Substance Abuse and TB Treatment

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EXCELLENCE EXPERTISE INNOVATION

Eduardo Vargas, LMSW has the following disclosures to make:

- No conflict of interests
- No relevant financial relationships with any commercial companies pertaining to this educational activity

SUBSTANCE ABUSE AND TB TREATMENT

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HELPFUL DEFINITIONS (APA, 2017)

- **Substance Use Disorder (SUD):** Recurrent use of alcohol and/or other drugs causing clinically significantly impairment, including health problems, disability, and failure to meet major responsibilities at work, school or home.
- **Addiction**: A condition in which the body must have a drug **to avoid** physical and psychological withdrawal symptoms.
- **Tolerance**: Need for higher, or more frequent, doses of the drug to acquire the original effect ("high").
- **Dependence:** Addiction's first stage, during which the search for a drug dominates an individual's life
- **Injection Drug Use (IDU):** Taking drugs directly into blood vessels using a hypodermic needle and syringe.

TYPES OF DRUGS

Alcohol	Club Drugs
Cocaine*	Hallucinogens
Heroin	Inhalants
Marijuana	MDMA
Methamphetamine	Opioids
Prescription Drugs	Steroids
Synthetic Cannabinoids	Synthetic Cathinones
Tobacco/Nicotine	

*Cocaine is the most frequent cause of drug-related death

HOW DOES TB TRANSMISSION HAPPEN?

- Illicit drug use associated with alcoholism, which increases risk of TB infection

Airborne

- "Shotgunning" – Exhale smoke directly on other person's mouth
- "Bong" – Share water pipe
- Hotboxing – Smoke with other people in room with windows closed (in the car)

Environmental

- Living in cramped conditions
  - Incarceration
  - Shelters
- Exposure to other, untreated, infected persons.
- Living in poorly ventilated areas
  - Shooting galleries
  - Sharing drug equipment

Montoya, 2014

QUIZ TIME!

Which of these methods constitute direct exposure to TB?

1. IV Drug Use
2. Shooting Galleries
3. Hotboxing
4. None of the above
5. All of the above

HOW PREVALENT ARE SUDs?

- LTBI prevalence among various cohorts of drug users between (10%-59%) (Deiss et al., 2009).
- Risk of TB infection and developing active disease **26 and 23 times higher** among incarcerated (Getahun et al., 2013).
- About one in five U.S. TB pts. reports abusing alcohol or using illicit drugs (Montoya, 2014).
- Overall percentage of TB pts. who abused a substance (18.7%) > the percentage who reported other established known risk factors for TB during the study period (Oeltmann et al., 2009).
- The prevalence of substance abuse among all patients with TB declined slightly from 19.6% in 1997 to 17.2% in 2006.
- Although homeless pts. accounted for only 22.7% of substance-abusing population, 66.8% reported substance abuse.
- Prevalence rates of substance abuse within racial subgroups showed that 39% of black patients, 26.2% of white patients, and 22.7% of Hispanic patients reported substance abuse.

Table 1. Prevalence of Substance Abuse Among US Patients With TB 15 Years or Older, Overall and by Abuse Category and Country of Birth, National Tuberculosis Surveillance System, 1997-2006

Substance Abuse Status	No. (%)[a]			
	Any Substance Abuse[b]	Injection Drug Use	Noninjection Drug Use	Excessive Alcohol Use
Total (N=153 268)				
Abuse	28 650 (18.7)	3972 (2.6)	11 616 (7.6)	23 138 (15.1)
No abuse	116 626 (76.1)	141 923 (92.6)	133 725 (87.2)	122 655 (80.0)
Unknown	7992 (5.2)	7373 (4.8)	7927 (5.2)	7475 (4.9)
US-born[c] (n=76 816)				
Abuse	22 293 (29.0)	3499 (4.6)	9697 (12.6)	17 803 (23.2)
No abuse	49 895 (65.0)	68 828 (89.6)	62 288 (81.1)	54 570 (71.0)
Unknown	4628 (6.0)	4489 (5.8)	4831 (6.3)	4443 (5.8)
US-born male (n=50 519)				
Abuse	17 860 (35.4)	2630 (5.2)	7153 (14.2)	14 737 (29.2)
No abuse	29 472 (58.3)	44 667 (88.4)	39 908 (79.0)	32 698 (64.7)
Unknown	3187 (6.3)	3222 (6.4)	3458 (6.8)	3084 (6.1)
US-born female (n=26 293)				
Abuse	4433 (16.9)	869 (3.3)	2544 (9.7)	3066 (11.7)
No abuse	20 419 (77.7)	24 157 (91.9)	22 376 (85.1)	21 868 (83.2)
Unknown	1441 (5.5)	1267 (4.8)	1373 (5.2)	1359 (5.2)
Foreign born (n=75 860)				
Abuse	6287 (8.3)	456 (0.6)	1893 (2.5)	5284 (7.0)
No abuse	66 456 (87.6)	72 765 (95.9)	71 129 (93.8)	67 786 (89.4)
Unknown	3117 (4.1)	2639 (3.5)	2838 (3.7)	2790 (3.7)
Foreign-born male (n=45 193)				
Abuse	5829 (12.9)	409 (0.9)	1715 (3.8)	4952 (11.0)
No abuse	37 242 (82.4)	42 934 (95.0)	41 498 (91.8)	38 318 (84.8)
Unknown	2122 (4.7)	1850 (4.1)	1980 (4.4)	1923 (4.3)
Foreign-born female (n=30 654)				
Abuse	458 (1.5)	47 (0.2)	178 (0.6)	332 (1.1)
No abuse	29 203 (95.3)	29 819 (97.3)	29 619 (96.6)	29 457 (96.1)
Unknown	993 (3.2)	788 (2.6)	857 (2.8)	865 (2.8)
Unknown country of birth (n=592)				
Abuse	70 (11.8)	17 (2.9)	26 (4.4)	51 (8.6)
No abuse	275 (46.5)	330 (55.7)	308 (52.0)	299 (50.5)
Unknown	247 (41.7)	245 (41.4)	258 (43.6)	242 (40.9)

QUIZ TIME!

What is the most abused intoxicating substance by people with TB?

1. Cocaine
2. Heroin
3. Alcohol
4. Tobacco
5. None of the above

HOW DO SUDs AFFECT THE BODY?

- Illicit drug users continue to be a group at high risk for TB infection and disease (Deiss et al., 2009).
- Substance abuse directly affects cells responsible for immune response (Deiss et al., 2009).
  - Increases susceptibility to opportunistic infection
  - Decreases immune response even after treatment is started
- TB is the **most common** opportunistic infection in **endemic areas**, and **prevalent among IDUs** even in **low prevalence areas** (Deiss et al., 2009).
- Drug use may hide symptoms, thus impacting detention and early treatment (Deiss et al., 2009).
- Pts. with TB and co-infection with viral hepatitis or HIV were at 4 to 5-fold at increased risk for developing drug-induced hepatitis (DIH), and a 14-fold increased risk if co-infected with both (Montoya, 2014).

HOW DOES IT IMPACT TB TREATMENT?

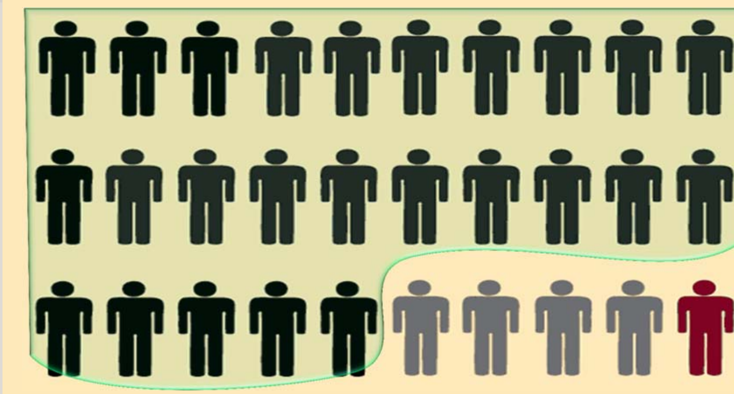
- Frequently associated with a number of epidemiological factors:
  - Tobacco use
  - Homelessness
  - Alcohol abuse
  - Incarceration
- More complicated course of treatment:
  - More infectious
  - Take longer to achieve negative culture
  - Increased risk for mortality
- Difficulty completing medical evaluations or adhering to treatment:
  - Low motivation for treatment (particularly when asymptomatic)
  - Unstable lifestyles
  - Alcohol use
  - Lack of primary care or health insurance.
  - Treatment is a low priority
  - Self-discrimination and stigma
  - Lack of social/family support
- Paranoia suspicion
- Competing demands
- Psychiatric and medical comorbidities
- Drug interactions

HOW DO SUDs AFFECT THE COMMUNITY? (DEISS ET AL., 2009).

- Drug users, and IDUs in particular, have driven TB (including MDR) epidemics in a number of countries.
- Disproportionate incidence of TB disease among drug users result from TB transmission, with the presence of identical DNA patterns ("clusters") between TB isolates - implying recent transmission.
- Even symptomatic IDUs wait longer to present for treatment after symptom onset ("patient delay")
  - Increases TB transmission rates
  - Lead to more severe disease.
  - Results in higher costs and more infection (disseminated TB)

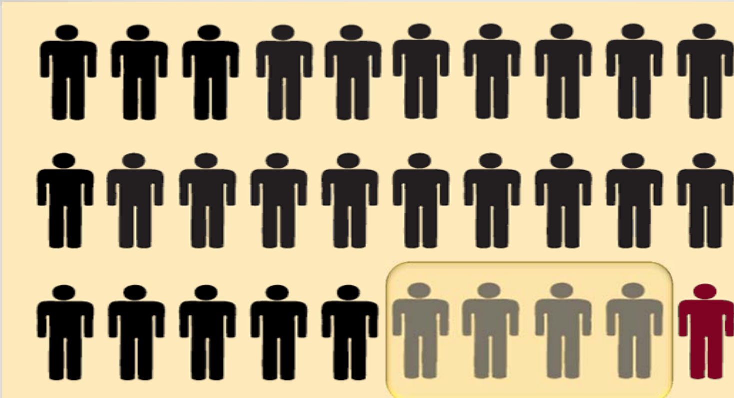
CONTINUUM OF SUBSTANCE USE

NON-USE / LOW RISK



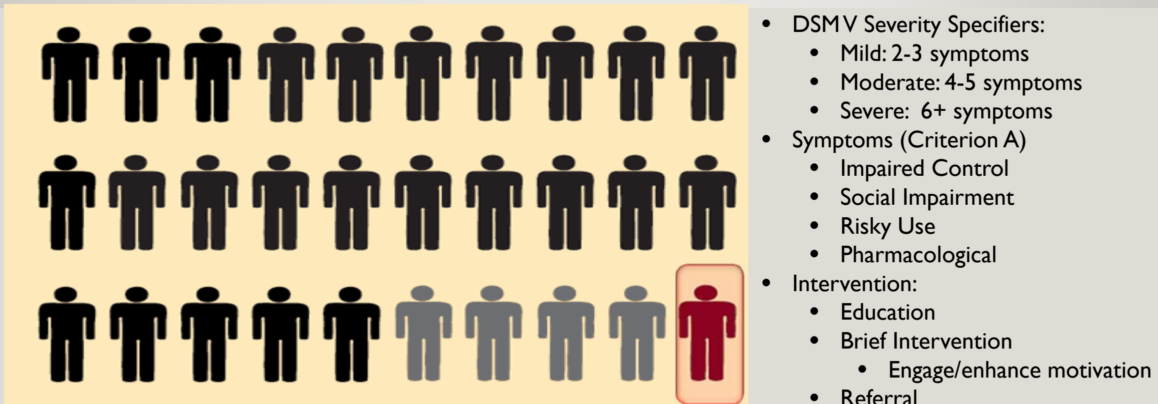
- From 1997-2006, 76.1% of patients with TB identified with no drug abuse
- Men (18-64), no more than:
  - 5 drinks per day
  - 15 drinks per week
- Women and Elderly
  - 4 drinks per day
  - 8 drinks per week
- Intervention:
  - education
  - positive health message

RISKY USE



- From 1997-2006, 18.7% of patients with TB reported at least one substance use
  - 2.6% IDU
  - 7.6% non IDU
  - 15.1% "excessive ETOH"
- **Any** recreational use of drugs
  - Use of prescription drugs for non-prescribed purposes
- Intervention:
  - Education
  - Brief intervention

SUBSTANCE ABUSE DISORDER: CLUSTER OF COGNITIVE, BEHAVIORAL, AND PHYSIOLOGICAL SYMPTOMS INDICATING THE INDIVIDUAL CONTINUES USING THE SUBSTANCES, DESPITE SIGNIFICANT SUBSTANCE-RELATED PROBLEMS



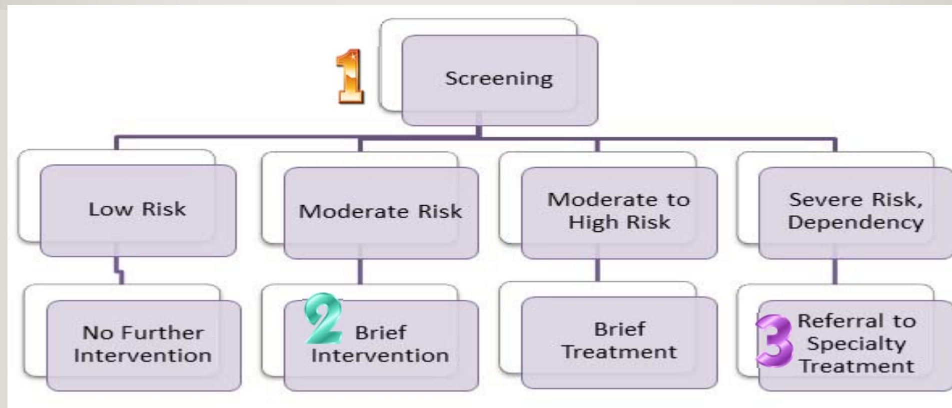
- DSM V Severity Specifiers:
  - Mild: 2-3 symptoms
  - Moderate: 4-5 symptoms
  - Severe: 6+ symptoms
- Symptoms (Criterion A)
  - Impaired Control
  - Social Impairment
  - Risky Use
  - Pharmacological
- Intervention:
  - Education
  - Brief Intervention
    - Engage/enhance motivation
  - Referral

CASE STUDY

Lucia, a Latina, married,36 year old female weighing approximately 136 lbs., drank a bottle of wine (6 servings) at her bachelorette party over a 6-hour time period. Furthermore, she reports one glass of wine at dinner every night. No recreational drug or prescription.

- Does Lucille meet criteria for low use/non-use?
- Under what criteria?
- What information is relevant, and what information is not?

SBIRT: EVIDENCE-BASED PRACTICE



PRE-SCREENING: TWO QUESTIONS

Alcohol - NIAAA

	None	1 or more
MEN: How many times in the past year have you had 5 or more drinks in a day?	○	○
WOMEN: How many times in the past year have you had 4 or more drinks in a day?	○	○

Drugs - NIDA

	None	1 or more
How many times in the past year have you used a recreational drug or used a prescription medication for nonmedical reasons?	○	○

National Institute on Alcohol Abuse and Alcoholism
National Institute on Drug Use

Alcohol screening questionnaire (AUDIT)

Drinking alcohol can affect your health and some medications you may take. Please help us provide you with the best medical care by answering the questions below.

One drink equals: 12 oz. beer | 5 oz. wine | 1.5 oz. liquor (one shot)

Question	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	Two to four times a month	Two to three times a week	Four or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	Zero to two	Three or four	Five or six	Seven to nine	Ten or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, in the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, in the last year

AUDIT and DAST – 2-4 minutes to administer

www.talkingalcohol.com/files/pdfs/WHO_audit.pdf
https://www.drugabuse.gov/sites/default/files/files/DAST-10.pdf

FULL SCREEN

Drug Screening Questionnaire (DAST)

Using drugs can affect your health and some medications you may take. Please help us provide you with the best medical care by answering the questions below.

In the following questions, "drug abuse" refers to:

- Using prescription pain, anxiety, or sleep medications more than directed by, or not prescribed by, your doctor or medical provider.
- Using recreational drugs.

Please check which recreational drugs you have used in the past year:

- ☐methamphetamines (speed, crystal)
- ☐cannabis (marijuana, pot)
- ☐inhalants (paint thinner, aerosol, glue)
- ☐tranquilizers (valium)
- ☐cocaine
- ☐narcotics (heroin, oxycodone, methadone, etc.)
- ☐hallucinogens (LSD, mushrooms)
- ☐other ____________

Question	0	1
1. Have you used drugs other than those required for medical reasons?	No	Yes
2. Do you abuse more than one drug at a time?	No	Yes
3. Are you unable to stop using drugs when you want to?	No	Yes
4. Have you ever had blackouts or flashbacks as a result of drug use?	No	Yes
5. Do you ever feel bad or guilty about your drug use?	No	Yes
6. Does your spouse (or parents) ever complain about your involvement with drugs?	No	Yes
7. Have you neglected your family because of your use of drugs?	No	Yes
8. Have you engaged in illegal activities in order to obtain drugs?	No	Yes
9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?	No	Yes
10. Have you had medical problems as a result of your drug use (e.g. memory loss, hepatitis, convulsions, bleeding)?	No	Yes

0	1	3	6
I	II	III	IV

USE AUDIT/DAST TO ASSESS RISK & PLAN INTERVENTION

ZONE OF USE:	I: LOW RISK	II: RISKY	III: HARMFUL	IV: SEVERE
AUDIT Score:	0–3	4–9	10–13	14+
DAST Score:	0	1–2	3–5	6+
Explanation of Zone:	"At low risk for health or social complications."	"May develop health problems or existing problems may worsen."	"Has experienced negative effects from substance use."	"Could benefit from more assessment and assistance."
Intervention:	Positive Health Message	Brief Intervention to Reduce Use	Brief Intervention to Reduce or Abstain	Brief Intervention to Accept Referral to Treatment

QUIZ TIME!

What are the most determinant factors in identifying someone as a risky user?

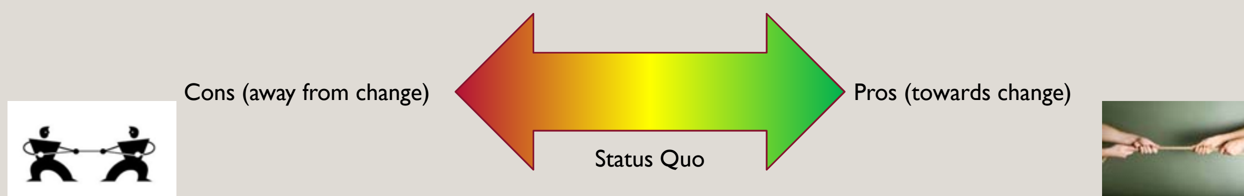
1. Frequency of use
2. Rate of use
3. Location of use
4. Type of drug used
5. 1 and 3
6. 2 and 4

BRIEF INTERVENTION

- Short (5-15 minute) motivational interviewing–based conversation to:
  - Enhance motivation to change
  - Motivate patients < severe use to seek treatment
- Provide education, but for the purpose of enhancing ambivalence, not for persuasion
- Listen for change-talk, commitment and ambivalence
- Don't forget to praise, praise, praise (affirmation)

AMBIVALENCE: THE CENTER CONCEPT

- "MI works by activating patients' own motivation for change and adherence to treatment" (Rollnick, Miller & Butler, 2014, p. 5)
- "Ambivalence is often experienced as first thinking of a reason to change, then thinking of a reason not to change, and then to stop thinking about it" (p. 34).
- There is a natural human tendency to resist persuasion, particularly under perceived loss of freedom.
- MI works by encouraging introspection, self-talk and encouraging ambivalence (breaking status quo).

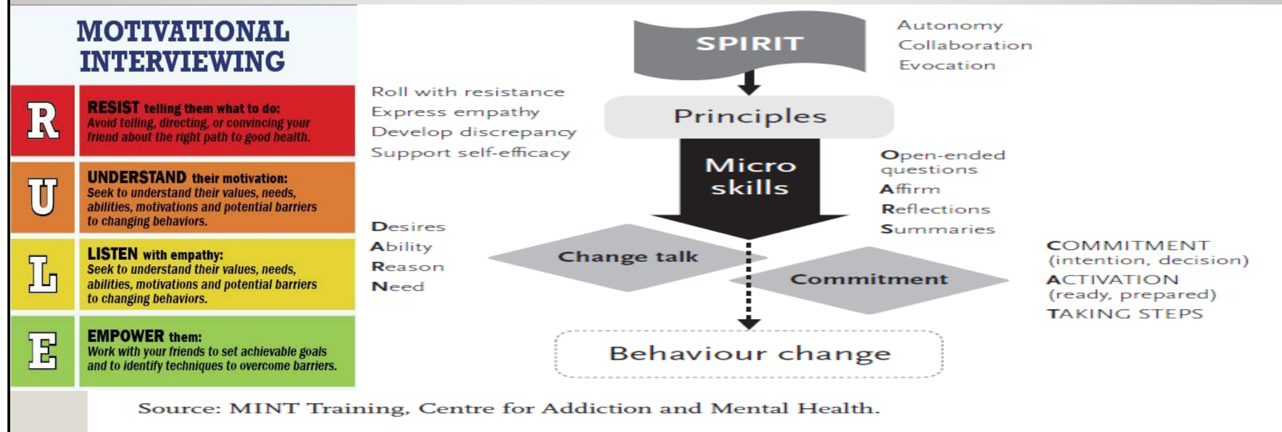


QUIZ TIME!

What are examples of ambivalence?

1. Deciding which car to buy
2. Choosing which way to go to work
3. Deciding whether to get married or not
4. Choosing between a job with health insurance included, or a higher-paying job without health insurance
5. None of the above
6. All of the above

MOTIVATIONAL INTERVIEWING



Source: MINT Training, Centre for Addiction and Mental Health.

SBIRT LEARNING TOOL – BRIEF INTERVENTION STEPS

Raise the subject	• Explain your role; ask permission to discuss the screening forms: *"Would it be okay if we talked about the annual screening forms you filled out today?"* • Ask for alcohol/drug use patterns: *"Tell me about your alcohol/drug use? In a typical week, what does your alcohol/drug use look like?"* • Listen carefully; use reflections to demonstrate understanding
Provide feedback	• Share AUDIT/DAST zone(s) and meaning; review low-risk drinking limits; explore patient's reaction: *"Your score on the screening form puts you in the __ zone, which means... And, here are the low-risk drinking limits... What do you think about that?"* • If applicable, explore possible connection to health, social, and/or work issues (share patient education materials): *"What connection might there be between your alcohol/drug use and ... ?"* • Explore patient's reaction to the information; listen closely and reflect
Enhance motivation	• Ask about pros/cons: "What do you like about your alcohol/drug use? What don't you like about your alcohol/drug use?" • Explore readiness to change and reasons for change using the readiness ruler: *"On a scale of 0-10, how ready are you to make a change in your alcohol/drug use?"* ◦ If > 2: *"Why that number and not a ____ (lower one)?"* ◦ If 0-2: *"How would your alcohol/drug use have to impact your life in order for you to start thinking about cutting back?"*
Negotiate plan	• Summarize the conversation, including reasons for change identified by the patient • Ask a key question: *"What do you think you will do?"* or *"What steps are you willing to take to cut back?"* • If not ready to plan, stop the intervention; thank patient; offer patient education materials • If needed, offer options for change (patient education materials); write down agreed-to steps and give to patient • Assess patient's confidence in achieving his/her goal: *"On a scale of 0-10, how confident are you about making these changes?"* • Negotiate follow-up visit and thank patient

Gotham, 2016

QUIZ TIME!

Organize the Brief Intervention Steps in the prescribed order.

1. Raise the subject, Provide Feedback, Enhance Motivation, Negotiate Plan
2. Enhance Motivation, Raise the subject, Provide Feedback, Negotiate Plan
3. Negotiate Plan, Provide Feedback, Enhance Motivation, Raise the subject
4. Educate, Negotiate Plan, Enhance Motivation, Provide Feedback

WHAT TYPES OF TREATMENT ARE AVAILABLE?

- Specialty Addiction Treatment
  - Groups
    - Support Groups
    - Educational Groups
    - Therapy Groups
  - Individual Counseling
    - Motivational Interviewing
    - Cognitive-Behavioral Therapy
    - Contingency Management
    - Family Behavior Therapy
- Medication-Assisted Treatment
  - Manage withdrawal
  - Stay in treatment
  - Prevent relapse
  - Risk-Reduction
- Systemic Support (family, friends, work)
- Faith-based approaches
- Others (cold turkey)

Gotham, 2016; Montoya, 2014

PRINCIPLES OF DRUG ABUSE TREATMENT

1. Addiction is a complex but treatable disease that affects brain function and behavior
2. No single treatment is appropriate for everyone
3. Treatment needs to be readily available
4. Effective treatment attends to the multiple needs of the individual
5. Remaining in treatment for an adequate period of time is critical for treatment effectiveness
6. Counseling and other behavioral therapies are critical components of effective treatment
7. Medications are an important element of treatment for many patients
8. Treatment plans must be assessed and modified continually to meet challenging needs
9. Co-existing disorders should be treated in an integrated way
10. Treatment does not need to be voluntary to be effective
11. Possible drug use relapse during treatment must be monitored continuously
12. Treatment programs should assess for HIV/AIDS, Hepatitis B & C, TB and other infectious diseases and help client modify at-risk behaviors

Montoya, 2014

QUIZ TIME!

Which is the most effective treatment for substance abuse disorder?

1. Group Therapy
2. Individual Counseling
3. Medication-Assisted Therapy
4. Motivational Interviewing
5. All-of-the-Above

HOW TO MINIMIZE STRUCTURAL BARRIERS?

- Drug treatment centers utilizing DOT as important sites for TB-related services
  - Combine LTBI TX with financial rewards
  - Combine TX with methadone
  - Demonstrated more cost-effective (even with incentives) for integrated treatment
- Enhance public health department to provide effective substance abuse TX
  - If not available on-site, have a "warm handoff" system of referrals
  - Multidisciplinary approach to treatment that incorporates mental health and social services
- Hospitalization

Deiss et al., 2009; Gotham, 2016

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