Changing Prescribing Practices to Prevent Opioid Addiction

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Moderator: John L. Eadie, MPA, Coordinator, Public Health and Prescription Drug Monitoring Program Project, National Emerging Threat Initiative, A National HIDTA Initiative, and Member, National Rx Drug Abuse & Heroin Summit Advisory Board
Disclosures

- Andrew Kolodny, MD, and John L. Eadie, MPA, have disclosed no relevant, real, or apparent personal or professional financial relationships with proprietary entities that produce healthcare goods and services.
Disclosures

- All planners/managers hereby state that they or their spouse/life partner do not have any financial relationships or relationships to products or devices with any commercial interest related to the content of this activity of any amount during the past 12 months.

- The following planners/managers have the following to disclose:
  - Kelly J. Clark, MD, MBA, FASAM, DFAPA – Consulting fees: Braeburn, Indivior
Learning Objectives

- Outline strategies for preventing inappropriate opioid prescribing.
- Identify pathways for development of addiction in patients exposed to opioids.
- Prepare interventions to promote more cautious prescribing.
Outline

I. Why Opioid Prescribing Still Matters

II. How Opioid Addiction Develops

III. Policies & Practices to Preventing Opioid Addiction
Overdose Deaths Involving Opioids, by Type of Opioid, United States, 2000-2016

- **Any Opioid**
- **Other Synthetic Opioids** (e.g., fentanyl, tramadol)
- **Heroin**
- **Natural & Semi-Synthetic Opioids** (e.g., oxycodone, hydrocodone)

**Methadone**

**Deaths per 100,000 population**


Heroin treatment admissions: 2003-2013

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 01.23.15.
“Societies tend to react against drugs slowly, and the reaction usually comes just after the popularity of drugs has peaked.”

“Learning to hate drugs comes not so much from a government brochure as from repeated observation of the damage to acquaintances and society.”

Dr. David Musto
The results reported in this paper do not support its authors' conclusion.
### Table 7.29A Past Year Initiation of Substance Use among Persons Aged 12 to 17: Numbers in Thousands, 2002-2016

<table>
<thead>
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<td>Daily Cigarette Use&lt;sup&gt;a&lt;/sup&gt;</td>
<td>403b</td>
<td>439b</td>
<td>417b</td>
<td>334b</td>
<td>386b</td>
<td>333b</td>
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<td>CIGARS</td>
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<td>849b</td>
<td>730b</td>
<td>797b</td>
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<td><strong>ALCOHOL</strong></td>
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<td>2,749</td>
<td>2,706</td>
<td>2,698</td>
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<td>2,476</td>
<td>2,622b</td>
<td>2,448</td>
<td>2,417</td>
<td>2,335</td>
<td>2,358</td>
<td>2,293</td>
</tr>
</tbody>
</table>

<sup>a</sup> = low precision. -- = not available. da = does not apply. nc = not comparable due to methodological changes. nr = not reported due to measurement issues.

NOTE: Some 2006 to 2010 estimates may differ from previously published estimates due to updates (see Section 1.3.5 in Appendix B of the 2015 National Survey on Drug Use and Health: Methodological Summary and Definitions).

NOTE: Past Year Initiation for a specific substance includes those who used that substance (assumed in the case of prescription psychotherapeutics) for the first time in the year. Methodological limitations preclude the estimation of past year initiation for the overall prescription psychotherapeutics category and consequently the overall illicit drugs category.

NOTE: Mood of prescription psychotherapeutics is defined as use in any way not directed by a doctor, including use without prescription of one’s own, use in greater amounts, more often, or longer than told; or use in any other way not directed by a doctor.

<sup>a</sup> The difference between this estimate and the 2016 estimate is statistically significant at the .05 level. Rounding may make the estimates appear identical.

<sup>b</sup> The difference between this estimate and the 2016 estimate is statistically significant at the .01 level. Rounding may make the estimates appear identical.

<sup>c</sup> Illicit Drug Use includes the misuse of prescription psychotherapeutics or the use of marijuana, cocaine (including crack), heroin, hallucinogens, inhalants, or methamphetamine.

<sup>d</sup> Prescription Psychotherapeutics include pain relievers, tranquilizers, stimulants, or sedatives and do not include over-the-counter drugs.

<sup>e</sup> Prescription Psychotherapeutic subtypes were revised in 2016; one effect was the comparability of codeine products between 2015 and 2016.

<sup>f</sup> Daily Cigarette Use is defined as ever smoking every day for at least 30 days.

<sup>g</sup> Smokeless Tobacco includes snuff, dip, chewing tobacco, or "untabbed" cigarettes.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002-2016
Three Opioid-Addicted Cohorts

1. 20-40 y/o, disproportionately white, significant heroin use, opioid addiction began with Rx use (addicted after 1995)

2. 40 y/o & up, disproportionately white, mostly Rx opioids, opioid addiction began with Rx use (addicted after 1995)

3. 50 y/o & up, disproportionately non-white, mostly heroin users, opioid addiction began in teen years with heroin use (addicted before 1995)
Death rates from overdoses of heroin or prescription opioid pain relievers (OPRs), by age group

In one year, drug overdoses killed more Americans than the entire Vietnam War did.

Dramatic Increases in Maternal Opioid Use and Neonatal Abstinence Syndrome

The First Count of Fentanyl Deaths in 2016: Up 540% in Three Years

How the opioid crisis decimated the American workforce...
Primary non-heroin opiates/synthetics admission rates, by State
(per 100,000 population aged 12 and over)

1999
(range 1 - 50)

- < 8
- 8 - 14
- 15 - 18
- 19 - 44
- 45 or more
- Incomplete data

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Primary non-heroin opiates/synthetics admission rates, by State (per 100,000 population aged 12 and over)

2001
(range 1 – 71)

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Primary non-heroin opiates/synthetics admission rates, by State
(per 100,000 population aged 12 and over)

2003
(range 2 – 139)

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Primary non-heroin opiates/synthetics admission rates, by State
(per 100,000 population aged 12 and over)

2005
(range 0 – 214)

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Primary non-heroin opiates/synthetics admission rates, by State
(per 100,000 population aged 12 and over)

2007
(range 1 – 340)

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Primary non-heroin opiates/synthetics admission rates, by State (per 100,000 population aged 12 and over)

2009 (range 1 – 379)

SOURCE: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set (TEDS). Data received through 11.03.10.
Rates of Opioid Sales, OD Deaths, and Treatment, 1999–2010

CDC. MMWR 2011
Addiction is a disease of exposure. Doctors and nurses, for instance, have a high addiction rate.

— William S. Burroughs —
USA oxycodone consumption (mg/capita)
1980–2015

Sources: International Narcotics Control Board; World Health Organization population data
Opioid prescribing in the U.S. peaked ~ 2011

Prescribing has declined slightly since 2011

Prescribing levels in 2015 were 3 times higher than 1999

National Survey On Drug Use & Health

- In 2015, 92 million Americans were prescribed an opioid- 38% of the adult population
  - Misuse reported by 12% that received Rx
  - Most common reason for misuse - relief of pain

- 11.5 million (4.7%) misused opioids

New York Consumption of Oxycodone
1980 - 2006

Sources: U.S. Dept of Justice, Drug Enforcement Administration, Office of Diversion Control
New York Consumption of Hydrocodone
1980 - 2006

Sources: U.S. Dept of Justice, Drug Enforcement Administration, Office of Diversion Control
Dollars Spent Marketing OxyContin (1996-2001)

Figure 1: Promotional Spending for Three Opioid Analgesics in First 6 Years of Sales

Absolute dollars in millions

Year 1: MS Contin: 1984-1989
Year 2: OxyContin: 1996-2001
Year 4: OxyContin: 1996-2001
Year 5: Duragesic: 1991-1996
Year 6: OxyContin: 1996-2001

Industry-funded organizations campaigned for greater use of opioids

- Pain Patient Groups
- Professional Societies
- The Joint Commission
- The Federation of State Medical Boards
“The risk of addiction is much less than 1%”


Cited 824 times (Google Scholar)
ADDICTION RARE IN PATIENTS TREATED WITH NARCOTICS

To the Editor: Recently, we examined our current files to determine the incidence of narcotic addiction in 39,946 hospitalized medical patients who were monitored consecutively. Although there were 11,882 patients who received at least one narcotic preparation, there were only four cases of reasonably well documented addiction in patients who had no history of addiction. The addiction was considered major in only one instance. The drugs implicated were meperidine in two patients, Percodan in one, and hydromorphone in one. We conclude that despite widespread use of narcotic drugs in hospitals, the development of addiction is rare in medical patients with no history of addiction.

JANE PORTER
HERSHEL JICK, M.D.
Boston Collaborative Drug Surveillance Program

Waltham, MA 02154

Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain

The SPACE Randomized Clinical Trial

Erin E. Krebs, MD, MPH; Amy Gravely, MA; Sean Nugent, BA; Agnes C. Jensen, MPH; Beth DeRonne, PharmD; Elizabeth S. Goldsmith, MD, MS; Kurt Kroenke, MD; Matthew J. Bair; Siamak Noorbalaoochi, PhD

Table 2. Patient-Reported Primary and Secondary Outcomes Among Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain Randomized to Opioid vs Nonopioid Medication

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Opioid Group, Mean (SD)</th>
<th>Nonopioid Group, Mean (SD)</th>
<th>Between-Group Difference (95% CI)*</th>
<th>Overall P Value</th>
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</thead>
<tbody>
<tr>
<td>Pain-Related Function (Primary Outcome)</td>
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<tr>
<td>BPI interference scale</td>
<td>5.4 (1.8)</td>
<td>5.5 (2.0)</td>
<td>-0.1 (-0.6 to 0.4)</td>
<td>.58</td>
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<tr>
<td>3 mo</td>
<td>3.7 (2.1)</td>
<td>3.7 (2.2)</td>
<td>0.0 (-0.5 to 0.6)</td>
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<tr>
<td>6 mo</td>
<td>3.4 (2.1)</td>
<td>3.6 (2.4)</td>
<td>-0.2 (-0.8 to 0.4)</td>
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<tr>
<td>9 mo</td>
<td>3.6 (2.2)</td>
<td>3.3 (2.4)</td>
<td>0.4 (-0.2 to 1.0)</td>
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<tr>
<td>12 mo</td>
<td>2.4 (2.5)</td>
<td>3.2 (2.6)</td>
<td>0.1 (-0.5 to 0.7)</td>
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<tr>
<td>Pain Intensity (Secondary Outcome)</td>
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<tr>
<td>BPI severity scale</td>
<td>5.4 (1.5)</td>
<td>5.4 (1.2)</td>
<td>0.0 (-0.4 to 0.2)</td>
<td>.03</td>
</tr>
<tr>
<td>3 mo</td>
<td>4.3 (1.8)</td>
<td>4.0 (1.7)</td>
<td>0.3 (-0.2 to 0.7)</td>
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<tr>
<td>6 mo</td>
<td>4.1 (1.8)</td>
<td>4.1 (1.9)</td>
<td>0.0 (-0.5 to 0.5)</td>
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<tr>
<td>9 mo</td>
<td>4.2 (1.7)</td>
<td>3.5 (1.7)</td>
<td>0.7 (0.2 to 1.2)</td>
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<tr>
<td>12 mo</td>
<td>4.0 (2.0)</td>
<td>3.5 (1.9)</td>
<td>0.5 (0.0 to 1.0)</td>
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Key Points

**Question** For patients with moderate to severe chronic back pain or hip or knee osteoarthritis pain despite analgesic use, does opioid medication compared with nonopioid medication result in better pain-related function?

**Findings** In this randomized clinical trial that included 240 patients, the use of opioid vs nonopioid medication therapy did not result in significantly better pain-related function over 12 months (3.4 vs 3.3 points on an 11-point scale at 12 months, respectively).

**Meaning** This study does not support initiation of opioid therapy for moderate to severe chronic back pain or hip or knee osteoarthritis pain.
One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of days’ supply* of the first opioid prescription — United States, 2006–2015

* Days’ supply of the first prescription is expressed in days (1–40) in 1-day increments.

Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial

Andrew K. Chang, MD, MS; Polly E. Bijur, PhD; David Esses, MD; Douglas P. Barnaby, MD, MS; Jesse Baer, MD

Key Points

**Question** Do any of 4 oral combination analgesics (3 with different opioids and 1 opioid-free) provide more effective reduction of moderate to severe acute extremity pain in the emergency department (ED)?

**Findings** In this randomized clinical trial of 411 ED patients with acute extremity pain (mean score, 8.7 on the 11-point numerical rating scale), there was no significant difference in pain reduction at 2 hours. Mean pain scores decreased by 4.3 with ibuprofen and acetaminophen (paracetamol); 4.4 with oxycodone and acetaminophen; 3.5 with hydrocodone and acetaminophen; and 3.9 with codeine and acetaminophen.

**Meaning** For adult ED patients with acute extremity pain, there were no clinically important differences in pain reduction at 2 hours with ibuprofen and acetaminophen or 3 different opioid and acetaminophen combination analgesics.

Table 2. Numerical Rating Scale (NRS) Pain Scores and Decline in Pain Scores by Treatment Group

<table>
<thead>
<tr>
<th>NRS Pain Score, Mean (95% CI)a</th>
<th>Ibuprofen and Acetaminophenb</th>
<th>Oxycodone and Acetaminophenc</th>
<th>Hydrocodone and Acetaminophend</th>
<th>Codeine and Acetaminophe</th>
<th>P Valuef</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patientsg</td>
<td>101</td>
<td>104</td>
<td>103</td>
<td>103</td>
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<tr>
<td>Primary end point: decline in score to 2 h</td>
<td>4.3 (3.6 to 4.9)</td>
<td>4.4 (3.7 to 5.0)</td>
<td>3.5 (2.9 to 4.2)</td>
<td>3.9 (3.2 to 4.5)</td>
<td>.053</td>
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<tr>
<td>Baseline score</td>
<td>8.9 (8.5 to 9.2)</td>
<td>8.7 (8.3 to 9.0)</td>
<td>8.6 (8.3 to 9.0)</td>
<td>8.6 (8.2 to 8.9)</td>
<td>.47</td>
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<tr>
<td>Score at 1 h</td>
<td>5.9 (5.3 to 6.6)</td>
<td>5.5 (4.9 to 6.2)</td>
<td>6.2 (5.6 to 6.9)</td>
<td>5.9 (5.2 to 6.5)</td>
<td>.25</td>
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<tr>
<td>Score at 2 h</td>
<td>4.6 (3.9 to 5.3)</td>
<td>4.3 (3.6 to 5.0)</td>
<td>5.1 (4.5 to 5.8)</td>
<td>4.7 (4.0 to 5.4)</td>
<td>.13</td>
</tr>
<tr>
<td>Decline in score to 1 h</td>
<td>2.9 (2.4 to 3.5)</td>
<td>3.1 (2.6 to 3.7)</td>
<td>2.4 (1.8 to 3.0)</td>
<td>2.7 (2.1 to 3.3)</td>
<td>.13</td>
</tr>
</tbody>
</table>
Pain management for third-molar extractions

Moore & Hersh Systematic Review (2015)

- Ibuprofen + APAP more effective than either one alone
- Ibuprofen + APAP more effective with less side effects than opioid combos

## How Dentists Compare With Other Specialties In Prescribing Opioids

<table>
<thead>
<tr>
<th>SPECIALTY</th>
<th>OPIOID PRESCRIPTIONS</th>
<th>TOTAL PRESCRIPTIONS</th>
<th>OPIOID PRESCRIBING RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain medicine</td>
<td>14.5 million</td>
<td>29.8 million</td>
<td>48.7%</td>
</tr>
<tr>
<td>Surgery</td>
<td>28.3 million</td>
<td>77.6 million</td>
<td>36.5%</td>
</tr>
<tr>
<td>Physical medicine and rehab</td>
<td>9.3 million</td>
<td>26.1 million</td>
<td>35.6%</td>
</tr>
<tr>
<td><strong>Dentistry</strong></td>
<td><strong>18.5 million</strong></td>
<td><strong>64.0 million</strong></td>
<td><strong>28.9%</strong></td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>12.5 million</td>
<td>60.5 million</td>
<td>20.7%</td>
</tr>
<tr>
<td>General practice</td>
<td>32.2 million</td>
<td>431.2 million</td>
<td>7.5%</td>
</tr>
<tr>
<td>Non-physician prescriber</td>
<td>32.2 million</td>
<td>447.3 million</td>
<td>7.2%</td>
</tr>
<tr>
<td>Family practice</td>
<td>52.5 million</td>
<td>946.9 million</td>
<td>5.5%</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>43.6 million</td>
<td>913.9 million</td>
<td>4.8%</td>
</tr>
<tr>
<td>All others</td>
<td>45.3 million</td>
<td>1.252 billion</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Dentists prescribe more opioids to teenagers than all other specialties.

Teenage brains may be more vulnerable to addiction
Nonmedical Use in College is Most Common in Students Prescribed Opioids as Children

Prescription Opioids in Adolescence and Future Opioid Misuse
Richard Miech, Lloyd Johnston, Patrick M. O'Malley, Katherine M. Keyes and Kennon Heard

Pediatrics; originally published online October 26, 2015;

BACKGROUND AND OBJECTIVE: Legitimate opioid use is associated with an increased risk of long-term opioid use and possibly misuse in adults. The objective of this study was to estimate the risk of future opioid misuse among adolescents who have not yet graduated from high school.

METHODS: Prospective, panel data come from the Monitoring the Future study. The analysis uses a nationally representative sample of 6220 individuals surveyed in school in 12th grade and then 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. This association is concentrated among individuals who have little to no history of drug use and, as well, strong disapproval of illegal drug use at baseline.

CONCLUSIONS: Use of prescribed opioids before the 12th grade is independently associated with future opioid misuse among patients with little drug experience and who disapprove of illegal drug use. Clinic-based education and prevention efforts have substantial potential to reduce future opioid misuse among these individuals, who begin opioid use with strong attitudes against illegal drug use.
Opinion

Breaking the Opioid Habit in Dentists’ Offices

Tina Rosenberg
FIXES  JULY 10, 2017

Dr. Harold Tu, the director of the division of oral and maxillofacial surgery at the University of Minnesota School of Dentistry. Jenn Ackerman for The New York Times
U of Minnesota Protocol

- Pre & post-op NSAIDs to be used first-line unless contraindicated
- When opioids required, use lowest effective dose
- Consult PDMP before opioid Rx
- Document reason if deviation from protocol
Mandatory PDMP use in NYS associated with 70% fewer scrips & 78% fewer pills

**Frequency and quantity (numbers of pills) of pain medication prescriptions for dental emergency patients before and after implementation of the mandatory PDMP.**

<table>
<thead>
<tr>
<th></th>
<th>Pre-iSTOP</th>
<th>Post-iSTOP-1</th>
<th>Post-iSTOP-2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>prescriptions</td>
<td>pills</td>
<td>prescriptions</td>
</tr>
<tr>
<td>Opioids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>378</td>
<td>4145</td>
<td>163</td>
</tr>
<tr>
<td>Codeine</td>
<td>51</td>
<td>650</td>
<td>24</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>23</td>
<td>301</td>
<td>3</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>452</strong></td>
<td><strong>5096</strong></td>
<td><strong>190</strong></td>
</tr>
<tr>
<td>Non-opioids</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>1000</td>
<td>22257</td>
<td>1051</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>23</td>
<td>467</td>
<td>107</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>1023</strong></td>
<td><strong>22724</strong></td>
<td><strong>1158</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1475</strong></td>
<td><strong>27820</strong></td>
<td><strong>1348</strong></td>
</tr>
</tbody>
</table>

What Can State Policymakers do to Prevent Opioid Addiction?

1. Require prescribers to warn patients about risk of addiction & dependence

2. Require use of PDMP

3. Limit QUANTITY (not duration) in first time prescriptions

4. Ensure monitoring of prescribers by state medical boards

5. New taxes on opioid analgesics
What Can Prescribers do to Prevent Opioid Addiction?

1. When you can, keep opioid naïve patients opioid naïve

2. When opioids are required, less is more

3. Join your county’s opioid task force

4. Encourage colleagues and trainees to prescribe more cautiously
What Can Patients do to Prevent Opioid Addiction?

1. Recognize that your doctor may be poorly informed about opioid risks- Ask for opioid alternatives.

2. Only take an opioid if other options are not available and pain is unbearable & stop as soon as you can.

3. FLUSH left over pills
What Can Health Payers do to Prevent Opioid Addiction?

1. Require prior authorization for more than a 3-day supply of opioids

2. Ensure that in-network prescribers understand opioid risks and benefits

3. Make opioid alternatives easier to access
Summary

- The U.S. is in the midst of a severe epidemic of opioid addiction

- To bring the epidemic to an end:
  - We must prevent new cases of opioid addiction
  - We must ensure access to treatment for people already addicted
Andrew Kolodny, MD
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Changing Prescribing Practices to Prevent Opioid Addiction

Andrew Kolodny, MD
Director, Physicians for Responsible Opioid Prescribing
Co-Director, Opioid Policy Research Collaborative, Brandeis University

Moderator: John L. Eadie, MPA, Coordinator, Public Health and Prescription Drug Monitoring Program Project, National Emerging Threat Initiative, A National HIDTA Initiative, and Member, National Rx Drug Abuse & Heroin Summit Advisory Board