Substance Abuse and TB Treatment
Eduardo Vargas, LMSW
September 12, 2017

TB Nurse Case Management
September 12-14, 2017

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
KEY CONCEPTS (APA, 2017)

- **Substance Use Disorder (SUD):** Recurrent use of alcohol and/or other drugs causing clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school or home.

- **Addiction:** Condition when person must use drug to avoid physical and psychological withdrawal symptoms.

- **Dependence:** Addiction’s first stage, during which the search for a drug dominates an individual’s life.

- **Tolerance:** Need for higher, or more frequent, doses of the drug to acquire the original effect.

- **Injection Drug Use (IDU/IVDU):** Taking drugs directly into blood vessels using a hypodermic needle and syringe.
PREVALENCE

• TB Patients report substance abuse (18.7%) more than other risk factors (Oeltmann et al., 2009).
  • About one in five U.S. TB pts. reports abusing alcohol or using illicit drugs (Montoya, 2014).

• TB Patients who are homeless:
  • Composed only 1/5 of substance-abusing population
  • Two thirds reported substance abuse problems

• Reported substance abuse: Black (39%) > White (26.2%) > Hispanic (22.7%).

• LTBI prevalence ranges between (10%-59%) among different cohorts of SUDs (Deiss et al., 2009).

• Risk of TBI (26X) and active disease (23X) higher among SUD (Getahun et al., 2013).

<table>
<thead>
<tr>
<th>Substance Abuse Status</th>
<th>Any Substance Abuse</th>
<th>Injection Drug Use</th>
<th>Noninjection Drug Use</th>
<th>Excessive Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (N = 153,258)</td>
<td>26,050 (16.7%)</td>
<td>11,616 (7.6%)</td>
<td>23,138 (15.1%)</td>
<td></td>
</tr>
<tr>
<td>Abuse</td>
<td>26,050 (16.7%)</td>
<td>11,616 (7.6%)</td>
<td>23,138 (15.1%)</td>
<td></td>
</tr>
<tr>
<td>No abuse</td>
<td>116,296 (76.1%)</td>
<td>141,923 (92.6%)</td>
<td>133,725 (87.2%)</td>
<td>122,656 (80.0%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>7,992 (5.2%)</td>
<td>7,373 (4.8%)</td>
<td>7,927 (5.2%)</td>
<td>7,475 (4.9%)</td>
</tr>
<tr>
<td>US-born a (n = 76,610)</td>
<td>22,293 (28.6%)</td>
<td>3499 (4.6%)</td>
<td>9697 (12.6%)</td>
<td>17,803 (23.3%)</td>
</tr>
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<td>Abuse</td>
<td>22,293 (28.6%)</td>
<td>3499 (4.6%)</td>
<td>9697 (12.6%)</td>
<td>17,803 (23.3%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>49,990 (65.6%)</td>
<td>66,268 (89.1%)</td>
<td>62,288 (81.1%)</td>
<td>54,570 (71.0%)</td>
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<td>Unknown</td>
<td>4,029 (5.0%)</td>
<td>4,499 (2.6%)</td>
<td>4,831 (6.3%)</td>
<td>4,443 (5.8%)</td>
</tr>
<tr>
<td>US-born male (n = 50,519)</td>
<td>17,860 (35.4%)</td>
<td>2630 (5.2%)</td>
<td>7,153 (14.2%)</td>
<td>14,737 (29.2%)</td>
</tr>
<tr>
<td>Abuse</td>
<td>17,860 (35.4%)</td>
<td>2630 (5.2%)</td>
<td>7,153 (14.2%)</td>
<td>14,737 (29.2%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>29,472 (58.3%)</td>
<td>44,667 (88.4%)</td>
<td>39,908 (79.0%)</td>
<td>32,698 (64.7%)</td>
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<tr>
<td>Unknown</td>
<td>3,187 (6.3%)</td>
<td>3,222 (6.4%)</td>
<td>3,456 (6.8%)</td>
<td>3,064 (6.1%)</td>
</tr>
<tr>
<td>US-born female (n = 20,293)</td>
<td>4,433 (16.9%)</td>
<td>869 (3.3%)</td>
<td>2544 (9.7%)</td>
<td>3066 (11.7%)</td>
</tr>
<tr>
<td>Abuse</td>
<td>4,433 (16.9%)</td>
<td>869 (3.3%)</td>
<td>2544 (9.7%)</td>
<td>3066 (11.7%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>20,419 (77.7%)</td>
<td>24,197 (91.9%)</td>
<td>22,376 (68.1%)</td>
<td>21,868 (63.2%)</td>
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<tr>
<td>Unknown</td>
<td>1,441 (5.6%)</td>
<td>1,267 (4.8%)</td>
<td>1,373 (5.2%)</td>
<td>1,359 (6.2%)</td>
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<tr>
<td>Foreign born (n = 73,800)</td>
<td>6,287 (8.3%)</td>
<td>456 (6.8%)</td>
<td>1,893 (2.5%)</td>
<td>5,254 (7.0%)</td>
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<td>Abuse</td>
<td>6,287 (8.3%)</td>
<td>456 (6.8%)</td>
<td>1,893 (2.5%)</td>
<td>5,254 (7.0%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>66,455 (87.6%)</td>
<td>72,265 (95.9%)</td>
<td>71,292 (93.8%)</td>
<td>67,796 (88.4%)</td>
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<td>Unknown</td>
<td>3,117 (4.1%)</td>
<td>2,639 (3.5%)</td>
<td>2,838 (3.7%)</td>
<td>2,790 (3.7%)</td>
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<tr>
<td>Foreign-born male (n = 45,193)</td>
<td>5,029 (12.9%)</td>
<td>409 (0.9%)</td>
<td>1,715 (3.6%)</td>
<td>4,902 (1.1%)</td>
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<tr>
<td>Abuse</td>
<td>5,029 (12.9%)</td>
<td>409 (0.9%)</td>
<td>1,715 (3.6%)</td>
<td>4,902 (1.1%)</td>
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<tr>
<td>No abuse</td>
<td>37,242 (82.4%)</td>
<td>42,934 (95.9%)</td>
<td>41,496 (87.8%)</td>
<td>38,318 (84.8%)</td>
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<td>Unknown</td>
<td>2,122 (4.7%)</td>
<td>1,850 (4.1%)</td>
<td>1,980 (4.4%)</td>
<td>1,923 (4.3%)</td>
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<tr>
<td>Foreign-born female (n = 30,564)</td>
<td>458 (1.5%)</td>
<td>47 (0.2%)</td>
<td>178 (0.6%)</td>
<td>332 (1.1%)</td>
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<tr>
<td>Abuse</td>
<td>458 (1.5%)</td>
<td>47 (0.2%)</td>
<td>178 (0.6%)</td>
<td>332 (1.1%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>29,203 (95.3%)</td>
<td>29,819 (97.3%)</td>
<td>29,610 (96.6%)</td>
<td>29,457 (96.1%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>993 (3.2%)</td>
<td>798 (2.6%)</td>
<td>857 (2.6%)</td>
<td>865 (2.6%)</td>
</tr>
<tr>
<td>Unknown country of birth (n = 592)</td>
<td>70 (11.8%)</td>
<td>17 (2.5%)</td>
<td>26 (4.4%)</td>
<td>51 (8.6%)</td>
</tr>
<tr>
<td>Abuse</td>
<td>70 (11.8%)</td>
<td>17 (2.5%)</td>
<td>26 (4.4%)</td>
<td>51 (8.6%)</td>
</tr>
<tr>
<td>No abuse</td>
<td>275 (46.5%)</td>
<td>330 (55.7%)</td>
<td>308 (52.0%)</td>
<td>259 (55.5%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>247 (41.7%)</td>
<td>245 (41.4%)</td>
<td>258 (43.6%)</td>
<td>242 (40.3%)</td>
</tr>
</tbody>
</table>
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 DOES TB TRANSMISSION HAPPEN?

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

SUDs IMPACT ON BODY

• Illicit drug users at high risk for TB infection and disease (Deiss et al., 2009).
• Affects cells responsible for immune response (Deiss et al., 2009).
  • Increases (↑) susceptibility to opportunistic infection
  • Decreases (↓) immune response even after treatment is started
• May hide symptoms  ➔ Impacts early detention and treatment (Deiss et al., 2009).
• TB + Viral Hepatitis/HIV ➔ 4 to 5-fold at increased risk for developing drug-induced hepatitis (DIH)
  TB + Viral Hepatitis  AND HIV ➔ 14-fold increase (Montoya, 2014).
SUDs IMPACT ON TREATMENT

- Frequently associated with a number of epidemiological factors:
  - Tobacco use (co-abuse)
  - Homelessness
  - Alcohol abuse (co-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 (limited time, transportation, money)
- Psychiatric and medical comorbidities
- Drug interactions

QUIZ TIME!

Which of the following are **TRUE** statements?

1. Alcohol abuse increases a person's chance of acquiring TB
2. Alcohol abuse makes TB medication less effective
3. Substance abuse makes a person sicker from TB
4. Substance abuse delays diagnosis/treatment of TB
5. All of the above
CONTINUUM OF SUBSTANCE USE

**NON-USE / LOW RISK**

- From 1997-2006, 76.1% of patients with TB did not abuse substances
- Men (18-64), no more than:
  - 4 drinks per day
  - 14 drinks per week
- Women and Elderly:
  - 3 drinks per day
  - 7 drinks per week
- Absolutely no recreational use of drugs/prescriptions

Intervention:
- education
- positive health message

**Key**
- Only require screening
- Require brief intervention
- Require referral to treatment

RISKY USE

• From 1997-2006, 18.7% of patients with TB reported at least risky 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

1. Screening
   - Low Risk
     - No Further Intervention
   - Moderate Risk
     - Brief Intervention
   - Moderate to High Risk
     - Brief Treatment
   - Severe Risk, Dependency
     - Referral to Specialty Treatment
PRE-SCREENING: TWO QUESTIONS

**Alcohol - NIAAA**

<table>
<thead>
<tr>
<th>MEN: How many times in the past year have you had 4 or more drinks in a day?</th>
<th>None</th>
<th>1 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOMEN: How many times in the past year have you had 3 or more drinks in a day?</td>
<td>None</td>
<td>1 or more</td>
</tr>
</tbody>
</table>

**Drugs - NIDA**

How many times in the past year have you used a recreational drug or used a prescription medication for nonmedical reasons?

AUDIT and DAST – 2-4 minutes to administer

USE AUDIT/DAST TO ASSESS RISK & PLAN INTERVENTION

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

PRACTICE TIME!

1. Conjure up a client that uses alcohol/drugs, preferably one that you know well
2. Use either the DAST/AUDI to score their behavior, based on your knowledge
3. Tabulate their score
4. What is the best intervention based on your client’s score?
5. Questions:
   1. How would you ask that person the questions to get more data?
   2. Is your relationship strong enough to withstand this questionnaire?
   3. What barriers do you anticipate to completing this process?
<table>
<thead>
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**Explanation of Zone:**
- **I: LOW RISK** - “At low risk for health or social complications.”
- **II: RISKY** - “May develop health problems or existing problems may worsen.”
- **III: HARMFUL** - “Has experienced negative effects from substance use.”
- **IV: SEVERE** - “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

**Questions:**
1. How would you ask that person the questions to get more data?
2. Is your relationship strong enough to withstand this questionnaire?
3. What barriers do you anticipate to completing this process?

**BRIEF INTERVENTION**

- Short (5-15 minute) motivational interviewing–based conversation to:
  - Enhance motivation to change
  - Motivate patients > severe use to seek treatment
- Provide education, to enhance ambivalence, not 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)
- "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).

Cons (away from change)  Status Quo  Pros (towards change)

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 a job with health insurance, or a higher-paying job w/o health insurance
5. None of the above
6. All of the above
MOTIVATIONAL INTERVIEWING

**MOTIVATIONAL INTERVIEWING**

**R**esist telling them what to do.
**U**nderstand their motivations.
**L**isten with empathy.
**E**mpower them.

- Resist: Let them guide the conversation.
- Understand: Seek to understand their values, needs, desires, abilities, strengths, and barriers to change.
- Listen: Work with them to set achievable goals and to identify techniques to overcome barriers.
- Empower: Move towards taking steps.

**SPRIT**
- Principles:
  - Autonomy
  - Collaboration
  - Evocation
- Micro skills:
  - Open-ended questions
  - Affirm
  - Reflections
  - Summaries
- Change talk:
  - Commitment
- Behaviour change

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

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**SBIRT LEARNING TOOL – BRIEF INTERVENTION STEPS**

- **Raise the subject:**
  - Explain your role; ask permission to discuss 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/CAGE component score; 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 positions.
  - "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 1-10, how ready are you to make a change in your alcohol/drug use?"
  - "If > 5: Why is that number not a 7 (power plant)"?

- **Negotiate a 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 1-10, 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
  • 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

REFERENCES


