

Harnessing National Data Sets to Measure Safety of Opioid Treatment: National Survey on Drug Use and Health (NSDUH) and VA Data

William C. Becker, MD

Assistant Professor, General Internal Medicine

VA Connecticut Healthcare System

Yale University School of Medicine



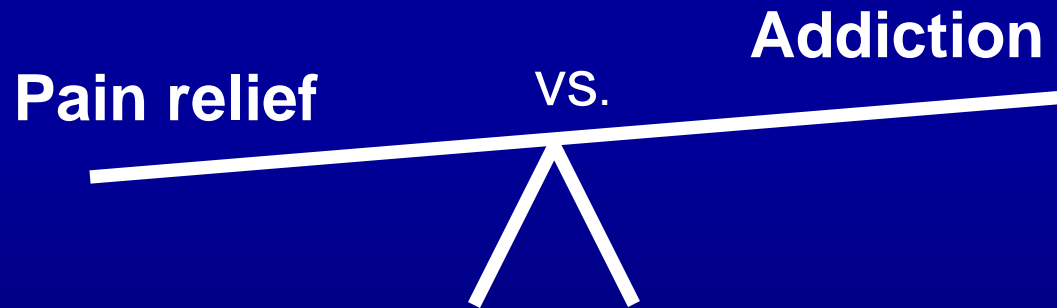
I have no conflicts of interest related to the content of this presentation.



Outline

- Broader conception of harm/benefit tradeoffs
- National Survey on Drug Use and Health
- VA Data:
 - VACS
 - Quality of Opioid Prescribing dataset
 - Musculoskeletal cohort

Old paradigm



New paradigm

**Taking opioids safely
(i.e. without side effects
or adverse events)**

**Achieving functional
goals**

Taking as prescribed

VS.

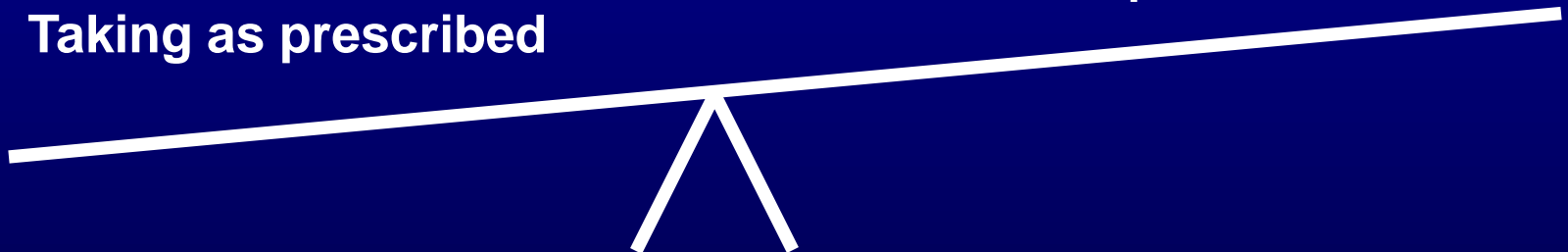
**Safety problems →
side effects,
adverse events**

- and/or -

**Low efficacy →
not achieving
functional goals**

- and/or -

**Misuse → not using
as prescribed**



Important toxicities

- Constipation
- Itching
- Nausea/vomiting
- Hypogonadism; impaired libido
- Opioid-induced hyperalgesia
- Sedation
- Impaired cognition
- Fractures/osteoporosis
- Motor vehicle accidents/falls
- Blunted respiratory drive
- ***Non-fatal and fatal overdose***

Observational data

- Strengths:
 - Power, especially in rare outcomes
 - OR can be used to approximate RR
- Weaknesses:
 - Causal inference is more difficult
 - Confounding by indication

NSDUH

- Funded by SAMHSA
- Purpose: measure the prevalence and correlates of illicit drug use in the United States

Methodology

- Cross-sectional self-report survey using combination of computer-assisted personal interviewing (CAPI) conducted by an interviewer and audio computer-assisted self-interviewing (ACASI)
- Civilian, non-institutionalized population
- Multi-stage area probability sampling → allows for national estimates; youths over-sampled
- Multiple validations over past 30 years
- Respondents paid \$30

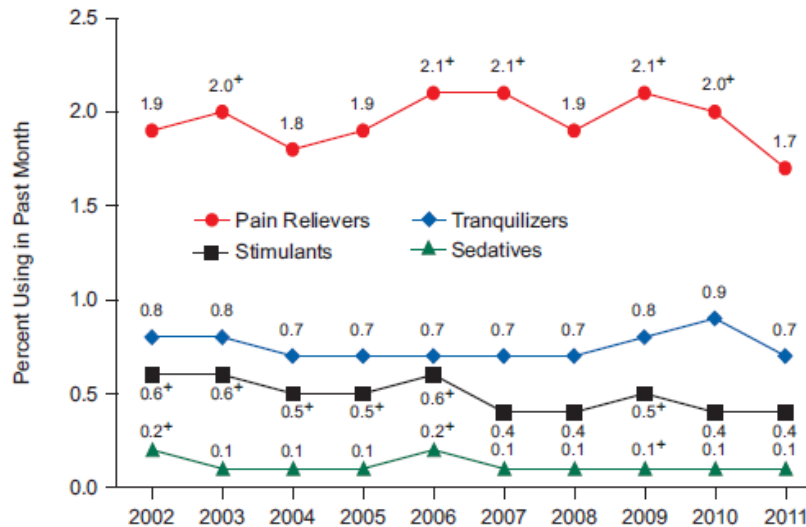
Opioid-related items

- Non-medical use: “Have you ever, even once, used [e.g.] Percocet, Percodan, or Tylox that was not prescribed for you or that you took only for the experience or feeling it caused?”
 - Age of onset
 - Last use
 - Number of days in past year
 - Source
- DSM-IV criteria for opioid use disorder (i.e. abuse, dependence)

Results

- Response rate ~ 77%
- Overall, low proportion missing values
- Typical findings:

Figure 2.3 Past Month Nonmedical Use of Types of Psychotherapeutic Drugs among Persons Aged 12 or Older: 2002-2011



⁺ Difference between this estimate and the 2011 estimate is statistically significant at the .05 level.

Relevant strengths/weaknesses (to this meeting)

- Strengths: high validity, population-level incidence and prevalence of non-medical opioid use; prescription opioid use disorder (i.e. abuse/dependence) as well as demographic and clinical correlates of these
- Weaknesses:
 - (1) No method for linking non-medical use with prescriptions → left with population-level inferences
 - (2) Lack of specificity of “non-medical use” question

Veterans Aging Cohort Study



- Prospective, observational cohort study of HIV(+) and demographically matched HIV(-) veterans in the US
- Examines role of comorbid disease in determining clinical outcomes in HIV infection
- Harnesses robust VA electronic health record: laboratory, pharmacy, administrative diagnostic data over 14 years, ~85,000 patients on opioids

Opioid analgesics

INCLUDED	EXCLUDED
<ul style="list-style-type: none">•Outpatient Prescriptions	<ul style="list-style-type: none">•Inpatient Prescriptions
<ul style="list-style-type: none">•Oral•Transdermal	<ul style="list-style-type: none">•Infrequently Used Preparations<ul style="list-style-type: none">•Rectal suppositories•Crystals•Powders•Films•Injection
<ul style="list-style-type: none">•Codeine; fentanyl; hydrocodone; hydromorphone; oxycodone (SA); methadone; morphine (SA);•Low-potency opioids (e.g. tramadol, pentazocine, propoxyphene)	<ul style="list-style-type: none">•Opioid Agonist Treatment<ul style="list-style-type: none">•Buprenorphine•Methadone for MMT

- Average daily morphine equivalent dose

Opioids workgroup analyses



- Demographic and clinical correlates of any, high dose, long term opioid receipt (Edelman et al, JGIM 2012)
- 12-year trends analysis – completed/submitted
- Next steps:
 - Association between opioid dose and important adverse effects:
 - Falls, fractures
 - Sleep-disordered breathing
 - Non fatal, fatal overdose

VACS limitations

- Sample's generalizability
- As with all administrative data, wide range in validity of outcomes (mortality: high validity; opioid use disorder: low validity)

Quality of Opioid Prescribing dataset

- Aimed at measuring adherence to opioid clinical practice guidelines → “best practices”
- Stepwise process:
 - Identified practices in key domains that could be identified in VA administrative data
 - Developed measures of practices or outcomes in these domains
 - Measures validated with a team of experts including clinical practice guideline authors

Some of the metrics

- Appropriate provision of bowel regimen
- Avoidance of BZD co-prescribing
- Regular urine toxicology
- Appropriate follow-up
- Provision of non-opioid treatment modalities

Sample

- Approximately 1.1 million veterans from FY 2009-2013 who received one or more opioid prescriptions
- Extensive additional data: ICD-diagnoses, health care utilization, and pharmacy data
- Hierarchical subgroups based generally on perceived risk of various opioid types:
 - 1) Long-acting opioids (e.g. methadone, fentanyl, oxycodone CR, morphine SA)
 - 2) Long-term short-acting opioids
 - 3) Acute short-acting opioids
 - 4) Tramadol only

Use of the data

- QI → Data report (updated quarterly) has been created to allow facilities to track their performance over time & allow comparison to other facilities/national norms
- Research → Relationship between guideline adherent prescribing and outcomes: non-fatal and fatal overdose is step 1.

Limitations

- Dose calculations have not been performed (relatively easily fixable)
- Standard limitations of administrative data

Musculoskeletal pain cohort

- VA-funded prospective cohort
- All the robust administrative, laboratory, pharmacy data PLUS survey-based pain severity, interference, function
- Limitations: recruiting just started

The PRIME Center

Pain Research, Informatics, Medical comorbidities, and Education
Enhancing Pain Care for Veterans