Pain Prevention and Treatment in Oral Health

Arizona Opioid Prescribing Guidelines and Recommendations

for

Oral Health Professionals

PRETEST

Multiple Choice

Dentists prescribe what percentage of opioids, and where do they rank as opioid pr

a. 5% of prescriptions, rank 5 out of ten top prescribers
b. 7% of prescriptions, rank 4 out of ten top prescribers
c. 10% of prescriptions, rank 3 out of ten top prescribers
d. 12% of prescriptions, rank 2 out of ten top prescribers

What percentage of people obtain painkillers from a friend or relative rather than a prescription?

a. 35%
b. 50%
c. 70%
d. 90%

PRETEST

Multiple Choice

The new Arizona opioid legislation contains a _____ morphine milligram equivalen dose limit per day for new prescriptions?

a. 75
b. 90
c. 50
d. 100

What percentage of oral and maxillofacial surgeons almost always prescribe a centrally acting opioid post operatively?

a. 45%
b. 65%
c. 75%
d. 85%

PRETEST

Multiple Choice

According to research, which of the following is the most effective at controlling de

a. Codeine 60 mg
b. Ibuprofen 400 mg
c. Oxycodone 10 mg + Acetaminophen 650 mg
d. Ibuprofen 200 mg + Acetaminophen 500 mg

The maximum amount of Acetaminophen which should be prescribed in a 24 hour period for a healthy patient is:

a. 3000 mg
b. 2000 mg
c. 4000 mg
d. 2800 mg

PRETEST

True or False

1. Dentists and oral surgeons are the major prescribers of opioids for people age 10-19, writing 31% of all prescriptions for this patient group.
2. The use of a long-acting local anesthetic for a dental procedure reduces pain the first 4-8 hours and up to 24 hours after.
3. Literature supports the belief that opioids are the strongest pain medications and should be used for severe dental pain.
4. The new Arizona opioid legislation has a 5 day limit on initial opioid prescriptions.
5. The U.S. consumes 69% of the worlds hydrocodone/acetaminophen combinations.

The US Opioid Epidemic

- There were 63,632 drug overdose deaths in the US in 2016
  - 174 deaths per day
  - One death every 8.28 minutes
  - 42,249 (66.4%) of the deaths were due to opioids
    - This is more than those resulting from firearms, suicide, homicide, and motor vehicle crashes[1]

- More than 70% of people who abuse prescription painkillers obtained the from friends or relatives, while only approximately 5% got them from drug dealers or over the internet[2]
- The U.S. consumes 99% of the worlds hydrocodone/acetaminophen combinations[3]

The US Opioid Epidemic

- Approximately 37% of nonmedical opioid use by high school seniors came from leftover prescription medications[6]
- Immediate release opioids are the most frequently abused
- Most abused are oxycodone and hydrocodone
- Dentists and oral surgeons must use their best professional judgment when prescribing pain medication in the treatment of their patients
- Providers can call the **OAR** Line: Opioid Assistance + Referral Line for Arizona Providers:
  1-888-688-4222 for additional opioid prescribing information
  - This line provides real-time consultations for clinicians with complex patients with pain and opioid use disorders, staffed by experts at the Poison and Drug Information Centers in Arizona.

Dental Prescribing Facts

- The opioid prescription rate per 1,000 dental patients increased from 130.58 in 2010, to 147.44 in 2015
  - Approximately 68.41% of all opioids prescribed were during surgical dental visits
  - Approximately 31.10% during nonsurgical visits
    - The majority of nonsurgical prescriptions were for restorative procedures[4]
- Dentists and oral surgeons are the major prescribers of opioids for people age 10-19, writing 31% of opioid prescriptions for this patient age group[5]
  - High school age patients who receive an opioid prescription are 33% more likely than their peers to misuse opioids between the 18 and 23 years of age[6]
- 85% of oral and maxillofacial surgeons almost always prescribe a centrally acting opioid, with hydrocodone with acetaminophen the most widely prescribed[5]

New Arizona Opioid Regulations

- There is a 5-day limit for initial opioid prescriptions.
- Prescribing dose limit of 90 MME per day for new prescriptions.
  - Opioid medication doses are measured in morphine milligram equivalents (MME).
  - The Centers for Disease Control and Prevention (CDC) recommends that doctors proceed with caution when prescribing above 50 MME and use extreme caution when prescribing above 90 MME.[1]
  - Studies show at 90 MME or more, the risk of death increases tenfold compared to 20 MME or less.[1]
    - Calculating the total daily dose of opioids is a crucial step in preventing unintentional overdoses and mitigating the current opioid epidemic.

Providers can call the OAR Line: Opioid Assistance + Referral Line for Arizona Providers: 1-888-688-4222

Morphine Milligram Equivalents

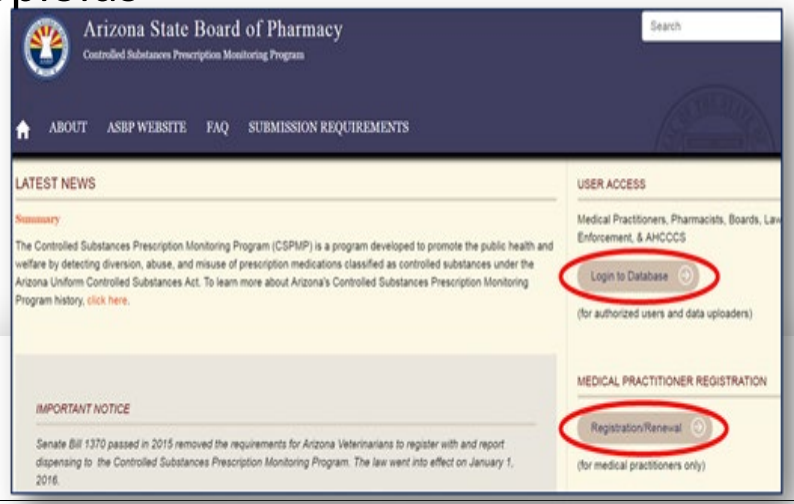
- Even lower daily doses of opioids (20-50 MMEs per day) can increase the risk of death. Opioids and other narcotics should always be prescribed at the lowest possible dose and for the shortest possible time. The following are the MMEs of commonly prescribed opioids for oral health procedures:
- 50 MME/Day
  - 50 mg of hydrocodone (10 tablets of hydrocodone/acetaminophen 5/300)
  - 33 mg of oxycodone (~ 2 tablets of oxycodone 15 mg sustained release)
- 90 MME/Day
  - 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
  - 60 mg of oxycodone (~ 2 tablets of oxycodone sustained-release 30 mg)
  - MME of 100 mg/day results in an 8.8-fold increase in overdose risk

Summary of Arizona Prescribing Guidelines for the Treatment of Acute Oral/Dental Pain

- Opioids and other narcotic pain medications should only be used for treating acute pain when the severity of pain warrants that choice, and non-opioid medications or therapies will not provide adequate pain relief
- When opioid medications are prescribed for treatment of acute pain, the number dispensed should be no more than the number of doses needed. This should be based on the expected duration of pain severe enough to justify prescribing opioids for that condition.
- Whenever opioids are prescribed, patients should be provided the The Arizona Opioid Assistance and Referral Line

Summary of Arizona Prescribing Guidelines (cont.)

- When opioid medications are prescribed for acuter pain, the patient should be counseled on the following:
  - Sharing with others is illegal
  - Medications should be securely stored
  - Medications should be disposed of properly when the pain has resolved to prevent non-medical use of medications
  - Opioids are intended for short-term use only
  - Driving or operating machinery should be avoided if a patient is sedated or confused while using opioids



Summary of Arizona Prescribing Guidelines (cont.)

- Long-acting opioids should not be used for the treatment of acute pain, including post-operative pain, except in select opioid tolerate patients and situations where monitoring and assessment for adverse effects can be conducted
- The continued use of opioids should be considered carefully, including assessing for the potential for misuse. If pain persists beyond the anticipated treatment duration, then the patient should be carefully re-evaluated
- The Arizona Controlled Substances Prescription Drug Monitoring program should be checked prior to prescribing opioids and periodically if renewing opioid prescriptions
- Dentists should thoroughly review the 2018 Arizona Opioid Prescribing Guidelines available at http://azdhs.gov/documents/audiences/clinicians/clinical-guidelines-recommendations/prescribing-guidelines/az-opioid-prescribing-guidelines.pdf

Prescription vs. Nonprescription Pain Control

- Scientific literature does not support the belief that opioids are the strongest pain medications and should be used for severe pain
  - The number needed to treat (NNT) measures the impact of a medication or therapy by estimating the number of patients that need to be treated to have an effect on one person
  - *A lower NNT score indicates a more effective the treatment*
    - A NNT of '1' means the medication is 100% effecti
    - A NNT of 1.5 is excellent,
    - A NNT of 2.0 would be considered good
    - A NNT of 2.5 is considered fair.[7]

NNT Comparison

Analgesic Number Needed to Treat (NNT) Comparison

Medication	NNT
Codeine 60 mg	16.7
Tramadol 50 mg	8.3
Oxycodone 5 mg + acetaminophen 325 (Percocet)	5.5
Oxycodone 15 mg	4.6
Acetaminophen 1000 mg	3.8
Naproxen (Aleve) 200 mg	3.4
Ibuprofen 200 mg	2.7
Oxycodone 10 mg + acetaminophen 650 mg	2.7
Naproxen (Aleve) 500 mg	2.7
Ibuprofen 400 mg	2.5
Ibuprofen 200 mg + Acetaminophen 500 mg	1.6
Ibuprofen 400 mg + Acetaminophen 1000 mg	1.5

Oxford Pain Group League[17]

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

Analgesics should be given preemptively before and/or immediately after surgery to prevent pain development! [8]

- Preoperative Period
  - Conduct a thorough pretreatment evaluation to include the following:
    - Dental and medical history
    - Past or current use of opioids, sedative-hypnotics, benzodiazepines, and anxiolytics
  - The use of long-acting local anesthetic (bupivacaine, etidocaine, liposomal bupivacaine) for a dental procedure results in less pain during the first 4-8 post-op hours and over the 48 hours after a procedure, when compared to lidocaine with epinephrine.[10, 11, 12]

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

- A perioperative corticosteroid (dexamethasone) may be useful in limiting swelling and decrease post-op discomfort after third-molar extractions.[12]
- Consider starting a nonsteroidal anti-inflammatory drug (NSAID) 24 hours prior to the procedure (e.g., 600 mg ibuprofen four times daily) to ensure a loading dose if there are no contraindications.[13]
  - Use of Ibuprofen or other NSAIDS within 24 hours of all types of surgery in reducing post-operative pain is currently being studi to address concerns related to an increase in post-operative bleeding.
    - Current studies are considered inconclusive as to whether not their use results in increased post-operative bleeding, due to poor study design

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

- Prescribe nonsteroidal anti-inflammatory analgesics (non-opioid) as the ***first*** line of pain control[13]
  - Multiple studies have indicated preoperative treatment with acetaminophen or ibuprofen decrease post-procedure pain in children, adolescents and adults[15, 16, 17].
    - *A combination of acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDS*) is optimal and rivals the analgesic effect of opioids unless medically contraindicated.*

*There are multiple types of NSAIDs which can be used to treat pain. These include ibuprofen, diclofenac (Voltaren), ketorolac (Toradol), aspirin, ketoprofen, and naproxen (Aleve). **Ibuprofen is the most widely studied and prescribed for oral/dental pain.**

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

- Only in cases where over-the-counter medications are ineffective should prescription medications be considered.
  - If opioid therapy is needed, immediate-releases opioids should be prescribed instead of extended release or long acting[1].
    - If opioids are prescribed, the minimum dose to meet the pain management objective should be used.
    - To decrease the amount of opioid needed, prescribe in tandem with acetaminophen or ibuprofen. Remembering the lower the NNT, the more effective the treatment:
      - The NNT of Oxycodone 15 mg is 4.6
      - The NNT of Oxycodone 10mg + acetaminophen 650 mg is 2.7 (equivalent to two 5 mg Percocet tablets).[19]

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

- The combination of ibuprofen and acetaminophen drugs may be used in lower doses than each individual drug alone, potentially reducing the incidence of adverse effects for the each.
  - Onset of analgesic effect is faster with a combination of the two medications than for either alone.[15, 17]
- The combination of different analgesics with different mechanisms of action enable the individual medications to act in a greater than synergistic fashion, providing multimodal coverage

Clinical Recommendations and Suggested Use of Analgesics Pre and Post-Dental Procedure

- Patient counseling on the use of pain medication should explain the goal is to be as comfortable as possible, but some discomfort is normal and may still occur with any analgesic prescribed.[18]
- For those patients suffering from chronic dental pain, consider referring the patient to a pain management clinic.
- Consideration should be given to medications potential to provide pain relief against its potential to do harm (i.e. side-effects and addiction potential)
- Dentists and oral surgeons must use their best professional judgment and maintain a patient-centered approach when prescribing pain medication in the treatment of their patients.

OTC Pain Control

- Careful monitoring and dosing instructions should be provided to avoid over dosage for all over-the-counter and prescription pain medications.[12]

- The following are clinical recommendations for over-the-counter (OTC) analgesics to improve the quality of care provided while minimizing the risks associated with prescription pain medications.

Patients should check all other medications they are taking for ibuprofen and acetaminophen and include the total number of milligrams in those drugs with the amount taken for pain relief, when calculating daily maximums.

Combination of Ibuprofen and Acetaminophen

- In the absence of medical conditions which prohibit the use of either medication, the following schedule is recommended.
  - Ibuprofen 400 mg *plus* 1000mg acetaminophen* *or* 200mg ibuprofen plus 500mg acetaminophen per the following schedule:
    - The ibuprofen and acetaminophen should be taken together every 4-6 hours
      - For example, 400 mg ibuprofen plus 1000 mg acetaminophen every 4-6 hours
    - ***OR*** individually every 2-3 hours apart on an overlapping schedule
      - For example, 400 mg ibuprofen followed 2-3 hours later by 1000mg acetaminophen, and repeat on the same alternating schedule

**** Assessment of the patients liver function should be conducted whenever acetaminophen is prescribed.***

Combination of Ibuprofen and Acetaminophen

- Reductions in individual doses may be necessary for teens depending on weight, height, and medication sensitivity. Consult your pharmacist for appropriate dosing when indicated.

- Combining ibuprofen and acetaminophen can lead to adverse reactions, especially with high doses in susceptible patients.

- **Do NOT exceed 3000 mg of Ibuprofen (eight 200mg tablets) plus 3200 mg Acetaminophen (three 500mg tablets) in a 24-hour period.**
  - ***This regime should not be taken continuously for more than 3 days (72 hours) unless under direct physician care.***

Ibuprofen

- Multiple studies have shown ibuprofen to usually be superior to acetaminophen for pain relief and control[9, 15, 16, 17].
  - It is available in either brand name or generic tablets.
  - Fast-acting tablets have a lower NNT than regular formulations
  - The common dose per tablet is 200 mg.
  - Brand name (Advil) or generic forms of ibuprofen have been demonstrated to provide more efficient relief of the symptoms related to inflammation.

Ibuprofen

- The recommended adult schedule for ibuprofen for dental procedures is as follows:
  - Ibuprofen 400 – 800 mg pre-operative dose.
    - Ibuprofen 400 mg has an NNT of 2.1 (fast-acting) to 2.5
  - Ibuprofen 400 – 800 mg every 4 hours after the initial pre-operative dose for the remainder of the day of treatment (even if you are still numb and even if you experience minimal discomfort).
  - Ibuprofen 400 mg – 800 mg every 4-6 hours as necessary for the next several days while the symptoms related to the inflammation resolve.
  - Reduce ibuprofen to 200 – 400 mg for those with sensitivity to NSAIDs and younger teens.

Ibuprofen (cont.)

- Over-the-counter ibuprofen tablets (200 mg each) allow the patient to decrease the dosage of ibuprofen from 800 mg (4 tablets) to 600 mg (3 tablets) to 400 mg (2 tablets) etc., as symptoms allow.
  - The frequency of the doses should remain at 4-6 hour intervals as the dosage decreases.
- Take with food to reduce risk of upset stomach or injury to stomach lining.
- Ibuprofen should not be taken if patient has a history of stomach ulcers, kidney problems or allergy to aspirin.
- Patients who are currently taking coumadin or other blood thinners should **NOT** take ibuprofen.
- **Do NOT exceed 3200 mg of Ibuprofen (sixteen 200 mg tablets) in a 24-hour period.**
  - ***This regime should not be taken continuously for more than 3 days (72 hours) unless under direct physician care.***

Acetaminophen

- For patients who cannot take ibuprofen, over-the counter acetaminophen (Tylenol) is another good choice.
- Regular strength dosages of acetaminophen are typically 325 mg/tablet; extra strength dosages are generally 500 mg/tablet.
- The recommended schedule for acetaminophen post-dental procedure is as follows*:
  - Acetaminophen 1000 mg preoperative dose.
  - Acetaminophen 1000 mg every 4-6 hours after the initial pre-operative dose for the remainder of the day of treatment (even if the patient is still numb and even if they experience minimal discomfort).
  - Acetaminophen 1000 mg every 4-6 hours as necessary for the next several days while the symptoms related to the inflammation resolve.

*** Liver function should be assessed before prescribing acetaminophen.**

Acetaminophen

- Patients with mild-moderate liver problems should limit total daily dose of acetaminophen to less than 2000 mg,
  - Avoid acetaminophen entirely if severe liver problem exists.

- Acetaminophen is an appropriate choice if the patient has no pain but has fever associated with pre/post-op infection.

- Research has shown acetaminophen it is less effective in pain management than ibuprofen 9, 16.

- **Do NOT exceed 3000 mg – 3250 mg Acetaminophen (six 500 mg tablets or nine 325 mg tablets) in a 24-hour period.**
  - ***This regime should not be taken continuously for more than 3 days (72 hours) unless under direct physician care.***

Conclusion

- New Arizona legislation limits prescribing of opioids to a 5-day limit, with a prescribing dose limit of 90 MME per day
- Opioids and opioid combination drugs are not considered effective or long-lasting options for treating acute dental pain.[18]
- From a risk-benefit perspective, justification for the use of opioid medications and opioids in combination with other medications remains unclear.[18]
- The largest body of peer-reviewed published research suggests that postoperative use of NSAIDS, with or without acetaminophen, is equal or superior to that of opioid medications for dental pain.[18]

POST-TEST

*Click after you make your choice to reveal the correct answer
Click again to see the next question

Dentists prescribe what percentage of opioids, and where do they rank as opioid prescribers?

a. 5% of prescriptions, rank 5 out of ten top prescribers
b. 7% of prescriptions, rank 4 out of ten top prescribers
c. 10% of prescriptions, rank 3 out of ten top prescribers
d. 12% of prescriptions, rank 2 out of ten top prescribers

Correct Answer: D

What percentage of people obtain painkillers from a friend or relative rather than a prescription?

a. 35%
b. 50%
c. 70%
d. 90%

Correct Answer: C

POST-TEST

Click after you make your choice to reveal the correct answer
Click again to see the next question

The new Arizona opioid legislation contains a _____ morphine milligram equivalent (MME) prescribing dose limit per day for new prescriptions?

a. 75
b. 90
c. 50
d. 100

Correct Answer: B

What percentage of oral and maxillofacial surgeons almost always prescribe a centrally acting opioid post operatively?

a. 45%
b. 65%
c. 75%
d. 85%

Correct Answer: D

Post-Test

Click after you make your choice to reveal the correct answer
Click again to see the next question

According to research, which of the following is the most effective at controlling dental pain?

a. Codeine 60 mg
b. Ibuprofen 400 mg
c. Oxycodone 10 mg + Acetaminophen 650 mg
d. Ibuprofen 200 mg + Acetaminophen 500 mg

Correct Answer: D

The maximum amount of Acetaminophen which should be prescribed in a 24 hour period for a healthy patient is:

a. 3000 mg
b. 2000 mg
c. 4000 mg
d. 2800 mg

Correct Answer: A

POST-TEST

Click after you make your choice to reveal the correct answer
Click again to see the next question

1. Dentists and oral surgeons are the major prescribers of opioids for people age 10-19, writing 31% of all prescriptions for this patient group.

   Correct Answer: True

2. The use of a long-acting local anesthetic for a dental procedure reduces pain the first 4-8 hours and up to 24 hours after.

   Correct Answer: False. Long-acting anesthetic can last up to 48 hours after

3. Literature supports the belief that opioids are the strongest pain medications and should be used for severe dental pain.

   Correct Answer: False. There is little research which supports this claim, with most evidence indicating ibuprofen and Tylenol can be more effective.

POST-TEST

Click after you make your choice to reveal the correct answer

Click again to see the next question

4. The new Arizona opioid legislation has a 5 day limit on initial opioid prescriptions.
   Correct Answer: True

5. The U.S. consumes 69% of the worlds hydrocodone/acetaminophen combinations.
   Correct Answer: False. The US consumes 99% of the worlds hydrocodone/acetaminophen combinations.

6. The majority of opioid prescription for nonsurgical dental visits was for preoperative pain control.
   Correct Answer: False. It was for dental visits for restorative procedures.

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