Introduction to Addiction Medicine

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A. Abstract

The American health profession workforce is underprepared to care for patients with alcohol and drug use disorders (substance use disorders, "SUDs"). These disorders have profound consequences for patients, their families, and their communities. Despite this, physicians fail to diagnose and do not feel confident discussing and treating SUDs (Ram & Chisolm, 2016). This problem is likely due, in part, to the lack of addiction medicine education that physicians receive in medical school. On average, schools offer 12-hours of exposure to this material over four years (Ram & Chisolm, 2016), and medical students have noted that the prevalence of SUDs in their clinical rotations was not reflected in pre-clinical lectures (Raber et al., 2018). Recent publications have urged medical schools to increase and improve addiction education to address this deficit (Ratycz et al., 2018; Shapiro et al., 2019; Lembke & Humphreys, 2018).

This course is designed to introduce pre-clinical medical students to the field of addiction medicine. The goal is to foster a compassionate, thorough, and humanizing framework for thinking about SUDs early in medical student development as physicians.

B. Educational Objectives

The overall goal for the course is for students to gain a solid knowledge foundation on SUDs, practice important patient care skills relevant to SUDs, and evaluate their views on SUDs through discussion and exposure to people with lived experience. The specific course objectives are outlined below. Each objective is labeled as a skill (**S**), knowledge (**K**), or value (**V**) objective.

By completing this course, students will be able to...

MODULE 1: Diagnosis, Pathophysiology, and Pharmacology for Substance Use Disorders

1. **Define** the diagnostic criteria for substance use disorders and **describe** the neurobiology of how substance use disorders develop. (**K**)
2. **Explain** the mechanisms of common medications for substance use disorders and **compare** methadone, buprenorphine, and extended-release naltrexone in terms of efficacy, induction, retention, and systems level constraints. (**K**)

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MODULE 2: Establishing Quality Patient Care: Stigmatizing Language, Harm Reduction Principles, and Trauma Informed Care

3. **Describe** the importance of harm reduction principles in treating substance use disorders. (**K**, **V**)
4. **Identify** stigmatizing language surrounding substance use disorders and **demonstrate** use of more appropriate, person-centered language. (**K**, **S**)
5. **Recognize** common emotional, behavioral, and physical responses to trauma, **interpret** patient encounters through a trauma-informed lens, and **demonstrate** techniques for providing trauma- informed care (**K**, **S**)

MODULE 3: Health Policy Surrounding Substance Use Disorders and Systemic Barriers to Treatment

6. **Explain** how current health policy surrounding substance use disorders developed, **analyze** its impact on patients, and **evaluate** new policies. (**K**, **S**)

INTERACTIVE ACTIVITIES:

7. **List** available support structures outside of the medical field for people with substance use disorders. (**K**)
8. **Appreciate** the variability within the patient population affected by substance use disorders. (**V**)
9. **Describe** how social determinants of health and structural inequities influence substance use disorders. (**K**)
10. **Reflect** on the origin of personal and cultural stigmas surrounding substance use disorders and **generate** ideas for reducing their existence and impact. (**V**, **S)**
11. **Investigate** unique considerations for various subpopulations with substance use disorders. (**S**)

C. Overview

This longitudinal curriculum incorporates self-paced learning opportunities tailored to fit medical students' busy schedules, as well as rich discussions and interactive experiences designed to make a lasting impact on students' attitudes towards SUDs. The course will be implemented by student coordinators with the help of faculty mentors and will enroll a small group of students to facilitate discussion. In total, the course will require 10-15 hours over several weeks and can be completed virtually, if necessary.

The first component of the course is three traditional lecture-style modules covering diagnosis, pathology, and pharmacology of SUDs, establishing trusting patient-physician relationships in the context of SUDs, and health policy surrounding SUDs. The goal of these modules is to prepare students for robust and thoughtful discussion and reflection on SUDs by providing broad foundational knowledge.

The interactive portion of the course includes a case study, where students will practice taking a SUD history, developing a treatment plan, and using non-stigmatizing language. In addition, students will practice history-taking over a video call with a standardized patient with lived experience of SUD and receive feedback. The inclusion of people with lived experience of SUDs is an essential innovation of this curriculum. Exposure to people with lived experience of addiction

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has been shown to change learner attitudes and self-perceived competency in working with patients with SUDs (Kastenholtz, 2016; Tringale & Reilly, 2017; Raber et al., 2018). Our course includes attending a SUD peer support group, followed by a group reflection. Dependent upon COVID-related restrictions on in-person clinical activities, our course also includes a 3-to-5-hour shadowing session with an addiction medicine provider.

Finally, our course provides space for personal reflection and exploration of other complexities of substance use disorders with a written reflection assignment and a "share a resource" assignment that encourages further exploration of topics related to SUDs.

The course is innovative in its balance of flexible learning opportunities that can be completed at a student's own pace with the engaging hands-on experiences necessary to stimulate reflection and rich discussion, its adaptability to online education, and its overview of SUDs from multiple perspectives including those of people with lived experience. These unique components have been thoughtfully designed to spark continued curiosity about SUDs, and empathy towards individuals with these disorders. Students who complete the course will be better prepared to serve patients with SUDs and all of their patients.

D. Curriculum and Assessment

Outline of the course components. Details in the Appendix.

- 3 hours of traditional lecture style modules (1 hour/each) will give medical students an introduction to the general landscape of addiction medicine. These can be delivered live or pre-recorded. Example slides and content can be found in the appendix, although exact content is customizable provided it meets the learning objectives.
  - Module 1: Diagnosis, Pathophysiology, and Pharmacology for Substance Use Disorders (Appendix B1)
  - Module 2: Establishing Quality Patient Care: Stigmatizing Language, Harm Reduction Principles, and Trauma-Informed Care (Appendix B2)
  - Module 3: Health Policy Surrounding Substance Use Disorder and Systemic Barriers to Treatment (Appendix B3)
- 3-5 hours of interactive activities and group discussion
  - Case Study (1-2 hours) facilitated by a physician and History-taking Exercise with a person with lived experience (Appendix C1)
  - Attendance at a Substance Use Peer Support Group of choice (1-2 hours) followed by a 1-hour reflection session with a small group of medical students (can be facilitated by a physician or another member of the substance use disorder treatment community) (Appendix C2)
  - Physician Shadowing at an Addiction Medicine Clinic (variable time, virtual or in person)
- 2 hours of personal assessment and reflection. These can either be shared via online forums or email discussions, or it can be kept between each student and the faculty coordinator.
  - Short post-module quizzes to retain information
  - Reflection assignments before and after the course (Appendix C3 and 4)
  - "Resource sharing" assignment

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Appendix A1

Introduction to Addiction Medicine Syllabus

This is a template – student coordinator should fill in the italicized sections

Course Title: Introduction to Addiction Medicine
Course Dates: *TBD*
Course Contacts:
Student Coordinator(s): *name, email*
Faculty Coordinator(s): *name, email*

Course Description:
This course is designed to be an introduction for first year medical students to the many ways that addiction affects patients and healthcare systems, and the innovative treatment approaches that can be used to help care for people with substance use disorders. Included in the course are didactics on medication for substance use disorders, drug policy, and trauma-informed care. Students will also participate in a case study, addiction medicine physician shadowing, a peer support group for substance use disorders, and practice taking a SUD history from a standardized patient with lived experience. There will be a session to collectively reflect on these experiences at the end of the course.

By the end of the course, students will be able to:

1. **Define** the diagnostic criteria for substance use disorders and **describe** the neurobiology of how substance use disorders develop.
2. **Explain** the mechanisms of common medications for substance use disorders and **compare** methadone, buprenorphine, and extended-release naltrexone in terms of efficacy, induction, retention, and systems level constraints.
3. **Understand** the importance of harm reduction principles in treating substance use disorders.
4. **Identify** stigmatizing language surrounding substance use disorders and **demonstrate** use of more appropriate, person-centered language.
5. **Recognize** common emotional, behavioral, and physical responses to trauma, **interpret** patient encounters through a trauma-informed lens, and **demonstrate** techniques for providing trauma-informed care.
6. **Understand** how current health policy surrounding substance use disorders developed, **analyze** its impact on patients, and **evaluate** new policies.
7. **List** available support structures outside of the medical field for people with substance use disorders.
8. **Appreciate** the variability within the patient population affected by substance use disorders.
9. **Understand** how social determinants of health and structural inequities influence substance use disorders.
10. **Reflect** on the origin of personal and cultural stigmas surrounding substance use disorders and **generate** ideas for reducing their existence and impact.
11. **Investigate** unique considerations for various subpopulations with substance use disorders.

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Assessment Assignments:

1. Pre-course reflection notes - *DEADLINE*

   Students will write down some brief notes on one or more of the following prompts prior to starting the course:

   - Without looking it up, how would you define the term substance use disorder?
   - What kinds of images or words come to mind when you think about substance use disorders?
   - Imagine that you are seeing a patient at a family medicine clinic who is interested in pursuing treatment for their substance use disorder. What next steps would you offer this person?

2. Post-course reflection essay – *DEADLINE*

   Students will write a one-page reflection on one of the following prompts:

   - What surprised you about the types of and availability of addiction medicine/mental health resources utilized by community clinicians in your area? Give examples.
   - How did your thoughts on treating addiction/substance use disorders change during this course? Give examples.
   - What assumptions did you have coming into this course and how were they challenged/changed during this course? Give examples.

3. Share a resource assignment – *DEADLINE*

   Students will share one external resource about something related to addiction medicine or SUDs with the rest of the class (book, podcast, scientific article, popular news article, etc.) with a brief summary of what it was about and why they found it interesting.

Course Schedule:

Week 1 - Diagnosis, Pathophysiology, and Pharmacology for Substance Use Disorders
Week 2 - Establishing Quality Patient Care: Stigmatizing Language, Harm Reduction Principles, and Trauma-Informed Care
Week 3 - Health Policy Surrounding Substance Use Disorder and Systemic Barriers to Treatment
Week 4 - Case Study and History-taking Exercise with a person with lived experience
Week 5 – Final Reflection

Grading and Attendance Expectations:

This course is graded pass/fail based on thoughtful participation in discussions, activities, and assignments. Up to [*insert number here*] absence(s) are permitted with advance notice to the course coordinators.

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Appendix A2

To Do List for Course Coordinator (if planning for an elective)

- ❑ Review school guidelines for proposing a new elective
- ❑ Identify and reach out to possible faculty coordinator(s)
- ❑ Determine the schedule
- ❑ Identify and reach out to facilitators for different modules, if different from faculty course coordinator
- ❑ Identify and reach out to facilitators for the case study and the final reflection session, if different from faculty course coordinator
- ❑ Identify faculty available for shadowing if different from faculty course coordinator, and create a shadowing sign-up sheets for students
- ❑ Schedule meeting times and locations (or create meeting links if online)
- ❑ Invite students to sign up

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Appendix B1

MODULE 1: Diagnosis, Pathophysiology, and Pharmacology for Substance Use Disorders

PowerPoint:
THE DIAGNOSES, NEUROBIOLOGY, AND TREATMENT OF SUBSTANCE USE DISORDERS
https://drive.google.com/file/d/1AgtUOSzmL-LC1xIpvQkAFKilkEY29Zuv/view

Quiz:

1. Which of the following is not a DSM V diagnostic criterion for Substance Use Disorders?
    1. Unsuccessful efforts to cut down use
    2. **Regular use of a physiologically dangerous substance**
    3. Spending a lot of time acquiring the substance
    4. Tolerance Development

2. Addiction is best understood as:
    a. **A multifactorial biopsychosocial disease**
    b. A strictly neurological illness mediated by the Nucleus Accumbens inhibiting Prefrontal Cortex activity
    c. A psychologically mediated habit surrounding repeated use of a psychoactive substance
    d. A series of repeated personal decisions to continue using substances despite harms

3. The primary neurotransmitter currently tied to addictive habit formation is:
    a. Serotonin
    b. GABA
    c. Glutamate
    d. Dopamine

4. Which of the following medications for Opiate Use Disorder require a week of abstinence before induction?
    a. Naltrexone
    b. Buprenorphine
    c. Methadone
    d. None of the Above
    e. All of the Above

5. The most dangerous point in treating Opiate Use Disorder with Methadone is:
    a. As patients taper off methadone after regular treatment
    b. During the first four weeks of induction
    c. Once patients have developed comfort in regular methadone use
    d. At the first dosing

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6. Which medication for Opiate Use Disorder has the most challenging induction and retention?
    a. Methadone
    b. Naltrexone
    c. Buprenorphine
    d. All of the above are equally difficult

7. Which medication is an Opioid receptor Antagonist?
    a. Methadone
    b. Naltrexone
    c. Buprenorphine
    d. All of the above are antagonists of opioid receptors

8. Which is the correct Mesolimbic dopamine signaling pathway?
    a. Ventral Tegmental Area --> Nucleus Accumbens --> Pre-Frontal Cortex
    b. Pre-Frontal Cortex --> Nucleus Accumbens --> Ventral Tegmental Area
    c. Nucleus Accumbens --> Ventral Tegmental Area --> Pre-Frontal Cortex
    d. Pre-Frontal Cortex --> Ventral Tegmental Area --> Nucleus Accumbens

9. Which of the following best describes Methadone treatment?
    a. A long-term injectable received once per month in a healthcare setting
    b. A sublingual tablet dosed daily at home
    c. A dermal patch applied once weekly at home
    d. **Daily overseen dosing at an opioid treatment program center**

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Appendix B2

MODULE 2:
Establishing Quality Patient Care: Stigmatizing Language, Harm Reduction Principles, and Trauma-Informed Care

PowerPoint:
HARM REDUCTION AND TRAUMA INFORMED CARE
https://drive.google.com/file/d/1PK7XCwej6LSc_YaQGATBJrbpeP6BWnsm/view

Quiz:

1. Harm Reduction is best described as:
    1. A legal framework that seeks to minimize liabilities for addiction medicine providers
    2. **Interventions aimed at reducing the adverse effects of substance use even if substance use continues**
    3. Interventions that focus on eliminating IV drug use associated pathogens
    4. A system that minimizes the harm of substance users on the larger society

2. When is negatively framed language permissible in trauma informed care?
    a. **In Mutual Aid Meetings with defined expectations**
    b. When describing SUD's in journalistic writing
    c. When presentations are directed at the non-professional public
    d. When patients are not present

3. Trauma Informed Care seeks to...
    a. Develop a set of universal tools that can resolve patients fear and facilitate healing
    b. Provide a framework for understanding and accepting the origins dangerous patient behavior
    c. Focus on traumatic aspects of a person's history until the issues are resolved
    d. **Provide a framework for understanding and responding appropriately to a patient's unique history and facilitate healing**

4. Supervised Injection Sites are associated with an increased incidence of IV drug use
    a. True
    b. **False**

5. The effects of trauma are solely psychological in nature
    a. True
    b. **False**

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Appendix B3

MODULE 3:
Health Policy Surrounding Substance Use Disorder and Systemic Barriers to Treatment
https://drive.google.com/file/d/1ouQ_E371PbfRQF4ekM6Kj9lApqjFQClo/view

QUIZ:

1. The first congressional bill to regulate drug use was the:
    1. 21st Amendment
    2. **Harrison Narcotic Act**
    3. Anti-Drug Abuse Act
    4. The Controlled Substances Act

2. Alcoholism had been described as a disease before the early 1900's
    a. **True**
    b. False

3. Substance Use Disorders are considered one of the elements of essential health benefits covered by the Affordable Care Act
    a. **True**
    b. False

4. What approximate percentage of people aged 12 or older in the United States use a substance (tobacco, alcohol, or illicit) each month?
    a. ~20%
    b. ~40%
    c. **~60%**
    d. ~80%

5. What age demographic has the highest need for substance use treatment?
    a. 12-17
    b. **18-25**
    c. 26 or older
    d. 12 or older

6. What year were the first American Board of Addiction Medicine Certifications awarded?
    a. 1954
    b. 1984
    c. 1999
    d. **2009**

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Appendix C: Facilitator Guide

C1: Example Case and Discussion Questions

Background:

A Primer on Non-Stigmatizing and Person-First Language

Replace…	**With….**
"Drug abuser" or "drug addict"	"Person with a substance use disorder"
"Alcoholic"	"Person with an alcohol use disorder"
"Heroin addict"	"Person with an opioid use disorder"
"Dirty urine"	"The urine was positive for…"
"Relapse"	"Return to use"

Note: some patients may prefer to use more stigmatizing language when referring to their own substance use disorder. It may be appropriate to ask those patients what kind of language they prefer be used by their physician.

Obtaining a history using the mnemonic RIP-TEAR:

R – _risk (evaluate for acute medical emergencies and social factors that contribute to poor outcomes) What questions would you as to assess the risk of this patient's substance use disorder?
Possible answers: questions about withdrawal, acute intoxication, overdose, suicidality, impaired judgement, risky sexual practices/behaviors, housing status, food insecurity

I – initiation (evaluate use trajectory and timeline)
What questions would you ask to assess initiation?
Possible answers: when did you start using this substance, when did you start using it regularly, when did you first recognize that this might be a problem for you, when was your period of heaviest use?

P – pattern (what, how, where, and when do you use this substance)
What questions would you ask to assess pattern?
Possible answers: what forms of substances do you use? How do you use it (injection, snort, smoke,ingest)? How do you buy it? Where do you use the substance? When do you use the substance?

T – treatment (assess prior treatment history for substance use disorders)
What questions would you ask to assess treatment history?
Possible answers: history of medication for a substance use disorder, participation in community-based support, residential or inpatient treatment

E – effects (evaluate positive and negative effects of the substance)
What questions would you ask to assess positive and negative effects of the substance?
Possible answers: improved sleep, decreased anxiety, pleasure, "feeling normal again," motivation (positive). Difficulty with personal relationships, stigma, problems with health, economic challenges(negative).

A – abstinence/recovery (evaluate for recovery successes and challenges)
What questions would you ask to assess recovery successes and challenges?
Possible answers: past periods of recovery or abstinence, what prompted or helped during thoseperiods, patient self-assessment of personal strengths

R – return to use (evaluate factors associated with return to use)
What kinds of questions would you ask to evaluate previous history of returning to use?
Possible answers: what factors were involved in previous return to use? Mood? Economic hardships?

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Practice with a Case

Below is a description of a patient (names and identifying details have been changed) presenting to an outpatient clinic. The facilitator of the case study should provide information only when students ask a relevant question. Students should take turns asking questions as though they were taking a patient history. The facilitator may improvise or add additional details to the case as they see fit. If there is time and interest, it might be interesting to include additional shorter cases about patientspresenting to a hospital, where there would be room for discussion on what to do when students encounter other health professionals using stigmatizing language as well as other complex situations unique to the hospital environment.

James is a new patient to the clinic. He has been using heroin for about a year. He feels sick when he is not able to get heroin, and is concerned about it interfering with relationships, but especially withhis work, because he is unable to come into work when he feels sick. He uses about 1-2 balloons of heroin a day, but sometimes he has to skip a few days if he can't get it. He typically smokes it, but if he is running out of it, he injects it in between his toes to avoid track marks. He gets the syringes fromthe pharmacy and doesn't share with other people. He started taking prescription opioids two years prior to starting heroin following a back surgery (lumbar fusion) after an injury at his welding job. He got about 60 pills of Percocet from his surgeon, and then one refill. After that the surgeon did not refill anymore. He occasionally got more pills from the emergency department but could not get enough to take them every day. During this time, he tested positive for opioids on a work-related drug test and was fired. He still experiences back pain although it is not as bad as it was in the past.

He doesn't have fevers or sweats associated with the back pain, although he will get sweats if he runs out of heroin. He does not have changes to his bladder or bowel function except what would be expected when undergoing an opioid withdrawal. He tried to quit Percocet but struggled with it as hewas separating from his children's mother at the time. He has not tried quitting heroin and has not been through a formal detox program. He has never tried taking buprenorphine, suboxone, or methadone. He says his main goal is to reduce his withdrawal symptoms because he has to call in sick to work when they happen. However, he also mentions that it causes problems with his children's mother who lives in a different city a few hours away. His current girlfriend, who he lives with in an apartment, knows about his heroin usage and uses heroin as well, although not as often. His family does not know about his heroin usage. He has passed out in the past after using heroin but has not had to go to the hospital as a result and has not needed Narcan. He uses heroine mostly alone, sometimes his girlfriend is there, and sometimes he uses it with the person he gets it from.

He has not used cocaine previously, but he has used methamphetamines, which helps him stay awakeduring long 12 hour shifts at his new welding job. Other people at his job use them as well. The last time he used methamphetamines was about two weeks ago. He drinks alcohol but not every day. He has not had legal issues related to alcohol use but has gotten into two bar fights in the past. He has not made attempts to cut back on drinking. He estimates smoking about 8 cigarettes a day. He tried using marijuana in high school but does not really use it now. He was prescribed benzodiazepines for depression/anxiety as a teenager but has not used them in a long time. He reports feeling some symptoms of anxiety now. He has never tried to hurt himself.

His father, who is deceased, drank a lot of alcohol when James was growing up. His mother and siblings do not drink alcohol. To his knowledge there is no other substance use in his family. His girlfriend has done heroin with James three or four times but does not use it regularly. He tried attending a Narcotics Anonymous meeting when he was taking the Percocet but was put off by aspects of the program and did not like sharing so much information with strangers. He is interested in individual counseling.

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Questions for students:

What treatment options are available to this patient? Practice explaining the treatment options to the patient.

Possible answers:

Suboxone (buprenorphine) partial agonist.

Methadone – need to go to a daily methadone clinicc

Counseling or group therapy options

Naltrexone, naloxone

Counsel about not using alone (increases risk of overdose)

Medications to treat opioid withdrawal symptoms (nausea, sleep)

Post Case Reflection:

How did you feel about taking a history? What worked well? Did anything feel uncomfortable? Whatwould you do differently next time?

Brainstorm some reasons why it might be challenging for patients to seek treatment for substance use disorder.

Possible answers:

Lack of transportation to clinic or pharmacy, lack of health insurance, poor experiences withhealthcare systems in the past, etc.

Following this in-class exercise, students may have the opportunity to schedule a video call to practice their history taking skills with a person with lived experience.

C2: List of Substance Use Disorder Peer Support Groups

Nationwide recovery meetings can be found here:
https://myrecoverylink.com/digital-recovery-meetings/

It may be desirable to find more local meetings by searching "recovery meetings" or "recovery networks" and your state or city. Common meetings are Narcotics Anonymous, Alcoholics Anonymous, or SMART Recovery Meetings. This curriculum does not endorse any particular type of recovery meeting.

C3: Example Reflective Exercise Prompts (before the course)

This reflective exercise is intended to be a relatively quick, bullet point style exercise.

- Without looking it up, how would you define the term substance use disorder?
- What kinds of images or words come to mind when you think about substance use disorders?
- Imagine you are seeing a patient at a family medicine clinic who is interested in pursuing treatment for their substance use disorder. What kinds of questions might you ask them?What next steps would you offer this person?

C4: Example Reflective Essay Prompts (after the course)

This reflective exercise is intended to be a one page or so essay.

- What surprised you about the types of and availability of addiction medicine/mental health resources utilized by community clinicians in your area? Give examples.
- How did your thoughts on treating addiction/substance use disorders change during this course? Give examples.
- What assumptions did you have coming into this course and how were they challenged/changed during this course? Give examples.

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Appendix D

Appendix D1

Grading Rubric

- The student completed Module 1 and the associated quiz --- 1 point
- The student completed Module 2 and the associated quiz --- 1 point
- The student completed Module 3 and the associated quiz --- 1 point
- The student attended the physician shadowing experience --- 2 points

- The student participated in the case study session --- 2 points
- The student participated in the final reflection discussion and had attended a peer support group meeting in advance --- 2 points
- The student submitted a thoughtful final reflection essay --- 2 points
- The student submitted a resource for the share a resource assignment --- 1 point

Post-Course Survey

Scoring: 1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

Select your level of agreement with the following statements:

After taking this course, I feel more confident identifying substance use disorders
1 2 3 4 5

After taking this course, I feel more confident distinguishing between medications for substance use disorders
1 2 3 4 5

After taking this course, I understand the various systemic barriers that make accessing care more challenging for patients.
1 2 3 4 5

After taking this course, I feel more confident talking to patients about their substance use disorders while using non-stigmatizing language.
1 2 3 4 5

I will use principles of harm reduction, trauma informed care, and person-first language in my future clinical experiences.
1 2 3 4 5

Answer the following free response questions:

What are the strengths of this course?

What could be improved in this course?

Please leave any other feedback or comments below.

Funding for this initiative was made possible (in part) by grant no. 1H79TI083343 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.

Appendix E

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