28
PubMed	13
Subtotal	446
-dupes	-153
total	293

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Predictors of adverse outcomes MVAs

-
- 1 exp Analgesics, Opioid/ (99795)
 - 2 (opioid* or opiate*).mp. (105016)
 - 3 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (137336)
 - 4 or/1-3 (187261)
 - 5 exp Narcotics/ (107638)
 - 6 narcotic*.mp. (55279)
 - 7 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (8814)

- 8 or/1-7 (214693)
- 9 prognosis/ (415963)
- 10 ep.fs. and (opioid or opiate or narcotic).mp. (7809)
- 11 survival analysis/ or kaplan-meier estimate/ or proportional hazards models/ (188963)
- 12 exp risk/ (978250)
- 13 exp Regression Analysis/ (349323)
- 14 "analysis of variance"/ or multivariate analysis/ (306307)
- 15 exp Probability/ (1116345)
- 16 or/9-15 (1871924)
- 17 (prognosis or prognostic or predict* or risk*).mp. (3322112)
- 18 ((univariate or covariate or variance or covariance or multivariate or regression or
adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (866119)
- 19 (logistic adj2 regress*).mp. (186723)
- 20 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or
kaplan-meier or estimate* or ANOVA or ANCOVA).mp. (2048884)
- 21 or/9-20 (4974659)
- 22 exp Prescription Drug Misuse/ (9664)
- 23 exp opioid-related disorders/ (21180)
- 24 "Drug and Narcotic Control"/ (8013)
- 25 substance abuse detection/ (8133)
- 26 or/22-25 (44448)
- 27 Drug-Seeking Behavior/ (812)
- 28 Behavior, Addictive/ (7094)
- 29 Substance Withdrawal Syndrome/ (20045)
- 30 Poisoning/ (21388)
- 31 "Drug-Related Side Effects and Adverse Reactions"/ (26009)
- 32 accidents/ or accidental falls/ or accidents, traffic/ (71495)
- 33 exp Death/ (132246)
- 34 exp Suicide/ (53434)
- 35 substance-related disorders/ (85553)
- 36 or/27-35 (398847)
- 37 (Opioid* or opiate* or narcotic* or analges* or prescription*).mp. (314274)
- 38 36 and 37 (23417)
- 39 26 or 38 (59909)
- 40 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or
or overdose or poison* or diversion or aberrant or monitoring or mortality or death or
suicide or coroner or (prob* adj2 "drug use"))).mp. (10744)
- 41 39 or 40 (63399)
- 42 animals/ not humans/ (4282624)
- 43 exp Animals, Laboratory/ (789537)
- 44 exp Animal Experimentation/ (8182)
- 45 exp Models, Animal/ (480712)
- 46 exp Rodentia/ (2930130)

- 47 (rat or rats or mouse or mice).ti. (1211152)
- 48 or/42-47 (5066906)
- 49 8 and 21 and 41 (13629)
- 50 49 not 48 (12972)
- 51 Accidents, Traffic/ (38116)
- 52 MVA.mp. (2753)
- 53 ((accident* or trauma* or collision* or crash*) adj3 (motor or vehicle or automobile or traffic or road*)).mp. (48412)
- 54 or/51-53 (50811)
- 55 50 and 54 (161)

Database: Embase <1974 to 2016 September 09>

Search Strategy: Predictors of adverse outcomes MVAs

- 1 (chronic adj4 pain*).mp. (83703)
- 2 chronic pain/ (43453)
- 3 exp osteoarthritis/ (100513)
- 4 osteoarthrit*.mp. (108737)
- 5 osteo-arthritis.mp. (443)
- 6 degenerative arthrit*.mp. (1421)
- 7 exp rheumatoid arthritis/ (172989)
- 8 exp neuralgia/ (85845)
- 9 diabetic neuropathy/ (19884)
- 10 (neuropath* adj5 (pain* or diabet*)).mp. (58134)
- 11 neuralg*.mp. (27862)
- 12 zoster.mp. (32609)
- 13 irritable colon/ (19630)
- 14 (Irritable Bowel Syndrome or IBS).mp. (18584)
- 15 exp migraine/ (51017)
- 16 migraine.mp. (56825)
- 17 fibromyalgia/ (15959)
- 18 fibromyalg*.mp. (17055)
- 19 reflex sympathetic dystrophy.mp. (2299)
- 20 (complex regional pain syndromes or causalgia).mp. (1420)
- 21 intractable pain/ (4117)
- 22 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (8051)
- 23 hyperalgesia/ (16250)
- 24 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (20996)
- 25 or/1-24 (593094)
- 26 exp backache/ (83370)
- 27 radiculopathy.mp. or exp radiculopathy/ (31730)
- 28 musculoskeletal pain/ (7249)

- 29 exp arthralgia/ (44949)
- 30 headache/ (168499)
- 31 headache*.mp. (221332)
- 32 temporomandibular joint disorder/ (11685)
- 33 ((TMJ or TMJD) and pain*).mp. (3010)
- 34 whiplash.mp. or whiplash injury/ (4666)
- 35 exp cumulative trauma disorder/ (16369)
- 36 ((medication* or opioid* or opiate* or narcotic*) and pain).mp. (103764)
- 37 or/26-36 (470443)
- 38 (acute or emergency or preoperative or postoperative).ti,ab. (2082429)
- 39 37 not 38 (388967)
- 40 25 or 39 (874941)
- 41 exp narcotic analgesic agent/ (280293)
- 42 (opioid* or opiate*).mp. (153740)
- 43 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (252610)
- 44 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (45981)
- 45 or/41-44 (356323)
- 46 prognosis/ (498711)
- 47 ep.fs. and (opioid or opiate or narcotic).mp. (6338)
- 48 epidemiology/ or pharmacoepidemiology/ (217954)

- 49 epidemiological data/ or survival/ (304901)
- 50 statistical analysis/ or "analysis of covariance"/ or "analysis of variance"/ or kaplan meier method/ or maximum likelihood method/ or exp multivariate analysis/ or exp regression analysis/ or univariate analysis/ (885010)
- 51 proportional hazards model/ (65825)
- 52 risk/ or risk assessment/ or risk factor/ (1467919)
- 53 probability/ (66348)
- 54 prediction/ (265057)
- 55 statistical model/ (128295)
- 56 disease association/ (415980)
- 57 disease duration/ (108064)
- 58 (prognosis or prognostic or predict* or risk*).mp. (4491184)
- 59 ((univariate or covariate or variance or covariance or multivariate or regression or adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (953031)
- 60 (logistic adj2 regress*).mp. (268379)
- 61 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-meier or estimate or ANOVA or ANCOVA).mp. (2138269)
- 62 or/46-61 (6634691)
- 63 opiate addiction/ (12440)
- 64 narcotic dependence/ or morphine addiction/ (3984)
- 65 prescription drug diversion/ (175)
- 66 or/63-65 (16289)
- 67 drug abuse/ or analgesic agent abuse/ or drug misuse/ (53192)
- 68 drug control/ (11729)
- 69 drug monitoring/ (46173)
- 70 substance abuse/ (46944)
- 71 drug urine level/ (32013)
- 72 drug dose regimen/ (30530)
- 73 drug overdose/ (18958)
- 74 drug seeking behavior/ (1722)
- 75 drug dependence/ (43106)
- 76 addiction/ (48419)
- 77 drug withdrawal/ (133407)
- 78 withdrawal syndrome/ (27234)
- 79 intoxication/ (182272)
- 80 accident/ or falling/ or home accident/ or traffic accident/ (104490)
- 81 exp death/ (574172)
- 82 suicide/ or suicidal behavior/ or suicide attempt/ (74634)
- 83 or/67-82 (1261952)
- 84 dt.fs. (3350552)
- 85 to.fs. (502724)
- 86 84 or 85 (3760517)
- 87 (Opioid* or opiate* or narcotic* or analges* or prescription*).ti,ab. (333040)

- 88 (Opioid* or opiate* or narcotic* or analges* or prescription*).ti. (115747)
- 89 83 and 87 (46369)
- 90 86 and 88 (34110)
- 91 66 or 89 or 90 (82106)
- 92 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or death or suicide or coroner or (prob* adj2 "drug use"))).mp. (23740)
- 93 91 or 92 (85378)
- 94 40 and 45 and 62 and 93 (5537)
- 95 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or animal cell/ or nonhuman/ (23613521)
- 96 human/ or normal human/ or human cell/ (17659070)
- 97 95 and 96 (17612306)
- 98 95 not 97 (6001215)
- 99 animals/ not humans/ (1159292)
- 100 nonhuman/ (4833863)
- 101 exp Animal Experiment/ (1964796)
- 102 exp Experimental Animal/ (530738)
- 103 exp Rodent/ (3264725)
- 104 (rat or rats or mouse or mice).ti. (1410003)
- 105 99 or 100 or 101 or 102 or 103 or 104 (7078787)
- 106 94 not 98 (5376)
- 107 106 not 105 (4993)
- 108 45 and 62 and 93 (17084)
- 109 108 not 98 (16414)
- 110 109 not 105 (15610)
- 111 traffic accident/ (52303)
- 112 MVA.mp. (4853)
- 113 ((accident* or trauma* or collision* or crash*) adj3 (motor or vehicle or automobile or traffic or road*)).mp. (60941)
- 114 111 or 112 or 113 (65317)
- 115 110 and 114 (180)

Database: PsycINFO <1806 to July Week 4 2016>

Search Strategy: Predictors of adverse outcomes MVAs

-
- 1 (chronic adj4 pain*).mp. (17781)
 - 2 chronic pain/ (11027)
 - 3 exp arthritis/ (3557)
 - 4 osteoarthrit*.mp. (1535)
 - 5 osteo-arthritis.mp. (7)
 - 6 degenerative arthrit*.mp. (15)
 - 7 exp neuralgia/ (828)

- 8 exp neuropathy/ (5226)
- 9 (neuropath* adj5 (pain* or diabet*)).mp. (5564)
- 10 neuralg*.mp. (1432)
- 11 zoster.mp. (506)
- 12 irritable bowel syndrome/ (958)
- 13 (IBS or irritable colon or irritable bowel).mp. (1660)
- 14 migraine headache/ (8180)
- 15 migraine.mp. (10877)
- 16 fibromyalgia/ (1542)
- 17 fibromyalg*.mp. (2728)
- 18 complex regional pain syndromes.mp. (54)
- 19 "complex regional pain syndrome (type i)"/ (124)
- 20 (complex regional pain syndromes or causalgia).mp. (105)
- 21 somatosensory disorders/ (1148)
- 22 hyperalgesi*.mp. (3619)
- 23 somatoform pain disorder/ (771)
- 24 somatoform disorders/ (7286)
- 25 conversion disorder/ (953)
- 26 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (2705)
- 27 or/1-26 (53713)
- 28 back pain.mp. or exp Back Pain/ (4833)
- 29 radiculopathy.mp. (172)
- 30 musculoskeletal pain.mp. (1222)
- 31 Arthralgia.mp. (81)
- 32 headache.mp. or exp HEADACHE/ (17858)
- 33 ((TMJ or TMJD) and pain*).mp. (127)
- 34 WHIPLASH/ or whiplash.mp. (534)
- 35 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (4953)
- 36 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (16386)
- 37 ((medication* or opioid* or opiate* or narcotic*) and pain).mp. (11101)
- 38 or/28-37 (44609)
- 39 (acute or emergency or preoperative or postoperative).ti,ab. (100185)
- 40 38 not 39 (38991)
- 41 27 or 40 (70049)
- 42 exp opiates/ (21115)
- 43 (opioid* or opiate*).mp. (25077)
- 44 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or

- codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (25995)
- 45 exp narcotic drugs/ (25083)
- 46 narcotic*.mp. (5551)
- 47 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicotid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (843)
- 48 or/42-47 (44433)
- 49 prognosis/ (7869)
- 50 epidemiology/ (43366)
- 51 risk assessment/ or risk factors/ (70478)
- 52 exp statistical regression/ (5379)
- 53 "analysis of variance"/ (2362)
- 54 exp multivariate analysis/ (17776)
- 55 exp variability measurement/ (4598)
- 56 exp "ANALYSIS OF COVARIANCE"/ (1272)
- 57 exp statistical probability/ (5531)
- 58 maximum likelihood/ or "goodness of fit"/ (2350)
- 59 (prognosis or prognostic or predict* or risk*).mp. (626368)
- 60 ((univariate or covariate or multivariate or variance or covariance or regression or adjusted or unadjusted or logistic or diagnostic) adj2 (analys* or model*)).mp. (134754)
- 61 (ANOVA or ANCOVA).mp. (21002)
- 62 (logistic adj2 regress*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (38963)

- 63 (proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-meier or estimate).mp. (115987)
- 64 adjust*.ti,ab. (120859)
- 65 or/49-64 (886905)
- 66 drug dependency/ (11540)
- 67 drug abuse/ (41068)
- 68 drug rehabilitation/ (19054)
- 69 "substance use disorder"/ (4426)
- 70 self-medication/ (610)
- 71 prescription drugs/ (3234)
- 72 drug overdoses/ (1233)
- 73 exp drug addiction/ (12578)
- 74 or/66-73 (71818)
- 75 drug seeking/ (716)
- 76 addiction/ (8029)
- 77 drug withdrawal/ (5357)
- 78 toxic disorders/ (1270)
- 79 "side effects (drug)"/ (23696)
- 80 drug tolerance/ (4216)
- 81 exp accidents/ (11228)
- 82 exp "death and dying"/ (27921)
- 83 suicide/ or self-destructive behavior/ or attempted suicide/ or self-injurious behavior/ or suicidal ideation/ or suicide prevention/ (36765)
- 84 or/75-83 (114601)
- 85 (Opioid* or opiate* or narcotic* or analges* or prescription*).mp. (52151)
- 86 84 and 85 (6053)
- 87 74 or 86 (75762)
- 88 ((Opioid* or opiate* or narcotic* or analges* or prescription*) adj3 (abuse or addict* or misuse or overdose or poison* or diversion or aberrant or monitoring or mortality or death or suicide or coroner or (prob* adj2 "drug use"))).mp. (5403)
- 89 87 or 88 (76867)
- 90 41 and 48 and 65 and 89 (728)
- 91 48 and 65 and 89 (5774)
- 92 motor traffic accidents/ or exp driving behavior/ (12611)
- 93 MVA.mp. (327)
- 94 ((accident* or trauma* or collision* or crash*) adj3 (motor or vehicle or automobile or traffic or road*)).mp. (8228)
- 95 92 or 93 or 94 (15408)
- 96 91 and 95 (64)
-
- S99 S95 AND S98 28
- S98 S96 OR S97 10,027
- S97 (accident* or trauma* or collision* or crash*) N3 (motor or vehicle or automobile or traffic

or road*) 10,027
S96 (MH "Accidents, Traffic")8,475
S95 S60 AND S76 AND S933,007
S94 S52 AND S60 AND S76 AND S93717
S93 S91 AND S9211,089
S92 Opioid* or opiate* or narcotic* or analges* or prescription*62,387
S91 S77 OR S78 OR S79 OR S80 OR S81 OR S82 OR S83 OR S84 OR S85 OR S86 OR S87 OR S88
OR S89 OR S90122,450
S90 (MH "Suicide+")14,732
S89 (MH "Death+")27,916
S88 (MH "Accidents") OR (MH "Accidental Falls") OR (MH "Accidents, Home") OR (MH
"Accidents, Traffic")22,188
S87 (MH "Adverse Drug Event+")13,373
S86 (MH "Poisoning")2,243
S85 (MH "Substance Withdrawal Syndrome")1,658
S84 (MH "Behavior, Addictive")2,282
S83 (MH "Substance Abuse Detection")2,176
S82 (MH "Drug and Narcotic Control")1,606
S81 (MH "Drug Toxicity")3,220
S80 (MH "Overdose")3,050
S79 (MH "Substance Use Disorders")12,359
S78 (MH "Substance Dependence")6,194
S77 (MH "Substance Abuse")18,954
S76 S61 OR S62 OR S63 OR S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72
OR S73 OR S74 OR S75768,531
S75 proportional or hazard* or bayes* or markov* or "odds ratio" or Cox or survival or kaplan-
meier or estimate* or ANOVA or ANCOVA 238,437
S74 logistic N2 regress* 85,680
S73 ((univariate or covariate or variance or covariance or multivariate or regression or
adjusted or unadjusted or logistic or diagnostic) N2 (analys* or model*)). 219,737
S72 prognosis or prognostic or predict* or risk* 500,391
S71 (MH "Probability") 6,017
S70 (MH "Analysis of Variance+") OR (MH "Analysis of Covariance+") 136,247
S69 (MH "Regression+") 152,763
S68 (MH "Risk Factors") 69,938
S67 (MH "Risk Assessment") 39,957
S66 (MH "Survival Analysis+") 38,411
S65 TX narcotic* AND MW "EP" 773
S64 TX opiate* AND MW "EP" 270
S63 TX opioid* AND MW "EP" 1,134
S62 (MH "Dose-Response Relationship") OR (MH "Epidemiology") OR (MH "Postexposure
Follow-Up") 6,572
S61 (MH "Prognosis") 25,024

- S60 S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 31,007
- S59 adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Diconid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogenic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram 1,449
- S58 alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol 15,306
- S57 "narcotic*" 9,319
- S56 (MH "Narcotics+") 18,429
- S55 "opiate*" 1,834
- S54 "opioid*" 12,968
- S53 (MH "Analgesics, Opioid+") 15,639
- S52 S43 OR S51 116,161
- S51 S50 NOT S41 10,729
- S50 S48 AND S49 15,308
- S49 "pain*" 145,592
- S48 S44 OR S45 OR S46 OR S47 81,457
- S47 "narcotic*" 9,319
- S46 "opiate*" 1,834
- S45 "opioid*" 12,968
- S44 "medication*" 64,075
- S43 S26 OR S42 110,270
- S42 S40 NOT S41 61,012
- S41 acute or emergency or preoperative or postoperative 262,477

- S40 S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 70,503
- S39 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) N3 pain) 41,695
- S38 backache* or backpain* or dorsalgi* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi* 11,463
- S37 (MH "Peripheral Nervous System+/DE") 1,500
- S36 (MH "Cumulative Trauma Disorders+") 3,912
- S35 (MH "Whiplash Injuries") OR "whiplash" 1,335
- S34 ((TMJ or TMJD) and pain*) 434
- S33 (MH "Temporomandibular Joint Syndrome") 368
- S32 "headache*" 15,071
- S31 (MH "Headache") 7,197
- S30 (MH "Arthralgia+") 3,975
- S29 "musculoskeletal pain" 1,515
- S28 (MH "Radiculopathy") OR "radiculopathy" 1,412
- S27 (MH "Back Pain+") 16,872
- S26 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 70,619
- S25 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) N3 pain) 2,819
- S24 (MH "Hyperalgesia") 1,004
- S23 (MH "Phantom Limb") OR (MH "Phantom Pain") 537
- S22 "intractable pain" 206
- S21 "causalgia" 71
- S20 (MH "Complex Regional Pain Syndromes+") 1,082
- S19 "fibromyalg*" 3,678
- S18 (MH "Fibromyalgia") 3,235
- S17 "migraine" 9,323
- S16 (MH "Migraine") 7,683
- S15 "IBS" 799
- S14 (irritable (bowel or colon)) 2,417
- S13 (MH "Irritable Bowel Syndrome") 2,031
- S12 "zoster" 2,200
- S11 "neuralg*" 2,718
- S10 (neuropath* N5 (pain* or diabet*)) 5,986
- S9 (MH "Diabetic Neuropathies") 2,699
- S8 (MH "Neuralgia+") 2,594
- S7 (MH "Arthritis, Rheumatoid+") 13,795
- S6 "degenerative arthrit*" 149

- S5 "osteo-arthritis" 32
- S4 "osteoarthrit*" 13,896
- S3 (MH "Osteoarthritis+") 11,700
- S2 chronic N4 pain 18,873
- S1 (MH "Chronic Pain") 11,285

PubMed Predictors of adverse outcomes MVAs

Search ((((((((((prognosis or prognostic or predict* or risk)) OR (((univariate or covariate or variance or covariance or multivariate or regression or adjusted or unadjusted or logistic or diagnostic) AND (analysis or model)))))))))) AND ((opioid OR opiate OR narcotic))) AND ((((((publisher [sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))))))) AND (((accident* or trauma* or collision* or crash*) and (motor or vehicle or automobile or traffic or road*))) Sort by: PublicationDate

4. Changing the dose of opioids

MEDLINE	7817
EMBASE	7814
PubMed	555
Subtotal	16186
-dupes	-3108
Total	13078

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Changing the dose of opioids

-
- 1 *Analgesics, Opioid/ad [Administration & Dosage] (5225)
 - 2 Oxycodone/ad [Administration & Dosage] (719)
 - 3 Oxymorphone/ad [Administration & Dosage] (113)
 - 4 Delayed-Action Preparations/ (31148)
 - 5 (Opioid* or opiate* or analges*).mp. (214157)
 - 6 4 and 5 (1545)
 - 7 ((Opioid* or opiate*) and ((rotat* or switch* or substitut* or titrat* or taper* or withdraw* or wean* or strateg* or adjust* or reduce or lower or decrease or sustained or controlled or slow or timed or modified or prolonged or extended or delayed or "long acting") adj1 (Dose* or dosage or dosing or level or formulation or preparation or release))).mp. (3007)
 - 8 (pain* and ((analgesi* or relief or control* or management) adj3 (insufficient* or unsatisfactor* or ineffective* or inadequate* or fail*))).mp. (3280)
 - 9 equi?analgesi*.mp. (353)
 - 10 1 or 2 or 3 or 6 or 7 or 8 or 9 (12106)
 - 11 Drug Administration Schedule/ (91723)

- 12 substance withdrawal syndrome/ (20044)
- 13 Drug Dosage Calculations/ (1525)
- 14 Pain Management/ (24563)
- 15 Breakthrough Pain/ (199)
- 16 Pain Measurement/ (70496)
- 17 Pain/dt [Drug Therapy] (26348)
- 18 Chronic Pain/dt [Drug Therapy] (1845)
- 19 or/11-18 (221497)
- 20 (Opioid* or opiate* or analges*).mp. (214157)
- 21 exp Analgesics, Opioid/ (99782)
- 22 20 or 21 (249440)
- 23 19 and 22 (53059)
- 24 10 or 23 (60173)
- 25 (chronic adj4 pain*).mp. (50778)
- 26 Chronic Pain/ (7049)
- 27 exp Osteoarthritis/ (52022)
- 28 osteoarthrit*.mp. (69377)
- 29 osteo-arthritis.mp. (368)
- 30 degenerative arthrit*.mp. (1230)
- 31 exp Arthritis, Rheumatoid/ (101442)
- 32 exp Neuralgia/ (16504)
- 33 Diabetic Neuropathies/ (13180)
- 34 (neuropath* adj5 (pain* or diabet*)).mp. (33363)
- 35 neuralg*.mp. (21789)
- 36 zoster.mp. (18185)
- 37 Irritable Bowel Syndrome/ (5470)
- 38 (IBS or irritable colon or irritable bowel).mp. (12757)
- 39 Migraine Disorders/ (22027)
- 40 migraine.mp. (31926)
- 41 Fibromyalgia/ (7189)
- 42 fibromyalg*.mp. (9424)
- 43 complex regional pain syndromes/ or exp causalgia/ or exp reflex sympathetic dystrophy/
(5115)
- 44 (complex regional pain syndromes or causalgia).mp. (2001)
- 45 Pain, Intractable/ (5925)
- 46 Phantom Limb/ (1669)
- 47 Hyperalgesia/ (9195)
- 48 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3
pain).mp. (14870)
- 49 or/25-48 (347212)
- 50 exp back pain/ or exp failed back surgery syndrome/ or exp low back pain/ (32786)
- 51 Radiculopathy/ or radiculopathy.mp. (7370)
- 52 musculoskeletal pain/ or headache/ (26587)

- 53 exp Arthralgia/ (9978)
54 exp Headache Disorders/ (29669)
55 headache*.mp. (77338)
56 Temporomandibular Joint Dysfunction Syndrome/ (4814)
57 ((TMJ or TMJD) and pain*).mp. (2181)
58 whiplash.mp. or exp whiplash injury/ (3612)
59 exp Cumulative Trauma Disorders/ (12189)
60 exp Peripheral Nervous System Diseases/dt [Drug Therapy] (12080)
61 Pain Measurement/de [Drug Effects] (6080)
62 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (36405)
63 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (129093)
64 or/50-63 (274730)
65 (acute or emergency or preoperative or postoperative).ti,ab. (1562829)
66 64 not 65 (232459)
67 49 or 66 (493859)
68 exp Analgesics, Opioid/ (99782)
69 (opiod* or opiate*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (104947)
70 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (137286)
71 or/68-70 (187167)
72 exp Narcotics/ (107625)
73 narcotic*.mp. (55269)
74 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or

lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or panceodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (8806)

- 75 or/68-74 (214593)
- 76 67 and 75 (20533)
- 77 animals/ not humans/ (4281898)
- 78 exp Animals, Laboratory/ (789371)
- 79 exp Animal Experimentation/ (8179)
- 80 exp Models, Animal/ (480565)
- 81 exp Rodentia/ (2929588)
- 82 (rat or rats or mouse or mice).ti. (1210780)
- 83 or/77-82 (5065741)
- 84 24 and 67 and 75 (10840)
- 85 24 and 76 (10840)
- 86 85 not 83 (7817)

Database: Embase <1974 to 2016 September 07>

Search Strategy: Changing the dose of opioids

-
- 1 *opiate/cb, cm [Drug Combination, Drug Comparison] (1176)
 - 2 opiate/do [Drug Dose] (2434)
 - 3 oxymorphone/do [Drug Dose] (145)
 - 4 oxycodone/do [Drug Dose] (857)
 - 5 *oxymorphone/cb, cm [Drug Combination, Drug Comparison] (72)
 - 6 oxycodone/cb, cm [Drug Combination, Drug Comparison] (1924)
 - 7 or/1-6 (5472)
 - 8 *chronic pain/dt [Drug Therapy] (5754)
 - 9 drug substitution/ (30235)
 - 10 drug withdrawal/ (133315)
 - 11 drug dose titration/ (20116)
 - 12 exp controlled release formulation/ (17816)
 - 13 or/8-12 (176316)
 - 14 (Opioid* or opiate* or analges*).mp. (356128)
 - 15 13 and 14 (15172)
 - 16 7 or 15 (19407)
 - 17 ((Opioid* or opiate*) and ((rotat* or switch* or substitut* or titrat* or taper* or

- withdraw* or wean* or strateg* or adjust* or reduce or lower or decrease or sustained or controlled or slow or timed or modified or prolonged or extended or delayed or "long acting") adj1 (Dose* or dosage or dosing or level or formulation or preparation or release)).mp. (5844)
- 18 (pain* and ((analgesi* or relief or control* or management) adj3 (insufficient* or unsatisfactor* or ineffective* or inadequate* or fail*))).mp. (5302)
- 19 16 or 17 or 18 (27220)
- 20 (chronic adj4 pain*).mp. (83633)
- 21 chronic pain/ (43417)
- 22 exp osteoarthritis/ (100457)
- 23 osteoarthrit*.mp. (108637)
- 24 osteo-arthritis.mp. (443)
- 25 degenerative arthrit*.mp. (1421)
- 26 exp rheumatoid arthritis/ (172924)
- 27 exp neuralgia/ (85794)
- 28 diabetic neuropathy/ (19875)
- 29 (neuropath* adj5 (pain* or diabet*)).mp. (58093)
- 30 neuralg*.mp. (27844)
- 31 zoster.mp. (32592)
- 32 irritable colon/ (19624)
- 33 (Irritable Bowel Syndrome or IBS).mp. (18564)
- 34 exp migraine/ (51002)
- 35 migraine.mp. (56802)
- 36 fibromyalgia/ (15950)
- 37 fibromyalg*.mp. (17045)
- 38 reflex sympathetic dystrophy.mp. (2298)
- 39 (complex regional pain syndromes or causalgia).mp. (1419)
- 40 intractable pain/ (4117)
- 41 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (8047)
- 42 hyperalgesia/ (16239)
- 43 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (20982)
- 44 or/20-43 (592729)
- 45 exp backache/ (83298)
- 46 radiculopathy.mp. or exp radiculopathy/ (31709)
- 47 musculoskeletal pain/ (7241)
- 48 exp arthralgia/ (44923)
- 49 headache/ (168388)
- 50 headache*.mp. (221194)
- 51 temporomandibular joint disorder/ (11684)
- 52 ((TMJ or TMJD) and pain*).mp. (3008)
- 53 whiplash.mp. or whiplash injury/ (4664)
- 54 exp cumulative trauma disorder/ (16359)

- 55 or/45-54 (385217)
- 56 (acute or emergency or preoperative or postoperative).ti,ab. (2080720)
- 57 55 not 56 (327982)
- 58 44 or 57 (834607)
- 59 exp narcotic analgesic agent/ (280158)
- 60 (opioid* or opiate*).mp. (153643)
- 61 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (252494)
- 62 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogescic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (45962)
- 63 or/59-62 (356138)
- 64 58 and 63 (44696)
- 65 19 and 64 (9048)
- 66 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or animal cell/ or nonhuman/ (23593475)
- 67 human/ or normal human/ or human cell/ (17642216)
- 68 66 and 67 (17595452)
- 69 66 not 68 (5998023)
- 70 65 not 69 (8782)
- 71 animals/ not humans/ (1180731)
- 72 nonhuman/ (4831054)
- 73 exp Animal Experiment/ (1963729)

- 74 exp Experimental Animal/ (530114)
- 75 animal model/ (894396)
- 76 exp Rodent/ (3263085)
- 77 (rat or rats or mouse or mice).ti. (1409340)
- 78 or/71-77 (7106166)
- 79 70 not 78 (7814)

PubMed, Changing the dose of opioids

Search (((((((pain* and ((analgesi* or relief or control* or management) AND (insufficient* or unsatisfactor* or ineffective* or inadequate* or fail*)))))) OR (((Opioid* or opiate*) and ((rotat* or switch* or substitut* or titrat* or taper* or withdraw* or wean* or strateg* or adjust* or reduce or lower or decrease or sustained or controlled or slow or timed or modified or prolonged or extended or delayed or "long acting") AND (Dose* or dosage or dosing or level or formulation or preparation or release)))))) AND (((chronic pain) AND (opioid* OR opiate* OR analges*)))) AND ((publisher[*sb*] OR inprocess[*sb*] OR pubmednotmedline[*sb*] OR pubstatusaheadofprint)) Sort by: PublicationDate
 Items found 555

5. Risk Assessment

MEDLINE	1693
EMBASE	3547
CINAHL	886
PsycInfo	403
PubMed	209
Subtotal	6738
-dupes	-1616
Total	5122

MEDLINE search

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Risk Assessment

 1 ((treatment or pain care or opioid* or medication or narcotic or adherence or "controlled substance" or opiate* or narcotic* or analges* or prescription*) adj3 (contract* or agreement* or structure* or monitor* or plan or manage* or program* or screen* or assess* or toxicol* or detect* or rotate or rotation)).mp. (144368)

- 2 ((opioid* or medication or opiate* or narcotic* or analges* or prescription*) and (aberrant* or inappropriate* or risk* or abuse or addict* or misuse or overdose or poison* or diversion)).mp. (104642)
- 3 *Analgesics, Opioid/ad, tu (11338)
- 4 Chronic Pain/dt (1760)
- 5 Pain/dt and (chronic or recurr* or intract* or persist*).ti,ab. (5627)
- 6 Chronic Disease/ (239226)
- 7 (Opioid* or opiate* or narcotic* or analges*).ti,ab. (169435)
- 8 6 and 7 (4088)
- 9 1 or 2 or 3 or 4 or 5 or 8 (254181)
- 10 Substance Abuse Detection/ (8069)
- 11 Opioid-Related Disorders/ (9899)
- 12 Analgesics, Opioid/ae, ur [Adverse Effects, Urine] (7830)
- 13 Narcotics/ae, ur [Adverse Effects, Urine] (2498)
- 14 or/10-13 (25999)
- 15 Urinalysis/ (6255)
- 16 Pharmacovigilance/ (956)
- 17 "Drug and Narcotic Control"/ (7966)
- 18 Mandatory Testing/ (812)
- 19 Drug Monitoring/ (16605)
- 20 Mass Screening/ (89002)
- 21 or/15-20 (121028)
- 22 (Opioid* or opiate* or narcotic* or analges* or prescription* or "controlled substance*" or "illicit drug" or "illicit substance").ti,ab. (238717)
- 23 21 and 22 (3265)
- 24 14 or 23 (28664)
- 25 Contracts/ (2945)
- 26 Health Services Misuse/ (4017)
- 27 exp Prescription Drug Misuse/ (9474)
- 28 "Drug-Related Side Effects and Adverse Reactions"/ (25646)
- 29 Drug Monitoring/ (16605)
- 30 Mass Screening/ (89002)
- 31 Substance-Related Disorders/ (84816)
- 32 informed consent/ (33123)
- 33 patient compliance/ or medication adherence/ (61976)
- 34 or/25-33 (318316)
- 35 (Opioid* or opiate* or narcotic* or analges*).ti,ab. (169435)
- 36 34 and 35 (10031)
- 37 14 or 23 or 36 (35407)
- 38 ((drug or narcotic or opio*) adj3 (screen* or montor* or assess* or toxicol* or detect* or risk* or misuse or abuse)).mp. (72106)
- 39 informed consent.mp. (52176)
- 40 Abuse deterren*.mp. (157)

- 41 tamper-resistan*.mp. (86)
- 42 (aberrant adj3 (behav* or drug-use or drug-taking or drug-related)).mp. (1635)
- 43 (problem adj3 (drug-use or drug-taking or drug-related)).mp. (426)
- 44 ((pill or pills or tablet* or dose or doses or prescript*) adj7 (limit* or count* or ration* or monitor* or exchange*)).mp. (42405)
- 45 (adher* adj5 monitor*).mp. (2169)
- 46 ((treatment or pain care or opioid or medication or narcotic or adherence or "controlled substance") adj3 (contract* or agreement* or structure* or monitor* or plan* or manage*)).mp. (96957)
- 47 (urinalys* or (urin* adj3 (analy* or test or tests or testing or screen* or toxicol*)) or (patient* adj3 (planning or agreement*)) or ((medication or opioid*) adj3 contract*) or (structur* adj3 (therap* or treat*)) or ((adheren* or complian* or nonadheren* or noncomplian* or dependen* or addict* or misuse*) adj3 (facilitat* or manage* or monitor* or checklist*))).ab,ti. (54992)
- 48 or/38-47 (306947)
- 49 37 or 48 (333799)
- 50 9 and 49 (89022)
- 51 (chronic adj4 pain*).mp. (49813)
- 52 Chronic Pain/ (6697)
- 53 exp Osteoarthritis/ (51309)
- 54 osteoarthrit*.mp. (68334)
- 55 osteo-arthritis.mp. (367)
- 56 degenerative arthrit*.mp. (1221)
- 57 exp Arthritis, Rheumatoid/ (100654)
- 58 exp Neuralgia/ (16246)
- 59 Diabetic Neuropathies/ (13018)
- 60 (neuropath* adj5 (pain* or diabet*)).mp. (32840)
- 61 neuralg*.mp. (21471)
- 62 zoster.mp. (18023)
- 63 Irritable Bowel Syndrome/ (5343)
- 64 (IBS or irritable colon or irritable bowel).mp. (12543)
- 65 Migraine Disorders/ (21877)
- 66 migraine.mp. (31609)
- 67 Fibromyalgia/ (7106)
- 68 fibromyalg*.mp. (9304)
- 69 complex regional pain syndromes/ or exp causalgia/ or exp reflex sympathetic dystrophy/ (5062)
- 70 (complex regional pain syndromes or causalgia).mp. (1971)
- 71 Pain, Intractable/ (5907)
- 72 Phantom Limb/ (1654)
- 73 Hyperalgesia/ (9015)
- 74 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (14663)

- 75 or/51-74 (343025)
- 76 exp back pain/ or exp failed back surgery syndrome/ or exp low back pain/ (32394)
- 77 Radiculopathy/ or radiculopathy.mp. (7281)
- 78 musculoskeletal pain/ or headache/ (26316)
- 79 exp Arthralgia/ (9788)
- 80 exp Headache Disorders/ (29444)
- 81 headache*.mp. (76462)
- 82 Temporomandibular Joint Dysfunction Syndrome/ (4794)
- 83 ((TMJ or TMJD) and pain*).mp. (2162)
- 84 whiplash.mp. or exp whiplash injury/ (3587)
- 85 exp Cumulative Trauma Disorders/ (12102)
- 86 exp Peripheral Nervous System Diseases/dt [Drug Therapy] (11917)
- 87 Pain Measurement/de [Drug Effects] (6018)
- 88 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (35962)
- 89 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (127047)
- 90 or/76-89 (271190)
- 91 (acute or emergency or preoperative or postoperative).ti,ab. (1543228)
- 92 90 not 91 (229534)
- 93 75 or 92 (487966)
- 94 exp Analgesics, Opioid/ (99012)
- 95 (opiod* or opiate*).mp. (103761)
- 96 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorpin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (136339)
- 97 or/94-96 (185537)
- 98 exp Narcotics/ (106838)
- 99 narcotic*.mp. (54894)
- 100 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogescic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or

hydromorphon or hydroxycodeinon or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodeinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (8718)

101 or/94-100 (212771)

102 93 and 101 (20236)

103 50 and 102 (3652)

104 animals/ not humans/ (4243766)

105 exp Animals, Laboratory/ (779761)

106 exp Animal Experimentation/ (8040)

107 exp Models, Animal/ (473465)

108 exp Rodentia/ (2900621)

109 (rat or rats or mouse or mice).ti. (1200210)

110 or/104-109 (5016580)

111 103 not 110 (3503)

112 epidemiologic studies/ (7190)

113 exp Case-Control Studies/ (799057)

114 exp Cohort Studies/ (1567367)

115 Case control.tw. (95251)

116 (cohort adj (study or studies)).tw. (119464)

117 Cohort analy\$.tw. (4925)

118 (Follow up adj (study or studies)).tw. (41832)

119 (observational adj (study or studies)).tw. (62276)

120 Longitudinal.tw. (172191)

121 Retrospective.tw. (347817)

122 Cross sectional.tw. (223467)

123 Cross-sectional studies/ (221476)

124 cohort*.mp. (447410)

125 controlled clinical trial.pt. (91219)

126 Epidemiologic Methods/ (30594)

127 limit 126 to yr="1966 - 1989" (11250)

128 or/112-125 (2420104)

129 127 or 128 (2429297)

130 "randomized controlled trial".pt. (424194)

131 (random\$ or placebo\$ or single blind\$ or double blind\$ or triple blind\$).ti,ab. (934119)

- 132 Randomized Controlled Trials as Topic/ or randomized controlled trial/ or Random Allocation/ or Double Blind Method/ or Single Blind Method/ or clinical trial/ (890647)
- 133 multicenter study.pt. (206849)
- 134 clinical trial.pt. (503358)
- 135 exp Clinical Trials as topic/ (298869)
- 136 (clinical adj trial\$.tw. (262970)
- 137 ((singl\$ or doubl\$ or treb\$ or tripl\$) adj (blind\$3 or mask\$3)).tw. (144050)
- 138 placebo\$.tw. (179519)
- 139 randomly allocated.tw. (20657)
- 140 (allocated adj2 random\$.tw. (23457)
- 141 or/130-140 (1684850)
- 142 (risk\$ adj7 (mitigat\$ or reduc\$)).mp. (141609)
- 143 (risk* adj7 (misuse or abuse or abberr*)).mp. (9848)
- 144 or/142-143 (150590)
- 145 129 or 141 or 144 (3714598)
- 146 111 and 145 (1693)

EMBASE

Database: Embase <1974 to 2016 July 07>

Search Strategy: Risk Assessment

-
- 1 ((treatment or pain care or opioid* or medication or narcotic or adherence or "controlled substance" or opiate* or narcotic* or analges* or prescription*) adj3 (contract* or agreement* or structure* or monitor* or plan or manage* or program* or screen* or assess* or toxicol* or detect* or rotate or rotation)).mp. (212339)
 - 2 ((opioid* or medication or opiate* or narcotic* or analges* or prescription*) and (aberrant* or inappropriate* or risk* or abuse or addict* or misuse or overdose or poison* or diversion)).mp. (195535)
 - 3 narcotic analgesic agent/dt [Drug Therapy] (8319)
 - 4 opiate/dt [Drug Therapy] (16368)
 - 5 chronic pain/dt [Drug Therapy] (10498)
 - 6 Pain/dt and (chronic or recurr* or intract* or persist*).ti,ab. (5319)
 - 7 chronic disease/dt [Drug Therapy] (4446)
 - 8 (Opioid* or opiate* or narcotic* or analges*).ti,ab. (227823)
 - 9 7 and 8 (89)
 - 10 1 or 2 or 3 or 4 or 5 or 6 or 9 (415238)
 - 11 opiate addiction/ (12255)
 - 12 narcotic analgesic agent/ae, to [Adverse Drug Reaction, Drug Toxicity] (3873)
 - 13 opiate/ae, to [Adverse Drug Reaction, Drug Toxicity] (8939)
 - 14 or/11-13 (23661)
 - 15 urinalysis/ (76371)

- 16 drug surveillance program/ (21782)
- 17 drug control/ (11638)
- 18 mandatory testing/ (785)
- 19 drug monitoring/ (45731)
- 20 mass screening/ (51854)
- 21 or/15-20 (204874)
- 22 (Opioid* or opiate* or narcotic* or analges* or prescription* or "controlled substance*" or "illicit drug" or "illicit substance").ti,ab. (335530)
- 23 21 and 22 (8571)
- 24 14 or 23 (31221)
- 25 contract/ (5686)
- 26 drug misuse/ (6129)
- 27 adverse drug reaction/ or side effect/ (368493)
- 28 addiction/ (47968)
- 29 drug abuse/ (47153)
- 30 substance abuse/ (46379)
- 31 informed consent/ (77556)
- 32 patient compliance/ (110699)
- 33 medication compliance/ (13430)
- 34 or/25-33 (688331)
- 35 (Opioid* or opiate* or narcotic* or analges*).ti,ab. (227823)
- 36 34 and 35 (28081)
- 37 14 or 23 or 36 (53208)
- 38 ((drug or narcotic or opio*) adj3 (screen* or montor* or assess* or toxicol* or detect* or risk* or misuse or abuse)).mp. (266186)
- 39 informed consent.mp. (93708)
- 40 Abuse deterren*.mp. (284)
- 41 tamper-resistan*.mp. (143)
- 42 (aberrant adj3 (behav* or drug-use or drug-taking or drug-related)).mp. (2196)
- 43 (problem adj3 (drug-use or drug-taking or drug-related)).mp. (680)
- 44 ((pill or pills or tablet* or dose or doses or prescript*) adj7 (limit* or count* or ration* or monitor* or exchange*)).mp. (67355)
- 45 (adher* adj5 monitor*).mp. (3204)
- 46 ((treatment or pain care or opioid or medication or narcotic or adherence or "controlled substance") adj3 (contract* or agreement* or structure* or monitor* or plan* or manage*)).mp. (233442)
- 47 (urinalys* or (urin* adj3 (analy* or test or tests or testing or screen* or toxicol*)) or (patient* adj3 (planning or agreement*)) or ((medication or opioid*) adj3 contract*) or (structur* adj3 (therap* or treat*)) or ((adheren* or complian* or nonadheren* or noncomplian* or dependen* or addict* or misuse*) adj3 (facilitat* or manage* or monitor* or checklist*))).ab,ti. (77867)
- 48 or/38-47 (712334)
- 49 37 or 48 (748198)

- 50 10 and 49 (155149)
- 51 (chronic adj4 pain*).mp. (82303)
- 52 chronic pain/ (42731)
- 53 exp osteoarthritis/ (99434)
- 54 osteoarthrit*.mp. (107230)
- 55 osteo-arthritis.mp. (441)
- 56 degenerative arthrit*.mp. (1414)
- 57 exp rheumatoid arthritis/ (171722)
- 58 exp neuralgia/ (84817)
- 59 diabetic neuropathy/ (19673)
- 60 (neuropath* adj5 (pain* or diabet*)).mp. (57195)
- 61 neuralg*.mp. (27522)
- 62 zoster.mp. (32255)
- 63 irritable colon/ (19387)
- 64 (Irritable Bowel Syndrome or IBS).mp. (18300)
- 65 exp migraine/ (50337)
- 66 migraine.mp. (56016)
- 67 fibromyalgia/ (15760)
- 68 fibromyalg*.mp. (16830)
- 69 reflex sympathetic dystrophy.mp. (2284)
- 70 (complex regional pain syndromes or causalgia).mp. (1403)
- 71 intractable pain/ (4096)
- 72 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (7973)
- 73 hyperalgesia/ (16039)
- 74 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (20703)
- 75 or/51-74 (586018)
- 76 exp backache/ (82186)
- 77 radiculopathy.mp. or exp radiculopathy/ (31253)
- 78 musculoskeletal pain/ (7067)
- 79 exp arthralgia/ (44275)
- 80 headache/ (165956)
- 81 headache*.mp. (218177)
- 82 temporomandibular joint disorder/ (11620)
- 83 ((TMJ or TMJD) and pain*).mp. (2979)
- 84 whiplash.mp. or whiplash injury/ (4627)
- 85 exp cumulative trauma disorder/ (16195)
- 86 or/76-85 (380156)
- 87 (acute or emergency or preoperative or postoperative).ti,ab. (2053773)
- 88 86 not 87 (323825)
- 89 75 or 88 (824858)
- 90 exp narcotic analgesic agent/ (277807)
- 91 (opioid* or opiate*).mp. (151969)

- 92 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (250568)
- 93 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (45596)
- 94 or/90-93 (353058)
- 95 89 and 94 (44135)
- 96 50 and 95 (9708)
- 97 clinical study/ (123320)
- 98 case control study/ (107394)
- 99 longitudinal study/ (89384)
- 100 intervention study/ (28477)
- 101 prospective study/ (341214)
- 102 retrospective study/ (475236)
- 103 cohort analysis/ (249415)
- 104 ((cohort or case control or follow up or observational or epidemiologic* or cross sectional) adj (study or studies)).mp. (764259)
- 105 clinical trial/ (864329)
- 106 exp controlled clinical trial/ (552991)
- 107 observational study/ (92749)
- 108 or/97-107 (2588805)
- 109 Randomized controlled trial/ or Randomization/ or Single blind procedure/ or Double blind procedure/ or Crossover procedure/ or Placebo/ (723869)

- 110 (random\$ or placebo\$ or single blind\$ or double blind\$ or triple blind\$).ti,ab. (1216191)
- 111 109 or 110 (1441654)
- 112 (risk* adj7 (misuse or abuse or abberr*)).mp. (14056)
- 113 (risk\$ adj7 (mitigat\$ or reduc\$)).mp. (232254)
- 114 112 or 113 (244994)
- 115 108 or 111 or 114 (3506651)
- 116 96 and 115 (4142)
- 117 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or animal cell/ or nonhuman/ (23330755)
- 118 human/ or normal human/ or human cell/ (17426632)
- 119 117 and 118 (17379868)
- 120 117 not 119 (5950887)
- 121 116 not 120 (4125)
- 122 animals/ not humans/ (1166800)
- 123 nonhuman/ (4784923)
- 124 exp Animal Experiment/ (1945569)
- 125 exp Experimental Animal/ (520799)
- 126 animal model/ (880591)
- 127 exp Rodent/ (3234403)
- 128 (rat or rats or mouse or mice).ti. (1399029)
- 129 or/122-128 (7039776)
- 130 121 not 129 (3547)

CINAHL Risk Assessment

#	Query	Results
S134	S99 AND S133	886
S133	S129 OR S132	599,731
S132	S130 OR S131	35,300
S131	TX (risk* N7 (misuse or abuse or abberr*))	4,560
S130	TX (risk* N7 (mitigat* or reduc*))	31,151
S129	S106 OR S128	578,934
S128	S126 NOT S127	481,512
S127	(MH "Animals+")	32,510
S126	S113 OR S118 OR S125	485,120
S125	S119 OR S120 OR S121 OR S122 OR S123 OR S124	428,695
S124	(MH "Prospective Studies+")	184,690
S123	(MH "Evaluation Research+")	21,134
S122	(MH "Comparative Studies")	76,373
S121	"latin square"	118
S120	(MH "Study Design") OR (MH "Crossover Design") OR (MH "Experimental Studies+")	180,558
S119	(MH "Random Sample+")	61,123
S118	S114 OR S115 OR S116 OR S117	175,483

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S117	"random*"	167,885
S116	"placebo*"	28,057
S115	(MH "Placebos")	7,627
S114	(MH "Placebo Effect")	1,062
S113	S107 OR S108 OR S109 OR S110 OR S111 OR S112	166,440
S112	"triple-blind"	100
S111	"single-blind"	7,422
S110	"double-blind"	26,184
S109	clinical W3 trial	108,667
S108	"randomi?ed controlled trial*"	51,229
S107	(MH "Clinical Trials+")	135,567
S106	S100 OR S101 OR S102 OR S103 OR S104 OR S105	306,649
S105	(observational N2 (study or studies))	15,468
S104	(cohort N2 (study or studies))	29,377
S103	(MH "Cross Sectional Studies")	74,754
S102	(MH "Correlational Studies")	17,463
S101	(MH "Case Control Studies+")	34,936
S100	(MH "Prospective Studies+")	184,690
S99	S90 AND S98	3,164
S98	S91 OR S92 OR S93 OR S94 OR S95 OR S96 OR S97	30,723
S97	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morphine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura	1,441

	or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	
S96	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	15,199
S95	"narcotic*"	9,259
S94	(MH "Narcotics+")	18,313
S93	"opiate*"	1,843
S92	"opioid*"	12,773
S91	(MH "Analgesics, Opioid+")	15,483
S90	S37 AND S89	5,613
S89	S80 OR S88	115,076
S88	S87 NOT S78	10,635
S87	S85 AND S86	15,213
S86	"pain*"	144,749
S85	S81 OR S82 OR S83 OR S84	80,721
S84	"narcotic*"	9,259
S83	"opiate*"	1,843
S82	"opioid*"	12,773
S81	"medication*"	63,531
S80	S63 OR S79	109,220
S79	S77 NOT S78	60,420
S78	acute or emergency or preoperative or postoperative	263,115
S77	S64 OR S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71 OR S72 OR S73 OR S74 OR S75 OR S76	69,921
S76	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic	41,250

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S75	or shoulder* or knee* or hip or hips) N3 pain) backache* or backpain* or dorsalgia* or arthralgia* or polyarthralgia* or arthrodynia* or myalgia* or fibromyalgia* or myodynia* or neuralgia* or ischialgia* or crps or rachialgia*	11,391
S74	(MH "Peripheral Nervous System+/DE")	1,489
S73	(MH "Cumulative Trauma Disorders+")	3,887
S72	(MH "Whiplash Injuries") OR "whiplash"	1,321
S71	((TMJ or TMJD) and pain*)	429
S70	(MH "Temporomandibular Joint Syndrome")	365
S69	"headache*"	15,016
S68	(MH "Headache")	7,187
S67	(MH "Arthralgia+")	3,935
S66	"musculoskeletal pain"	1,484
S65	(MH "Radiculopathy") OR "radiculopathy"	1,397
S64	(MH "Back Pain+")	16,755
S63	S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60 OR S61 OR S62	69,904
S62	((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) N3 pain)	2,796
S61	(MH "Hyperalgesia")	987
S60	(MH "Phantom Limb") OR (MH "Phantom Pain")	535
S59	"intractable pain"	206
S58	"causalgia"	69
S57	(MH "Complex Regional Pain Syndromes+")	1,074
S56	"fibromyalg*"	3,656
S55	(MH "Fibromyalgia")	3,224
S54	"migraine"	9,274
S53	(MH "Migraine")	7,661
S52	"IBS"	780
S51	(irritable (bowel or colon))	2,380
S50	(MH "Irritable Bowel Syndrome")	2,023
S49	"zoster"	2,180
S48	"neuralg*"	2,684
S47	(neuropath* N5 (pain* or diabet*))	5,918
S46	(MH "Diabetic Neuropathies")	2,692
S45	(MH "Neuralgia+")	2,572
S44	(MH "Arthritis, Rheumatoid+")	13,698
S43	"degenerative arthrit*"	149
S42	"osteo-arthritis"	32
S41	"osteoarthrit*"	13,751

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S40	(MH "Osteoarthritis+")	11,597
S39	chronic N4 pain	18,590
S38	(MH "Chronic Pain")	11,106
S37	S5 OR S14 OR S24 OR S36	72,073
S36	S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35	57,872
S35	TX (urinalys* or (urin* adj3 (analy* or test or tests or testing or screen* or toxicol*)) or (patient* adj3 (planning or agreement*)) or ((medication or opioid*) adj3 contract*) or (structur* adj3 (therap* or treat*)) or ((adheren* or complian* or nonadheren* or noncomplian* or dependen* or addict* or misuse*) N3 (facilitat* or manage* or monitor* or checklist*)))	7,570
S34	TX ((treatment or pain care or opioid or medication or narcotic or adherence or "controlled substance") N3 (contract* or agreement* or structure* or monitor* or plan* or manage*))	19,730
S33	TX (adher* N5 monitor*)	669
S32	TX ((pill or pills or tablet* or dose or doses or prescript*) N7 (limit* or count* or ration* or monitor* or exchange*))	4,422
S31	TX (problem N3 (drug-use or drug-taking or drug-related))	575
S30	TX (aberrant N3 (behav* or drug-use or drug-taking or drug-related))	410
S29	TX tamper-resistan*	51
S28	TX Abuse deterren*	79
S27	TX informed consent	6,177
S26	TX ((drug or narcotic or opio*) N3 (screen* or monitor* or assess* or toxicol* or detect* or risk* or misuse or abuse)	22,945
S25	S5 OR S14 OR S24	19,218
S24	S22 AND S23	3,196
S23	TX Opioid* or opiate* or narcotic* or analges*	36,837
S22	S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21	61,601
S21	(MH "Patient Compliance") OR (MH "Medication Compliance")	25,474
S20	(MH "Consent+")	11,711
S19	(MH "Substance Use Disorders")	12,207
S18	(MH "Drug Monitoring")	4,002
S17	(MH "Adverse Drug Event")	4,310
S16	(MH "Health Services Misuse")	950
S15	(MH "Contracts")	4,287

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S14	S5 OR S13	18,696
S13	S11 AND S12	2,421
S12	TX (Opioid* or opiate* or narcotic* or analges* or prescription* or "controlled substance*" or "illicit drug" or "illicit substance")	67,681
S11	S6 OR S7 OR S8 OR S9 OR S10	9,876
S10	(MH "Drug Monitoring")	4,002
S9	(MH "Mandatory Testing")	371
S8	(MH "Drug and Narcotic Control")	1,591
S7	(MH "Pharmacovigilance")	177
S6	(MH "Urinalysis")	3,800
S5	S1 OR S2 OR S3 OR S4	16,844
S4	(MH "Narcotics/AE/UR")	1,556
S3	(MH "Analgesics, Opioid/AE/UR")	1,676
S2	(MH "Substance Use Disorders")	12,207
S1	(MH "Substance Abuse Detection")	2,159

PsycINFO

Database: PsycINFO <1806 to July Week 1 2016>

Search Strategy: Risk Assessment

-
- 1 exp Drug Abuse/ (96869)
 - 2 drug abuse/ or drug abuse liability/ or drug abuse prevention/ or exp drug addiction/ or intravenous drug usage/ or "substance abuse and addiction measures"/ or "substance use disorder"/ (57824)
 - 3 urinalysis/ or drug usage screening/ (1297)
 - 4 "side effects (drug)"/ (23651)
 - 5 screening/ (8093)
 - 6 informed consent/ (3698)
 - 7 treatment compliance/ (12541)
 - 8 or/1-7 (147502)
 - 9 (Opioid* or opiate* or narcotic* or analges* or prescription* or "controlled substance*" or "illicit drug" or "illicit substance").ti,ab. (52210)
 - 10 8 and 9 (14833)
 - 11 ((drug or narcotic or opio*) adj3 (screen* or montor* or assess* or toxicol* or detect* or risk* or misuse or abuse)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (57881)
 - 12 informed consent.mp. (7720)
 - 13 Abuse deterren*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (46)
 - 14 tamper-resistan*.mp. (25)

- 15 (aberrant adj3 (behav* or drug-use or drug-taking or drug-related)).mp. (1856)
- 16 (problem adj3 (drug-use or drug-taking or drug-related)).mp. (381)
- 17 ((pill or pills or tablet* or dose or doses or prescript*) adj7 (limit* or count* or ration* or monitor* or exchange*)).mp. (2827)
- 18 (adher* adj5 monitor*).mp. (606)
- 19 ((treatment or pain care or opioid or medication or narcotic or adherence or "controlled substance") adj3 (contract* or agreement* or structure* or monitor* or plan* or manage*)).mp. (23860)
- 20 (urinalys* or (urin* adj3 (analy* or test or tests or testing or screen* or toxicol*)) or (patient* adj3 (planning or agreement*)) or ((medication or opioid*) adj3 contract*) or (structur* adj3 (therap* or treat*)) or ((adheren* or complian* or nonadheren* or noncomplian* or dependen* or addict* or misuse*) adj3 (facilitat* or manage* or monitor* or checklist*))).ab,ti. (10772)
- 21 or/11-20 (98562)
- 22 10 and 21 (7921)
- 23 (chronic adj4 pain*).mp. (17715)
- 24 chronic pain/ (10982)
- 25 exp arthritis/ (3545)
- 26 osteoarthrit*.mp. (1530)
- 27 osteo-arthritis.mp. (7)
- 28 degenerative arthrit*.mp. (15)
- 29 exp neuralgia/ (827)
- 30 exp neuropathy/ (5208)
- 31 (neuropath* adj5 (pain* or diabet*)).mp. (5542)
- 32 neuralg*.mp. (1431)
- 33 zoster.mp. (506)
- 34 irritable bowel syndrome/ (957)
- 35 (IBS or irritable colon or irritable bowel).mp. (1657)
- 36 migraine headache/ (8158)
- 37 migraine.mp. (10848)
- 38 fibromyalgia/ (1537)
- 39 fibromyalg*.mp. (2719)
- 40 complex regional pain syndromes.mp. (54)
- 41 "complex regional pain syndrome (type i)"/ (124)
- 42 (complex regional pain syndromes or causalgia).mp. (105)
- 43 somatosensory disorders/ (1145)
- 44 hyperalgesi*.mp. (3607)
- 45 somatoform pain disorder/ (771)
- 46 somatoform disorders/ (7281)
- 47 conversion disorder/ (951)
- 48 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (2696)
- 49 or/23-48 (53562)

- 50 back pain.mp. or exp Back Pain/ (4813)
- 51 radiculopathy.mp. (171)
- 52 musculoskeletal pain.mp. (1220)
- 53 Arthralgia.mp. (80)
- 54 headache.mp. or exp HEADACHE/ (17816)
- 55 ((TMJ or TMJD) and pain*).mp. (126)
- 56 WHIPLASH/ or whiplash.mp. (532)
- 57 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (4941)
- 58 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (16336)
- 59 or/50-58 (36228)
- 60 (acute or emergency or preoperative or postoperative).ti,ab. (99827)
- 61 59 not 60 (31964)
- 62 49 or 61 (65115)
- 63 exp opiates/ (21045)
- 64 (opioid* or opiate*).mp. (24987)
- 65 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or dextorphan or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (25946)
- 66 exp narcotic drugs/ (25010)
- 67 narcotic*.mp. (5546)
- 68 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfina or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or

tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (842)

69 or/63-68 (44320)

70 22 and 62 and 69 (403)

PubMed Risk Assessment

Search (((((((treatment agreement) OR structured therapy) OR urinalysis)) OR (((Abuse deterren*) OR tamper-resistan*) OR informed consent) OR drug screening)) OR ((misuse detect*) OR abuse detect*)) OR ((opioid) AND (abuse or misuse))) AND (((publisher [sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)) AND (opioid OR opiate OR narcotic)) AND chronic pain) 209

5.a. Naloxone

NB the search strategy was adapted from the search published in EMCDDA 2015. Run for years 2013 forward in Cochrane Library and PubMed/ MEDLINE, EMBASE and CINAHL. Search was adapted to PsycInfo and run since 2013, given comprehensive searches of PsycInfo in Clark 2014 and MacDonald 2016.

MEDLINE	597
EMBASE	660
PsycInfo	130
PubMed	318
Central	23
CINAHL	156
Subtotal	1884
-dupes	-875
Total	1009

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: Naloxone

-
- 1 Drug Overdose/ (8838)
 - 2 overdos*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (20701)
 - 3 Opioid-Related Disorders/ (10154)
 - 4 ((intoxicat* or poison*) and (opiat* or opioid* or heroin* or narcot*)).mp. (3141)

- 5 or/1-4 (32254)
- 6 exp Naloxone/ (23558)
- 7 naloxon*.mp. (25143)
- 8 narcan*.mp. (76)
- 9 or/6-8 (30639)
- 10 5 and 9 (2097)
- 11 limit 10 to yr="2013 -Current" (597)

Database: Embase <1974 to 2016 October 05>

Search Strategy: Naloxone

-
- 1 opiate addiction/ (13215)
 - 2 (Opioid* or opiate* or narcot* or heroin* or prescription*).mp. (380746)
 - 3 1 or 2 (380746)
 - 4 drug overdose/ (19577)
 - 5 (intoxicat* or poison*).mp. (309948)
 - 6 4 or 5 (319860)
 - 7 3 and 6 (14059)
 - 8 naloxone/ (38937)
 - 9 naloxon*.mp. (43039)
 - 10 narcan*.mp. (1430)
 - 11 or/8-10 (43049)
 - 12 7 and 11 (1996)
 - 13 limit 12 to yr="2013 -Current" (595)
 - 14 drug overdose/ (19577)
 - 15 overdos*.mp. (34621)
 - 16 opiate addiction/ (13215)
 - 17 ((intoxicat* or poison*) and (opiat* or opioid* or heroin* or narcot*)).mp. (8829)
 - 18 or/14-17 (52484)
 - 19 naloxone/ (38937)
 - 20 naloxon*.mp. (43039)
 - 21 narcan*.mp. (1430)
 - 22 or/19-21 (43049)
 - 23 18 and 22 (4235)
 - 24 (prevent* or inject*).mp. (3065229)
 - 25 23 and 24 (1138)
 - 26 exp animals/ or exp invertebrate/ or animal experiment/ or animal model/ or animal tissue/ or animal cell/ or nonhuman/ (23889962)
 - 27 human/ or normal human/ or human cell/ (18085635)
 - 28 26 and 27 (18038817)
 - 29 26 not 28 (5851145)
 - 30 animals/ not humans/ (1222132)
 - 31 nonhuman/ (4925699)

- 32 exp Animal Experiment/ (2034558)
- 33 exp Experimental Animal/ (644420)
- 34 animal model/ (994316)
- 35 exp Rodent/ (3320215)
- 36 (rat or rats or mouse or mice).ti. (1396998)
- 37 or/30-36 (7210576)
- 38 25 not 29 (912)
- 39 38 not 37 (822)
- 40 limit 39 to yr="2013 -Current" (317)
- 41 13 not 29 (583)
- 42 41 not 37 (558)
- 43 40 or 42 (660)

Database: PsycINFO <1806 to September Week 4 2016>

Search Strategy: Naloxone

-
- 1 exp Drug Overdoses/ (1261)
 - 2 overdos*.mp. (3452)
 - 3 ((intoxicat* or poison*) and (opiat* or opioid* or heroin* or narcot*)).mp. (562)
 - 4 or/1-3 (3922)
 - 5 exp NALOXONE/ (2573)
 - 6 naloxon*.mp. (5030)
 - 7 narcan*.mp. (10)
 - 8 or/5-7 (5031)
 - 9 4 and 8 (241)
 - 10 limit 9 to yr="2013 -Current" (130)

Central

Search Name: Naloxone

Date Run: 05/10/16 21:48:59.973

Description:

ID	Search Hits	
#1	opiat* or opioid* or heroin* or narcot*	19209
#2	MeSH descriptor: [Opioid-Related Disorders] explode all trees	1421
#3	#1 or #2	19215
#4	MeSH descriptor: [Drug Overdose] explode all trees	85
#5	overdos* or intoxicat* or poison*:ti,ab,kw (Word variations have been searched)	3350
#6	#4 or #5	3350

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#7	MeSH descriptor: [Naloxone] explode all trees	1722
#8	naloxone:ti,ab,kw (Word variations have been searched)	1874
#9	narcan	10
#10	narcan:ti,ab,kw (Word variations have been searched)	4
#11	MeSH descriptor: [Narcotic Antagonists] this term only	1041
#12	((narcotic or opiate or opioid) near/3 antagonist*):ti,ab	916
#13	#7 or #8 or #9 or #10 or #11 or #12 3095	
#14	#3 and #6 and #13 Publication Year from 2013 to 2016, in Trials	23

PubMed Naloxone

Search (((((((("drug overdose"[MeSH Terms]) OR overdos*[Title/Abstract]) OR intoxicat*[Title/Abstract])) AND (((opiat*[tiab] OR opioid*[tiab] OR heroin*[tiab] OR narcot*[tiab]))) OR "Opioid-Related Disorders"[MeSH])) AND (((naloxone[MeSH Terms]) OR naloxone[Title/Abstract]) OR narcan[Title/Abstract])) AND ("2013"[Date - Publication] : "3000"[Date - Publication])) OR (((((((("drug overdose"[MeSH Terms]) OR overdos*[Title/Abstract]) OR intoxicat*[Title/Abstract])) AND (((opiat*[tiab] OR opioid*[tiab] OR heroin*[tiab] OR narcot*[tiab]))) OR "Opioid-Related Disorders"[MeSH])) AND (((naloxone[MeSH Terms]) OR naloxone[Title/Abstract]) OR narcan[Title/Abstract])) AND (((publisher[sb] OR inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))) Sort by:PublicationDate

CINAHL Naloxone

#	Query	Results
S12	S11 Limiters - Published Date: 20130101-20161231	156
S11	S3 AND S6 AND S10	314
S10	S7 OR S8 OR S9	2,271
S9	TX Narcan*	37
S8	TX Naloxone	1,415
S7	(MH "Naloxone+")	1,858
S6	S4 OR S5	9,426
S5	TI overdos* OR TI intoxicat* OR TI poison* OR AB overdos* OR AB intoxicat* OR AB poison*	8,855
S4	(MM "Overdose")	1,657
S3	S1 OR S2	49,880
S2	TI opiat* OR TI opioid* OR TI heroin* OR TI narcot* or AB opiat* OR AB opioid* OR AB heroin* OR AB narcot*	14,205
S1	(MH "Substance Abuse+")	37,826

6. Treatment of adverse events

Treatment of opioid-induced sleep apnea

MEDLINE	162
EMBASE	465
Cochrane	13
CINAHL	35
PubMed	27
Subtotal	702
-dupes	-198
total	504

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present
 Search Strategy: sleep apnea

-
- 1 sleep apnea syndromes/ or sleep apnea, central/ (14100)
 - 2 sleep apne*.mp. (34420)
 - 3 sleep apnoe*.mp. (4959)
 - 4 (upper airway resistan* adj2 syndrom*).mp. (244)
 - 5 (obstruct* adj2 hypopn?ea*).mp. (369)
 - 6 (sleep disorder* adj1 breathing).mp. (5223)
 - 7 (sleep adj2 respirat* adj1 disorder).mp. (33)
 - 8 osa.tw. (9325)
 - 9 osas.tw. (3484)
 - 10 osahs.tw. (1123)
 - 11 ((mixed or central) adj4 apn?ea*).mp. (2896)
 - 12 apn?e*-hypopn*.mp. (8028)
 - 13 (nocturnal adj2 hypoxemia).mp. (406)
 - 14 (sleep disorder* adj1 respirat*).mp. (74)
 - 15 (nocturnal adj2 hypoxemia).mp. (406)
 - 16 apn?eic.mp. (3056)
 - 17 hypopneic.mp. (69)
 - 18 or/1-17 (40282)
 - 19 exp Analgesics, Opioid/ (100406)
 - 20 (opiod* or opiate*).mp. (107348)
 - 21 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (139313)
 - 22 or/19-21 (190639)
 - 23 exp Narcotics/ (108262)

- 24 narcotic*.mp. (55740)
- 25 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogenic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levodromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n-methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (9018)
- 26 or/19-25 (218404)
- 27 18 and 26 (628)
- 28 limit 27 to yr="2014 -Current" (162)

Database: Embase <1974 to 2016 November 07>

Search Strategy: sleep apnea

-
- 1 central sleep apnea syndrome/ or upper airway resistance syndrome/ (2481)
 - 2 sleep apne*.mp. (50856)
 - 3 sleep apnoe*.mp. (8231)
 - 4 (upper airway resist* adj2 syndrom*).mp. (505)
 - 5 (obstruct* adj2 hypopn?ea*).mp. (671)
 - 6 (sleep disorder* adj1 breathing).mp. (30987)
 - 7 (sleep adj2 respirat* adj1 disorder).mp. (46)
 - 8 osa.tw. (17845)
 - 9 osas.tw. (5744)
 - 10 osahs.tw. (1606)
 - 11 ((mixed or central) adj4 apn?ea*).mp. (4445)
 - 12 apn?e*-hypopn*.mp. (15303)
 - 13 (nocturnal adj2 hypoxemia).mp. (628)
 - 14 (sleep disorder* adj1 respirat*).mp. (137)
 - 15 (nocturnal adj2 hypoxemia).mp. (628)
 - 16 apn?eic.mp. (4003)
 - 17 hypopneic.mp. (101)
 - 18 or/1-17 (67893)
 - 19 exp narcotic analgesic agent/ (291371)
 - 20 (opioid* or opiate*).mp. (156577)
 - 21 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or

codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (255409)

22 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levodromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodoinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadololor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading] (46645)

23 or/19-22 (361276)

24 animals/ not humans/ (1220995)

25 exp rodent/ (3335896)

26 (rat or rats or mouse or mice).ti. (1402483)

27 exp Animals, Laboratory/ or exp Animal Experimentation/ or exp Models, Animal/ (2608932)

28 or/24-27 (4860661)

29 18 and 23 (1947)

30 29 not 28 (1882)

31 limit 30 to yr="2014 -Current" (522)

32 remove duplicates from 31 (465)

Cochrane

Search Name: sleep apnea

Date Run: 08/11/16 21:18:43.855

Description:

ID Search Hits

#1 MeSH descriptor: [Sleep Apnea Syndromes] this term only 518

#2 MeSH descriptor: [Sleep Apnea, Central] explode all trees 49

#3 sleep apn?e* 1093

#4	upper airway resistanc* N2 syndrom*	6
#5	obstruct* N2 hypopnea*	0
#6	sleep disorder* N1 breathing	36
#7	sleep N2 respirat* N1 disorder	22
#8	osa	1327
#9	osas	379
#10	osahs	134
#11	((mixed or central) N4 apnea*)	5
#12	apnea*-hypopnea*	321
#13	sleep disorder* N1 respirat*	41
#14	nocturnal hypoxemia	77
#15	apneic	116
#16	hypopneic	6
#17	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16	2999
#18	opioid* or opiate*	15440
#19	narcotic*	5883
#20	MeSH descriptor: [Analgesics, Opioid] explode all trees	5868
#21	MeSH descriptor: [Narcotics] explode all trees	6626
#22	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or dextorphan or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirlinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	29137
#23	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or bionalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or duorgesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacodone or l dromoran or levodromoran or levorphanol or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or	4890

morphinene or morphium or ms contin or
 n-methylmorphine or n methylmorphine or nobligan
 or numorphan or oramorph or oxycodion or oxiconum
 or oxycone or oxycontin or palladone or pancodine or
 pethidine or phentanyl or prontosfort or robidone or skenan
 or sublimaze or sulfentanyl or sulfentanil or sufenta or
 takadol or talwin or theocodin or tramadol or tramadolhameln
 or tramador or tramadura or tramagetic or tramagit or tramake
 or tramal or tramex or tramundin or trasedal or theradol or
 tiral or topalgic or tradol or tradolpuren or tradonal or
 tralgiol or tramadorsch or tramadin or tramadoc or ultram
 or zamudol or zumalgic or zydol or zytram

- #24 #18 or #19 or #20 or #21 or #22 or #23 37704
 #25 #17 and #24 Publication Year from 2014 to 2016, in Trials 13

CINAHL Sleep apnea

#	Query	Results
S24	S23 Limiters - Published Date: 20140101-2016123135	
S23	S14 AND S22	143
S22	S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21	31,334
S21	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodion or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodion or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or	1,458

	zydol or zytram		
S20	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	15,423	
S19	"narcotic*"	9,392	
S18	(MH "Narcotics+")	18,552	
S17	"opiate*"	1,842	
S16	"opioid*"	13,174	
S15	(MH "Analgesics, Opioid+")	15,781	
S14	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13	7,448	
S13	TX apn?eic OR TX hypopneic	44	
S12	sleep disorder* N1 respirat*	13	
S11	"nocturnal hypoxemia"	55	
S10	apn?e*-hypopn*	91	
S9	((mixed or central) N4 apn?ea*	34	
S8	TX osa OR TX osas OR TX osahs	1,692	
S7	sleep N2 respirat* N1 disorder	19	
S6	sleep disorder* N1 breathing	984	
S5	obstruct* N2 hypopn?ea*	23	
S4	upper airway resistan* N2 syndrom*	28	
S3	sleep apnoe*	482	
S2	sleep apne*	6,910	
S1	(MH "Sleep Apnea, Central") OR (MH "Sleep Apnea Syndromes")	3,438	

PubMed Sleep apnea

Search (((((publisher[sb] OR inprocess[sb] OR pubmednotmedline[sb] OR
pubstatusaheadofprint)) AND ("2014/01/01"[PDat] : "3000/12/31"[PDat]))) AND (sleep apnea
AND ("2014/01/01"[PDat] : "3000/12/31"[PDat]))) AND (((opioid or opiate or narcotic)) AND
("2014/01/01"[PDat] : "3000/12/31"[PDat])) Filters: Publication date from 2014/01/01

Treatment of opioid-induced hypogonadism

MEDLINE	186
EMBASE	567

PsycInfo	49
CINAHL	40
PubMed	14
Subtotal	856
-dupes	-222
Total	634

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy: hypogonadism

-
- 1 exp Hypogonadism/ (12138)
 - 2 hypogonadism.mp. (12203)
 - 3 ((low* or supress* or deficien* or reduc*) adj3 (testosteron* or androgen* or gonad*)).mp. (13903)
 - 4 or/1-3 (27892)
 - 5 exp Analgesics, Opioid/ (99447)
 - 6 (opiod* or opiate*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier] (104495)
 - 7 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (136906)
 - 8 or/5-7 (186538)
 - 9 exp Narcotics/ (107283)
 - 10 narcotic*.mp. (55099)
 - 11 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogenic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (8776)

- 12 or/5-11 (213886)
- 13 4 and 12 (265)
- 14 animals/ not humans/ (4268144)
- 15 exp Animals, Laboratory/ or exp Animal Experimentation/ or exp Models, Animal/ or exp Rodentia/ (3045511)
- 16 (rat or rats or mouse or mice).ti. (1207967)
- 17 14 or 15 or 16 (5048288)
- 18 13 not 17 (186)

Database: Embase <1974 to 2016 August 17>

Search Strategy: hypogonadism

-
- 1 hypogonadism/ or hypogonadotropic hypogonadism/ (16853)
 - 2 hypogonad*.mp. (21525)
 - 3 ((low* or supress* or deficien* or reduc*) adj3 (testosteron* or androgen* or gonad*)).mp. (19294)
 - 4 or/1-3 (36925)
 - 5 exp narcotic analgesic agent/ (279415)
 - 6 (opioid* or opiate*).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword] (153118)
 - 7 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (251875)
 - 8 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydronone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levodromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n-methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadololor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (45845)
 - 9 or/5-8 (355164)
 - 10 4 and 9 (725)
 - 11 animals/ not humans/ (1176131)

- 12 exp rodent/ (3253414)
- 13 (rat or rats or mouse or mice).ti. (1405967)
- 14 exp Animals, Laboratory/ or exp Animal Experimentation/ or exp Models, Animal/ (2478969)
- 15 or/11-14 (4709155)
- 16 10 not 15 (622)
- 17 limit 16 to human (580)
- 18 remove duplicates from 17 (567)

Database: PsycINFO <1806 to July Week 4 2016>

Search Strategy: hypogonadism

-
- 1 hypogonadism/ (266)
 - 2 hypogonad*.mp. (695)
 - 3 ((low* or supress* or deficien* or reduc*) adj3 (testosteron* or androgen* or gonad*)).mp. (1316)
 - 4 or/1-3 (1831)
 - 5 exp opiates/ (21115)
 - 6 (opioid* or opiate*).mp. (25077)
 - 7 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (25995)
 - 8 exp narcotic drugs/ (25083)
 - 9 narcotic*.mp. (5551)
 - 10 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogescic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levodromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n-methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (843)
 - 11 or/5-10 (44433)

12 4 and 11 (49)

CINAHL hypogonadism

S13 S4 AND S12 40

S12 S5 OR S6 OR S7 OR S8 OR S9 OR 30,819
S10 OR S11

S11 adolonta or Anpec or Ardinex or 1,448
Asimadoline or Alvimopam or amadol or
biodalgic or biokanol or Codinovo or contramal
or Demerol or Dicodid or Dihydrocodeinone or
dihydromorphinone or dihydrohydroxycodone
or dihydrone or dilaudid or dinarkon or dolsin
or dolosal or dolin or dolantin or dolargan or dolcontral
or duramorph or duromorph or duragesic or durogesic
or eucodal or Fedotzine or Fentanest or Fentora or Fortral
or Hycodan or Hycon or Hydrocodone or
Hydrocodeinonebitartrate or hydromorphon or
hydroxycodone or isocodeine or isonipeccain or
jutadol or laudacod or l dromoran or levodromoran or
levorphan or levo-dromoran or levodromoran or lexir
or lidol or lydol or morfin or morfine or morphia or
morphin or morphinium or morphinene or morphium
or ms contin or n-methylmorphine or n methylmorphine
or nobligan or numorphan or oramorph or oxycodone
or oxiconum or oxycone or oxycontin or palladone or
pancodine or pethidine or phentanyl or prontosfort or
robidone or skenan or sublimaze or sulfentanyl or
sulfentanil or sufenta or takadol or talwin or theocodin
or tramadol or tramadolhameln or tramadol or
tramadura or tramagetic or tramagit or tramake
or tramal or tramex or tramundin or trasedal
or theradol or tiral or topalgic or tradol
or tradolpuren or tradonal or tralgiol or
tramadorsch or tramadin or tramadoc or
ultram or zamudol or zumalgic or
zydol or zytram

S10 alfentanil or alphaprodine or 15,225
beta-casomorphin\$ or buprenorphine
or carfentanil or codeine or deltorphin
or dextromethorphan or dezocine or
dihydrocodeine or dihydromorphine or
enkephalin\$ or ethylketocyclazocine or
ethylmorphine or etorphine or fentanyl
or heroin or hydrocodone or hydromorphone
or ketobemidone or levorphanol or lofentanil
or meperidine or meptazinol or methadone or

methadyl acetate or morphine or nalbuphine
or opium or oxycodone or oxymorphone or
pentazocine or phenazocine or phenoperidine
or pirinitramide or promedol or propoxyphene
or remifentanil or sufentanil or tilidine or
tapentadol

- S9 "narcotic*" 9,285
 - S8 (MH "Narcotics+") 18,356
 - S7 "opiate*" 1,826
 - S6 "opioid*" 12,861
 - S5 (MH "Analgesics, Opioid+") 15,547
 - S4 S1 OR S2 OR S3 1,445
 - S3 TX ((low* or supress* or deficien* or 722
reduc*) N3 (testosteron* or androgen*
or gonad*))
 - S2 "hypogonad*" 706
 - S1 (MH "Hypogonadism+") OR
(MH "Testosterone Replacement Therapy") 661
- PubMed hypogonadism

Search (((opioid OR opiate OR narcotic))) AND ((hypogonadism) AND (((publisher[sb] OR
inprocess[sb] OR pubmednotmedline[sb] OR pubstatusaheadofprint)))) Sort by: PublicationDate

14

Opioid-induced nausea and vomiting

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily
and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

-
- 1 Nausea/ci [Chemically Induced] (7471)
 - 2 (nausea and (side effect or drug-induced)).mp. (2138)
 - 3 1 or 2 (9168)
 - 4 limit 3 to "reviews (best balance of sensitivity and specificity)" (1203)
 - 5 Practice Guideline/ or guideline.mp. or Guideline/ (82611)
 - 6 3 and 5 (75)

Opioid Induced constipation

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily
and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

-
- 1 *Constipation/ (7545)
 - 2 *Analgesics, Opioid/ (22843)
 - 3 1 and 2 (234)
 - 4 limit 3 to "reviews (best balance of sensitivity and specificity)" (62)

Opioid-induced drowsiness

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

-
- 1 methylphenidate.mp. or *Methylphenidate/ (7965)
 - 2 opioid.mp. or *Analgesics, Opioid/ (86282)
 - 3 1 and 2 (95)
 - 4 substance abuse.mp. or Substance-Related Disorders/ (115571)
 - 5 3 not 4 (73)
 - 6 from 5 keep 43-44 (2)
 - 7 (opi* adj2 sedat*).mp. (539)
 - 8 (opi* adj2 sedation).mp. (164)
 - 9 donepezil.mp. (3135)
 - 10 dextroamphetamine.mp. or Dextroamphetamine/ (7001)
 - 11 1 or 9 or 10 (17328)
 - 12 8 and 11 (13)

Opioid-induced pruritis and xerostomia

MEDLINE	58
EMBASE	62
Subtotal	120
-duplicates	-31
Total	89

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present

Search Strategy:

-
- 1 *Analgesics, Opioid/ae [Adverse Effects] (3391)
 - 2 limit 1 to "therapy (best balance of sensitivity and specificity)" (445)
 - 3 Analgesics, Opioid/ae [Adverse Effects] (8216)
 - 4 limit 3 to "therapy (best balance of sensitivity and specificity)" (1944)

- 5 Xerostomia/ci [Chemically Induced] (726)
- 6 exp Pruritus/ci [Chemically Induced] (1847)
- 7 *Xerostomia/ci [Chemically Induced] (172)
- 8 exp *Pruritus/ci [Chemically Induced] (469)
- 9 *Xerostomia/ (2049)
- 10 *Pruritus/ (6176)
- 11 ((xerostom* or dry mouth or pruriti* or itching) and (opioid* or opiate* or narcotic* or morphine*)).mp. (575)
- 12 (xerostom* or dry mouth or pruriti* or itching).ti. (2662)
- 13 (opioid* or opiate* or narcotic* or morphine*).mp. (175172)
- 14 12 and 13 (43)
- 15 limit 14 to "therapy (best balance of sensitivity and specificity)" (6)
- 16 7 or 8 (641)
- 17 2 and 16 (15)
- 18 4 and 16 (21)
- 19 9 or 10 (8224)
- 20 13 and 19 (561)
- 21 4 and 20 (57)
- 22 5 or 6 (2570)
- 23 2 and 22 (48)
- 24 15 or 18 or 21 or 23 (73)
- 25 limit 24 to yr="2000 -Current" (58)

Database: Embase <1974 to 2016 November 14>

Search Strategy:

-
- 1 exp *narcotic analgesic agent/ae [Adverse Drug Reaction] (16519)
 - 2 *pruritus/si [Side Effect] (575)
 - 3 *xerostomia/si [Side Effect] (195)
 - 4 2 or 3 (769)
 - 5 1 and 4 (154)
 - 6 (xerostom* or dry mouth or pruriti* or itching).ti. (3299)
 - 7 (opioid* or opiate* or narcotic* or morphine*).mp. (244911)
 - 8 6 and 7 (101)
 - 9 5 or 8 (243)
 - 10 limit 9 to "therapy (best balance of sensitivity and specificity)" (92)
 - 11 limit 10 to yr="2000 -Current" (64)
 - 12 remove duplicates from 11 (62)

7. Economic evaluation

MEDLINE	1241
---------	------

EMBASE	1670
subtotal	2911
-duplicates	-216
total	2695

Database: OVID Medline Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) 1946 to Present
 Search Strategy: Economic evaluation

-
- 1 Economics/ (28598)
 - 2 "costs and cost analysis"/ (46893)
 - 3 Cost allocation/ (2111)
 - 4 Cost-benefit analysis/ (72899)
 - 5 Cost control/ (22150)
 - 6 Cost savings/ (10816)
 - 7 Cost of illness/ (23413)
 - 8 Cost sharing/ (2392)
 - 9 "deductibles and coinsurance"/ (1686)
 - 10 Medical savings accounts/ (552)
 - 11 Health care costs/ (34827)
 - 12 Direct service costs/ (1163)
 - 13 Drug costs/ (14478)
 - 14 Employer health costs/ (1184)
 - 15 Hospital costs/ (9734)
 - 16 Health expenditures/ (17128)
 - 17 Capital expenditures/ (2084)
 - 18 Value of life/ (5942)
 - 19 exp economics, hospital/ (23030)
 - 20 exp economics, medical/ (14674)
 - 21 Economics, nursing/ (4000)
 - 22 Economics, pharmaceutical/ (2804)
 - 23 exp "fees and charges"/ (30221)
 - 24 exp budgets/ (13596)
 - 25 (low adj cost).mp. (38195)
 - 26 (high adj cost).mp. (11046)
 - 27 (health?care adj cost\$).mp. (7523)
 - 28 (fiscal or funding or financial or finance).tw. (117417)
 - 29 (cost adj estimate\$).mp. (1935)
 - 30 (cost adj variable).mp. (40)
 - 31 (unit adj cost\$).mp. (2117)
 - 32 (economic\$ or pharmacoeconomic\$ or price\$ or pricing).tw. (238878)
 - 33 or/1-32 (611934)

- 34 exp "Costs and Cost Analysis"/ (216971)
- 35 Economics/ (28598)
- 36 Economics, Nursing/ or Economics, Medical/ or Economics, Hospital/ or Economics, Pharmaceutical/ (26999)
- 37 exp "Fees and Charges"/ (30221)
- 38 exp Budgets/ (13596)
- 39 budget\$.tw. (24447)
- 40 cost\$.ti. (105327)
- 41 (cost\$ adj2 (effective\$ or utilit\$ or benefit\$ or minimi\$)).ab. (118101)
- 42 (economic\$ or pharmacoeconomic\$ or pharmaco-economic\$).ti. (42035)
- 43 (price\$ or pricing\$).tw. (33071)
- 44 (financial or finance or finances or financed).tw. (75039)
- 45 (fee or fees).tw. (15583)
- 46 (value adj2 (money or monetary)).tw. (1864)
- 47 Value of Life/ (5942)
- 48 quality adjusted life.tw. (9874)
- 49 (qaly\$ or qald\$ or qale\$ or qtime\$).tw. (8041)
- 50 disability adjusted life.tw. (2233)
- 51 daly\$.tw. (2080)
- 52 Health Status Indicators/ (23884)
- 53 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw. (22021)
- 54 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw. (1734)
- 55 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw. (4485)
- 56 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw. (27)
- 57 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw. (389)
- 58 (euroqol or euro qol or eq5d or eq 5d).tw. (7071)
- 59 (hql or hqol or h qol or hrqol or hr qol).tw. (12619)
- 60 (hye or hyes).tw. (63)
- 61 (hui or hui1 or hui2 or hui3).tw. (1271)
- 62 utilit\$.tw. (173704)
- 63 disutilit\$.tw. (353)
- 64 rosser.tw. (86)
- 65 quality of wellbeing.tw. (13)
- 66 qwb.tw. (216)
- 67 willingness to pay.tw. (3729)
- 68 standard gamble\$.tw. (824)
- 69 time trade off.tw. (1022)
- 70 time tradeoff.tw. (249)

- 71 tto.tw. (848)
- 72 exp models, economic/ (13049)
- 73 models, theoretical/ or models, organizational/ (155018)
- 74 economic model\$.tw. (2554)
- 75 markov chains/ (13494)
- 76 markov\$.tw. (20383)
- 77 Monte Carlo Method/ (26224)
- 78 monte carlo.tw. (40698)
- 79 exp Decision Theory/ (11295)
- 80 (decision\$ adj2 (tree\$ or anlay\$ or model\$)).tw. (13035)
- 81 or/34-80 (953657)
- 82 (chronic adj4 pain*).mp. (56232)
- 83 Chronic Pain/ (8140)
- 84 exp Osteoarthritis/ (57241)
- 85 osteoarthrit*.mp. (77379)
- 86 osteo-arthritis.mp. (375)
- 87 degenerative arthrit*.mp. (1277)
- 88 exp Arthritis, Rheumatoid/ (106756)
- 89 exp Neuralgia/ (17672)
- 90 Diabetic Neuropathies/ (13937)
- 91 (neuropath* adj5 (pain* or diabet*)).mp. (36556)
- 92 neuralg*.mp. (23280)
- 93 zoster.mp. (19510)
- 94 Irritable Bowel Syndrome/ (6044)
- 95 (IBS or irritable colon or irritable bowel).mp. (14029)
- 96 Migraine Disorders/ (23040)
- 97 migraine.mp. (33990)
- 98 Fibromyalgia/ (7685)
- 99 fibromyalg*.mp. (10299)
- 100 complex regional pain syndromes/ or exp causalgia/ or exp reflex sympathetic dystrophy/ (5293)
- 101 (complex regional pain syndromes or causalgia).mp. (2118)
- 102 Pain, Intractable/ (6141)
- 103 Phantom Limb/ (1746)
- 104 Hyperalgesia/ (10636)
- 105 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (16202)
- 106 or/82-105 (375067)
- 107 exp back pain/ or exp failed back surgery syndrome/ or exp low back pain/ (34471)
- 108 Radiculopathy/ or radiculopathy.mp. (7783)
- 109 musculoskeletal pain/ or headache/ (27723)
- 110 exp Arthralgia/ (10931)
- 111 exp Headache Disorders/ (31090)

- 112 headache*.mp. (81551)
- 113 Temporomandibular Joint Dysfunction Syndrome/ (4968)
- 114 ((TMJ or TMJD) and pain*).mp. (2341)
- 115 whiplash.mp. or exp whiplash injury/ (3771)
- 116 exp Cumulative Trauma Disorders/ (12871)
- 117 exp Peripheral Nervous System Diseases/dt (12988)
- 118 Pain Measurement/de (6570)
- 119 (backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*).ab,ti. (38995)
- 120 ((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) adj3 pain).mp. (139664)
- 121 or/107-120 (293786)
- 122 (acute or emergency or preoperative or postoperative).ti,ab. (1684147)
- 123 121 not 122 (248743)
- 124 106 or 123 (530864)
- 125 33 and 124 (10820)
- 126 81 and 124 (21353)
- 127 125 or 126 (24816)
- 128 33 or 81 (1148810)
- 129 124 and 128 (24816)
- 130 exp Analgesics, Opioid/ (105827)
- 131 (opiod* or opiate*).mp. (115204)
- 132 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol).mp. (146241)
- 133 exp Narcotics/ (113983)
- 134 narcotic*.mp. (59243)
- 135 (adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecaïn or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir

or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodoinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (9282)

136 or/130-135 (230626)

137 129 and 136 (1241)

Database: Embase <1974 to 2016 November 16>

Search Strategy: Economic evaluation

-
- 1 Socioeconomics/ (124881)
 - 2 Cost benefit analysis/ (75595)
 - 3 Cost effectiveness analysis/ (127025)
 - 4 Cost of illness/ (16854)
 - 5 Cost control/ (61962)
 - 6 Economic aspect/ (115422)
 - 7 Financial management/ (111606)
 - 8 Health care cost/ (160939)
 - 9 Health care financing/ (12732)
 - 10 Health economics/ (37164)
 - 11 Hospital cost/ (18086)
 - 12 (fiscal or financial or finance or funding).tw. (135435)
 - 13 Cost minimization analysis/ (3059)
 - 14 (cost adj estimate\$).mp. (2563)
 - 15 (cost adj variable\$).mp. (187)
 - 16 (unit adj cost\$).mp. (3236)
 - 17 or/1-16 (790191)
 - 18 exp economic aspect/ (1390052)
 - 19 cost\$.tw. (593649)
 - 20 (price\$ or pricing\$).tw. (42245)
 - 21 (fee or fees).tw. (18131)
 - 22 (financial or finance or finances or financed).tw. (90842)
 - 23 (value adj2 (money or monetary)).tw. (2384)
 - 24 resourc\$ allocat\$.tw. (7945)
 - 25 expenditure\$.tw. (57167)
 - 26 (fund or funds or funding or fundings or funded).tw. (90402)

- 27 (ration or rations or rationing or rationings or rationed).tw. (13628)
- 28 (saving or savings).tw. (72631)
- 29 or/18-28 (1824106)
- 30 Quality of Life/ (367145)
- 31 quality of life.tw. (299755)
- 32 life quality.tw. (8986)
- 33 quality adjusted life.tw. (12983)
- 34 (qaly\$ or qald\$ or qale\$ or qtime\$).tw. (13107)
- 35 disability adjusted life.tw. (2441)
- 36 daly\$.tw. (2481)
- 37 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw. (31238)
- 38 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw. (1798)
- 39 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw. (6421)
- 40 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw. (41)
- 41 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw. (378)
- 42 (euroqol or euro qol or eq5d or eq 5d).tw. (11669)
- 43 (hql or hqol or h qol or hrqol or hr qol).tw. (18007)
- 44 (hye or hyes).tw. (104)
- 45 health\$ equivalent\$ year\$.tw. (1)
- 46 (hui or hui1 or hui2 or hui3).tw. (1633)
- 47 health utilit\$.tw. (2259)
- 48 disutilit\$.tw. (555)
- 49 rosser.tw. (93)
- 50 (quality of wellbeing or quality of well being).tw. (441)
- 51 qwb.tw. (222)
- 52 willingness to pay.tw. (5337)
- 53 standard gamble\$.tw. (930)
- 54 time trade off.tw. (1295)
- 55 time tradeoff.tw. (245)
- 56 tto.tw. (1220)
- 57 factor analy\$.tw. (42058)
- 58 preference based.tw. (1282)
- 59 (state adj2 valu\$).tw. (2674)
- 60 Life Expectancy/ (43536)
- 61 life expectancy\$.tw. (32364)
- 62 ((duration or length or period of time or lasting or last or lasted) adj4 symptom\$).tw. (26838)
- 63 or/30-62 (542866)

- 64 (chronic adj4 pain*).mp. (86108)
- 65 chronic pain/ (50897)
- 66 exp osteoarthritis/ (108983)
- 67 osteoarthrit*.mp. (112185)
- 68 osteo-arthritis.mp. (417)
- 69 degenerative arthrit*.mp. (1428)
- 70 exp rheumatoid arthritis/ (178840)
- 71 exp neuralgia/ (91588)
- 72 diabetic neuropathy/ (20926)
- 73 (neuropath* adj5 (pain* or diabet*)).mp. (59776)
- 74 neuralg*.mp. (26965)
- 75 zoster.mp. (32573)
- 76 irritable colon/ (21233)
- 77 (Irritable Bowel Syndrome or IBS).mp. (19177)
- 78 exp migraine/ (53476)
- 79 migraine.mp. (57152)
- 80 fibromyalgia/ (16702)
- 81 fibromyalg*.mp. (17354)
- 82 reflex sympathetic dystrophy.mp. (2293)
- 83 (complex regional pain syndromes or causalgia).mp. (1314)
- 84 intractable pain/ (4587)
- 85 phantom limb.mp. or agnosia/ or phantom pain/ or amputation stump/ (8213)
- 86 hyperalgesia/ (17683)
- 87 ((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) adj3 pain).mp. (21605)
- 88 or/64-87 (607507)
- 89 exp backache/ (88885)
- 90 radiculopathy.mp. or exp radiculopathy/ (32912)
- 91 musculoskeletal pain/ (8136)
- 92 exp arthralgia/ (48272)
- 93 headache/ (181575)
- 94 headache*.mp. (225537)
- 95 temporomandibular joint disorder/ (11952)
- 96 ((TMJ or TMJD) and pain*).mp. (3043)
- 97 whiplash.mp. or whiplash injury/ (4690)
- 98 exp cumulative trauma disorder/ (17366)
- 99 or/89-98 (398837)
- 100 (acute or emergency or preoperative or postoperative).ti,ab. (2104350)
- 101 100 not 99 (2044247)
- 102 88 or 101 (2600857)
- 103 exp narcotic analgesic agent/ (291978)
- 104 (opioid* or opiate*).mp. (157003)
- 105 (alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or

codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicotid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogescic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram).mp. (271586)

- 106 exp Narcotics/ (246632)
- 107 narcotic*.mp. (45763)
- 108 or/103-107 (374689)
- 109 17 or 29 or 63 (2259007)
- 110 102 and 108 and 109 (12207)
- 111 limit 110 to exclude medline journals (1670)

Economic evaluation, stage two search CINAHL etc

CINAHL	280
NHS EED	82
HTA database	41
EconLit	8
Web of Science	683
Tufts CEA registry	8
Subtotal	1102
-dupes	-407
total	695

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

CINAHL Economic evaluation

#	Query	Results
S65	S21 AND S64	280
S64	S47 OR S63	113,317
S63	S61 NOT S62	62,787
S62	acute or emergency or preoperative or postoperative	271,817
S61	S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55 OR S56 OR S57 OR S58 OR S59 OR S60	72,591
S60	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachi* or orofacial or somatic or shoulder* or knee* or hip or hips) N3 pain)	42,868
S59	backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*	12,010
S58	(MH "Peripheral Nervous System+/DE")	1,539
S57	(MH "Cumulative Trauma Disorders+")	3,968
S56	(MH "Whiplash Injuries") OR "whiplash"	1,357
S55	((TMJ or TMJD) and pain*)	447
S54	(MH "Temporomandibular Joint Syndrome")	370
S53	"headache*"	15,494
S52	(MH "Headache")	7,319
S51	(MH "Arthralgia+")	4,117
S50	"musculoskeletal pain"	1,564
S49	(MH "Radiculopathy") OR "radiculopathy"	1,438
S48	(MH "Back Pain+")	17,145
S47	S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46	72,486
S46	((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) N3 pain)	2,915
S45	(MH "Hyperalgesia")	1,040
S44	(MH "Phantom Limb") OR (MH "Phantom Pain")	541
S43	"intractable pain"	211
S42	"causalgia"	72
S41	(MH "Complex Regional Pain Syndromes+")	1,096
S40	"fibromyalg*"	3,776
S39	(MH "Fibromyalgia")	3,293

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

S38	"migraine"	9,523
S37	(MH "Migraine")	7,802
S36	"IBS"	822
S35	(irritable (bowel or colon))	2,472
S34	(MH "Irritable Bowel Syndrome")	2,069
S33	"zoster"	2,261
S32	"neuralg*"	2,790
S31	(neuropath* N5 (pain* or diabet*))	6,191
S30	(MH "Diabetic Neuropathies")	2,765
S29	(MH "Neuralgia+")	2,654
S28	(MH "Arthritis, Rheumatoid+")	14,074
S27	"degenerative arthrit*"	154
S26	"osteo-arthritis"	33
S25	"osteoarthrit*"	14,267
S24	(MH "Osteoarthritis+")	11,918
S23	chronic N4 pain	19,490
S22	(MH "Chronic Pain")	11,629
S21	S12 AND S20	1,851
S20	S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19	32,231
S19	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodromoran or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morphine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or	1,504

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	trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	
S18	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	15,837
S17	"narcotic*"	9,561
S16	(MH "Narcotics+")	18,841
S15	"opiate*"	1,900
S14	"opioid*"	13,714
S13	(MH "Analgesics, Opioid+")	16,109
S12	S10 OR S11	220,465
S11	cost or costs or economic\$ or pharmaco-economic\$ or price\$ or pricing\$	204,828
S10	S7 OR S8 OR S9	66,723
S9	(MH "Health Resource Utilization")	10,458
S8	(MH "Health Resource Allocation")	6,557
S7	S1 NOT S6	55,441
S6	S2 OR S3 OR S4 OR S5	510,865
S5	(MH "Business+")	80,749
S4	(MH "Financing, Organized+")	96,503
S3	(MH "Financial Support+")	332,412
S2	(MH "Financial Management+")	39,673
S1	(MH "Economics+")	516,378

NHS EED and HTA database (via Cochrane Library, Wiley)

Search Name: 2017-04-21 Chronic Pain_opioids_HTA and NHS EED

Date Run: 07/03/17 15:50:22.99

Description: Economic evaluation

2017 Canadian Guideline for Opioids for Chronic Noncancer Pain

ID	Search Hits	
#1	chronic near/3 pain	8703
#2	MeSH descriptor: [Chronic Pain] explode all trees	894
#3	MeSH descriptor: [Osteoarthritis] explode all trees	4405
#4	osteoarthritis*	9295
#5	osteo-arthritis	67
#6	degenerative arthritis*	330
#7	MeSH descriptor: [Arthritis, Rheumatoid] explode all trees	4621
#8	MeSH descriptor: [Neuralgia] explode all trees	963
#9	MeSH descriptor: [Diabetic Neuropathies] explode all trees	1342
#10	neuropath* near/5 (pain* or diabet*)	4047
#11	neuralg*	1715
#12	zoster	1444
#13	MeSH descriptor: [Irritable Bowel Syndrome] explode all trees	624
#14	irritable (colon or bowel)	2180
#15	IBS	1403
#16	MeSH descriptor: [Migraine Disorders] explode all trees	1894
#17	migraine	4229
#18	MeSH descriptor: [Fibromyalgia] explode all trees	804
#19	fibromyalg*	1858
#20	MeSH descriptor: [Complex Regional Pain Syndromes] explode all trees	230
#21	complex regional pain syndromes or causalgia	180
#22	MeSH descriptor: [Pain, Intractable] explode all trees	264
#23	MeSH descriptor: [Phantom Limb] explode all trees	71
#24	MeSH descriptor: [Hyperalgesia] explode all trees	420
#25	((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) near/3 pain)	1883
#26	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or 10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25	36648
#27	MeSH descriptor: [Back Pain] explode all trees	3543
#28	MeSH descriptor: [Radiculopathy] explode all trees	263
#29	radiculopathy	760
#30	MeSH descriptor: [Musculoskeletal Pain] explode all trees	351
#31	MeSH descriptor: [Arthralgia] explode all trees	1196
#32	MeSH descriptor: [Headache Disorders] explode all trees	2325
#33	MeSH descriptor: [Headache] explode all trees	1744

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#34	headache*	23181
#35	MeSH descriptor: [Temporomandibular Joint Dysfunction Syndrome] explode all trees	174
#36	((TMJ or TMJD) and pain*)	232
#37	MeSH descriptor: [Whiplash Injuries] explode all trees	198
#38	whiplash	433
#39	MeSH descriptor: [Cumulative Trauma Disorders] explode all trees	628
#40	backache* or backpain* or dorsalgia* or arthralgia* or polyarthralgia* or arthrodynia* or myalgia* or fibromyalgia* or myodynia* or neuralgia* or ischialgia* or crps or rachialgia*	11504
#41	((back or discogen* or bone or musculoskeletal* or muscle* or skeletal* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrachial* or orofacial or somatic or shoulder* or knee* or hip or hips) near/3 pain)	25116
#42	#27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41	52235
#43	acute or emergency or preoperative or postoperative	180922
#44	42 not 43	56036
#45	#26 or #44	90632
#46	opioid* or opiate*	16274
#47	narcotic*	6103
#48	MeSH descriptor: [Analgesics, Opioid] explode all trees	6076
#49	MeSH descriptor: [Narcotics] explode all trees	6843
#50	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	30293
#51	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or	5114

Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogesic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodeinon or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontofort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolor or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram

#52	#46 or #47 or #48 or #49 or #50 or #51	39306
#53	#45 and #52 Publication Year from 2010 to 2016, in Trials	1919
#54	#45 and #52 in Cochrane Reviews (Reviews and Protocols), Other Reviews and Economic Evaluations	818
#55	#53 or #54	2737
#56	#45 and #52 in Technology Assessments and Economic Evaluations	123

EconLit Ebsco (NB used blocks of strategy from CINAHL Ebsco searches)

S61	S8 AND S60	8
S60	S51 OR S59	501
S59	S58 NOT S49	13
S58	S56 AND S57	13
S57	"pain*"	2,322
S56	S52 OR S53 OR S54 OR S55	586
S55	"narcotic*"	80
S54	"opiate*"	18

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S53	"opioid*"	22
S52	"medication*"	469
S51	S34 OR S50	499
S50	S48 NOT S49	216
S49	acute or emergency or preoperative or postoperative	3,485
S48	S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47	224
S47	((back or discogen* or bone or musculoskelet* or muscle* or skelet* or spinal or spine or vertebra* or joint* or arthritis or Intestin* or neuropath* or neck or cervical* or head or facial* or complex or radicular or cervicobrach* or orofacial or somatic or shoulder* or knee* or hip or hips) N3 pain)	46
S46	backache* or backpain* or dorsalg* or arthralgi* or polyarthralgi* or arthrodyni* or myalgi* or fibromyalgi* or myodyn* or neuralgi* or ischialgi* or crps or rachialgi*	122
S45	(MH "Peripheral Nervous System+/DE")	38
S44	(MH "Cumulative Trauma Disorders+")	10
S43	(MH "Whiplash Injuries") OR "whiplash"	6
S42	((TMJ or TMJD) and pain*)	0
S41	(MH "Temporomandibular Joint Syndrome")	0
S40	"headache*"	54
S39	(MH "Headache")	0
S38	(MH "Arthralgia+")	0
S37	"musculoskeletal pain"	1
S36	(MH "Radiculopathy") OR "radiculopathy"	0
S35	(MH "Back Pain+")	0
S34	S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33	322
S33	((noncancer* or non-cancer* or chronic* or recurrent or persist* or non-malign*) N3 pain)	5
S32	(MH "Hyperalgesia")	0
S31	(MH "Phantom Limb") OR (MH "Phantom Pain")	0

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S30	"intractable pain"	0
S29	"causalgia"	0
S28	(MH "Complex Regional Pain Syndromes+")	8
S27	"fibromyalg*"	6
S26	(MH "Fibromyalgia")	0
S25	"migraine"	39
S24	(MH "Migraine")	0
S23	"IBS"	179
S22	(irritable (bowel or colon))	9
S21	(MH "Irritable Bowel Syndrome")	9
S20	"zoster"	11
S19	"neuralg*"	9
S18	(neuropath* N5 (pain* or diabet*))	5
S17	(MH "Diabetic Neuropathies")	0
S16	(MH "Neuralgia+")	0
S15	(MH "Arthritis, Rheumatoid+")	71
S14	"degenerative arthrit*"	0
S13	"osteo-arthritis"	0
S12	"osteoarthrit*"	31
S11	(MH "Osteoarthritis+")	0
S10	chronic N4 pain	39
S9	(MH "Chronic Pain")	0
S8	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7	336
S7	adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgic or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodeinone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogenic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodeinon or isocodeine or isonipecain or jutadol or laudacon or I dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexir or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or	13

	n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramador or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram	
S6	alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or piritramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol	225
S5	"narcotic"	80
S4	(MH "Narcotics+")	0
S3	"opiate"	18
S2	"opioid"	22
S1	(MH "Analgesics, Opioid+")	

Web of Science, Economic evaluation

- #5 #4 AND #3
DocType=All document types; Language=All languages;
- #4 **TOPIC:** (economic*) **OR TOPIC:** (cost*) **OR TOPIC:** (pharmacoeconomic*) **OR TOPIC:** (price or pricing) **OR TOPIC:** (health resource allocation) **OR TOPIC:** (Health resource utilization)
DocType=All document types; Language=All languages;
- #3 #2 AND #1

- DocType=All document types; Language=All languages;*
- #2 TS=(opioid* or narcotic* or opiate* or alfentanil or alphaprodine or beta-casomorphin\$ or buprenorphine or carfentanil or codeine or deltorphin or dextromethorphan or dezocine or dihydrocodeine or dihydromorphine or enkephalin\$ or ethylketocyclazocine or ethylmorphine or etorphine or fentanyl or heroin or hydrocodone or hydromorphone or ketobemidone or levorphanol or lofentanil or meperidine or meptazinol or methadone or methadyl acetate or morphine or nalbuphine or opium or oxycodone or oxymorphone or pentazocine or phenazocine or phenoperidine or pirinitramide or promedol or propoxyphene or remifentanil or sufentanil or tilidine or tapentadol or adolonta or Anpec or Ardinex or Asimadoline or Alvimopam or amadol or biodalgie or biokanol or Codinovo or contramal or Demerol or Dicodid or Dihydrocodeinone or dihydromorphinone or dihydrohydroxycodone or dihydrone or dilaudid or dinarkon or dolsin or dolosal or dolin or dolantin or dolargan or dolcontral or duramorph or duromorph or duragesic or durogescic or eucodal or Fedotzine or Fentanest or Fentora or Fortral or Hycodan or Hycon or Hydrocodone or Hydrocodeinonebitartrate or hydromorphon or hydroxycodone or isocodeine or isonipeccain or jutadol or laudacon or l dromoran or levodroman or levorphan or levo-dromoran or levodromoran or lexicr or lidol or lydol or morfin or morfine or morphia or morphin or morphinium or morphinene or morphium or ms contin or n-methylmorphine or n methylmorphine or nobligan or numorphan or oramorph or oxycodone or oxiconum or oxycone or oxycontin or palladone or pancodine or pethidine or phentanyl or prontosfort or robidone or skenan or sublimaze or sulfentanyl or sulfentanil or sufenta or takadol or talwin or theocodin or tramadol or tramadolhameln or tramadolol or tramadura or tramagetic or tramagit or tramake or tramal or tramex or tramundin or trasedal or theradol or tiral or topalgic or tradol or tradolpuren or tradonal or tralgiol or tramadorsch or tramadin or tramadoc or ultram or zamudol or zumalgic or zydol or zytram)
- DocType=All document types; Language=All languages;*
- #1 TS=(chronic pain or arthriti* or osteoarthriti* or headache* or migraine* or fibromyalgi* or irritable bowel or IBS or backache* or backpain* or dorsalgia* or arthralgia* or polyarthralgia* or arthrodynia* or myalgia* or fibromyalgia* or myodynia* or neuralgia* or ischialgia* or crps or rachialgia*)
- DocType=All document types; Language=All languages;*