

**Search Terms<sup>1</sup>**

“opioid” or “painkiller” or “pain killer” or “opiate” or “pain reliever” or “pain medication” or “codeine” or “Percocet” or “Vicodin” or “Demerol” or “hydrocodone” or “morphine” or “OxyContin” or “oxycodone” or “buprenorphine” or “Suboxone” or “Subutex” AND “abuse” OR “addict” OR “misuse” OR “overdose.”

<sup>1</sup>While this list is not inclusive of all specific brand name and generic opioid analgesic medications, we found that adding additional terms did not improve yield of relevant news stories.

**Coding Instrument and Inter-Rater Agreement**

<b>Basic Coding and Exclusions</b>	
Domain	Coding Scheme
Coder ID	1 – JB 2 – AKH
Story unique ID	
Outlet	1 – USA Today 2 – Wall Street Journal 3 – New York Times 4 – Washington Post 5 – New York Daily News 6 – Chicago Sun Times 7 – Dallas Morning News 8 – Los Angeles Times 9 – ABC Good Morning America 10 – ABC World News 11 – CBS This Morning/Early Show 12 – CBS Evening News 13 – NBC Today 14 – NBC Nightly News 15 – Fox Special Report 16 – NewsHour with Jim Lehrer
Exclusion 1: Focus is on prescription pain medication abuse	1 – No 0 – Yes
Exclusion 3:	1 – Correction 2 – Book review 3 – Letter to the editor 4 – Solely business/stock 5 – Obituary 6 – Duplicate wire story 7 – Story preview 8 – Calendar/event report 9 – Other (fill in) 0 – News story, health/lifestyle, metro, op-ed/editorial
Exclusion 4: Word length	1 – article <100 words 0 – article >=100 words
<b>Code Only for Included Stories</b>	
Item	Coding Scheme
Story word count	
Month (two #)	
Day (two #)	
Year (four #)	
Section type	1 – Front page 2 – Other 9 – NA
<b>Uses and Types of Prescription Pain Medications</b>	

	<b>Coding</b>	<b>Raw Agreement (%)</b>	<b>Kappa Statistic</b>
Mention that prescription pain medications are narcotics/controlled substances	1=yes 0=no	97	0.95
Mention that prescription pain medications are effective in treating pain	1=yes 0=no	85	0.91
Mention that prescription pain medications are used to treat:			
Cancer	1=yes 0=no	99	0.95
Acute injuries	1=yes 1=yes 0=no	92	0.79
Chronic pain	1=yes 0=no	98	0.94
Headaches/migraines	1=yes 0=no	100	1.00
Fibromyalgia	1=yes 0=no	100	1.00
Arthritis	1=yes 0=no	99	0.92
Back Pain	1=yes 0=no	96	0.74
Mention of abuse of specific prescription pain medications:	1=yes 0=no	99	0.96
<b>If yes, Codeine</b>	1=yes 0=no	99	0.91
<b>If yes, Percocet</b>	1=yes 0=no	99	0.96
<b>If yes, Vicodin</b>	1=yes 0=no	99	0.99
<b>If yes, Demerol</b>	1=yes 0=no	100	1.00
<b>If yes, Hydrocodone</b>	1=yes 0=no	100	1.00
<b>If yes, Morphine</b>	1=yes 0=no	93	0.71
<b>If yes, Oxycontin</b>	1=yes 0=no	97	0.95
<b>If yes, Oxycodone</b>	1=yes 0=no	100	1.00
<b>If yes, Buprenorphine</b>	1=yes 0=no	99	0.80
<b>If yes, Suboxone</b>	1=yes 0=no	100	1.00
<b>If yes, Subutex</b>	1=yes 0=no	100	1.00
<b>If yes, Fentanyl</b>	1=yes 0=no	100	1.00
<b>If yes, Methadone</b>	1=yes 0=no	100	1.00
<b>If yes, Lortab</b>	1=yes 0=no	100	1.00
<b>If yes, MS Contin</b>	1=yes 0=no	100	1.00
<b>If yes, Kadian</b>	1=yes 0=no	100	1.00
<b>If yes, Duragesic</b>	1=yes 0=no	100	1.00
<b>If yes, Zubsolv</b>	1=yes 0=no	100	1.00
<b>News Media Depictions of Individuals who Abuse Prescription Pain Medications</b>			
<b>Characteristics of Individuals Depicted</b>			
Any involvement in criminal activity	1=yes	85	0.70

	0=no		
Using other illicit drugs in addition to prescription pain medication	1=yes 0=no	96	0.80
Non-athlete celebrity	1=yes 0=no	97	0.94
Athlete celebrity	1=yes 0=no	99	0.92
Receiving any type of drug abuse treatment	1=yes 0=no	98	0.95
Receiving medication-assisted drug abuse treatment	1=yes 0=no	100	1.00
Teen	1=yes 0=no	99	0.92
Active-duty member of the military or veteran	1=yes 0=no	90	0.99
<b>Consequences of Prescription Pain Medication Abuse</b>			
Addiction or dependence	1=yes 0=no	96	0.91
Death	1=yes 0=no	94	0.88
Overdose	1=yes 0=no	99	0.98
Employment-related consequences	1=yes 0=no	94	0.71
Damaged relationships with family, friends, or co-workers	1=yes 0=no	96	0.73
Transitioning to other drug use (e.g. heroin)	1=yes 0=no	99	0.80
High healthcare costs to individuals, families, and/or society	1=yes 0=no	99	0.80
<b>Causes of Prescription Pain Medication Abuse</b>			
It is easy to buy prescription pain medications from illicit dealers, including doctors, pharmacists, patients, and other drug dealers who sell the drugs illegally	1=yes 0=no	89	0.77
It is easy to get a prescription for pain medication from doctors	1=yes 0=no	88	0.73
Doctors prescribe painkillers at inappropriately high doses or prescribe more pills than necessary	1=yes 0=no	95	0.78
Having friends or family members who use or abuse prescription pain medications	1=yes 0=no	94	0.74
It is easy to get prescription pain medication from pharmacies	1=yes 0=no	96	0.82
It is easy to get multiple prescriptions from different doctors (doctor shopping)	1=yes 0=no	99	0.98
People don't know prescription pain medications can be addictive or lead to overdose	1=yes 0=no	75	0.95
It is easy to get prescription pain medication from pain clinics	1=yes 0=no	99	0.86
Doctors write prescriptions without giving the patient a proper medical exam	1=yes 0=no	98	0.82
Pharmaceutical companies fail to disclose the risks of prescription painkillers to patients and doctors	1=yes 0=no	98	0.78
Stressful life circumstances (e.g. unemployment or divorce)	1=yes 0=no	97	0.79
Genetic predisposition to addiction	1=yes 0=no	99	0.85
Patients do not properly dispose of prescription pain medications when no longer needed	1=yes 0=no	99	0.86
Pain management guidelines encourage doctors to overprescribe	1=yes 0=no	100	1.00
<b>Solutions to Prescription Pain Medication Abuse</b>			
Arrests and prosecutions of individuals who illegally buy or sell prescription	1=yes	91	0.69

drugs	0=no		
Arrests and prosecutions of physicians who illegally prescribe or sell prescription drugs	1=yes 0=no	93	0.73
Arrest and prosecute pharmacists and/or shut down problematic pharmacies	1=yes 0=no	97	0.74
Arrest clinicians practicing at/shut down clinics that illegally prescribe and dispense drugs (pill mills)	1=yes 0=no	98	0.75
Educating individuals about the dangers, proper use, and storage of prescription painkillers	1=yes 0=no	97	0.69
Prescription drug monitoring programs	1=yes 0=no	100	1.00
Educating physicians about pain management and prescribing	1=yes 0=no	97	0.79
Changing warning labels on prescription pain medications	1=yes 0=no	99	0.75
Expanding substance abuse treatment	1=yes 0=no	100	1.00
Expanding medication-assisted treatment	1=yes 0=no	100	1.00
Expanding non-medication treatment	1=yes 0=no	100	1.00
Law to protect people from criminal charges for drug crimes if they seek medical help for themselves or others experiencing prescription pain medication overdose	1=yes 0=no	100	1.00

Table 2 – Expanded Version. Causes of and solutions to opioid analgesic abuse in United States news media coverage, 1998-2012 (N=673)

	All News Stories (n=673)	1998-2000 (n=35)	2001-2003 (n=170)	2004-2006 (n=148)	2007-2009 (n=149)	2010-2012 (n=170)	Change over study period
	n (%) <sup>1</sup>						p <sup>2</sup>
<b>NEWS STORY MENTIONS ANY CAUSE OF OPIOID ANALGESIC ABUSE</b>	<b>518 (77)</b>	<b>15 (42)</b>	<b>144 (85)</b>	<b>112 (76)</b>	<b>114 (76)</b>	<b>133 (78)</b>	<b>&lt;0.001</b>
Illicit drug dealing by doctors, patients, or others	297 (57)	5 (33)	104 (72)	59 (53)	48 (42)	81 (61)	<0.001
Any physician-related cause	245 (47)	8 (53)	62 (43)	39 (35)	53 (46)	83 (62)	<0.001
Easy to get a prescription for pain medication from doctors	234 (45)	8 (53)	58 (40)	35 (31)	53 (47)	80 (60)	<0.001
Doctors prescribe painkillers at inappropriately high doses or prescribe more pills than necessary	146 (28)	5 (33)	31 (22)	26 (23)	25 (23)	59 (44)	<0.001
Doctors write prescriptions without giving the patient a proper medical exam	45 (9)	0 (0)	19 (13)	8 (7)	7 (6)	11 (8)	0.052
Any patient-related cause	164 (32)	2 (13)	32 (22)	43 (38)	43 (38)	44 (33)	0.013
Easy to get prescriptions from different doctors (doctor shopping)	89 (17)	1 (7)	18 (13)	26 (23)	15 (13)	29 (22)	0.049
People don't know opioid analgesics can be addictive/ cause overdose	61 (12)	0 (0)	9 (6)	15 (13)	24 (21)	13 (10)	0.002
Genetic predisposition to addiction	24 (5)	1 (7)	6 (4)	7 (6)	5 (4)	5 (4)	0.891
Patients do not properly dispose of unused opioid analgesics	22 (4)	0 (0)	1 (<1)	0 (0)	11 (10)	10 (8)	<0.001
Pharmacy, pain clinic, and pharmaceutical company causes <sup>2</sup>	175 (34)	2 (13)	43 (29)	42 (38)	44 (39)	44 (33)	0.223
Easy to get opioid analgesics from pharmacies	99 (19)	1 (7)	18 (13)	35 (31)	23 (20)	22 (17)	0.002
Easy to get opioid analgesics from pain clinics	56 (11)	1 (7)	13 (9)	5 (4)	11 (10)	26 (19)	0.003
Pharmaceutical companies fail to disclose the risks of prescription painkillers to patients and doctors	42 (8)	0 (0)	16 (11)	8 (7)	14 (12)	4 (3)	0.033
Other causes	142 (27)	5 (33)	26 (18)	26 (23)	43 (37)	42 (32)	0.005
Having friends or family members who use or abuse opioid analgesics	122 (24)	4 (27)	24 (17)	24 (21)	32 (28)	38 (29)	0.121
Stressful life circumstances (e.g. unemployment or divorce)	27 (5)	1 (7)	2 (1)	3 (3)	17 (15)	4 (3)	<0.001
Pain management guidelines encourage doctors to overprescribe	2 (<1)	0 (0)	0 (0)	0 (0)	0 (0)	2 (2)	0.204
<b>NEWS STORY MENTIONS ANY SOLUTION TO OPIOID ANALGESIC ABUSE</b>	<b>343 (51)</b>	<b>10 (29)</b>	<b>98 (58)</b>	<b>64 (43)</b>	<b>70 (47)</b>	<b>101 (59)</b>	<b>0.001</b>
Any law enforcement solution	219 (64)	7 (70)	72 (73)	48 (75)	35 (50)	57 (56)	0.003
Arrests and prosecutions of individuals who illegally buy or sell opioid analgesics	126 (37)	4 (40)	49 (50)	24 (38)	20 (29)	29 (29)	0.015
Arrests and prosecutions of physicians who illegally prescribe or sell opioid analgesics	102 (30)	4 (40)	26 (27)	23 (36)	17 (24)	32 (32)	0.502
Arrest and prosecute pharmacists and/or shut down problematic pharmacies	59 (17)	2 (20)	18 (18)	20 (31)	6 (9)	13 (13)	0.007
Arrest clinicians practicing at/shut down clinics that illegally prescribe and dispense drugs (pill mills)	33 (10)	1 (10)	7 (7)	1 (2)	6 (9)	18 (18)	0.010
Any prevention-oriented solution	141 (41)	1 (10)	30 (31)	27 (42)	27 (39)	56 (55)	0.002
Educating individuals about the dangers, proper use, and storage of opioid analgesics	67 (20)	1 (10)	13 (13)	10 (16)	17 (24)	26 (26)	0.129
Prescription drug monitoring programs	50 (15)	0 (0)	6 (6)	6 (9)	9 (12)	29 (29)	<0.001

Educating physicians about pain management and prescribing	41 (12)	0 (0)	9 (9)	14 (22)	1 (1)	17 (17)	0.001
Laws to ensure that pharmacies only dispense legitimate prescriptions for pain medications (e.g. Law requiring pharmacists to check IDs or pharmacy lock-in programs where patients can only have drugs dispensed from a single pharmacy)	13 (4)	0 (0)	6 (6)	2 (3)	2 (3)	3 (3)	0.683
Changing warning labels on opioid analgesics	11 (3)	0 (0)	5 (5)	4 (6)	2 (3)	0 (0)	0.150
Expanding substance use treatment (%) <sup>2</sup>	11 (3)	0 (0)	1 (1)	4 (6)	3 (4)	3 (3)	0.402
Expanding non-medication treatment (e.g. counseling or non-clinical support such as Narcotics Anonymous)	11 (3)	0 (0)	1 (1)	4 (6)	3 (4)	3 (3)	0.402
Expanding medication-assisted treatment	2 (<1)	0 (0)	0 (0)	1 (2)	0 (0)	1 (1)	0.664
Any harm-reduction solution (%) <sup>2</sup>	1 (<1)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0.418
Law to protect people from criminal charges for drug crimes if they seek medical help for themselves or others experiencing opioid analgesic overdose	1 (<1)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0.418
Law to support use of rescue medication that reverses the effects of prescription pain medication overdose ( i.e., naloxone)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	--

<sup>1</sup>For mentions of any cause and any solution, proportions were calculated among the total number of news stories (n=673). For mentions of specific causes and solutions, proportions were calculated among the subset of news stories that mentioned any cause (n=518) or any solution (n=343).

<sup>2</sup>Chi-square tests were used to assess differences across five time period periods: 1998-2000; 2001-2003; 2004-2006; 2007-2009; 2010-2012