



Adolescent Case Management: Pain and Opioids

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Funding for this initiative was made possible (in part) by Prescribers' Clinical Support System for Opioid Therapies (1H79T023439-01) from SAMHSA. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

Objectives

- Examine the unique challenges of managing persistent pain in adolescents.
- Review pharmacologic options for pain management in adolescents
- Discuss the role of opioids in the management of adolescents with persistent pain

Adolescence

- "It was the best of times...it was the worst of times...it was the age of wisdom...it was the age of foolishness
- "Our youth now love luxury. They have bad manners...contempt for authority...they show disrespect for their elders...favor chatter in place of exercise...they contradict their parents, gobble up food, and tyrannize their teachers"

Herrman, 2009

Challenges of Adolescence

- Impulsivity/risk taking
- Emotional instability—depression, anger, anxiety
- Invincible
- Testing boundaries
- Complacent/Passive
- Non-adherent

• Blame the brain!!!



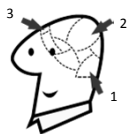
Developmental Awareness

- Teen brain is still “under construction”
 - Proliferation
 - Pruning
 - Myelination
 - Back to front maturation



Developmental Awareness

- Back to Front Maturation
 - Back
 - Cerebellum
 - Coordination/senses/early thought
 - Amygdala
 - Emotional center—fear and rage
 - Middle
 - Basal ganglia
 - Priority setting, fine motor, bigger in females
 - Corpus collosum
 - Problem solving, creativity



Developmental Awareness

- Back to Front Maturation
 - Front
 - Prefrontal cortex—rational thought
 - Organizing thoughts
 - Weighing consequences
 - Assuming responsibilities
 - Interpreting emotions
 - Last area to mature, grows into 20's
 - Sensitive to environment



Incidence of Persistent Pain

- 15-25% of children experience persistent pain
 - Recurrent abdominal pain
 - Headaches
 - Musculoskeletal pain
- ?-? % have persistent pain as part of life limiting condition
 - Cancer
 - Sickle cell
 - Rheumatologic conditions
 - Cystic fibrosis



I-M Approach

- Interdisciplinary Team
- Multimodal Pain Management

Interdisciplinary

- Physicians
- APRNs
- RNs
- Psychologists
- Physical Therapists
- Social Workers
- Child Life Therapists
- School Teachers



Multimodal Pain Management

- Incorporates pharmacological and nonpharmacological
- Rational combinations of analgesics with differing mechanisms and sites of action

Goals of Multimodal Pain Management

- Target pain in the CNS and PNS
 - Reduce excitatory processes
 - Maximize inhibitory mechanisms
- Restore or optimize function
- Improve bio-psycho-social-spiritual outcomes

Management Options

- Pharmacological—multimodal analgesia
- Nonpharmacological
- Interventional
- Integrative Therapies
- Multimodal Treatment Plan

Pharmacological

- Intent is to reduce side effects
 - NSAIDs
 - Acetaminophen
 - Opioids
 - Alpha 2, delta ligands
 - Local anesthetics
 - NMDA receptor agonists
 - Alpha 2 adrenergic receptor agonists

Nonpharmacological

- Cognitive Behavioral Therapies
 - Behavioral training (operant conditioning)
 - Relaxation
 - Rhythmic breathing
 - Progressive muscle relaxation
 - Biofeedback
 - Cognitive training (psycho education)
 - Respondent therapies
 - Hypnosis
 - Visualization/Guided Imagery/Virtual Reality
 - Distraction—active or passive

Nonpharmacological

- Physical & Occupational Therapies
 - Early mobility
 - Transcutaneous electric nerve stimulation (TENS)
 - Heat/cold
 - Ultrasound

Nonpharmacological

- Physical & Occupational Therapies
 - Reprogramming
 - Improved function
 - Reconditioning
 - Rehabilitation
 - Adaptive

Interventional

- Regional anesthesia/analgesia
- Peripheral nerve blocks/infusions
- Percutaneous infusions
- Trigger point injections

Interventional

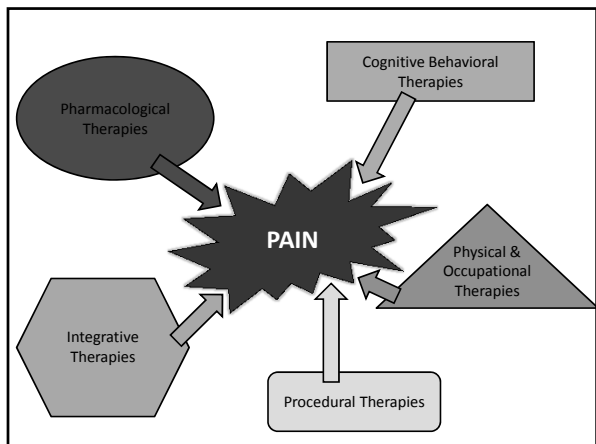
- Joint injections
- Spinal cord stimulation
- Neuroablative techniques
- Surgery

Integrative Therapies

- Complementary medicine—together with conventional therapies
- Alternative medicine—in place of conventional therapies
- Integrative—combines
 - Conventional
 - Complementary
 - Alternative

Integrative Therapies

- Mind-body therapies
 - Humor, Imagery, Meditation, Prayer, Yoga
- Biological
 - Herbs, Vitamins, Nutritional Supplements
- Manipulative/Body based
 - Acupuncture, Chiropractic, Massage
- Energy
 - Healing Touch, Therapeutic Touch, Reiki, Magnets



Opioids
To Use or to Not
?????

Opioids in Persistent Pain

- Trend is away from opioids in persistent nonmalignant pain.
- The prevalence of substance use disorders in patients receiving opioids for persistent pain is essentially unknown.
- The risk for substance use disorders surfacing during opioid treatment of pain is likely somewhere between 5 and 19 percent.

Ballantyne, 2006

Opioids in Persistent Pain

- Consequences of increased prescribing
 - Lack of effectiveness
 - Systemic effects
 - Increased (18-41%) substance use disorders

Manchikanti, 2008

- Tolerance
- Opioid Induced Hyperalgesia

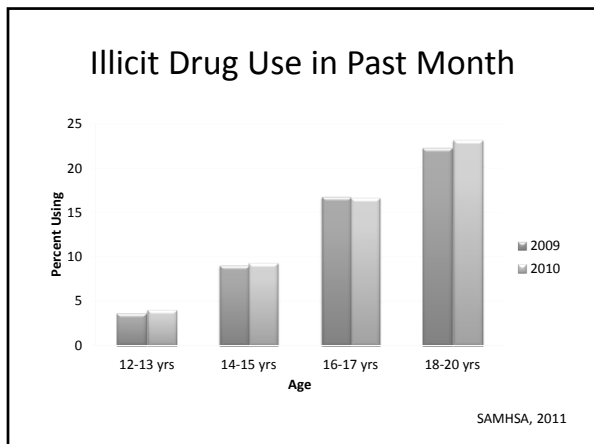
Risk Assessment

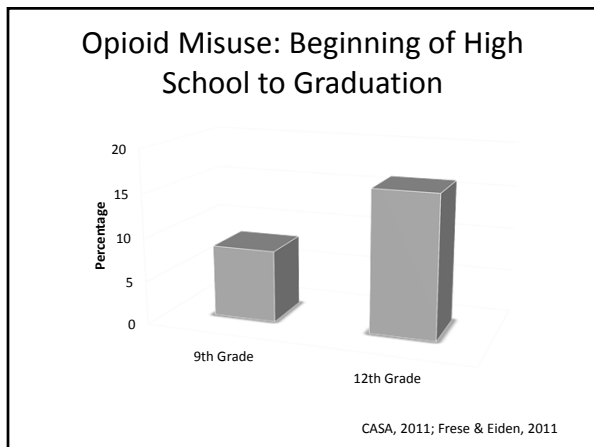
- Formal tools and standard procedures
 - Facilitate individualization of care
 - Limit legal liability
- Continuous process
 - Pill counts
 - Urine toxicology studies
 - Prescription monitoring programs

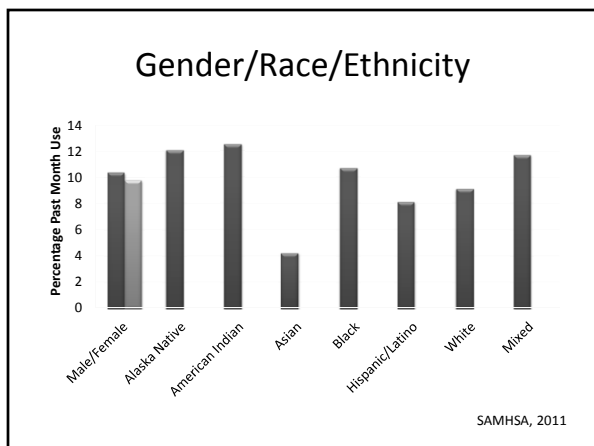
Prescription Opioids

- Initiation rates for nonmedical pain reliever use is second only to marijuana rates
- 2 million or more new nonmedical pain reliever users each year since 2002
- 500,000 who initiate use without ever using another illicit drug.

SAMHSA, 2011







Prevalence of Motives to Use Rx Drugs

- 56.4% -- relax or relieve tension
- 53.5% -- feel good or get high
- 52.4% -- experiment, see what it's like
- **44.8% -- relieve physical pain**
- 29.5% -- have a good time with my friends

McCabe , 2009

Risk Factors

- Genetics
- Family history
- Environment
- Exposure



Risk Factors/Protective Factors

- Individual
- Family
- Community

Individual Risk Factors

- Cognitive
 - Lack of accurate information
- Attitudinal
 - Alienation
 - Rebelliousness
 - Positive expectations regarding the effects
 - Beliefs that using will increase coping and enhance social functioning

Individual Risk Factors

- Psychological
 - Low self-esteem
 - Low assertiveness
 - Poor behavioral self control
- Developmental
 - Younger age of initial use—greater risk

Individual Protective Factors


- Resilient temperament
- High intelligence
- Prosocial orientation

Family Risk Factors

- **Modeling**
 - Direct modeling and positive attitudes toward substances
- **Bonding**
 - Harsh discipline
 - Poor monitoring
 - Low levels of bonding
- **Conflict**
 - High levels of conflict

Family Protective Factors

- Warm supportive parental involvement
- Monitoring
- Consistent discipline
- Expectations against use



Community Risk Factors

- **Schools**
 - Higher number of disengaged students
- **Peers**
 - Strongest predictors of use and misuse
- **Community**
 - Availability of substances
 - Safety
 - Engagement
 - Disorganization

Environment

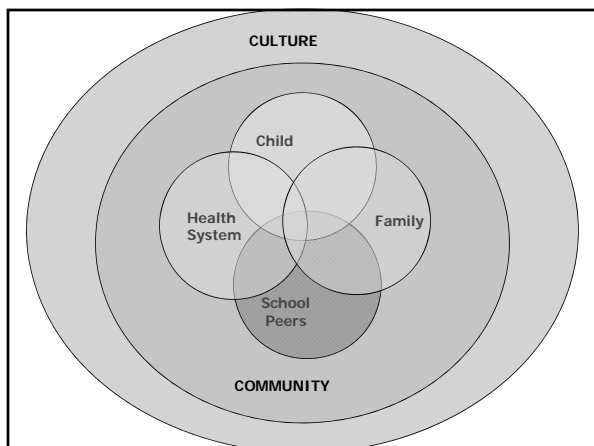
- 80% high schoolers and 44% of middle schoolers personally witnessed on their school grounds
 - Illegal drug use
 - Illegal drug dealing
 - Illegal drug possession
 - Other drug abuse related activities



Manchikanti , 2008

Community Protective Factors

- High levels of neighborhood attachment
- Stable neighborhoods
 - Less dense population
 - Decreased mobility (moving in and out)
 - Acceptable housing
- More difficult access to substances
 - Cost, availability, legal restrictions



“Dealing” With Teens

- Be real
- Thoughtful treatment
- Vigilance
- Consistent communication
- Education
- Support



Summary

- Multimodal pain management is not just about opioids
- More medications prescribed = more medications available for misuse
- Risk and protective factors occur at the individual, family, and community level

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Questions?
