


Tufts Health Care Institute  
The Role of Dentists in Preventing Opioid Abuse  
March 11-12, 2010

## Standard Prescribing Practices of Opioid Analgesics in Dentistry

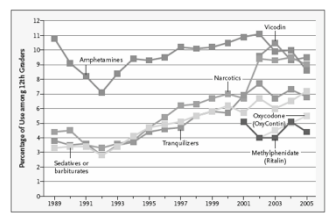


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## Monitoring the Future

Monitoring the Future, National Survey Results on Adolescent Drug Use, 2005.



Prevalence of Use of Prescription Drugs without Medical Supervision among 12th Graders.

Richard A. Friedman, NEJM 354:14, 2006

Monitoring the Future, 2008. Vicodin use among 12<sup>th</sup> graders = 9.7%

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## CEDAR Substance Use Rates: Age 19

HAR = High Average Risk  
LAR = Low Average Risk

Substance	Lifetime Drug Use Rates	
	HAR	LAR
Caffeine drinks	96.9%	96.8%
Beer	83.4%	77.8%
Smoking Tobacco	62.8%	54.0%
Cannabis	70.4%	47.2%
Chewing Tobacco	26.5%	16.1%
Caffeine Pills	19.3%	16.5%
Prescription Painkillers	16.6%	9.3%

Center for Education and Drug Abuse Research: CEDAR  
Ralph E. Tarter, PhD. Unpublished data from project P50 DA05605.

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## Agency for Healthcare Research and Quality

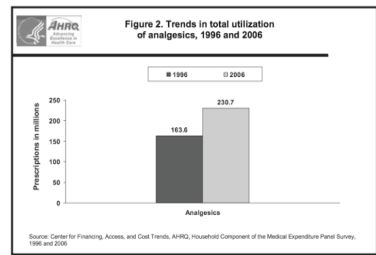


Figure 2. Trends in total utilization of analgesics, 1996 and 2006

Source: Center for Financing, Access, and Cost Trends, AHRQ, Inpatient Component of the Medical Expenditure Panel Survey, 1996 and 2006.

Stagnitti, M. N. Trends in Outpatient Prescription Analgesics Utilization and Expenditures for the U.S. Civilian Noninstitutionalized Population, 1996 and 2006. Statistical Brief #235, February 2009.

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## Heath Ledger's Overdose

- ✓ Feb 6, 2008 -- A deadly cocktail of mostly prescription drugs killed Heath Ledger.
- ✓ The deadly drug cocktail included:
  - Oxycodone, also known under brand name OXYCOTIN, a potent painkiller.
  - Hydrocodone, an ingredient in VICODIN, other painkillers, and some cough suppressants.
  - Diazepam or VALIUM, an antianxiety drug sometimes prescribed as a muscle relaxant
  - Alprazolam or XANAX, prescribed for panic attacks
  - Temazepam or RESTORIL, prescribed for insomnia

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## Comprehensive National Survey

- Random national sample
- Current practicing OMFS
- 3rd molar extractions
- Pain control practices



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## Why Third Molar Extractions?

- ✓ Most common surgical procedure in dentistry.
- ✓ Healthy population of young adults having a median age = 20 (IQ 18-24).\*
- ✓ Generally requires sedation/anesthesia and postoperative analgesics.
- ✓ Oral and Maxillofacial Surgeons (OMFS) serve as the Knowledge Opinion Leaders regarding patient care for general dental practitioners.
- ✓ Studied frequently in outpatient analgesic RCTs: Third molar pain model.\*\*

\*Cooper SA et al.  
\*\*Snyder M. et al JOMS 2005

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## Therapeutic Topics of Interest

- ✓ Anesthesia Practices
  - General Anesthesia
  - Intravenous Conscious Sedation
  - N2O/O2 Inhalational Sedation
  - Oral Sedation
- ✓ Preferred Agents
  - Anesthetics and Sedatives
  - Local Anesthetics
    - Surgical and Post-op pain management
  - Antibiotics and Corticosteroids
  - Post-operative Analgesics
    - Peripherally and Centrally-Acting

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## Questionnaire Design

- Random national sample of 850 currently active practicing oral and maxillofacial in U.S. (5,542)\*
- Survey included practitioners from 9 geographic census regions.
- Questionnaire designed with expert panel and pilot testing.
- Initial and two follow-up mailings.

\*ADA Survey Center's Distribution of Dentists in the United States by Region and State, 2000.

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## U.S. Census Regions

New England: CT, ME, NH, RI, VT, MA  
 Middle Atlantic: NJ, NY, PA  
 South Atlantic: DE, DC, FL, GA, MD, NC, SC, VA, WV  
 East South Central: AL, KY, MS, TN  
 East North Central: IL, IN, MI, OH, WI  
 West North Central: IA, KS, MN, MO, NE, ND, SD  
 West South Central: AR, LA, OK, TX  
 Mountain: AZ, CO, ID, MT, NV, NM, UT, WY  
 Pacific: AK, CA, HI, OR, WA

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## Participants Demographics

Characteristic	Mailed	Returned
# Oral Surgeons	850	563*
Male/Female	820/30	548/15
Mean Age ( $\pm$ s.e.)	53.0 ( $\pm$ 3)	52.8 ( $\pm$ 4)
Graduation Date	1978	1978

\*Response rate = 66.2%



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## Third Molar Surgeries/Year

"On average, how many third molar extraction surgery cases do you perform each month?" **Patients/Month**

Geographic Region	Cases/Month	# OMFS	Cases/year
New England:	44.9 ( $\pm$ 4.9)	416	224,141
Middle Atlantic:	46.8 ( $\pm$ 3.4)	1,061	595,858
South Atlantic:	51.2 ( $\pm$ 3.0)	996	611,942
East South Central:	45.9 ( $\pm$ 6.7)	294	161,935
East North Central:	54.1 ( $\pm$ 3.5)	875	568,050
West North Central:	68.5 ( $\pm$ 4.8)	329	270,438
West South Central:	48.9 ( $\pm$ 3.9)	496	291,053
Mountain:	66.5 ( $\pm$ 6.1)	298	237,804
Pacific:	55.7 ( $\pm$ 3.7)	777	519,347
<b>U.S. Overall</b>	<b>52.7 (<math>\pm</math> 1.4)</b>	<b>5,542</b>	<b>3,504,761</b>

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## Outpatient Anesthesia Modalities

“How often do you use the following anesthetic modalities for pain and anxiety control when extracting third molars?”

Geographic Region	GA*	IV CS*	Oral	N2O*	Local*
<b>New England:</b>	52.1%	26.8%	2.2%	8.0%	11.2%
<b>Middle Atlantic:</b>	39.1%	27.0%	2.5%	9.3%	22.2%
<b>South Atlantic:</b>	38.0%	40.4%	2.2%	6.2%	13.5%
<b>East South Central:</b>	48.4%	44.2%	0.1%	2.2%	3.3%
<b>East North Central:</b>	45.2%	36.4%	0.6%	6.1%	12.3%
<b>West North Central:</b>	52.1%	27.3%	2.6%	5.8%	11.9%
<b>West South Central:</b>	39.6%	48.5%	2.4%	2.4%	7.6%
<b>Mountain:</b>	56.1%	36.3%	0.5%	4.4%	4.6%
<b>Pacific:</b>	62.8%	16.6%	1.1%	4.2%	15.2%
<b>U.S. Overall</b>	<b>46.3%</b>	<b>33.4%</b>	<b>1.7%</b>	<b>5.8%</b>	<b>13.0%</b>

\* p>0.01  
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## Agents for Intravenous Sedation

“Which agents do you routinely use for intravenous (I.V.) conscious sedation? **Check ALL that are used**”.

Midazolam	85.0% (±1.5)
Fentanyl	66.9% (±2.0)
Propofol	55.0% (±2.1)
Methohexital*	36.0% (±2.1)
Ketamine	33.9% (±0.5)
Diazepam	30.0% (±0.2)
Meperidine	19.8% (±1.7)
Partial opioid agonists	6.4% (±1.1)
Thiopental	4.3% (±0.8)
Promethazine	3.1% (±0.7)
Droperidol	2.8% (±0.7)
Other	3.8% (±0.8)

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## Oral Surgeon Practices: Summary

- ✓ 3.5 million surgery cases/year
- ✓ 2.8 million required General Anesthesia or Deep Sedation.
- ✓ US Census 2000 for the age interval of 20-24: 18.9 million\* (4.7 million per year)
- ✓ 3.8 million per age year (i.e. 20 year olds).

\*U.S Census 2000. Census 2000 Brief, C2KBR01-12.  
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## Preferred Peripherally-Acting Analgesics

“Please complete the following prescription for the **peripherally-acting analgesic** you have recommended most often in the past month.”

Ibuprofen (Advil, Motrin)	73.5% (312)
Rofecoxib (Vioxx)	6.1% (26)
Naproxen (Aleve, Naproxen)	4.9% (21)
Etorolac (Lodine)	4.5% (19)
Ketorolac (Toradol)	2.3% (10)
Valdecoxib (Bextra)	1.9% (8)
Acetaminophen (Tylenol)	1.7% (7)

Comments: Preoperatively and immediately postoperatively  
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## Centrally-Acting Analgesics

“What percentage of patients do you prescribe **centrally-acting analgesics (narcotic)** following third molar extractions? “

Rarely (1-20%)	2.9%
Sometimes (21-40%)	1.5%
Half the time (41-60%)	1.9%
Often (61-80%)	8.6%
Almost always (81-100%)	85.1%

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## Preferred Centrally-Acting Analgesics


“Please complete the following prescription for the **centrally-acting analgesic** you prescribed most often in the past month.”

Hydrocodone / APAP	64.0%
Oxycodone / APAP	20.2%
Hydrocodone / ibuprofen	4.6%
Codeine / APAP	4.3%
Promethazine / meperidine	3.7%
Propoxyphene / APAP	1.2%

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## Hydrocodone Formulations

- ✓ Vicodan
  - hydrocodone 5.0mg / APAP 500 mg
  - hydrocodone 7.5mg / APAP 750 mg (ES)
  - hydrocodone 10mg / APAP 660 mg (HP)
- ✓ Lorcet
  - hydrocodone 5.0mg / APAP 500 mg (HD)
  - hydrocodone 7.5mg / APAP 650 mg (PLUS)
  - hydrocodone 10mg / APAP 650 mg (10/650)


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## Centrally-Acting Analgesics: 1996

"If you prescribe narcotics, which medications do use use?"


Analgesic Agent	Gen Dentist	Endodontist
Codeine / APAP	77%	66%
Hydrocodone / APAP	72%	87%
Oxycodone / APAP	34%	53%
Propoxyphene / APAP	23%	35%

National survey of 334 general dentists and 379 endodontists  
Whitten BH et al. JADA 127:1333

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## Prescription Analgesics: Top 200

Vicodin	hydrocodone/APAP	#1
Motrin	ibuprofen	#20
Darvocet	propoxyphene/APAP	#24
Perocet	oxycodone/APAP	#30
Ultram	tramadol	#44
Tylenol #3	codeine/APAP	#48
Naproxen	naproxen	#61
Celebrex	celecoxib	#76
Oxycontin	oxycodone	#100

Verispan Scott-Levin, SPA 


## Summary: Analgesics

- OMFS's prescribe opioid analgesic almost always (85%) following third molar extraction surgery.
- Hydrocodone /APAP is the preferred combination analgesics. (efficacy, flexibility, marketing, side effects?)
- Instructions recommend "take as needed for pain" by 96% OMFS.
- Median dispensing of hydrocodone/APAP: 20 tabs (range 8-40).



## Issues in Therapeutics

- ✓ Overall increasing trends of prescriptions for analgesics.
- ✓ Changes in drug therapy for post-operative dental pain management.
  - No longer prescribing APC / Codeine or Tylenol #3
  - Long-acting local anesthetics i.e. Marcaine
  - Efficacy of NSAID's both pre-and post-operatively
  - Steroids for inflammation
- ✓ First exposure to anesthesia, sedation and opioids.
- ✓ Role of predoctoral education and CODA.

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## CODA Policy Statement

**Chemical Dependency Instruction:**

The Commission on Dental Accreditation encourages all accredited dental and dental-related education programs to allocate adequate time in their curricula and in faculty development programs for presentation of content concerning substance use, misuse and addiction. The content to be included should bring students and faculty up-to-date with current knowledge and understanding of chemical addiction as a disease. Suggested instructional topics may include but should not be limited to understanding addictiveness, identification of early warning signs and effective treatment approaches.

CODA EPP: Evaluation of Policies and Procedures document /January 2008.

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