

The Dentist's Role in Addressing the Opioid Crisis

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Disclosures

- No financial disclosures (Salisbury-Afshar)
- No financial disclosures (Moore)

Note: If AAAP is the CME provider for this training, please complete our COI form here: http://www.cvent.com/d/ntqcxz.

The content of this activity may include discussion of off label or investigative drug uses.

The faculty is aware that is their responsibility to disclose this information.

Target Audience

 The overarching goal of PCSS is to train a diverse range of healthcare professionals in the safe and effective prescribing of opioid medications for the treatment of pain, as well as the treatment of substance use disorders, particularly opioid use disorders, with medication-assisted treatments.

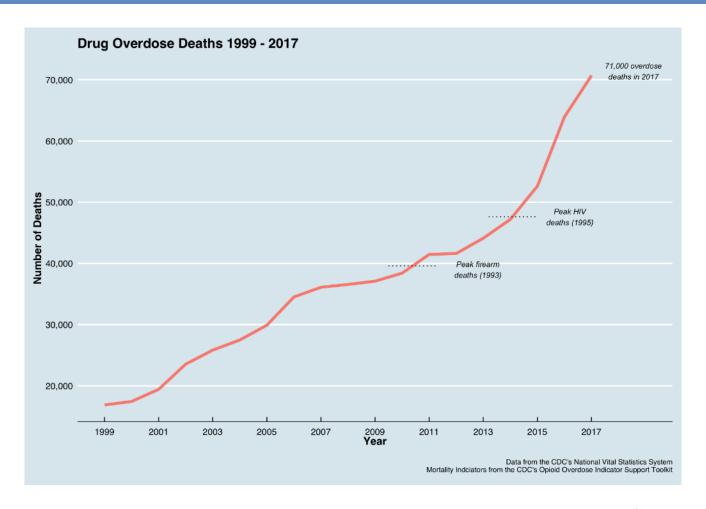
Educational Objectives

- At the conclusion of this activity participants should be able to:
 - Describe the 3 waves of the opioid epidemic in the United States
 - Explain the clinical diagnosis of opioid use disorder
 - List the 3 medications that are FDA approved to treatment opioid use disorder
 - Describe evidence-based pharmacologic alternatives for limiting the need to prescribe analgesics for acute pain

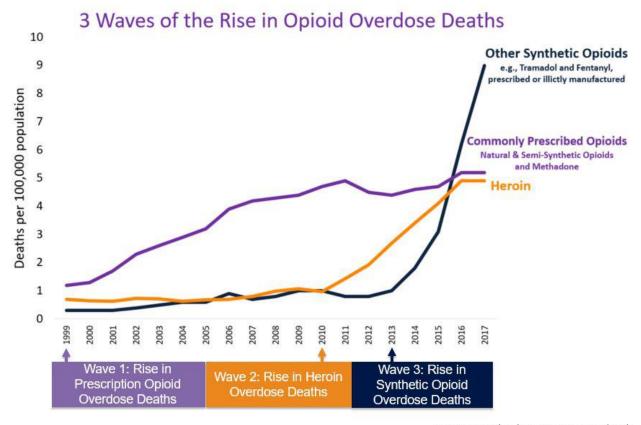
Agenda

- Opioid Epidemic in the United States
- Clinical Diagnosis of Opioid Use Disorder
- Medications Used to treat Opioid Use Disorder
- Alternative Strategies to Limit Opioid Prescriptions

Drug Overdose Deaths in United States, 1999–2017



Overdose Deaths Involving Opioids, by Type of Opioid

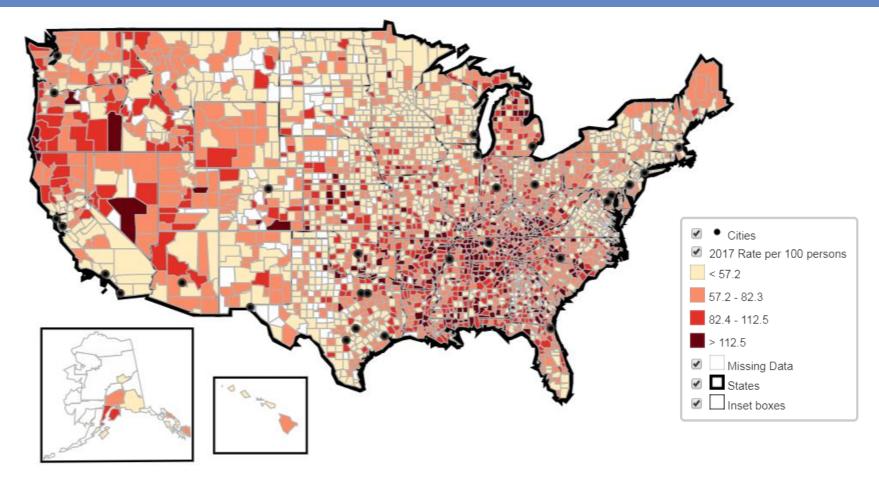


SOURCE: National Vital Statistics System Mortality File.

Source: https://www.cdc.gov/drugoverdose/images/epidemic/3WavesOfTheRiseInOpioidOverdoseDeaths.png/

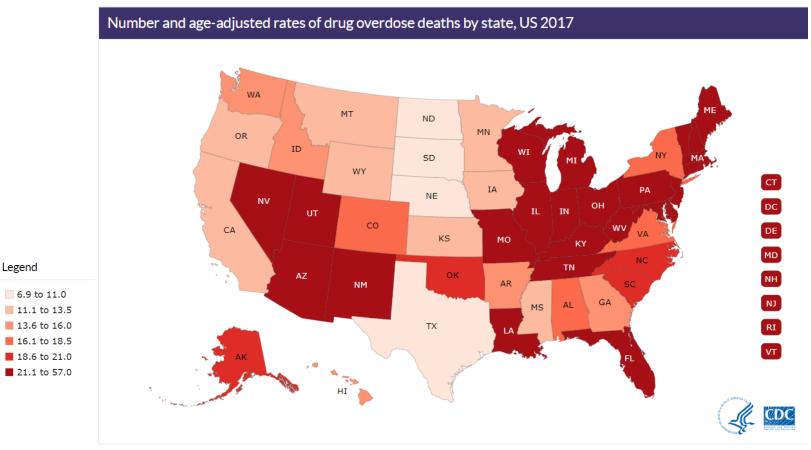


US County Opioid Prescribing Rates, 2017



Source: https://www.cdc.gov/drugoverdose/maps/rxcounty2017.html

Rates of Drug Overdose Deaths, 2017



Source: https://www.cdc.gov/drugoverdose/data/statedeaths.html

Statistically Significant Increase in Drug Overdose Death Rate, 2016–2017



Public Health Interventions to Address Opioid Crisis

Prevention



- Prescribing limits
- · Patient education
- Provider education
- Disposal of unused opioids

Misuse



- Drug (re)formulation
- Insurance utilization
- Pain clinic regulations
- Prescription drug monitoring programs

Treatment and Recovery



- Increased insurance coverage of Medications for addiction treatment (MATs)
- MAT patient limits
- More waivered prescribers
- MATs in jails and prisons

Harm Reduction



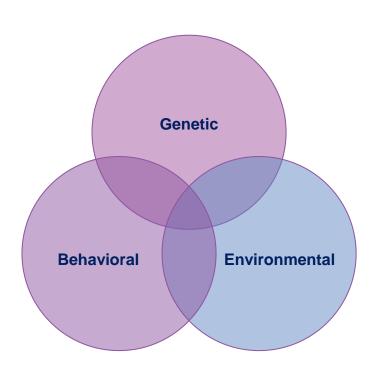
- Naloxone access
- Good Samaritan laws
- Syringe access
- Overdose prevention sites

Defining Substance Use Disorders

What Is Substance Use Disorder?

- Many people use drugs and alcohol, but not all users develop an addiction.
- Substance use disorder is not simply about the use of drugs; it is about the behaviors and symptoms around the use of drugs.
- Many people get better without formal treatment.
 - Treatment shortens the time it takes to get better.
 - Treatment reduces negative outcomes along the way (HIV, mental illness, overdose death).

Who Develops a Substance Use Disorder?



- Genetic component
- Environmental component
- Behavioral component
- Early exposures: Adverse childhood events, early exposure to drugs and alcohol

Opioid Use Disorder Diagnosis

The Three Cs of Addiction

Loss of Control

Continued use despite Consequences

Craving or Compulsion

Opioid Use Disorder Diagnosis

Diagnostic and Statistical Manual of Mental Disorders 5 Criteria	
 More or longer than intended Unable to cut back or control Time dedicated to obtaining, using, recovering from 	Loss of control
 Physical or psychological consequences Activities given up Failure to fulfill major obligations Social or interpersonal problems caused or made worse by use in hazardous situations 	Continued use despite consequences
Craving, strong desire, or urge	Craving or compulsion
 Tolerance (unless taken solely under appropriate medical supervision) Withdrawal (unless taken solely under appropriate medical supervision) 	

Source: American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed). Washington, DC: Author.

Medical Diagnosis: Opioid Use Disorder

DSM-IV

- Used terms
 "dependence"
 (seven symptoms) and
 "abuse"
 (four symptoms) as
 separate diagnoses
- Included legal problems as a diagnostic criterion for "abuse"

DSM-5

- Uses new term "use disorder," which ranges from mild to severe based on number of symptoms
- Removed "legal problems" and added "cravings" as a diagnostic criterion

Source: American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed). Washington, DC: Author.



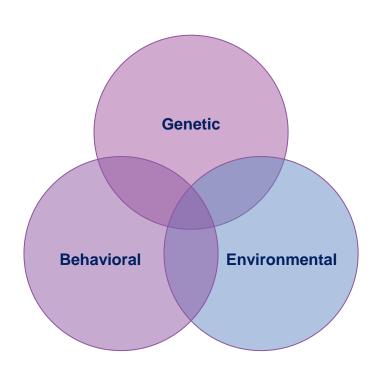
Does Language Matter?

- Stigma associated with term "abuse"
- Importance of identifying person with a "substance use disorder" as opposed to "an addict" or "substance abuser"

Does Language Matter?

- A randomized controlled trial of language and its effect on mental health professionals was conducted.
- Groups received same clinical scenario—one with "substance abuser" and the other with "person with substance use disorder."
- Those in the "substance abuser" condition agreed more with the notion that the character was personally culpable and that punitive measures should be taken.

Substance Use Disorders Are Chronic Conditions



- Many other chronic conditions that involve genetics, environment, and behavior:
 - Type 2 diabetes
 - Hypertension
 - Depression

Treatment of Opioid Use Disorder

Opioid Use Disorder Treatment

- Behavioral support (individual counseling, peer support groups, etc.)
- Medications for Addiction Treatment (MAT)
 - Methadone
 - Buprenorphine (Suboxone®, Bunavail™, Zubsolve®, Subutex, Probuphine® implant, Sublocade injection)
 - Injectable extended-release naltrexone (Vivitrol®)
- Detox is not a treatment and actually increases risk of overdose without linkage to the next level of care.
- Approximately one third of treatment providers offer methadone or buprenorphine.

MATs for Opioid Use Disorder

- All three medications do two things:
 - 1. Help control cravings (block negative reinforcement)
 - 2. Reduce the experience of using opioids on top of the medication (block positive reinforcement)
- The way they work in the brain is slightly different.
- Regulation around each medication is different.

Opioid Agonists and Antagonists

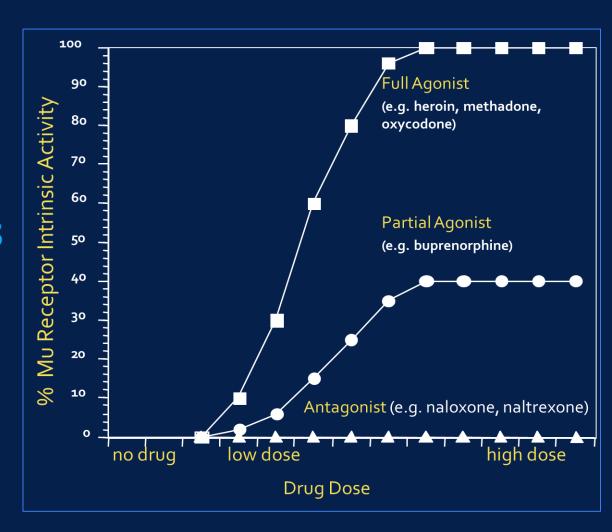
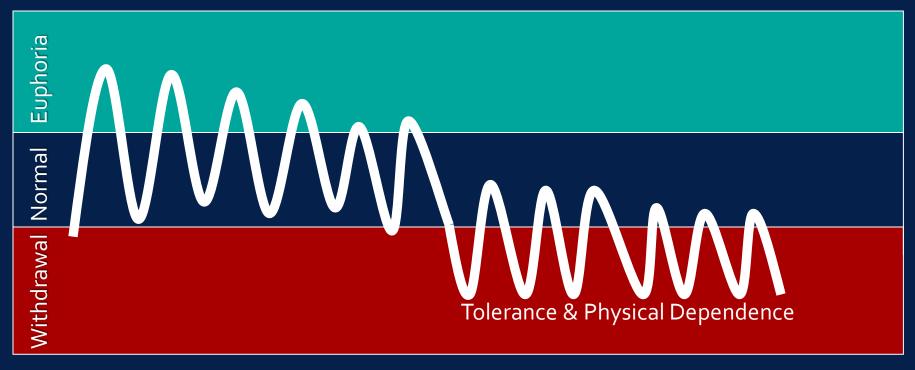


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Natural History of Opioid Use Disorder



Initial use

Chronic use

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Opioid Agonist Therapy

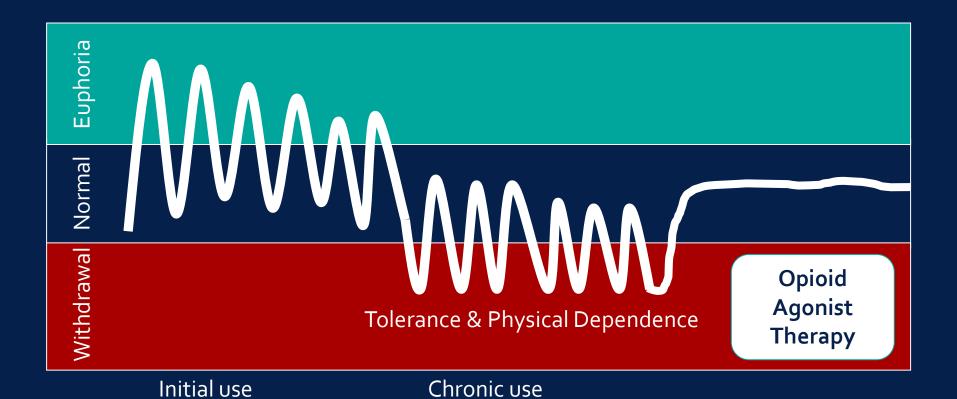


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Methadone for Treatment of Opioid Use Disorder

- Approved for treatment of opioid use disorder (OUD) since the 1970s.
- In the United States, it is available only in certified opioid treatment programs.
- There are strict regulations around administration.
- It will not show up in the Prescription Drug Monitoring Program.

Buprenorphine for Treatment of Opioid Use Disorder

- Approved by the U.S. Food and Drug Administration (FDA) since 2002.
- It can be prescribed in outpatient settings with a waiver (requires additional education).
- Initially only physicians, but now nurse practitioners and physician assistants are able to prescribe.
- Each prescriber has a limit to how many patients they can prescribe to at any given time (30, 100, 275).
- It will usually show up in the Prescription Drug Monitoring Program (Schedule 3 drug).

Naltrexone for Treatment of Opioid Use Disorder

- Injectable extended-release naltrexone (Vivitrol)
 - It has been FDA approved to treat OUD since 2010.
 - No additional license or waiver is required.
 - No controlled substance license is required to prescribe it (anyone with prescribing authority can prescribe it)
- It will not show up in the Prescription Drug Monitoring Program (not controlled substance).
- Oral naltrexone is available but has not been shown to improve outcomes for OUD; it is not recommended.

MAT for Opioid Use Disorder Treatment: Outcomes

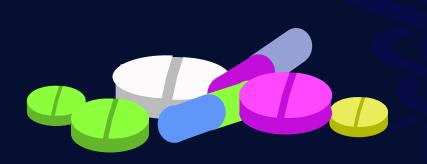
Outcome	Buprenorphine	Methadone	Extended- release naltrexone
Increased retention in treatment	X	X	Х
Reduced illicit opioid use	X	X	Х
Reduced risk of overdose death	Х	X	
Reduced all-cause mortality	Х	X	
Reduced HIV risk behaviors	X	X	

Source: Substance Abuse and Mental Health Services Administration. (2018). *Medications for opioid use disorder.* Treatment Improvement Protocol (TIP) Series 63, Full Document. HHS Publication No. (SMA) 18-5063. Rockville, MD: Author. Retrieved from https://store.samhsa.gov/system/files/sma18-5063fulldoc.pdf



American Dental Association PCSS-O Webinar June 19th 2019

Opioid-Sparing Pain Management in Dental Practice



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In the last twenty years, Dr. Moore has served as a research consultant to several companies including Dentsply Pharm., Kodak Dental Systems, Septodont USA, St Renatus, Novalar Inc. and Novocol of Canada Inc. His serves have involved pharmacovigilance of marketed local anesthetic products as well as research protocol development of new local anesthetics for dentistry. Additionally, he has also served as a principal investigator for FDA required Phase II, Phase III and Phase IV clinical research contracts awarded to the University of Pittsburgh by Wyeth Consumer Healthcare, Novocol of Canada Inc. and Novalar Pharmaceutical Inc.

He currently has had no affiliations with any pharmaceutical company for the last seven years.

USS Homestead Mill - 1966



Changing Professional Responsibilities

Antibiotic Stewardship

- Narrow spectrum selection
- D/C after 2-3 days symptom free
- Bacterial infections only

Mercury Waste: EPA/ADA requirements

- Amalgam separators
- Prohibits flushing
- Avoid bleach and chorine cleaners

Opioid Prescribing: ADA guidelines

- Risk assessment and history of abuse or mental illness
- ADR's: Nausea / vomiting and constipation
- Respiratory depression with alcohol and other drugs
- Counseling for misuse and abuse of unused opioid medications



Opioids and Acute Pain Management

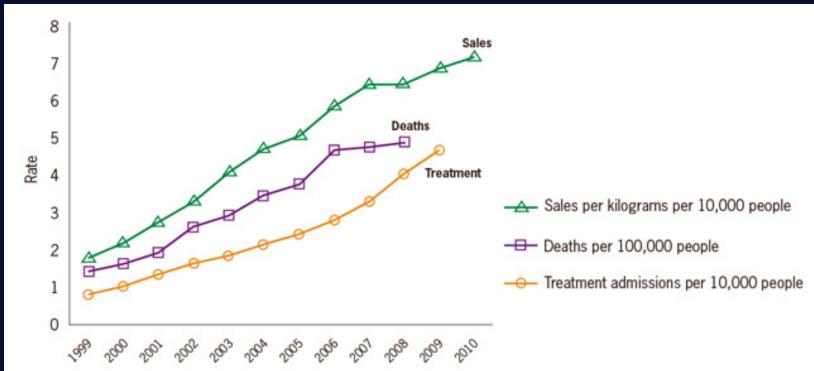
- Opioid Epidemic: From Prescriptions to Illicit Drugs.
- Opioid Prescribing Practices in Dentistry.
- Opioid-Sparing Strategies for Post-op Pain Management.
- Alternative Prescribing: APAP combined with Ibuprofen.
- Dentistry's Responsibility for Safe Prescribing.



Opioid Epidemic: Why Now?

- Advocacy groups pressure the medical community to improve treatment of chronic non-cancer pain.
- To improve awareness and diagnostics, pain was recommended to be the "fifth" vital sign (2001 Joint Commission).
- Insurance companies and hospitals offered patient satisfaction as a element of quality of care.

Availability and Access

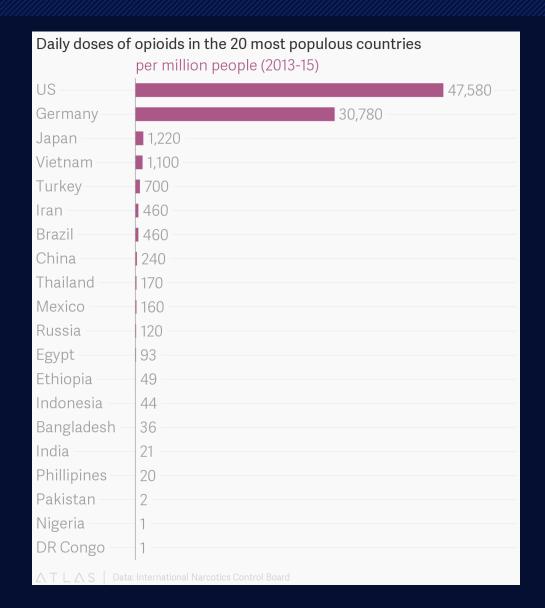


SOURCES: National Vital Statistics System, 1999-2008; Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration (DEA), 1999-2010; Treatment Episode Data Set, 1999-2009

Decreasing Prescriptions Rates

- ➤ Amount of prescription opioids peaked in 2010.
- ➤ Prescription rates plateau 2010 2012 and have declined since.
- Amount prescribed in 2015 is four times higher than Europe.
- Declines are due to State legislation, Federal Laws, CDC reports, education and use of PDMPs.
- Overdose deaths continue due to illicit opioids.
- > 4 or 5 heroin users first abused prescription opioids

Opioid Prescriptions by Nations



ATLAS: Data International Narcotics Control Board. 2015-17

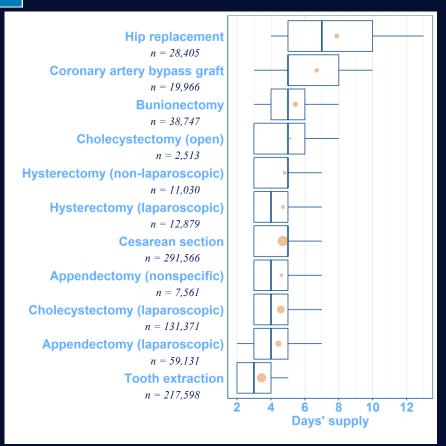


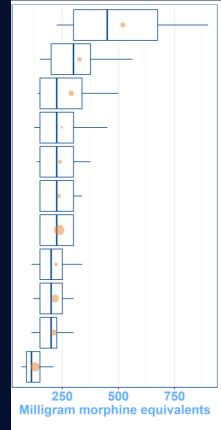
Opioid Prescribing: U.S vs England

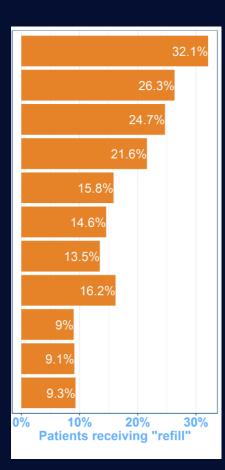
- Cross-sectional study of dentist prescriptions from outpatient pharmacies. Data collected between Jan. 2015 and Oct. 2016.
- Dentists in England only prescribe dihydrocodeine. Dentists in US prescribe hydrocodone (62%), codeine (23%), oxycodone (9%), and tramadol (5%)
- Dentists in the US write 37 times as many opioid prescription as dentists in England. (U.S. = 58)per clinician; England = 1.2 per clinician)

Observed Quantities Dispensed









Centrally-Acting Analgesics: South Carolina

South Carolina PDMP 2012-2013 by Dentists. 653,650 opioid prescriptions. 99.9% were for immediate release formulations. People younger than 21 year was 11.2%. Refills represent only 3.8%.

Hydrocodone / APAP	76.1%
Oxycodone / APAP	12.2%
Codeine / APAP	6.8%
Hydrocodone / ibuprofen	3.0%
Meperidine	1.2%

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%



Analgesics Use in the U.S.

- ➤ 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).
- ➤ Over 50% of prescribed tablets are not consumed.





Why Are Dental Practitioners Unique?

- We are extremely risk aversive.
- We manage acute pain almost exclusively.
- Outpatient and solo practice model:
 - "A Culture of Independence"
- Our role in opioid addiction crisis is "Primary Prevention".
- May be first to prescribe to adolescents.



MAT Patient Issues: Acute Dental Pain

- ✓ MAT: Medication Assisted Therapy
- ✓ Methadone: once a day oral opioid may develop cross tolerance.
- ✓ Buprenorphine/naloxone (Suboxone®) is a partial opioid agonist. Analgesic effects of Vicodin®, Percodan®, etc. may be blocked.
- ✓ Naltrexone (Revia®, Vivitrol®) is a full opioid antagonist. Opioid analgesic and euphoric effects of opioids are blocked.



MAT Patient Issues: Acute Dental Pain

- ✓ Opioids may not be effective. (Drug tolerance and antagonism)
- ✓ Avoid prescribing opioids (i.e. Vicodin, Percocet, etc.). Alternative include ice, steroids, pre-emptive NSAIDs, long-acting local anesthetic (Marcaine®).
- ✓ NSAIDs plus acetaminophen are the most effective analgesics for inflammatory dental pain.
- Consulting the patient's physician is appropriate if an opioid is absolutely necessary.
- ✓ Changing or stopping the MAT should not be done by a dentist, and should only be directed by the physician.



Opioid-Sparing Pharmacotherapy

- ✓ Preventive NSAIDs (naproxen sodium 550 mg, or ibuprofen 600 mg)
- ✓ Long-acting local anesthesia/analgesia: 0.5% bupivacaine with 1:200,000 epinephrine.
- ✓ Corticosteroids (dexamethasone 8 mg i.m. or i.v.)
- ✓ Reliance on NSAIDs analgesics as the first-line of therapy. (ADA)
- ✓ Consider the combination of ibuprofen (400 mg) and acetaminophen (500 mg) as an opioid alternative.
- ✓ A two or three day supply of opioids analgesics is usually sufficient. (CDC)



Ibuprofen Pretreatment

	Pain onset		Severity	
Pretreatment	(min)	Severe	Moderate	Mild
Placebo	137 ± 8	16	29	0
Ibuprofen	238 ± 20	8	34	3

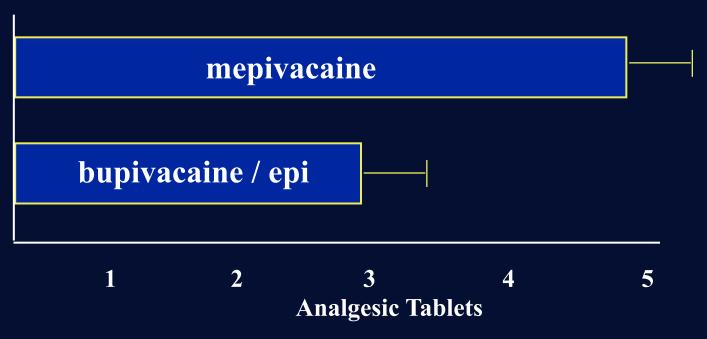
Bupivacaine

- Marketed as Marcaine® and Vivacaine® and available in dental cartridges.
- Provides prolonged duration of soft tissue anesthesia to delay the postoperative pain (6-8 hours).
- 0.5% bupivacaine, 1:200,000 epinephrine.
- Onset time is longer (8 min. vs 4 min.) than other LA drugs b/c of elevated pKa
- Long duration due to binding to tissue proteins.



Post-Extraction Pain

Analgesics Following Third Molar Extractions



Trieger N and Gillen GH. Anesth Prog 20:23-27, 1979.

Corticosteroid Use: 3rd molars

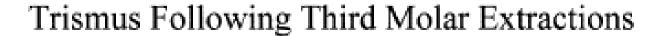
"How often do you use corticosteroids as part of your post-operative management?"

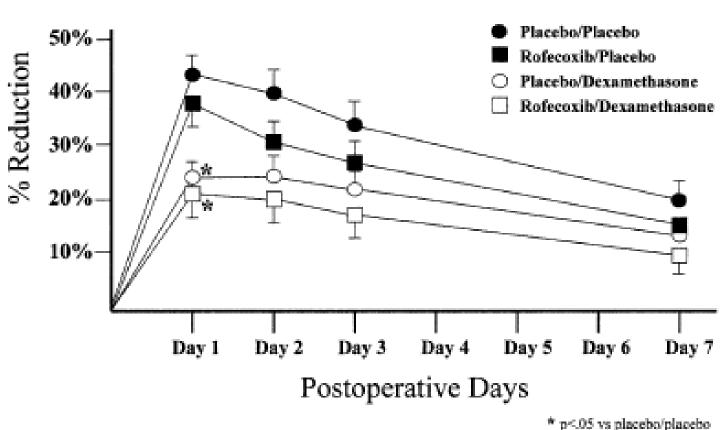
Never	20.0%
Rarely	7.9%
Sometimes	6.2%
Half the time	5.1%
Often	22.8%
Almost always	38.0%

"90.2% of OMFS selected dexamethasone"

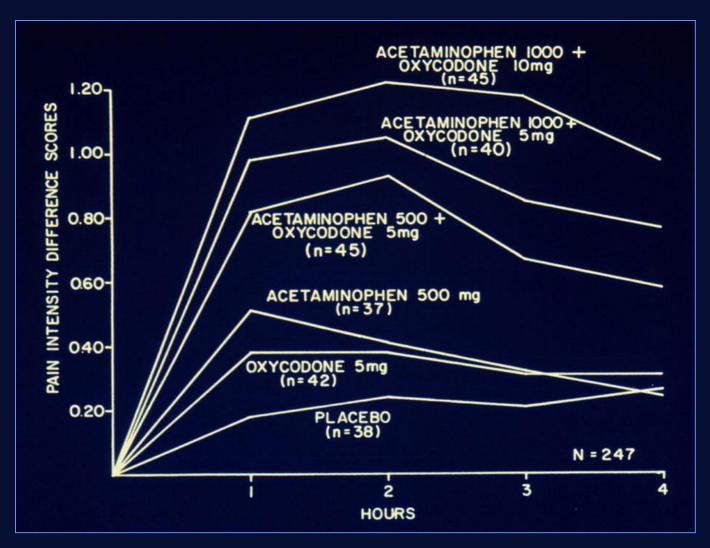


Dexamethasone and Third Molar Surgery



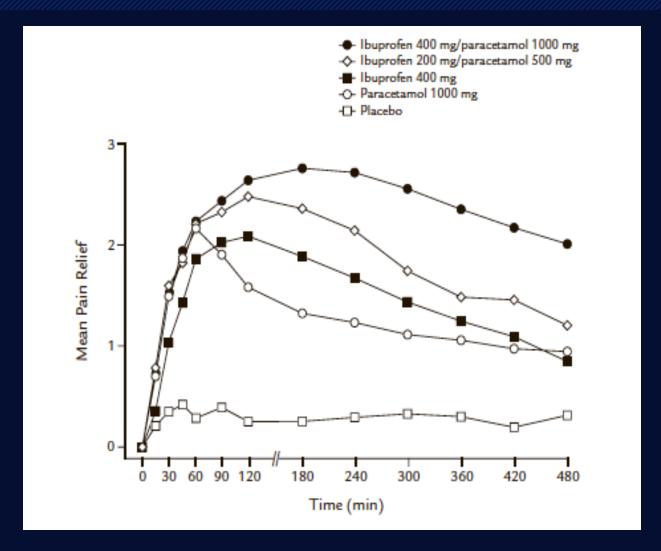


Oral Surgery Model: Opioid Combinations



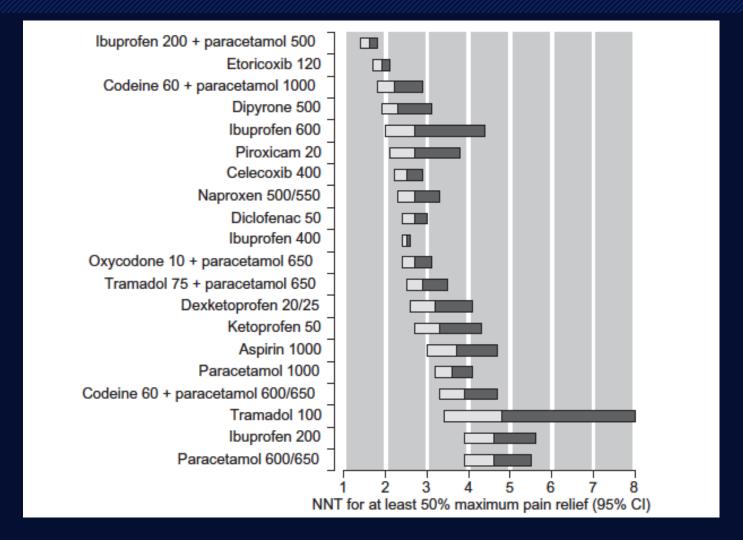


Ibuprofen and APAP





NNTs for Analgesic Agents





NNTs for Dental Analgesics

Drug Formulation	Trials/Subjects	NNT (C.I.)
Aspirin 600/650 mg	45/3581	4.5 (4.0-5.0)
Aspirin 1,000 mg	4/436	4.2 (3.2-6.0)
Acetaminophen 1,000 mg	19/2157	3.2 (2.9-3.6)
Ibuprofen 200 mg	18/2470	2.7 (2.5-3.0)
Celecoxib 400 mg	4/620	2.5 (2.2-2.9)
Ibuprofen 400 mg	49/5428	2.3 (2.2-2.4)
Oxycodone 10 mg plus		
Acetaminophen 650 mg	6/673	2.3 (2.0-6.4)
Codeine 60 mg plus		
APAP 1000 mg	26/2295	2.2 (1.8-2.9)
Naproxen 500/550 mg Ibuprofen 200 mg plus	5/402	1.8 (1.6-2.1)
Acetaminophen 500 mg	2/280	1.6 (1.4-1.8)

Benefits and harms associated with analgesic medications used in the management of acute dental pain: An overview of systematic reviews. J Am Dent Assoc. 2018:149(4):256-268.

Stepwise Guidelines

Mild Pain

Ibuprofen 200-400 mg q 4-6 hours: as needed (p.r.n.) pain

Mild-Moderate Pain

Ibuprofen 400-600 mg q 4-6 hours: fixed interval for 24 hours

Moderate - Severe Pain

Ibuprofen 400-600 mg plus APAP 500 mg q 6 hours: fixed interval for 24 hours

Severe Pain

Thuprofen 400 mg plus APAP 650/hydrocodone 10 mg q 6 hours: fixed interval for 24-48 hours



Ibuprofen + APAP Emergency Room

- 416 patients going to the ER at Montefiore Medical Center.
- Acute extremity pain from bone fractures, dislocated shoulders, sprained ankles, and other injuries or conditions.
- Four groups:
 - non-opioid group:
 - 400 mg ibuprofen and 1,000 mg acetaminophen.
 - opioid groups
 - 5 mg of oxycodone /325 mg of acetaminophen
 - 5 mg of hydrocodone and 300 mg of acetaminophen,
 - 30 mg of codeine and 300 mg of acetaminophen.
- Initial pain score of 8.7/10
- Pain scores fell over the two hours:
 - 4.3 in the ibuprofen and acetaminophen group,
 - 4.4 in the oxycodone and acetaminophen group,
 - 3.5 in the hydrocodone and acetaminophen group,
 - 3.9 in the codeine and acetaminophen group.



Provider Issues with Opioid Therapy

- ✓ Drug use and abuse histories of patient and family.
- ✓ Consider risks regarding patient's mental health.
- ✓ Use State's PDMP
- ✓ Determine potential drug interactions re. opioids.
- ✓ Limiting prescriptions with fewer units of opioids. (None?, 6-8 units?, 20 units?)
- Counsel patients of expectations and dangers.

This may be our most important "teaching opportunity for first time users of anesthetics and analgesic drugs"

Patient Issues with Opioid Therapy

- ✓ Re-enforce parent's responsibility as the "gatekeeper" to monitor pain and analgesia needs.
- ✓ Prepare for patients for possible ADR's i.e. nausea, vomiting, and constipation.
- ✓ Understand the potential of opioid prescriptions for drug misuse, abuse and addiction, particularly with young adults.
- Recommend strategies to secure prescriptions.
- ✓ Indicate local DEA drug take-back programs.
- ✓ Describe procedures for disposal of unused drug.



Thankyou for your attention



Aaron Huey, NatGeo Photographer



APAP / Ibuprofen Reviews

Moore PA and Hersh EV.

Combining Ibuprofen and Acetaminophen for Acute Postoperative Pain Management: Translating Clinical Research to Dental Practice. J Am Dent Assoc 2013;144(8):898-908.

Guggenheimer J and Moore PA.

Therapeutic applications and risks associated with acetaminophen: a review and update. J Am Dent Assoc 2011;142(12):38-44.

Moore PA and Hersh EV.

Postoperative Pain Management in Dentistry: Five Strategies to Assure Safe and Effective Care. Inside Dentistry April 2015.

Moore PA, Ziegler KM, Lipman RD, Aminoshariae A, Carrasco-Labra A, Mariotti A. Benefits and harms associated with analgesic medications used in the management of acute dental pain: An overview of systematic reviews. J Am Dent Assoc. 2018:149(4):256-268.



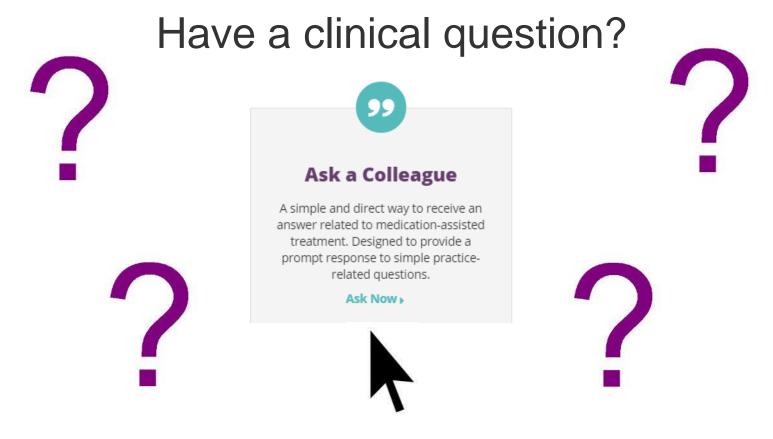
PCSS Mentoring Program

- PCSS Mentor Program is designed to offer general information to clinicians about evidence-based clinical practices in prescribing medications for opioid addiction.
- PCSS Mentors are a national network of providers with expertise in addictions, pain, evidence-based treatment including medicationassisted treatment.
- 3-tiered approach allows every mentor/mentee relationship to be unique and catered to the specific needs of the mentee.
- No cost.

For more information visit:

https://pcssNOW.org/mentoring/

PCSS Discussion Forum



http://pcss.invisionzone.com/register



PCSS is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with:

American Academy of Family Physicians	American Psychiatric Association
American Academy of Neurology	American Society of Addiction Medicine
Addiction Technology Transfer Center	American Society of Pain Management Nursing
American Academy of Pain Medicine	Association for Medical Education and Research in Substance Abuse
American Academy of Pediatrics	International Nurses Society on Addictions
American College of Emergency Physicians	American Psychiatric Nurses Association
American College of Physicians	National Association of Community Health Centers
American Dental Association	National Association of Drug Court Professionals
American Medical Association	Southeastern Consortium for Substance Abuse Training
American Osteopathic Academy of Addiction Medicine	







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- Participants in today's webinar will be emailed the link to complete their evaluations.
- Thank you for your feedback!

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