

Prescription Drug Poisoning in Utah: No Longer A Silent Epidemic

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Outline

- Overview of fatal drug poisoning in Utah
- Describe other data sources available for the study of fatal drug poisoning
- Describe ongoing study
 - an individual link between Vital Statistics and the Controlled Substances Database
- Describe educational efforts

The Bottom Line

- Prescribable drugs kill more Utahns each year than illicit drugs
 - 307 in 2006, 317 in 2007
- Fatality is the most severe outcome
 - Many people using prescribable drugs inappropriately that have not died (yet)
- National Survey on Drug Use and Health
 - 6.5% of Utahns reported inappropriate use of prescription pain medicine

Utah Health Status Update: August 2007

Poisonings surpass motor vehicle crashes as Utah's leading cause of injury death.

In 2003, rate of unintentional and undetermined intent poisoning deaths, 13.9 per 100,000, surpassed that for motor vehicle crash, 13.2 per 100,000.

The increase has continued and the gap is widening.



Drugs Identified at Death

- Illicit drugs only
 - Drugs that are not legal to use
 - Heroin, cocaine, methamphetamine
- Non-illicit drugs only
 - Prescription drugs – although may be acquired illegally
 - Methadone, oxycodone, hydrocodone, anti-anxiety, sleep drugs
- Combination of illicit and non-illicit drugs

Fatal Drug Poisoning in 2007

528 fatal drug poisonings
investigated by OME

Mean age = 39.4 years

65 illicit drugs only

67 combination of
illicit and non-illicit

373 non-illicit drugs only

Mean age = 34.8 yrs

Range 17-60

78% male

69% undetermined
intent

10 counties

9 health districts

Mean age = 36.8 yrs

Range 18-57

66% male

89% undetermined intent

9 counties

8 health districts

Mean age = 40.3 yrs

Range 3-88

54% male

62% undetermined intent

77% involve pain meds

23% involve methadone

25 counties

11 of 12 health districts

Fatal Drug Poisoning in 2008

517 fatal drug poisonings
investigated by OME

Mean age = 40.1 years
59.8% male

93 illicit drugs only

43 combination of
illicit and non-illicit

335 non-illicit drugs only

Mean age = 36.1 yrs
Range 18-58
83% male
55% undetermined
intent
11% involve alcohol
9 counties
9 health districts

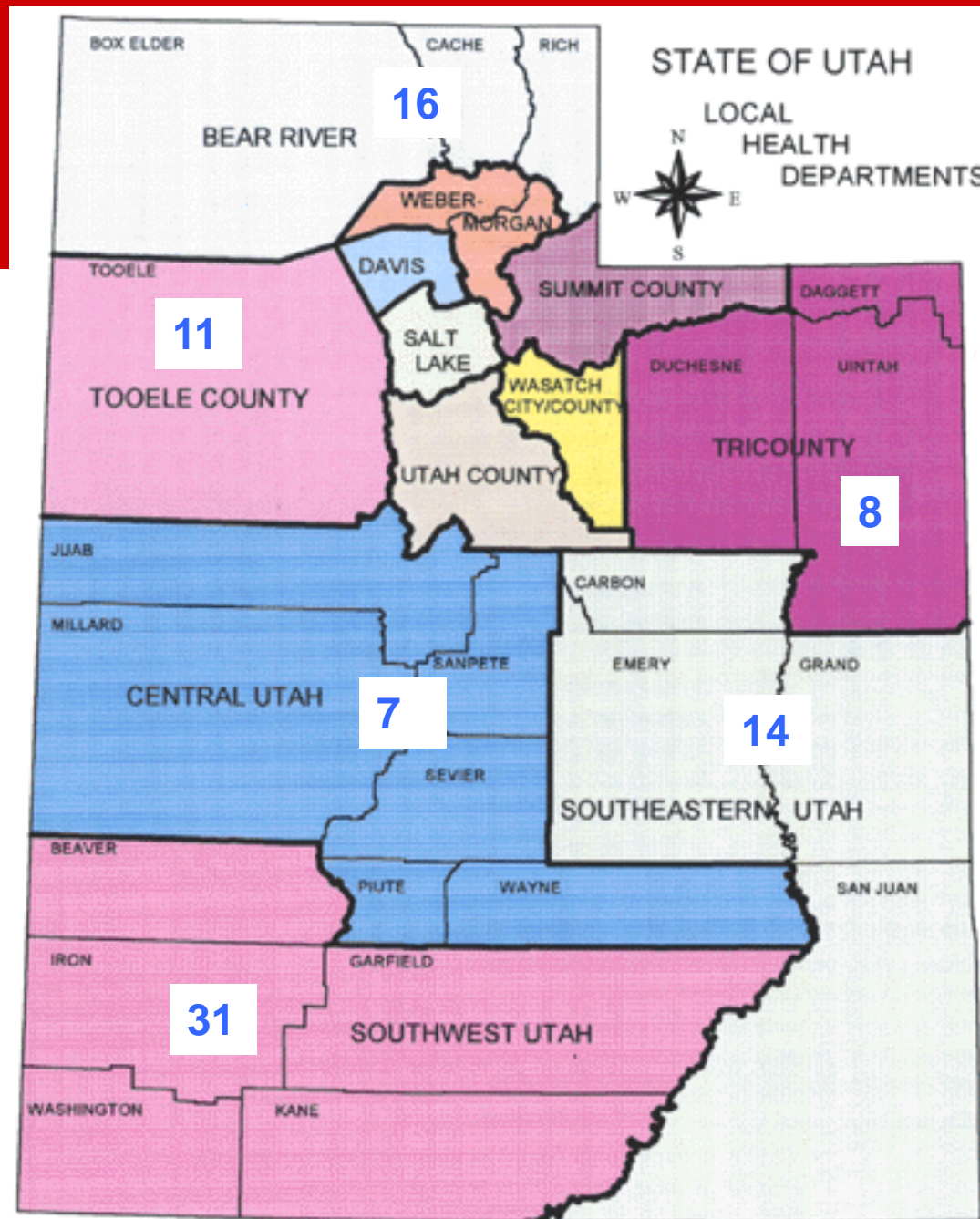
Mean age = 39.1 yrs
Range 18-62
67% male
60% undetermined intent
9% involve alcohol
10 counties
10 health districts

Mean age = 41.1 yrs
Range 1-85 (only 2<18 yrs)
52% male
47% undetermined intent
13% involve alcohol
75% involve pain meds
23 counties
12 of 12 health districts

Non-Illicit Overdose Deaths by Health District, 2007

- Weber-Morgan = 35
- Davis = 34
- Salt Lake = 159
- Utah = 51
- Summit & Wasatch* = 7

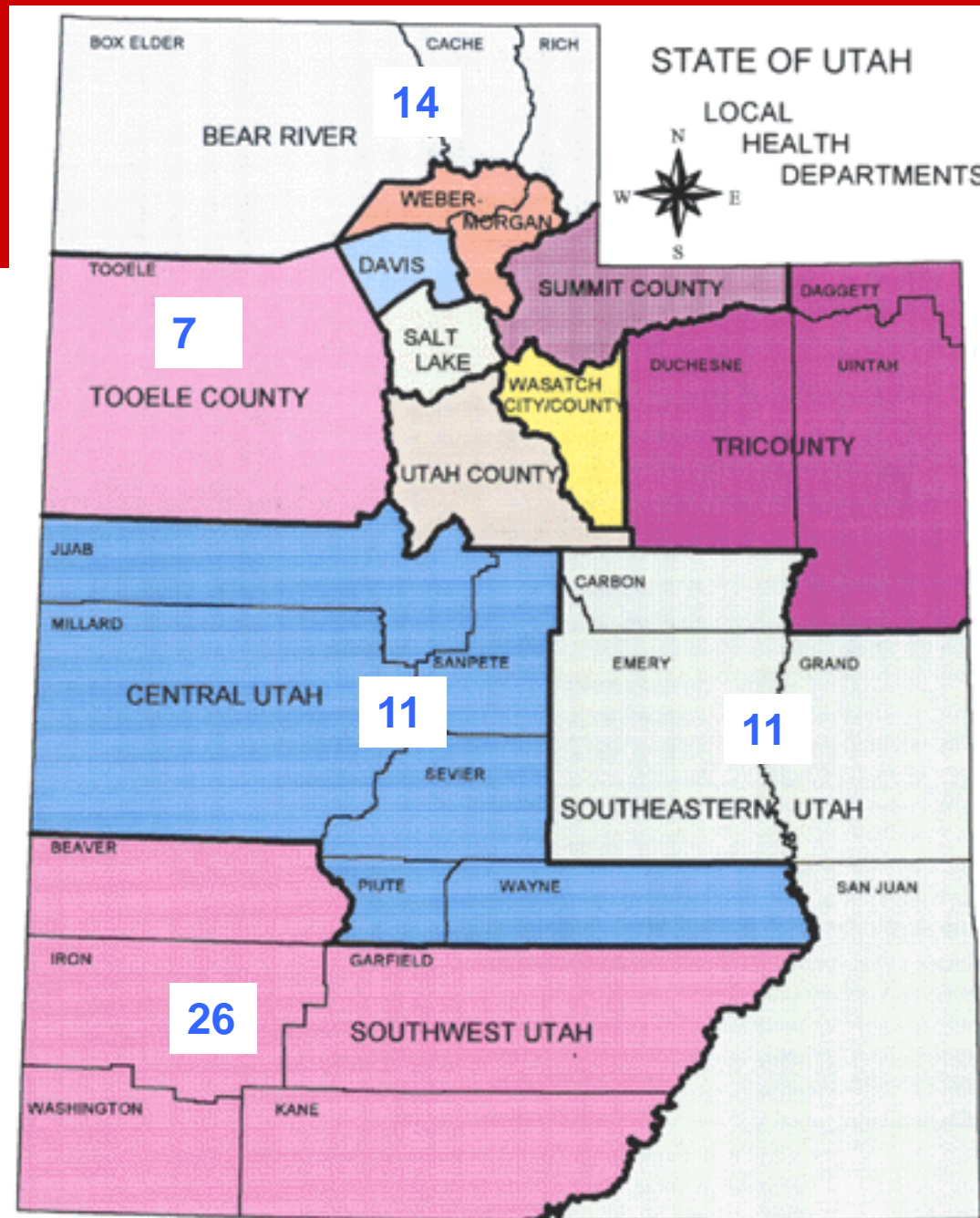
* combined due to small numbers



Non-Illicit Overdose Deaths by Health District, 2008

- Weber-Morgan = 38
- Davis = 42
- Salt Lake = 133
- Utah = 44
- Summit & Wasatch & Tricounty* = 9

* combined due to small numbers



Manner of Death

- Medical Examiner makes a decision about the intentionality of death
- Natural
- Intentional: suicide & homicide
- Unintentional: accidents
- Undetermined: evidence is not strong enough to classify the death into another category
 - 70% of drug-related deaths

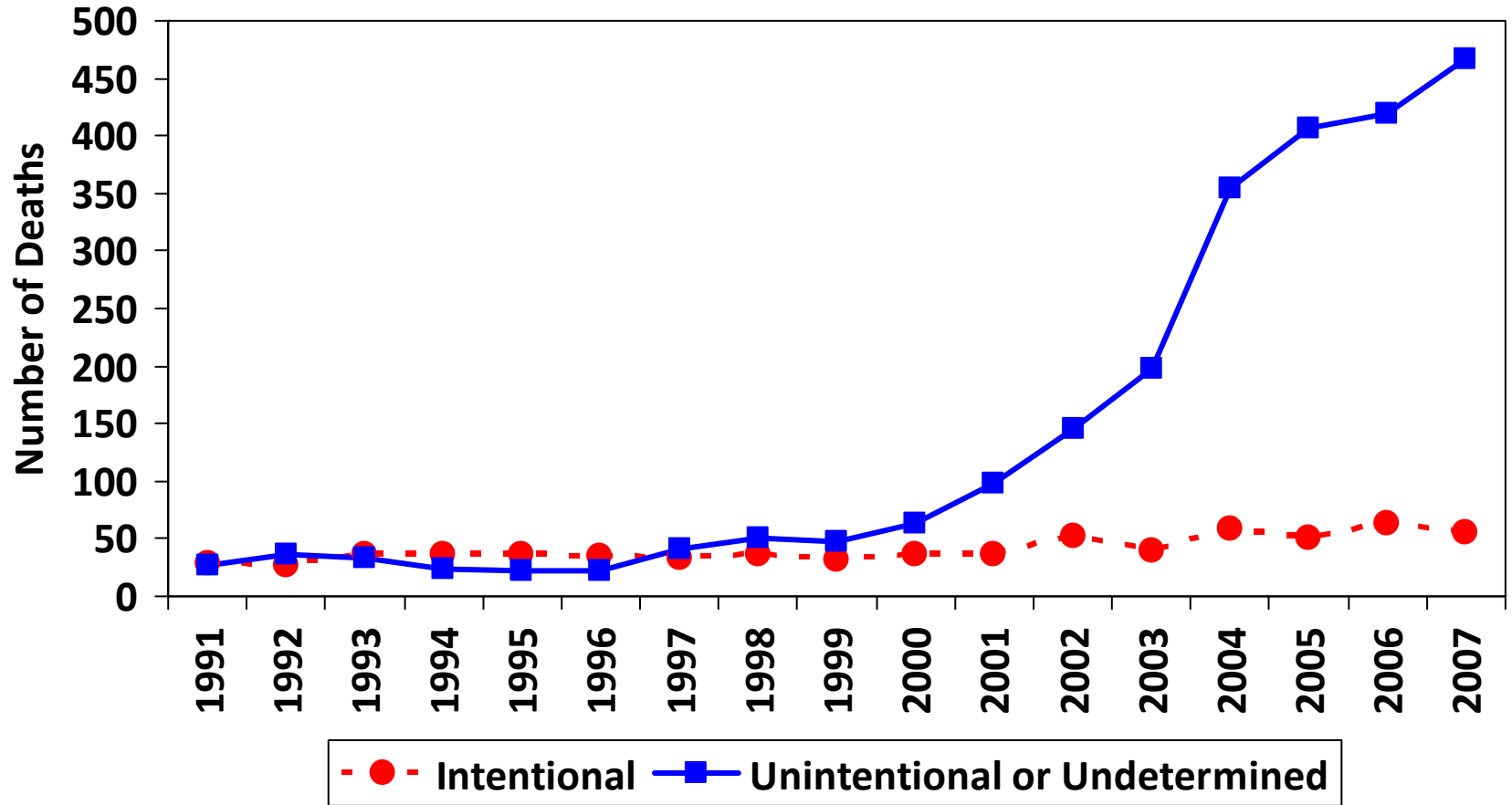
Manner of Death

- Research different manners of death separately
- Different means of prevention
- Different causes
- Combine unintentional and undetermined

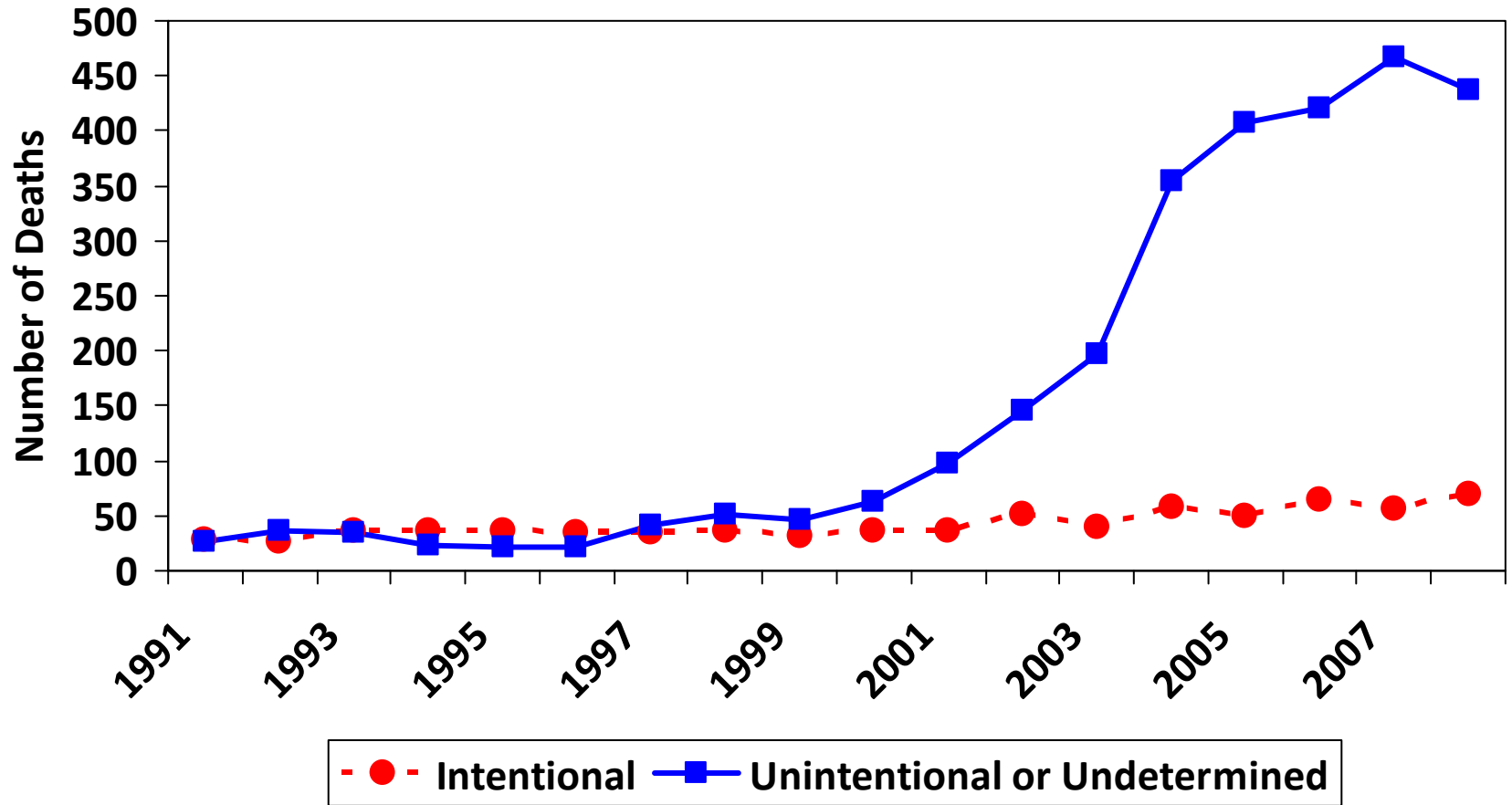
What about suicides?

- Number of suicides involving drugs relatively stable since 1991
 - ~1 per week
- Suicide decedents older than others
- Different causal and risk factors
- It is a problem, but it is a different problem than I will talk about today

Drug Poisoning Deaths by Manner and Year — Utah 1991-2007



Drug Poisoning Deaths by Manner and Year — Utah 1991-2008



Where we began...

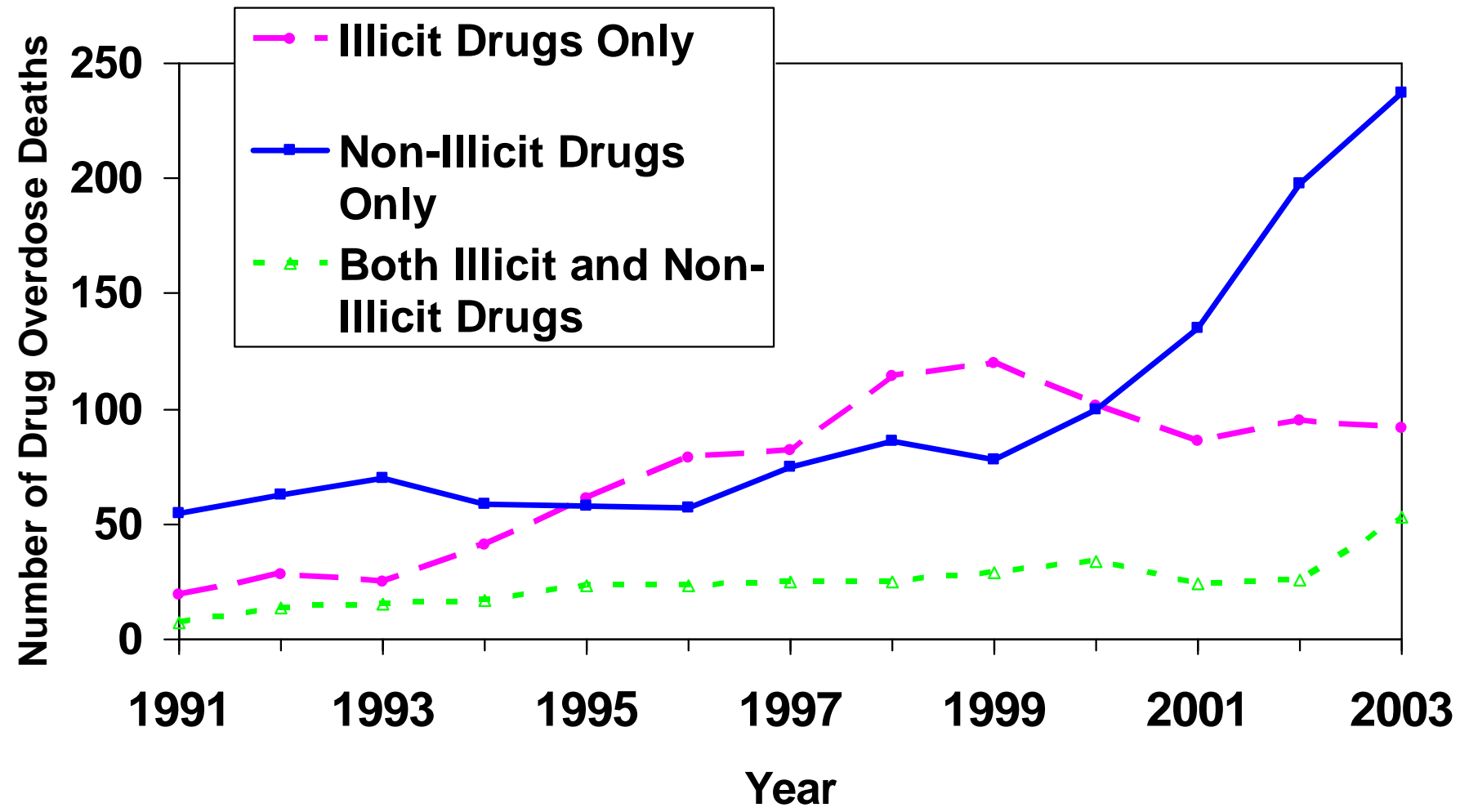
- Medical Examiner noticed more deaths caused by prescribable drugs, asked epidemiologist to take a look at the data
- Using Medical Examiner data
- Reviewed all drug poisoning deaths between 1991 and 2003
 - Categorized by type of drug involved

Utah Medical Examiner

- Investigates
 - Sudden or unexpected deaths
 - including drug-related deaths
- Examination includes
 - Toxicology – identity and amount of drugs or poisons
 - Physical examination
 - Information gathering from friends, family, witnesses when possible



Number of Drug Poisoning Deaths by Drug Category and Year — Utah 1991-2003



Changes Over Time

- Highest numbers of deaths
 - In urban areas
 - Among males
- Biggest increases in death rates
 - In rural areas
 - Among females
- Possible relationship with obesity
 - Increasing death rate with increasing BMI



Geography

- Popular belief that drug use is an urban problem
- Analyzed county of residence compared to county of death



Residence County Compared to Death County

- County of residence agreed with death county for **91.6%** (668 / 729)
- An additional 36 decedents (4.9%) died in a county contiguous to their county of residence
- **96.6%** of decedents with known residence died in their home county or in a contiguous county

Timing of Death

- Hypothesis that non-illicit drug poisoning deaths more likely to occur during sleep
- Opioid drugs can induce a central apnea
- Time of death was often estimated
 - Decedents found in the morning
- Decedents most often found in bed or usual sleeping place

Specific Drugs of Interest

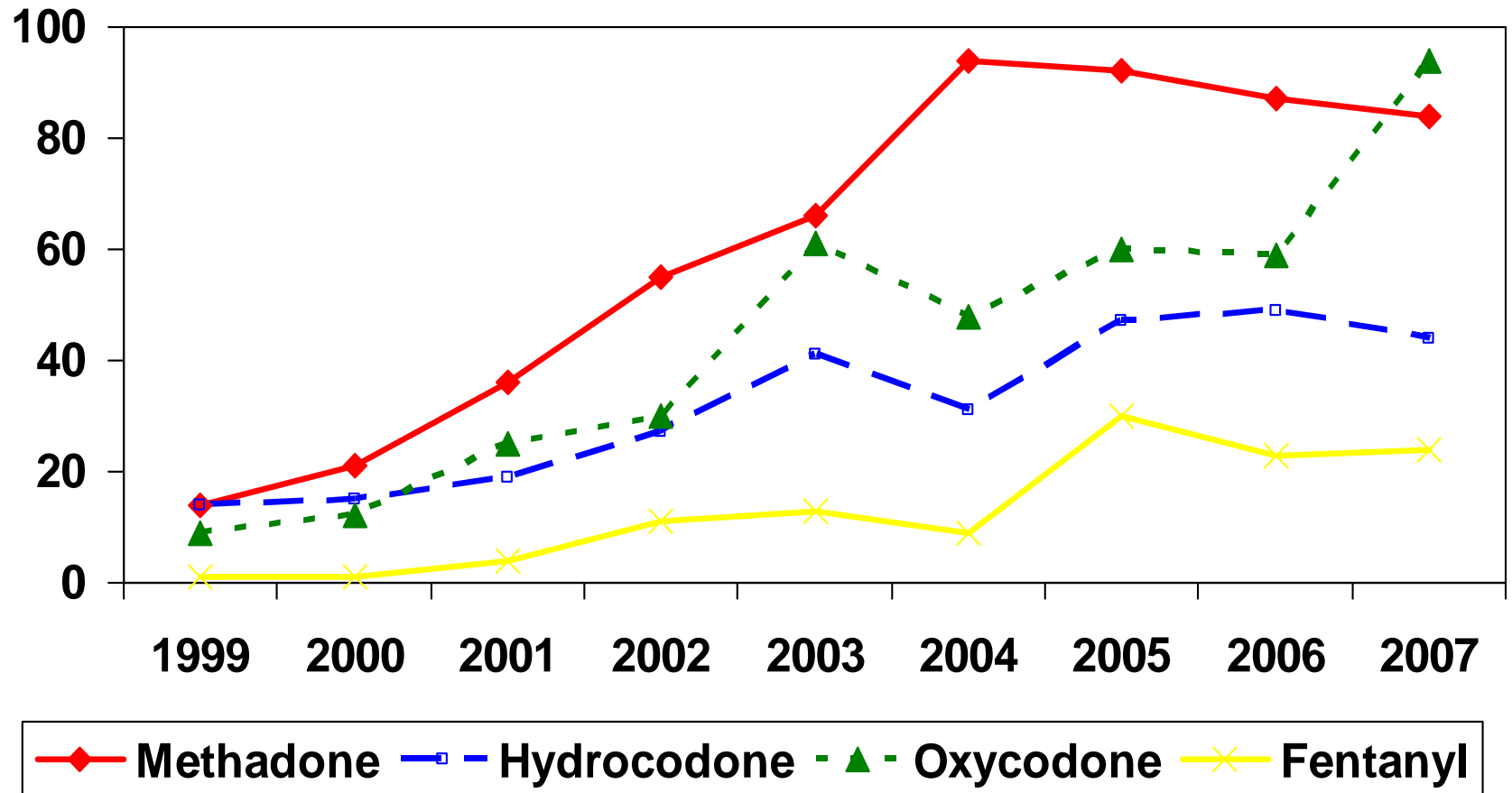
- Not all non-illicit drugs contribute equally to fatalities

Increase in Number of Methadone-Related Deaths

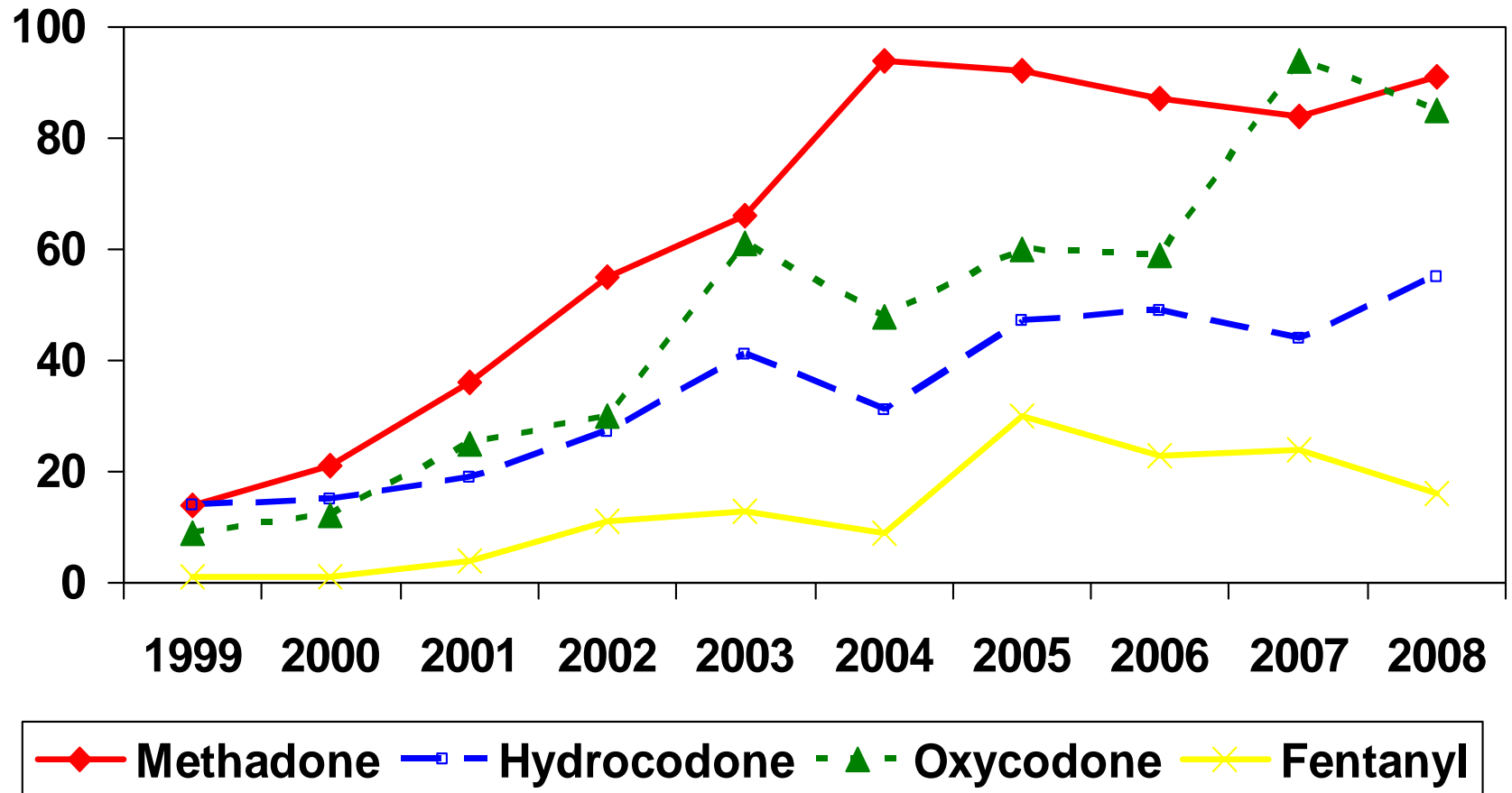
- Office of the Medical Examiner case files for methadone-related deaths
- Year 2000 on the left, 2004 on the right



Number of Non-Illicit, Accidental and Intent Undetermined Deaths by Year & Drug



Number of Non-Illicit, Accidental and Intent Undetermined Deaths by Year & Drug



Other Data Sources

- US DEA collects information on retail supply of prescription drugs
 - Proxy for amount of drug legitimately circulating
- Emergency Department Encounter Database
 - Data on non-fatal poisoning events
- Controlled Substances Database
 - Registry of all filled prescriptions for controlled substances

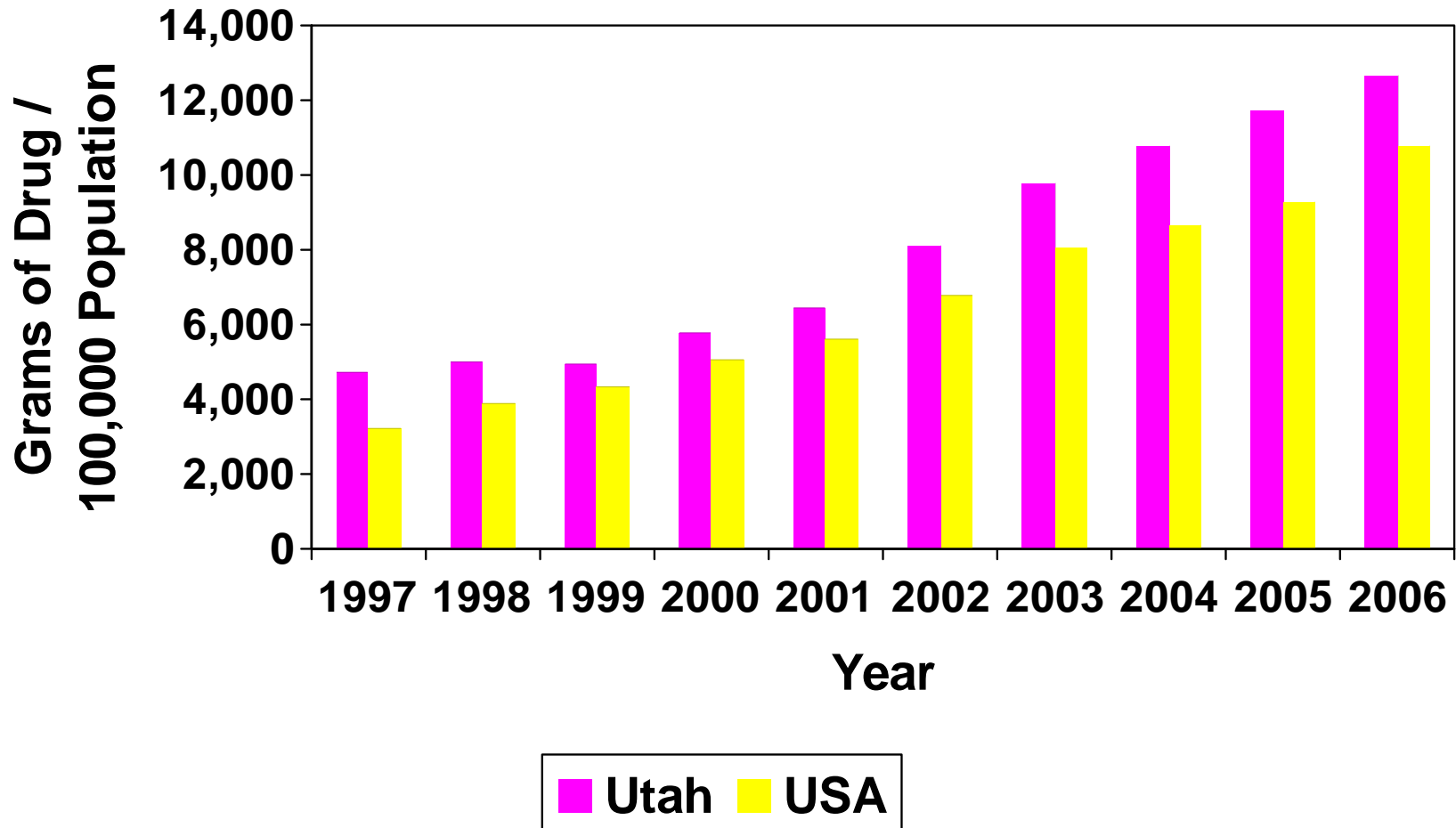


Supply of Non-Illicit Drugs

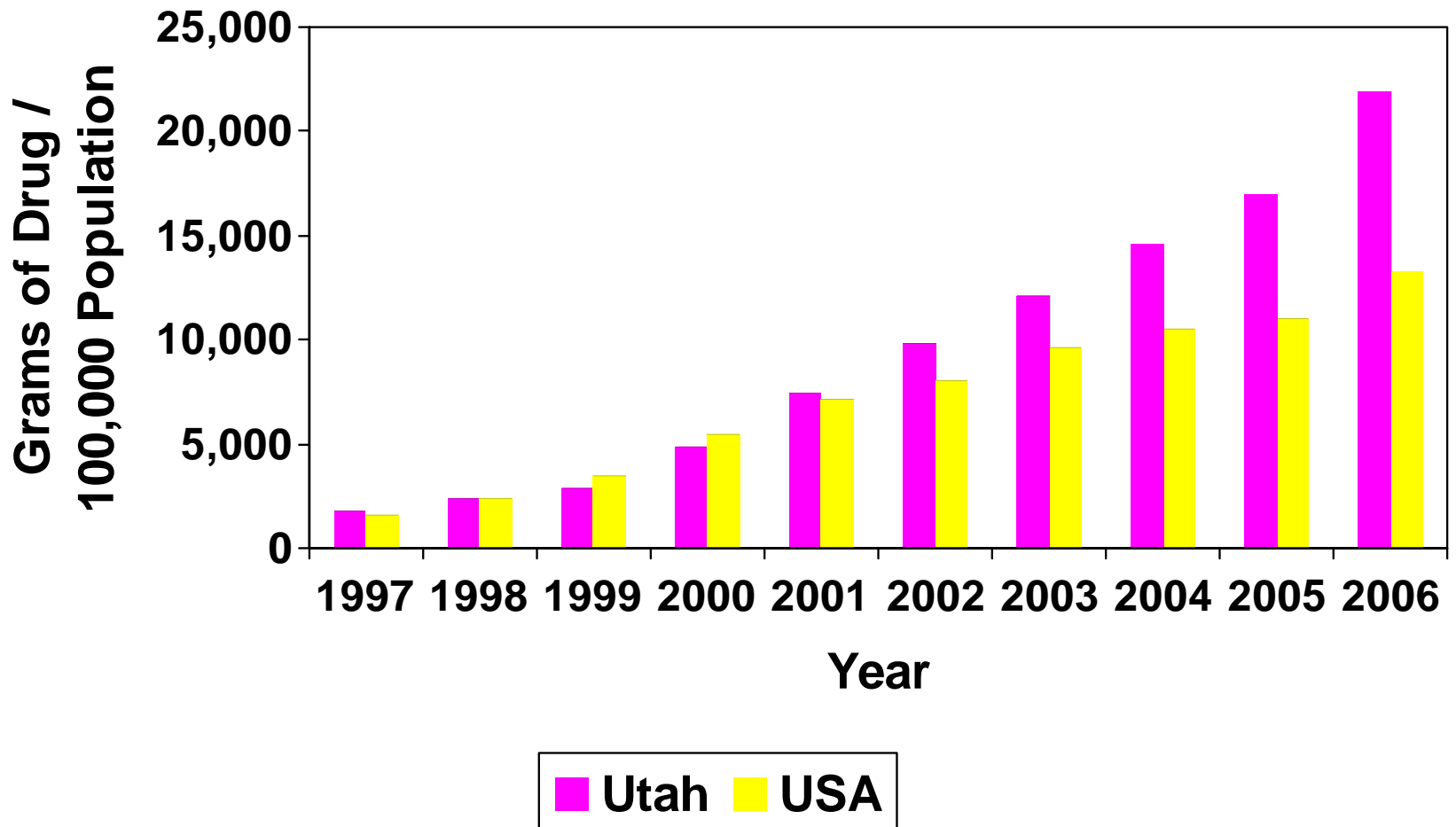
- Drug Enforcement Administration collects information on retail supply of prescribable drugs
- ARCOS data publicly available
- Does not include drugs used in addiction treatment programs



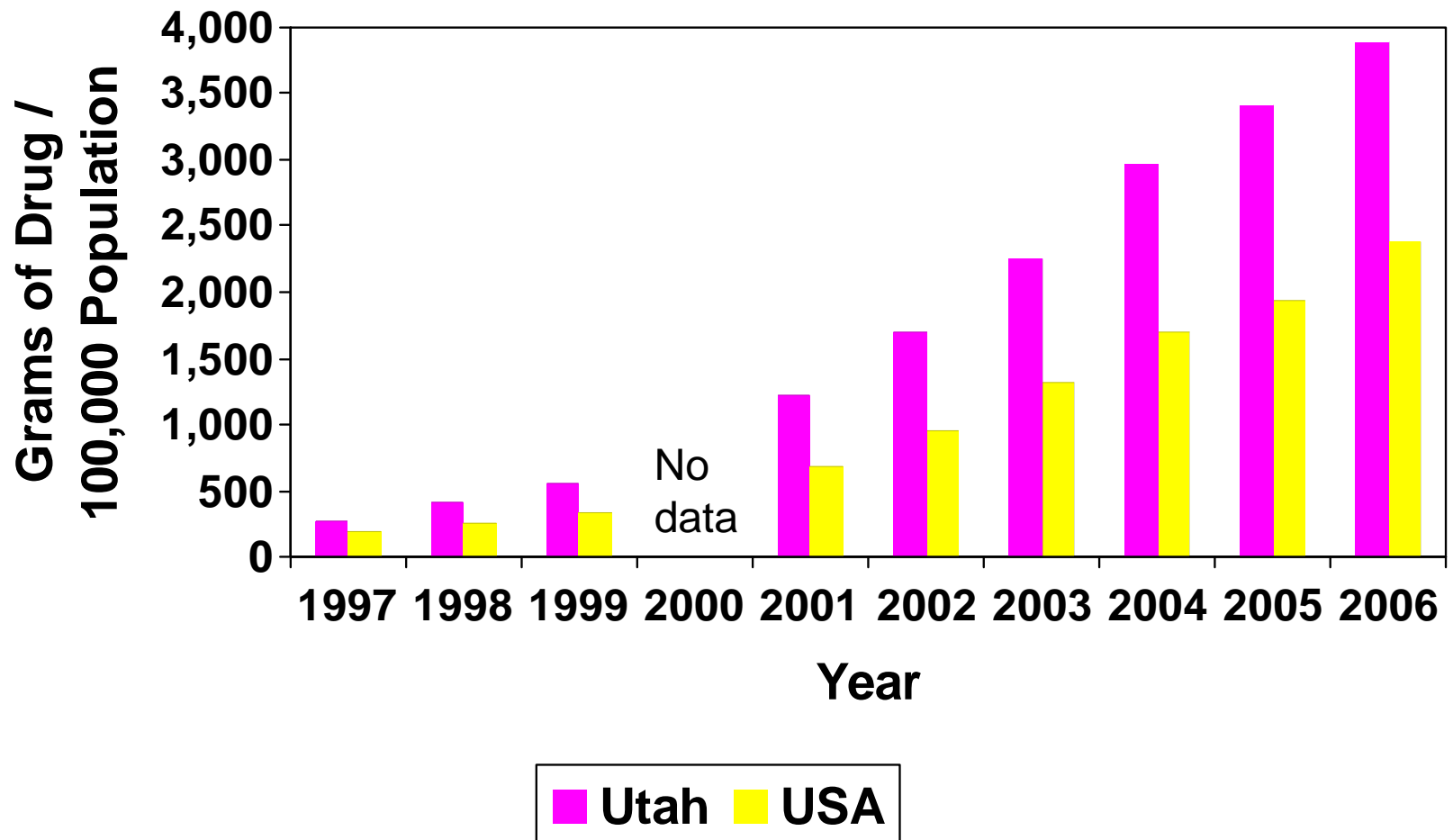
Retail Distribution of Hydrocodone in Utah and the USA Tracked by ARCOS, 1997-2006



Retail Distribution of Oxycodone in Utah and the USA as Tracked by ARCOS, 1997-2006



Retail Distribution of Methadone in Utah and the USA as Tracked by ARCOS, 1997-2006





Non-Fatal Drug Overdose

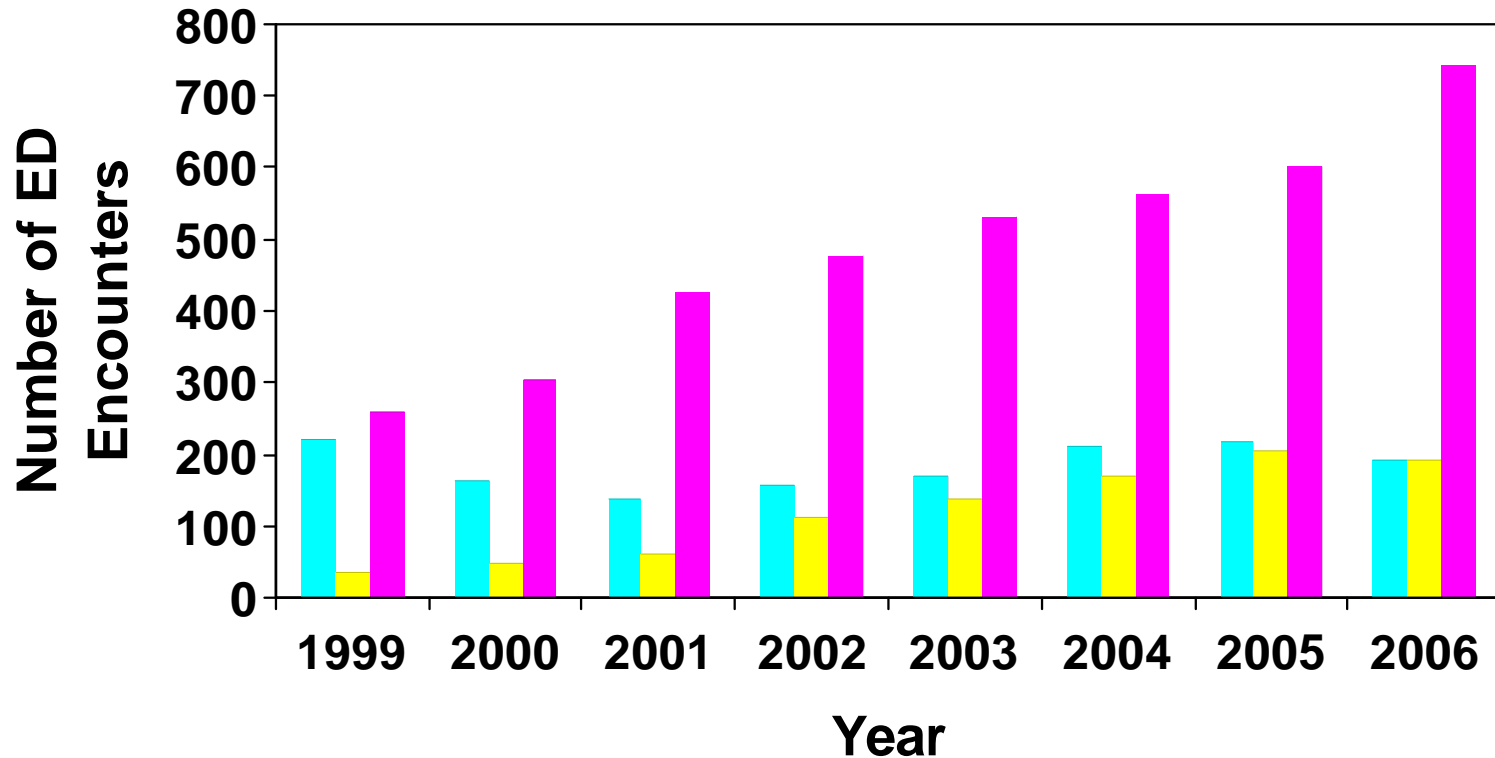
- Some people may use drugs inappropriately but have not yet suffered an outcome serious enough to require medical attention
- Other persons who overdose may present to the emergency department
 - Utah Emergency Department Encounter Database



Emergency Department Database

- Licensed hospital facilities that provide emergency medical services
- A patient data record is submitted for each encounter
- All hospitals report complete billing, medical, and personal information describing a patient, the services received, and charges billed for a single emergency department patient encounter

Emergency Department (ED) Encounters Captured in the Utah ED Database by ICD-9 Diagnosis Code and Year, 1999-2006



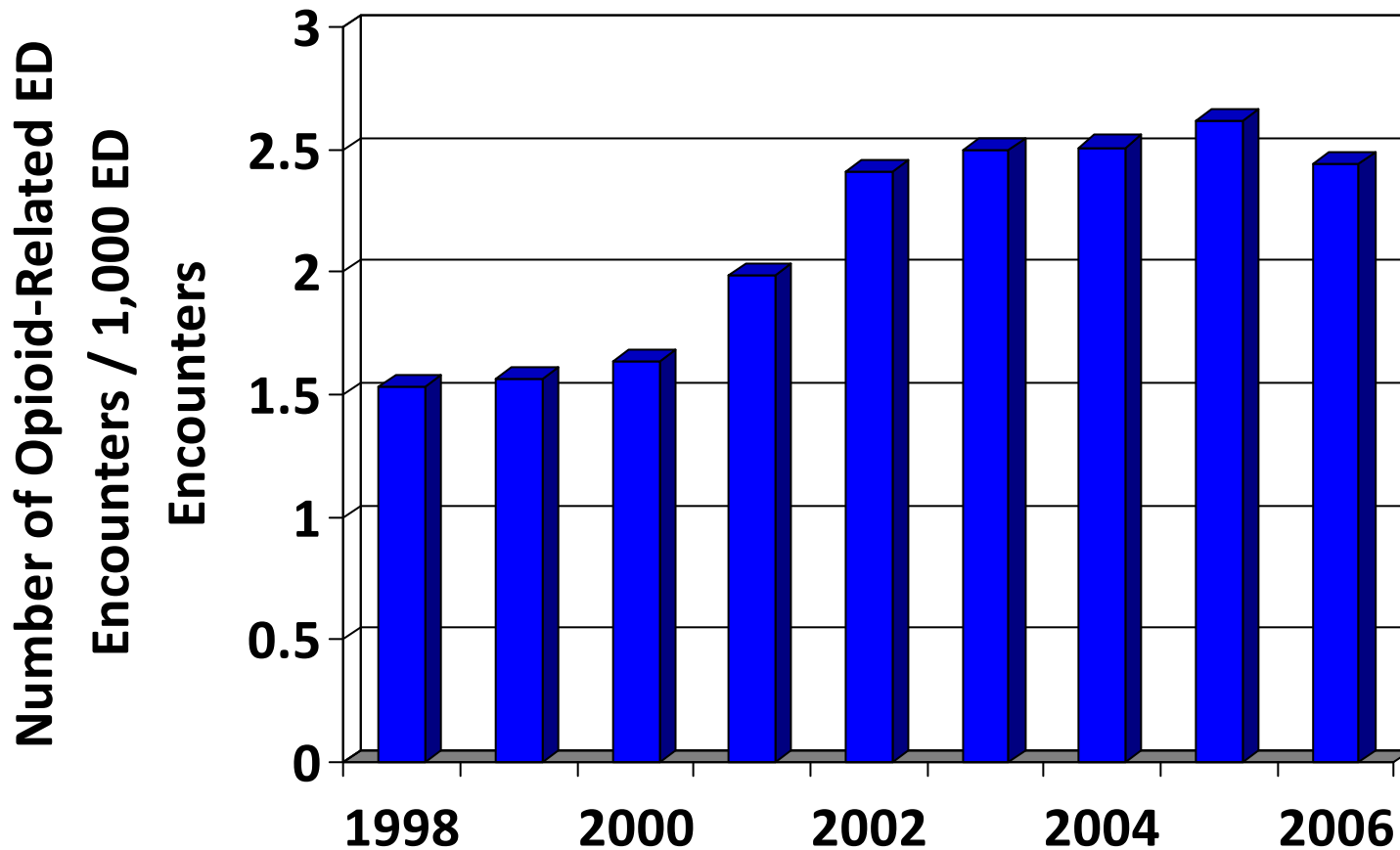
Heroin (965.01) Methadone (965.02) Other Narcotics (965.09)



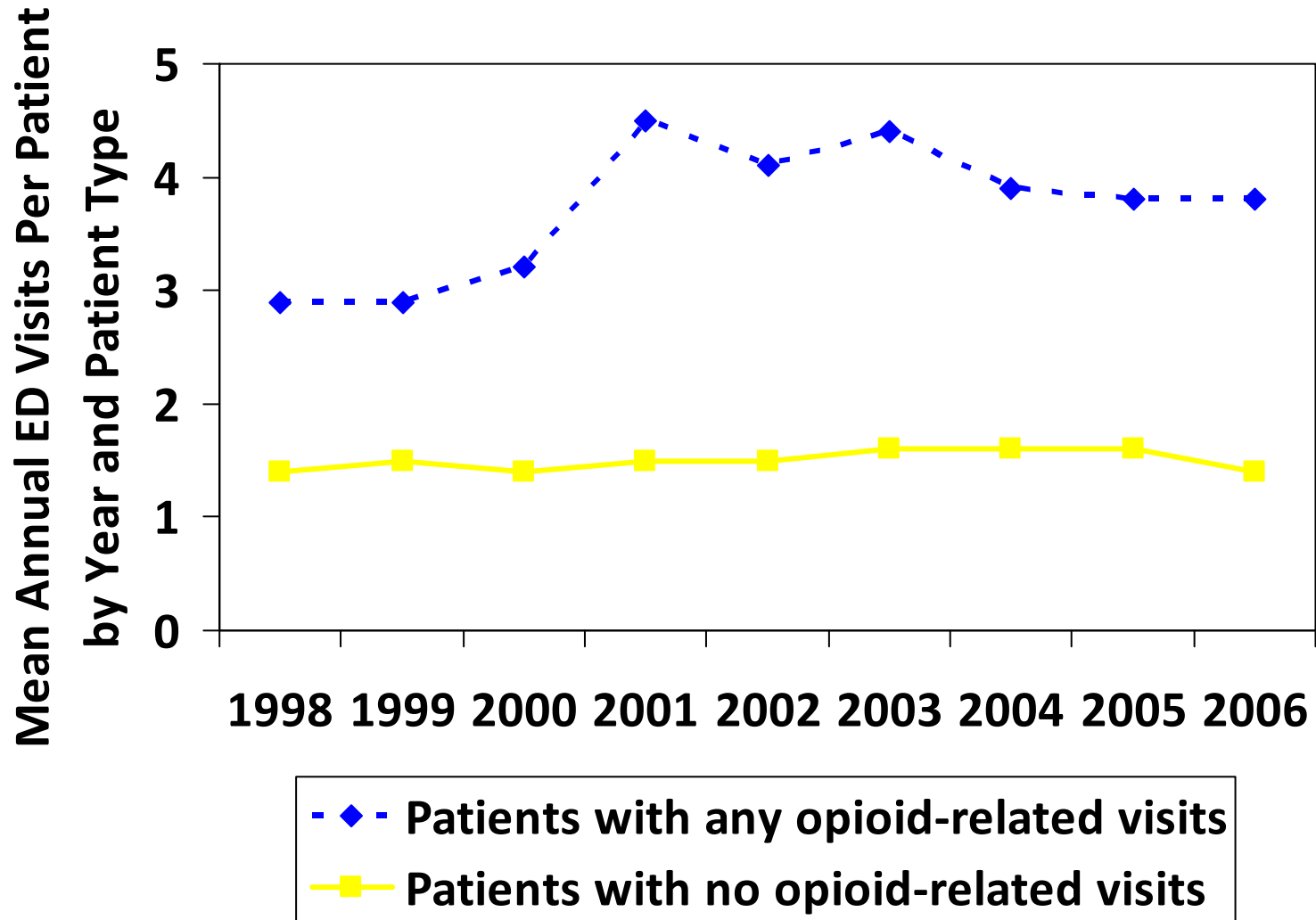
Selection Criteria

- ICD-9 Coding
- Poisoning by opiates and related narcotics
- Accidental poisoning by opiates and related narcotics
- Adverse effects of opiates in therapeutic use
- Excludes diagnoses attributed to heroin use
- Excludes diagnoses identified as suicide

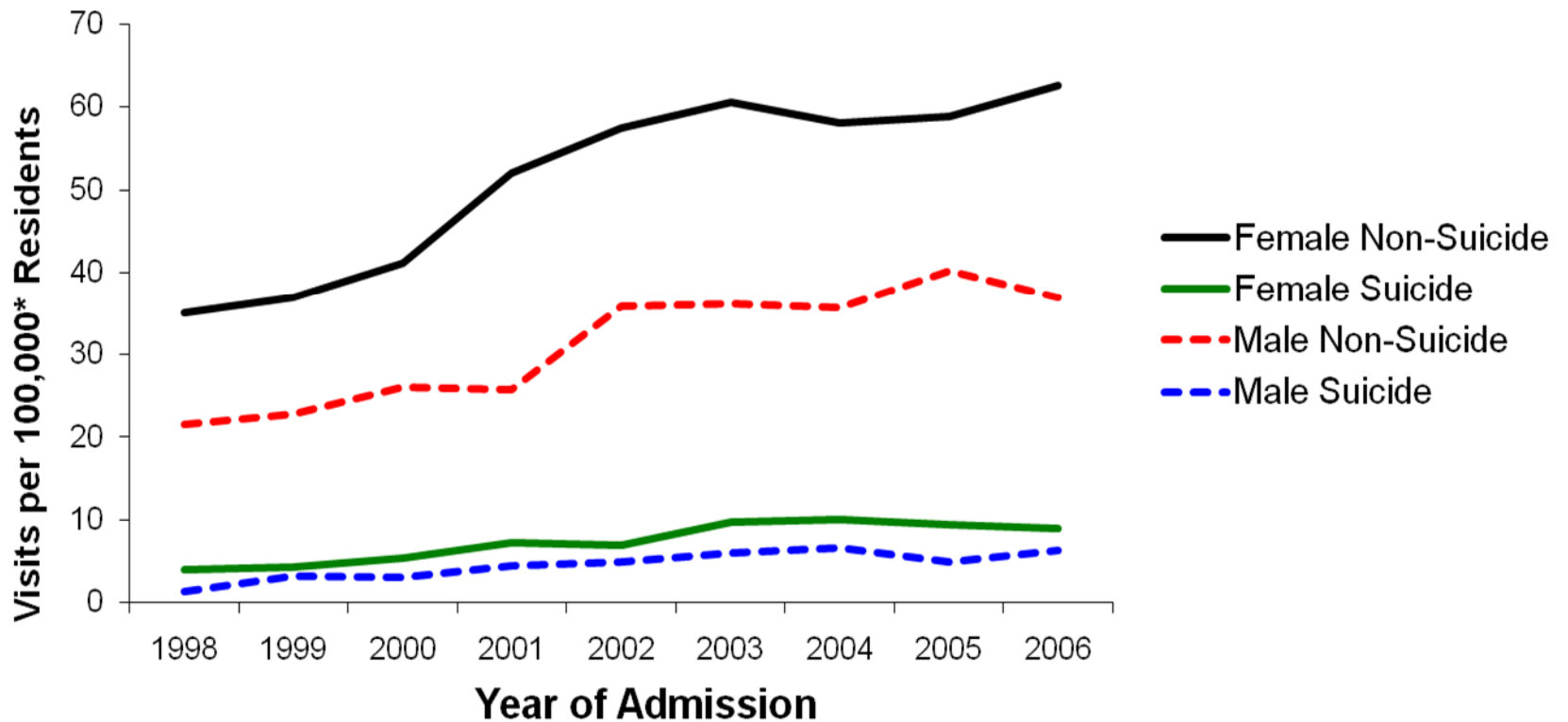
Prevalence of Opioid-Related ED Encounters by Year



Mean Annual ED Visits Per Patient by Year and Patient Type

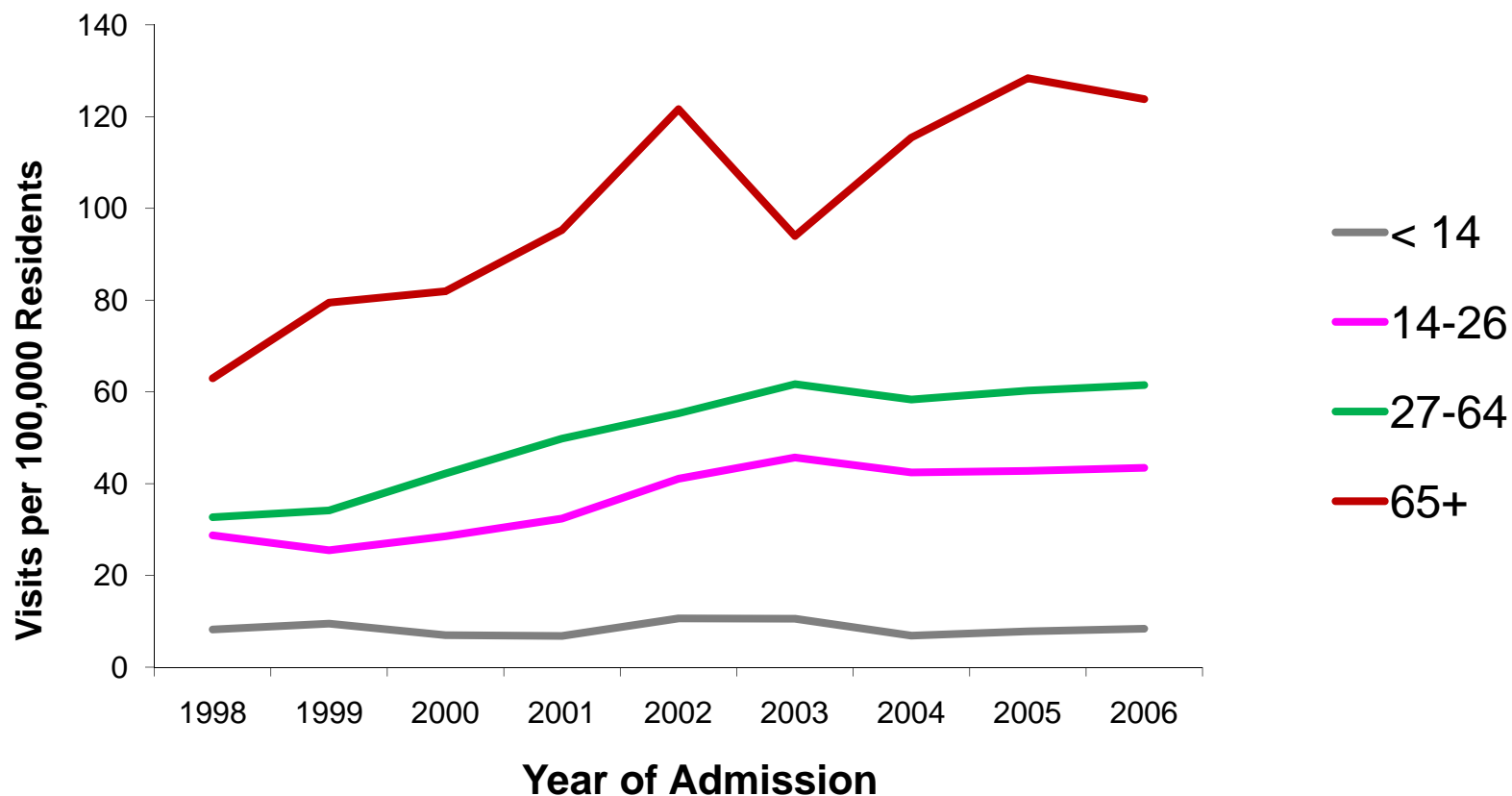


Utah Emergency Discharge Records with Opioid-Related Diagnoses Adjusted for Gender

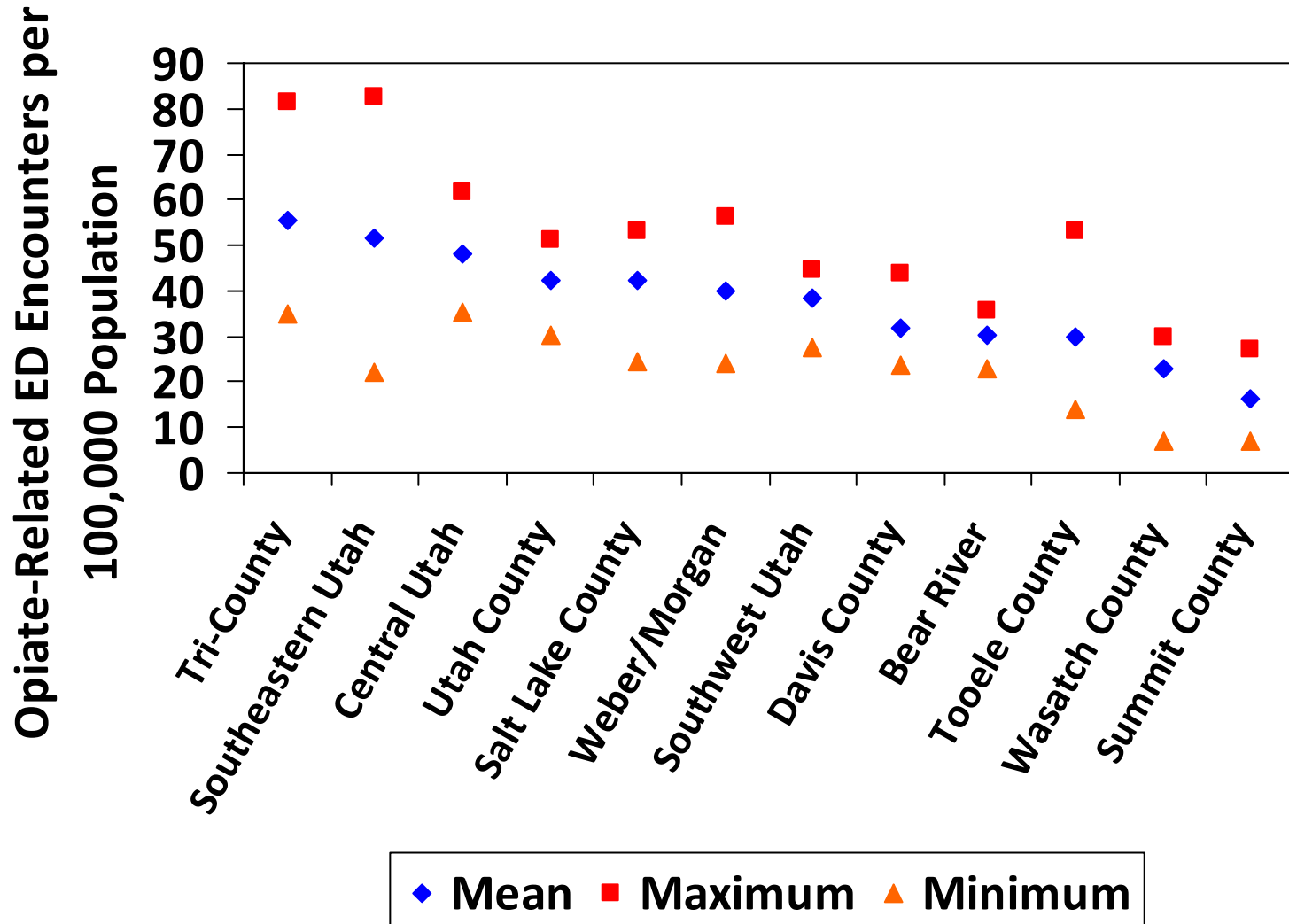




Utah Emergency Discharge Records with Opiate Related Diagnoses Adjusted for Age Group



Distribution of Opioid-Related ED Encounters by Health District, 1998-2006



Research Question

- How many people that died from non-illicit drug poisoning actually had a prescription for the drug?
- Is this a patient safety issue?
- Is it a law enforcement issue?
- Is it both?

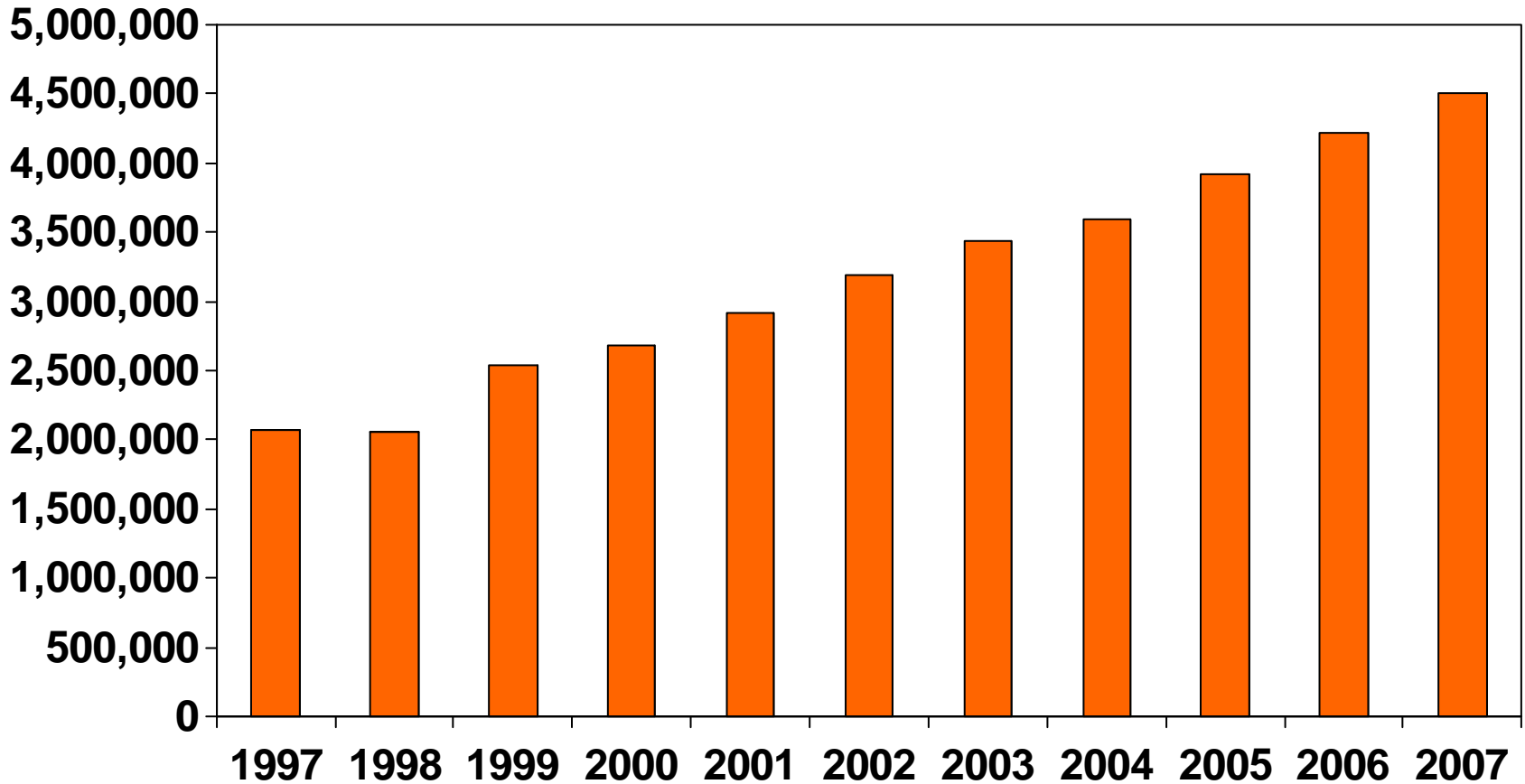
Utah Controlled Substances Database

- Maintained by DOPL
- Registry of all prescriptions for Schedule II-V drugs dispensed in Utah and by Utah providers.
- “The purpose of the database is to contain data as described in this section regarding every prescription for a controlled substance dispensed in the state to any person other than an inpatient in a licensed health care facility”

Data Access

- Strong privacy protection on CSDB
- Providers can access to query their patients
- DOPL can access to monitor providers, pharmacies, and patients
- Legislation changed to allow Utah Department of Health researchers to access

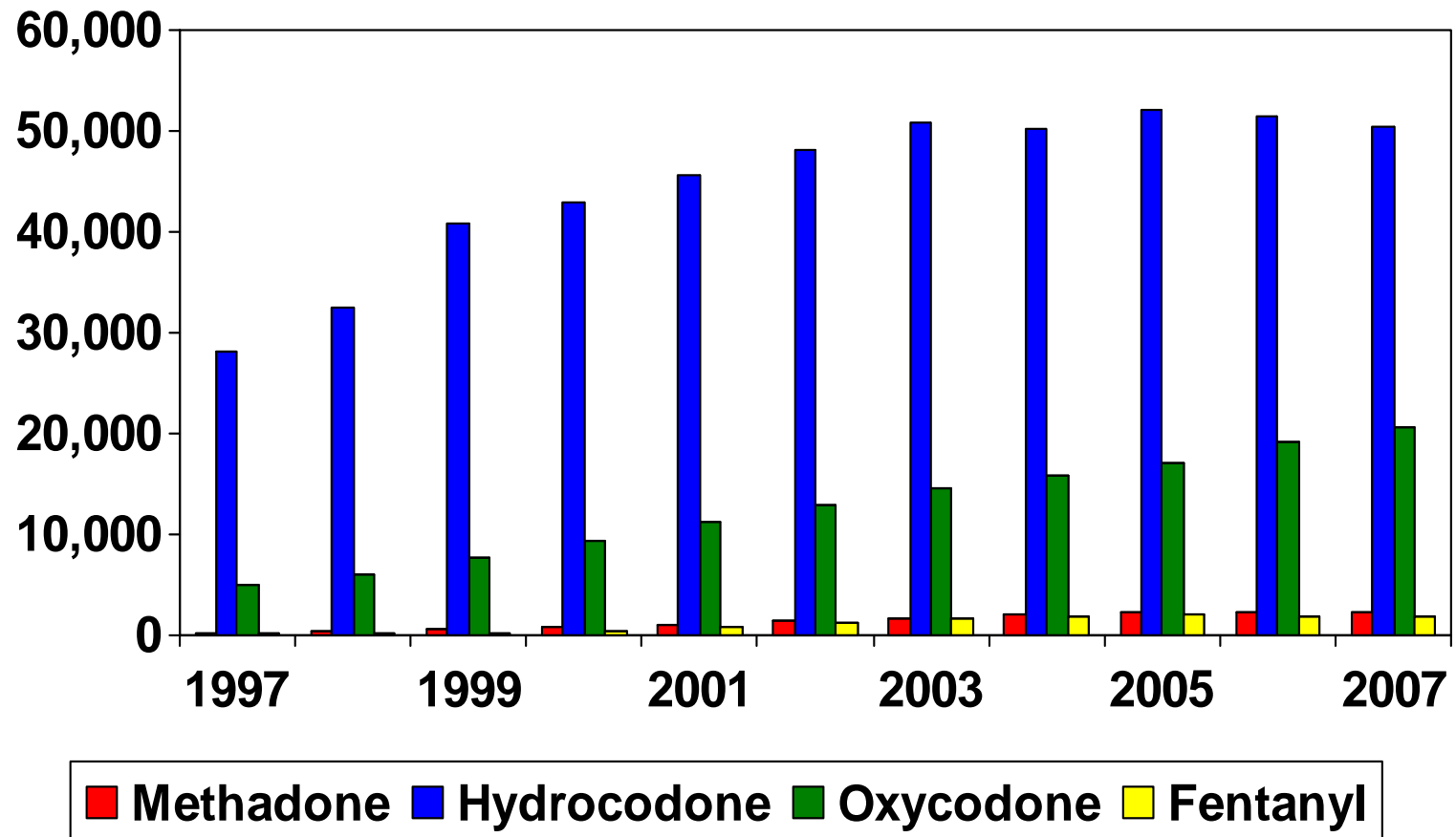
Number of Prescriptions in the Utah CSDB by Year



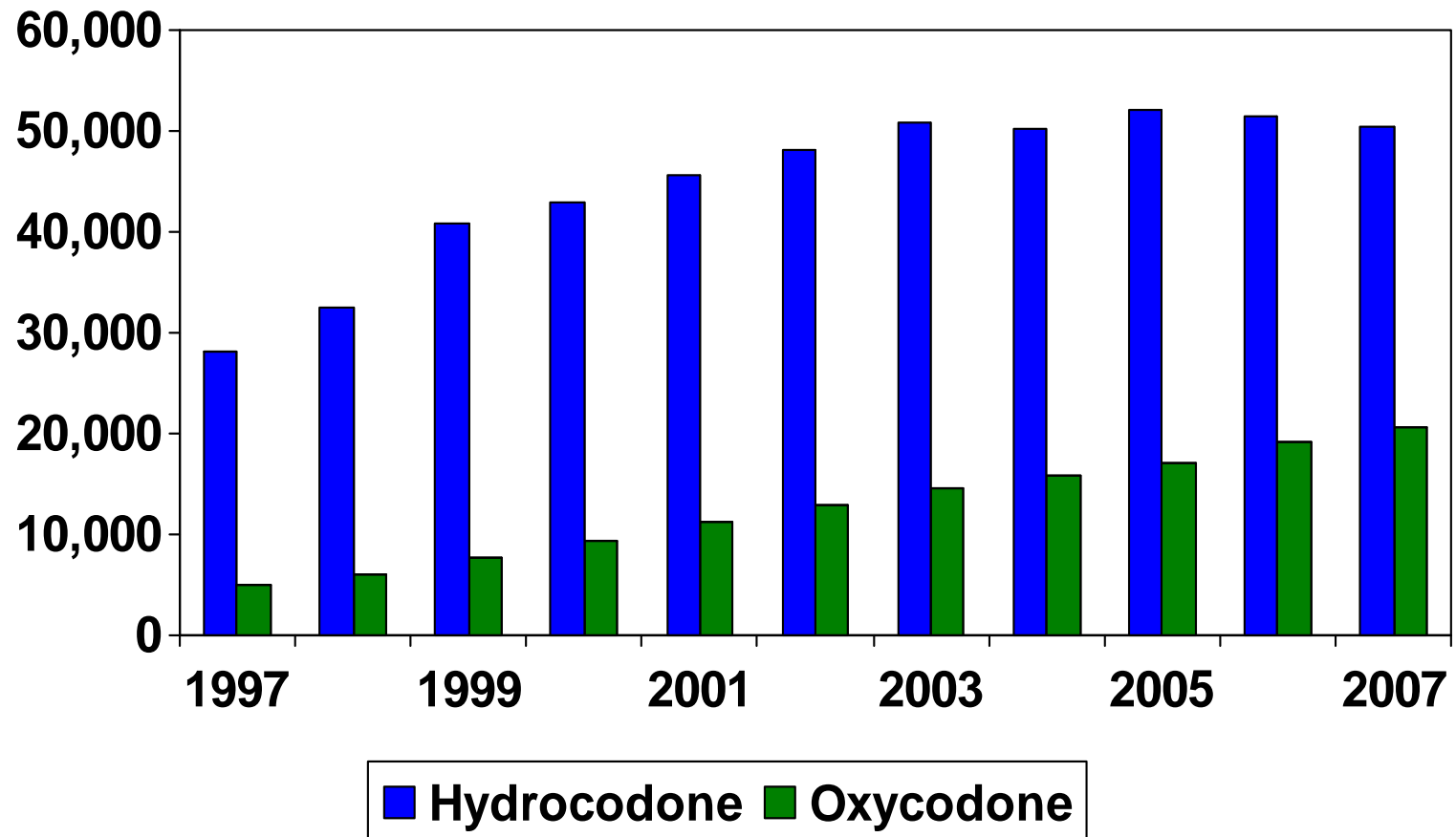
2004 Utah Population = 2,469,230

2004 Utah Population \geq 18 = 1,698,118

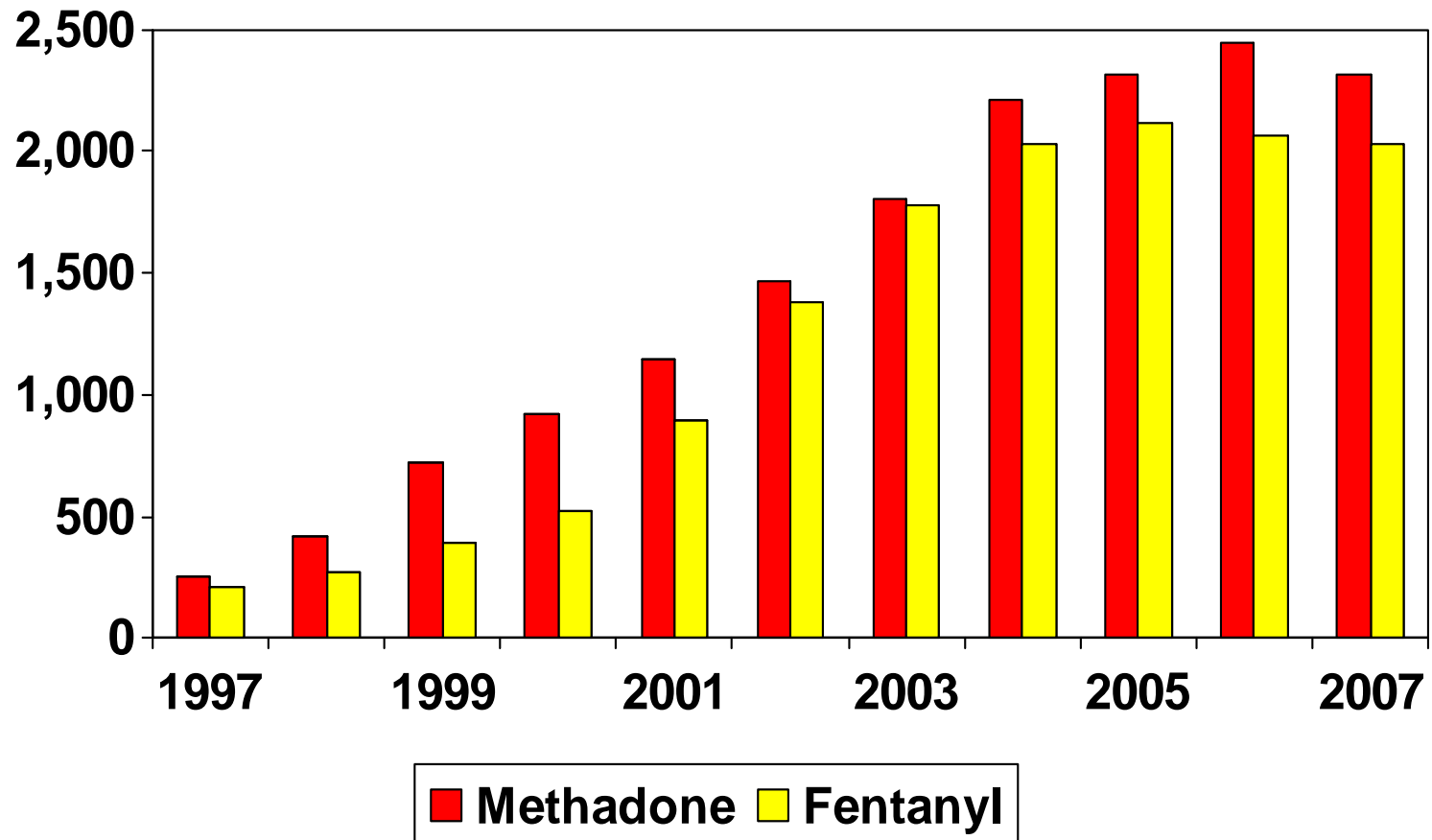
Number of Prescriptions per 100,000 Population and Year



Number of Prescriptions per 100,000 Population and Year

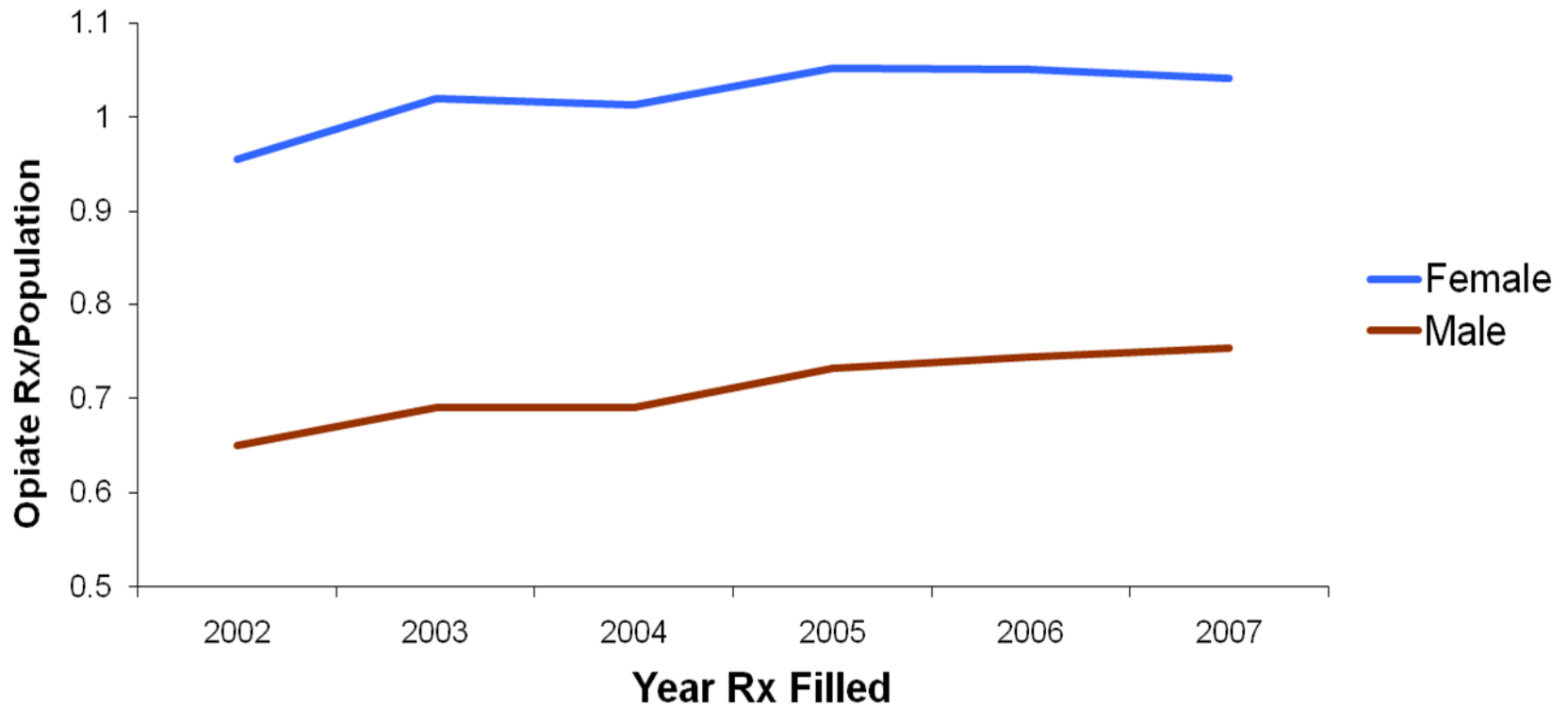


Number of Prescriptions per 100,000 Population and Year





Utah Controlled Substance Database Prescribed Opioids



Methods

- De-duplicated CSDB 1999-2004
- Linked CSDB to death certificate database and medical examiner data
- Identified populations of interest
 - All decedents – anyone with a CSDB record that died of any cause
 - Poisoning decedents – anyone with a CSDB record that died with primary cause X42, X44, Y12, Y14

Research Questions

- What proportion of narcotics poisoning decedents had a valid controlled substance prescription at time of death?
- ...within other time intervals of death?

Results

- 734 poisoning decedents identified
- 47% had an active narcotic Rx at time of death
 - 57% filled within 30 days of death,
 - 63% within 90 days of death, and 75% within 365 days of death.
- No evidence of a filled opioid prescription from 1999 through the date of death for only 15% of these decedents

Agreement

- Using drugs identified on toxicology (ME)
- Did they have an *active prescription* for *every drug* identified on toxicology as contributing to death?
- 43% YES

Next Steps

- Examine relationship between changes in dose and risk of death
- Include the emergency department data –
 - History of non-fatal overdose may predict risk
- Examine prescription history among *illicit* drug overdose decedents
- Geographic description of poisoning and prescribing in Utah



Use only as directed.

Prescription Pain Medication: What you need to know



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Diverse Utah Groups Involved

Governmental Groups:

- UDOH
- Division of Substance Abuse and Mental Health
- Labor Commission
- Workers Compensation Fund
- DOPL
- Utah Attorney General's Office

Professional Organizations:

- Utah Medical Association
- Utah Pharmacy Association

Private and Nonprofit Groups:

- University of Utah
- Intermountain Healthcare
- Pain Research Center
- Lifesource
- *HealthInsight*





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Physician Education





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Objective of Physician Education: Increase Safety of Opioid Prescribing

After a presentation, doctors will be able to...

1. Implement “Six practices for safe opioid prescribing”
2. Identify tools to help you integrate these practices into your work
3. Assess improvements in your prescribing patterns in the first month and at 6 months

**R_x**

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Six Practices for Safe Prescribing

1. Start low, go slow
2. Obtain sleep studies for all patients on moderate or high doses of any long-acting opioid
3. Obtain EKGs for methadone dose increases to and above 50mg/day (QT prolongation)
4. Avoid sleep aids and benzodiazepines with opioids
5. Avoid long acting opioids in acute pain
6. Educate patients/family about risk



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Tools that will be available to physicians

- Sample treatment plan (aka “contract” or “agreement”)
- List of alternative options for treating pain
- Tools to assess patient’s risk of addiction
- Tool that tracks patient’s daily function and pain control
- Checklist for doctor’s with reminders of when to check CSDB and do random drug screens





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Utah Opioid Guideline

- **Based on 7 evidence-based guidelines**
- **Utah consensus product**
- **Mandated by legislature**
- **Accompanied by implementation tools (tools and guideline are still in draft form)**



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Education: Patients & General Public

- Media Campaign Jan 2008-June 2009
 - Public Opinion Survey
 - Collateral materials
 - Prescription Awareness Week (end of October)
 - Contracted with Vanguard Media



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Tips for Safe Use

1. Never take prescription pain medication that is not prescribed to you
2. Never adjust your own doses
3. Never mix with alcohol
4. Taking sleep aids or anti-anxiety medications together with prescription pain medication can be dangerous
5. Always tell your healthcare provider about all medications you are taking from any source
6. Keep your medications locked in a safe place
7. Dispose of any unused medications





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Why should I dispose of my meds?

- Unused and expired medication can be dangerous:
- Makes you a target for theft
 - Stories: workers, visits after a new birth, friends, funerals (obituaries)
- Children or pets could accidentally take the medication
- Best way of prevention is to reduce the source



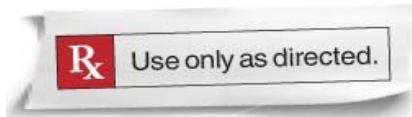
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Why is disposing *properly* important?

- Traces of prescription drugs have been identified in rivers, streams, and ground water
- Serious, negative impacts on the fish and aquatic life
- Long-term impacts unknown

Website: useonlyasdirected.org



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Prescription Pain Medication

Ennius et sapines et fortis et alter Homerus, ut critici dicunt, leviter curare videtur, Quo promissa cadant et somnia Pythagorea. Naevius in manibus non est et mentibus haeret paene.

Adeo sanctum est vetus omne poema. ambigitur quotiens. Uter utro sit prior, aufert Pacuvius docti famam senis Accius alti, dicitur Afrani toga convenisse.

[Learn More](#)



Resources

Resources and information for parents, seniors, teens and health care providers.



Treatment & Intervention



Get help now.
No judgements.

[FOR YOURSELF.](#)
[FOR A FRIEND.](#)

Real Stories

Quo pro et somnia Pythagorea. Naevius in manibus non est et mentibus haeret paene. Uter utro sit prior, aufert Pacuvius docti famam [MORE...](#)



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More Utahns died last year from unintentional
prescription pain medication overdoses than
in car crashes.



Use only as directed.

www.useonlyasdirected.org

PHARMACEUTICAL FOLK SONGS

* SING
TO THE
TUNE OF
"TURN, TURN
TURN."

FOR EVERY PROBLEM,
PILLS, PILLS, PILLS,
THERE ARE PRESCRIPTIONS,
PILLS, PILLS, PILLS,
... OR EXPENSIVE,
NONPRESCRIPTION,
PHARMACEUTICALS.

A PILL TO BE STRONG,
A PILL TO DIE,
A PILL TO HAVE SEX,
A PILL TO GET HIGH,
PILLS TO BE SMART,
PILLS TO LOSE WEIGHT,
A PILL TO SLEEP,
AND PILLS TO STAY
AWAKE...
(REPEAT REFRAIN)



SINGER

