



Pain, prescription opioid use and misuse among homeless populations: What do we know?

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What are we talking about when we talk about pain?

“What’s a man or woman to do?” asked Ben, a young man here who said he started drinking at age 12. “I felt helpless. I felt worthless, and I wanted a drink to get rid of my pain. But then you get more pain.”

--from Nicholas Kristof’s piece “Poverty’s Poster Child” about poverty on the Pine Ridge reservation. NY Times, May 9, 2012



Overview

- Definition of chronic pain
 - Risk factors for chronic pain
 - Rates of pain in homeless samples
 - Canadian study
 - Pain study in San Francisco
 - Risks of opioid analgesics
 - Rates of complications
 - Rates of misuse
 - Data from Pain Study in San Francisco
 - Use and misuse of opioid analgesics in high risk cohort
 - PCP attitudes
 - PCP ability to estimate misuse
 - Conclusions
-



What is chronic non-cancer pain?

- Pain that lasts longer than 3 months
 - Thought to be duration of normal tissue healing
 - Not caused by cancer
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Risk Factors for CNCP: Much overlap with homelessness

- Women>Men
 - Low socioeconomic status
 - Mental health disorders
 - PTSD, anxiety, depression
 - Traumatic Brain Injury
 - Substance use disorders
 - HIV infection
-



Traumatic Brain Injury as risk factor

- Traumatic Brain Injury (TBI) common in homeless populations
 - Study in Canada showed 53% homeless with TBI in lifetime; 12% with moderate-severe head injury

- In studies of Veterans, TBI associated with PTSD and pain
 - Among those with TBI
 - 89% had psych dx (73% had PTSD)
 - 70% had head, back, neck pain
 - Rate of co-morbid PTSD/Pain was 54% (as compared to 11% in veterans without TBI)
 - Hwang et al CMAJ 2008
 - Taylor et al Medical Care 2012



PTSD and Pain

- PTSD common in homeless populations
 - Australian study found 12 month prevalence of PTSD
 - 41% in homeless population
 - 1.5% in general population

 - PTSD strongly associated with pain
 - “polytrauma clinical triad”
 - Post concussive syndrome, PTSD and pain
 - Taylor et al. Aust NZ J Psychiatry 2008
 - Lew et al. J Rehab Research and Development 2009
-



What do we know about chronic pain in homeless adults?

- Canadian study of 312 shelter residents
 - 162 had chronic pain (52%)
 - Of those with pain
 - 23% high disability, moderately limiting
 - 37% high disability, severely limiting



How did homeless individuals treat pain?

- Homeless individuals reported numerous barriers to pain management
 - Stress of shelter life, poor sleeping accommodations, inability to afford medications, transportation problems, adverse reactions to medications, belief that medication ineffective, problems with Dr/patient relationship and inability to restrict physical activity
- Homeless individuals reported variety of ways to manage pain:
 - OTC medications (48%)
 - Street drugs (46%)
 - Prescribed meds (43%)
 - Alcohol (29%)

■ Hwang et al BMC Family Practice 2011



Pain Study

- 2-year longitudinal cohort
 - Participants recruited from REACH cohort
 - Indigent HIV infected adults in San Francisco
 - Probability sampling from homeless shelters, free-meal programs and SROs
-



Participant Characteristics

n=296

Age (mean (SD))	48.1 (7.3)
Female at birth	83 (28.0%)
Race/Ethnicity	
African-American	122 (41.2%)
White	114 (38.5%)
Other	60 (20.3%)
Less than High School	84 (28.8%)
Chronically Homeless	148 (51.2%)
<u>Health</u>	
CD4 Count <200	75 (27.4%)
Moderate or Severe Depression	123 (41.7%)
Fair or Poor Health	116 (39.2%)



Substance Use

Lifetime history of use disorder (DIS IV)

Crack/Cocaine	157 (55.1%)
Methamphetamine	116 (40.7%)
Heroin	84 (29.5%)
Alcohol	167 (58.6%)

Past 90 day Use

Crack/Cocaine	70 (23.7%)
Methamphetamine	47 (15.9%)
Heroin	18 (6.1%)
Regular Drinking	21 (17.1%)

Smoking

Lifetime	248 (83.8%)
Current daily	215 (72.6%)

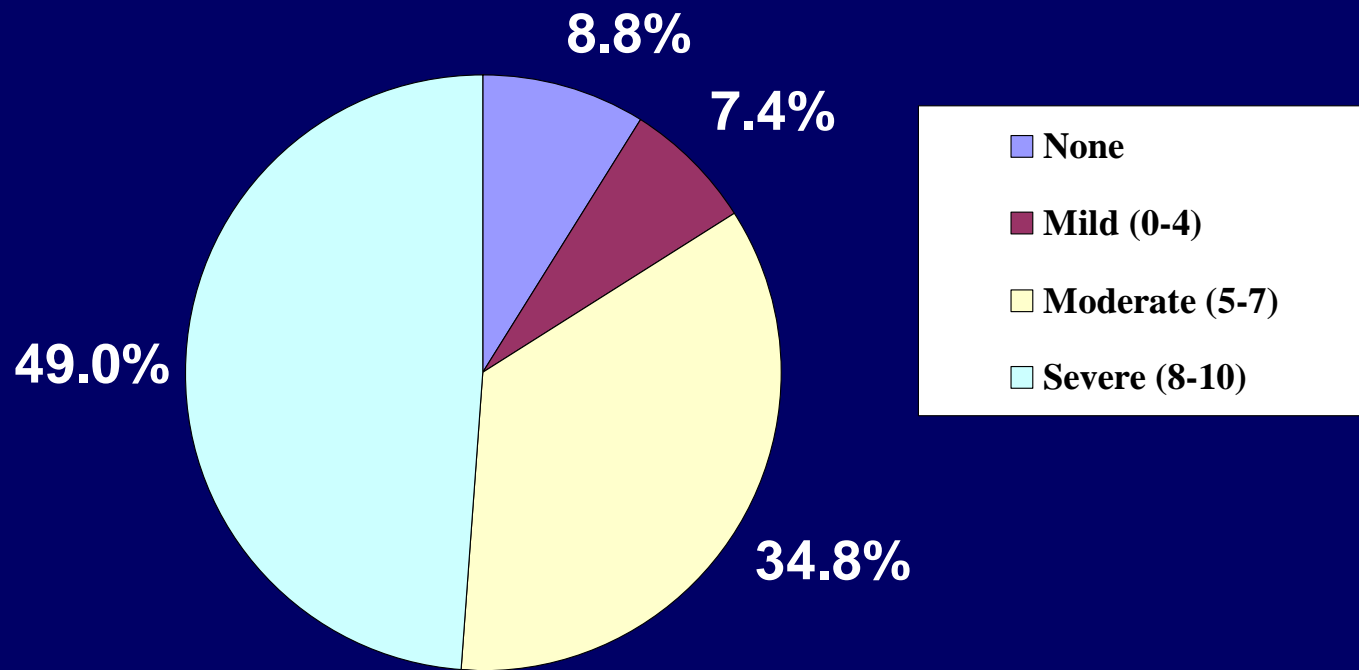


Pain is common

- 270 (91.2%) reported past week pain or pain rx

	n=270
Pain Severity	
Severe	145 (53.7%)
Moderate	103 (38.1%)
None / Mild	22 (8.1%)
Pain lasting \geq 6 months	243 (90.0%)
Pain every day (past 90 days)	175 (64.8%)

Past-Week Pain Severity (0-10 NRS) (n=296)





Female sex, low education, depression and smoking associated with pain severity

- Participant factors associated with increasing pain severity:
 - Female sex at birth
 - Less than high school education
 - Moderate or severe depression (BDI)
 - Current cigarette smoking
- Factors not associated with pain severity:
 - Age, income, race/ethnicity, homeless history
 - CD4 <200
 - Lifetime and current illicit drug history



Participants attributed pain to both disease and social factors

Pain attributed to...	n=270
HIV/AIDS	163 (60.4%)
Medicine (a side effect)	74 (27.4%)
Physical assault	58 (21.5%)
Living conditions	92 (34.1%)
# of pain attributions (mean (SD))	1.4 (1.1)



Why are we concerned about pain?

- Pain is associated with diminished quality of life
 - Pain is, by definition, always subjective
 - chronic pain more so (fewer autonomic signs)
 - Chronic pain challenging to manage
 - Strength of evidence is limited
 - Treatments of limited efficacy
 - Treatments expensive, hard to access
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Opioid Analgesics



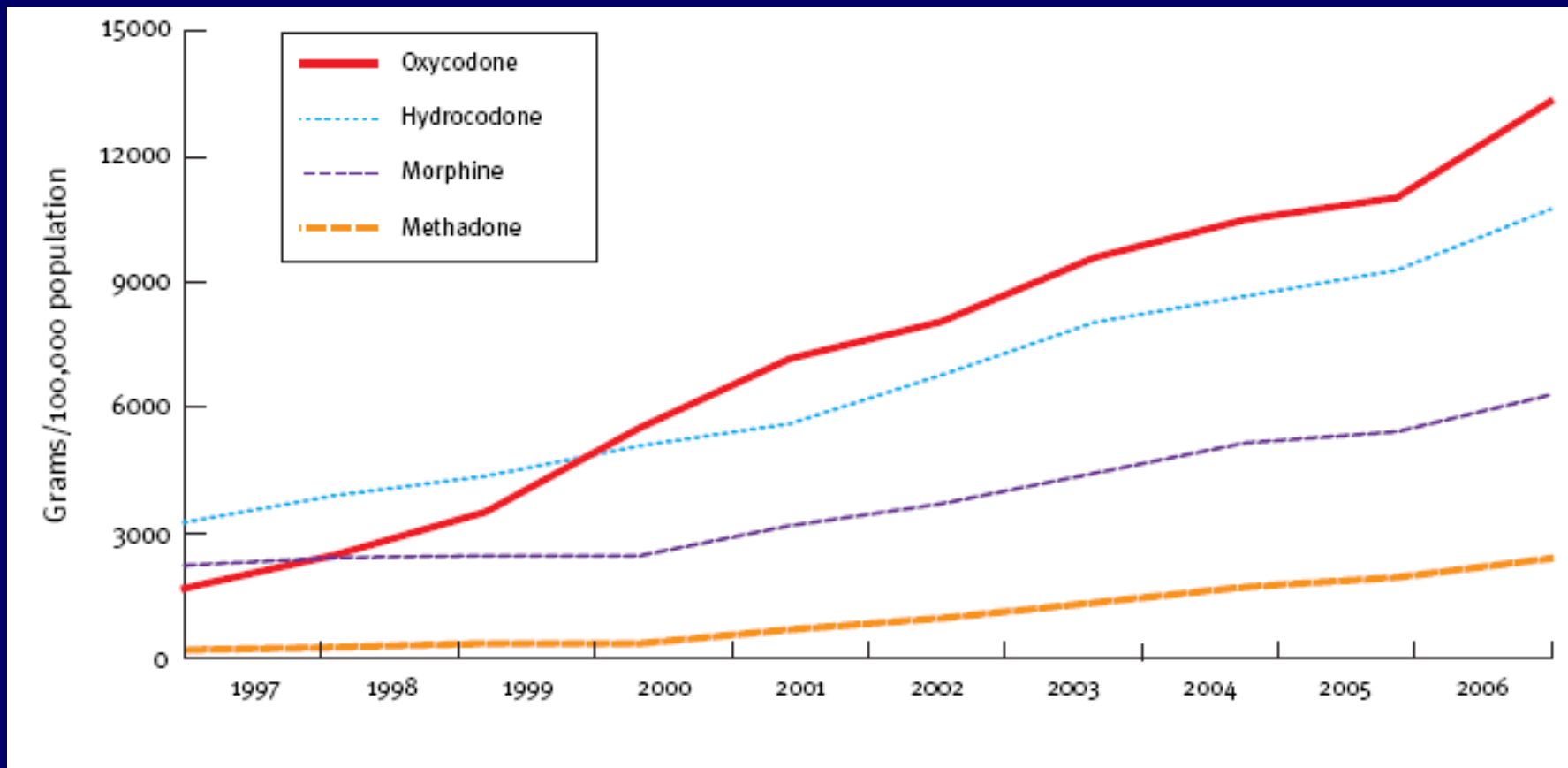
Use of opioid analgesics in chronic non-cancer pain is controversial

- Use of opioid analgesics widely accepted for
 - Short term use in acute pain
 - Use in cancer pain or pain at the end of life

- Use of opioid analgesics for CNCP is controversial ¹
 - Lack of evidence that opioid analgesics provide significant improvement
 - Side effects of medications can be serious
 - Concern about misuse

¹ Chou et al. "Research gaps on use of opioids for chronic noncancer pain: findings from a review of the evidence for an American Pain Society and American Academy of Pain Medicine clinical practice guideline." J Pain. 2009 Feb;10(2):147-59.

Increase in therapeutic opioid use in the United States --- 1997 - 2006



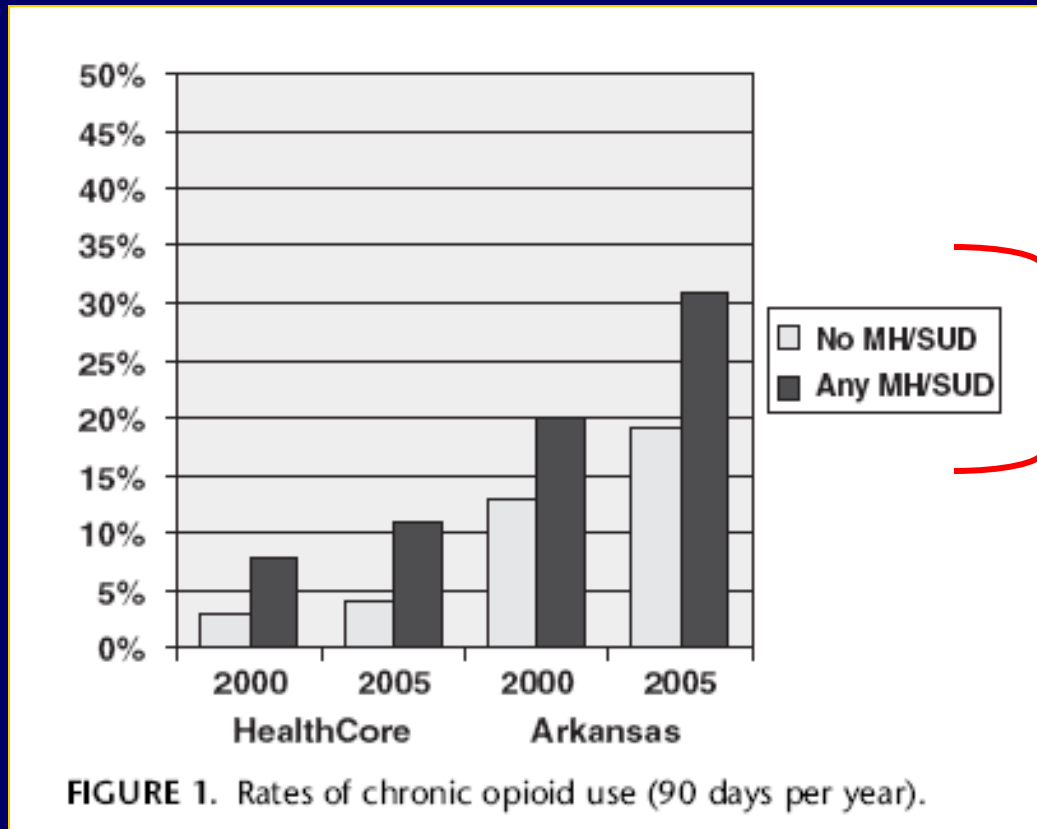
Manchikanti and Singh, "Therapeutic opioids: a ten-year perspective on the complexities and complications of the escalating use, abuse and nonmedical use of opioids." Pain Physician 2008 Mar;11(2 Suppl):S63-88.



Who receives prescriptions for opioid analgesics

- ❑ People with substance use and mental health disorders are more likely to experience chronic pain than those without
 - ❑ Among people with pain, people with substance use and mental health disorders are more likely to receive prescriptions for opioid analgesics
 - ❑ SUD (and to a lesser extent, mental health disorders) are associated with opioid analgesic misuse
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Rates of Chronic Opioid Use Among Individuals with Chronic Noncancer Pain Conditions



HealthCore:
Fully Insured National Sample

Arkansas:
Arkansas Medicaid database

Mental Health Diagnostic Category and Receipt of Prescription Opioids.

Table 2. Mental Health Diagnostic Category and Receipt of Prescription Opioids^a

	Mental Health Diagnostic Category		
	None	Diagnosis Without PTSD	PTSD With and Without Another Mental Health Diagnosis
First year of pain diagnosis			
No. of veterans	68 737	27 309	44 983
No. (%) of opioid prescriptions	4488 (6.5)	3205 (11.7)	7983 (17.8)
RR (95% CI)	1 [Reference]	1.80 (1.72-1.88)	2.72 (2.63-2.81)
Adjusted RR (95%) CI ^b	1 [Reference]	1.74 (1.67-1.82)	2.58 (2.49-2.67)
First year in the VA health care system			
No. of veterans	187 452	43 656	60 097
Opioid prescriptions, No. (%)	4972 (2.7)	3176 (7.3)	7414 (12.3)
RR (95% CI)	1 [Reference]	2.74 (2.63-2.86)	4.65 (4.49-4.82)
Adjusted RR (95%) CI ^b	1 [Reference]	2.65 (2.54-2.77)	4.32 (4.17-4.49)

Abbreviations: PTSD, posttraumatic stress disorder; RR, relative risk; VA, Veterans Affairs.

^aAll *P* values are <.001

^bAdjusted for age, sex, race, marital status, component, rank, branch of service, multiple deployments (y/n), and primary VA facility type.



Risks of Opioid Analgesics

- ❑ Serious adverse events
 - ❑ Prescription opioid misuse and abuse
 - ❑ Acute health care utilization
 - ❑ Mortality
-

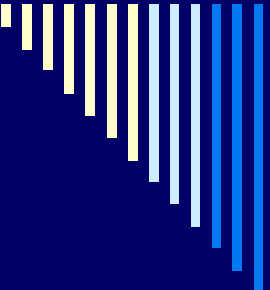


Definition of prescription opioid misuse

- Variably defined, no consistent definitions
 - aberrant behavior, opioid misuse, abuse, non-medical use
 - definition includes behaviors with range of severity
- Use other than as directed / indicated, whether willful or unintentional, and whether harm results or not.¹
 - e.g. saving meds, altering route, selling or trading meds
- NSDUH: Use without a prescription or just for the experience or feeling it caused ²

¹ Katz et al, "Challenges in the development of prescription opioid abuse-deterrent formulations." Clin J Pain. 2007 Oct;23(8):648-60. 2007.

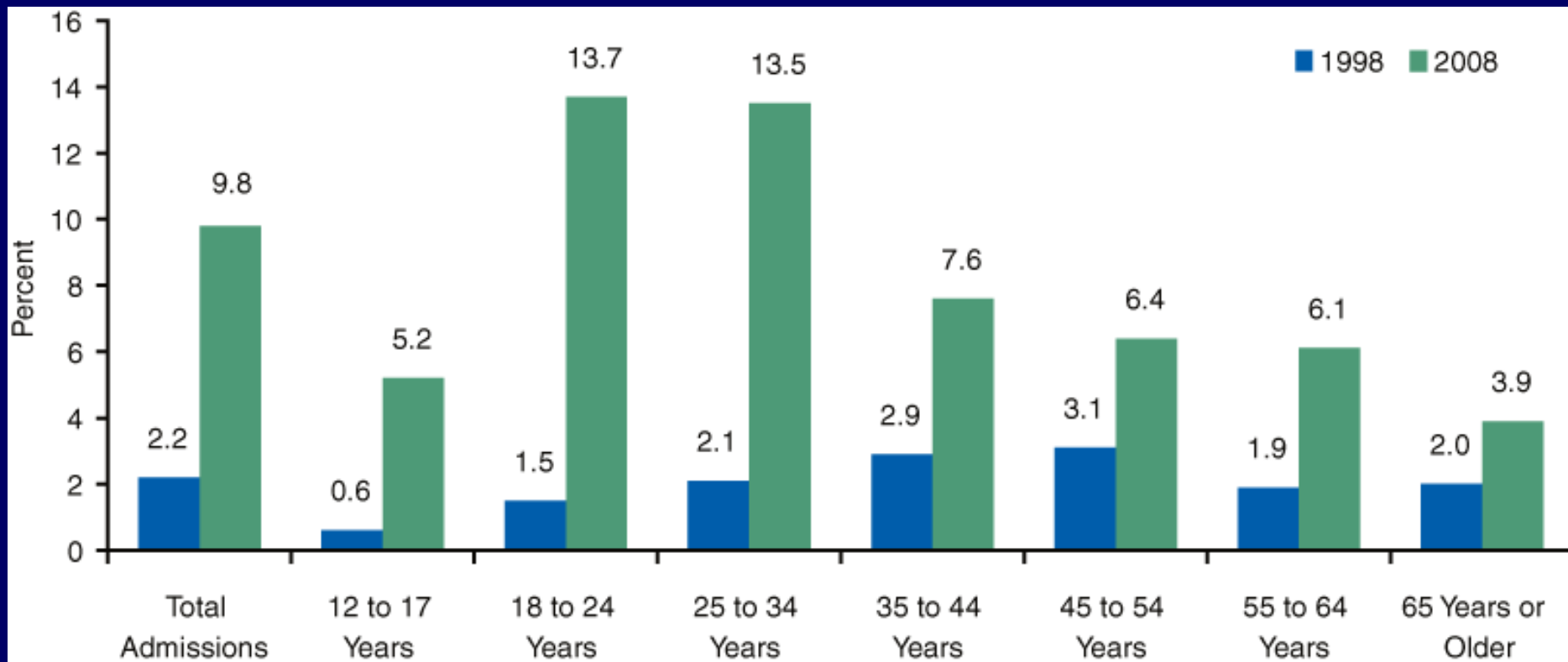
² US Substance Abuse and Mental Health Administration, Office of Applied Studies. National Survey on Drug Use and Health, 2009



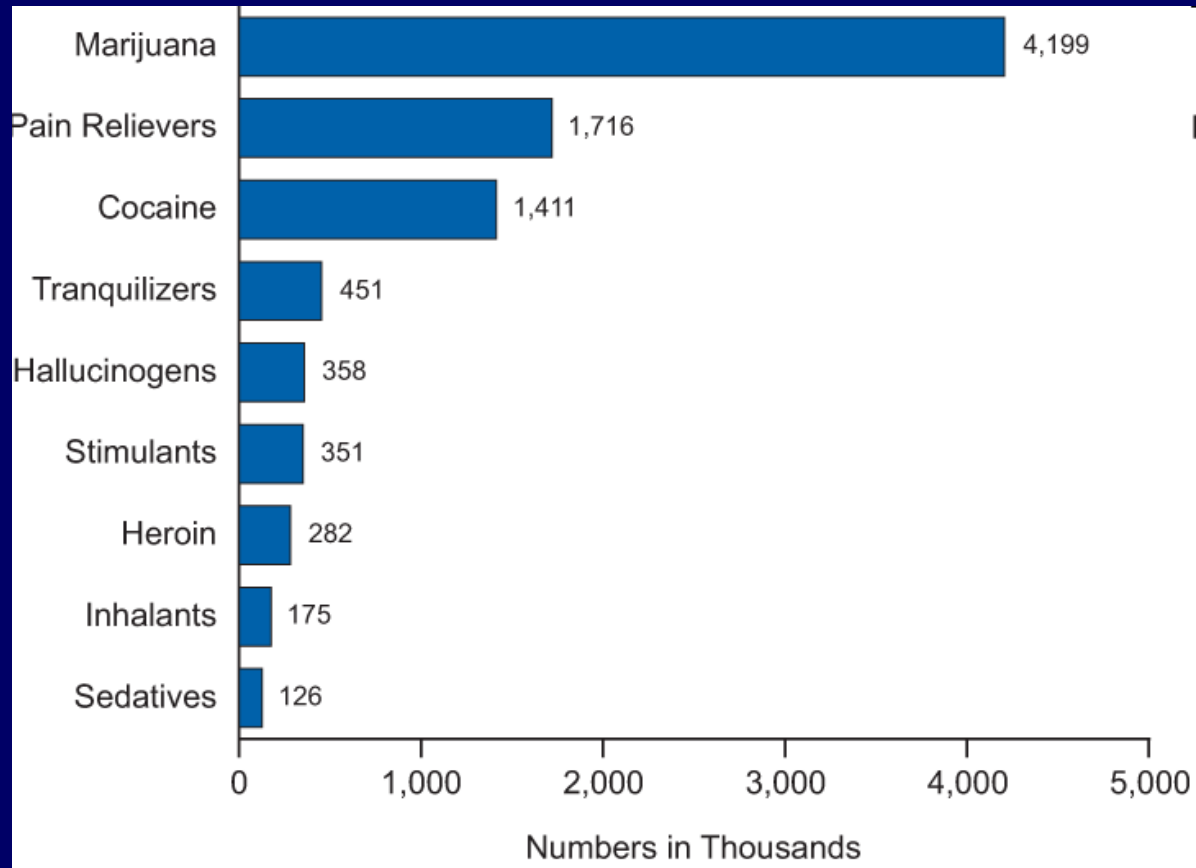
Increased rates of prescription opioid misuse and serious adverse events

- Increased rates of use of prescription opioid analgesics corresponds to dramatic increases in rates of misuse and serious adverse events
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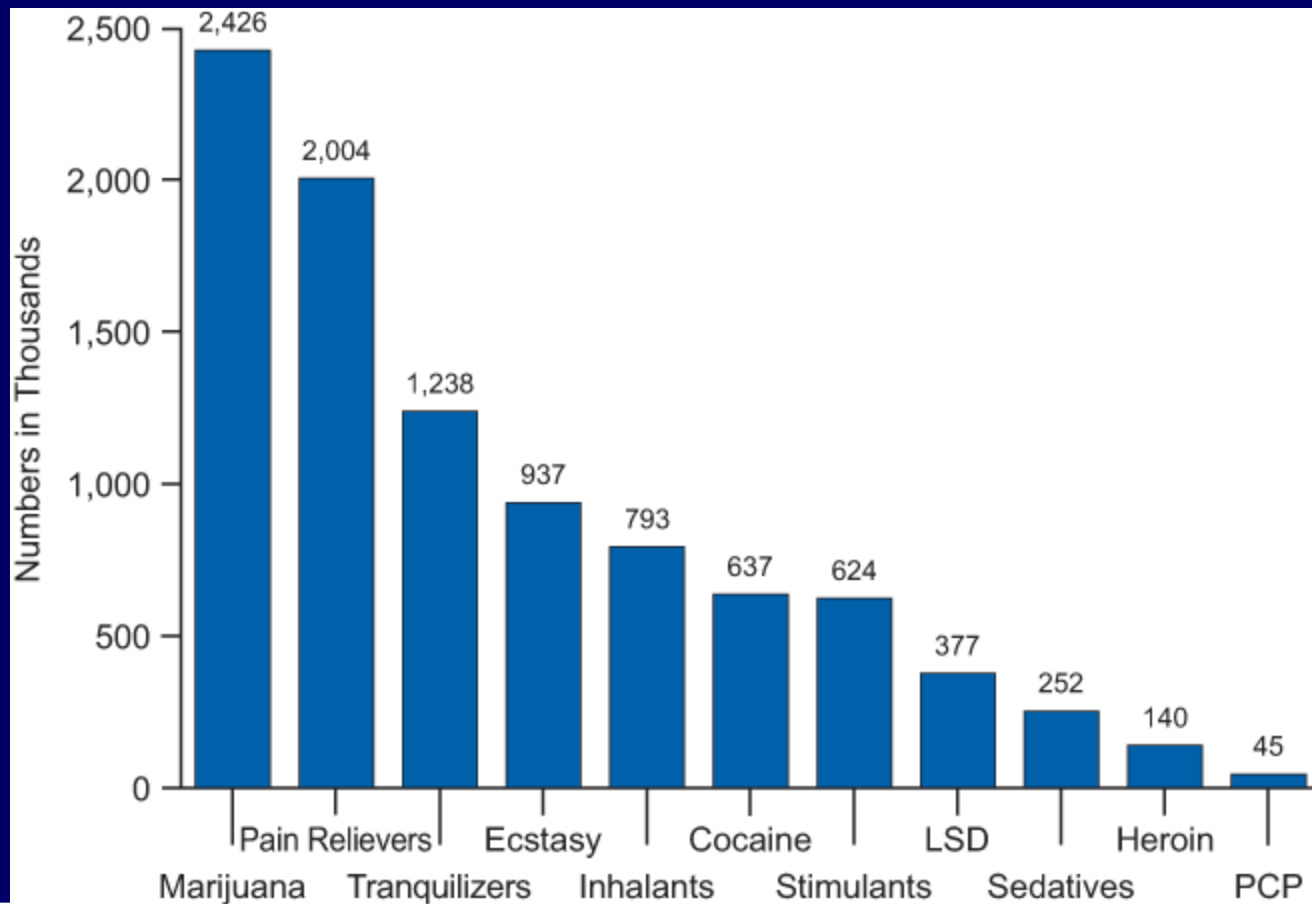
Percentages of Substance Abuse Treatment Admissions Reporting Prescription Opioid Abuse



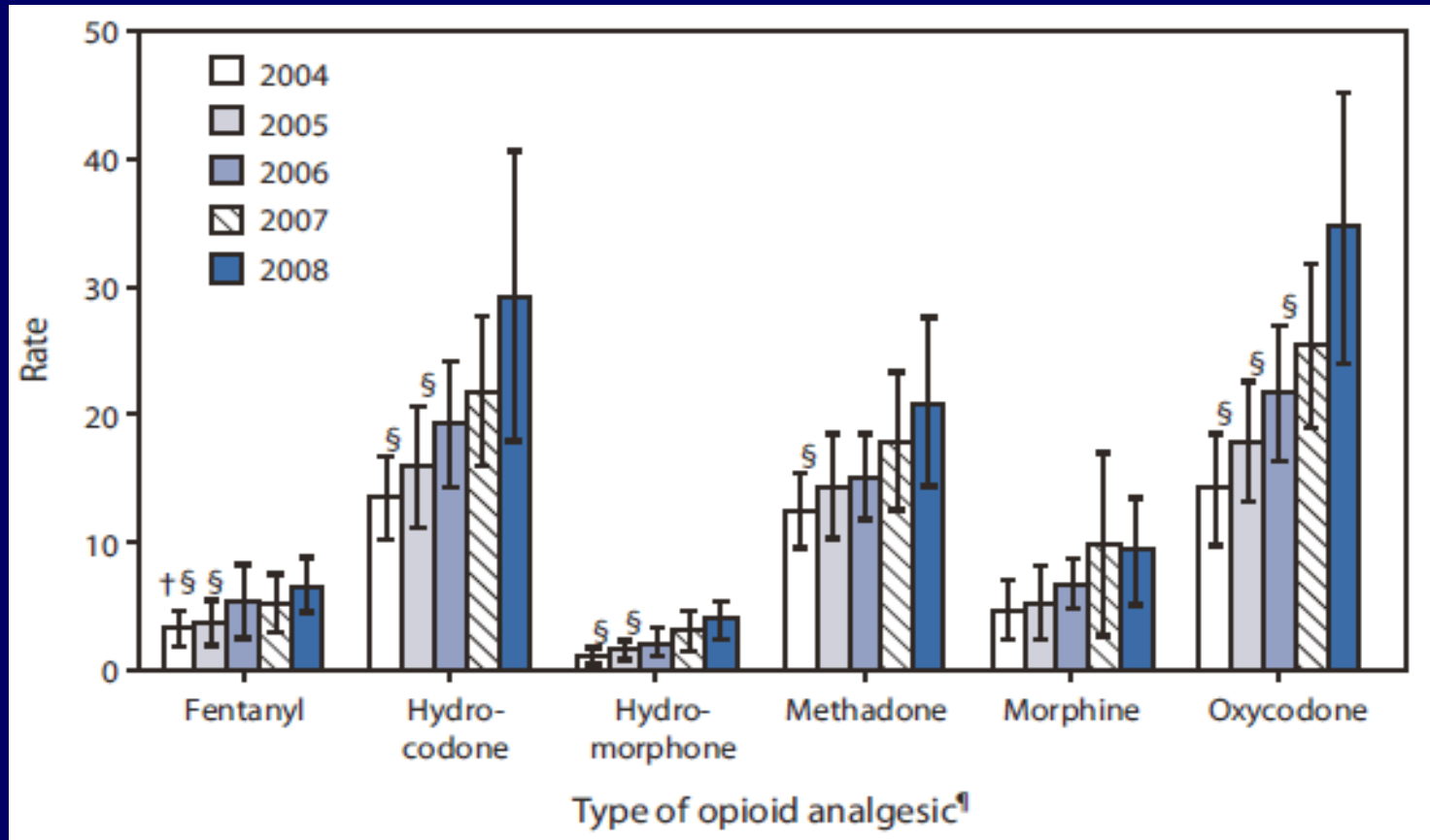
Dependence on or Abuse of Illicit Drugs, Past Year --- 2008



Past year initiates of specific illicit drugs among persons aged 12 or older: 2010

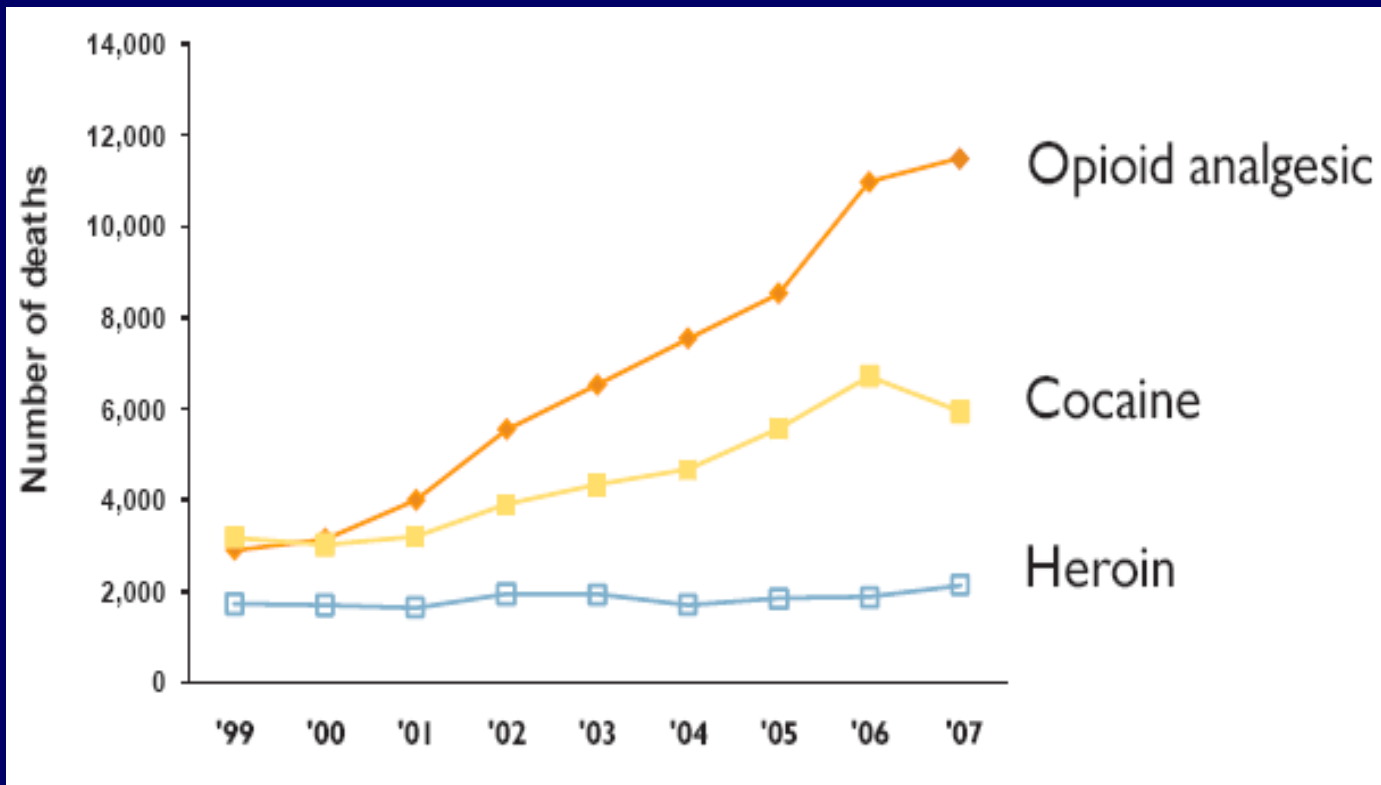


Rates of Emergency Department visits for nonmedical use of opioids, United States 2004-2008

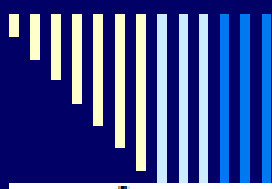


Source: Substance Abuse and Mental Health Services Administration (SAMHSA)'s Drug Abuse Warning Network (DAWN), 2004--2008.

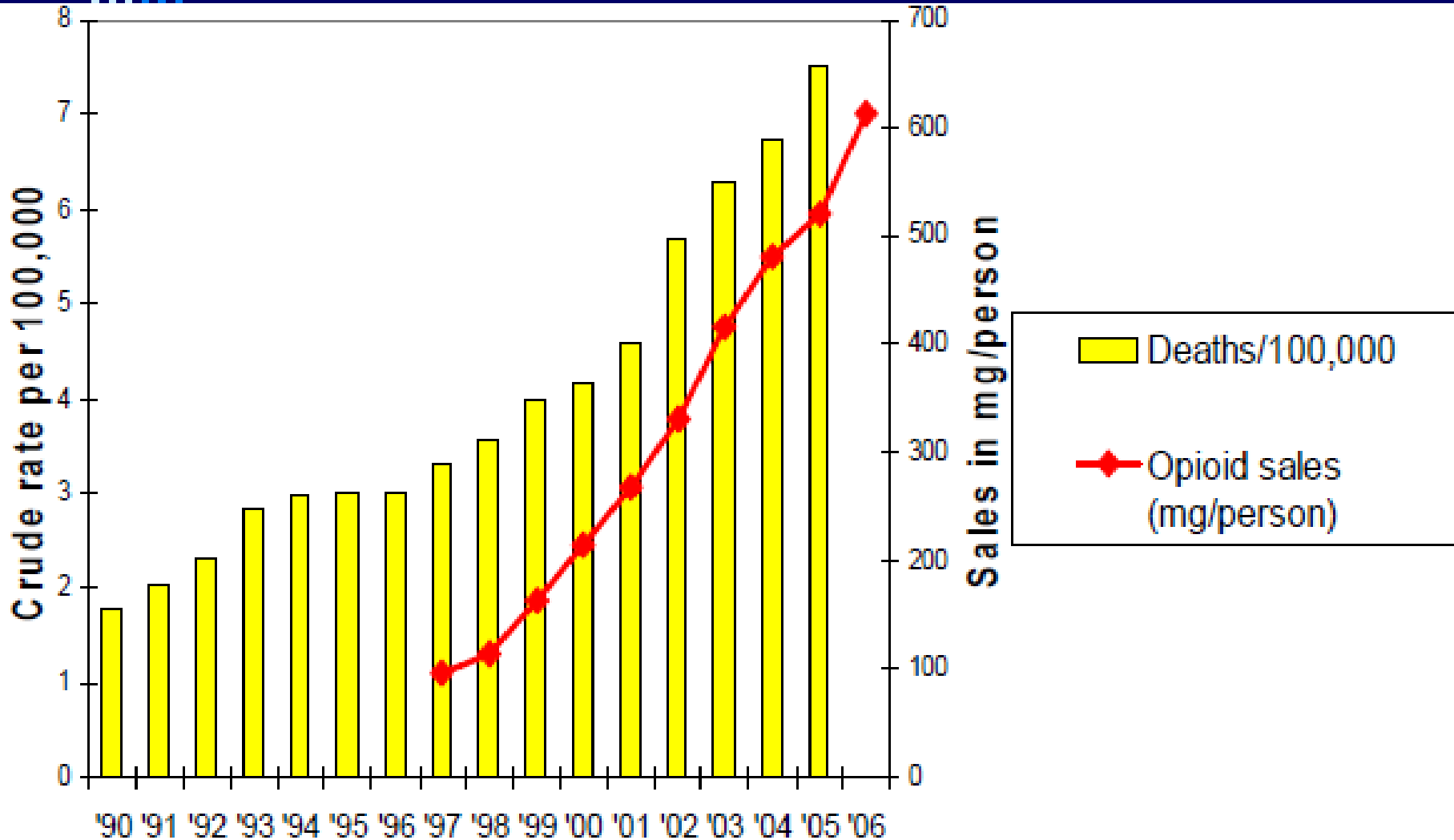
Overdose deaths due to opioid analgesics have risen dramatically



Source: National Vital Statistics System



Unintentional Overdose Rate & Opioid Sales





How is pain treated in homeless populations?

- Results from Pain Study
-



Pain Study

- 2-year longitudinal cohort
 - Participants recruited from REACH cohort
 - Indigent HIV infected adults in San Francisco
 - Probability sampling from homeless shelters, free-meal programs and SROs
 - Participants' PCPs recruited by mail and advertising at clinics
 - Sensitive Data (aberrant opioid use) collected by ACASI
 - Funded by R01DA022550
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Participants saw PCPs regularly and discussed pain

- 98% visited PCP at least once in year
 - 88% visited PCP at least once per quarter
 - 82% reported PCP discussed pain or talked about ways to manage pain in year
-



Few saw pain specialists

- 6% reported seeing a pain specialist over 1 year
-



Non-opioid analgesic agents used uncommonly

Type of Drug	n=270
NSAIDs	73 (27.0%)
Anti-convulsants	66 (24.4%)
Tricyclic antidepressant	18 (6.7%)
Benzodiazepines	48 (17.8%)
Muscle relaxants	23 (8.5%)
Marijuana for pain	98 (36.3%)



Opioid analgesics prescribed at high rates

- 52% of all participants had a prescribed opioid analgesic in past 90 days (at baseline)
 - 59.7% only short-acting opioid

 - 15.2% of all participants averaged more than 100mg morphine equivalent daily dose

 - Vast majority of opioid analgesics prescribed by PCPs
-



Emergency Department use was high and often motivated by pain

- 50% visited ED at least once (in 1 year)
 - 75% of all who visited ED reported that at least one of their visits was for chronic pain
-



Factors Associated with Use of ED (N=296)

Race/Ethnicity (Ref White)	
African-American	1.47 (1.04-2.08)
Latino	2.56 (1.50-4.38)
CD4 Count <200	1.63 (1.19-2.24)
Depression	1.46 (1.12-1.89)
Methamphetamine Use	1.71 (1.23-2.39)
Heroin Use	1.97 (1.23-3.14)
Lived in Street or Shelter	1.67 (1.12-2.49)
Pain Severity (Ref: no/mild)	
Moderate Pain	1.41 (0.96-2.08)
Severe Pain	1.91 (1.32-2.76)
Prescription for Opioid Analgesic	2.01 (1.52-2.65)



Are rates of misuse high?

- Results from Pain Study
-



Definition of “Major Opioid Misuse” in Pain Study

- Behaviors that posed imminent risk for overdose or legal consequences, or
 - Behaviors for which > 50% of the participants who engaged in that behavior reported that their motivation was to get high
-



The “Major Misuse” Behaviors

Used opioid analgesics to get high

Snorted, crushed, injected or smoked opioid analgesics

Licked, or dissolved or injected transdermal fentanyl

Sold opioid analgesics

Stole opioid analgesics from another person

Stole opioid analgesics from a pharmacy, hospital or clinic

Exchanged opioid analgesics for sex or other drugs

Performed sex to get one of these medicines

Traded street drugs to get opioid analgesics

Attempted to forge a prescription for opioid analgesics

Drank alcohol or used street drugs to boost effects of opioid analgesics

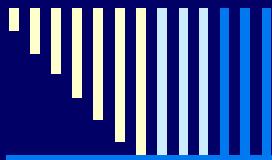
Lied about pain symptoms to get opioid analgesics

Bought medicines from another person



Minor Misuse Behavior

- ❑ Saved prescribed opioid analgesics when done using
- ❑ Borrowed opioid analgesics from another person
- ❑ Falsely reported Rx opioid lost, ruined, or stolen
- ❑ Argued with provider about opioids
- ❑ Lied about side effects of other medications
- ❑ Been told to leave or banned from clinic
- ❑ Tried to obtain opioid over internet without prescription



Major Opioid Misuse Rates

	Lifetime (%) enrollment	Cumulative (%) Study interval
Used opioid analgesics to get high	35.5	25.3
Drank alcohol or used street drugs to boost effects of opioid analgesics	31.4	32.1
Sold opioid analgesics	17.6	10.1
Snorted, crushed, injected or smoked opioid analgesics	16.6	9.5
Licked, or dissolved or injected transdermal fentanyl	5.4	7.1
Stole opioid analgesics from another person	6.4	8.9
Stole opioid analgesics from a pharmacy, hospital or clinic	3.0	4.1
Exchanged opioid analgesics for sex or other drugs	8.1	4.7
Performed sex to get one of these medicines	5.1	4.7
Traded street drugs to get opioid analgesics	13.5	8.8
Attempted to forge a prescription for opioid analgesics	3.7	5.4
Lied about pain symptoms to get opioid analgesics	15.2	6.4
Bought medicines from another person	25.3	14.5
One or more major misuse behaviors	54.4	53.5



Minor aberrant behaviors

Minor Aberrant Behaviors	Lifetime (n=296)	One year (n=249)
Saved prescribed opioid analgesics when done using	111 (41.1%)	66 (26.5%)
Borrowed opioid analgesics from another person	82 (30.4%)	42 (16.9%)
Falsely reported Rx opioid lost, ruined, or stolen	36 (13.3%)	24 (9.6%)
Argument with a provider about opioid analgesics	32 (11.9%)	14 (5.6%)
Lied about side effects/allergies to get specific opioid	22 (8.2%)	16 (6.4%)
Told to leave or banned from clinic	7 (2.6%)	4 (1.6%)
Tried to obtain an opioid over the internet without Rx	1 (0.4%)	3 (1.2%)



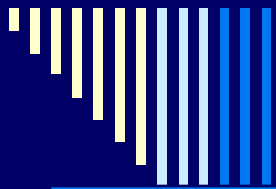
Factors associated with any major misuse

	Adjusted odds ratio (95% CI)
Age	1.0 (1.0-1.0)
Male	0.9 (0.6-1.3)
White	0.9 (0.6-1.3)
History of street or shelter stay in the past 90 days	1.6 (1.1-2.4)^a
Men who have sex with men	1.5 (1.0-2.3)^a
Problem drinking in the past 30 days	1.7 (1.1-2.6)^a
Current smoking in the past 30 days	1.6 (1.1-2.4)^a
Illicit drug use in the past 90 days	2.0 (1.5-2.7)^b
Moderate to severe depression in the past 90 days	1.5 (1.1-2.0)^a
Severe pain in the past week	1.4 (1.0-2.1) ^c

a $p < 0.05$

b $p < 0.001$

c $p = 0.06$



Health care provider as source of misused opioid

	Proportion with PCP as source
Sold opioid analgesics	69.2
Drank alcohol or used street drugs to boost effects of opioid analgesics	49.5
Exchanged opioid analgesics for sex or other drugs	45.8
Used opioid analgesics to get high	37.1
Snorted, crushed, injected or smoked opioid analgesics	30.6
Licked, or dissolved or injected transdermal fentanyl	25.0

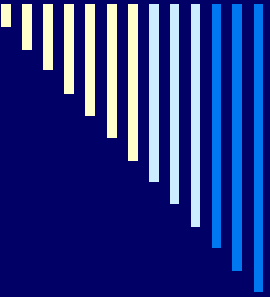
Most participants received the misused opioid from a health care provider

Most prescribers were PCPs



Primary Care Provider Study

- Participants identified primary care providers (PCPs)
 - Study staff made repeated contacts with PCPs through postal and e-mail
 - PCPs completed mail-based surveys:
 - Questions about themselves: demographics, training background, clinic characteristics, opinions about treating chronic pain
 - Questions about each participant who identified them as PCP: medical history, trust scale, illicit drug use, opioid Rx, estimated opioid misuse
-



PCPs do not find pain management satisfying and don't feel confident

- Compared to conditions encountered regularly in practice....
 - 84.6% find treating chronic pain much or slightly less satisfying
 - 53.9% feel much or slightly less confident treating chronic pain
-



PCPs were unable to accurately assess misuse

- ❑ PCPs did not identify 38.1% of participants who reported misuse
- ❑ PCPs mis-identified 46.4% who did not report misuse
- ❑ No concordance between PCPs' opinions and participants' self-reports of past-year misuse (Kappa score 0.09, $p < 0.10$)



PCPs overestimated misuse in African-American patients

- PCPs were more likely to suspect misuse in:
 - Patients with past-year illicit substance use (AOR = 3.33 (1.35-8.20))
 - Younger patients (age AOR = 0.89 (0.84-0.97))
 - African American patients (AOR = 2.53 (1.05-6.07))

 - Illicit drug use is associated: Race is NOT
 - People with past-year illicit substance use were more likely to report misuse (AOR = 3.01 (1.04-8.76))
 - African American patients were not more likely to report misuse (AOR = 0.71 (0.25-1.97))



Pain medication agreements rare

- According to patients at the baseline interview:
- 14.9% overall cohort reported ever having a pain medicine agreement with a provider/clinic
- 8.4% reported currently having a pain medicine agreement
 - 13.6% of participants w/current Rx for an opioid analgesic reported a pain medicine agreement

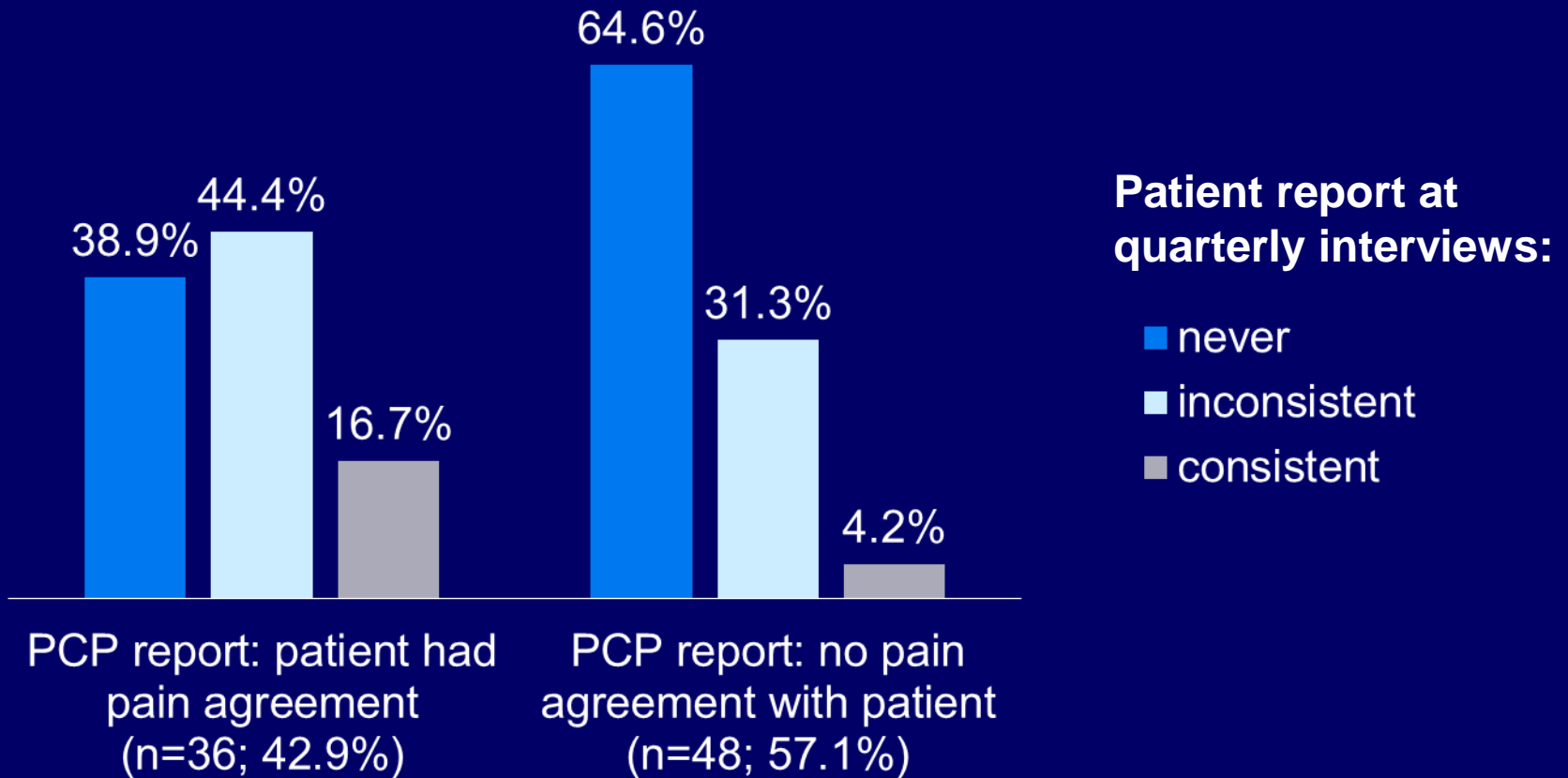


Do patients know they are on pain agreements?

- N=84 patients in PCP sample with regular opioid prescriptions from PCP in past year
 - 42.9% had a pain medicine agreement, per PCP report
 - 46.4% had a pain medicine agreement, per patient report (ever endorsed in one year)

 - Comparing patient report at interview closest in time to PCP interview to PCP report of pain agreement
 - Poor agreement : 61.9% agreement; kappa = 0.18
 - Patients reported with sensitivity = 36.1%
-

We asked both patients and PCPs about pain medication agreements: patients did not know if they were on them!





Summary of Findings

- ❑ CNCP common and severe in a community-based sample of indigent adults with HIV
 - ❑ Participants with many of described risk factors of prescription opioid misuse
 - ❑ Much health care utilization driven by pain
 - ❑ Prescription opioid analgesics frequently prescribed
 - ❑ Rates of misuse quite high
 - ❑ Clinicians do not enjoy or feel comfortable with managing pain
 - ❑ Clinicians have difficulty assessing who has misused
 - ❑ Pain agreements used rarely; patients do not know that they are on pain agreements
-



Conclusions

- Dearth of research: particularly on what to do!
 - Risk factors for chronic pain common in homeless populations
 - Mental health problems (PTSD, Depression)
 - Traumatic Brain injury
 - Substance use problems
 - Use of opioid analgesics increased dramatically in past 10 years despite limited evidence for their use
 - Emphasis on treating chronic pain
 - Big pharma interest
-



Conclusions

- Use increased disproportionately in those living in poverty, mental health and substance use disorders
 - Mental health and substance use disorders also associated with increased rates of misuse

 - Complications of opioid analgesics increased dramatically as well
 - ED visits
 - Overdoses
 - Soaring rates of addiction to opioid analgesics
-



Conclusions

- PCPs do the lion share of managing pain
 - Lack confidence in doing so
 - Very poor at judging who is at risk for misuse
 - Rates of misuse of opioid analgesics are high
 - Place patients at risk for overdose
 - Create societal problems
-



Conclusions

- Pain needs recognition as a public health problem
 - New models of care are needed that
 - Address root causes of pain
 - Don't rely on opioid analgesics as cornerstone of approach
-



What are we talking about when we talk about pain?

“What’s a man or woman to do?” asked Ben, a young man here who said he started drinking at age 12. “I felt helpless. I felt worthless, and I wanted a drink to get rid of my pain. But then you get more pain.”

--from Nicholas Kristof’s piece “Poverty’s Poster Child” about poverty on the Pine Ridge reservation. NY Times, May 9, 2012



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