



Twelve Year Prescribing Trends for Fifteen Different Opioid, Benzodiazepine, Amphetamine, and Barbiturate Prescription Drugs Correlated with Reports of Prescription Medication Abuse and Diversion

Twelve Year Prescribing Trends for Fifteen Different Opioid, Benzodiazepine, Amphetamine, and Barbiturate Prescription Drugs Correlated with Reports of Prescription Medication Abuse and Diversion

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Disclosure

- The presenters DO NOT have an interest in selling a technology, program, product, and/or service to CME/CE professionals.
- CDR Sean Belouin and Dr. Janine Cook have nothing to disclose with regard to commercial relationships.
- The content of this presentation does not relate to any product of a commercial interest. Therefore, there are no relevant financial relationships to disclose.

SAMHSA's Direction

➤ **Mission:** To reduce the impact of substance abuse and mental illness on America's communities.

➤ **8 Strategic Initiatives**

- **Prevention of Substance Abuse and Mental Illness**
- **Trauma and Justice**
- **Military Families—Active, Guard, Reserve, and Veteran**
- **Health Reform**
- **Housing and Homelessness**
- **Health Information Technology for Behavioral Health Providers**
- **Data, Quality, and Outcomes—Demonstrating Results**
- **Public Education and Support**

Learning Objectives

- Summarize the changes in physician prescribing practices, both in the number of prescriptions written and the number of extended units dispensed, over the previous 12 years.
- Correlate the 12-year historical prescription drug trending data with prescription drug abuse databases.
- Correlate the 12-year historical prescription drug trending data with the prescription drug diversion databases.
- Compare and contrast the age and gender of the intended prescription recipients with those who are abusing and diverting prescription medications.

Prescription Drugs Analyzed

- Prescription Drug Data: 1998-2009
- Prescription Drugs
 - Oxycodone, hydrocodone, methadone, Fentanyl, codeine, propoxyphene, alprazolam, lorazepam, diazepam, clonazepam, temazepam, amphetamine, methamphetamine, butalbital, and phenobarbital.
- Combined Brand/Generic Drug Data
 - Example: Percocet, Oxycontin, Endocet, Percodan, Tylox, Oxy-IR, and Oxy-Fast are several brand names containing oxycodone in addition to firms manufacturing generic oxycodone.

Sales Data

Why it is not used in this analysis

Drug Name	Retail Cost for #100 Tablets - CVS Pharmacy	Retail Cost for #100 Tablets - Giant Pharmacy	Retail Cost for #100 Tablets - Walmart Pharmacy
Hydrocodone / APAP 5 mg/500 mg	\$59.59 ~ \$ 0.60 per tablet	\$27.99 ~ \$ 0.28 per tablet	\$19.62 ~ \$ 0.20 per tablet
Alprazolam 1 mg	\$38.39 ~ \$ 0.38 per tablet	\$25.99 ~ \$ 0.26 per tablet	\$19.62 ~ \$ 0.20 per tablet
Lorazepam 1 mg	\$66.59 ~ \$ 0.67 per tablet	\$46.99 ~ \$ 0.47 per tablet	\$29.36 ~ \$ 0.29 per tablet
Lipitor 20 mg	\$485.99 ~ \$ 4.86 per tablet	\$425.99 ~ \$ 4.26 per tablet	\$410.36 ~ \$ 4.10 per tablet

- Retail cost acquired from: CVS Pharmacy; Giant Pharmacy; Walmart Pharmacy; Germantown, MD: 8/23/2008.

- Lipitor ranked #3 in terms of prescription drug volume in 2007 with 55.1 million prescriptions. SDI Vector One®: Year 2007, Extracted 8/25/2008.

- Lipitor ranked #1 in terms of manufacturer drug sales in 2007 with 8.1 billion in sales.

- http://www.pharmacytimes.com/issues/articles/2008-05_003.asp (courtesy of IMS Health)

- Lipitor ranked #1 in terms of manufacture drug sales in 2009 with 5.36 billion in sales (IMS Health)

Analysis Breakdown

- **Drug strength**
 - Example: hydrocodone: 2.5 mg, 3.5 mg, 4.5 mg, 5 mg, 7 mg, 7.5 mg, 10 mg
- **Total number of prescriptions**
 - For each drug
 - Each year: 1998-2009
- **Demographics for prescribing**
 - Men
 - Women
 - Age ranges using 10 year intervals
- **Total volume of drug dispensed**
 - For each drug (tablets, capsules, patches, ml, etc., referred to as 'extended units')
 - Each year: 1998-2009

Surveillance Data, Inc. (SDI) Vector One[®] National (VONA)

- **SDI Vector One[®]**
 - Measures dispensing of prescriptions
 - Information on physician specialty, patient's age and gender, and estimates for numbers of patients continuing or beginning new therapy.
 - Integrates prescription activity from a variety of sources
 - Retail chains, mass merchandisers, mail order pharmacies, pharmacy benefit managers, provider groups.
 - Receives over 2 billion prescription claims a year, representing over 160 million unique patients.
 - Prescriptions captured from a sample of 59,000 pharmacies throughout U.S.
 - Pharmacies in data base account for nearly all retail pharmacies and represent nearly half of retail prescriptions dispensed nationwide.
 - Receives all prescriptions from ~ 1/3 of stores and significant sample of prescriptions from remaining stores.

IMS National Sales Perspectives: Retail and Non-Retail

- **IMS National Sales Perspectives**
 - Measures prescription drug sales data and market share
 - Data based on national sales projections and outlets within retail and non-retail markets
 - Retail market
 - Chain drug stores
 - Independent drug stores
 - Mass merchandisers
 - Food stores
 - Mail service
 - Non-retail market
 - Clinics
 - Non-federal hospitals
 - Federal facilities
 - HMOs
 - Long-term care facilities
 - Home health care
 - Other miscellaneous settings

Channels of Distribution for Selected Prescription Drugs

- Sales data for oxycodone, hydrocodone, methadone, codeine, propoxyphene, alprazolam, lorazepam, diazepam, clonazepam, temazepam, amphetamine, methamphetamine, butalbital, and phenobarbital by number of tablets, capsules, and mLs sold in year 2009 indicate that the majority of distribution is toward outpatient pharmacy settings* (73% or greater).
- The only exception is with Fentanyl in which 20% of distribution is toward outpatient pharmacy settings while 79% is toward inpatient settings.

**Outpatient pharmacy settings: chain, independent, food stores with pharmacies, and mail order pharmacies. Mail order distribution accounted for approximately less than 9% for all of the manufacturers of selected prescriptions drugs. Mail order data are not included in this analysis.*

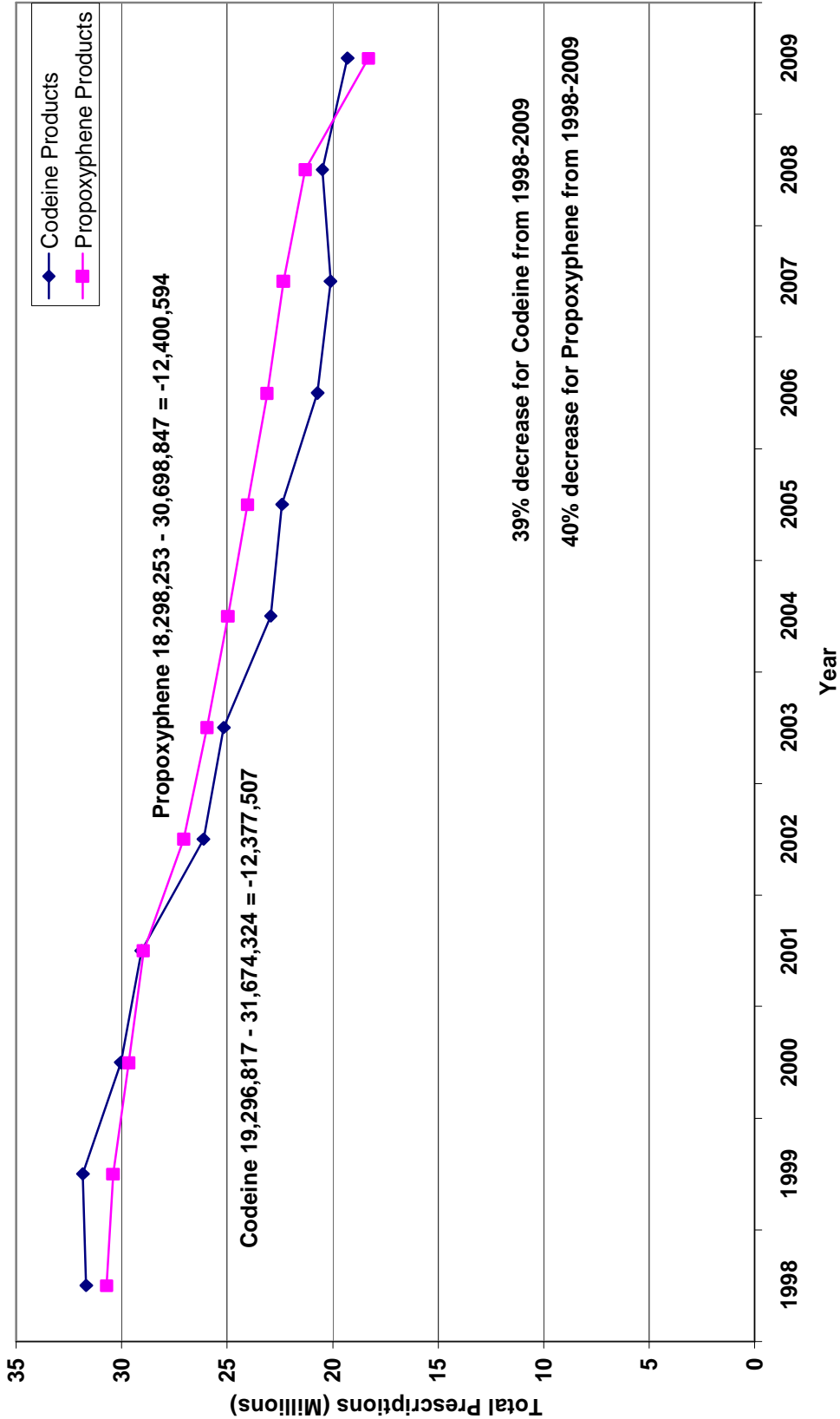
Typical Stock Bottles in Retail Pharmacy

- **CVS Pharmacy**
 - Hydrocodone 5 mg/APAP 500 mg: 500 count
 - Alprazolam 1 mg: 500 count
 - Lorazepam 1 mg: 1000 count
- **Giant Pharmacy**
 - Hydrocodone 5 mg/APAP 500 mg: 500 count
 - Alprazolam 0.25 mg & 0.5 mg: 500 count
 - Lorazepam 1 mg: 500 count
- **Walmart Pharmacy**
 - Hydrocodone 5 mg/APAP 500 mg: 500 count
 - Lorazepam 1 mg: 500 count

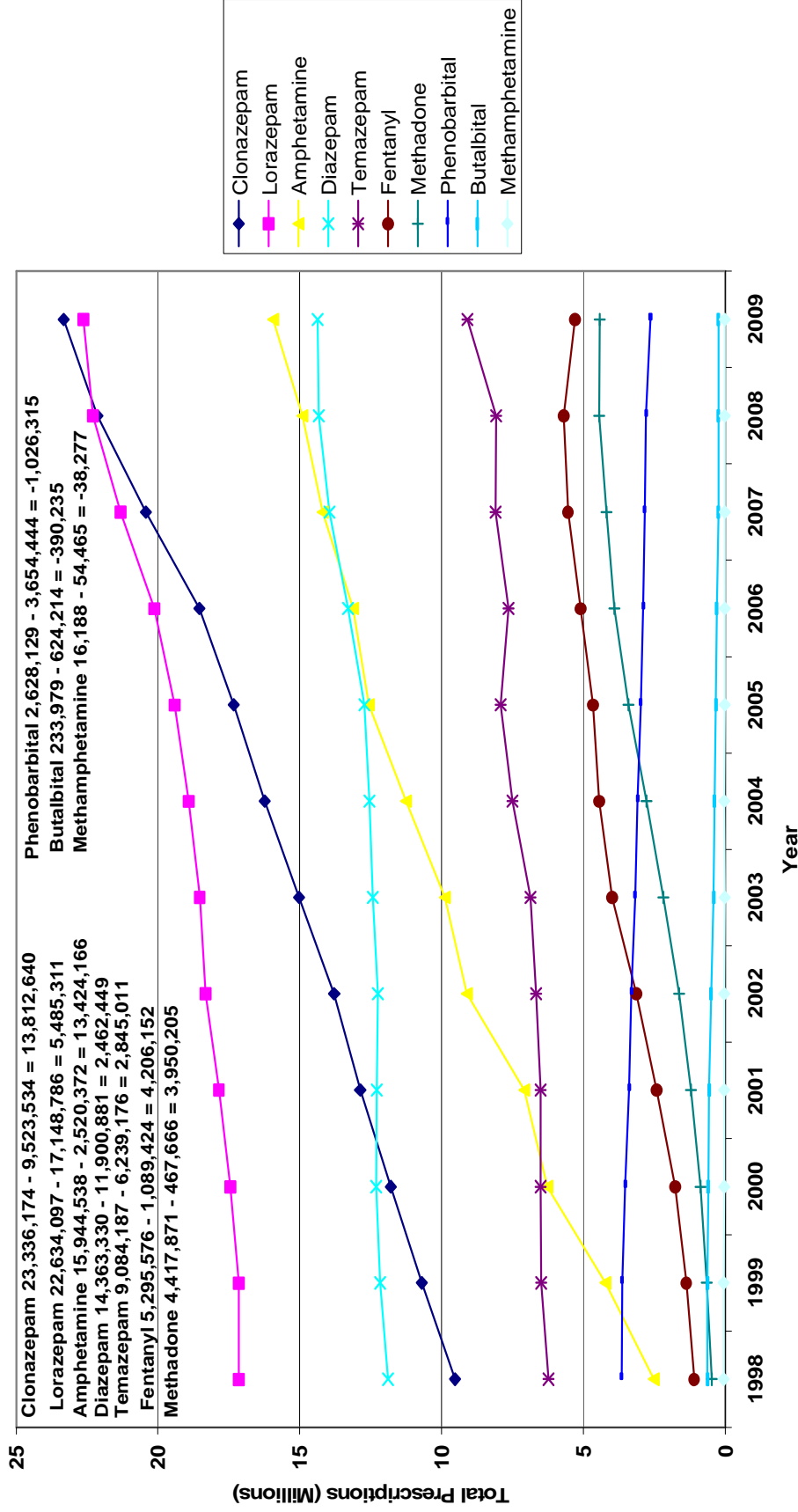
Stock bottle inventory information acquired from:
CVS Pharmacy; Giant Pharmacy; Walmart Pharmacy; Germantown, MD



Total Number of Dispensed Prescriptions for CODEINE and PROPOXYPHENE Containing Products Through U.S. Outpatient Retail Pharmacies, 1998-2009

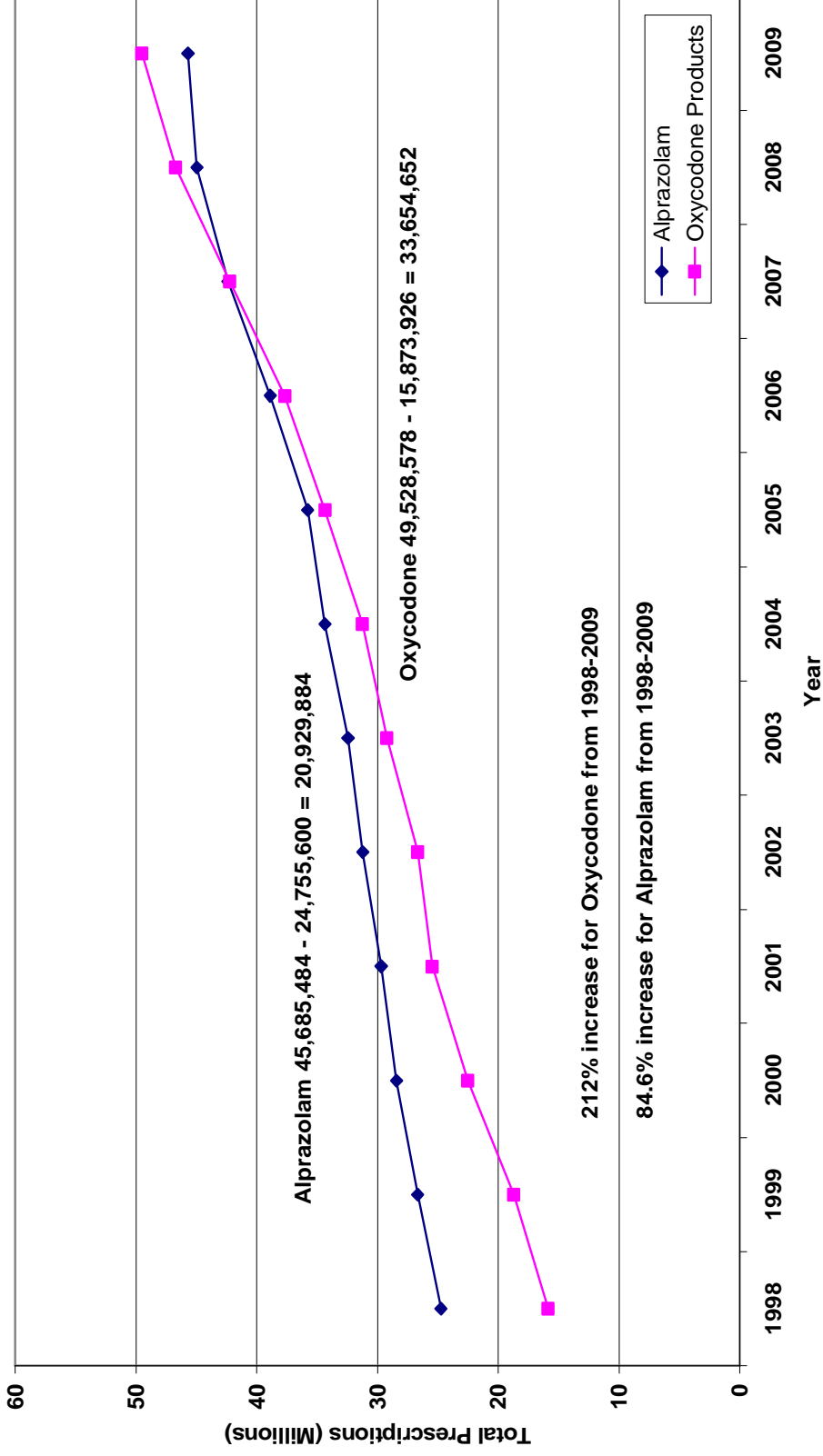


Total Number of Dispensed Prescriptions for Selected Agents Through U.S. Outpatient Retail Pharmacies, 1998-2009



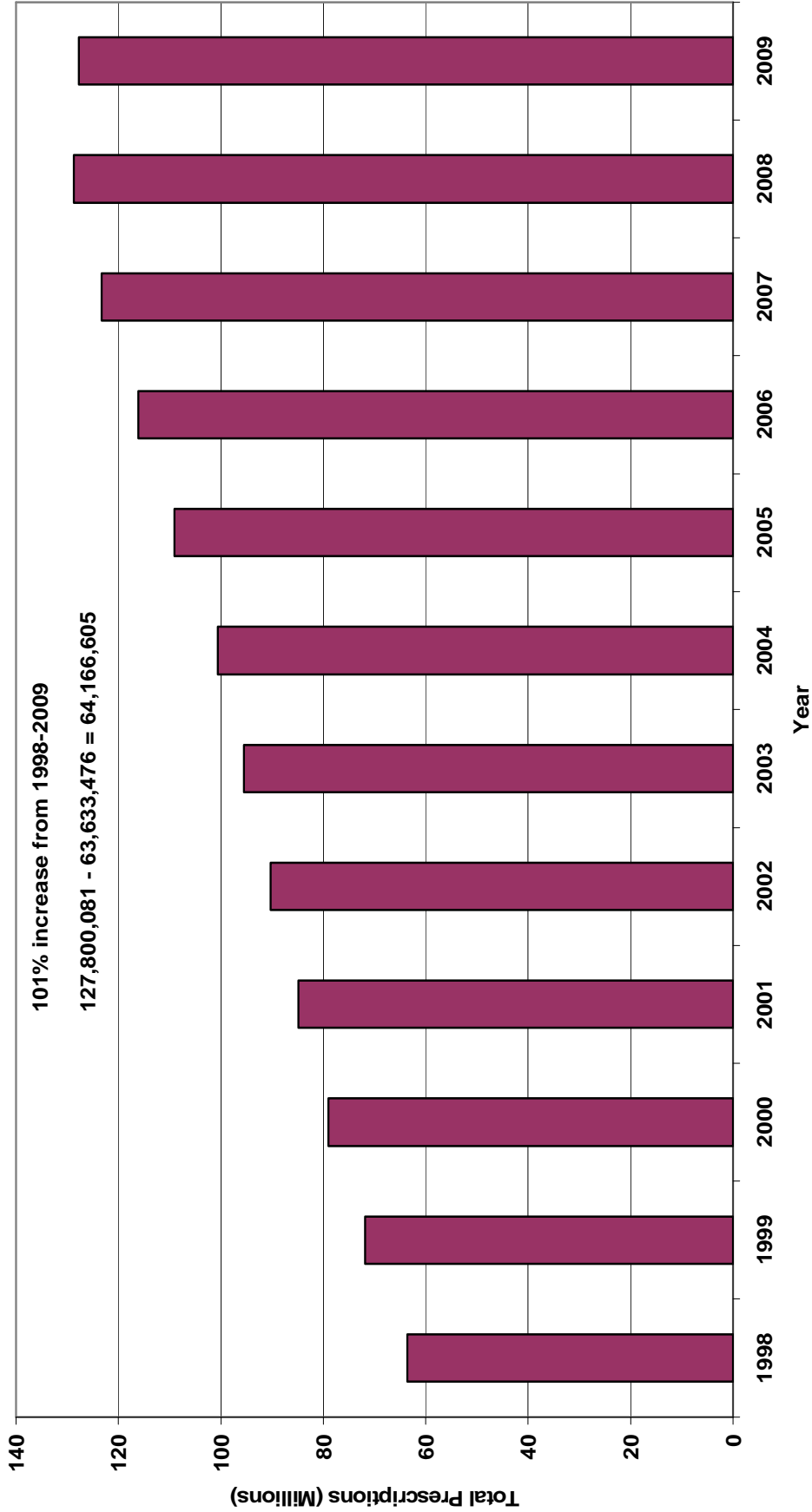
- Dispensed prescriptions for methadone have increased by approximately 845% from 1998 to 2009.
- 533% increase for amphetamine, 386% increase for Fentanyl, 145% increase for clonazepam, 46% increase for temazepam, 32% for lorazepam, and 21% increase for diazepam.
- 70% decrease for methamphetamines, 63% decrease for butalbital, and 28% decrease for phenobarbital.

Total Number of Dispensed Prescriptions for OXYCODONE Containing Products and ALPRAZOLAM Through U.S. Outpatient Retail Pharmacies, 1998-2009



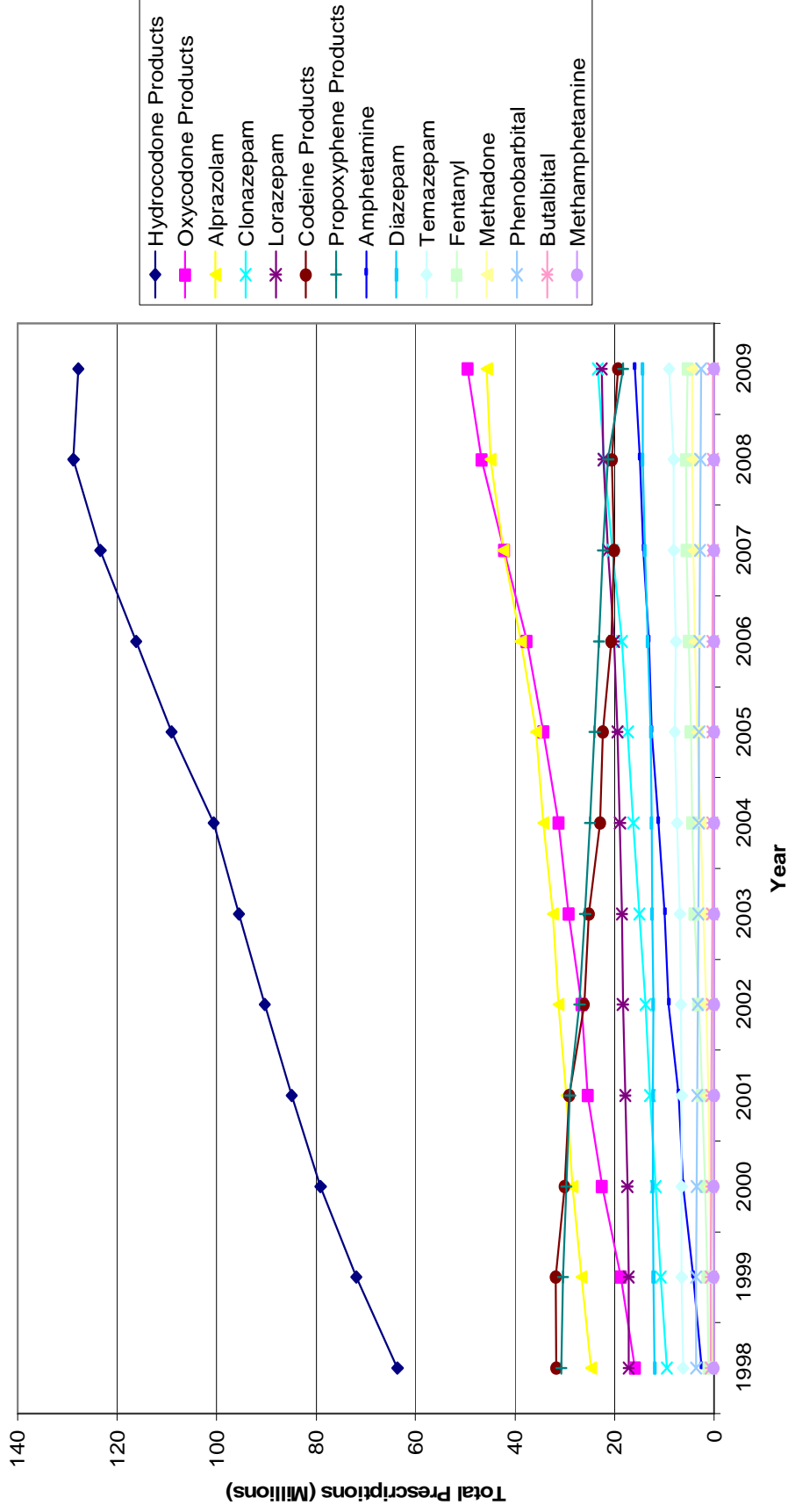
- Oxycodone prescriptions increased by 212% from 1998 to 2009 and alprazolam increased by 85% in the same period.

Total Number of Dispensed Prescriptions for HYDROCODONE Containing Products Through U.S. Outpatient Retail Pharmacies, 1998-2009



- 101% increase in prescriptions of hydrocodone being dispensed from 1998 to 2009.

Total Number of Dispensed Prescriptions for Various Agents Through U.S. Outpatient Retail Pharmacies, 1998-2009

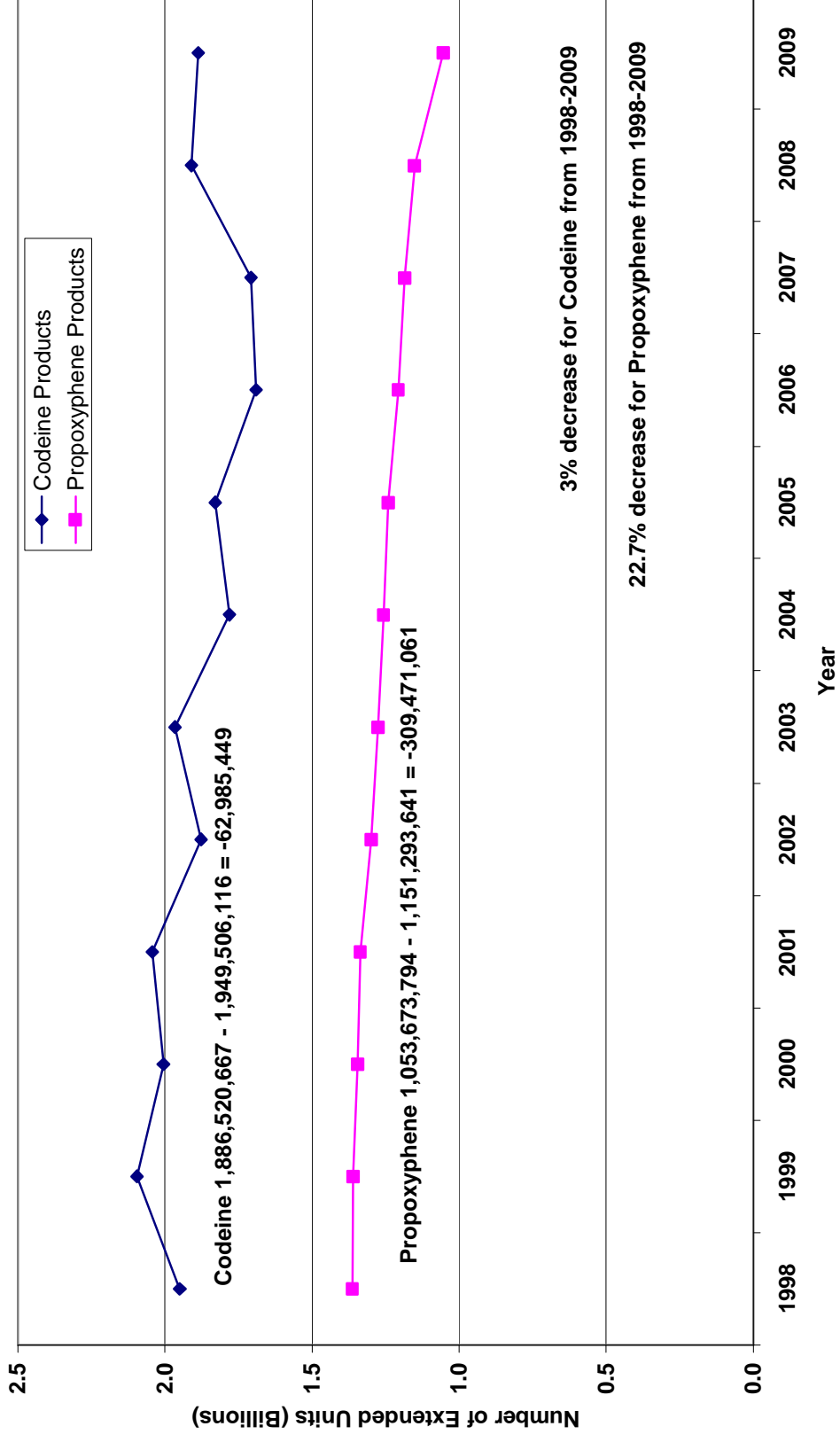


- Of the selected agents, products containing hydrocodone were the top dispensed in the U.S. from 1998-2009.
- Dispensed prescriptions for methadone have increased by approximately 845% followed by amphetamine, Fentanyl, oxycodone, clonazepam, and hydrocodone at 533%, 386%, 212%, 145%, and 101%, respectively from 1998 to 2009.

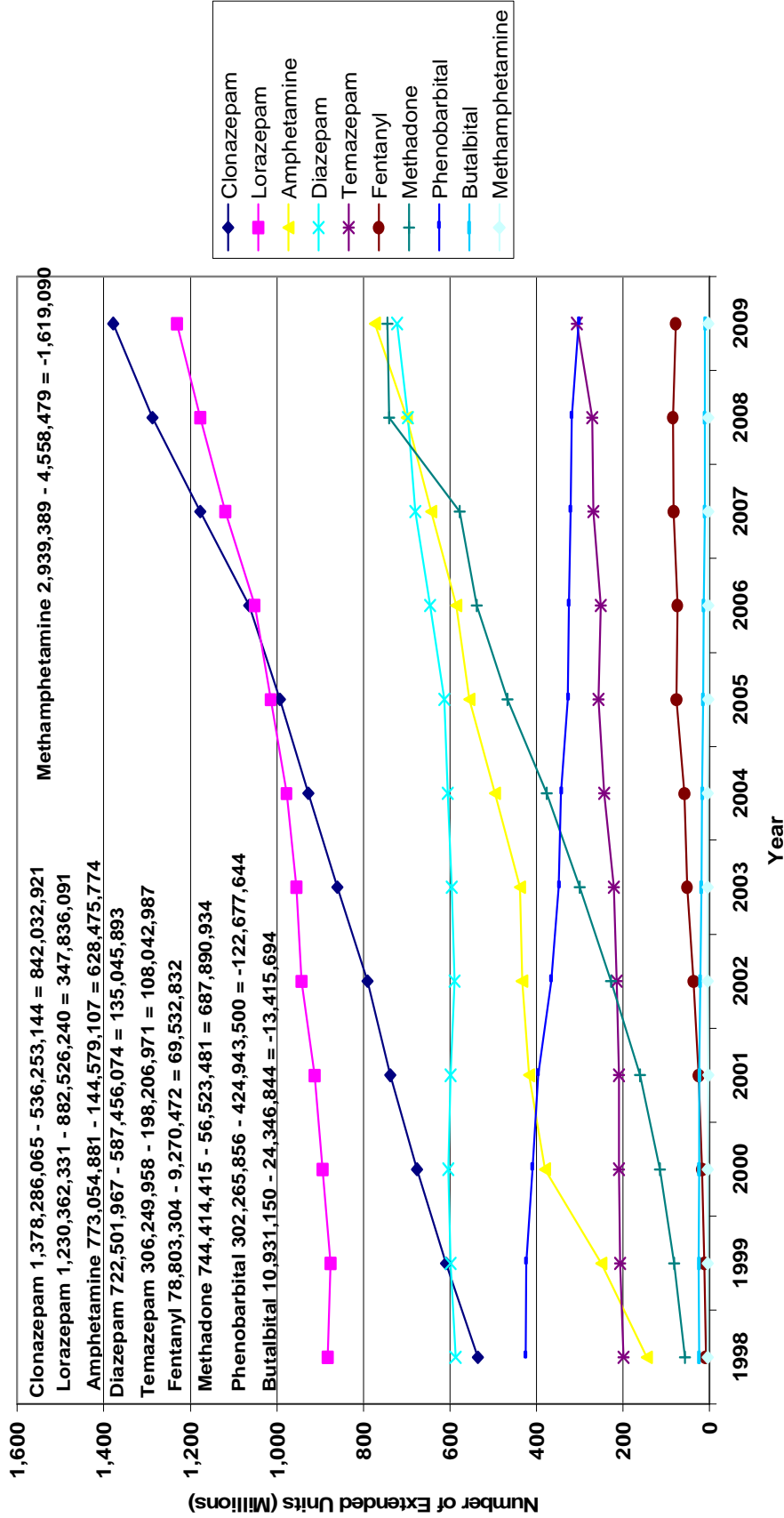
Age and Gender of the Intended Prescription Recipients for 2009

Prescription Drug	Majority Age Range (years)	Ratio Female : Males
Alprazolam	51-60 (both)	2.1
Amphetamine	21-30 (females) 11-20 (males)	0.9
Butalbital	41-50 (females) 51-60 (males)	3.8
Clonazepam	51-60 (both)	1.8
Codeine	51-60 (both)	1.7
Diazepam	51-60 (both)	1.5
Fentanyl	71+ (females) 51-60 (males)	1.9
Hydrocodone	51-60 (both)	1.4
Lorazepam	71+ (females) 51-60 (males)	2.3
Methadone	51-60 (both)	1.0
Methamphetamine	51-60 (both)	0.8
Oxycodone	41-50 (females) 51-60 (males)	1.1
Phenobarbital	0-10 (both)	1.0
Propoxyphene	61-70 (females) 71+ (males)	2.5
Temazepam	71+ (both)	1.7

Total Number of Extended Units (Tablets, Capsules) Dispensed for CODEINE and PROPOXYPHENE Containing Products Through U.S. Outpatient Retail Pharmacies, 1998-2009

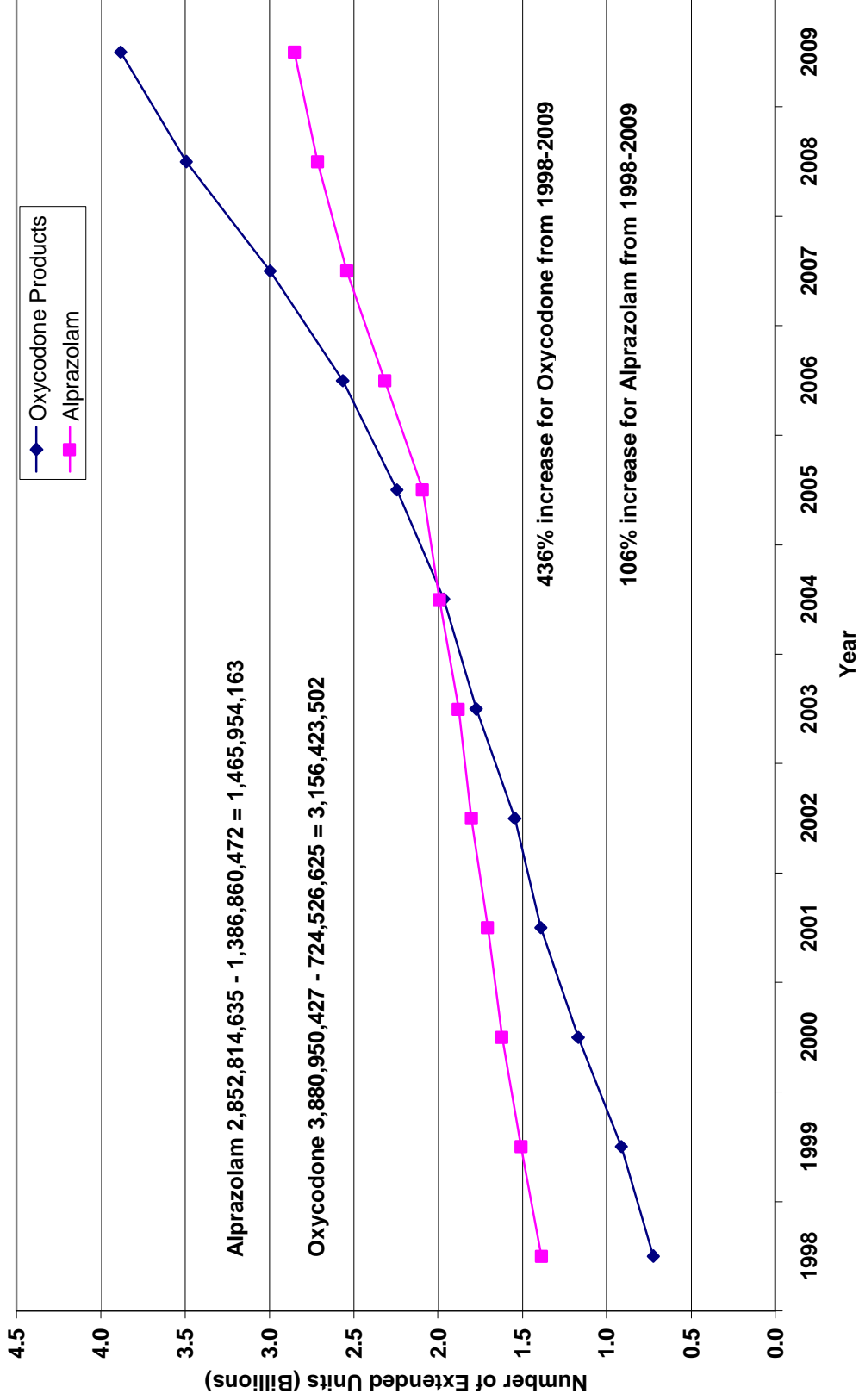


Total Number of Extended Units (Tablets, Capsules) Dispensed for Selected Agents Through U.S. Outpatient Retail Pharmacies, 1998-2009

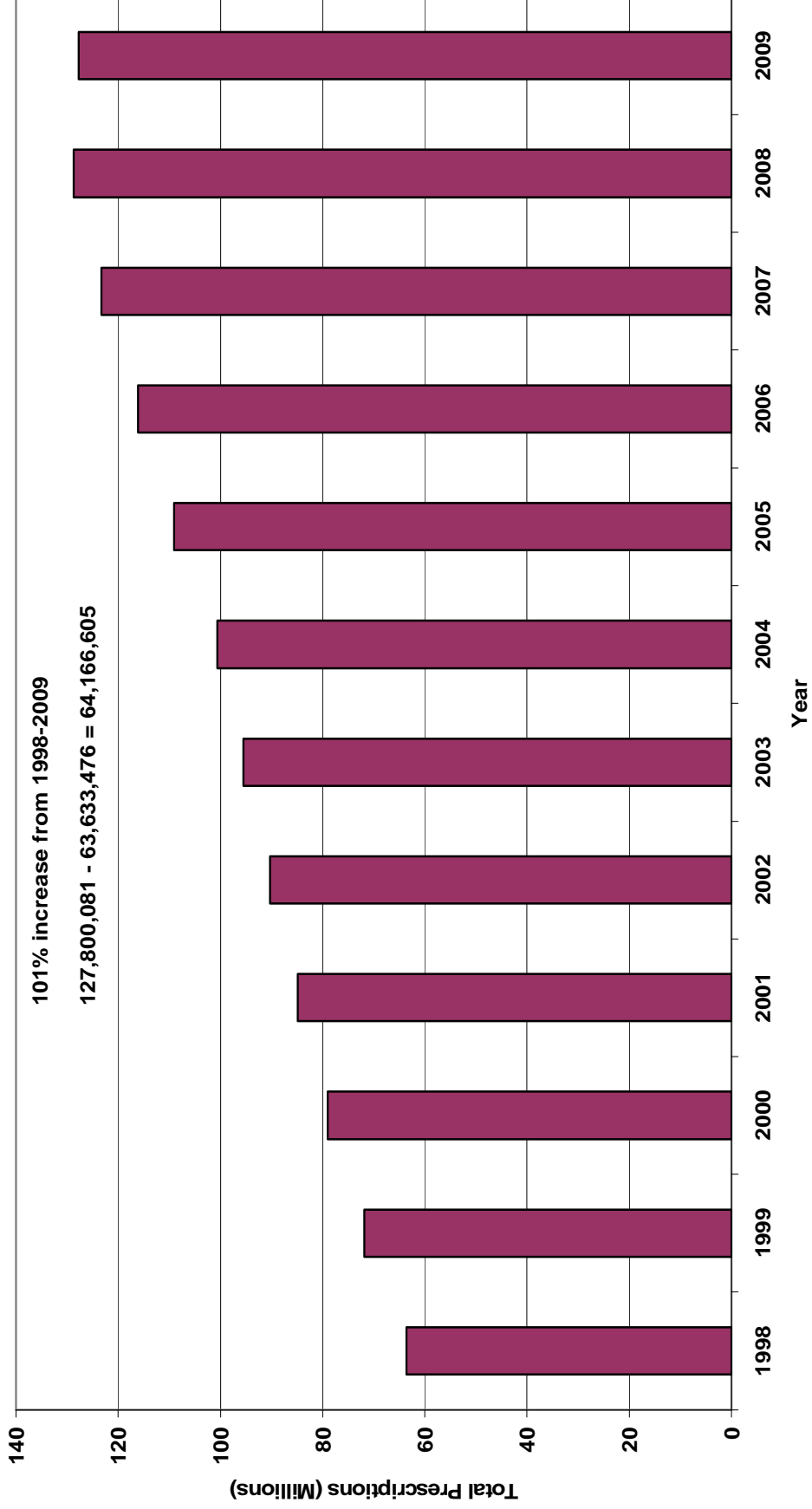


- Number of extended units being dispensed for methadone has increased by approximately 1217% from 1998 to 2009.
- 750% increase for Fentanyl, 435% increase for amphetamines, 157% increase for clonazepam, 55% increase for temazepam, 39% increase for lorazepam, and 23% increase for diazepam.
- 55% decrease for butalbital, 36% decrease for methamphetamine, and 29% decrease for phenobarbital.

Total Number of Extended Units (Tablets, Capsules) Dispensed for OXYCODONE Products and ALPRAZOLAM Through U.S. Outpatient Retail Pharmacies, 1998-2009

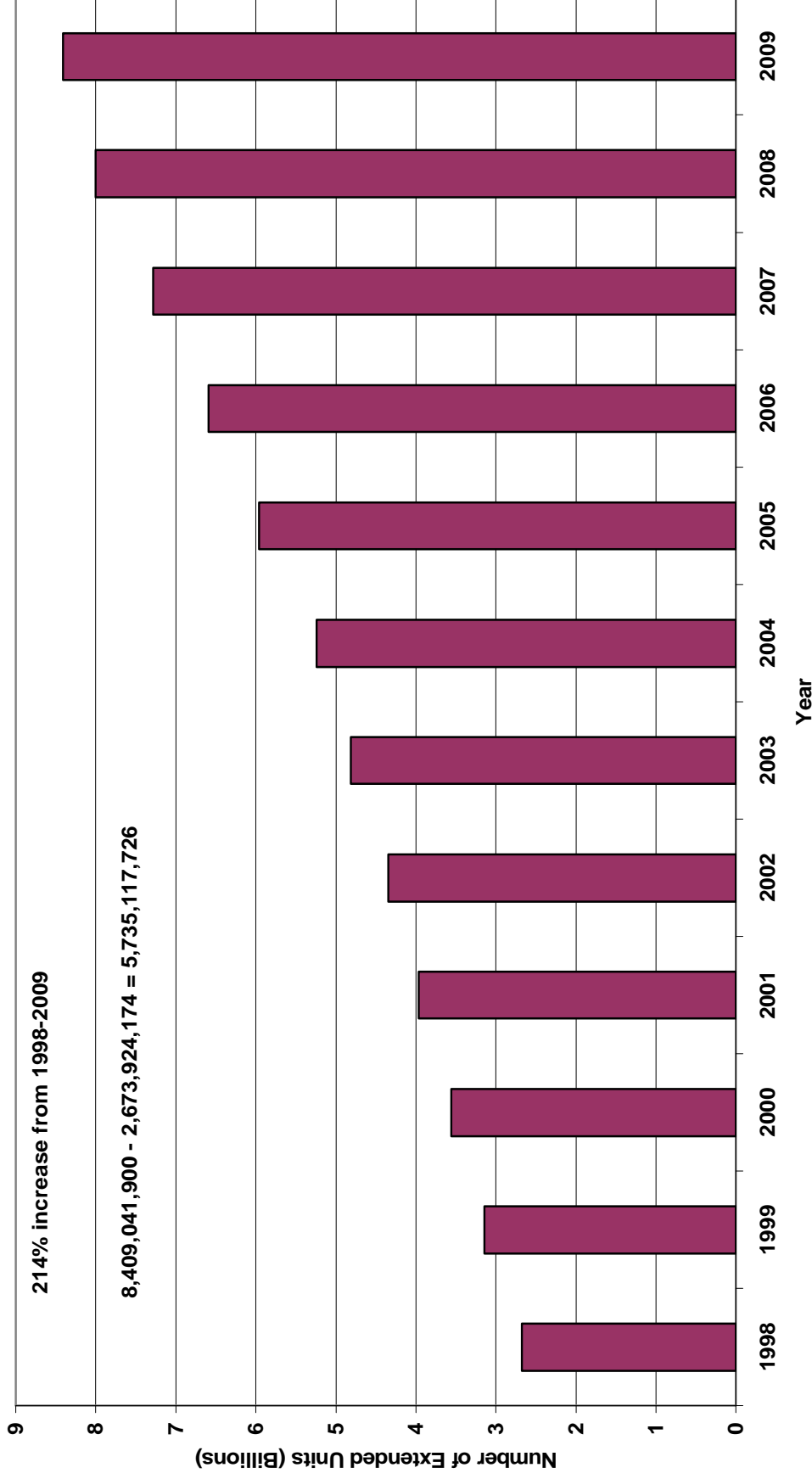


Total Number of Dispensed Prescriptions for HYDROCODONE Containing Products Through U.S. Outpatient Retail Pharmacies, 1998-2009



- 101% increase in prescriptions of hydrocodone being dispensed from 1998 to 2009.

Total Number of Extended Units (Tablets, Capsules) Dispensed for HYDROCODONE Containing Products Through U.S. Outpatient Retail Pharmacies, 1998-2009



- 214% increase in number of extended units of hydrocodone being dispensed from 1998 to 2009.

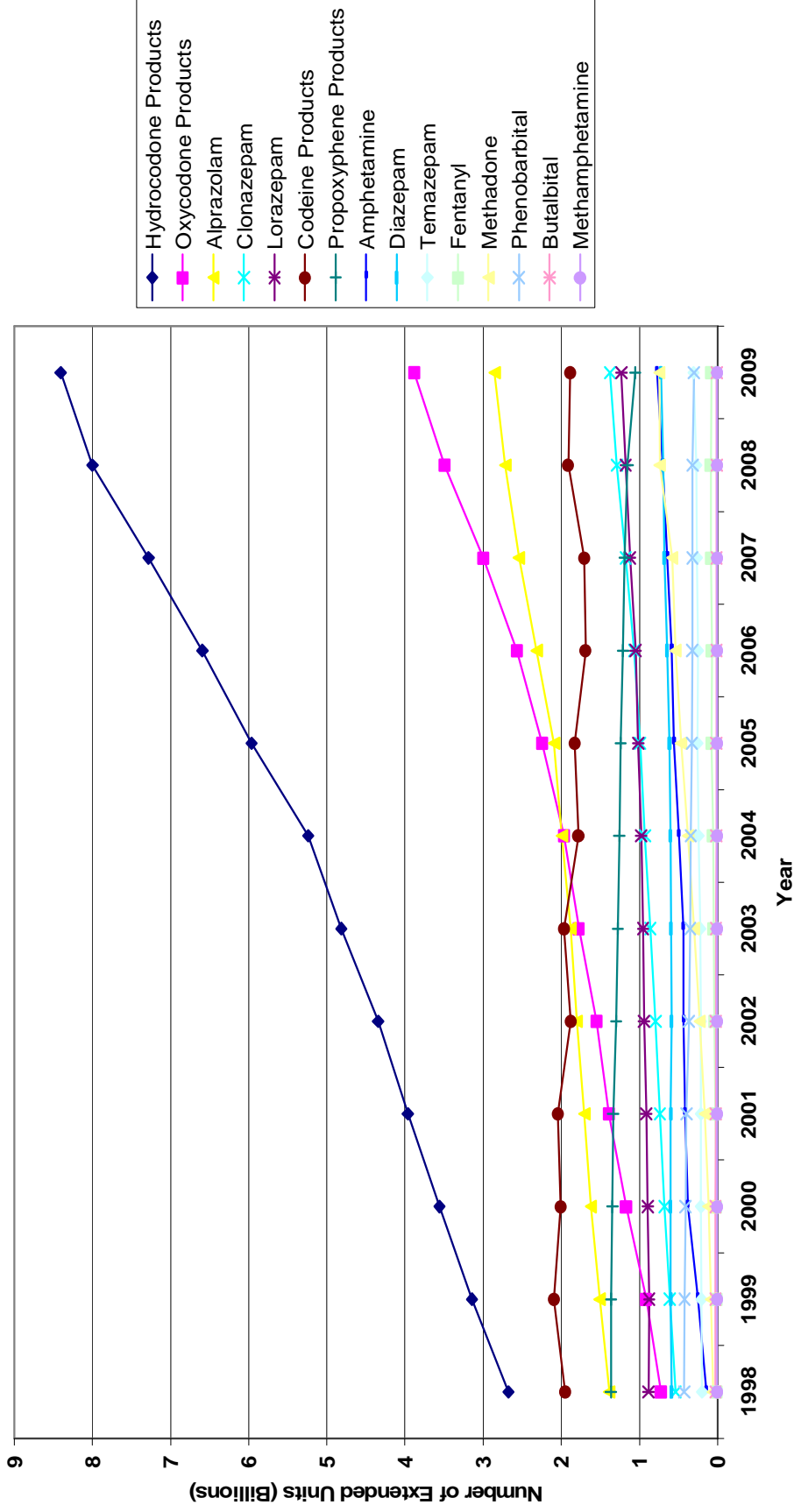
Rank of Selected Prescription Drugs in Market based on Prescription Volume for Year 2009

Drug	Rank
Hydrocodone w/ APAP	1
Lisinopril	2
Simvastatin	3
Alprazolam	9
Oxycodone w/ APAP	19
Clonazepam	31
Lorazepam	33
Propoxyphene/APAP	46
Diazepam	56
Temazepam	91
Amphetamine Salt Combo	115
Codeine w/ promethazine	144
Fentanyl Transdermal	169
Methadone	175
Butalbital/APAP/Caffeine	180
Phenobarbital	257
Methamphetamine	not listed

Source: SDI Vector One®: National. Extracted 2/25/10. File: VONA 2010-24 Top Drugs Dispensed 2-25-10.xls

- **Hydrocodone/APAP is the number one dispensed prescription drug out of 7829 based on prescription volume for year 2008.**
- **In year 2009, over 120 million prescriptions were dispensed for hydrocodone/APAP followed by lisinopril with 74.5 million and 73 million for simvastatin.**

Total Number of Extended Units (Tablets and Capsules) Dispensed for Various Agents Through U.S. Outpatient Retail Pharmacies, 1998-2009



- Hydrocodone products are the most commonly dispensed in terms of extended units.
- Dispensed extended units of hydrocodone products, oxycodone products, and alprazolam have gradually increased over the past 12 years.



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