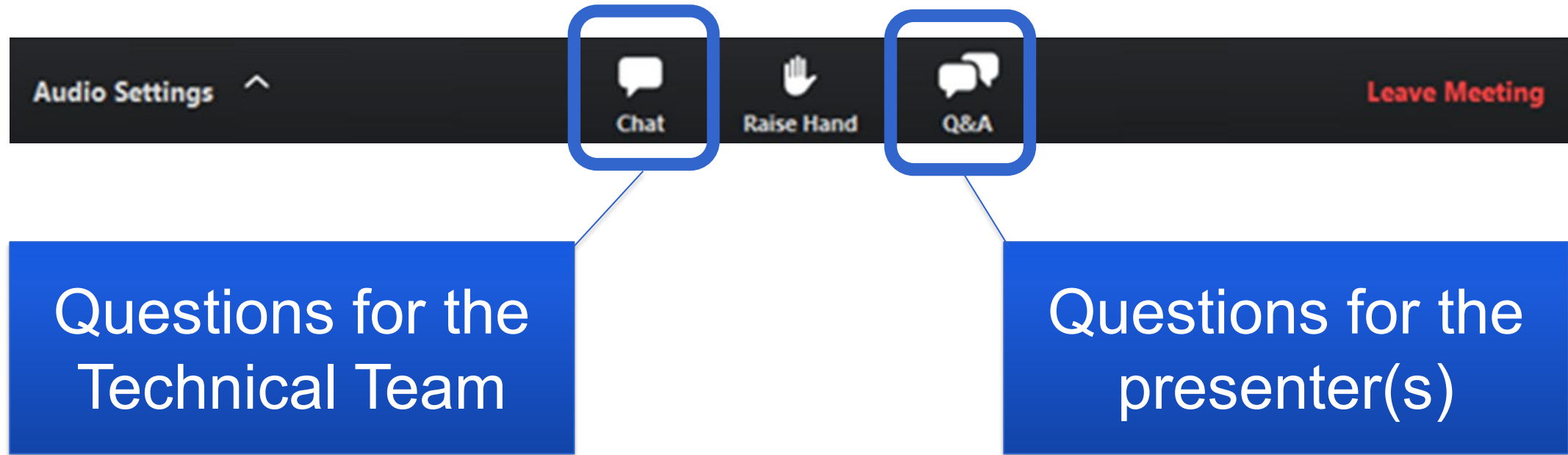


The Special Considerations of Pain Management and Opioid Use in Older Adults

Mehran Mehrabi, D.M.D., M.D.
June 8, 2022

To interact during the webinar:



Disclosures

- Dr. Mehran Mehrabi has no relationships to disclose.

Target Audience

- This webinar is aimed at dentists, administrative staff, physicians, social workers, students and educators, and interprofessional teams.
- The overarching goal of PCSS is to train healthcare professionals in evidence-based practices for the prevention and treatment of opioid use disorders, particularly in prescribing medications, as well for the prevention and treatment of substance use disorders.

Bio

- Mehran Mehrabi, D.M.D., M.D.
- Oral and Maxillofacial Surgeon at Advanced Dental Specialists (ADS)

Educational Objectives

- At the conclusion of this activity participants should be able to:
 - Describe special considerations for treating older adults by assessing their pain and interpreting their health status
 - Review risk factors for opioid toxicity in older adults
 - Summarize opioid misuse in older adult population

The Special Considerations of Pain Management and Opioid Use in Older Adults

MEHRAN MEHRABI, DMD MD



How Sick is Too Sick?

- Procedure
 - Invasiveness
 - Provider's knowledge, skill, experience
 - Instruments and equipment
 - Rout of treatment
 - Preoperative analgesia/anxiolysis
 - Local anesthesia
 - Nitrous sedation
 - Intravenous sedation/GA
 - Postoperative care
 - Bleeding
 - Infection
 - Pain
- Patient
 - Focused medical history
 - CV, Respiratory
 - Neuro
 - Hematology/Oncology
 - GI (liver)
 - Drug metabolism-Child Pugh classification
 - Renal
 - Drug clearance-Stage I-IV
 - General appearance
 - Wheelchair bound, oxygen dependent
 - Communicative, comprehensive
 - Alert and oriented
 - Vital signs- HR, BP, SpO2, RR



Polypharmacy in Elderly

- Defined as 5-10 drugs
 - Complex medical history
 - Medication use
 - 90% 1 medication
 - 67% 3 medications
 - 30% 5 medications
 - Adverse experience vs. complications
 - Drug interactions
 - Drug-drug interaction
 - Drug disease interaction
 - Drug-healing interaction
- Pharmacodynamic change
 - Efficacy
- Drug receptor sensitivity
 - potency
 - Absorption, increase fat to muscle ratio, metabolism, excretion

Drug-Herbal

- 1998 to 2010
 - Ginseng, Ginkgo, Glucosamine
 - 14 to 63 percent
- Ginkgo, Garlic, Ginseng
 - Increase risk of bleeding
 - Warfarin and Ginkgo
 - St. John Wort and SSRI
 - Serotonin syndrome

Polypharmacy

- Drug-drug interaction: Numerous and often missed
 - Drug A potentiate the effect of Drug B
 - Ibuprofen and warfarin
 - Fentanyl patch and oxycodone
 - Drug A inhibits the effect of Drug B
 - Warfarin and vitamin K
 - Oxycodone and naloxone
 - Drug A increase the effect of Drug B by enzymatic activity
 - Metronidazole and Warfarin
 - Drug A and Drug B potentiate the side effect of each other
 - Amitriptyline and azithromycin

NOAD, Nitric Oxide Donor



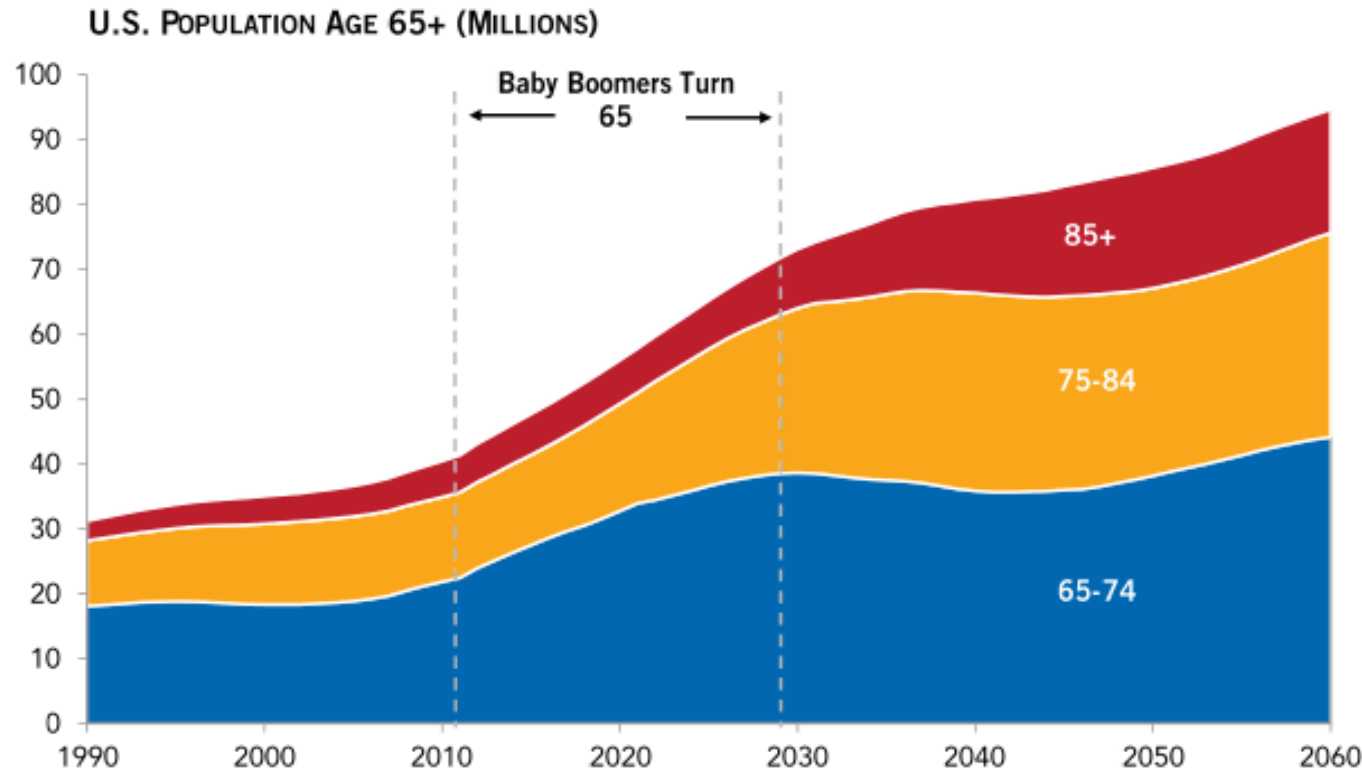
Rise in Elderly population

- Increased life expectancy
 - 21% of population/74 million, US in 2030
 - Increased life expectancy 65 by average 19.3%
- Decrease edentulism
 - 30% in 1980 vs. 19% in 2011
- Greater treatment expectation
- Higher disposable income

Skaar, DD; O'connor, H. Using the Beers criteria to identify potentially inappropriate medication use by older adults dental patients. JADA 148 (5) May 2017



The elderly population is growing rapidly and living longer



SOURCE: U.S. Census Bureau, *National Intercensal Estimates, 2016 Population Estimates*, June 2017; and *2017 National Population Projections*, September 2018. Compiled by PGPF.

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PGPF.ORG

Beer's List

- Developed in 1991
- Potentially inappropriate medications
 - Vulnerable older adults in nursing homes
 - Expanded to include community adult
- Older patients have more medical problems, more medications, slower drug elimination
- Criteria
 - Age, other medications, excising health condition
- Groups
 - Inappropriate in elderly
 - Appropriate with certain condition
 - Used with cautions

Social Factors

- Adult daily activity
 - Exercise
 - Going up the stair
 - Walking without getting short of breath
- Activity of Daily Living
 - Toilet hygiene
 - Eating
 - Personal hygiene
 - Safety emergency response
- Living arrangement
 - Alone (young adult/elderly)
 - Spouse
 - Assisted living
 - Nursing home
 - Role of caregiver
 - Caregiver attention/involvement
 - Caregiver demands
- Power of attorney for healthcare
- HIPPA
- Finances
 - Affordability
 - Insurance coverage

Pain assessment

- Preoperative
 - Diagnosis
 - Addressed surgically or medically
 - Urgency in treatment
- Intraoperative
 - Prophylactic treatment
 - Local anesthesia
 - Toxicity
 - Epinephrine
 - Sedation/intravenous
 - IM, sublingual, transnasal, transrectal
- Post operative
 - Adverse effect and drug interaction
- Diagnosis
- Progression
- Effectiveness of treatment

Importance of pain

- Time of onset
- Severity
- Localization (superficial, deep, diffuse, localized)
- Intensity
- Duration
- Radiation and referred
- Previous treatments
- Onset
 - Abrupt vs. gradual
- Characteristic: Sharp (stabbing, throbbing, cramping), dull (nagging, aching, pressing), neuropathic (burning)
- Frequency: Continuous, on and off, pulsating
- Function vs. rest
- Exacerbating and alleviating factors

Emotional/psychological

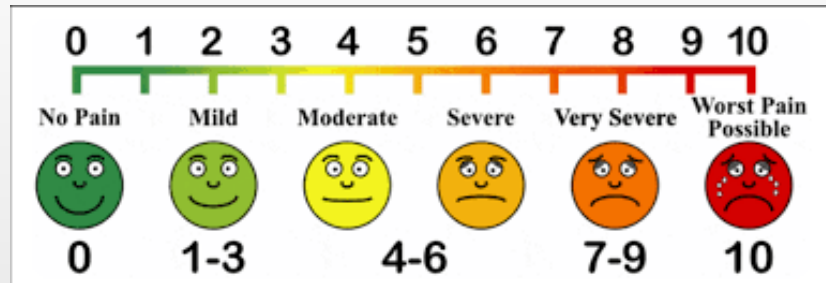
- Fear
- Anxiety
- Stress
- Memory
- Trust

Pain Assessment

YOU CAN NOT
IMPROVE ON WHAT
YOU DO NOT
MEASURE




Measurement of acute pain



Wong Baker Faces Pain Scale

Numeric Rating Scale

Visual Analogue Scale



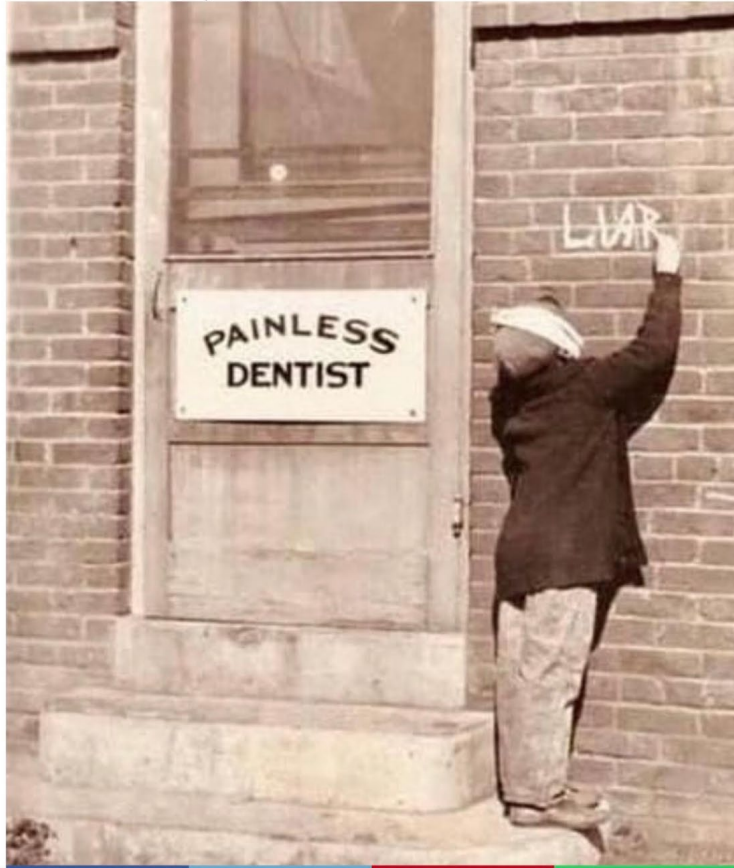
The diagram illustrates a Visual Analogue Scale (VAS) for pain measurement. It consists of two horizontal lines. The top line is a solid black line with a green smiley face at the left end and a green frowny face at the right end. Below the smiley face is the text "No pain", and below the frowny face is the text "Worst pain ever". A horizontal dotted line is drawn below the top line. The bottom line is a solid black line with the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 positioned below it, representing a numerical scale from 0 to 10.

Extensive pain questionnaire

- FLACC scale
 - Face Leg, Activity, Cry, Consolability
- CRIES Scale
 - Crying, Required oxygen demand, Increased Vital sign, Expression, Sleeplessness
- COMFORT scale
 - Alertness, calmness, Respiratory Distress, Crying, Physical Mvt, muscle tone, facial tension, Blood pressure and Heart rate.
- McGill Pain Scale
- Mankowski Scale
- Color pain Scale
- Brief pain Inventory
- Descriptor differential Scale (DDS)

Historically, Pain and dentistry are intertwined!

#7 An Upset Little Patient After A Visit To The Dentist, 1920s



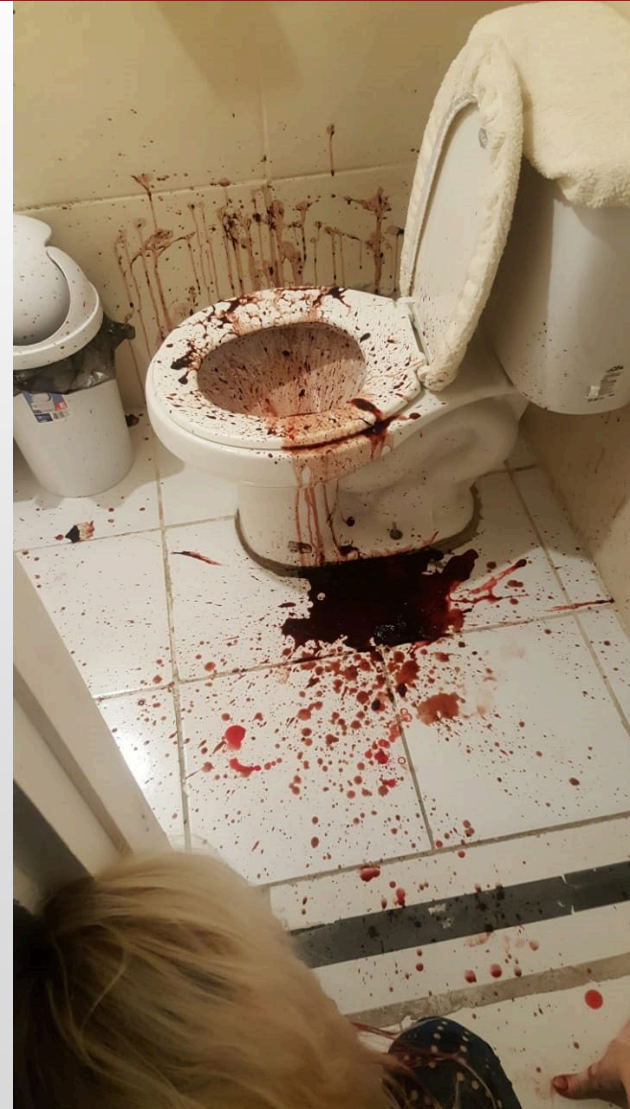
Patient and Caretaker Demand

- Patient's desire
 - Quality of life
 - Days out of work and Schools
 - Reduce number of visit
 - No pain
 - Short duration of procedure

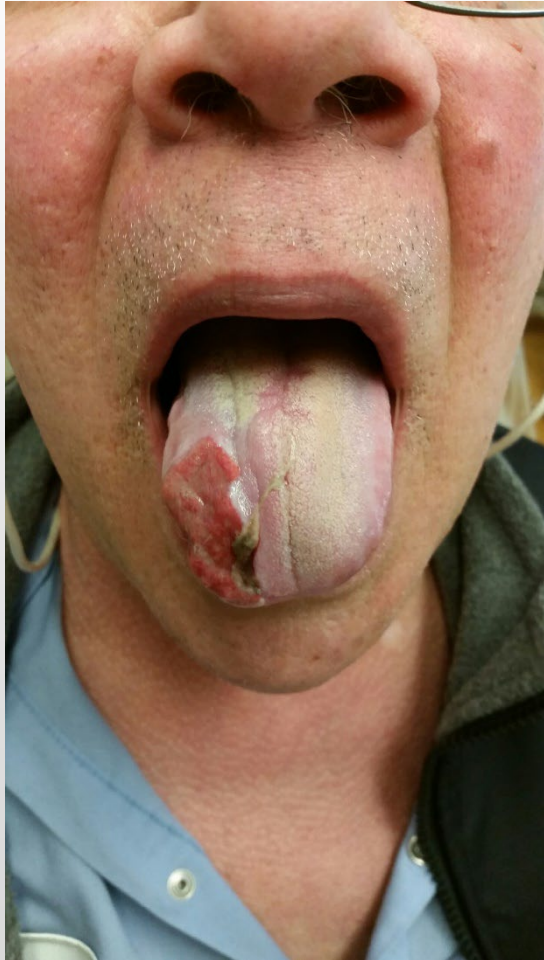
Pain Management Solutions

- Vaccine, gene therapy
- Painless anesthesia
 - Potent topical anesthesia
- Atraumatic surgery
 - Skill
 - Flap design
 - Length of surgery
 - Technique
- Accelerated healing
 - Growth factors (PDGF, PRP, L-PRF)
 - Tissue glue
- Painless vs. minimal painful post-operative course

Keen Surgical Skills



Post operative instruction



- Brief summary of recovery course
- Prescribed medications
- Chronic medications
- Diet
- Activity
- Wound care
- What to report and how to report:
 - Bleeding
 - Pain management
 - Allergic reactions
- Transfer of care

Pain management

- History
 - Medical records
 - Primary care provider
 - EPDM
 - Previous analgesics, surgery
 - patient's pain tolerance
- Invasiveness of the surgery
 - Restorative work
 - Scaling and root planing
 - Excision of fibroma
 - Biopsy of tongue
 - Mandibular third molars extraction
- Postoperative care
 - Access for post operative complications
- Medical comorbidity
- Mental status
- Medications
- Medication clearance
- Length of recovery

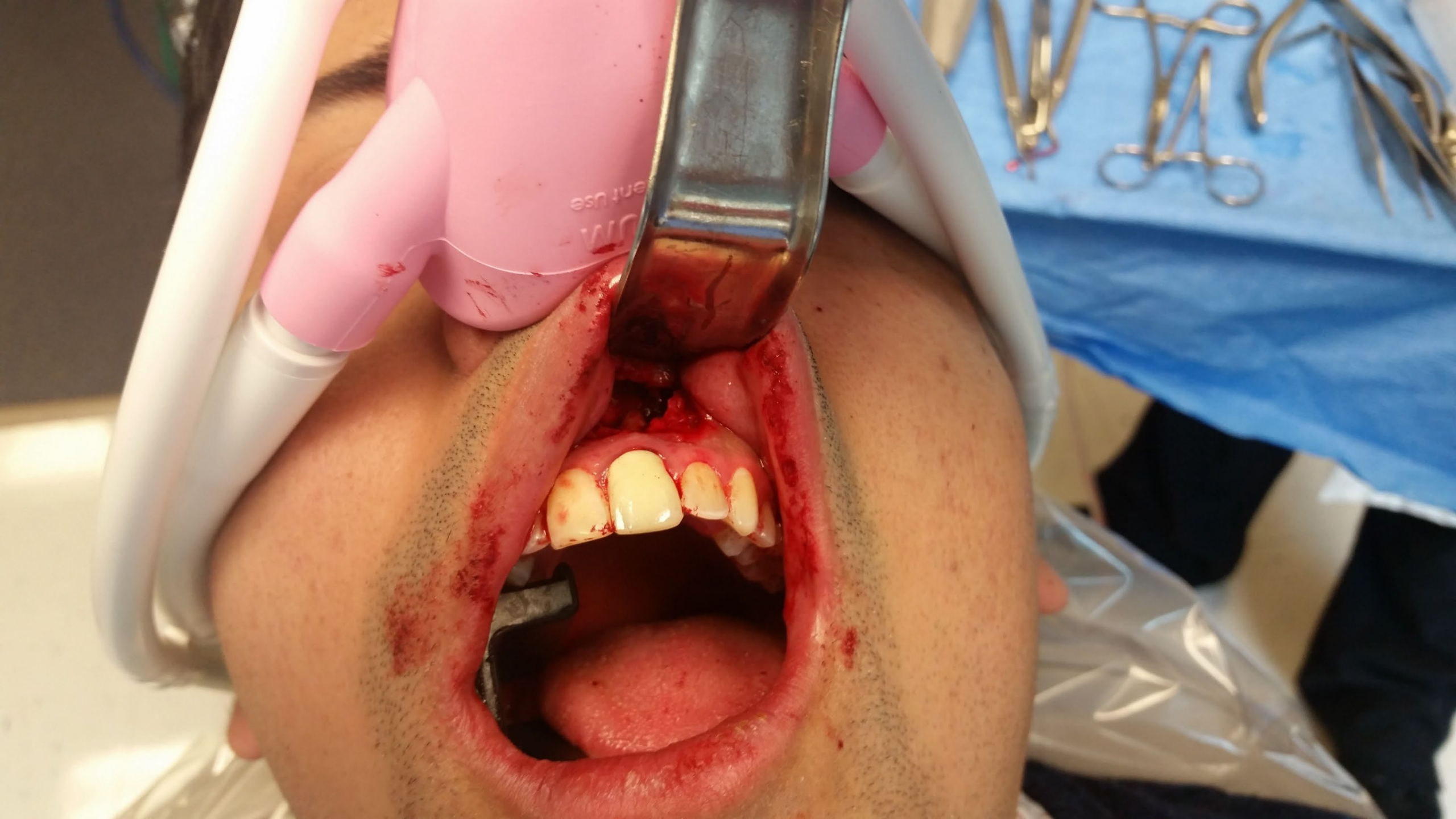






















Preemptive pain management

- Preoperative acetaminophen
- Preoperative NSAIDS
- Preoperative steroids
- Preoperative opioids analgesics?
- Preoperative antibiotics?
- Preoperative anxiolysis

Bromelain



- Pineapple core and skin
- Orange w/ skin
- Lemmon w/ skin
- Cinnamon
- Bay leaves
- Turmeric
- Cayenne Paper
- Ginseng

1900 Remedy

- Gin
- Sugar
- Water
- Cocaine
- Heroine
- Thorazine



Acute Pain Management

- Acetaminophen
- NSAIDS
 - Non-selective Cox inhibitor
 - Selective Cox 2 inhibitors
- Opioids
- Perioperative steroids
- Diphenhydramine
- Long-acting local anesthetic
- Local anesthetic pump
- ICE/Heat
- Muscle relaxants

Opioids

| | |
|------------------|------|
| ▪ Hydrocodone | 1.0 |
| ▪ Oxycodone | 1.5 |
| ▪ Oxymorphone | 3.0 |
| ▪ Morphine | 1.0 |
| ▪ Codeine | 0.15 |
| ▪ Fentanyl Patch | 7.2 |
| ▪ Hydromorphone | 4 |
| ▪ Tramadol | 0.1 |
| ▪ Methadone | 3 |

Chronic and Neuropathic pain management

- Acetaminophen
- NSAIDS
- Opioids
 - Oral
 - Patch
- Anticonvulsant
 - Carbamazepine
 - Gabapentin
 - Pregabalin
 - Clonazepam, lamotrigine, valporate
- Antidepressant
 - TCA
 - Amitriptyline
 - SNRI
 - Duloxetine
- Muscle relaxant
 - Benzodiazepine
 - Baclofen
 - Cyclobenzaprine
- Topical
 - Lidocaine
 - Capsaicin
 - Salicylates
- THC/Cannabis
 - Inhaled, oral, topical
 - Plant derived
 - Synthetic
 - Dronabinol
 - Nabilone

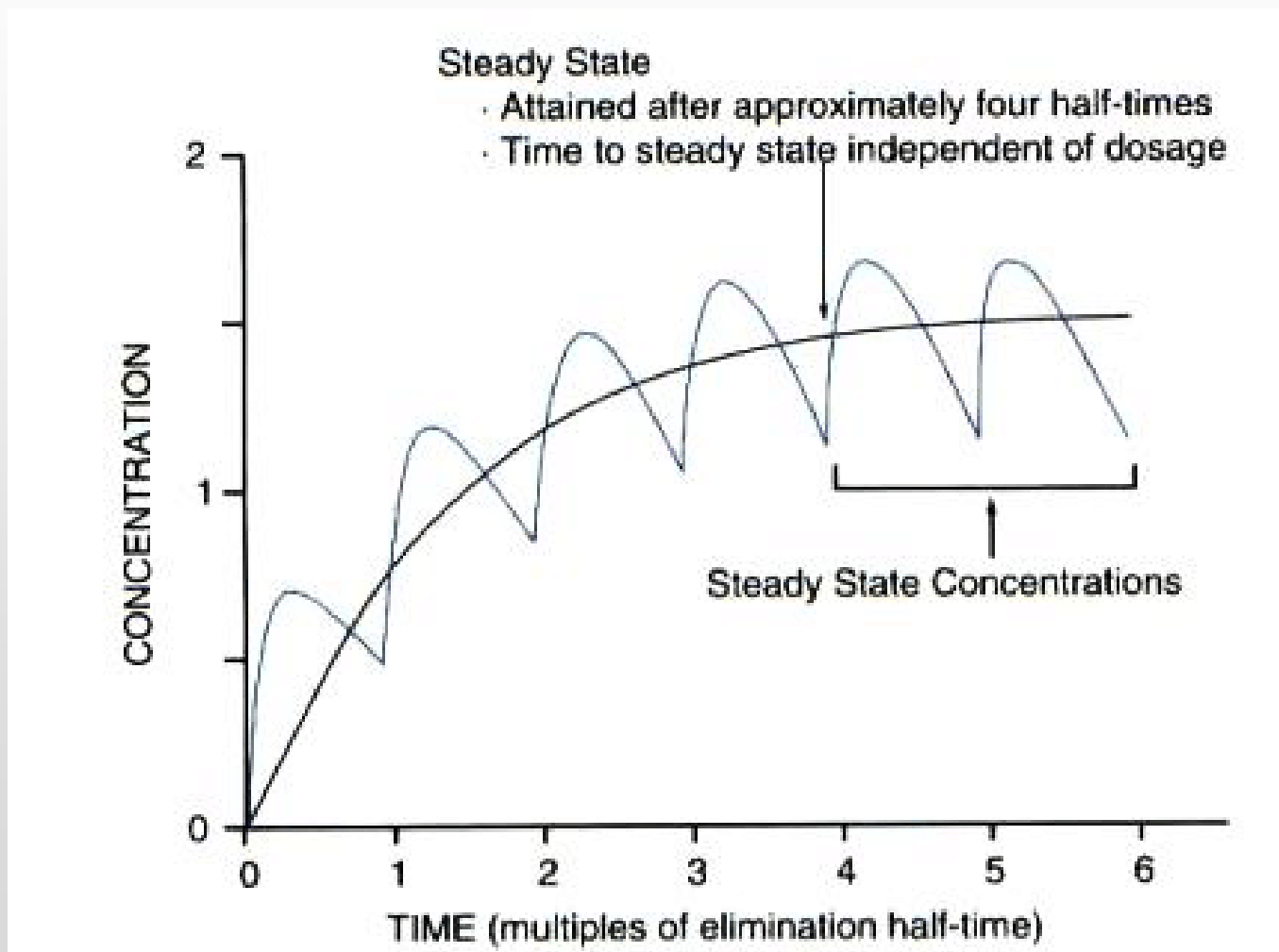
Contraindication to Acetaminophen

- Liver disease
 - Hepatitis
 - Viral
 - Alcoholic
 - Cholestatic
 - Cirrhosis
- Phenytoin
- Carbamazepine
- Isoniazid
- Allergy to acetaminophen
- Other medication containing acetaminophen
 - Delayed reaction

Motrin, Contraindication

- Allergic Reaction to NSAIDS
- Pregnancy
- Renal insufficiency
- Nephrotoxic drugs
 - Vancomycin, Penicillin, Cephalosporins
 - Cisplatin
 - Tacrolimus/Sirolimus
- Lithium
- Methotrexate
- Anticoagulant
- Asthma
- G6PD deficiency
- IBD
- SSRI
- PUD, Steroid therapy
- Nephrectomy
- ACE inhibitors
- CAD
- HTN

Steady State Concentration



Post operative

- Level 1

- Acetaminophen
- NSAIDS
 - Analgesics work better as drug concentration achieve and steady state equilibrium.
 - The anti-inflammatory effect of a medication may be higher does than analgesic effect. By inhibiting the anti-inflammatory furthered tissue destruction can be prohibited.
- Cryotherapy
- Laser
- LA (topical)

- Level 2

- Combined NSAIDS and acetaminophen
- Intermittent short acting Opioid doses

- Level 3

- Search for etiology
- Scheduled Opioids

- Long-acting local anesthesia

- Preoperative steroids

- Post operative pain, trismus, nausea tissue destruction

Providers Opioid prescriptions

| | |
|-------------------------|-------------|
| Family physician | 20.5 |
| Internal medicine | 15.7 |
| Dentist | 8.9 |

- Emergency department
 - No reduction in rate of opioid prescriptions
 - 3X more likely prescribed opioids by Nurse practitioner than dentist
- Rural dentist
 - Small towns and rural community
 - Lack of specialty care

Opioid epidemic

- 42,000 killed in 2016
 - 40% RX opioid
- \$78.5 Billion/year national burden
- Prevalence of immediate release opioid by dentists
 - 1990s 15.5%
 - 2009 8%
 - 2012 6.4%
- Dentist and patient education, opioid prescription limit, EPDM

Prevalence of Opioid Prescribed by Dentists

- Hydrocodone
- Codeine
- Oxycodone
- Tramadol

The first step
in solving a
problem is
knowing it
exist.



Screening tool

| Mark each box that applies | Yes | No |
|--|-----|----|
| Family history of substance abuse | | |
| Alcohol | 1 | 0 |
| Illegal drugs | 1 | 0 |
| Rx drugs | 1 | 0 |
| Personal history of substance abuse | | |
| Alcohol | 1 | 0 |
| Illegal drugs | 1 | 0 |
| Rx drugs | 1 | 0 |
| Age between 16-45 years | 1 | 0 |
| Psychological disease | | |
| ADD, OCD, bipolar, schizophrenia | 1 | 0 |
| Depression | 1 | 0 |
| Scoring totals | | |

Acute Opioid Effects

- Analgesia
- Euphoria
- Drowsiness/sedation
- Dizziness, **Meiosis**
- Respiratory depression/arrest
 - Overlapping benzodiazepine
 - OSA
- **Nausea , vomiting, Constipation,**
delayed gastric emptying
- Bradycardia and hypotension
- Confusion, depression
- Low testosterone
- Itching and sweating
- Muscular rigidity
- **Opioid Induced Hyperalgesia**

Tolerance

- A reduction in the desired effect given the same dose over time
- Treated with increase dose, but fail to achieve the same effect and more rapid decline in response
- It is reversible through a drug holiday
- Tachyphylaxis
 - Sudden short-term tolerance
- Mechanism
 - Receptor desensitization
 - Receptor reduction

Withdraw

- Physical or psychological features that follow abrupt discontinuation of medication
 - Opioids
 - Beta blockers
 - Clonidine
 - Denusemab
 - Alcohol and benzodiazepine
 - SSRI
 - L-Dopa
 - Warfarin?

Opioid Withdraw

- Tremor/chills
- Drug craving
- Anxiety/irritability
- Abdominal pain/diarrhea/vomiting
- Insomnia
- Cold flashes
- Muscle and bone pain
- Uncontrollable leg movement
 - Kicking the habit
- Goosebumps (cold turkey)
- Sweating
- Tears
- Yawning

Altered Mental Status Delirium vs. Dementia

▪ Delirium

- Acute
- Acute illness or drug toxicity
- Reversible
- Attention
- Almost with another condition
 - dehydration,
 - Drugs or withdraw
 - Infection
 - BG
- Variable consciousness

▪ Dementia

- Slower onset
- Irreversible
- Memory
- Anatomical brain changes
- Slow but progressive
 - Alzheimer,
 - Lewy body
 - Vascular dementia
 - Unimpaired until end

Long Term Effect of Opioid Use

- GI
 - Constipation
 - Resistant to laxative and stool softener
 - Malnutrition
 - Bowl obstruction
 - Nausea and vomiting
- Respiratory
 - Central sleep apnea
 - CO2 retention
 - Hypoxemia
 - Ataxic breathing
- CV
 - MI, HF, BE
- Neuro
 - Hyperalgesia
 - Apnea
 - Benzodiazepine, barbiturate, alcohol
 - Indirect
 - Dizziness and fall resulting in fx
- MS
 - Fall, fx (independent of fall, ?etiology)
- Endo (hypothalamic-pituitary axis)



Young Adults



Adults

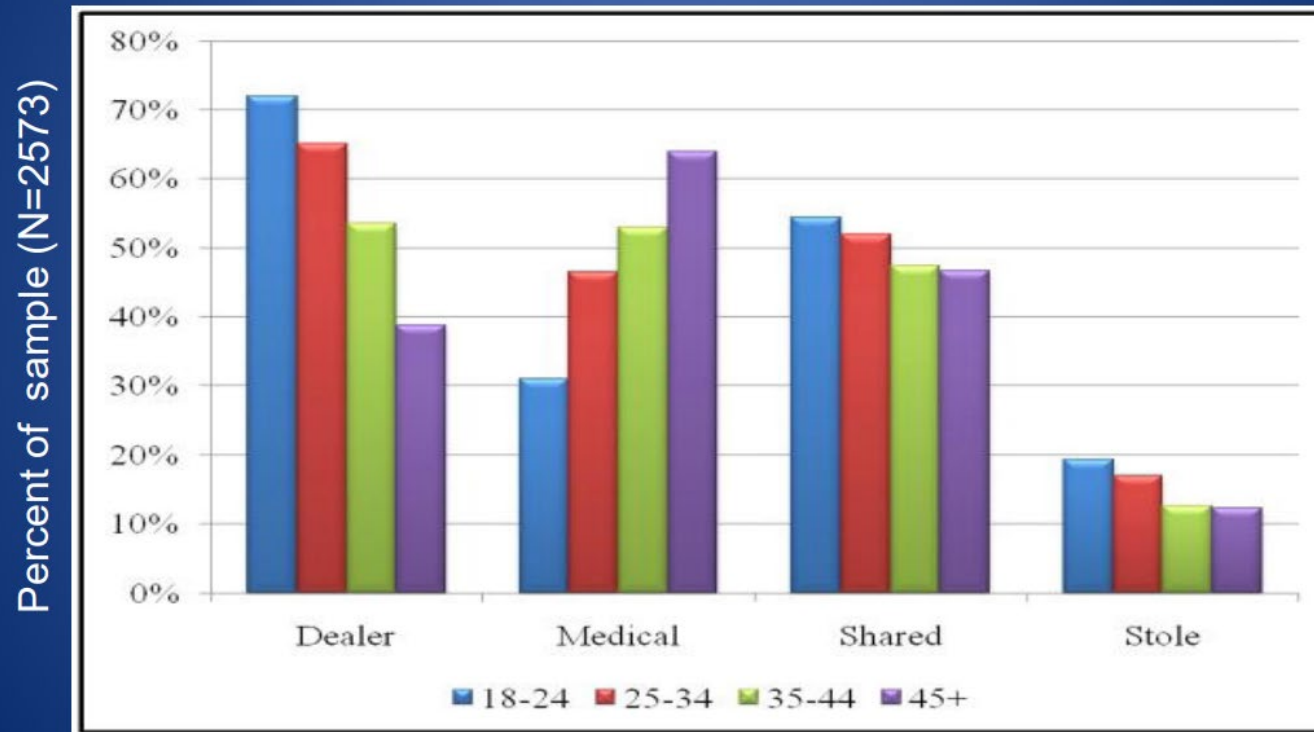


Elderly opioid abuser



Opioid Economy and Elderly

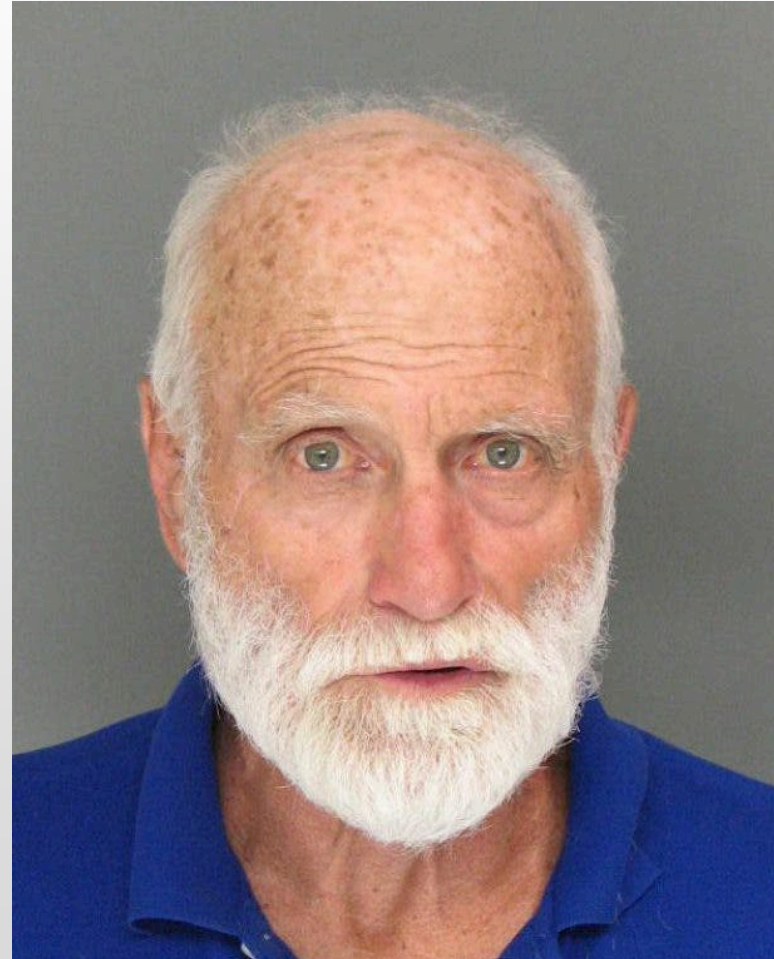
Prescription Opioid-dependent Patients Entering Treatment: Modes of Diversion as a Function of Age



Cicero et al, JSAT 42(1): 87-94, 2012

Elderly drug dealers

- Medicare insurance
- Social security
- Retirement
- Supplemental income
- Financing expensive habits
- Unsecure Opioids
- Excess opioid due to decline in memory and cognition



Substance Use Disorder (SUD) in Elderly

- Gradual decline in SUD into adulthood
- 1 Million above age 65 w/ SUD
- Increase admission for treatment from 3.4 to 7.0%
- Etiology
 - Ease of access
 - Aging as etiology of more susceptible to drug and alcohol use
 - Increase drug sensitivity
 - Change in brain such as temporal Lobe with chronic Cocaine use
 - More affected by the consequence of substance abuse
 - Mood disorder, Lung and heart problem, judgment, coordination

Key take away

- Opioid pain medications even when administered correctly in appropriate circumstances may result in abuse, addiction and devastating life lasting effects on patient and their family.
- Due to complex medical history, there may be no choice but to prescribe narcotics to these category of patients.
- Opioid use following acute pain should never be the initial treatment.
- It should be reserved for severe pain and administered for a short time with limited purpose.

Key take away

- Go low and go slow
 - Pharmacokinetic, pharmacodynamic
- Drug-Drug interaction
 - Beer's criteria
 - Opioid and Benzodiazepine
 - Increase list of medications with Age
- Treat patient as a team
 - Dentist, hygienist, assistant, front desk staff
 - Primary care physician, medical specialists, Nurse practitioner
 - Dental specialists (Oral surgeon, endodontists, periodontists, oral pathologists, oral radiologists, etc.)

Thank you for your attention

- Questions
- wisdent@yahoo.com





Additional Resources

- [ADA.org/Wellness](https://ada.org/Wellness)
- pcssNOW.org

PCSS Mentoring Program

- PCSS Mentor Program is designed to offer general information to clinicians about evidence-based clinical practices in prescribing medications for opioid use disorder.
- PCSS Mentors are a national network of providers with expertise in **addictions, pain, evidence-based treatment including medications for addiction 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

Have a clinical question?



Ask a Colleague

A simple and direct way to receive an answer related to medication-assisted treatment. Designed to provide a prompt response to simple practice-related questions.

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<http://pcss.invisionzone.com/register>



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| American Academy of Pain Medicine | Association for Multidisciplinary Education and Research in Substance use and Addiction |
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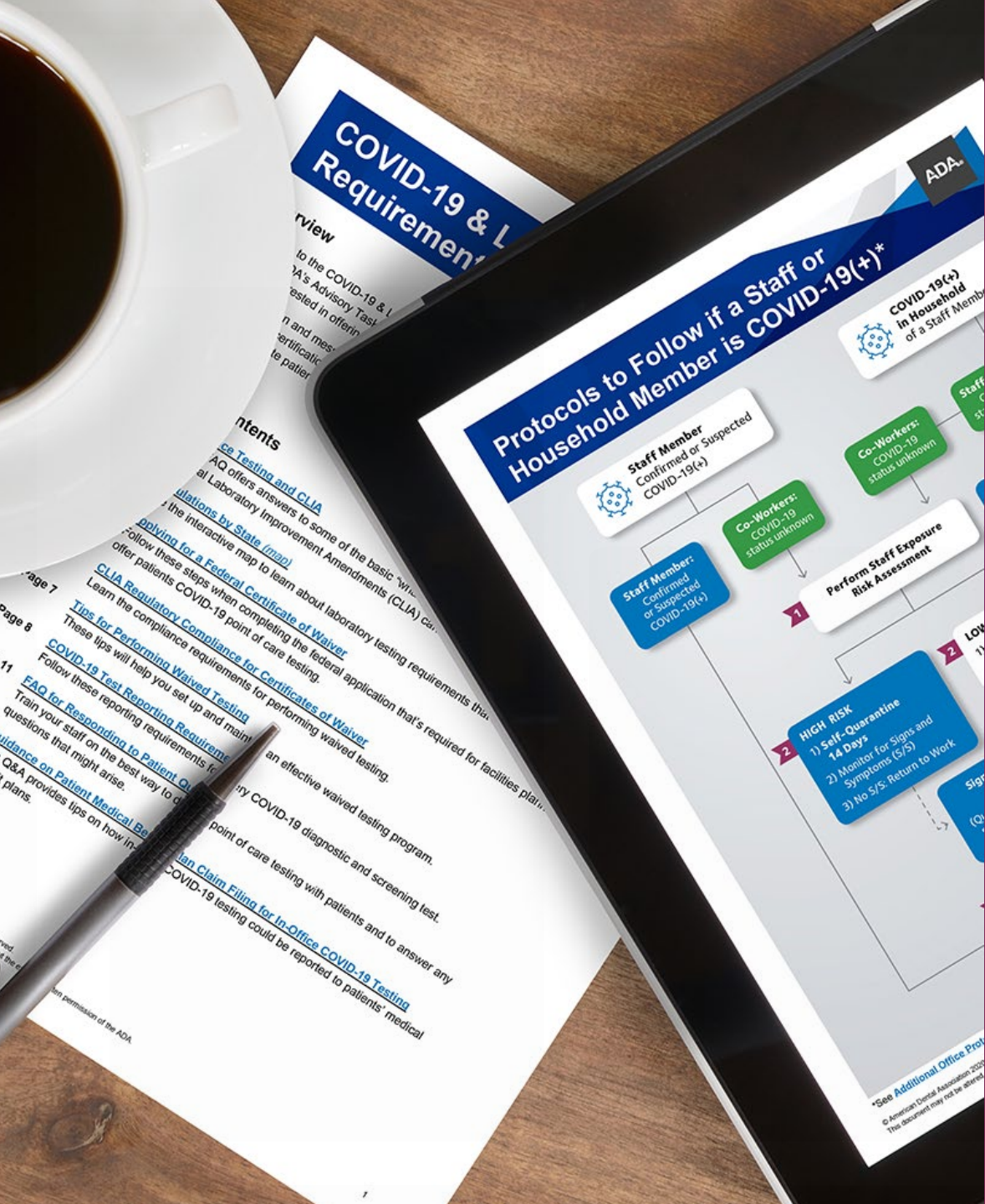


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