Luncheon: Best Practices in Adolescent Opiate Addiction Treatment

Sharon Levy, MD, MPH, Director, Adolescent Substance Abuse Program, Children's Hospital Boston, Assistant Professor of Pediatrics, Harvard Medical School
Opioids

National Trends and Evidence-Based Pediatric Practice for Preventing Misuse and Addiction
Opiates

Opioids
Opioid Pharmacology

- Mimic endorphins
- Bind to mu-opioid receptors
- Well-being, satisfaction, pleasure

Opioid µ-receptor and agonist
Opioid Neurobiology

**PREFRONTAL CORTEX:** Executive Functions

**LIMBIC SYSTEM:** Pleasure, reward. This area is responsible for development of addiction.

**BRAIN STEM:** Respiration; Cough Suppression

**SPINAL CORD:** Analgesia
Civil War

VIETNAM WAR

"PAIN" AS THE 5th VITAL SIGN

1860’s

1914

1974

1999

HARRISON DRUG ACT

METHADONE
Increase in Opiate Prescriptions, 1991-2013

<table>
<thead>
<tr>
<th>Percent agreeing with statement</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescription drugs are available everywhere</td>
<td>42</td>
<td>55</td>
<td>38</td>
</tr>
<tr>
<td>It is easy to get prescription drugs from parents’ medicine cabinets</td>
<td>56</td>
<td>63</td>
<td>47</td>
</tr>
<tr>
<td>Most teens get prescription drugs from their families’ own medicine cabinet</td>
<td>59</td>
<td>62</td>
<td>51</td>
</tr>
<tr>
<td>Most teens get prescription drugs from their friends</td>
<td>53</td>
<td>62</td>
<td>49</td>
</tr>
</tbody>
</table>

The Partnership Attitude Tracking Study (PATS) 2010. N= 2,544; grades 7th to 12th
Rates of opioid misuse by 12th graders

• Misuse/Non-medical use

• Substance Use Disorder

• Addiction
11.1% of 12th graders have misused opioids in their lifetime. There are two main reasons for misuse:

- **Self-medication for pain**
- **“Recreationally” (for euphoria)**

**Sources:**
11.1% of 12th graders have misused opioids in their lifetime. There are two main reasons for misuse:

- Self-medication for pain
- "Recreationally" (for euphoria)


Brain Development

Adolescent milestones: impulse control

Planning, Organizing, Impulse control

Prefrontal cortex

School age milestones: achievement

motivation

Nucleus Accumbens

Preschool milestones: emotional regulation

emotion

Amygdala

Toddler milestones: balance, walking, coordination

Physical coordination, Sensory processing

Cerebellum

Slide adapted from Ken Winters, PhD.
Children ages 7-11  Teens ages 13-17  Adults ages 23-29

Addiction: A chronic, relapsing medical condition resulting from neurological changes in the brain’s reward system leading to compulsive use of a substance.
Heroin

- Very rapid delivery of morphine to the central nervous system
- Potent and relatively inexpensive
- Snorting or smoking as practical alternatives to injecting
Heroin Epidemiology

## Treatment for Opioid Addiction

<table>
<thead>
<tr>
<th>Non-pharmacologic</th>
<th>Pharmacologic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient individual or group</td>
<td>Detox methadone, buprenorphine, clonidine, “comfort meds”</td>
</tr>
<tr>
<td>Intensive outpatient/partial</td>
<td>Antagonist therapy naltrexone PO or IM</td>
</tr>
<tr>
<td>Family therapy and parent support</td>
<td></td>
</tr>
<tr>
<td>Recovery High School</td>
<td></td>
</tr>
<tr>
<td>Acute or Long Term Residential</td>
<td>Agonist therapy methadone, buprenorphine</td>
</tr>
<tr>
<td>Sober home/half-way house</td>
<td></td>
</tr>
</tbody>
</table>
Detoxification

Adult studies have recurrently found high relapse rates after detoxification without subsequent treatment. An NIH consensus statement regarding treatment of opioid dependent adults indicated detoxification alone is insufficient treatment.

Antagonist Therapy

- Block euphoric effect
- Suppress cravings
- Monthly injectable dosing can help with compliance
- Patients who used naltrexone had less opioid use, better treatment retention and fewer cravings.
- Efficacy or adverse effects profile in children?

Agonist Therapy

Drug Abuse Treatment Act of 2000
Length of Treatment

- **Methods:**
  - Participants 15-21 years old, N=156
  - All participants received counseling
  - 2-week detox vs. 12-week treatment

- **Results:**
  - 12-week treatment group had fewer opioid positive drug tests at 4 and 8 weeks
  - No differences by 12 weeks

Buprenorphine Waiver Training:
The Half and Half Course – specifically for Pediatricians and Family Physicians in addressing adolescent specific issues
Faculty: Drs. Sharon Levy and Sarah Bagley
Wednesday, November 5, 2014
4:00 – 8:00 PM PT
JW Marriot Union Square, Room Salon II
515 Mason St, San Francisco, CA 94102

http://www.cvent.com/d/l4q2mj
Stakeholders

- Parents
- Medical Professionals
Alcohol and Marijuana use precede opioid use

Teens that use alcohol or marijuana
• more likely to misuse opioids
• much more likely to misuse opioids for recreational purposes.


Teens that did not use drugs reported:

- Parents often checked homework
- Parents praised frequently
- Teens perceived strong disapproval of drug use by parents

Parental involvement teen reduces drug use.


Teenagers Are Right—Parents Do Not Know Much: An Analysis of Adolescent–Parent Agreement on Reports of Adolescent Substance Use, Abuse, and Dependence


<table>
<thead>
<tr>
<th>Behavior</th>
<th>Child Report</th>
<th>Parent Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumed at least 1 drink</td>
<td>54%</td>
<td>30.5%</td>
</tr>
<tr>
<td>Have been intoxicated</td>
<td>23.6%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Tobacco Use</td>
<td>44%</td>
<td>27%</td>
</tr>
<tr>
<td>Marijuana Use</td>
<td>22.9%</td>
<td>13.2%</td>
</tr>
</tbody>
</table>

Non-Specific Signs of SUD

- Change in appearance, grooming
- Change in friends
- Decline in school performance
- Loss of interest in hobbies
- Moodiness, irritability
- Possession of drugs or paraphernalia
Suggestions for parents:

• Set a good example

• Speak to teens frequently about ALL drug use including “pills”

• Take alcohol and marijuana use seriously.

• Get rid of left over medications
### Reasons for Misusing Opioids

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to get from medicine cabinet</td>
<td>62%</td>
</tr>
<tr>
<td>Available everywhere</td>
<td>52%</td>
</tr>
<tr>
<td>Not illegal</td>
<td>51%</td>
</tr>
<tr>
<td>Easy to get through other people’s prescription</td>
<td>50%</td>
</tr>
<tr>
<td>Can claim you have a prescription if caught</td>
<td>49%</td>
</tr>
<tr>
<td>Cheap</td>
<td>43%</td>
</tr>
<tr>
<td>Safer to use than illegal drugs</td>
<td>35%</td>
</tr>
<tr>
<td>Less shame attached to using</td>
<td>33%</td>
</tr>
<tr>
<td>Easy to purchase over the Internet</td>
<td>32%</td>
</tr>
<tr>
<td>Fewer side effects than street drugs</td>
<td>32%</td>
</tr>
<tr>
<td>Parents don’t care as much if you get caught</td>
<td>21%</td>
</tr>
</tbody>
</table>

Partnership for a Drug-Free America. The Partnership Attitude Tracking Study (PATS): Teens in grades 7 through 12 2005; May 16, 2006
Medical Professionals

- Anticipatory guidance regarding pain meds
- **Screen** all teens for substance use including opioid misuse
- **Brief advice** for teens that misuse for pain
- **Assess** teens that report use
- **Facilitate treatment entry** when necessary.

Changes in Prescribing Controlled Meds to Adolescents, 1994-2007

Percentage of visits with controlled med Rxed

- All controlled medications
- Opioid
- Sedative-hypnotic
- Stimulant

Caution when prescribing

- Avoid opioids for relatively minor trauma, musculoskeletal pain, headache, abdominal pain, dysmenorrhea or other relatively minor, self-limited pain that can be managed otherwise
- Keep prescriptions small and re-evaluate if pain persists
- Ask parents to monitor meds for kids with acute pain
- Discard all left over medication
- Help to monitor teens with medical conditions receiving chronic opioid therapy

Maximize Non-Opioid Therapy

1. Non-pharmacologic treatments: rest, ice, compression, splinting, physical therapy, biofeedback, etc.


3. Assess and treat underlying mental health disorders, particularly for patients with chronic pain. Anxiety and depression in particular reduce pain tolerance.

Specialty Programs and Higher Levels of Care

- Insure access to programs specifically designed for adolescents
- Support development of new programs in under-serviced areas
- Insure adequate reimbursement to keep programs running
- Use existing models
The Gap
Closing the Gap

• Expand access to intervention and treatment for adolescents with SUD’s within the medical system.
  o Encourage waiver training in primary care
  o Support a properly trained counseling workforce
  o Build support systems and subspecialty programs to prevent kids from falling into “the gap”
A Group Therapy Program for Opioid Dependent Adolescents and their Parents

Marianne Pugatch MSW, John R. Knight MD, Patricia McGuiness MSW, Lon Sherritt MPH & Sharon Levy MD MPH

(Subst. Abus. 2014;(September):37–41.)
A Retrospective Study of Retention of Opioid-Dependent Adolescents and Young Adults in an Outpatient Buprenorphine/Naloxone Clinic

Steven C. Matson, MD, Gerrit Hobson, BA, Mahmoud Abdel-Rasoul, MS, MPH, and Andrea E. Bonny, MD

From the Department of Pediatrics (SCM, AEB), The Ohio State University College of Medicine, Columbus, OH

(J AddictMed 2014;00: 1–7)
Contact Information

Sharon Levy, MD, MPH
Director, Adolescent Substance Abuse Program
Boston Children’s Hospital

Sharon.levy@childrens.harvard.edu