

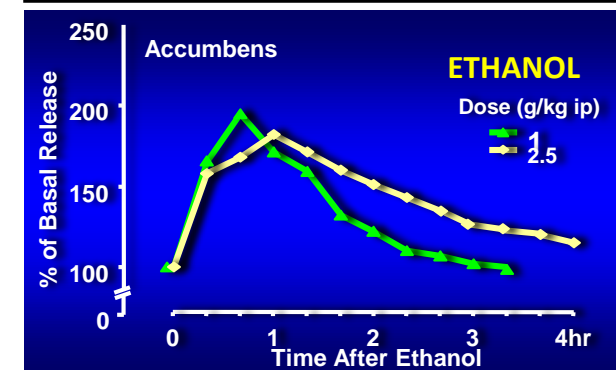
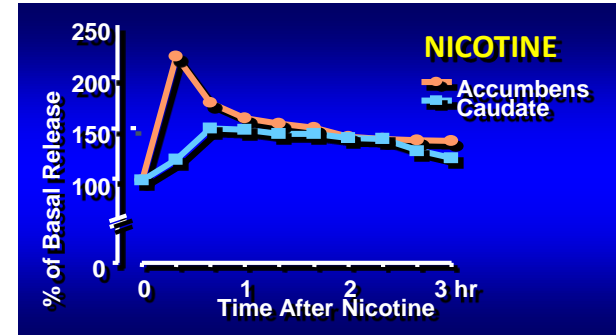
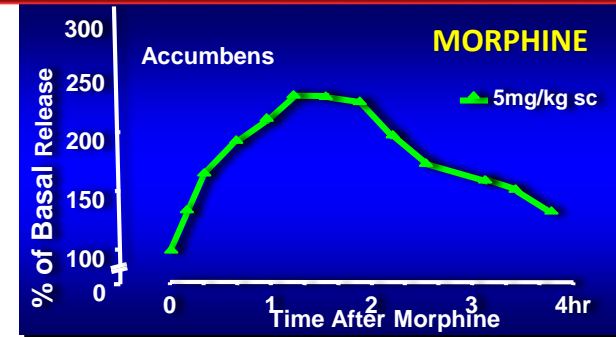
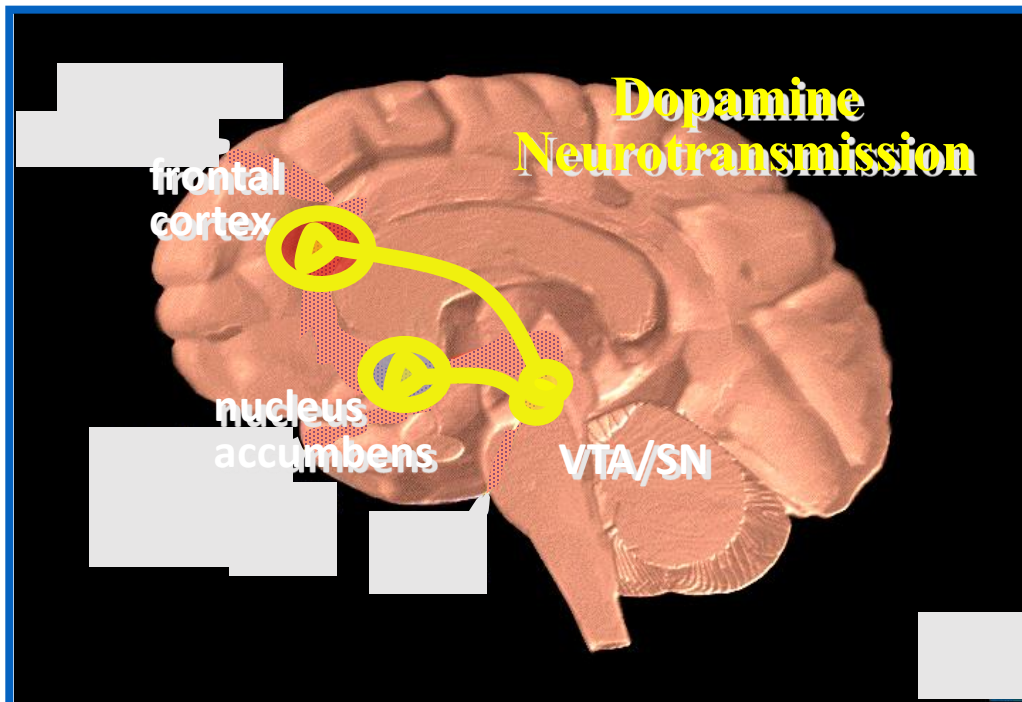
Drug Abuse and Addiction: **A Major Contributor to Women's** **Rising Mortality Rates?**



Nora D. Volkow, M.D.
Director
National Institute
on Drug Abuse

Why Do People Abuse Drugs?

All drugs of abuse (including cocaine, opiates, marijuana, nicotine and alcohol) raise brain dopamine levels



Di Chiara et al.

Females respond differently to drug intoxication than males and this is affected by age

Hormones may increase a drug's reinforcing effects and its concentration in brain



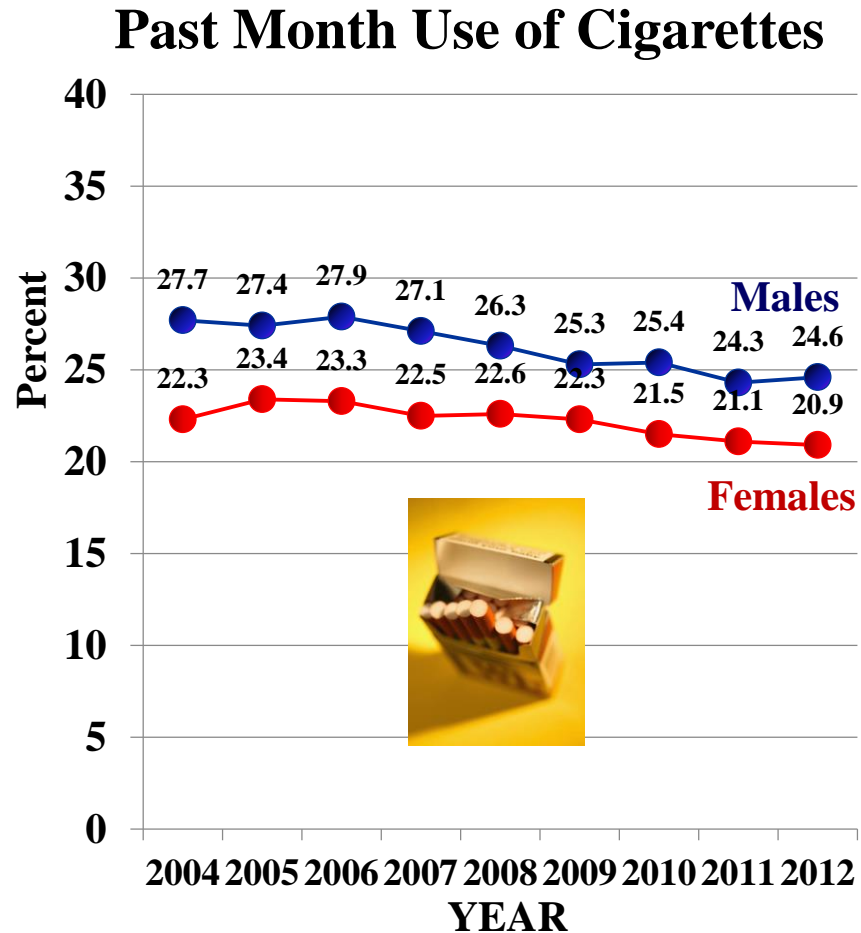
Menopause



Menarche



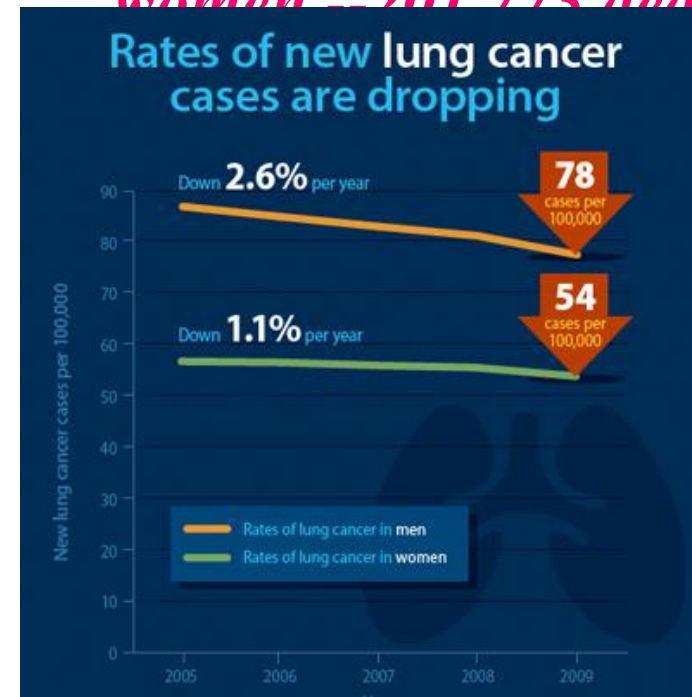
Tobacco Use is the Leading Preventable Cause of Death in the U.S.



Source: SAMHSA, NSDUH, 2002-2012.

480,000 annual deaths
men --278, 544
deaths

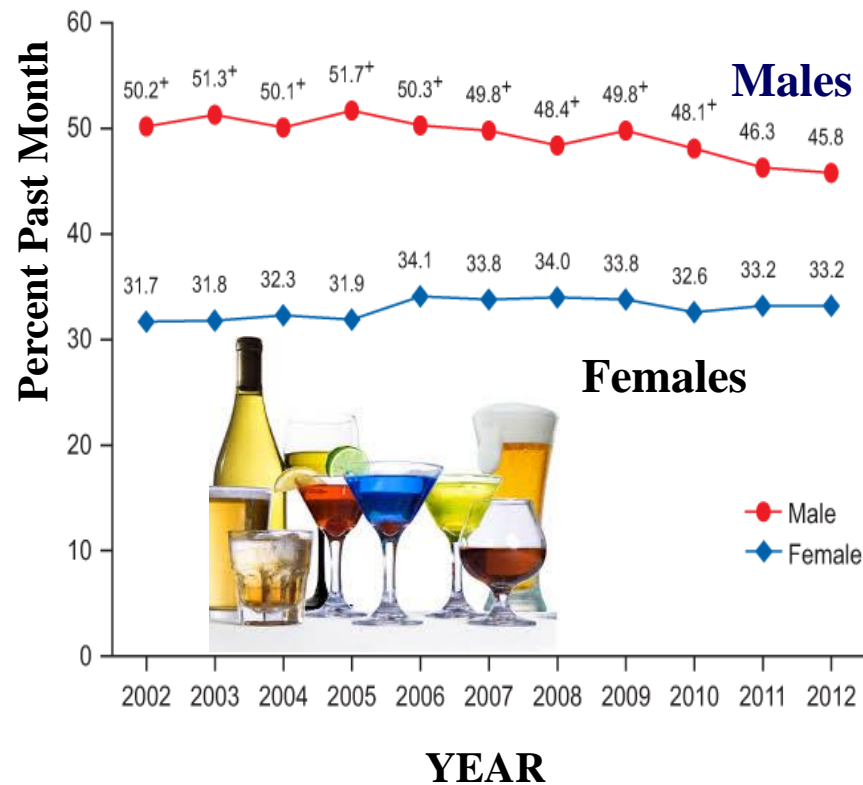
women --201, 773 deaths



Source: CDC Fact Sheet Tobacco Related Mortality.

Excessive Alcohol Use is the Fourth Leading Preventable Cause of Death in the U.S.

Binge Alcohol Use 18-25 Years



Source: SAMHSA, NSDUH, 2002-2012.

88,000 annual deaths

men –62,000 deaths

women –26,000 deaths

ACUTE

FALLS

CAR ACCIDENTS 9764

POISONING
2947

CHRONIC

LIVER DISEASE 10403

CIRRHOSIS 3255

CANCER*
not in table

Males

Females

3853

3688

2696

5457

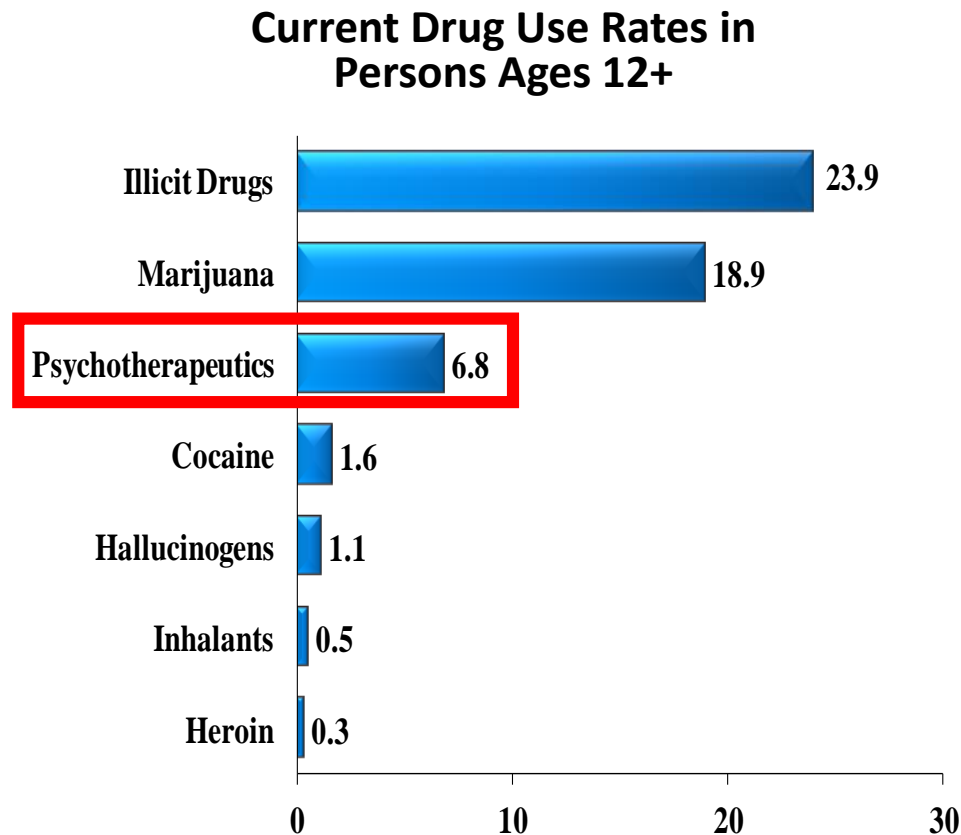
3961

4592

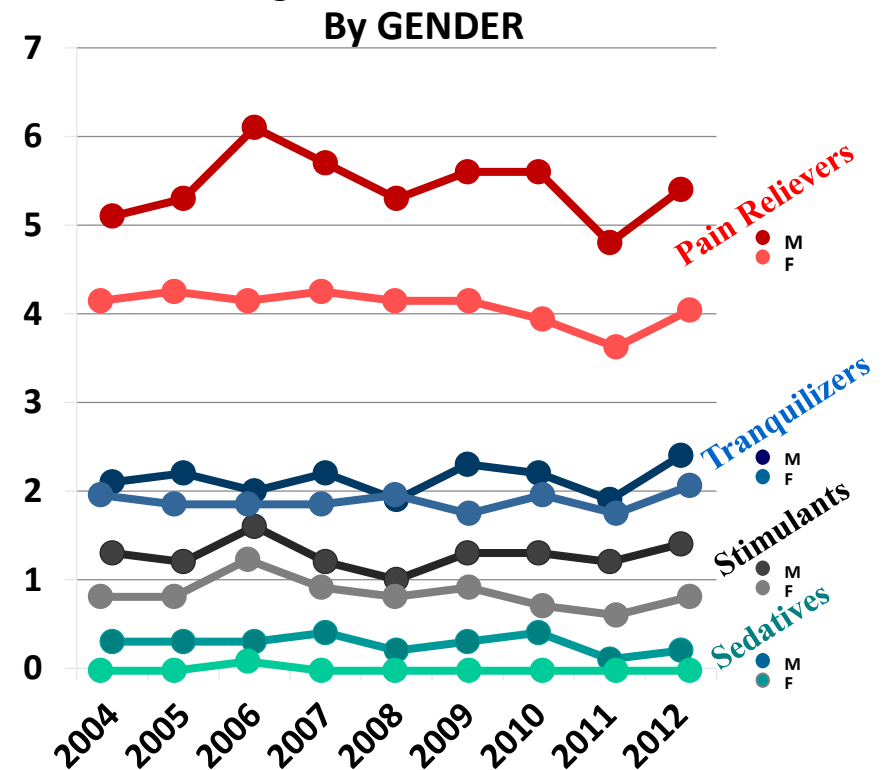
Source: CDC Alcohol and Public Health.

Alcohol-Related Disease Impact (ARDI)

Prescription Drug Misuse/Abuse Is A Major Problem in the US

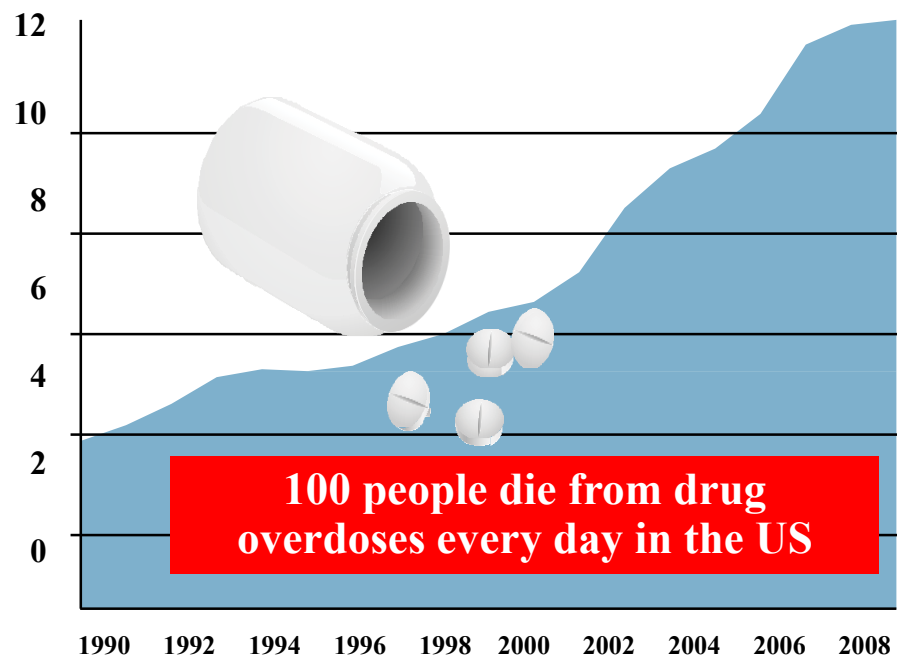


Past Year Nonmedical Use of Types of Psychotherapeutic Drugs among Persons Aged 12 or Older: 2004-2012



Source: SAMHSA, 2012 National Survey on Drug Use and Health, 2013.

Drug OD in the US Have More Than *Tripled* since 1990 and **INCREASES** Are Greater for Women (Five-FOLD)

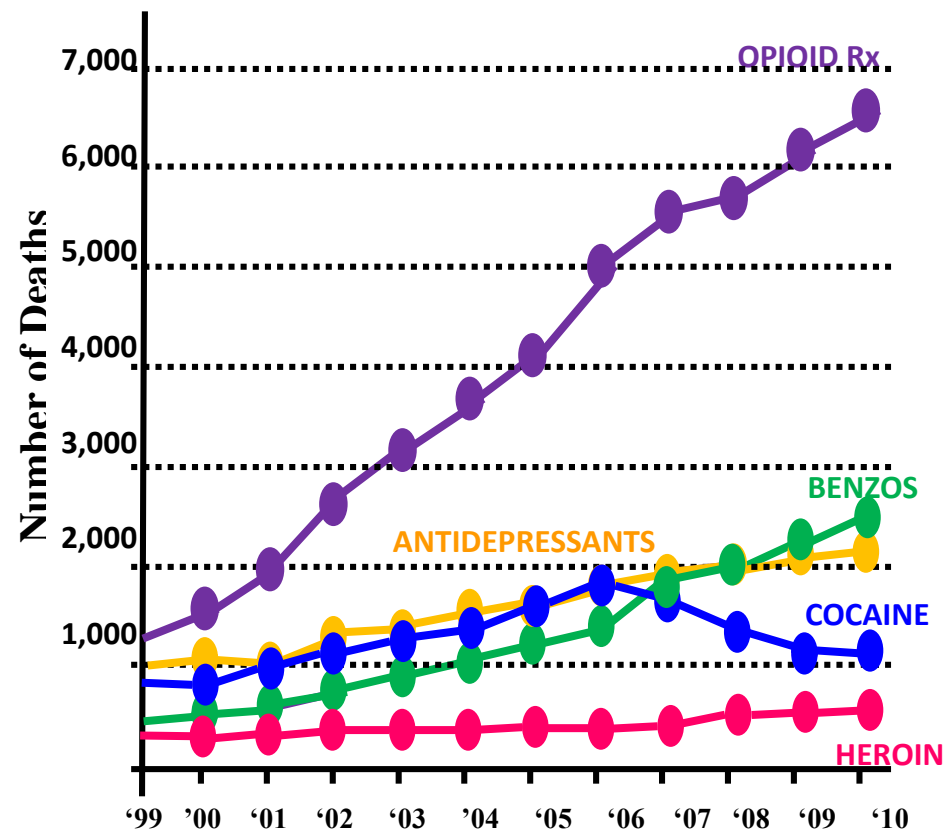


National Vital Statistics System.
Drug Overdose Death Rates by State 2008.

*Deaths are those for which poisoning by drugs (illicit, prescription, and over-the-counter) was the underlying cause.

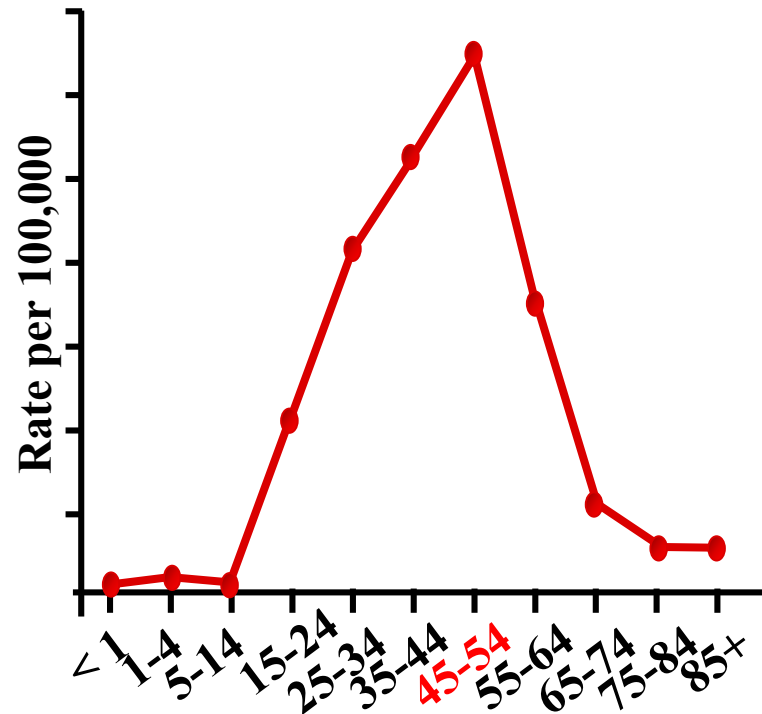
CDC Vital Signs, July 2013.

Prescription OPIOID OD Deaths Among Women



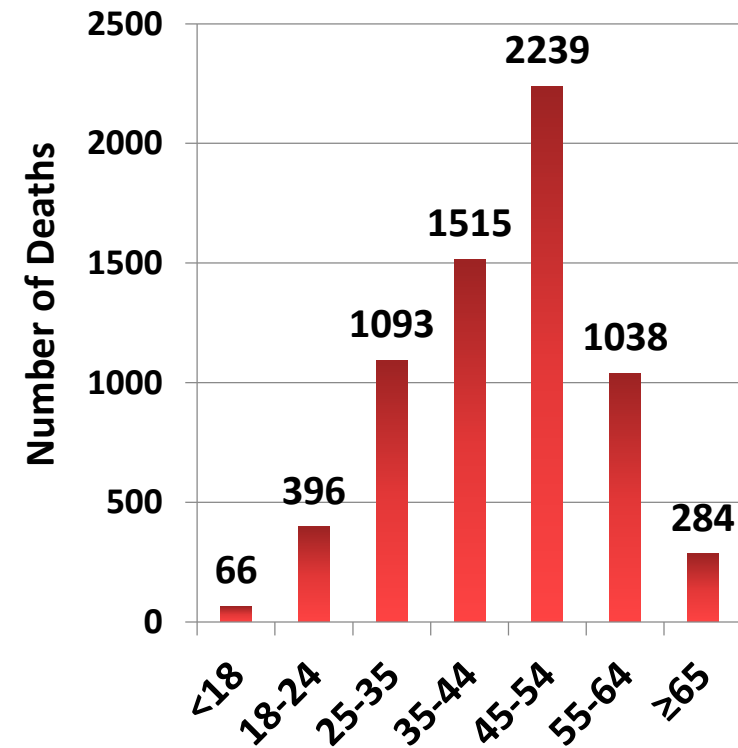
Source: National Vital Statistics System,
1999-2010 (deaths included suicides).

Opioids Overdose Death by Age Group, US, 2008



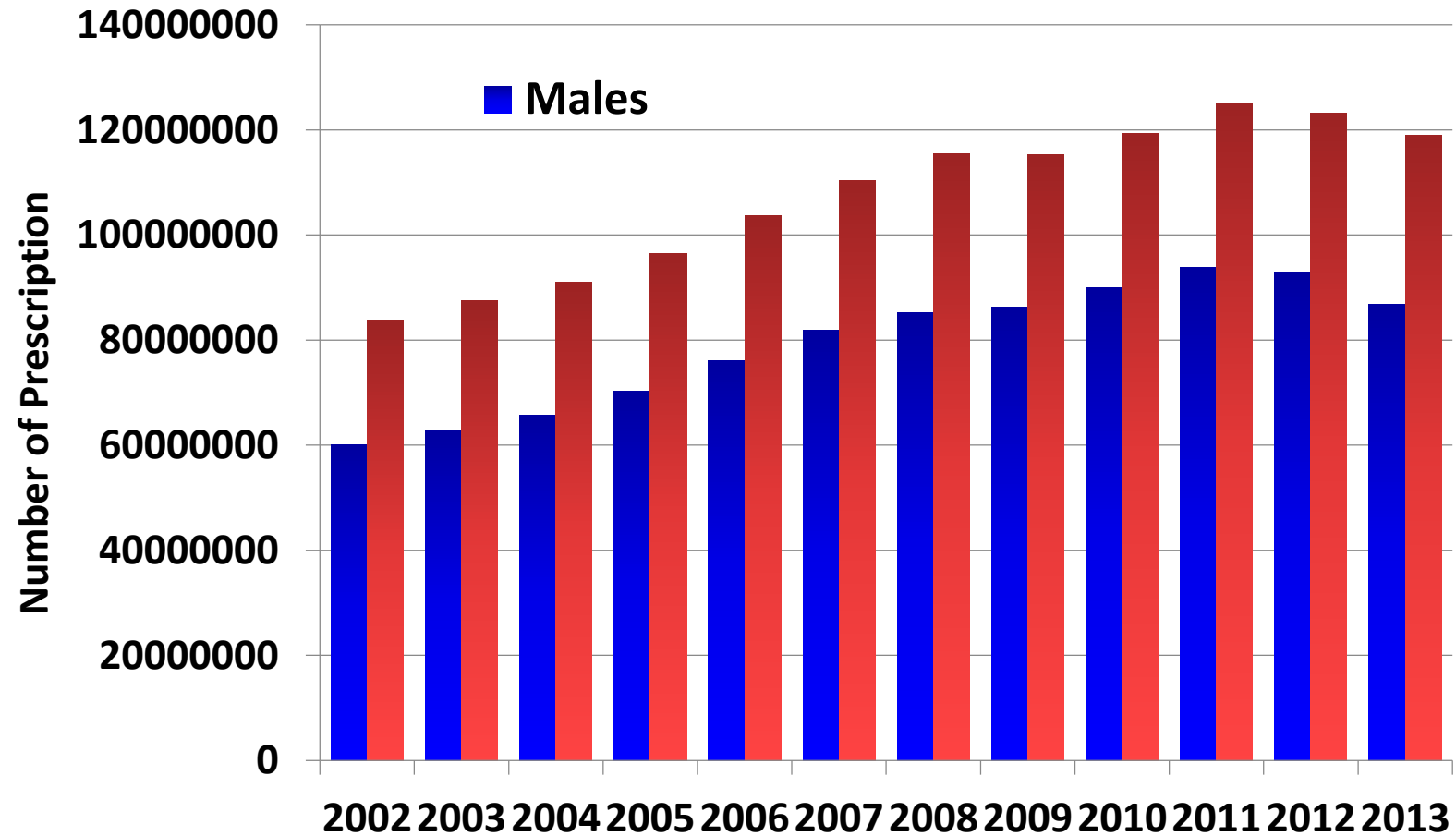
Paulozzi LJ, J Safety Res 2012; 43(4): 283-289.

Rx Opioid OD Deaths Are Greatest Among Women 45-54 years, 2010



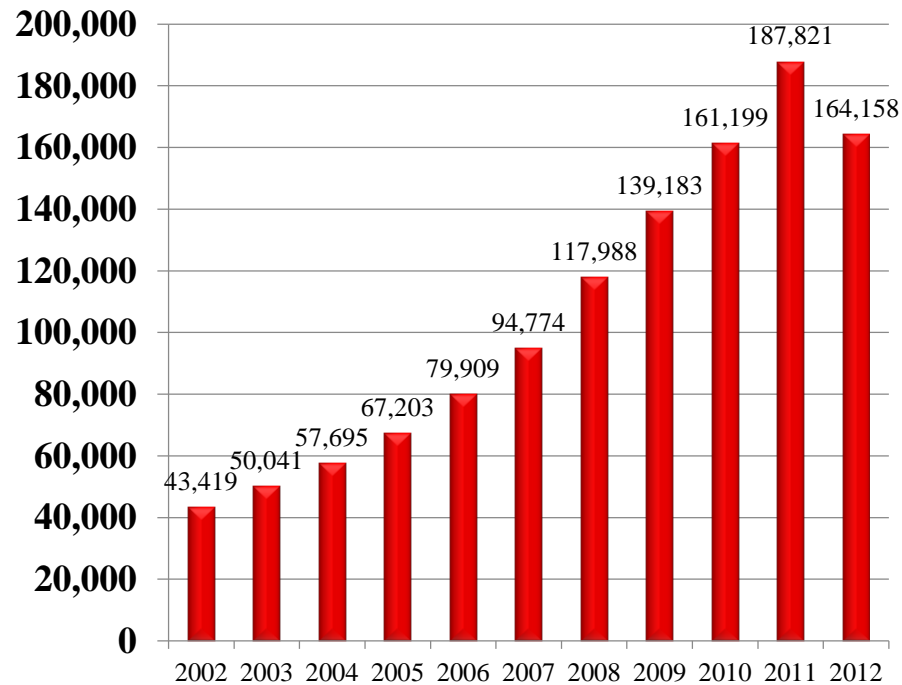
Source: CDC Vital Signs July 2013.

Number of Opioid Prescriptions from U.S. Retail Pharmacies, 2002-2013



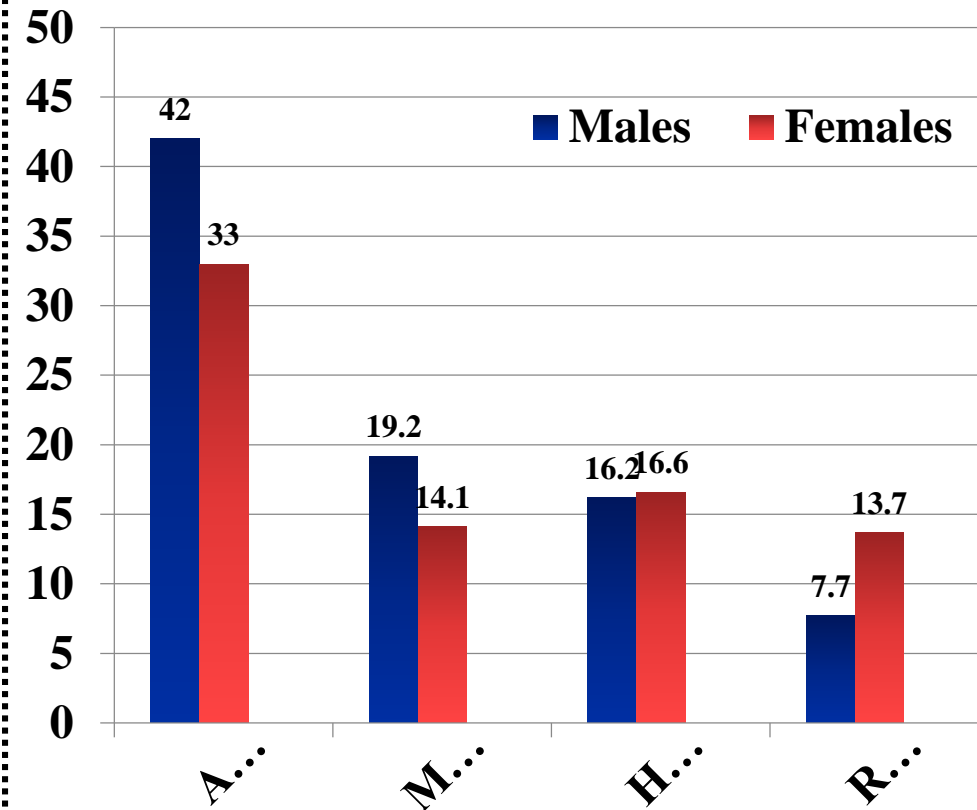
Source: IMS Health, National Prescription Audit

More Than 4-Fold Increase In *Treatment Admissions For Prescription Painkillers* In the Past Decade



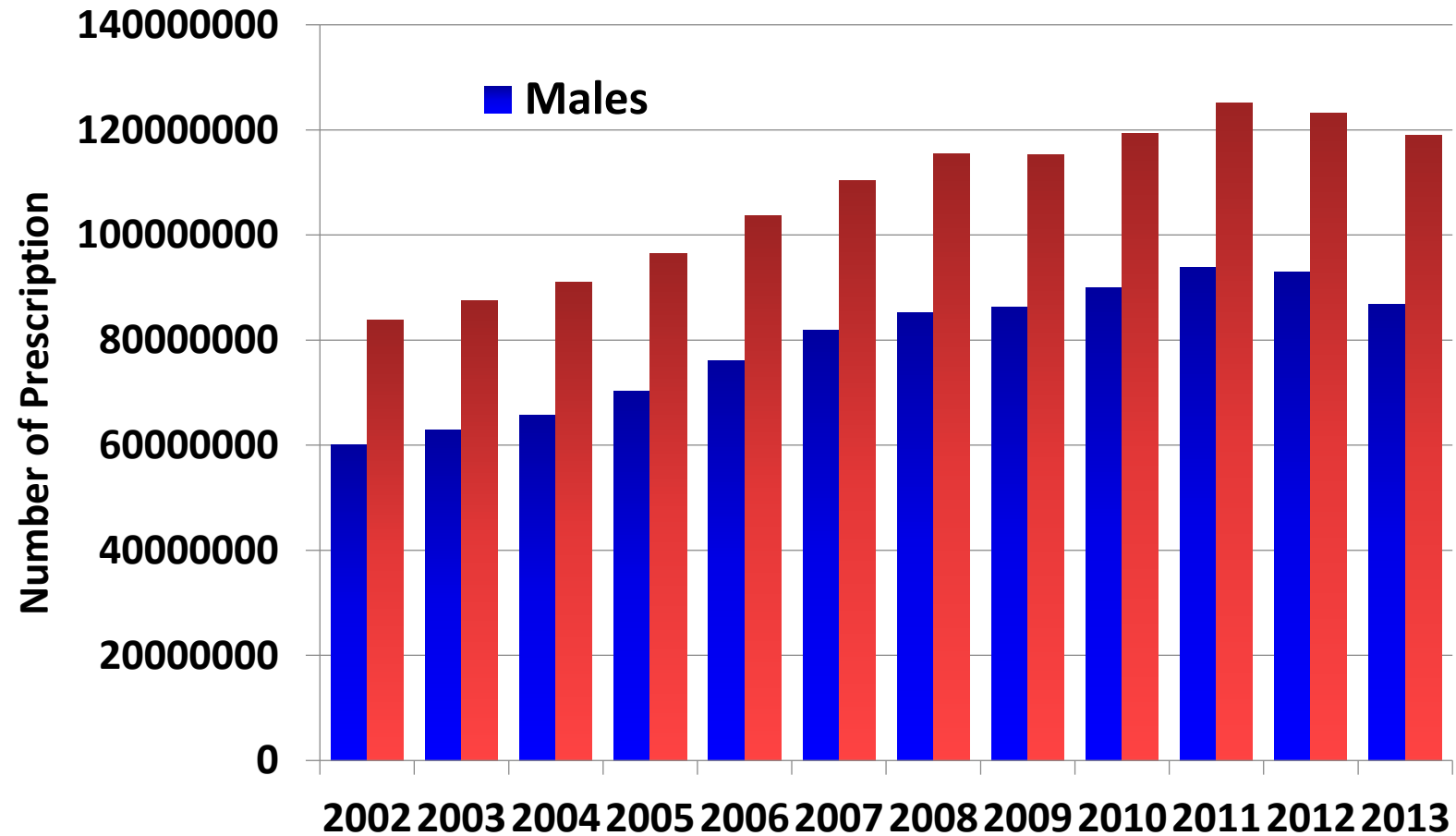
Source: SAMHSA Treatment Episode Data Set (TEDS), 2002-2012

SUD TX Admissions Aged 12 Or Older, 2012

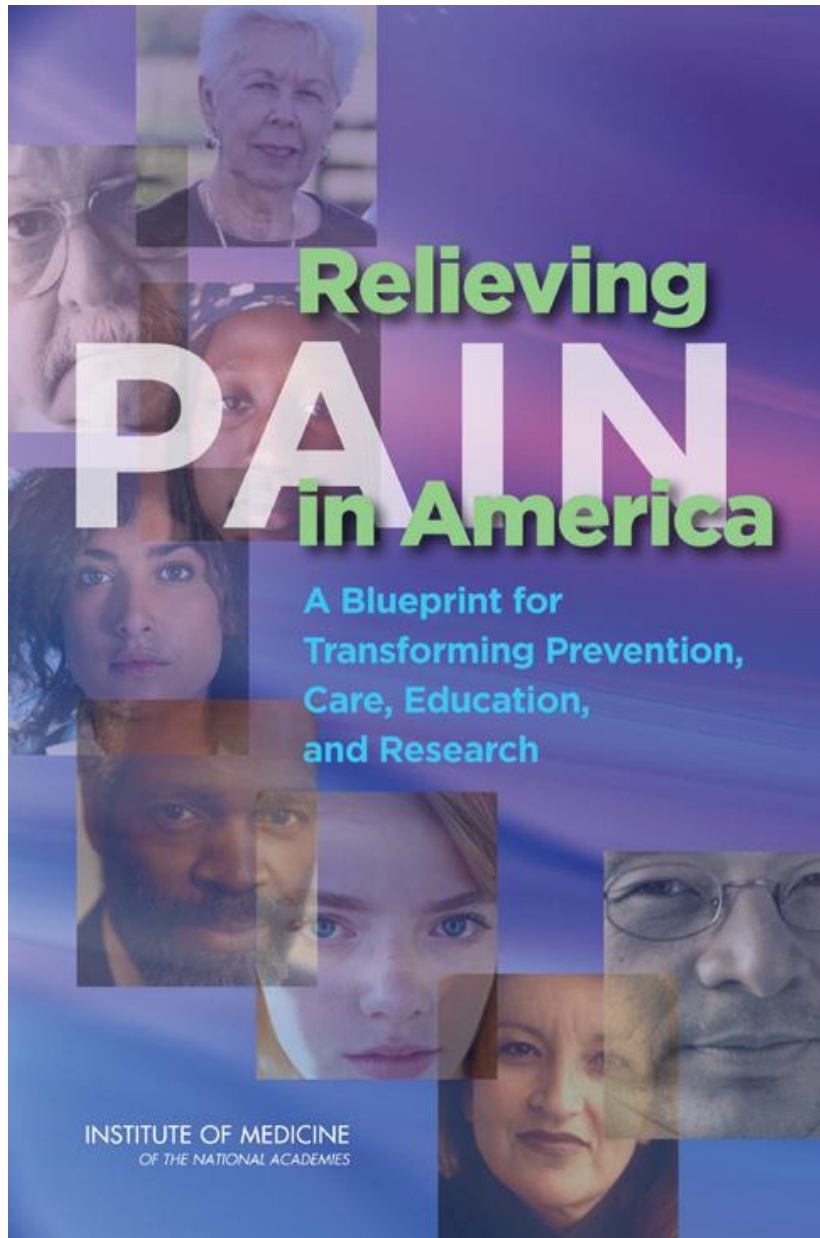


Note: percentages may not sum to 100 % due to rounding.
Source: SAMHSA, TEDS, 2012.

Number of Opioid Prescriptions from U.S. Retail Pharmacies, 2002-2013



Source: IMS Health, National Prescription Audit

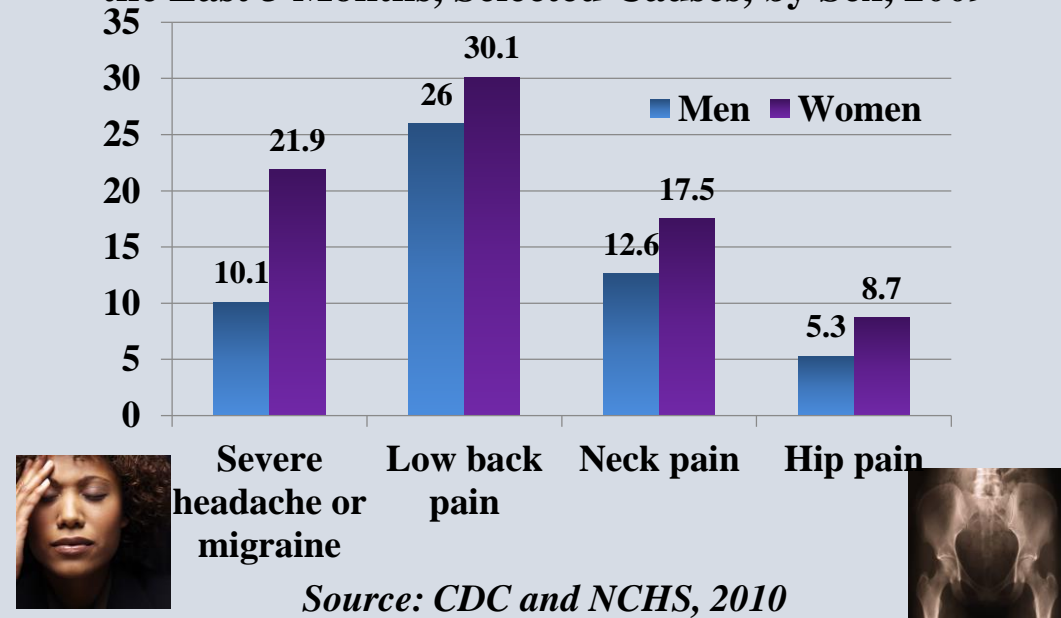


Recommendations included...

Addressing disparities in the experience of pain among subgroups of Americans

- Women appeared to suffer more pain in many categories

Age-Adjusted Rates of U.S. Adults Reporting Pain in the Last 3 Months, Selected Causes, by Sex, 2009



- Women's reports of pain were more likely to be dismissed

The Prescription Painkiller Problem Affects Women In Different Ways Than Men

- Women are more likely to have chronic pain, be prescribed prescription painkillers, be given higher doses, and use them for longer time periods than men
- Women may become dependent on prescription painkillers more quickly than men



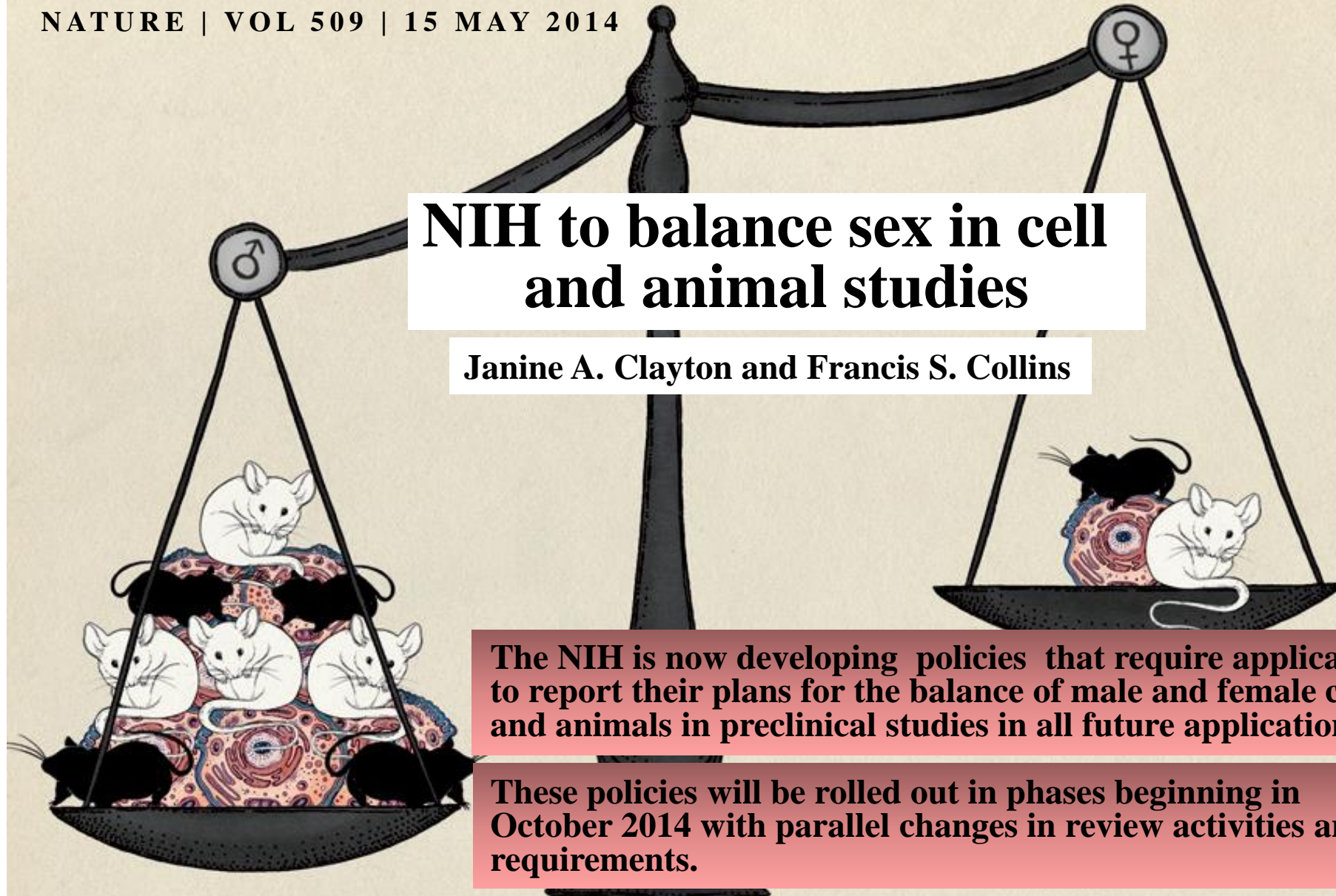
Source: CDC Vital Signs July 2013.

NIH to balance sex in cell and animal studies

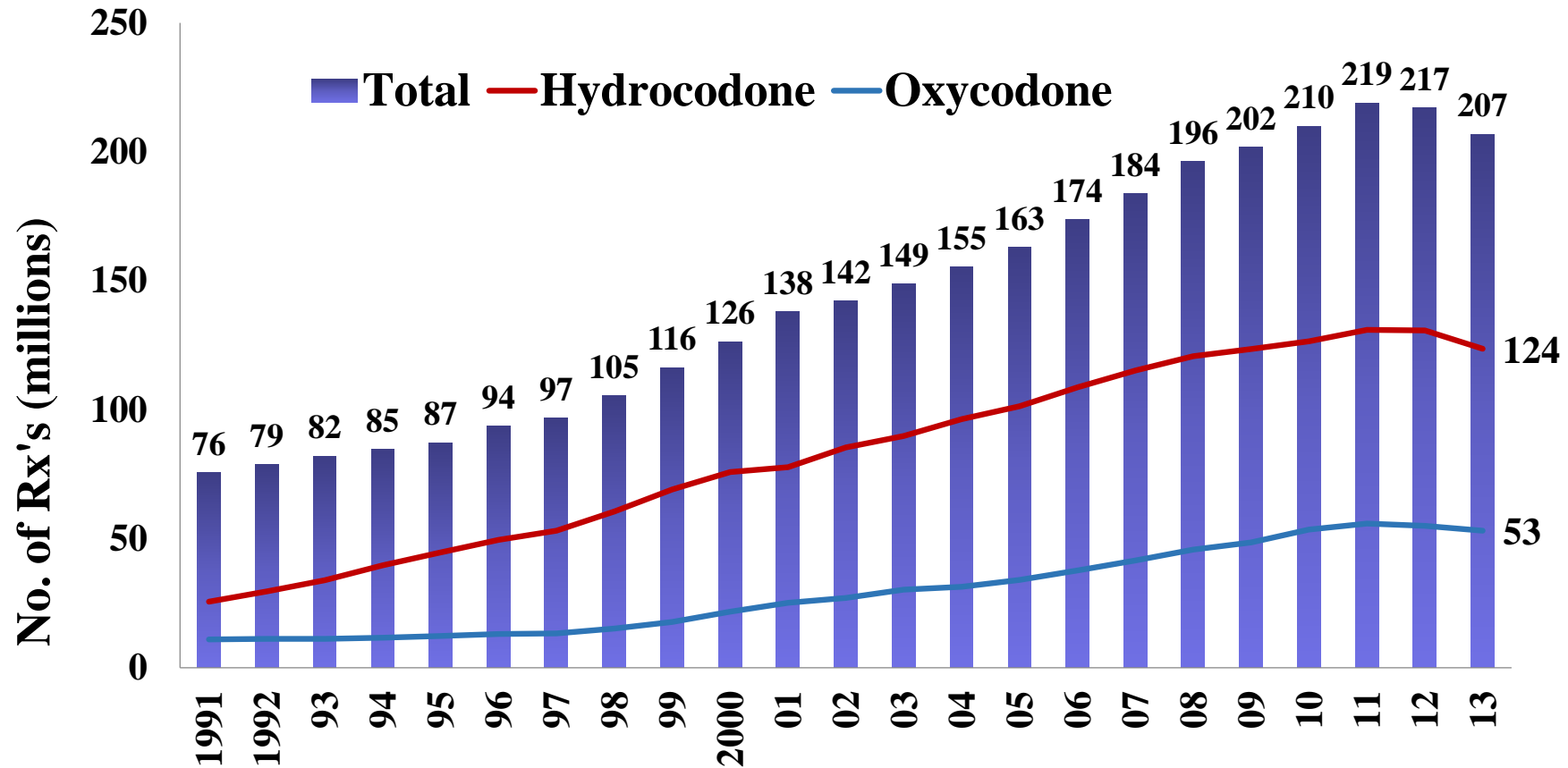
Janine A. Clayton and Francis S. Collins

The NIH is now developing policies that require applicants to report their plans for the balance of male and female cells and animals in preclinical studies in all future applications.

These policies will be rolled out in phases beginning in October 2014 with parallel changes in review activities and requirements.



Number of Opioid Prescriptions Dispensed by U.S. Retail Pharmacies, Years 1991-2013



IMS Health, Vector One: National, Years 1991-1996, Data Extracted 2014
IMS Health, National Prescription Audit, Years 1997-2013, Data Extracted 2014

Drugs Abuse During Pregnancy...



- **Affects prenatal and postnatal growth**
- **Increases the risk of developmental and behavioral deficits**

