Substance Abuse

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Part 1

Pre-Lecture Exam
Question 1

1. **Which of the following statements is false:**

A. Physical dependence is synonymous with addiction.

B. One can be addicted without being physically dependent.

C. Once a patient has met criteria for Substance Dependence, they should not be diagnosed in the future with Substance Abuse.

D. A critical feature of addiction is compulsive use in spite of harm.

Question 2

2. Which of the following statements is false:

A. Psychiatric disorders can cause substance abuse.

B. Substance abuse can cause psychiatric disorders.

C. If both substance abuse and a psychiatric disorder are present, treating the psychiatric disorder is usually not necessary.

D. Treating an underlying psychiatric disorder usually does not adequately treat the substance abuse.

Question 3

3. The most common comorbid psychiatric diagnosis in patients with substance abuse is:

A. Schizophrenia
B. Antisocial Personality Disorder
C. Anxiety Disorder
D. Major Depression

Question 4

4. **Which one of the following is false:**

A. Cocaine decreases negative symptoms in schizophrenics.

B. When cocaine free, schizophrenics have more negative symptoms.

C. Chronic cocaine use increases depression in schizophrenics.

D. Chronic cocaine decreases positive symptoms of schizophrenia.

Question 5

5. Which of the following are considered "Gateway Drugs"?

A. Alcohol

B. Marijuana

C. Nicotine

D. A & C only

E. A, B, & C

Question 6

6. **Adolescent substance abuse is associated with:**

A. Increased school dropout

B. Increased depression and suicidality

C. Premature involvement in sexuality

D. All of the above

Question 7

7. The proportion of users who ever became dependent is as follows (from high to low):

A. Nicotine, alcohol, heroin, cocaine, marijuana.

B. Alcohol, nicotine, cocaine, heroin, marijuana.

C. Nicotine, heroin, cocaine, alcohol, marijuana.

D. Nicotine, alcohol, marijuana, cocaine, heroin.

Question 8

8. Which of the following is not used as a maintenance agent in heroin addiction:

A. Methadone

B. Clonidine

C. LAAM

D. Naltrexone

E. Buprenorphine

Question 9

9. Which category of medications is <u>not</u> yet available for treatment of heroin addiction:

A. Agonists

B. Antagonists

C. Partial agonists

D. Anti-craving agents

E. Anti-withdrawal agents

Question 10

10. Which of the following statements are true:

A. Naltrexone blocks the effects of alcohol.

B. Drinking while on naltrexone can make one very ill.

C. Benzodiazepines are the usual agents used for alcohol withdrawal.

D. All of the above

The Leading Causes of Disability in the World, 1990

		Total (Millions)	Percent of Total (%)
	All Causes	473	100
1	Unipolar Major Depression	51	11
2	Iron-Deficiency Anemia	22	5
3	Falls	22	4
4	Alcohol Use (+ other drugs)	16	3
5	Chr. Obstructive Pulmonary Dis.	15	3

Total Dollars (Billions) Spent or Lost Due to Alcohol and Drug Disorders, 1990

	Total AD	% of Total	Mental Health	Alcohol	Drug
AIDS/Fetal Alcohol	$ 8.4	2.7	$ 0.0	$ 2.1	$ 6.3
Crime	67.8	21.6	6.0	15.8	46.0
Loss of Productivity	157	50	75	370	12
Health Care Costs	80.8	25.8	67.0	10.6	3.2
Dollars Lost	313.6	100.0	147.9	98.7	66.9

Categories of Drugs

- Depressants
- Stimulants
- Opiates
- Cannabinols
- Hallucinogens
- Phencyclidine (PCP)
- Inhalants/solvents
- Others

Magnitude of Problem (USA)

- Nicotine - over 50 million dependent
- Alcohol - 12 - 18 million alcoholics and problem drinkers
- M.J. over 3 million dependant
- Cocaine - 2-3.5 million dependent
- Heroin - 800,000 - 1 million dependent

Health Effects of Drugs

(1) Infections
  - Hepatitis (heroin, cocaine, alcohol)
  - AIDS (heroin, cocaine, inhalants)

(2) Gastrointestinal Pain and Bleeding
  - Ulcers (alcohol)

(3) Brain and Peripheral Neuron Damage
  - Dementia (alcohol, stimulants, inhalants)

(4) Cardiovascular
  - Stroke and heart attack (stimulants)

Continuum of Drug Use

- Initiation/intoxication
- Harmful use/abuse
- Dependence/withdrawal
- Relapse and craving
- Recovery and persisting deficits

Definitions

- Psychological dependence/addiction
- Physical dependence/addiction
- Tolerance
- Dependence syndrome

Considerations Each Clinician is to Review

- Overdose/toxic reaction
- Abstinence syndrome/state of withdrawal
- Organic Brain Syndrome (OBS)
- Psychosis
- Depression/anxiety

Clinically Significant Drug Problems by Category

	Panic	Flashbacks	Overdose	Psychosis	OBS	Withdrawal
Depressants	-	-	++	++	++	++
Stimulants	+	-	+	++	+	++
Opiates	-	-	++	-	+	++
Cannabinols	+	+		+	+	-
Hallucinogens	++	++	+	-	+	-
Solvents	+	-	+	-	++	-
PCP	+	?	++	a	a	?
OTC	-	-	+	-	++	-

+ = the syndrome (eg., panic) is likely to be seen with the drug
++ = the syndrome can be very intense
a = absence of syndrome

MAJOR SUBSTANCE DIAGNOSES (I)

Substance	Intoxication	Withdrawl	Persisting	Abuse	Depend
Alcohol	x	x	x	x	x
Amphetamine	x	x		x	x
Caffine	x				
Cannabis	x	x		x	x
Cocaine	x	x		x	x
Hallucinogen	x		x	x	x

Substance Intoxication

- Reversible syndrome
- Maladaptive behavior (anger, depression, cognitive impairment)
- Not due to medical condition

Substance Abuse (DSM-IV)

....made only in the absence of dependence or history of dependence

- Failure to fulfill major role obligations
- Use in hazardous situations
- Legal problems
- Use despite problems

Pharmacological Effects of Drugs Substance Dependence

- Maladaptive pattern of use
- Impairment or distress
- With tolerance or withdrawal
- More use than intended

Pharmacological Effects of Drugs
Substance Dependence (cont.)

- Unsuccessful attempts to cut down
- Reduce other activities
- Great deal of time spent on drug use
- Continued use despite adverse consequences

Tolerance

- Occurs after prolonged (usually weeks), regular (daily), heavy use
- Increased amounts for desired effect
- Diminished effects

Withdrawal

- Requires regular (at least daily) use for prolonged period
- Specific physiological syndromes by drug
- Substance taken to avoid syndrome
- Not due to general medical condition

Possible Relation Between Substance Use and Psychiatric Disorder

- Psychiatric disorder causes substance abuse
- Substance abuse causes psychiatric disorder
- Both caused by common underlying disorder
- Both occur independent of the other

Lifetime Comorbid Substance Use Disorder Prevalences - ECA (I)

	Any Substance		Alcohol Diagnosis		Other Drug Diagnosis	
Schizophrenia	47.0%	4.6	33.7%	3.3	27.5%	6.2
Antisocial PD	83.6%	29.6	73.6%	21.0	42.0%	13.4
Anxiety Disorder	23.7%	17.9	17.9%	1.5	11.9%	2.5
Phobia	22.9%	1.6	17.3%	1.4	11.2%	2.2

Lifetime Comorbid Substance Use Disorder Prevalences - ECA (II)

	Any Substance		Alcohol Diagnosis		Other Drug Diagnosis	
Panic Disorder	35.8%	2.9	28.7%	2.6	16.7%	3.2
OCD	32.8%	2.5	24.0%	2.1	18.4%	3.7
Bipolar I	60.7%	7.9	46.2%	5.6	40.7%	11.1
Maj Dep	27.2%	1.9	16.5%	1.3	18.0%	3.8

Categories of Drugs Most Likely to Produce Psychopathology

- Stimulants
  - all forms of amphetamines and all forms of cocaine
- Depressants
  - alcohol
  - benzodiazepines
  - barbituates
  - carbamates
    - (i.e. meprobamate)

Substance-Induced Disorders

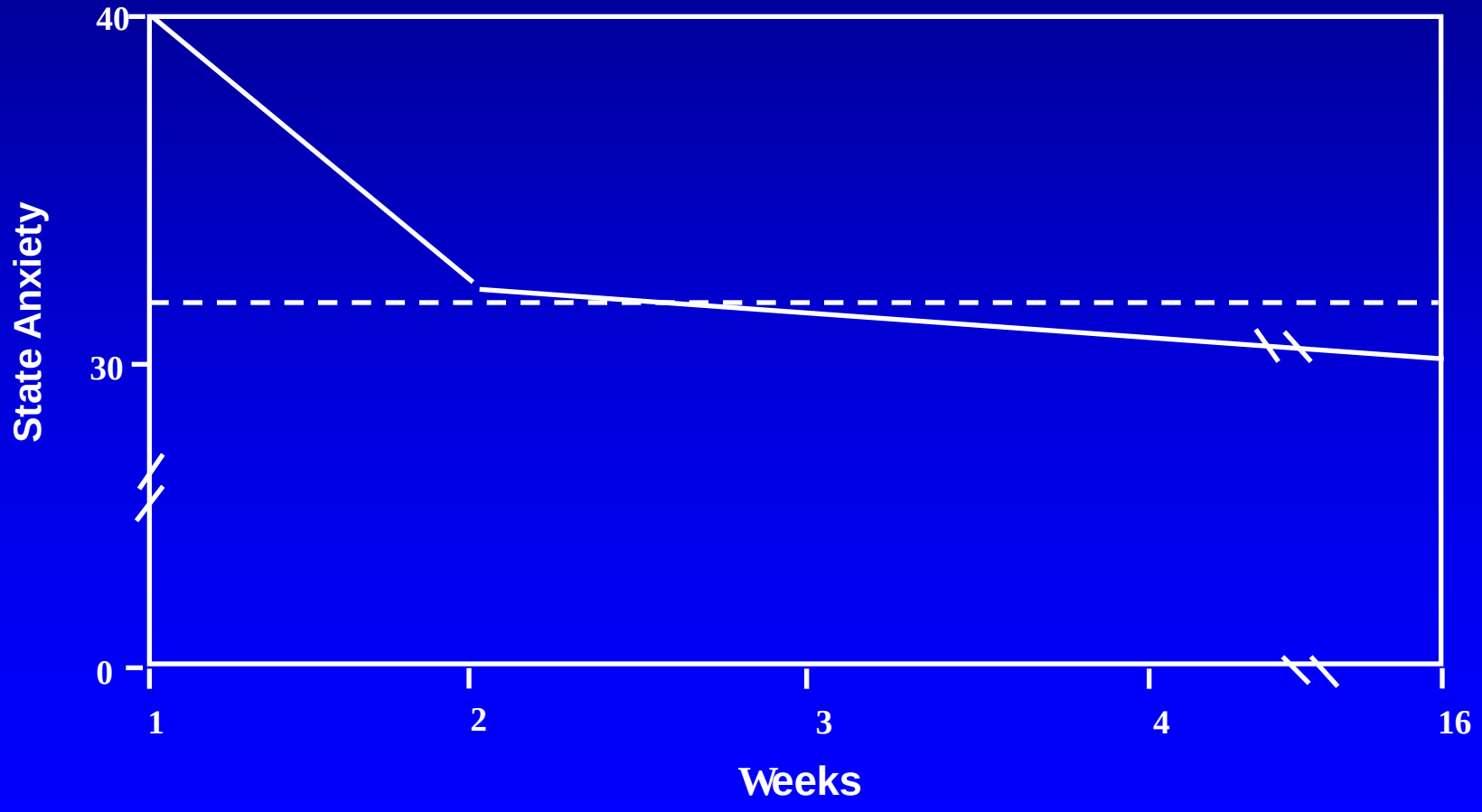
- Development of a substance-specific syndrome which is usually reversible.
- Symptoms are:
  - not due to general medical condition
  - not better accounted for by another mental disorder
- There is evidence obtained from:
  - history
  - physical exam
  - toxicologic analysis of body fluids

Drugs of Abuse are Known to Exacerbate Prior Psychiatric Disorders

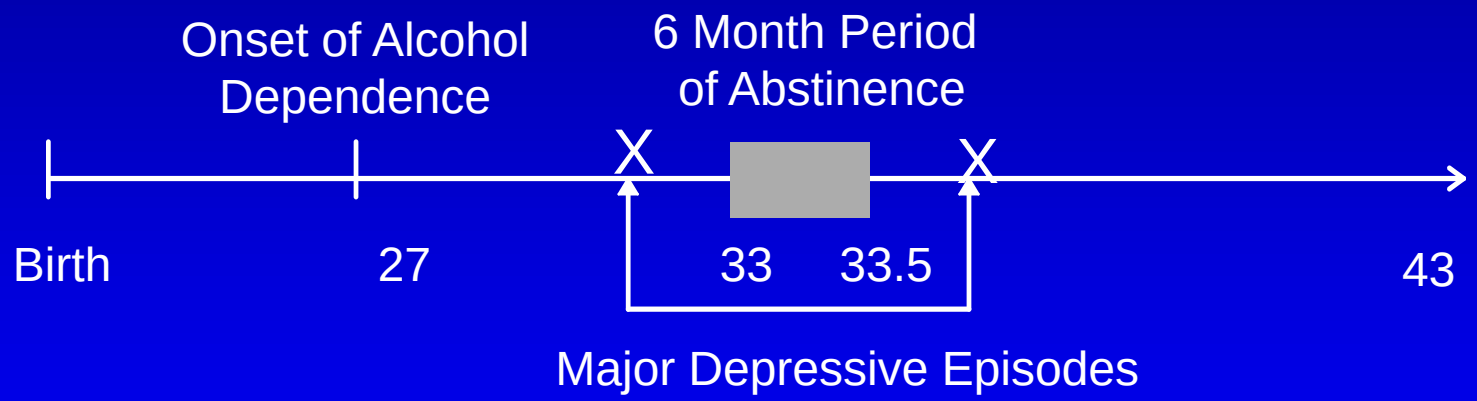
by increasing:

- Mood swings
- Anxiety
- Paranoia
- Hallucinations
- Confusion

X Spielburger State Anxiety During Alcohol Withdrawal



Time Line Example



Psychostimulants and Negative Symptoms of Schizophrenia

- Negative symptoms reduced in laboratory studies using amphetamines (0.25mg/Kg/day)
- Fewer negative symptoms in ER presentations of cocaine abusing schizophrenics
- At four-week cocaine free follow-up, more negative symptoms in cocaine abusing schizophrenics
- Chronic cocaine increases anxious, agitated depression in schizophrenics

Psychostimulants and Positive Symptoms of Schizophrenia (I)

- More paranoia (Brady, Satel)
- Hallucinations specifically intensified (Serper)
- Global psychotic symptoms may be lower in stimulant abusing schizophrenics, when abstinent

Psychostimulants and Positive Symptoms of Schizophrenia (II)

- Stimulant abusing schizophrenics hyposensitive to amphetamine effects (Kornetsky 1976)
- Psychotomimetic cocaine effects last hours to days; may relate to sleep deprivation
- Regular stimulant use for over 6 years associated with psychosis induction (McLellan 1979)

SUBSTANCE-INDUCED DISORDERS (I)

	Delirium	Dementia	Amnestic	Psychotic
Alcohol	I/W	P	P	I/W
Amphetamine	I			I
Caffeine				
Cannabis	I			I
Cocaine	I			I
Hallucinogens	I			I

I= intoxication, W= withdrawal

SUBSTANCE-INDUCED DISORDERS (II)

	Mood	Anxiety	Sex	Sleep
Alcohol	I/W	I/W	I	I/W
Amphetamine	I/W	I	I	IW
Caffeine		I		I
Cannabis		I		
Cocaine	I/W	I	I	I/W
Hallucinogen	I	I		

SUBSTANCE-INDUCED DISORDERS (III)

	Delirium	Dementia	Amnestic	Psychotic
Inhalant	I	P		I
Nicotine				
Opioid	I			I
PCP	I			I
Sedative	I/W	P	P	I/W
Other	I/W	P	P	I/W

SUBSTANCE-INDUCED DISORDERS (IV)

	Mood	Anxiety	Sex	Sleep
Inhalant	I	I		
Nicotine				
Opioid	I		I	I/W
PCP	I	I		
Sedative	I/W	W	I	I/W
Other	I/W	I/W	I	IW

Gateway Drugs and Later Dependence

- Alcohol, nicotine, marijuana
- Use before age 15
- Earlier use more likely in dependent young adults
- Most drugs show 10 users for every one later becoming dependent (e.g., cocaine)
- Risk of dependence forever varies by drug used

Normal Growth and Development and Substance Abuse

- Hormonal control: growth hormone, testosterone
- Drugs disrupt hormone release/effects
- Adolescent struggle for independence
- Pseudoindividuation of drug abuse
- Experimentation vs. dependence on drugs

Drug Abuse and Adolescent Development

- Drug use as integral to growing up
- Premature involvement in work and sexuality
- Deviant behavior and crime
- Poor social integration and education
- Cognitive processes disrupted

Adolescent Social Disruption With Drug Abuse

- Early family formation and divorce
- Increased stealing
- Reduced job stability
- Increased high school dropout
- Increased depression and suicidality

Adolescent Social Forces in Hard Drug Use

- Not peer pressure
- Distress and alienation
- Vary by type of drug (alcohol vs. cocaine)

It takes 3 things to make an addict

- Addicting drug
- Susceptible person
- Mechanism to bring them together

Addicting drugs

Drug	Proportion of users that ever became dependent
Nicotine	32%
Heroin	23%
Cocaine	17%
Alcohol	15%
Marijuana	9%
Anxiolytics	9%

Susceptible Person

- Genetic issues
- Psychological issues
- Psychosocial issues

Mechanism to Bring Drug/person Together

- Availability - physical, economic, psychological, legal status
- Role of poverty

Effective Identification of Substance Use Disorders

- Recognize prevalence problem
- Drop stereotypes
- Always screen for disorders
- Corroborate results

M.A.S.T.
Michigan Alcoholism Screening Test

- 25 item self-administered questionnaire
- Self-report of alcohol (and perhaps drug) problems
- Paper and pencil test
- Helpful, but not diagnostic

CAGE - AID

- Have you felt you ought to Cut down on your drinking or drug use?
- Have people Annoyed you by criticizing your drinking or drug use?
- Have you ever felt bad or Guilty about your drinking or drug use?
- Have you ever had a drink or used drugs first thing in the morning to steady your nerves or to get rid of a hangover (Eye-opener)?

(Brown, R.L., & Rounds, L.A. (1995). Conjoint screening questionnaires for alcohol and other drug abuse: Criterion validity in a primary care practice. Wisconsin Medical Journal, 94, 135-140)

Sharing the Diagnosis (Confrontation or Intervention)

- Give specific findings
- Remember patient is responsible
- Watch for signs of denial
- Repeat as needed

Stimulant Intoxication (I)

- Euphoria
- Agitation/retardation
- Weakness, respiratory depression
- Chest pain, cardiac arrhythmia
- Confusion, seizures, coma
- Dystonias, dyskinesias

Stimulant Intoxication (II)

- Tachycardia
- Pupillary dilation
- Elevated blood pressure
- Perspiration/chills
- Nausea/vomiting
- Weight loss

Opioid Intoxication

- Pupillary constriction
- Drowsiness
- Slurred speech
- Impaired attention

Sedative and Alcohol Intoxication

- Maladaptive behavior (aggression/depression)
- Slurred speech/incoordination
- Nystagmus/unsteady gait
- Impaired attention (stupor)

Hallucinogen Intoxication

- Perceptual changes (intensified, depersonalization)
- Maladaptive behavior (paranoia, anxiety, ideas of reference)
- Pupillary dilation, blurred vision
- Tachycardia, sweating, tremors
- Incoordination

Optimize Levels of Physical Functioning

- Careful physical examination
- Appropriate detoxification procedures when needed
- Efforts to reverse physical pathology

Detoxification
for Depressants, Stimulants, and Opiates

- Physical exam
- Educate, reassure
- Vitamins, etc.
- Meds?

Rehabilitation
for Substance-Use Disorders

- Use best data
- Establish realistic goals
- Change is the patient's responsibility
- Use all resources
- Agree on goals

Maximize Motivation for Abstinence

- Lectures
- Discussion groups with patients
- Discussion groups with family members
- Using counselors in recovery
- Self-help groups

Rebuild a Life Without Substances

Substances have been a very important part of life and are very difficult to give up.
Lectures and discussion groups to talk about issues.

- Appropriate use of free time
- Interaction with relatives and friends now that you are sober
- Appropriate interaction with or avoidance of substance-using friends
- Saying no to substances when offered (refusal skills)

Relapse Prevention

- Avoid high risk situations
- Anticipate minor relapses
- Recovering from relapses
- Identify triggers

Aftercare

- Lessons learned can be reinforced
- Provides opportunity to apply knowledge to everyday situations

Recovery from Dependence

- Early remission - no symptoms for one to 12 months
- Full remission - no symptoms for one year
- On agonist therapy (e.g., methadone)
- In controlled environment (e.g., T.C.)
- Relapse vs. slip

Treatment of Intoxication

- Hallucinogens - benzodiazepines
- Stimulants - benzodiazepines, haloperidol

Stimulant Relapse Prevention Investigational Agents

- Antidepressants
  - tricyclics
  - serotonin reuptake inhibitors
- Dopamine agonists
- Vaccines - antibodies against cocaine

(Fox et al., 1996)

Possible Medications

For Opiate Rehabilitation

- Methadone
- LAAM
- Buprenorphine
- Naltrexone

Possible Medications

For Alcohol Rehabilitation

- Disulfiram
- Naltrexone
- Serotonin re-uptake inhibitors
- Acamprosate

Medical Disorders and Symptoms Mimicked by Substance Abuse

- Intoxication: thyroid, brain dysfunction
- Withdrawal:
  a) metabolic delirium
  b) non-specific symptoms; fatigue, weakness, nausea, diarrhea

Type of Treatment

Inpatient
vs.
Outpatient

Substance Abuse Treatment Criteria

LEVELS OF SERVICE		
LEVEL 0.5 Early Intervention	LEVEL I Outpatient Services including Opioid Maintenance Therapy	LEVEL II Intensive Outpatient and Partial Hospitalization

LEVEL III Residential Services	LEVEL IV Medically-Managed Intensive Inpatient

Substance Abuse Treatment Criteria

CRITERIA DIMENSIONS

DIMENSION 1: **Alcohol Intoxication and/or Withdrawal Potential**	**DIMENSION 2:** **Biomedical Conditions and Complications**	**DIMENSION 3:** **Emotional/Behavioral Conditions and Complications**
DIMENSION 4: **Treatment Acceptance/ Resistance**	**DIMENSION 5:** **Relapse/Continued Use Potential**	**DIMENSION 6:** **Recovery Environment**

Comparison of Detoxification Services Across Treatment Levels

LEVEL I-D	LEVEL II-D	LEVEL III.2-D
Ambulatory Detoxification without Extended On-Site Monitoring	Ambulatory Detoxification with Extended On-Site Monitoring	Clinically-Managed Residential Detoxification
Physician's Office, Home Health Care Agency	Day Hospital Service	Social Setting Detoxification Program without Medication

Comparison of Detoxification Services Across Treatment Levels

LEVEL III.7-D	LEVEL IV-D
Medically-Monitored Inpatient Detoxification	Medically-Managed Intensive Inpatient Detoxification
Freestanding Detoxification Center	Psychiatric Hospital Inpatient Unit

Adult Admission Criteria: Crosswalk of Levels 0.5 Through IV (I)

Criteria Dimensions	Level 0.5 Early Intervention	OMT/ Opioid Maintenance Therapy
Dimension 1: Alcohol Intoxication and/or Withdrawal Potential	No withdrawal risk	Physiologically dependent
Dimension 2: Biomedical Conditions and Complications	None or very stable	None or manageable with outpatient medical monitoring
Dimension 3: Emotional/Behavioral Conditions and Complications	None or very stable	None

Adult Admission Criteria: Crosswalk of Levels 0.5 Through IV (II)

Criteria Dimensions	Level 0.5 Early Intervention	OMT/Opioid Maintenance Therapy
Dimension 4: Treatment Acceptance/ Resistance	Understand how current use may affect personal goals	Resistance high enough to require structured program
Dimension 5: Relapse/Continued Use Potential	Needs understanding of, or skills to change current use patterns	High risk of relapse
Dimension 6: Recovery Environment	Social support system increase risk for personal conflict re alcohol/drug use	Supportive recovery environment

Adult Admission Criteria: Crosswalk of Levels 0.5 Through IV (III)

Criteria Dimensions	Level I OP Services	Level II.I Intensive OP	Level II.5 Partial Hosp.
Dimension 1: Alcohol Intox. and/or Withdrawal Potential	Minimal risk of severe withdrawal	Minimal risk of severe withdrawal	Moderate risk of severe withdrawal
Dimension 2: Biomedical Conditions and Complications	None or very stable	None	None
Dimension 3: Emotional/Behav. Conditions and Complications	None or very stable	Mild severity	Moderate severity

Adult Admission Criteria: Crosswalk of Levels 0.5 Through IV (IV)

Criteria Dimensions	Level I OP Services	Level II.I Intensive OP	Level II.5 Partial Hosp.
Dimension 4: Treatment Acceptance/ Resistance	Willing to cooperate-needs motivating & monitoring strat.	Resistance high enough to require structured prog.	Resistance high enough to require structured prog.
Dimension 5: Relapse/Contin Use Potential	Able to maintain abstinence	Intensification addiction symp. despite active in Level I	Intensification addiction symps. despite active in Level I or II.1
Dimension 6: Recovery Environment	Supportive environment--skills to cope	Environment unsupportive	Environment is not supportive

Adult Admission Criteria: Crosswalk of Levels 0.5 Through IV (V)

Criteria Dimensions	Level III.5 Clinically-Managed Residential Services	Level III.7 Medically-Monitored Intensive Inpatient Services	Level IV Medically-Managed Intensive Inpatient Services
Dimension 1: Alcohol Intoxication and/or Withdrawal Potential	Minimal risk of severe withdrawal	Severe withdrawal	Severe withdrawal risk
Dimension 2: Biomedical Conditions & Complications	None or stable	Patient requires medical monitoring	Patient requires 24-hour medical and nursing care
Dimension 3: Emotional/Behavioral Conditions & Comp.	Repeated inability to control impulses	Moderate severity, patient needs 24-hour structured setting	Severe problems require 24-hour psychiatric care

Adult Admission Criteria: Crosswalk of Levels of 0.5 Through IV (VI)

Criteria Dimensions	Level III.5 Clinically-Managed Medium/High Intensity Residential Services	Level III.7 Medically-Monitored Intensive Inpatient Services	Level IV Medically-Managed Intensive Inpatient Services
Dimension 4: Treatment Acceptance/ Resistance	Opposition to treatment, with dangerous consequences	Resistance high and impulse control poor, despite negative consequences	Not qualify the patient
Dimension 6: Recovery Environment	Environment is dangerous; patient lacks skills	Environment dangerous	Not qualify the patient

Adolescent Criteria: Crosswalk of Levels 0.5 Through IV (I)

Criteria Dimensions	Level 0.5 Early Intervention	Level I Outpatient Treatment	Level II Intensive Outpatient Treatment
Dimension 1: Acute Intoxication and/or Withdrawal Potential	No withdrawal risk	No withdrawal risk	No symptoms of withdrawal risk
Dimension 2: Biomedical Conditions and Complications	None or very stable	None or very stable	None
Dimension 3: Emotional/Behav Conditions and Complications	None or very stable	None	Mild severity

Adolescent Criteria: Crosswalk of Levels 0.5 Through IV (II)

Criteria Dimensions	Level 0.5 Early Interventions	Level I Outpatient Treatment	Level II Intensive Outpatient Treatment
Dimension 4: Treatment Acceptance/Resistance	Understand how current use may affect personal goals	Willing to cooperate but needs motivation	Resistance high enough to require structured program
Dimension 5: Relapse/Continued Use Potential	Needs understanding of, or skills to change current use patterns	Able to maintain abstinence and recovery goals with minimal support	Intensification of addiction symptoms high likelihood of relapse w/o support
Dimension 6: Recovery Environment	Social support system	Supportive recovery environment	Environment unsupportive

Adolescent Criteria: Crosswalk of Levels 0.5 Through IV (III)

Criteria Dimensions	Level III Medically-Monitored Intensive Inpatient Treatment	Level IV Medically-Managed Intensive Inpatient Treatment
Dimension 1: Acute Intoxication and/or Withdrawal Potential	Risk of withdrawal syndrome	Severe withdrawal risk
Dimension 2: Biomedical Conditions and Complications	Require medical monitoring	Requires 24-hour medical and nursing care
Dimension 3: Emotional/Behavioral Conditions and Complications	Moderate severity	Severe problems require 24-hour psychiatric care

Adolescent Criteria: Crosswalk of Level 0.5 Through IV (IV)

Criteria Dimensions	Level III Medically-Monitored Intensive Inpatient Treatment	Level IV Medically-Managed Intensive Inpatient Treatment
Dimension 4: Treatment Acceptance/Resistance	Resistance high despite negative consequences; needs intensive motivating	Not qualify patient
Dimension 5: Relapse/Continued Use Potential	Unable to control use despite active participation in less intensive care	Not qualify patient
Dimension 6: Recovery Environment	Environment dangerous; removal from the environment; logistical impediments to outpatient	Not qualify patient

Basic Pharmacology

- Medications and abused drugs affect multiple organs in body
- Neuron receptors altered by abused drugs
- Neuron receptors bind medications to reverse abnormalities induced by abused drugs
- Metabolism by liver - damaged by abused drugs
  - impair efficacy of medications

Pharmacotherapy

- Alcohol and sedatives
- Opioids - heroin
- Stimulants - cocaine/amphetamines
- Nicotine
- Hallucinogens

Pharmacotherapy Targets

A. Overdose reversal (flumazenil)
B. Detoxification (chlordiazepoxide)
C. Relapse Prevention
   - Substitution (methadone)
   - Blockade (naltrexone for opioids)
   - Aversion (disulfiram)
   - Anti-craving (naltrexone for alcohol)

Reversal of Overdoses

- Stimulants - benzodiazepines
  - haloperidol
- Opioids - naloxone “IV drip”
- Benzodiazepines - flumazenil “IV drip”
- Hallucinogens - benzodiazepines

Detoxification Principles

- Oral, non abusable medication
- Long duration of action
- Clear target symptoms/signs
- No metabolic or toxic interactions with other detox medications for polydrug abusers

Alcohol and Sedative Detoxification

- Benzodiazepines
  - chlordiazepoxide
  - oxazepam
- Barbiturates - Phenobarbital

Investigational

- Carbamazepine
- Valproate
- Adrenergic blocker augmentation

Benzodiazepines for Alcohol Detoxification

- Titrate dose to symptoms- chlordiazepoxide
- Peak symptoms at day 3, last 7 days
- Oxazepam in older or liver impaired alcoholics
- May supplement with adrenergic blockers

Carbamazepine for Alcohol Detoxification

- Non-abusable, prevents seizures
- Equal efficacy to benzodiazepines
- Loading dose of 1200 mg orally
- Taper dose days 3 to 7
- Anticonvulsives may be first line agents for patients with history of withdrawl siezures

Adrenergic Blockers for Alcohol Detoxification

- Beta blocker (atenolol) - 50-100 mg QD improves vital signs and agitation
- Alpha adrenergic agonist (clonidine) -0.1mg works with benzodiazepines to control anxiety and vital signs
- Both agents do not prevent seizures and need to be augmenting agents not sole therapy

Alcohol Relapse Prevention

- Naltrexone
- Disulfiram

Investigational

- Serotonin reuptake inhibition
- Buspirone
- Tricyclic antidepressants
- Acamprosate

Alcohol Relapse Prevention
Disulfiram

- Aversive with alcohol use: vomit, hypotension
- Inhibit acetaldehyde breakdown
- Need enforced compliance
- Contraindications: liver failure, psychosis

Alcohol Relapse Prevention
Naltrexone

- Anti-craving, block priming effect
- No aversive effect if alcohol used
- Daily oral dose of 50 mg
- Duration - 6 to 12 months
- Contraindications: opioid dependence severe liver disease
- Side effects (5-10%): nausea, headache

Risks vs. Benefits for Naltrexone in Alcoholism

Risks

- ✓ 6-10% initial dropout due to vomiting, nausea, and anxiety, which does not persist after discontinuation

Benefits

- ✓ Approximately 50% reduction of relapse risk
- ✓ Improved ratings of employment problems
- ✓ Benefits for preventing relapse persist for six months after discontinuation
- ✓ Improved abstinence rates at endpoint and follow-up

Naltrexone for Alcoholism Cases
Mr. A - Clear Cut Effect

Course in Treatment

- Immediate subjective reduction in craving
- Challenged effect on day 1 at liquor store, bar
- Abstinent for 10 weeks on medications
- Randomized to placebo at 10 weeks
- Returned unused medications at 14 weeks stating that it is placebo
- Resumed pre-treatment drinking weeks 18-24
- Returned to treatment/naltrexone week 24
- Abstinent x1 year while on naltrexone

Naltrexone for Alcoholism Cases
Mr. A - Clear Cut Effect

Alcohol History

38 year old married white man

- Drinking 1.5 pints vodka/night 4x weekly for 10 years
- Cocaine dependence in late 20's
- 1 prior inpatient stay with rapid relapse
- Seeking treatment under pressure from 2nd wife
- Family History+++ Alcoholic father, 2 brothers, 2 grandfathers, 1 grandmother

Opioid Detoxification

- Methadone tapering

Investigational

- Clonidine or Lofexidine
- Clonidine/naltrexone - rapid
- Benzodiazepine/naltrexone - ultra-rapid
- Buprenorphine

Opioid Detoxification Methadone Tapering

- Standard starting dose of 25-35 mg for “street addict” on heroin
- Methadone patient may be over 100 mg QD
- Day 2 dose same or higher, if withdrawal seen
- Day 3 reduce 5 mg/day to 10 mg, then 2-3 mg/day reduction
- Inpatient 5-10 days, outpatient up to 30 days

Opioids: Clonidine Detoxification

- Adrenergic anti-hypertensive
- Non-abusable, oral use
- Dose titration, start 0.1 mg TID
- Heroin - 7 days, Methadone - 14 days
- Targets autonomic symptoms
- Anxiety, diarrhea not well relieved
- Side effects - sedation, orthostatic hypotension

Opioid Detoxification: Rapid Clonidine/Naltrexone

- Inpatient or day hospital procedure - 3 days
- Clonidine preload day 1: 0.2-0.3 mg
- Naltrexone 12.5 mg, 1 hour after clonidine
- Continue clonidine TID on first day
- Day 2: clonidine + naltrexone 25 mg
- Day 3: clonidine + naltrexone 50 mg
- Augmenting agents helpful: oxazepam 30 mg

Opioid Detoxification: Ultra Rapid

- Precipitates withdrawal using naltrexone
- Benzodiazepine induced sedation
- Or agents such as propofol for anesthesia
- Takes about one day
- Risks of severe complications/death
- High costs

Opioid Detoxification: Buprenorphine

- Partial opioid agonist: low dose withdrawal relief, high dose precipitate withdrawal
- Once daily sublingual dosing
- Transition from street heroin onto 2-6 mg
- Mild withdrawal during dosage taper
- Can combine with clonidine/naltrexone rapid detoxification

Opioid Relapse Prevention
Pharmacotherapy

- Methadone
- Levo alpha acetyl methadol (LAAM)
- Naltrexone
- Buprenorphine

Opioids - Methadone Maintenance

- Agonist - relieves withdrawal
- Cross-tolerance to opioids
- Starting dose 30 mg, then escalate
- Dose - over 70 mg once daily orally
- Duration - one to over 20 years

Opioids: Methadone Limitations

- Side effects - constipation, sedation
- Diversion to street abuse of “take homes”
- Alcohol and cocaine abuse
- Difficult to discontinue
- Medication interactions
- Dosing for rapid metabolizers

Opioids: Levo Alpha Acetyl Methadol (LAAM)

- Long acting opioid agonist
- 3 x per week dosing
- 70 mg - 70 mg - 120 mg (M - W - F)
- Lower abuse potential than methadone
- Slow onset, poor retention than methadone

Opioid Relapse Prevention
Naltrexone

- Pure opioid antagonist, need detox before start
- Heroin use not aversive, just blocked
- Oral dosing - either 50 mg / day or 100 mg Monday and Wednesday, 150 mg Friday
- Duration: 6-12 months
- Maintain abstinent state
- Need enforced compliance, e.g. parolees, significant others

Opioid Relapse Prevention: Naltrexone Limitations

- Lower preference than methadone by addicts
- Poorer treatment retention than methadone
- Requires opioid detoxification before starting
- Lacks negative reinforcement when not taken (e.g. no withdrawal symptoms if stopped)
- Potential liver toxicity at higher doses (300 mg)
- Blocks opioid pain medications for up to 72 hours

Opioid Relapse Prevention
Buprenorphine

- Partial opioid agonist, cross tolerance, at 12 mg daily has about 75% blockade of heroin high
- Maintenance dose of 8-20 mg sublingual daily
- Comparable to methadone in treatment retention and reduced illicit heroin abuse
- Lower overdose potential and abuse liability than methadone
- Less severe withdrawal than methadone when discontinued

Stimulant Relapse Prevention

- Only Investigational Agents
  - Antidepressants
    - tricyclics
    - serotonin reuptake inhibitors
- Dopamine agonists
- NMDA antagonists
- Gultante antagonists
- Vaccine

Nicotine Detoxification/Relapse Prevention

- Nicotine gum
- Nicotine patch
- Bupropion
- Blockade and deterrents

Investigational

- Tricyclic antidepressants
- Clonidine
- Naltrexone

Ethical Issues in Treatment

- Personal relationships
- Confidentiality
- Dangerousness to self and others
- Informed consent
- Financial conflict of interest

Ethical Issues: Confidentiality I

- Interdisciplinary treatment teams
- Supervision in and outside of program
- Outside agencies/practitioners
- Family members
- Teaching/sharing experiences

Ethical Issues: Confidentiality II

- Legal protection of records
- Illegal activities by patients and reporting to police
- Drug use itself as illegal activity
- Group and family meeting risks

Ethical Issues: Personal Relationships

- No sexual relationships with patients
- Meetings outside treatment program
- Group versus individual meetings
- Ongoing contacts after patient leaves treatment

Ethical Issues: Dangerous

- Duty to inform threatened persons
- Conflict with confidentiality
- Who and when to notify
- Medical emergencies - limited disclosure
- High risk behaviors - AIDS

Ethical Issues: Informed Consent I

- Written informed consent
- Release of written records
- Oral communication - dangerousness
- Need to document released information
- Program policies, HIV testing

Ethical Issues: Informed Consent II

- Capacity to provide consent
- Surrogate consent (e.g. family members)
- Full disclosure of risks and benefits
- Parole, probation and criminal justice reports

Ethics: Conflict of Interest

- Financial most common with treatment extension or discharge due to insurance
- Favoring one easily available treatment mode
- Pre-treatment relationship to patient
- Dual reporting to criminal justice, employer, etc.

Ethics: HIV Testing

- Negative consequences: medical services, housing, employment, school admission
- Contact tracing and partner notification
- Associated sexual diseases, tuberculosis

Ethics: Methadone Programs

- Retention vs discharge: non-compliance
- Blind withdrawal only on request
- Pregnancy and continued drug use
- Child protective services

Post Lecture Exam
Question 1

1. **Which of the following statements is false:**

A. Physical dependence is synonymous with addiction.

B. One can be addicted without being physically dependent.

C. Once a patient has met criteria for Substance Dependence, they should not be diagnosed in the future with Substance Abuse.

D. A critical feature of addiction is compulsive use in spite of harm.

Question 2

2. Which of the following statements is false:

A. Psychiatric disorders can cause substance abuse.

B. Substance abuse can cause psychiatric disorders.

C. If both substance abuse and a psychiatric disorder are present, treating the psychiatric disorder is usually not necessary.

D. Treating an underlying psychiatric disorder usually does not adequately treat the substance abuse.

Question 3

3. The most common comorbid psychiatric diagnosis in patients with substance abuse is:

A. Schizophrenia
B. Antisocial Personality Disorder
C. Anxiety Disorder
D. Major Depression

Question 4

4. **Which one of the following is false:**

A. Cocaine decreases negative symptoms in schizophrenics.

B. When cocaine free, schizophrenics have more negative symptoms.

C. Chronic cocaine use increases depression in schizophrenics.

D. Chronic cocaine decreases positive symptoms of schizophrenia.

Question 5

5. Which of the following are considered "Gateway Drugs"?

A. Alcohol

B. Marijuana

C. Nicotine

D. A & C only

E. A, B, & C

Question 6

6. Adolescent substance abuse is associated with:

A. Increased school dropout

B. Increased depression and suicidality

C. Premature involvement in sexuality

D. All of the above

Question 7

7. The proportion of users who ever became dependent is as follows (from high to low):

A. Nicotine, alcohol, heroin, cocaine, marijuana.

B. Alcohol, nicotine, cocaine, heroin, marijuana.

C. Nicotine, heroin, cocaine, alcohol, marijuana.

D. Nicotine, alcohol, marijuana, cocaine, heroin.

Question 8

8. Which of the following is not used as a maintenance agent in heroin addiction:

A. Methadone

B. Clonidine

C. LAAM

D. Naltrexone

E. Buprenorphine

Question 9

9. Which category of medications is <u>not</u> yet available for treatment of heroin addiction:

A. Agonists

B. Antagonists

C. Partial agonists

D. Anti-craving agents

E. Anti-withdrawal agents

Question 10

10. Which of the following statements are true:

A. Naltrexone blocks the effects of alcohol.

B. Drinking while on naltrexone can make one very ill.

C. Benzodiazepines are the usual agents used for alcohol withdrawal.

D. All of the above

Answers to Pre & Post Competency Exams

1. A
2. C
3. B
4. D
5. E
6. D
7. C
8. B
9. D
10. C