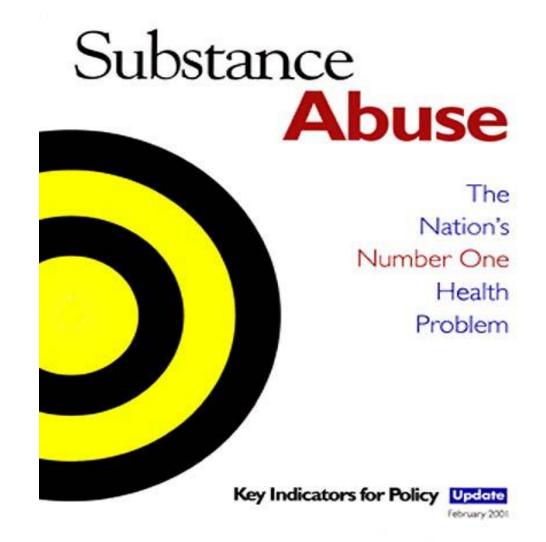
The Robert Wood
Johnson
Foundation has
identified
Substance Abuse
as the Nation's
Number One Health
Problem



Opioid Pharmacology

OPIOID: Any chemical compound with pharmacologic actions similar to those of morphine. The term "narcotic analgesic" is often used to refer to opioids. Sumerians (6000 years ago) called poppy "joy plants." Morphine and codeine are alkaloids of the poppy plant, obtained as opium, referred to as OPIATE.

Opioid Actions

CNS: analgesia, euphoria (dysphoria), sedation, respiratory depression, release of prolactin, nausea, anti-tussive effect

C-V: peripheral vasodilatation

EYE: pupil constriction

LUNGS: respiratory depression

GI: decrease in propulsive contractions in the small intestine and colon. Spasms.

Pain -- Opioids -- Analgesia

Primary medical use

entire group - morphine, etc.

acute and chronic severe pain

cancer pain --- addiction

Non-medical use = euphoria

Opiate Dependence

- Nationally =
- Heroin but also pharmaceutical opioids fentanyl, oxycodone (esp.. Oxycotin®)
- Male vs. female
- Urban

- 2.3 million Americans reported using heroin ≥ once (1998)
- 149,000 new users (1999)
- 980,000 persons using at least weekly (1998)
- 810,000–1 million chronic users of heroin
- Only 170,000–200,000 receiving treatment

- Abuse of Prescription analgesics has risen
- •OxyContin®, Vicodin®, Demerol®
- Dramatic press coverage
- •Emergency Department visits 1994–2001: 41,687 to 90,232 (117% increase)

Significant diversion and abuse of methadone

What is the cost to society?

- \$20 billion per year total cost of heroin abuse
- The economic cost of drug use and dependence estimated to be \$98 billion (Harwood *et al*, 1998)
- Figures do not take into account social impact of drug addiction
 - Crime / legal costs
 - Absenteeism from work / unemployment
 - Welfare / medical costs

- Abuse culturally disapproved use
- Addiction meaning varies
- Dependence physiological changes, maladaptive behavior, neuroadaptation, repeat doses or withdrawal (see lecture notes for DSM-IV diagnosis)

- Tolerance —
- Withdrawal Symptoms abrupt stop --craving, dysphoria,
 nervous system over-activity
- Cross-Tolerance another drug substitutes
- Rebound abrupt stop --- exaggerated original symptoms

- Detoxification slow taper to prevent withdrawal
- Withdrawal Symptoms craving, dysphoria, nervous system over-activity
- Relapse return to abuse following full detoxification and stabilization
- "slip" —

Agonist — stimulates receptor same as abused drug

• Partial Agonist — stimulates but "ceiling" effect

 Antagonist — blocks receptor and prevents abused drug effect

Substance Abuse signs -- General Physician

Medical: infection, nasal/pulm, scars, drug requests

Behavior: poor school/work, marital, family discord

Laboratory: urine*, blood, (hair **, etc.)

- * No info regarding tolerance/dependence
- ** huge issues re: privacy issues, validity

Opioid

- **Detoxification** agonist, taper and/or clonidine (transcrainal electro-stimulation -- inc. endorphin)
- **Substitution** methadone, buprenorphine
- •Antagonist naltrexone
- Relapse Prevention naltrexone
- New long-acting buprenorphine, naltrexone

Withdrawal symptoms

- Sweating
- Yawning
- Anxiety
- Increased BP and respiratory rate
- Cravings
- Lacrimation
- Piloerection
- Rhinitis
- Gastrointestinal symptoms
 Abdominal cramps, Diarrhea