

# Comfortably Numb

Opiates in Minnesota

- Presented by Rick Moldenhauer, MS,  
LADC, ICADC, LPCC

Treatment Services Consultant/State Opioid  
Treatment Authority

P: (651) 431 2474

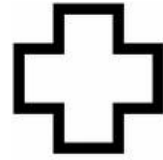
F: (651) 431 7449

Alcohol and Drug Abuse Division, DHS

PO Box 64977

St Paul, Minnesota 55164-0977

[richard.moldenhauer@state.mn.us](mailto:richard.moldenhauer@state.mn.us)



# Notice of Copyright and Limitations on Use and Liability

- "Copyright 2010, State of Minnesota, Department of Human Services"
- "This curriculum was written by the Minnesota Department of Human Services for use in its training regarding opioid use. The curriculum was designed for the specific purposes that may or may not apply to other locations, and may require modifications of content and/or form before it can be used in other jurisdictions. The Minnesota Department of Human Services makes no representations and accepts no liability on its use or results. This curriculum is made available free as part of training provided by the Minnesota Department of Human Services and is available for personal use by a single requestor for a nominal fee, which covers the cost of making, certifying, compiling and copying the materials. Any use of this curriculum for other than personal use requires a licensing agreement with the department. This curriculum may not be sold, used, or reproduced for profit or financial gain. Those accessing or copying this document agree to be bound by the aforementioned limitations on its use. "



Any of the psychoactive drugs that originate from the opium poppy or that have a chemical structure like the drugs derived from opium

opiates, for our discussion,  
are....

-heroin

-morphine

-oxycontin

-vicoden

-percodan

-percocet

-and so on.....

# Please remember...

- What is legal and illegal becomes vague
- What is medicine and what is poison is often a matter of dose

- A bottle of Bayer's 'Heroin'.
- Between 1890 and 1910 heroin was sold as a non-addictive substitute for morphine.
- It was also used to treat children suffering with a strong cough.





# Opium for Asthma:

- At 40% alcohol plus 3 grains of opium per tablet, it didn't cure you, but you didn't care...



# Opium for newborns

- I'm sure this would make them sleep well (not only the Opium, but also 46% alcohol)!



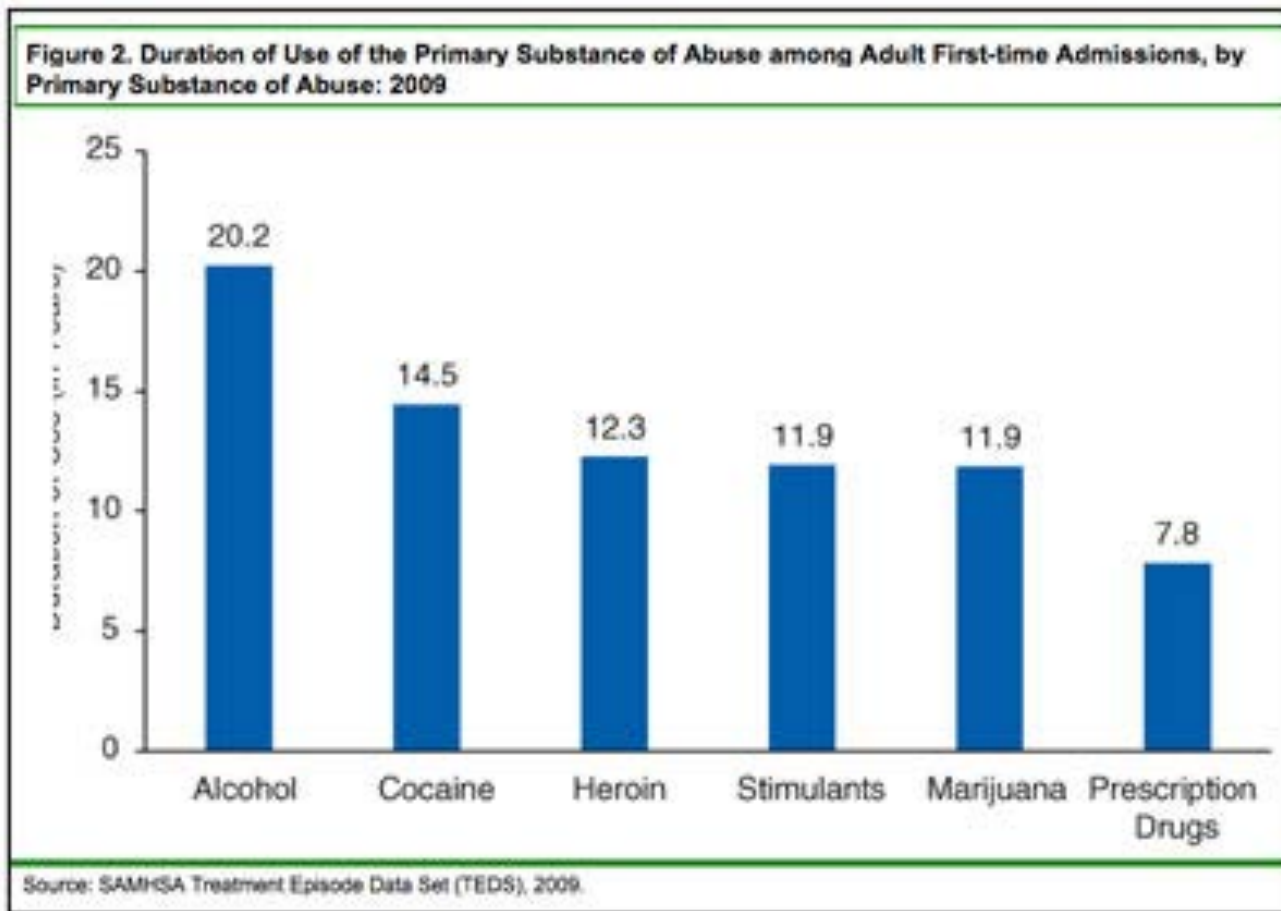
# laudanum

- **Laudanum**, also known as **opium tincture** or **thebaic tincture**, is an alcoholic herbal preparation containing approximately 10% opium and 1% morphine (the equivalent of 100 mg of opium/10 mg of morphine per mL).

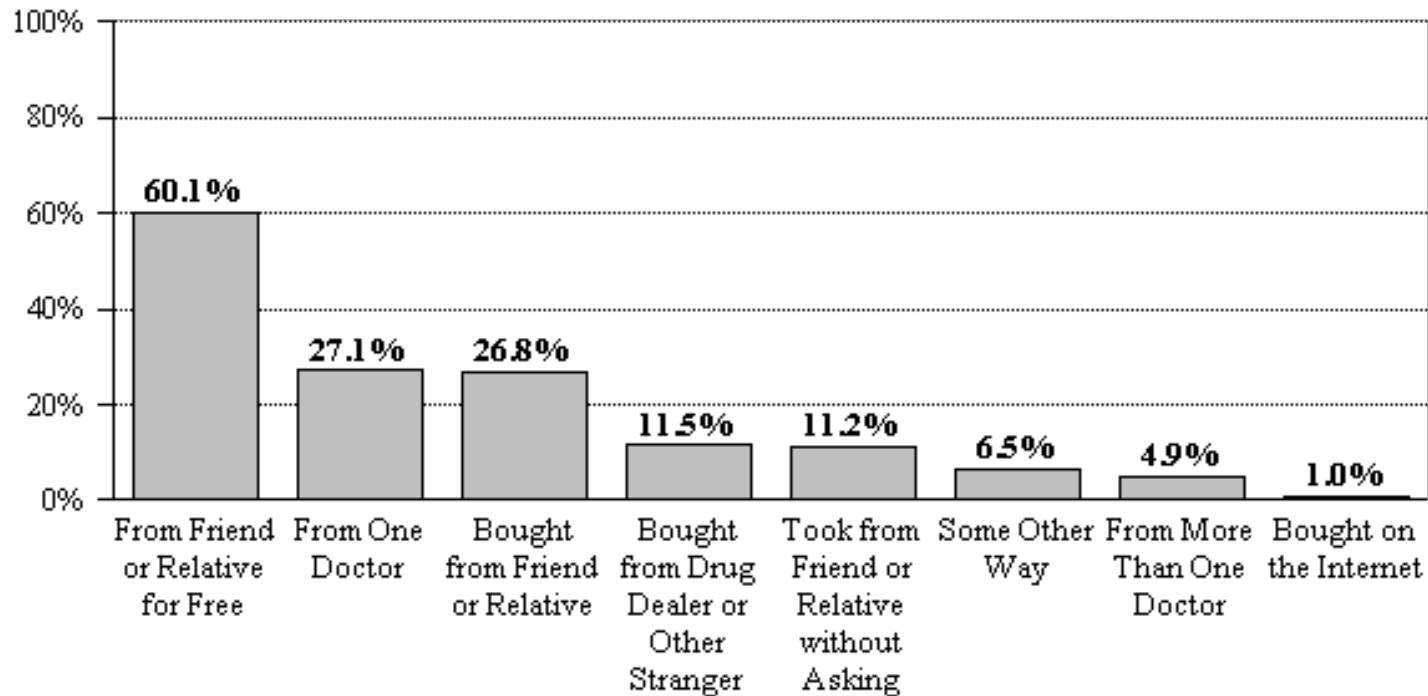


# Focusing on “other Opiates”

- Vicoden.....hydrocodone+acetaminophen
- Vicoprofen..... hydrocodone+Ibuprofen
- Percodan..... oxycodone
- Percocet..... oxycodone+acetaminophen
- Morphine..... morphine
- OxyContin..... oxycodone
- Darvon.....dextropropoxyphene
- Darvocet..... dextropropoxyphene
- Codeine.....



# Source of Prescription Pain Relievers Among Nonmedical Users



SOURCE: CESAR FAX, Vol. 20, Issue 41, Oct 31, 2011

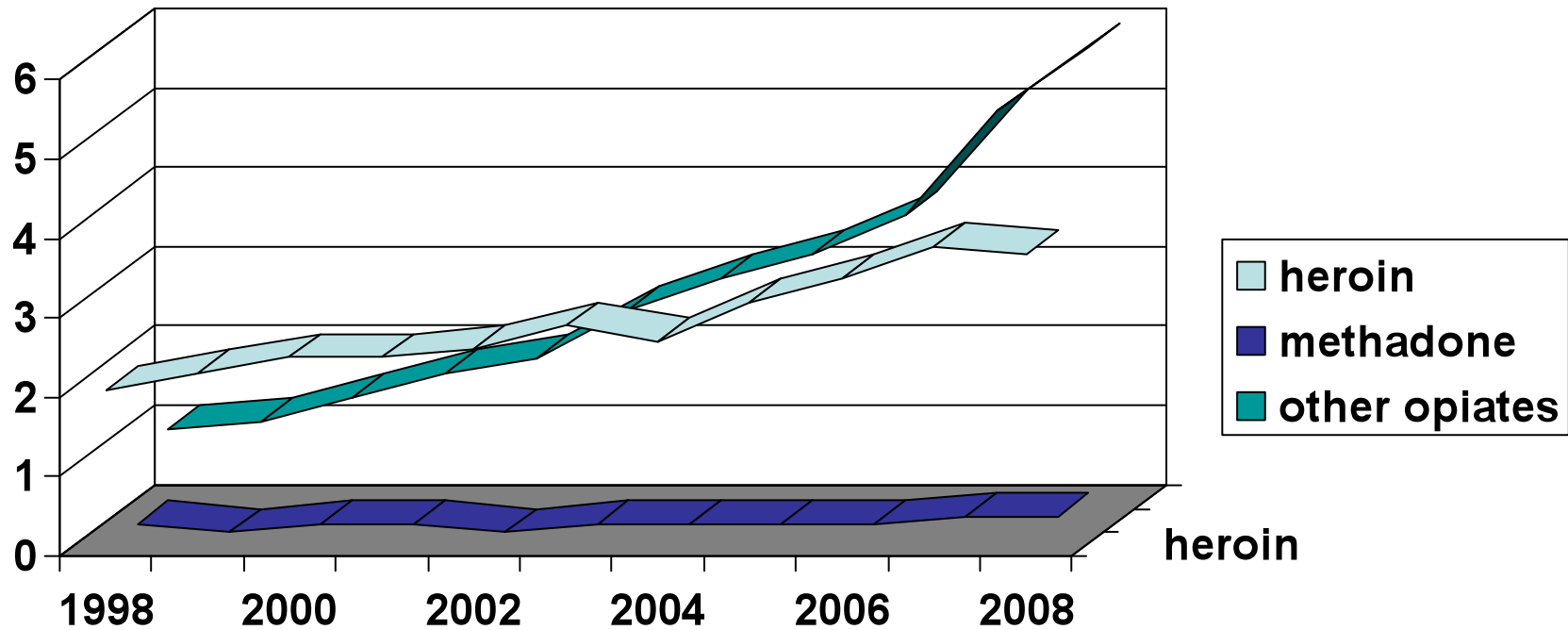
Opioid	Strength (Codeine)	Equivalent Dose (30 mg codeine)	Strength (Morphine)	Equivalent Dose (10 mg morphine mg)
Aspirin	1/36	1080 mg	1/360	3600 mg
Dextropropoxyphene	1/4	120 mg	1/40	400 mg
Codeine	1	<b>30 mg</b>	1/10	100 mg
Tramadol	1	30 mg	1/10	100 mg
Demerol	3.6	8.3 mg	.36	27.8 mg
Hydrocodone	6	5 mg	.6	16.67 mg
Morphine	10	3 mg	1	<b>10 mg</b>
<b>Oxycodone (OxyContin)</b>	<b>15-20</b>	<b>1.5-2 mg</b>	<b>1.5-2</b>	<b>4.5-6 mg</b>
Morphine IV/IM	40	.75 mg	4	2.5 mg
Hydromorphone	50	.6 mg	5	2 mg
Oxymorphone	70	0.4 mg	7	1.4 mg
Levorphanol	80	0.26 mg	8	.8 mg
Buprenorphine	400	0.075 mg	40	.25 mg
Fentanyl	500-1000	0.03-0.06 mg	50-100	0.1-0.2 mg
Carfentanyl***	1,000,000	30 pcg	100,000	100 pcg

\*\*\*Used only in sedating large animals.

	Heroin	Methadone	other Opiates
1998	2.1%	0.1	1.0
1999	2.3	0.0	1.1
2000	2.5	0.1	1.4
2001	2.5	0.1	1.7
2002	2.6	0.0	1.9
2003	2.9	0.1	2.5
2004	2.7	0.1	2.9
2005	3.2	0.1	3.2
2006	3.5	0.1	3.7
2007	3.9	0.2	5.0
2008	3.8	0.2	5.8

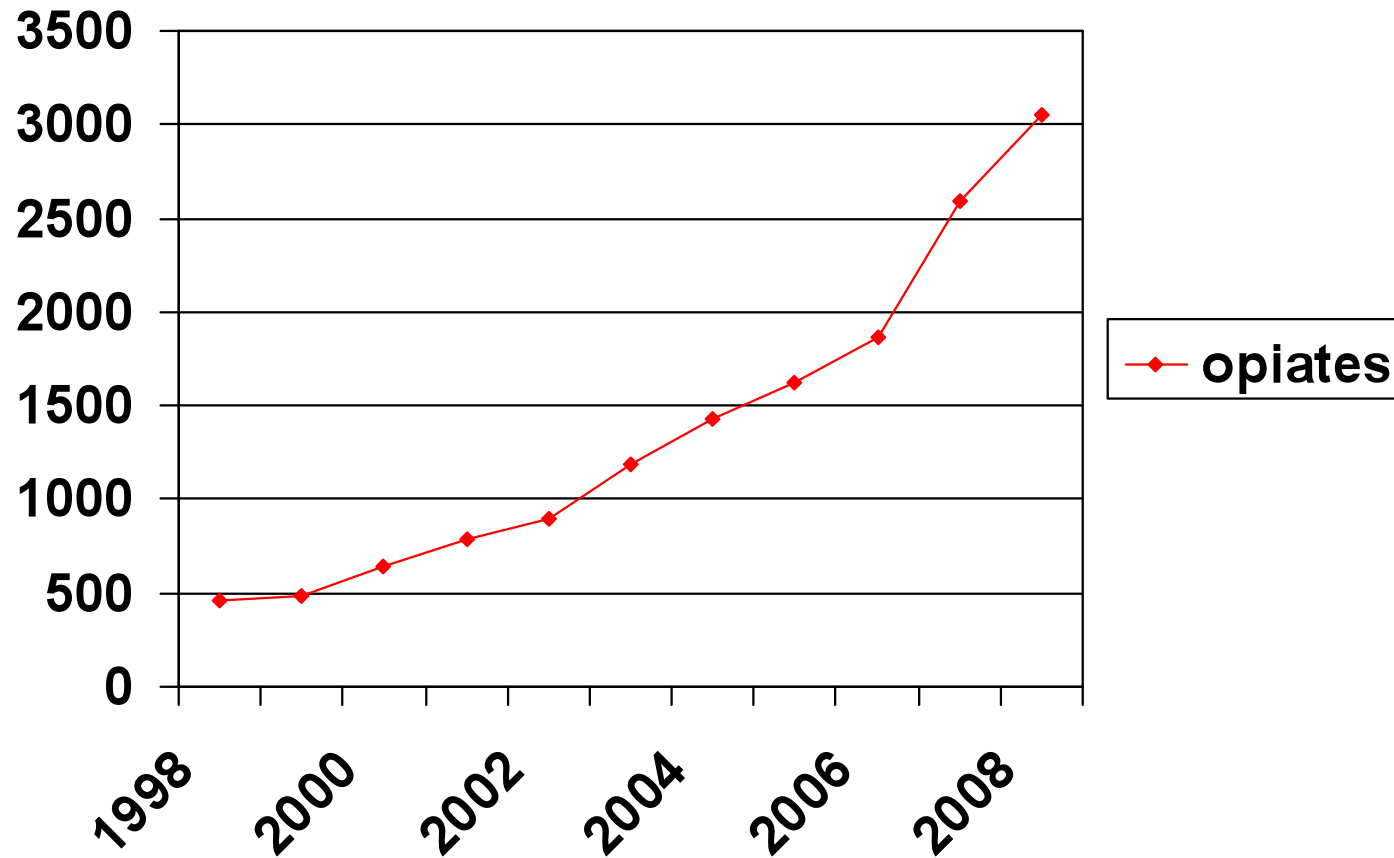


# A decade of opiates in Minnesota

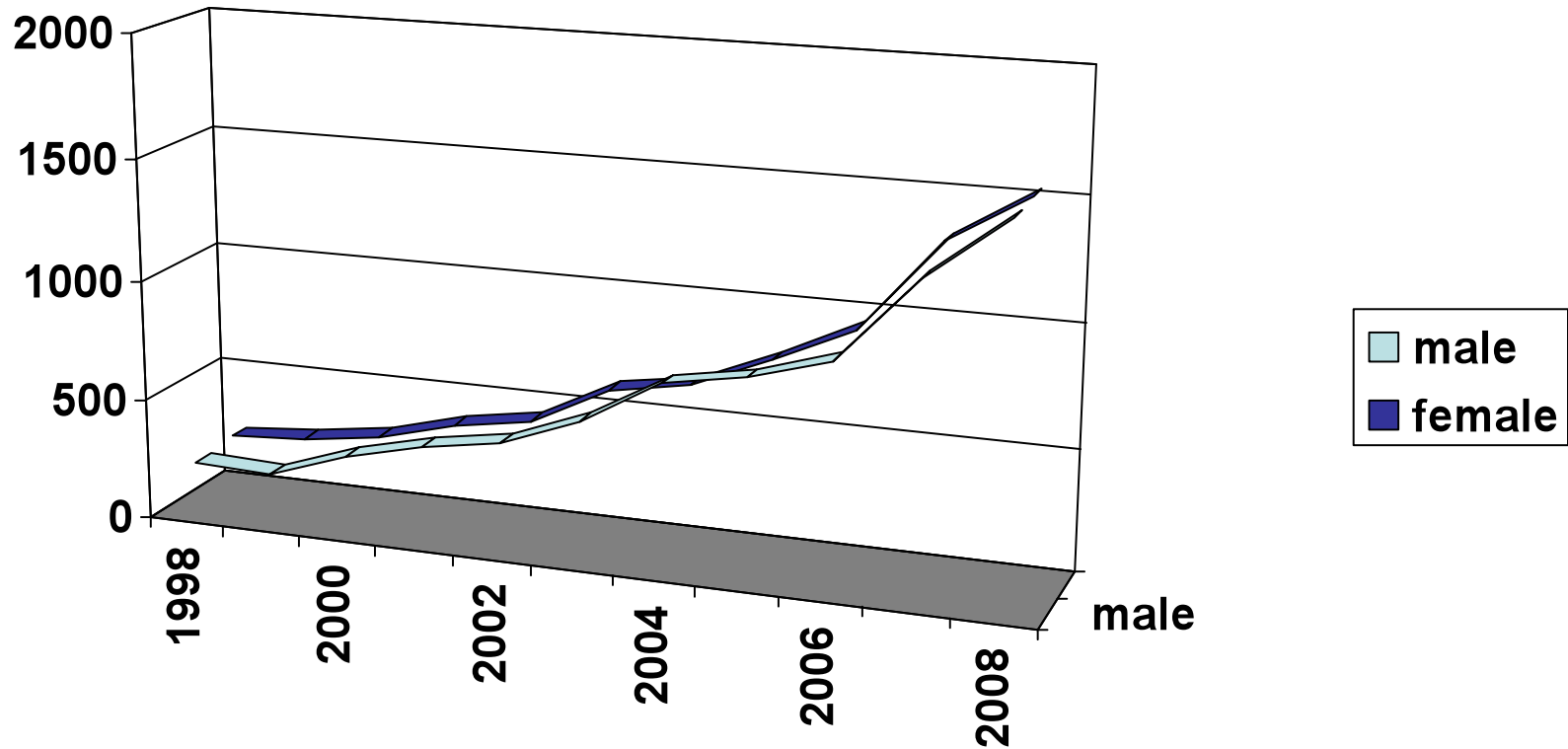


Source: PMQI, DAANES, Dept of Human Services, 2009

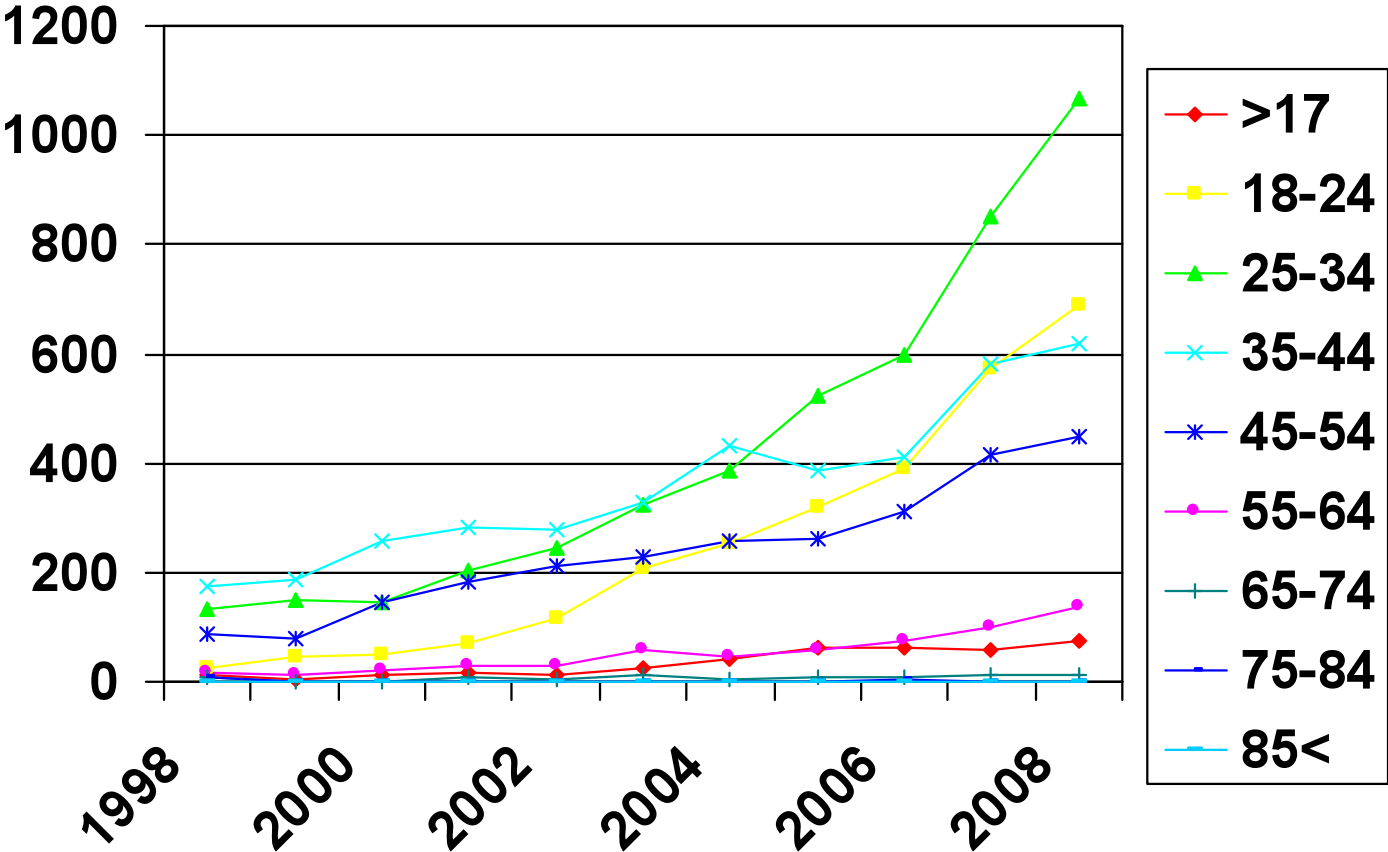
# All Tx Admission for Opiates, 1998-2008



# All Tx Admission for Opiates, by gender, 1998-2008

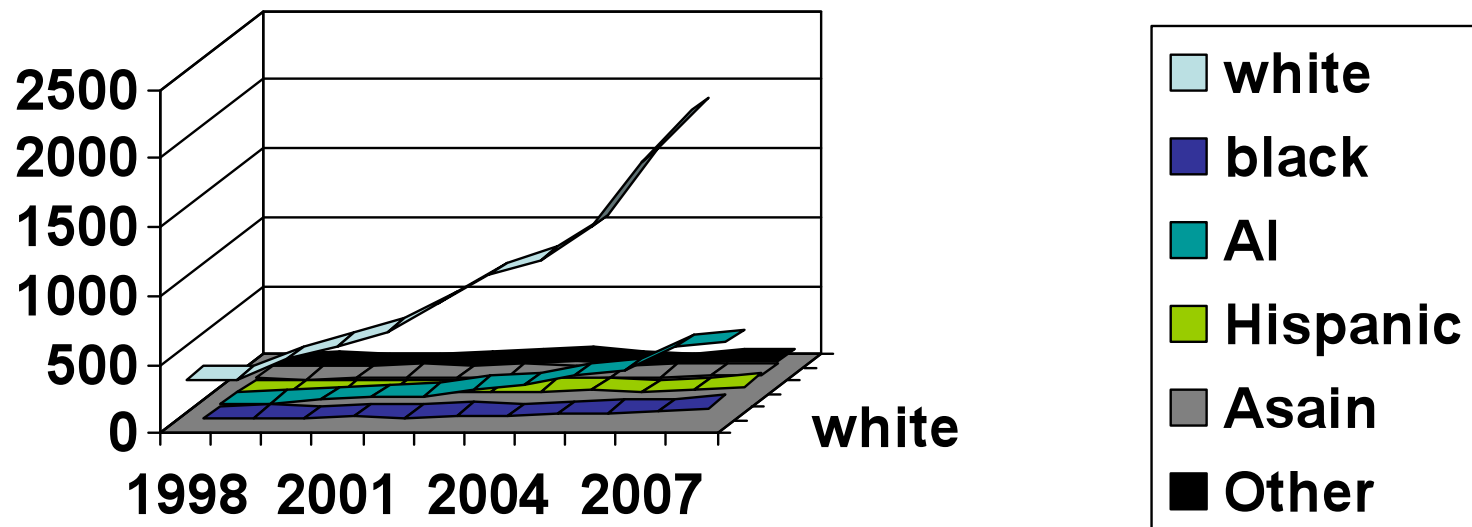


# Opiates by age group, 2000-2007

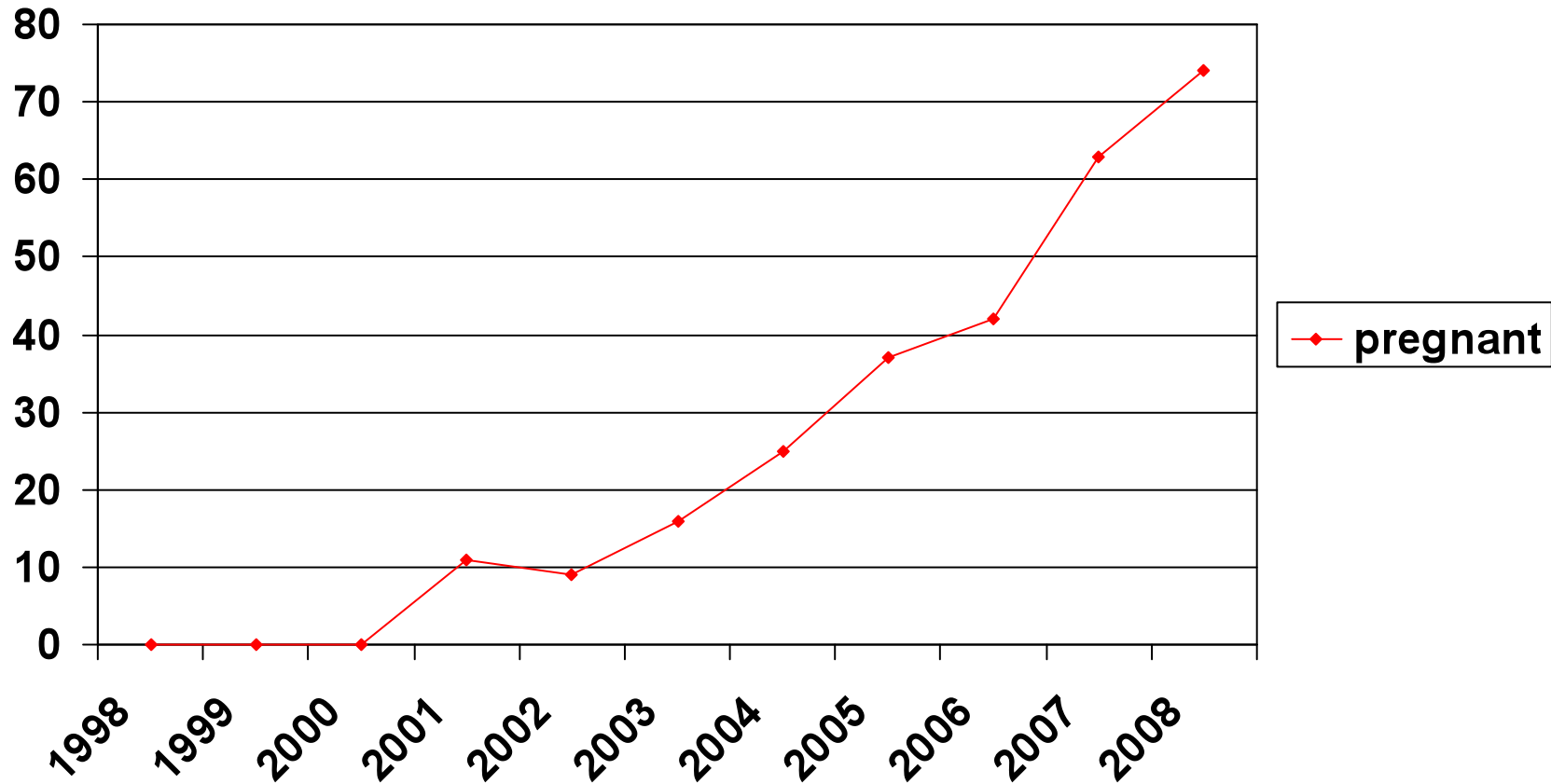


Source: DAANES, PMQI 2010

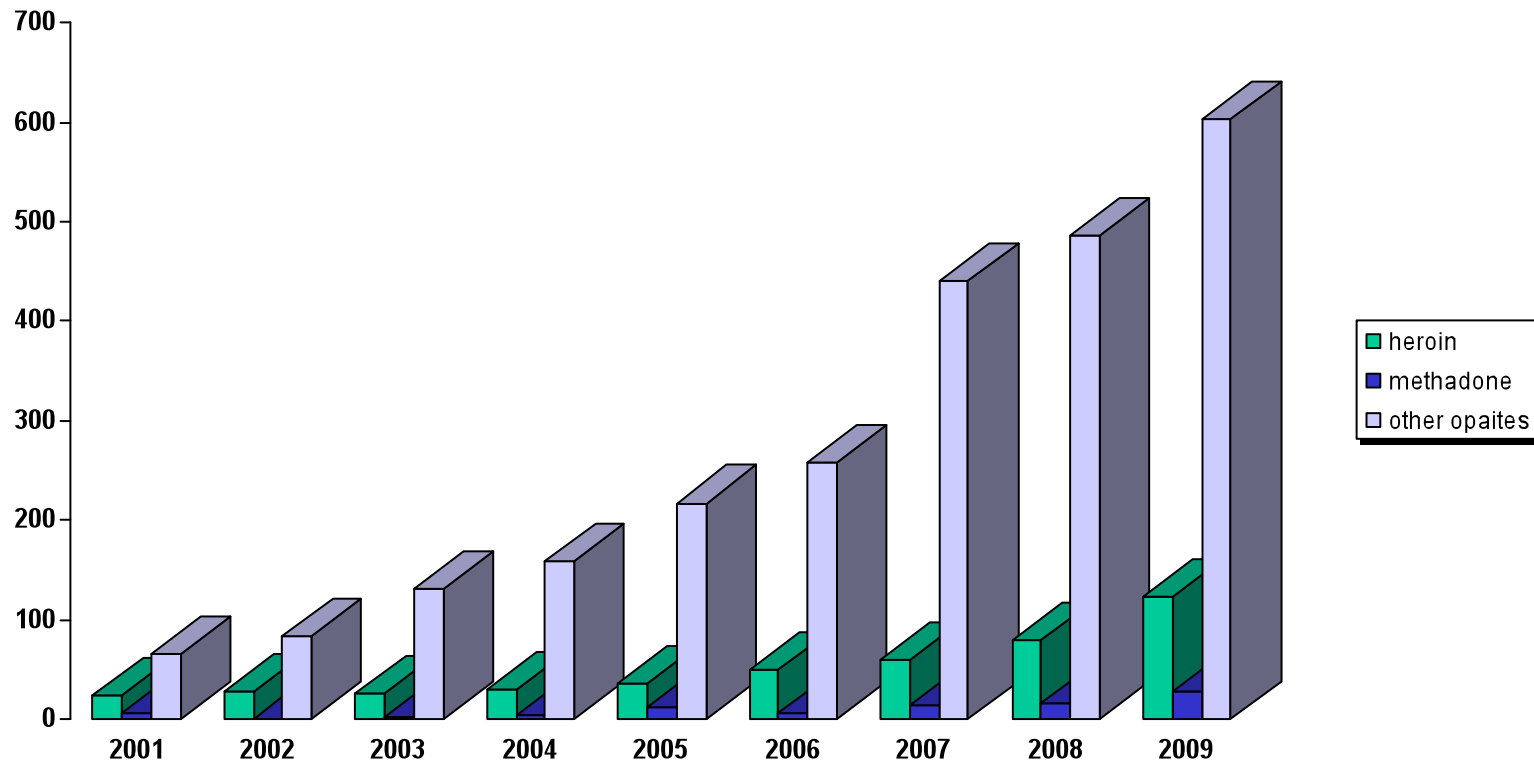
# Opiates by race, 2000-2007



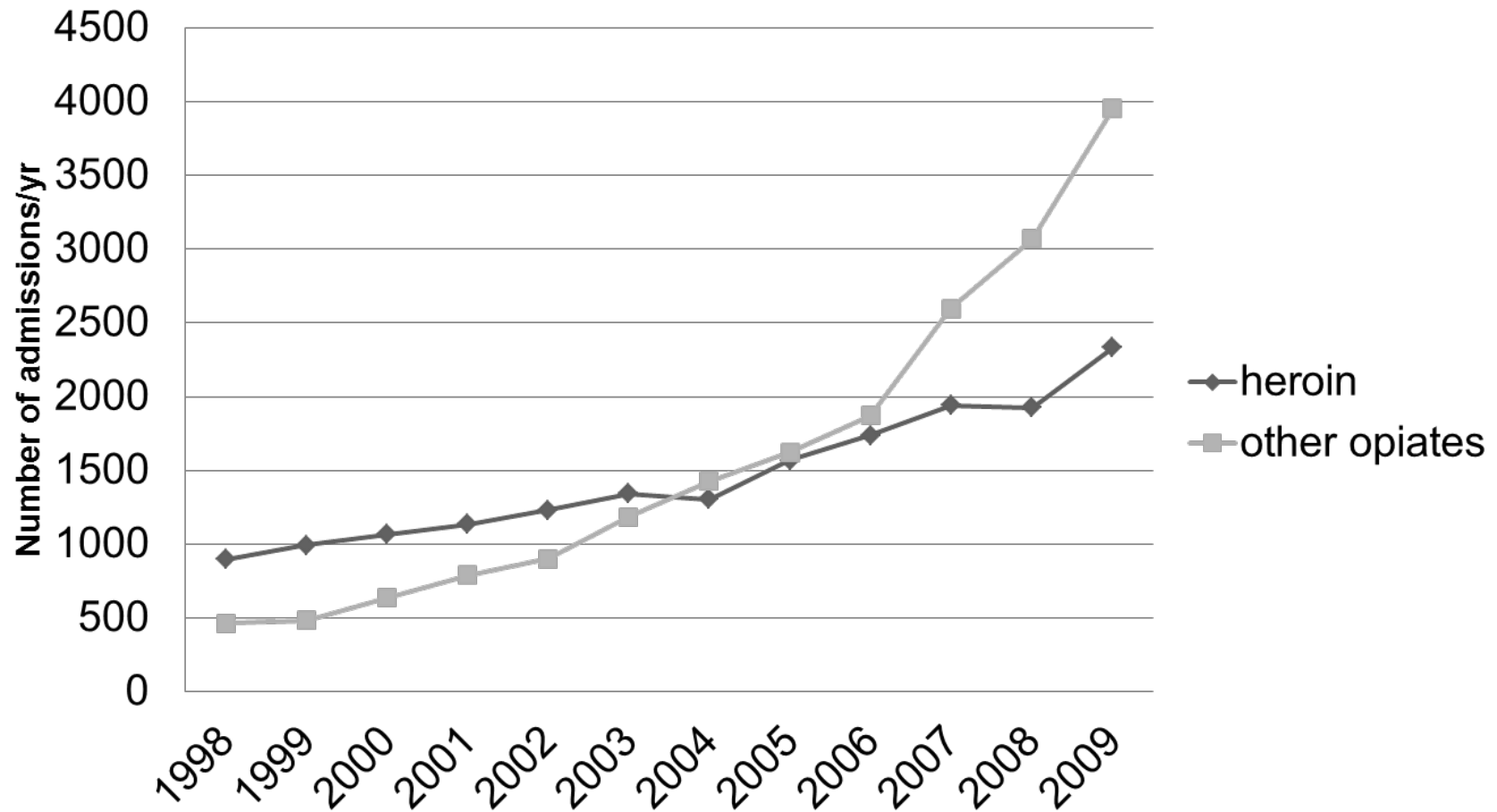
# Pregnancy status at admission 2000-2007, opiates



# American Indian Opiate admissions 2001- 2009



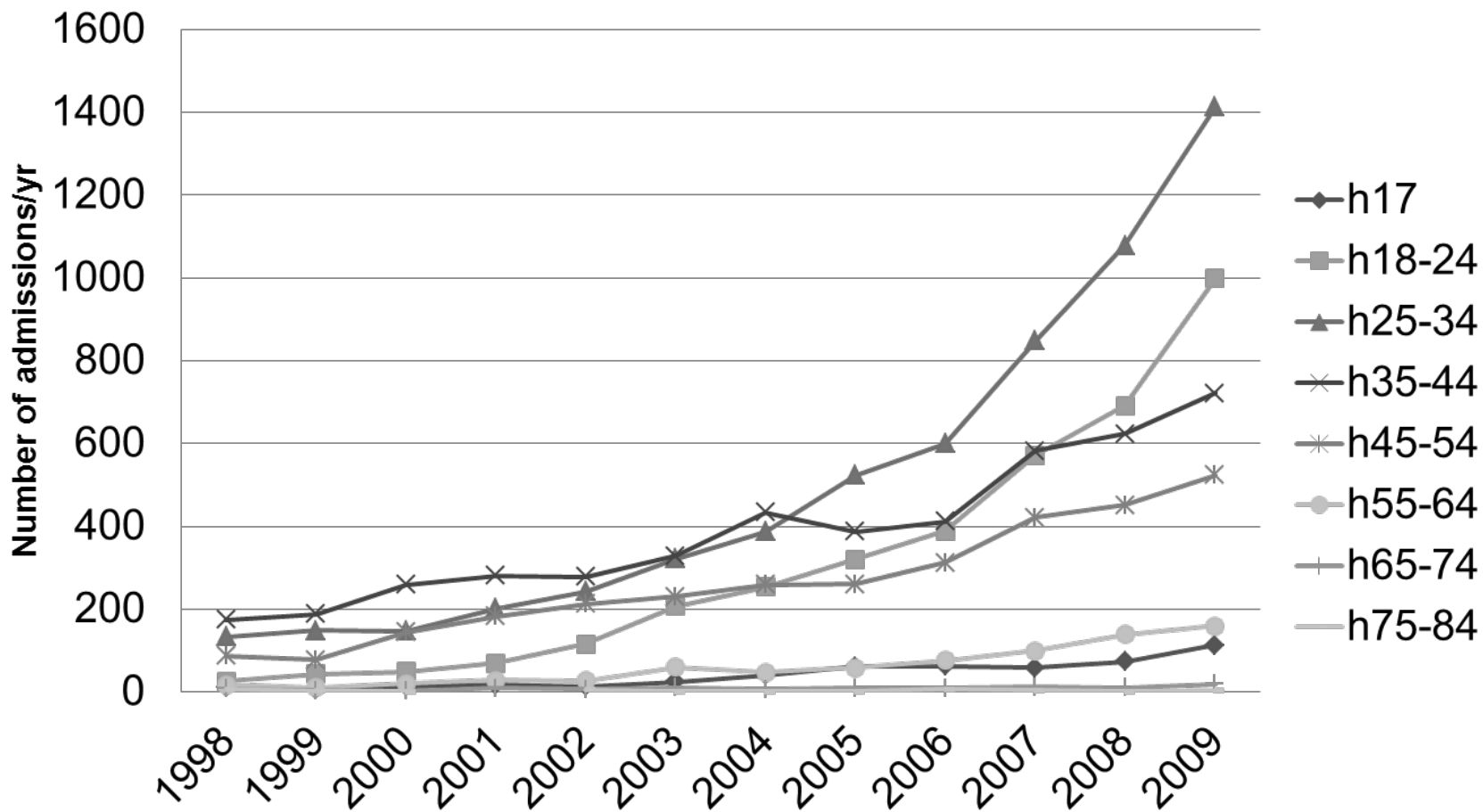
# Heroin vs. other opiate admission 1998-2009



Source: DAANES, PMQI, MN DHS 2010

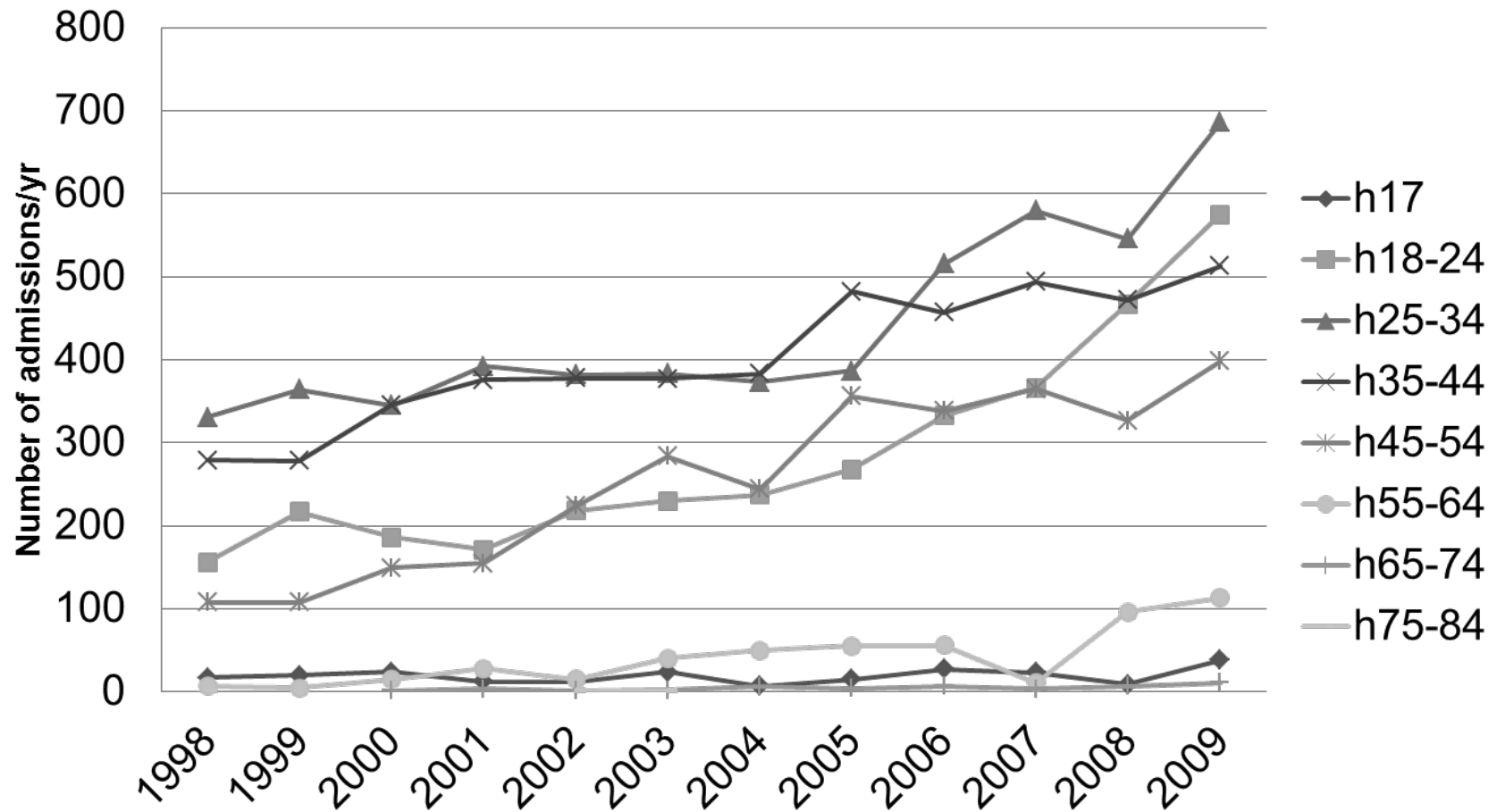


# Other opiate admission by age 1998-2009



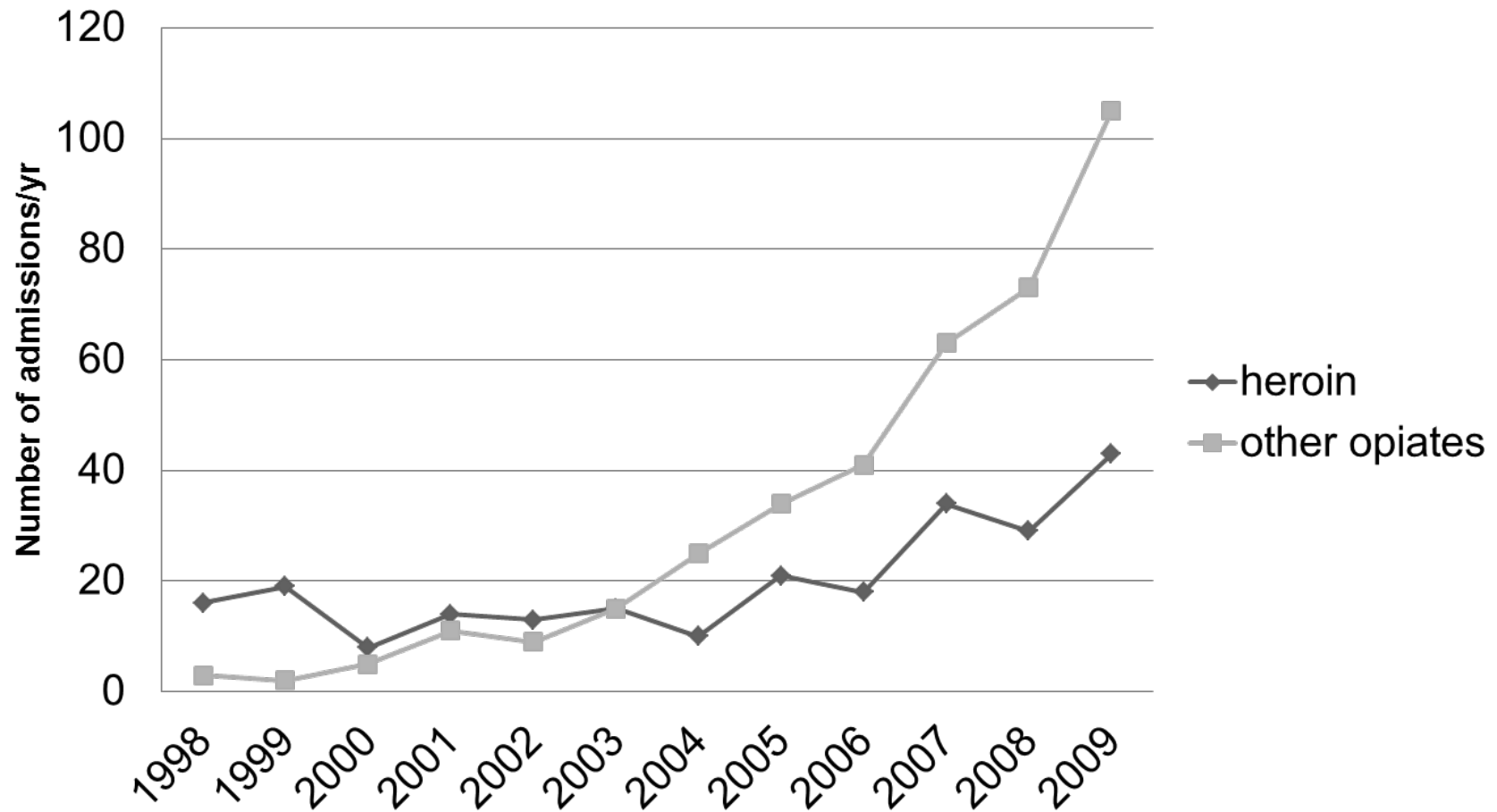
Source: DAANES, PMQI, MN DHS 2010

# Heroin admission by age 1998-2009



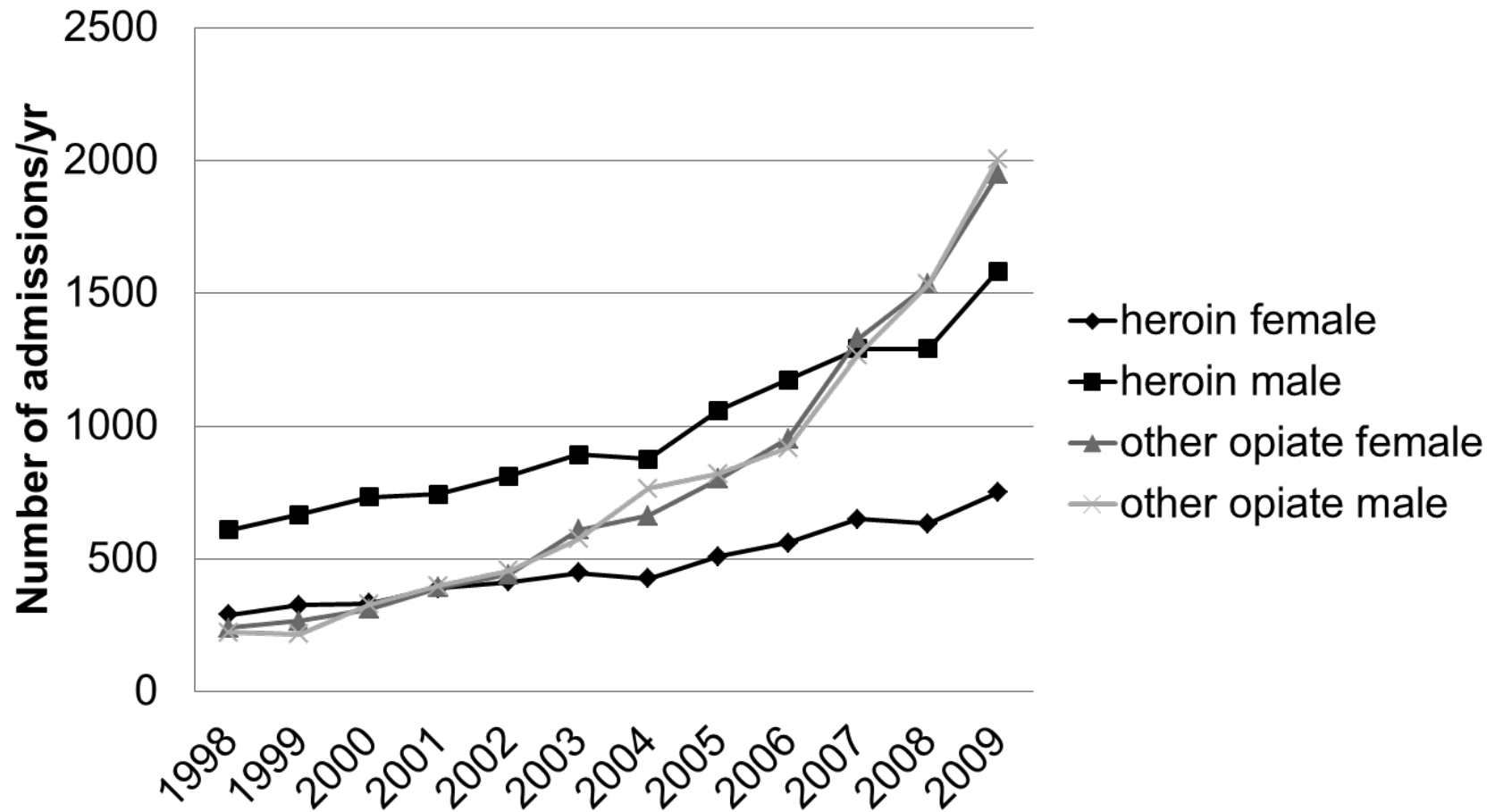
Source: DAANES, PMQI, MN DHS 2010

# Heroin vs. other opiate admission for pregnant women, 1998-2009

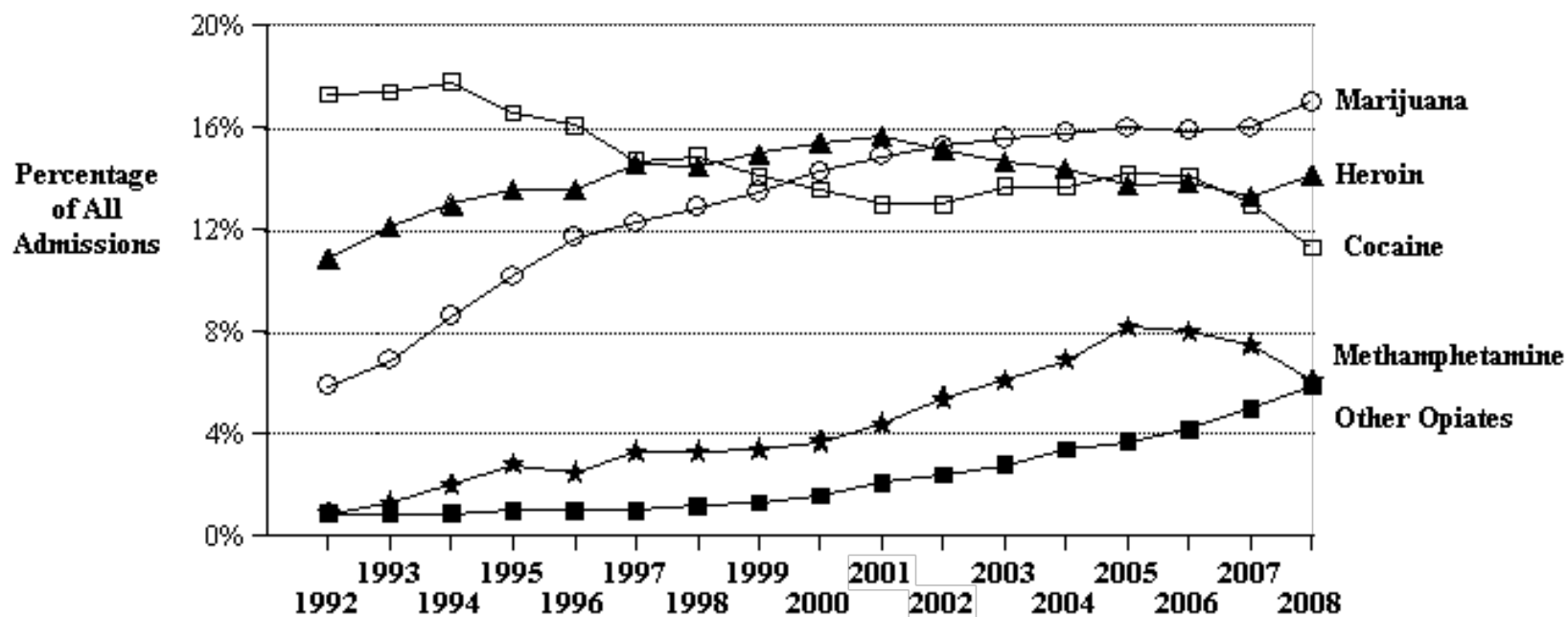


Source: DAANES, PMQI, MN DHS 2010

# Heroin vs. other opiate admission 1998-2009 by gender

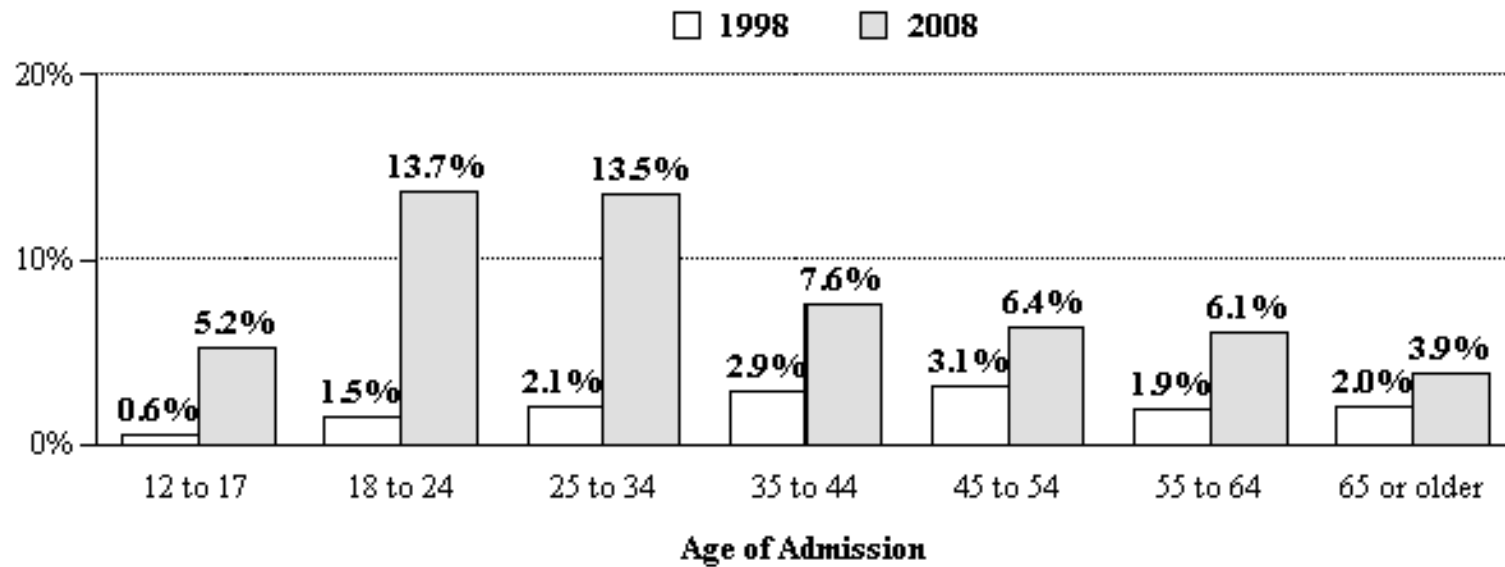


**Primary Substance of Abuse (Other Than Alcohol) at Admission to U.S. State Licensed or Certified Substance Abuse Treatment Facilities, Ages 12 and Older, 1992 to 2008**



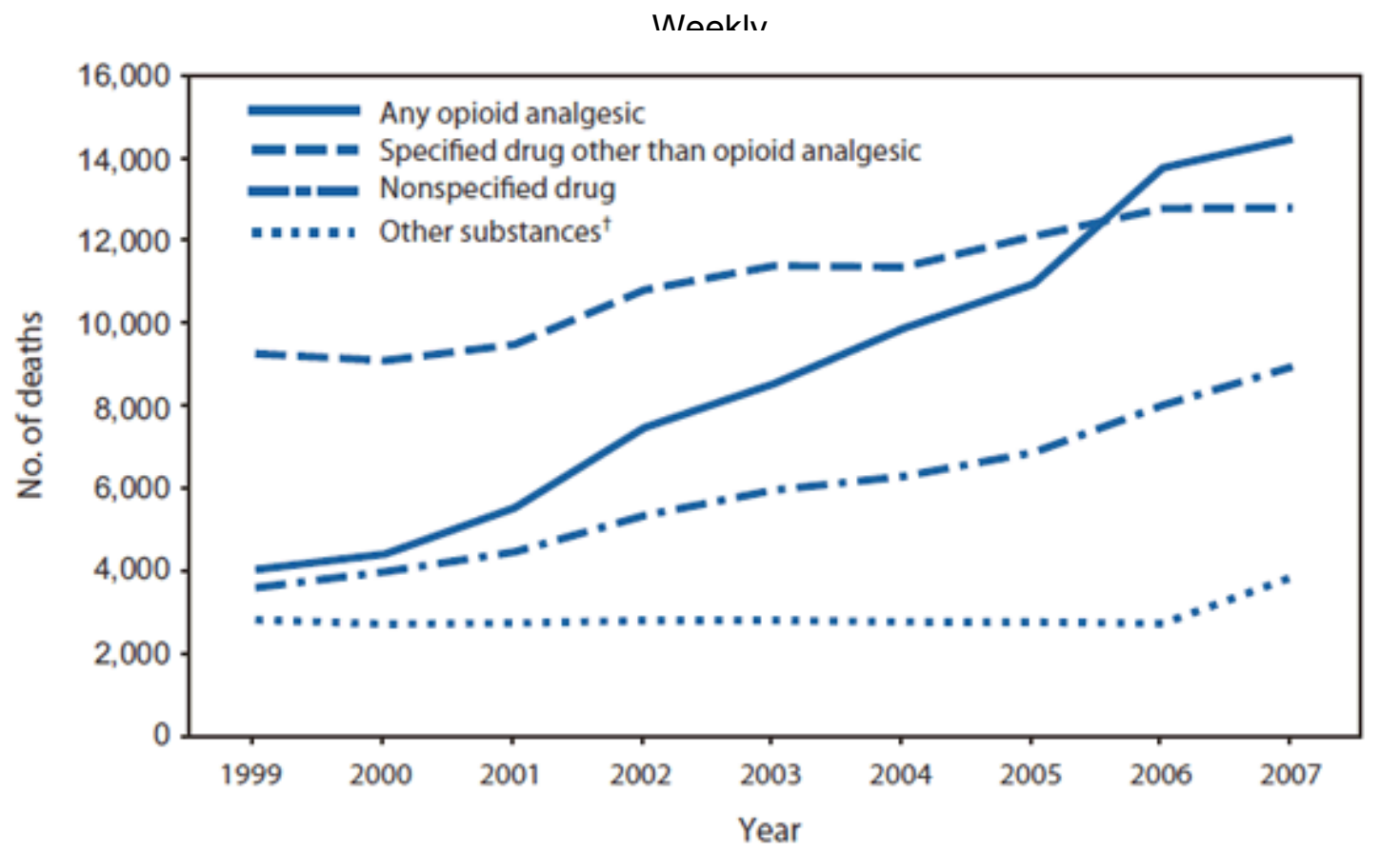
Source: CESAR Fax May 24, 2010, Vol.19, Issue 19

**Percentage of U.S. Substance Abuse Treatment Admissions That Reported Any Pain Reliever Abuse, by Age Group, 1998 and 2008\***



Source: CESAR Fax, July 26<sup>th</sup>, 2010, Vol. 19, Issue 28

# Number of Poisoning Deaths\* Involving Opioid Analgesics and Other Drugs or Substances --- United States, 1999--2007



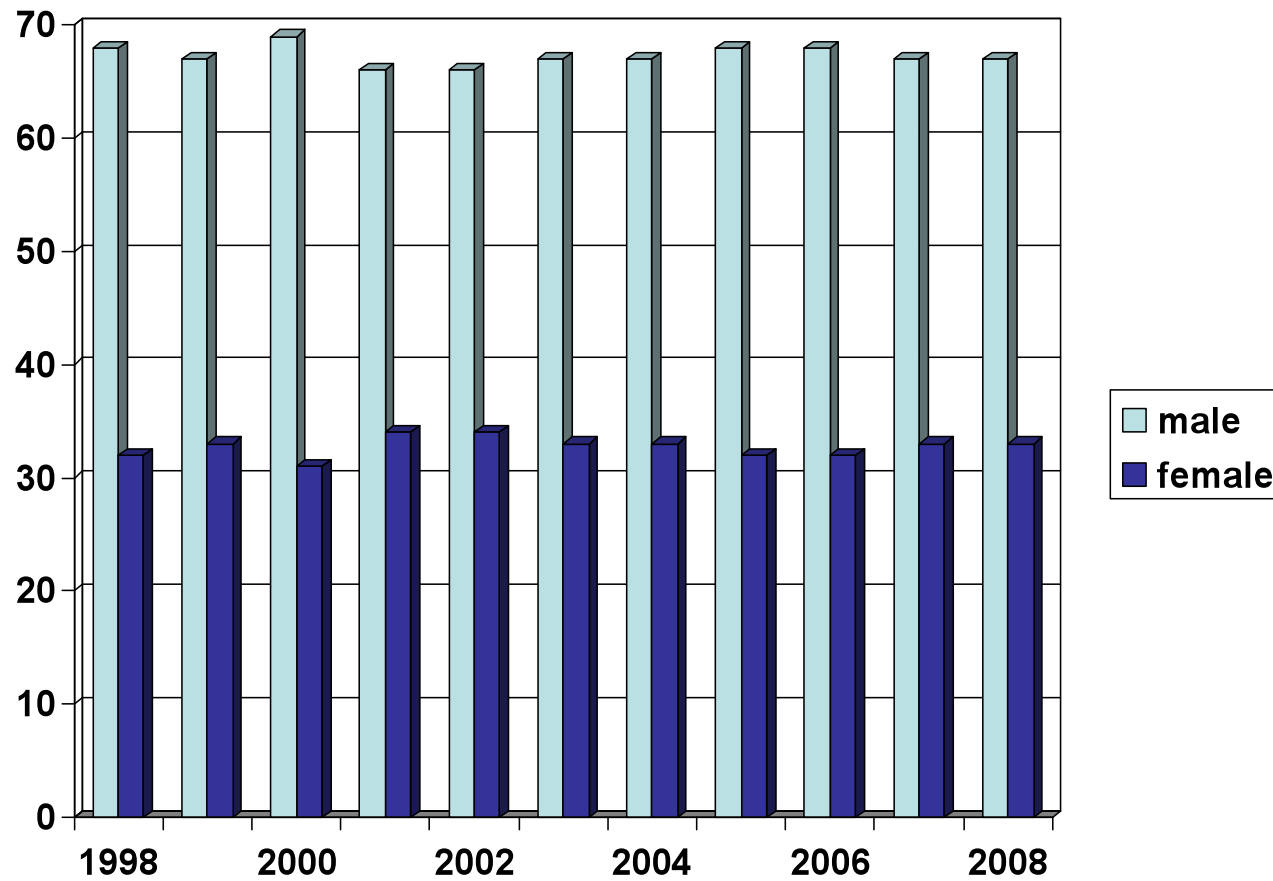
Source: Warner M, Chen LH, Makuc DM. Increase in fatal poisonings involving opioid analgesics in the United States, 1999--2006. NCHS data brief, no 22. Hyattsville, MD: US Department of Health and Human Services, CDC, National Center for Health Statistics; 2009.

# Where, 2005-2007

- Five County Metro:
- Hennepin 37.8%
- Ramsey 12.3%
- Anoka 6.8%
- Dakota 4.3%
- Washington 2.3%
- Totals 63.5% of entire State
- Honorable mention:
- St Louis 5.3
- Cass 4.2%
- Olmsted 2.1
- Beltrami 1.4%
- Stearns 1.4%
- Totals 14.4% in outlying MN

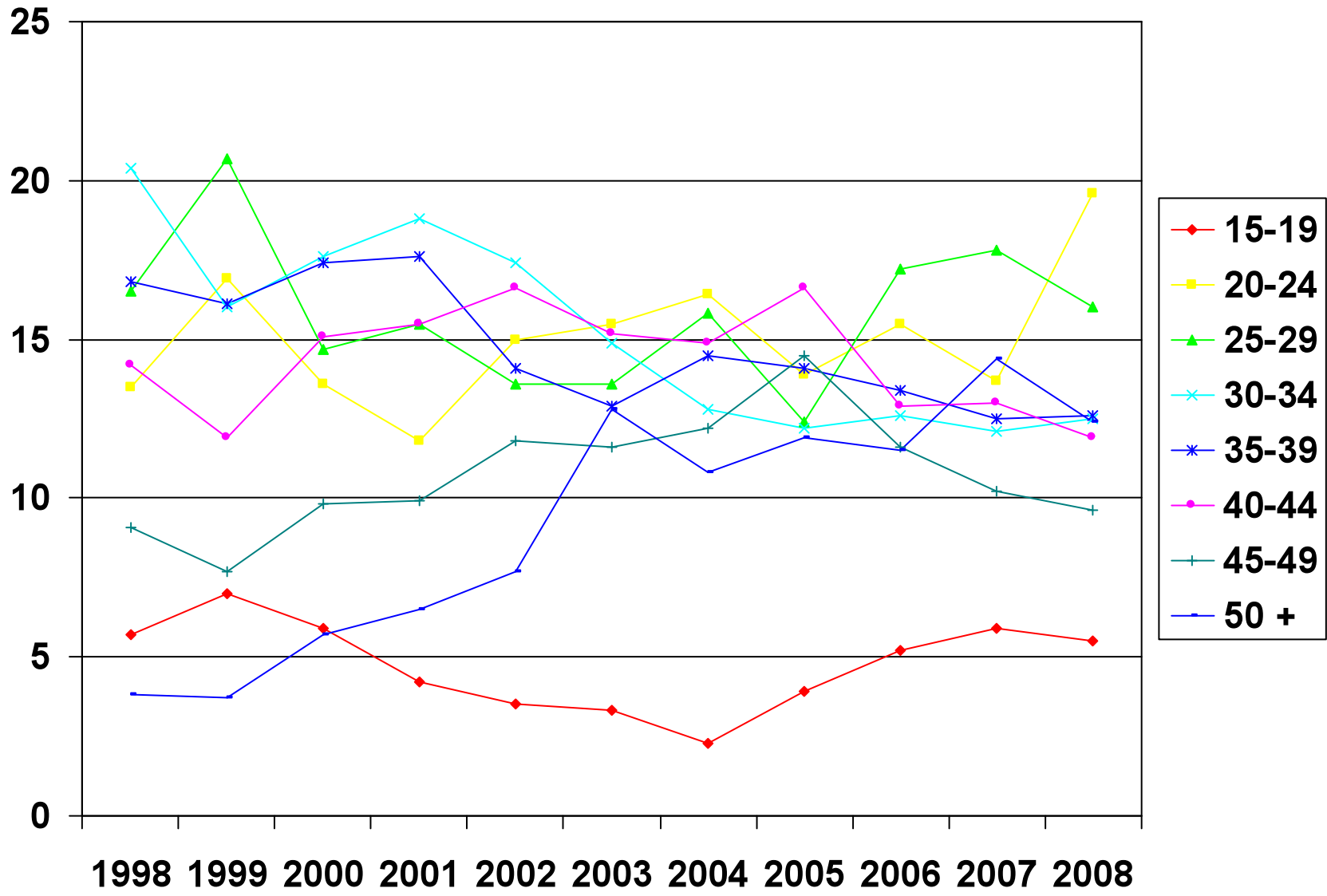


## Opioid use by gender, 1998-2008 in Minnesota



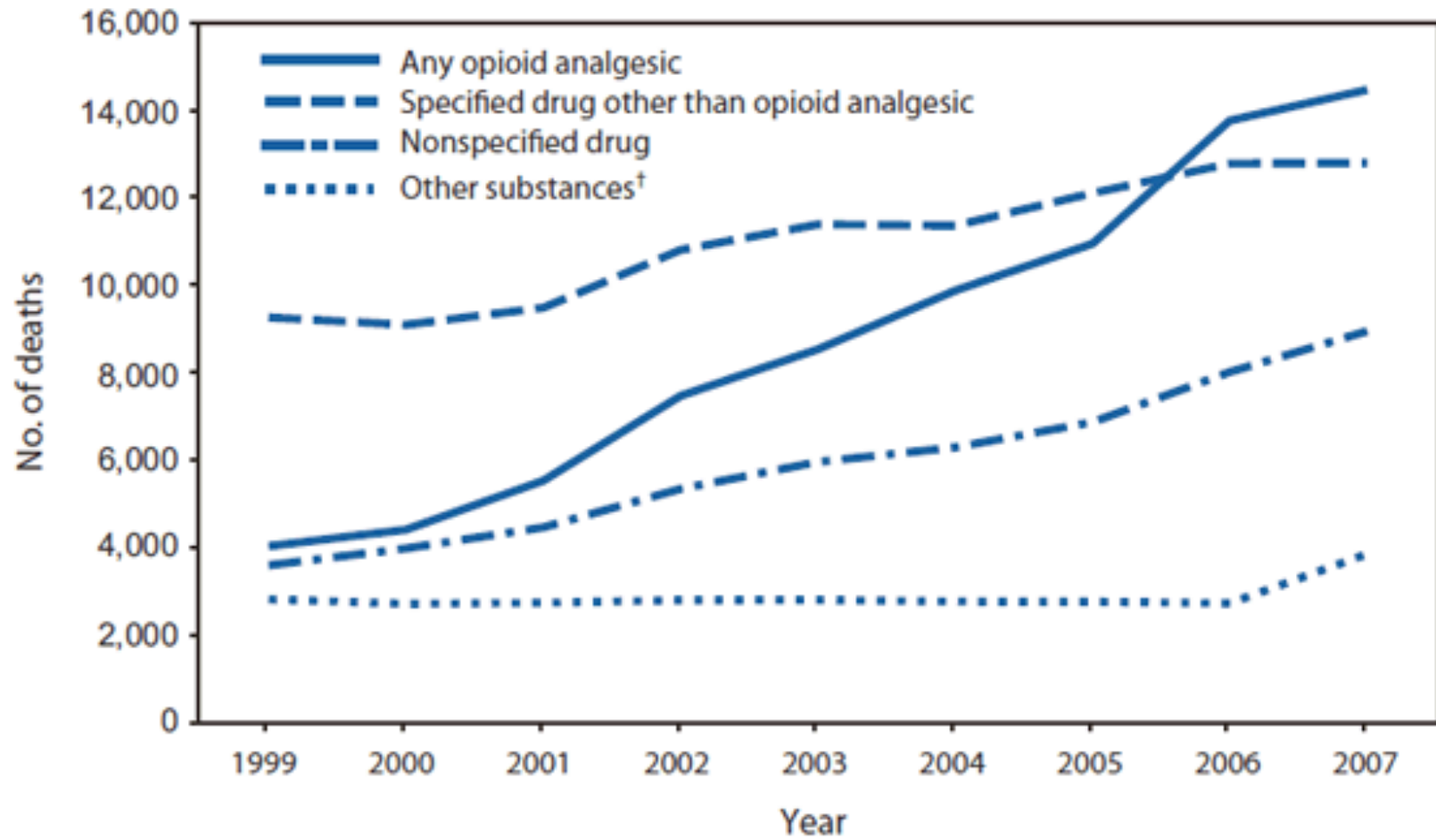
Source: PMQI, DAANES, Dept of Human Services, 2009

# “Other opiates” by age group



Source: PMQI, DAANES,  
Dept of Human Services,  
2009

- QuickStats: Number of Poisoning Deaths\* Involving Opioid Analgesics and Other Drugs or Substances --- United States, 1999—2007,
- MMR August 20, 2010



[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5932a6.htm?s\\_cid=mm5932a6\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5932a6.htm?s_cid=mm5932a6_e)

# So....

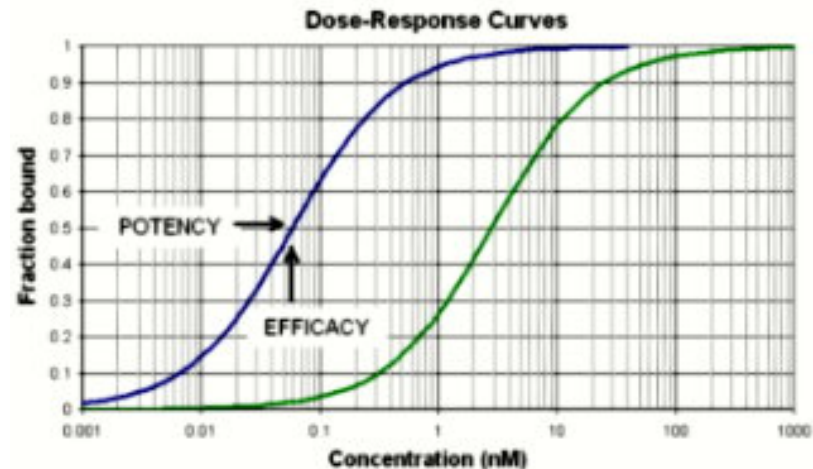
- About twice the number of men than women present with “other opioid”
- More prevalent age group is 20-24
- Most increased presentation by age group is 20-24 year old (1998 was 13.4% to 2008 was 19.6%)

# Half Life

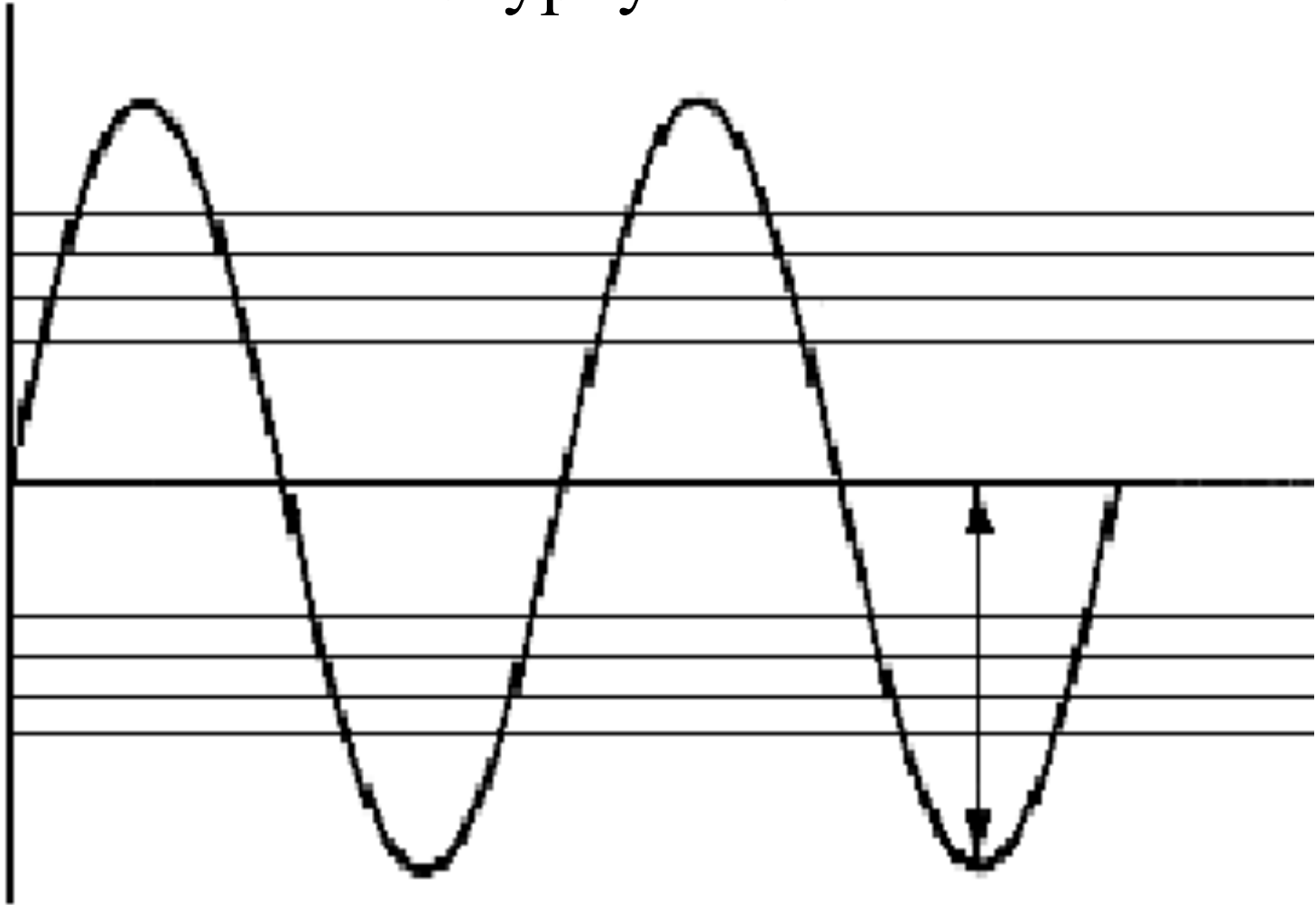
- Abbreviated as:  $t_{1/2}$
  - The time it takes for a substance to lose half of its pharmacologic activity
  - Generally, 9 x  $t_{1/2}$  it's gone
  - Does NOT equal elimination half-life
- |     |         |              |
|-----|---------|--------------|
| • 0 | 1/1     | 100%         |
| • 1 | 1/2     | 50%          |
| • 2 | 1/4     | 25%          |
| • 3 | 1/8     | 12.5%        |
| • 4 | 1/16    | 6.25%        |
| • 5 | 1/32    | 3.125%       |
| • 6 | 1/64    | 1.563        |
| • 7 | 1/128   | 0.781        |
| • n | $1/2^n$ | $100(1/2^n)$ |

# Potency

- A measure of drug activity expressed in terms of the amount required to produce an effect of given intensity. A highly potent drug evokes a larger response at low concentrations. It is proportional to Affinity and Efficacy
- For our purposes, how strong the stuff is.....don't forget synergistic effect and contaminants



tachyphylaxis





# Opiate intoxication

- A) Recent use of an opioid
- B) Clinically significant maladaptive behavioral or psychological changes (e.g. initial euphoria followed by apathy, dysphoria, psychomotor agitation or retardation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, opioid use.
- C) Pupillary constriction (miosis)(or pupillary dilation due to anoxia from severe overdose) and one (or more) of the following signs, developing during or shortly after, opioid use:
  - 1) drowsiness or coma
  - 2) slurred speech
  - 3) impairment in attention or memory

# miosis

- Constricting of the pupil, 2-3mm



# Stupor or coma

- The partial or nearly complete unconsciousness, manifested by the subject's responding only to vigorous stimulation



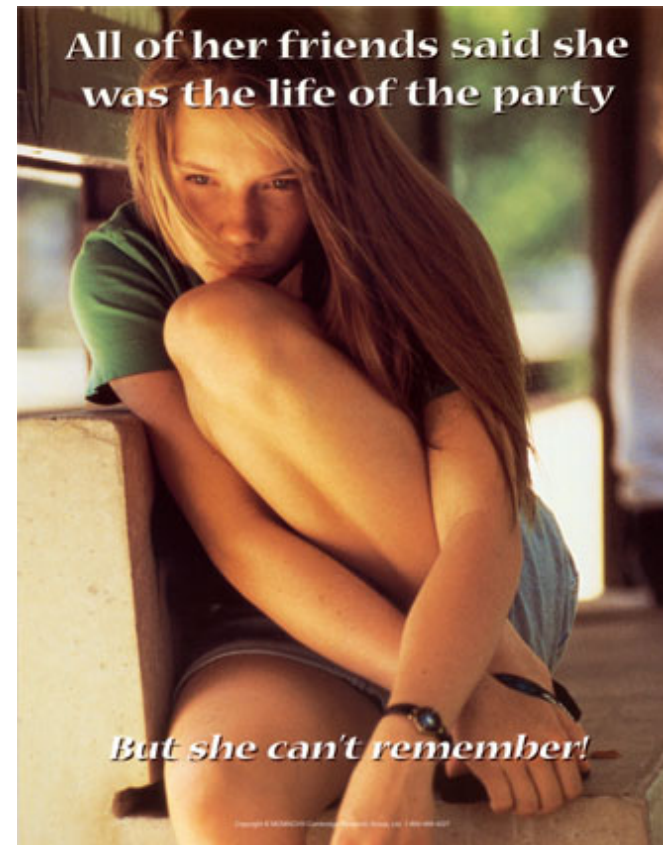
# Slurred speech

- Inability to enunciate words, broken sentence structure and vocabulary choice



# Impairment in memory

- Inability to recall short or long term memory, may also have difficulty with recognition





# Opioid withdrawal

- A) Either of the following:
  - 1) cessation of (or reduction in) opioid use that has been heavy and prolonged (several weeks or longer)
  - 2) administration of an opioid antagonist after a period of opioid use
- B) Three (or more) of the following, developing within minutes to several days after Criterion A:
  - -dysphoric mood
  - -nausea or vomiting
  - -muscle aches
  - -lacrimation or rhinorrhea
  - -Pupillary dilation, piloerection, or sweating

# DSM IV-R 292.0

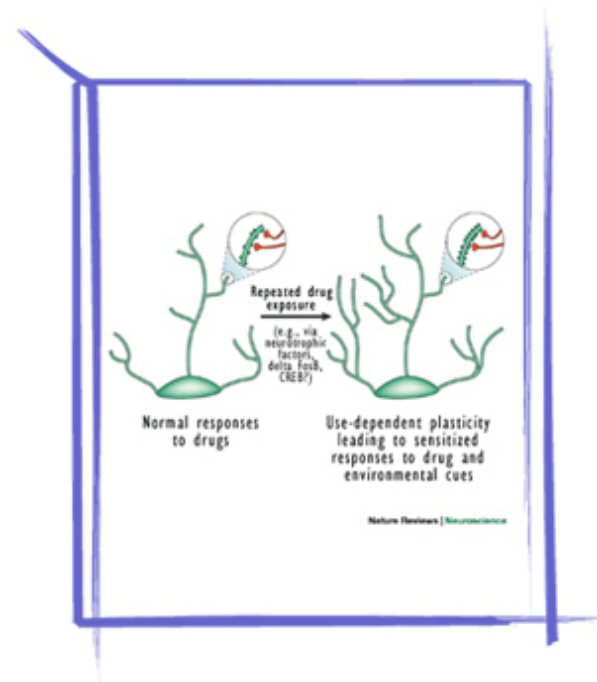
-diarrhea  
-yawning  
-fever  
-insomnia

- C) The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.



# dysphoria

- Excessive pain, anguish, agitation, disquiet, restlessness, malaise.



# Nausea/emesis

- Upset stomach and vomiting



# Muscle aches

- Burning pain in the muscle body



# lacrimation

- Watering of the eyes,  
shedding tears



# rhinorrhea

- Flowing, nasal discharge



# mydriasis

- Widening of the pupil, 7-8mm, slow and sluggish to respond



# diarrhea

- A frequent and profuse discharge of loose or fluid evacuations from the intestines



# yawning

- Looks tired and ‘worn out’





# piloerection

- Erection of the hair, e.g. “hair standing on end”



# diaphoresis

- Perspiration, especially profuse perspiration, e.g “sweating”



# Opiate Dependency 304.00

- Three or more in the same 12 month period:
  - 1) Tolerance
  - 2) withdrawal
  - 3) increasing quantity/  
longer period of time
  - 4) persistent desire or  
unsuccessful effort to  
stop
  - 5) time spent chasing  
drug
  - 6) loss of social,  
occupational or  
recreational activities
  - 7) use despite knowledge  
of effects

# Often potentiated with:

- Alcohol
- Anxiolytics (Xanax/  
Klobnopin)
- Street w/d:
- Diphenhydramine
- Dextromethorphan  
HB

# FDA Wants Detailed Industry Plans on Preventing Abuse of Opioids

- December 9, 2009
- The U.S. Food and Drug Administration (FDA) is holding a series of meetings with pharmaceutical companies as the industry crafts a plan to help prevent misuse of opioid-based medications, [Reuters](#) reported Dec. 4.
- Regulators met with industry representatives last week to get more details on the risk-evaluation and mitigation (REMS) plan that the FDA requested earlier this year. Company officials said they were developing a voluntary training program to educate doctors about proper practices and government certification for prescribing drugs like methadone and oxycodone.
- Some experts expressed concern that doctors might choose not to prescribe the drugs if regulation is increased; an FDA official said the agency is looking to balance the need to reduce abuse with the need to make effective painkillers available to patients. More meetings on the plan will be held next year.
- The National Center on Addiction and Substance Abuse (CASA\*) at Columbia University petitioned the FDA in May 2009 for a REMS plan that covers the entire class of opiate-based medications and would include education for both patients and doctors as well as "elements to assure safe use," such as certification of prescribing physicians.
- CASA also requested that "each opioid drug risk evaluation and mitigation strategy ... include a certification that the drug has been formulated to minimize potential for abuse, both intentional and unintentional, to the extent possible without compromising the drug's therapeutic effectiveness."
- Source:  
<http://www.jointogether.org/news/headlines/inthenews/2009/fda-wants-detailed-industry.html>