Improving Opioid Prescribing: The CDC Guideline for Prescribing Opioids for Chronic Pain, and Considerations for Dentistry

Debbie Dowell, MD, MPH
American Dental Association's 2018 Opioid Webinar Series

February 14, 2017
Established benefits of opioids

• Reduce severe, acute pain (by about 20%-30%)

• Relieve pain associated with cancer and other painful conditions at the end of life

• Benefits not established for long-term pain relief or improved function in chronic pain
Chronic pain and prescription opioids

- In 1st RCT of long-term opioid therapy for chronic pain, opioids less effective than nonopioid pain treatment
  - Pain relief: small, significant advantage for nonopioid therapy
  - Function: no difference between opioid and nonopioid therapy
  - Medication-related adverse symptoms: significantly more with opioid therapy

- Opioids frequently prescribed for chronic pain
  - Chronic pain accounts for ~50% of U.S. rx opioid market
  - 4-5% of American adults use opioid pain medication long-term

US prescription opioid use increased dramatically since late 1990s and decreased slightly since 2011

Sources: International Narcotics Board; World Health Organization population data
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2017
How much do dentists contribute to opioid prescribing?

• 18.5 million prescriptions in 2012 (6.4% of US total)*

• Among clinical specialties in the US from 2007-2012, the largest drops in opioid-prescribing rates occurred in emergency medicine (–8.9%) and dentistry (–5.7%)*

• In South Carolina in 2012-2013, where dentists represented 8.9% of unique prescribers, they prescribed 44.9% of initial opioid fills**


New evidence: short-term opioid exposure in opioid-naïve patients associated with long-term opioid use

- If prescribed ≥1 day, probability of continued use at 1 year = 6.0%*

- New persistent opioid use in 5.5-6.4% of adults who received opioids postoperatively vs 0.4% in controls**

- Odds of long-term opioid use higher if seen by a high- vs. low-intensity opioid prescriber in the ED (aOR 1.30, p<0.0001)***


Opioid-related overdose deaths

- Natural and semi-synthetic opioids (like oxycodone or hydrocodone) and methadone
- Heroin
- Synthetic opioids (like fentanyl)

Amounts of opioids prescribed, by county—United States, 2015

Drug poisoning death rates, by county—United States, 2016


12 recommendations,* including

- When opioids are used for acute pain, prescribe no more than needed
- Check Prescription Drug Monitoring Program (PDMP) data
- Avoid concurrent benzodiazepines and opioids when possible
- Arrange medication-assisted treatment for opioid use disorder

*Some of the recommendations might be relevant for acute care settings or other specialists, such as emergency physicians or dentists, but use in these settings or by other specialists is not the focus of the guideline. Readers are referred to other sources for prescribing recommendations within acute care settings and in dental practice, such as ... the Pennsylvania Guidelines on the Use of Opioids in Dental Practice.
For acute pain severe enough to require opioids

- Prescribe the lowest effective dose
- Prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids
- Prescribe no greater quantity than needed for expected duration of pain severe enough to require opioids (≤3 days usually sufficient; >7 days rarely needed)
New evidence: ibuprofen + acetaminophen equivalent to opioids + acetaminophen for acute pain*

• For patients in the emergency department with acute extremity pain, no significant differences in pain reduction between
  – ibuprofen 400mg + acetaminophen 1000mg (4.3 point ↓**)
  – oxycodone 5mg + acetaminophen 325mg (4.4 point ↓**)
  – hydrocodone 5mg + acetaminophen 300mg (3.5 point ↓**)
  – codeine 30mg + acetaminophen 300mg (3.9 point ↓**)

**pain intensity assessed at 2 hours using the 11-point numerical rating scale (NRS)
Most prescription opioid overdose deaths involve high dosages and/or multiple sources; information on both is available in PDMP data.

These dosage thresholds are based on overdose risk when opioids are prescribed for pain and should not guide dosing of medication-assisted treatment of opioid use disorder.
Mobile App

• Features include:
  – MME calculator
  – Prescribing guidance
  – Motivational interviewing

available for download on the App store and on Google play
If you find concerning information in the PDMP, take action to improve patient safety

• Discuss safety concerns including increased overdose risk

• Consider opioid use disorder and discuss concerns

• Do not dismiss patients from care—use the opportunity to provide potentially lifesaving information and interventions
PRESCRIPTION DRUG MONITORING PROGRAMS (PDMPs)

WHAT IS A PDMP?
A PDMP is a statewide electronic database that tracks all controlled substance prescriptions. Authorized users can access prescription data such as medications dispensed and doses.

PDMPs improve patient safety by allowing clinicians to:
- Identify patients who are obtaining opioids from multiple providers.
- Calculate the total amount of opioids prescribed per day (in MME/day).
- Identify patients who are being prescribed other substances that may increase risk of opioids—such as benzodiazepines.

WHAT SHOULD I CONSIDER WHEN PRESCRIBING OPIOIDS?

- **High Dosage**: Talk to your patient about the risks for respiratory depression and overdose. Consider offering to taper opioids as well as prescribing naloxone for patients taking 50 MME/day or more.
- **Multiple Providers**: Counsel your patient and coordinate care with their other prescribers to improve safety and discuss the need to obtain opioids from a single provider. Check the PDMP regularly and consider tapering or discontinuation of opioids if pattern continues.
- **Drug Interactions**: Whenever possible, avoid prescribing opioids and benzodiazepines concurrently. Communicate with other prescribers to prioritize patient goals and weigh risks of concurrent opioid and benzodiazepine use.

WHEN SHOULD I CHECK THE PDMP?

State requirements vary, but CDC recommends checking at least once every 3 months and consider checking prior to every opioid prescription.

WHAT SHOULD I DO IF I FIND INFORMATION ABOUT A PATIENT IN THE PDMP THAT CONCERNS ME?

Patients should not be dismissed from care based on PDMP information. Use the opportunity to provide potentially life-saving information and interventions.

1. **Confirm that the information in the PDMP is correct.** Check for potential data entry errors, use of a nickname or maiden name, or possible identity theft to obtain prescriptions.
2. **Assess for possible misuse or abuse.** Offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients who meet criteria for opioid use disorder. If you suspect diversion, urine drug testing can assist in determining whether opioids can be discontinued without causing withdrawal.
3. **Discuss any areas of concern with your patient and emphasize your interest in their safety.**

available at cdc.gov/drugoverdose/prescribing/resources.html
Opioid use disorder

• Previously classified as opioid abuse or opioid dependence (DSM-IV)

• Defined in DSM-5 as a problematic pattern of opioid use leading to clinically significant impairment or distress
  – manifested by at least two defined criteria
  – occurring within a year
If you suspect opioid use disorder

• Discuss your concern with your patient
• Provide an opportunity for your patient to disclose related concerns or problems
• Arrange for assessment with a substance use disorder specialist
• Do not dismiss patients from care—use the opportunity to provide potentially lifesaving information and interventions
Resources for opioid use disorder treatment

• SAMHSA’s buprenorphine provider locator (https://www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator)

• SAMHSA’s Opioid Treatment Program Directory (http://dpt2.samhsa.gov/treatment/directory.aspx)

• SAMHSA’s Provider Clinical Support System for Opioid Therapies (pcssNOW.org) offers expertise in the treatment of substance use disorders, opioid use disorder, and on the interface of pain and opioid misuse
Web based training: Applying CDC's Guideline for Prescribing Opioids

- Opportunities to practice communication throughout
- One module focuses on communication
- Stand alone modules
- Interactive scenarios
- Resource links
- Checks knowledge
- Allows practice

available at cdc.gov/drugoverdose/training/
“The first time I ever took prescription opioids is when I got my wisdom teeth taken out.... I must have gotten a 30-day script. I took them all in three days.”

- Devin
For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Prescribing Opioids in Dentistry: Requirements, Responsibilities, and Alternatives

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Managing Chronic Pain
Opioid Epidemic: Why Now?

- 1996 Purdue Pharmaceutical Company introduces OxyContin.
- Porter and Jick: Abstract
- 2000 – 2014 overdose deaths increase 137%
- 2007-2012: 740 million Vicodin and OxyContin pills sold in WV, equaling 433 pills per resident
- One (1) OxyContin pill = $80.00
- One (1) bag of heroin = $10.00
- 2010 OxyContin reformulated
- Since 2010, overdose deaths decrease for prescription opioids and increase for heroin, fentanyl and now carfentany
Prescriptions vs Heroin

The graph shows the number of deaths due to prescription opioids and heroin from 1995 to 2014. The number of deaths due to prescription opioids and heroin and/or unspecified opioids has been increasing over the years.
Pittsburgh/Allegheny County

Estimates for 2017: 750 overdose fatalities

FATAL OVERDOSES IN ALLEGHENY COUNTY

Overdose fatalities increased 45% in 2016

Source: OverdoseFreePA

James Hilston/Post-Gazette
Opioid Prescriptions by Dentists

Primary care providers prescribe the most opioids

Opioid Prescriptions by Specialty, 2012

Number of prescriptions

Family Practice | Internal Medicine | General Practice | Surgery | Dentists | Physician Assistants | Nurse Practitioners | Pain Medicine | ED Physicians | Physical Medicine | Oncology

Specialty
Opioid Market: Chronic Pain

Half of US Opioids Market is Treatment for Chronic, Non-Cancer Pain

U.S. opioids market revenues
7 leading indications - 2010

- Cancer
- Fibromyalgia
- Neuropathic Pain
- Osteoarthritis
- Rheumatoid Arthritis
- Post Operative Care
- Low Back Pain

{50%}
# Top Prescription in US

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td>Total*</td>
<td>4,014</td>
<td>4,155</td>
<td>4,236</td>
<td>4,325</td>
<td>4,368</td>
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<tr>
<td>1. levothyroxine</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>105</td>
<td>112</td>
<td>117</td>
<td>120</td>
<td>121</td>
</tr>
<tr>
<td>2. lisinopril</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>89</td>
<td>99</td>
<td>102</td>
<td>104</td>
<td>106</td>
</tr>
<tr>
<td>3. APAP/hydrocodone</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>137</td>
<td>136</td>
<td>129</td>
<td>119</td>
<td>97</td>
</tr>
</tbody>
</table>

*millions of prescriptions

Medicines Use and Spending in the U.S.
IMS Institute for Healthcare Informatics, April 2016.

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Trends: Opioid Prescribing in Dentistry

- Dentists prescribe 12.2% of all immediate-release opioids (Vicodin® or Percocet®).

- Dentists most often treat acute inflammatory pain that is either post-surgical or odontogenic/inflammatory.

- The need and effectiveness of opioid analgesics following dental surgery is difficult to predict.

- Dentists and OMFS’s may often be prescribing an opioid analgesics to adolescents and young adults for the first time in their lives (3-4 million wisdom teeth extractions).


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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%.

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Hydrocodone / APAP</td>
<td>76.1%</td>
</tr>
<tr>
<td>Oxycodone / APAP</td>
<td>12.2%</td>
</tr>
<tr>
<td>Codeine / APAP</td>
<td>6.8%</td>
</tr>
<tr>
<td>Hydrocodone / ibuprofen</td>
<td>3.0%</td>
</tr>
<tr>
<td>Meperidine</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

MacCauley JL et al, JADA 2016
Preferred Centrally-Acting Analgesics

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

<table>
<thead>
<tr>
<th>Drug Combination</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocodone / APAP</td>
<td>64.0%</td>
</tr>
<tr>
<td>Oxycodone / APAP</td>
<td>20.2%</td>
</tr>
<tr>
<td>Hydrocodone / ibuprofen</td>
<td>4.6%</td>
</tr>
<tr>
<td>Codeine / APAP</td>
<td>4.3%</td>
</tr>
<tr>
<td>Promethazine / meperidine</td>
<td>3.7%</td>
</tr>
<tr>
<td>Propoxyphene / APAP</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

1.7 million patients prescribed opioids following third molar extractions.

The median milligrams of morphine equivalents was 120 MME's.

This represents:

- 24 tablets of hydrocodone 5 mg (Vicodin)
- 16 tablets of oxycodone 5 mg (Percocet).

Opioid Prescribing After Surgical Extraction of Teeth in Medicaid Patients, 2000–2010

Prescribing vs Utilization

- Forty-eight patient interviews (1-day, 7-days).
- Age: 18.8 yrs (15-30)
- Female = 22 / Males = 13
- 20 Vicodin® prescribed
- 12 (60%) pills unused at 7-days.
- Nausea/vomiting at 7-days interview: 24%.

Trends for Opioids Misuse

• From 1997-2007, use increased from 74 mg/person to 369 mg person (500% increase).

• Prescription opioid drugs rank second to marijuana in categories of abused drugs.

• For first time users, friends and family were the primary source: “the AT&T plan”.

Developing Adolescent Brain

Balance between pleasure center (Nucleus Acumbens) and judgement center (Prefrontal Cortex) is not completely developed until 20-25 years of age.
Data come from the Monitoring the Future study, University of Michigan.

Nationally representative sample of 6,220 individuals surveyed in high school in 12th grade.

Followed up through age 23. Analyses are stratified by predicted future opioid misuse as measured in 12th grade on the basis of known risk factors. The main outcome is nonmedical use of a prescription opioid at ages 19 to 23.

Predictors include use of a legitimate prescription by 12th grade, as well as baseline history of drug use and baseline attitudes toward illegal drug use.

**RESULTS:** Legitimate opioid use before high school graduation is independently associated with a 33% increase in the risk of future opioid misuse after high school among low risk children.

Richard Miech, Lloyd Johnston, Patrick M. O’Malley, Katherine M. Keyes, Kennon Heard
Prescription Opioids in Adolescence and Future Opioid Misuse. Pediatrics 2017;139(6)
Ibuprofen vs APAP

Figure 1. Mean pain intensity difference scores vs time. Pain intensity was rated on a scale of 0 = none to 3 = severe.

ASA vs. Codeine vs. Placebo

<table>
<thead>
<tr>
<th>TIME (HR)</th>
<th>ASA</th>
<th>CODEINE</th>
<th>PLACEBO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>2</td>
<td>2.0</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>2.0</td>
<td>1.5</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>2.0</td>
<td>1.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Oral Surgery Model: Opioid Combinations

- Acetaminophen 1000 + Oxycodeone 10mg (n=45)
- Acetaminophen 1000 + Oxycodeone 5mg (n=40)
- Acetaminophen 500 + Oxycodeone 5mg (n=45)
- Acetaminophen 500 mg (n=37)
- Oxycodeone 5mg (n=42)
- Placebo (n=38)

N = 247

Pain intensity difference scores over hours.
Ibuprofen-Opioid Combination

Ibuprofen and APAP

Paracetamol and APAP (Acetaminophen) are chemical names for Tylenol.


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NNTs for Analgesic Agents

- Ibuprofen 200 + paracetamol 500
- Etoricoxib 120
- Codeine 60 + paracetamol 1000
- Dipyrrone 500
- Ibuprofen 600
- Piroxicam 20
- Celecoxib 400
- Naproxen 500/550
- Diclofenac 50
- Ibuprofen 400
- Oxycodone 10 + paracetamol 650
- Tramadol 75 + paracetamol 650
- Dexketoprofen 20/25
- Ketoprofen 50
- Aspirin 1000
- Paracetamol 1000
- Codeine 60 + paracetamol 600/650
- Tramadol 100
- Ibuprofen 200
- Paracetamol 600/650

NNT for at least 50% maximum pain relief (95% CI)
## NNTs for Dental Analgesics

<table>
<thead>
<tr>
<th>Drug Formulation</th>
<th>Trials/Subjects</th>
<th>NNT (C.I.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin 600/650 mg</td>
<td>45/3581</td>
<td>4.5 (4.0-5.2)</td>
</tr>
<tr>
<td>Aspirin 1,000 mg</td>
<td>4/436</td>
<td>4.2 (3.2-6.0)</td>
</tr>
<tr>
<td>Acetaminophen 1,000 mg</td>
<td>19/2157</td>
<td>3.2 (2.9-3.6)</td>
</tr>
<tr>
<td>Ibuprofen 200 mg</td>
<td>18/2470</td>
<td>2.7 (2.5-3.0)</td>
</tr>
<tr>
<td>Celecoxib 400 mg</td>
<td>4/620</td>
<td>2.5 (2.2-2.9)</td>
</tr>
<tr>
<td><strong>Ibuprofen 400 mg</strong></td>
<td><strong>49/5428</strong></td>
<td><strong>2.3 (2.2-2.4)</strong></td>
</tr>
<tr>
<td>Oxycodone 10 mg plus Acetaminophen 650 mg</td>
<td>6/673</td>
<td>2.3 (2.0-6.4)</td>
</tr>
<tr>
<td><strong>Codeine 60 mg plus APAP 1000 mg</strong></td>
<td><strong>26/2295</strong></td>
<td><strong>2.2 (1.8-2.9)</strong></td>
</tr>
<tr>
<td>Naproxen 500/550 mg</td>
<td>5/402</td>
<td>1.8 (1.6-2.1)</td>
</tr>
<tr>
<td><strong>Ibuprofen 200 mg plus Acetaminophen 500 mg</strong></td>
<td><strong>2/280</strong></td>
<td><strong>1.6 (1.4-1.8)</strong></td>
</tr>
</tbody>
</table>
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**
- Ibuprofen 400 mg plus APAP 650/hydrocodone 10 mg
- q 6 hours: fixed interval for 24-48 hours

Issues in Opioid Pain Therapeutics

- Changes in drug therapy for post-operative dental pain management.
  - No longer prescribing Darvocet.
  - Limiting dose of APAP in combination analgesics.
  - Long-acting local anesthetics i.e. Marcaine
  - High efficacy of NSAIDs in dental post-op pain.
  - Steroids as an antiemetic and an anti-inflammation.
  - Prophylactic NSAID’s.
  - APAP-Ibuprofen alternative.

- Balancing pain Tx and potential misuse.
National Issues in Opioid Therapeutics

- Expand take-back programs.
- Educational requirements for DEA registration and State licensure.
- REMS: Risk Evaluation and Mitigation Strategies.
- Expand dental school accreditation curriculums in anesthesia and pain control.
- PDMPs: Electronic State sponsored prescription drug monitoring programs.
- Revise opioid formulation DEA scheduling.
Checklist: Opioid-Sparing Strategies

- 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)
The CDC expert panel recognized that long-term opioid use often begins with treatment of acute pain.

“Three days or less will often be sufficient; more than seven days will rarely be needed.”

Extended release and long-acting opioids, such as methadone, fentanyl patches, or extended release versions of opioids such as oxycodone, oxymorphone, or morphine, should not be prescribed for the treatment of acute pain.

The American Dental Association revised its statement on the Use of Opioids in the Treatment of Dental Pain.*

“Dentists should consider nonsteroidal anti-inflammatory analgesics (NSAIDs) as the first-line therapy for acute pain management.

*Adopted by the House of Delegates 2016.

Available at ADA.org
The American Dental Association revised its statement on the Use of Opioids in the Treatment of Dental Pain.*

“Dentists should consider coordination with other treating doctors, including pain specialists when prescribing opioids for management of chronic orofacial pain.”

*Adopted by the House of Delegates 2016.

Available at ADA.org
Provider Issues in Opioid Therapeutics

✓ Assessing patients at risk for opioid misuse.
✓ Limiting prescriptions to fewer units of opioids. (No refills, 8 units?, 20 units?, 40 units?)
✓ Educate parents and patients of dangers.

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

✓ With adolescents, parent responsibility as the “gatekeeper” to monitor pain and analgesia needs.
✓ Recommend strategies to secure prescriptions.
✓ Indicate DEA drug take-back programs.
✓ Describe procedures for disposal of unused drug.
Changing Professional Responsibilities

• **Antibiotic Stewardship**
  - Narrow spectrum
  - D/C after 2-3 days symptom free
  - Definitive bacterial infections only

• **Mercury Waste: EPA/ADA requirements**
  - Amalgam separators
  - Prohibits flushing into water supplies
  - Avoid bleach and chorine cleaners

• **Opioid Prescribing: ADA guidelines**
  - Explain your expectation for postoperative pain.
  - History of abuse or mental illness.
  - Respiratory depression with alcohol and drug interactions.
  - Limit dose and numbers when prescribing opioids.
  - Discuss possible side effects: nausea / vomiting and constipation.
  - Counseling for misuse of unused opioid medications.
Questions / Comments

Omar Torres / AFP-Getty Images
Providers’ Clinical Support System Training

PCSS is a collaborative effort led by the American Academy of Addiction Psychiatry (AAAP) in partnership with: Addiction Technology Transfer Center (ATTC), American Academy of Neurology (AAN), American Academy of Pain Medicine (AAPM), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Dental Association (ADA), American Medical Association (AMA), American Osteopathic Academy of Addiction Medicine (AOAAM), American Psychiatric Association (APA), American Society for Pain Management Nursing (ASPMN), International Nurses Society on Addictions (IntNSA), and Southeast Consortium for Substance Abuse Training (SECSAT).

For more information visit: www.pcssnow.org

For questions, email: pcss@aaap.org

Visit us on Twitter: @PCSSProjects

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Webinar Evaluations (Post and 30-Day)

Each PCSS partner organization is asked to distribute a post and 30-day evaluation to participants for their completion.

Participants in today’s webinar will be emailed the link to complete their evaluations.
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