Case Presentations from the Addiction Academy

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Abstract In this article, a case-based format is used to address complex clinical issues in addiction medicine. The cases were developed from the authors' practice experience, and were presented at the American College of Medical Toxicology Addiction Academy in 2015. [Section I: Drug and Alcohol Dependence and Pain](#) explores cases of patients with co-occurring pain and substance use disorders. [Section II: Legal and Policy Issues in Substance Use Disorders](#) highlights difficult legal and policy questions in addiction medicine. [Section III: Special Populations and Addictive Disorders](#) delves into the complexity of addiction in special populations (pregnant, pediatric, and geriatric patients).

Keywords Addiction · Pregnancy · Legal · Chronic pain · Special populations

Introduction

The case studies described in this article were presented as panel and small group discussion sessions at the American College of Medical Toxicology “Addiction Medicine

Academy” symposium in March 2015. The individuals who participated in the panel and led the group sessions are listed in the appendix. These cases were developed based on the practice experiences of the author and faculty participating in the discussions. The ensuing discussions are described in the question and answer style of the group sessions.

The cases in [Section I: Drug and Alcohol Dependence and Pain](#) describe issues that arise in the treatment of pain in patients with a history of, or concerning features for, substance use disorder. In [Section II. Legal and Policy Issues in Substance Use Disorders](#), addiction medicine legal and policy perspectives are discussed through case-based format. In [Section III: Special Populations and Addictive Disorders](#), the cases highlight the complex clinical issues medical providers face in the management of addiction in special populations including pregnant women, pediatrics, and the elderly.

Section I: Drug and Alcohol Dependence and Pain

Case 1

A 54-year-old woman with chronic pain due to inflammatory arthritis presents to the emergency department (ED) stating that she is having a “flare” of her arthritis, but is out of her Oxycontin[®] and immediate-release oxycodone. She is aware that it is too early to fill her prescriptions, but she insists that she will be traveling out of state and “really needs” her medications. She presents on a Saturday when her clinic is closed, and her primary care physician is “on vacation.”

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Question: How do you Approach This Patient in the ED?

Discussion Due to the escalation of opioid misuse in the USA, many EDs have instituted guidelines limiting refills of opioid medications for chronic pain concerns, particularly when there is no objective evidence of for an acute etiology of changes in pain [1].

Additional steps to the approach of this patient include:

- Conducting an evaluation for medical conditions causing the change in symptoms.
- Reviewing the prescription monitoring program database if available in the state of practice.
- Determining how early the refill request is, and her recent pattern of opioid use.
- Considering non-narcotic therapies.
- Determining risk of withdrawal or adverse events if the medication is not refilled.

In this scenario, several “red flags” suggest that the patient has a substance use disorder. She is using her prescribed opioid analgesics inappropriately by taking extra doses, and has subsequently run out of medications early. She is also presenting to the emergency department rather than returning to her physician for refills. Additionally, her “off-hour” presentation occurs at a time when her prescribing physician cannot be reached for verification and direction. Most physicians that provide opioid prescriptions use a contract that includes information about early refills and use of non-prescribed medications and illicit drugs. Some hospitals or physician groups include patient opioid contracts in their electronic health record (EHR).

Case 1 Alternate Scenario

The patient then presents to her primary care physician of 1 year with objective painful conditions (inflammatory arthritis, severe osteoarthritis, knee replacement, and a hip fracture associated with chronic prednisone use). She requests continued opioid therapy for these conditions. While this patient has been under her PCP’s care, the physician has received concerning information regarding her use of alcohol; a Driving Under the Influence charge, spousal complaints about her drinking, and a discharge summary from the emergency department visit related to injuries sustained after a fall from “mixing her pills with her drinks.”

Question: How do you Approach Management of This Patient in the Primary Care Setting?

Discussion Alcohol misuse is a contraindication to the prescription of opioid therapy for pain. The combination

of alcohol and opioids synergistically increases the potential for sedation; a recent study found that the misuse of alcohol was a common feature in prescription opioid-related ED visits [2]. Many physicians obtain an “informed consent agreement,” or a “pain contract,” as the standard of care for treating patients with opioids. These agreements detail the risks of chronic opioid therapy and outline guidelines for treatment, including warnings that patients should not be using alcohol or illicit drugs while receiving opioids. Many providers will monitor for alcohol use in patients receiving chronic opioids, incorporating urine ethyl sulfate or ethyl glucuronide testing for ethanol use.

Approaches to the management of patients who abuse alcohol in the setting of chronic opioid therapy vary. Strategies include limiting or tapering opioid therapies, referral to pain management specialists, or offering screening, assessment, brief intervention, and referral to treatment (SBIRT) for alcohol use disorder.

When chronic pain patients abuse alcohol or other substances, specific pain and addiction program referral is available in some areas. These programs include personalized treatment aimed at the substance use disorder, as well as the complex nexus of pain and addiction. Alternatives to opioid analgesics include non-opioid medications (muscle relaxants, NSAIDs), physical therapy, mindfulness, biofeedback, and relaxation techniques.

Case 2

A 30-year-old woman with a history of recent intravenous (IV) drug use is admitted to the observation unit for IV antibiotics after the incision and drainage of an antecubital abscess. She has a history of opioid and cocaine dependence.

She receives IV morphine followed by IV hydromorphone for acute pain, as she had a significant debridement performed. After the procedure, she is demanding increasingly higher doses of IV opioids, and the observation unit team is becoming uneasy regarding the dose and frequency of opioid medications that she is receiving. The nursing staff raises concerns that she has tampered with her IV tubing and may be using her IV to “inject something.”

Question: How do you Approach This Patient with Respect to her Pain and her Behavior?

Discussion Given her history of opioid dependence, this patient is tolerant to opioids; her physiological requirements for analgesia are higher than expected when compared to an opioid-naïve patient. Careful assessment of physical and psychological indices of pain, and evaluation for other conditions that may be contributing to pain (i.e., recurrent infection,

thrombosis, etc.) are indicated. Symptoms of opioid withdrawal should also be assessed. In this setting, it is essential to discuss the pain management plan with the patient in a non-judgmental manner that describes the course of treatment. Anxiety concerning withdrawal or unmanaged pain can drive requests for additional opioid medications or unusual behaviors during treatment. A common pitfall in the management of pain in opioid-dependent persons is a lack of consideration for analgesic needs above their baseline opioid tolerance. Healthcare providers are often concerned about the potential respiratory depression secondary to high opioid doses, without recognizing the tolerance to respiratory depression that opioid dependence confers; the “amount” of opioid has less importance in pain management than close clinical monitoring of patient response. Monitoring in patients receiving high-dose opioids must include vital signs and overall level of arousal and wakefulness, as well as other clinical assessments like oxygen saturation and end-tidal carbon dioxide measurement (capnography). These tools may indicate either insufficient or excessive opioid dose.

The treatment plan should be coordinated with the primary care provider with involvement of a pain specialist, if available. Opioid-tolerant patients may have a prolonged recovery after a painful illness or injury. Some healthcare systems have dedicated committees of multidisciplinary specialists, including psychiatry, pain management, addiction medicine, internal medicine, and emergency medicine providers to convene and discuss management of these difficult cases. When a patient truly does not respond to (or worsens with) opioid analgesia, opioid-induced hyperalgesia must be considered, which would improve with the decrease/cessation of opioids—notably, this a difficult concept to implement in a patient at risk of opioid withdrawal. In hospitalized patients, additional options include simultaneous treatment with agents that enhance or otherwise modify the opioid effect, such as ketamine [3] and alpha-2 agonists [4]. Delivery of adjunctive treatments such as nerve blocks or administration of intrathecal opioids singly or alongside other medications by appropriately trained providers can also provide relief to selected patients. Specific strategies:

- Using a combination of long-acting and short-acting opioids, scheduling both the long- and short-acting opioids, and informing the patient regarding the schedule.
- Switching to oral formulations as soon as possible.
- Maximizing non-narcotic therapies.
- Considering initiation of methadone in the hospital for management of baseline tolerance and opioid use disorder, with referral to an addiction medicine program that incorporates opioid agonist treatment.
- Urine drug testing for concerns about IV use of illicit drugs, such as heroin, in the hospital.

- Consider buprenorphine for both pain and addiction in appropriate hospitalized patients. However, provider experience and knowledge of buprenorphine pharmacology is critical to the success of buprenorphine therapy in this setting.

Case 3

A 27-year-old woman on buprenorphine-naloxone (Suboxone®) for treatment of opioid dependence is admitted to the hospital with severe abdominal pain due to a perforated gastric ulcer. She received hydromorphone in the ED, and is urgently taken to the operating room. Postoperatively, she is on a patient-controlled analgesic (PCA) pump containing fentanyl. Her last dose of buprenorphine-naloxone was 20 h prior to the surgery; her daily dose is 16 mg.

Question: How can Pain be Managed in Patients who are Taking Buprenorphine-Naloxone? What Adjustments to her Medication Regimen can be Recommended?

Discussion Whether the patient is on methadone or buprenorphine-naloxone for treatment of opioid use disorder, clarification of patient history is critical for making management decisions regarding pain, as well as continuation of therapy for opioid dependence. Important clinical actions include the following:

- Understanding the medication history. What was the medication schedule? Once or twice daily use? Recent dose changes? How often are doses missed? How many doses are directly observed?
- Obtaining consent to discuss management with prescribing provider.
- Reviewing the prescription monitoring program records, if available, noting that methadone from an opioid treatment program is not documented in the databases.
- Identifying any concomitant use of additional opioids or sedating medications (prescribed or non-prescribed).

The article “Acute Pain Management for Patients Receiving Maintenance Methadone or Buprenorphine Therapy” by Alford et al. [5] provides an excellent summary of options for pain management:

1. Continue buprenorphine maintenance therapy and titrate short-acting analgesics. Doses required to provide analgesia are higher than expected and should be titrated to response. High-potency analgesics, such as fentanyl or hydromorphone, are suitable choices.

2. Divide the pre-surgery daily buprenorphine dose every 6–8 h, with consideration of supplemental doses as needed for additional analgesia.
3. Discontinue buprenorphine therapy and use a combination of long- and short-acting opioid analgesics, again noting that a higher dose is needed to meet both baseline opioid tolerance and analgesia requirements. The half-life of buprenorphine is approximately a day; expect that 1–2 days after last buprenorphine dose, other opioids will start to have more effect at the opioid receptor. The patient should be closely monitored during this time period. Convert back to buprenorphine by re-induction methods when pain is resolved.
4. Discontinue buprenorphine and treat opioid dependence with methadone 20–40 mg. Use additional short-acting opioid analgesics to treat pain, with consideration to schedule doses. Note that this is only an option for hospitalized patients.

Any of the above treatment plans should include additional psychosocial support, such as mutual help groups, increased frequency of visits to their treating physician, or brief counseling sessions from a licensed alcohol and drug counselor or peer support specialist.

For buprenorphine re-induction, management should occur in tandem with the patient's buprenorphine prescriber, especially if the plan is to restart buprenorphine as an outpatient. Buprenorphine re-induction can proceed in the hospital or at home, with an abbreviated version of a typical induction regimen. Once acute pain needs related to surgery have improved, discontinue short-acting opioids for 16–24 h depending on the opioid. Then, administer sequential doses of 2 mg buprenorphine up to previous maintenance dose over a 4-h period. If the pain persists, a more frequent dosing regimen (e.g., every 6–8 h) is indicated instead of the standard daily or twice daily dosing that most buprenorphine maintenance patients receive. The patient must follow up with his/her regular buprenorphine provider soon after hospital discharge.

Question: If This Patient was on Methadone Maintenance for Treatment of Opioid Use Disorder, How Should Pain be Managed?

Discussion Treatment of pain in patients maintained on methadone tends to be less complicated than those receiving buprenorphine-naloxone. Continue the patient's methadone at the normal maintenance dose if she can tolerate oral medications. If the patient is not able to take medications by mouth, IV methadone is a viable alternative. Treat pain with additional short-acting opioids as needed; doses are likely to

be higher than expected to provide analgesia in opioid-naïve patients.

Question: What Options are Available for Pain Management if This Patient was Being Treated With Oral Naltrexone for Opioid Use Disorder?

Discussion First, the provider must determine which form of naltrexone the patient is receiving (e.g., Revia® PO or Vivitrol® IM). If a painful condition can be anticipated (such as an elective surgery), the oral form of naltrexone should be discontinued for 2–3 days prior, or the last dose of intramuscular naloxone should be given 30 days beforehand. Administer opioids in typical doses after that time. If pain is unanticipated (e.g., trauma), rapidly acting potent opioids like fentanyl should be carefully titrated to patient response, including respiratory rate, level of awareness, and level of analgesia. This management strategy requires close monitoring; respiratory support and reversal agents must be available. A second option is the use of non-narcotic analgesics, like non-steroidal anti-inflammatory drugs, ketamine, or local/regional/general anesthesia.

Before resuming naltrexone after receiving opioid analgesics for pain, it is recommended the patient be abstinent from opioids for at least 3 to 5 days although this may need to be longer for patients given long-acting agents such as methadone, oxycodone or that have been on a fentanyl patch. This is to mitigate any potential for precipitated withdrawal symptoms developing when the antagonist, naltrexone, is administered too closely after the full agonist used for pain.

Case 4

The emergency department contacts a medical toxicologist with a question regarding a patient seen frequently for pain complaints. His outpatient providers have been managing his opioid therapies for chronic pain, but the patient often runs out of pills early, misses scheduled pills counts, or has non-prescribed substances identified on urine drug testing. The patient denies that he has an "addiction problem," and states his increased use is due to uncontrolled pain. The provider asks whether these behaviors are due to addiction or pain, and if this patient should be referred to addiction medicine.

Question: How is Opioid use for Pain Versus Addiction Differentiated?

Discussion This is a difficult question. Clinicians will encounter this conundrum frequently when treating patients who receive chronic opioids. Separating behaviors related to unmanaged pain versus an opioid use disorder can be very

challenging. The Diagnostics and Statistics Manual (DSM)-V criteria for opioid use disorder [6] (see Table 1) provide a useful framework. In addition to the DSM-V, several brief validated questionnaires are available to estimate the risk of opioid-related aberrant behaviors. The Opioid Risk Tool (ORT) is a five-question assessment that helps to identify patients at high risk for misuse that might benefit from other modalities of pain control besides opioids [7]. The ORT is primarily applicable to patients with chronic pain. The Screener and Opioid Assessment for Patients with Pain-Revised (SOAPP-R) [8] is a slightly longer instrument which can also be used to predict opioid abuse in chronic pain patients. This tool includes aspects of self-report and observation as well as toxicology testing. The “Current Opioid Misuse Measure (COMM)” is a self-report assessment of past month aberrant medication-related behaviors [9]. The questions encapsulate signs and symptoms of inappropriate drug use, psychological issues, and compliance. Examples of aberrant behaviors include being more interested in opioids than other forms of treatment, seeking early refills, and requesting increasing doses of opioids. While the presence of aberrant behaviors can indicate a substance use disorder, patients may display aberrant behaviors for reasons other than addiction, such as misunderstanding instructions, seeking euphoria, using medications to deal with fear or stress, using medications to treat sleep problems, diverting medications for profit, coping with untreated psychiatric disorders, coping with undertreated pain, or general non-adherence. “Pseudoaddiction” is a controversial term of primarily historical significance thought to describe behaviors that mimicked those of addiction, but were actually due to severe, uncontrolled pain.

Table 1 DSM-V criteria for substance use disorder

DSM-V criteria for substance use disorder:

Taking the substance in larger amounts than intended
Unable to cut down despite efforts
Spending a significant portion of time obtaining or using the substance
Cravings to use
Not managing school, home, or work responsibilities because of substance use
Continuing to use despite causing problems in relationships
Giving up social or occupational activities because of substance use
Using substance repeatedly in the setting of danger
Continuing to use despite knowledge that substance use has caused a problem
Tolerance
Withdrawal
(The presence of 2–3 of the 11 criteria indicates a mild substance use disorder, 4–5 a moderate use disorder, 6 or more a severe use disorder)

Section II. Legal and Policy Issues in Substance Use Disorders

Case 5

A 20-year-old man is brought to the emergency department (ED) by his family for evaluation. His family reports that he failed out of school in his second year at a local community college. He admits to escalating struggles with prescription pain pills (prescription opioids), and then heroin use. He appears to be in opioid withdrawal; he describes anorexia and diarrhea, and is yawning and sweating on exam. He has a Clinical Opioid Withdrawal Scale (COWS) [10] (Fig. 1) score of 15, indicating moderate withdrawal. His provider orders clonidine, ondansetron, and 2/0.5 mg sublingual buprenorphine/naloxone, with a plan to observe him in the ED. The provider subsequently receives a concerned call from the hospital pharmacist.

Question: The Pharmacist States That the Provider is Unable to Administer Buprenorphine in the ED Without an X-Waivered DEA Number. Is This Accurate?

Discussion In the ED setting, an X-waiver is not required. The distinction is that the providers are administering or dispensing buprenorphine, not prescribing it for outpatient use (please see Fig. 2). Under the Title 21 Code of Federal Regulations Section 1306.07 [11]: Administering or dispensing of narcotic drugs: “Nothing in this section shall prohibit a physician who is not specifically registered to conduct a narcotic treatment program from administering (but not prescribing) narcotic drugs to a person for the purpose of relieving acute withdrawal symptoms when necessary while arrangements are being made for referral to treatment. Not more than one day’s medication may be administered to the person or for the person’s use at one time. Emergency treatment may be carried out for not more than three days and may not be renewed or extended.” Section 1306.07 also declares that “This section is not intended to impose any limitations on a physician or authorized hospital staff to administer or dispense narcotic drugs in a hospital to maintain or detoxify a person as an incidental adjunct to medical or surgical treatment of conditions other than addiction or to administer or dispense narcotic drugs to persons with intractable pain in which no relief or cure is possible or none has been found with reasonable efforts.”

This section of the Federal Regulations allows physicians in a hospital or ED to treat acute withdrawal with buprenorphine or methadone while the patient is attempting to access treatment. The patient may not receive more than 3 days of administered methadone in the emergency department or hospital unless there is a concomitant acute medical or surgical condition requiring treatment. Additionally, the

Fig. 1 Clinical opiate withdrawal scale

Clinical Opiate Withdrawal Scale (COWS)			
1.) Resting Pulse Rate: Record Beats per Minute		6.) GI Upset: Over Last 1/2 Hour	
0 = pulse rate < 80	2 = pulse rate 101-120	0 = no GI symptoms	3 = vomiting or diarrhea
1 = pulse rate 81-100	4 = pulse rate > 120	1 = stomach cramps	4 = multiple episodes of diarrhea or vomiting
2.) Sweating: Over Past 1/2 hour not Accounted for by Room Temperature or Patient Activity		7.) Tremor Observation of Outstretched Hands	
0 = no report chills or flushing	3 = beads of sweat on brow or face	0 = no tremor	2 = slight tremor observable
1 = subjective reports chills/flushing	4 = sweat streaming off face	1 = tremor can be felt, but not observed	4 = gross tremor or muscle twitching
2 = flushed or observable moistness on face			
3.) Restlessness Observation During Assessment		8.) Yawning Observation During Assessment	
0 = able to sit still	3 = frequent shifting or extraneous movements of arms/legs	0 = no yawning	2 = yawning 3 or more times during assessment
1 = reports difficulty sitting still but is able to do so	4 = Unable to sit still for more than a few seconds	1 = yawning once or twice during assessment	4 = yawning several times/minute
4.) Bone or Joint Aches if Patient was Having Pain Previously only the Additional Component Attributed to Opiate Withdrawal is Scored		9.) Anxiety or Irritability	
0 not present	2 = patient reports severe diffuse aching of joints/muscles	0 = none	2 = patient obviously irritable/anxious
1 = mild diffuse discomfort	4= patient is rubbing joints or muscles and is unable to sit still because of discomfort	1 = patient reports increasing irritability or anxiousness	4 = patient so irritable that participation in the assessment is difficult
5.) Runny Nose or Tearing Not Accounted for by Cold Symptoms of Allergies		10.) Gooseflesh Skin	
0 = not present	2 = nose running or tearing	0 = skin is smooth	5 = prominent piloerection
1 = nasal stuffiness or unusually moist eyes	4 = nose constantly running or tears streaming down cheeks	1 = piloerection of skin can be felt or hairs standing up on arms	
Score			
5-12 = Mild			
13-24 = Moderate			
25-36 = Moderately Severe			
More than 36 = Severe Withdrawal			

patient may not be given a prescription for the medication upon discharge from the facility. For example, if the patient is hospitalized with an abscess, they may be treated for opioid withdrawal for the duration of their hospital encounter, but they may not be discharged with a prescription for methadone or buprenorphine. If a patient who is currently in a medication-assisted treatment program is hospitalized, their medication may be continued in the hospital, but they may not be discharged with a prescription. They must return to their

prescribing provider for continued care. It is important to clarify their treatment plan with their provider and to verify the dose and schedule. Providers who administer buprenorphine in the ED for opioid withdrawal must follow standard buprenorphine induction guidelines [12]. An exception to the above rule exists when the treating provider is X-waivered (able to prescribe buprenorphine for the treatment of opioid dependence) and they are able to link the patient to either their own clinic or another provider who also has

Fig. 2 Title 21 Code of Federal Regulations 1306.07—Administering or Dispensing of Narcotic Drugs

Title 21 Code of Federal Regulations

Section 1306.07 Administering or Dispensing of Narcotic Drugs

- (a) A practitioner may administer or dispense directly (but not prescribe) a narcotic drug listed in any schedule to a narcotic dependant person for the purpose of maintenance or detoxification treatment if the practitioner meets both of the following conditions:
- (1) The practitioner is separately registered with DEA as a narcotic treatment program.
 - (2) The practitioner is in compliance with DEA regulations regarding treatment qualifications, security, records, and unsupervised use of the drugs pursuant to the Act.
- (b) Nothing in this section shall prohibit a physician who is not specifically registered to conduct a narcotic treatment program from administering (but not prescribing) narcotic drugs to a person for the purpose of relieving acute withdrawal symptoms when necessary while arrangements are being made for referral for treatment. Not more than one day's medication may be administered to the person or for the person's use at one time. Such emergency treatment may be carried out for not more than three days and may not be renewed or extended.
- (c) This section is not intended to impose any limitations on a physician or authorized hospital staff to administer or dispense narcotic drugs in a hospital to maintain or detoxify a person as an incidental adjunct to medical or surgical treatment of conditions other than addiction, or to administer or dispense narcotic drugs to persons with intractable pain in which no relief or cure is possible or none has been found after reasonable efforts.
- (d) A practitioner may administer or dispense (including prescribe) any Schedule III, IV, or V narcotic drug approved by the Food and Drug Administration specifically for use in maintenance or detoxification treatment to a narcotic dependent person if the practitioner complies with the requirements of §1301.28 of this chapter.

[39 FR 37986, Oct. 25, 1974, as amended at 70 FR 36344, June 23, 2005]

X-waiver certification and agrees to continue the buprenorphine prescription.

Case 6

A provider is covering a county detoxification program (from alcohol and opioids) with 30 beds. The program is funded through the state's Office of Alcohol and Substance Abuse Services, and operates under the Code of Federal Regulations (CFR) Title 42 Part 2 [13] guidelines regarding privacy and notification.

Question: What is CFR-42 Part 2?

Discussion Under federal law, there are restrictions concerning the use and disclosure of patient records pertaining to substance abuse treatment. CFR Title 42 Part 2 applies to any individual or entity that is federally assisted, and holds itself out as providing, and provides, alcohol or drug abuse diagnosis, treatment, or referral for treatment. Most drug and alcohol treatment programs are federally assisted. For-profit programs and private practitioners that do not receive federal assistance of any kind are not subject to the requirements of CFR Title 42 Part 2, unless the state licensing or certification agency requires them to comply. However, any clinician who uses a controlled substance for detoxification or maintenance treatment of a substance use disorder requires a federal Drug Enforcement Agency (DEA) registration, and becomes subject to the regulations through the DEA license. The restrictions under CFR Title 42 Part 2 apply to any information disclosed by a covered program

that would identify a patient as a current or past alcohol or drug abuser, or as a participant in a covered program.

Case Continued

A woman calls the program, and identifies herself as the mother of one of the patients. She states that she does not want to intrude, but wants to confirm he actually made it to detox, saying "I just need to know if he's there and safe."

Question: Can the Provider Disclose his Presence at the Facility?

Discussion With limited exceptions, CFR Title 42 Part 2 requires patient consent for disclosures of protected health information even for the purposes of treatment, payment, or healthcare operations. Consent for disclosure must be documented in writing. Without consent, programs publicly identified as only a drug or alcohol diagnosis, treatment, or referral facility cannot disclose whether the person in question is a current or past patient. However, the regulations permit a provider to say that an identified individual is not, and never has been, a patient.

Case 6 Continued

Police arrive at the facility and state they have a warrant to arrest the patient. Apparently, his ex-girlfriend told the police that he was at this detoxification facility when they inquired about his location. The police will not discuss the charges, simply reiterating that they have an arrest warrant.

Question: What are the Obligations to Disclose Patient Information to Law Enforcement in This Setting?

Discussion If an immediate threat to the health and safety of an individual exists due to a medical emergency or crime on the program premises or against program personnel, information about a patient's treatment may be disclosed without the patient's consent to medical personnel in a medical emergency, or to law enforcement agencies. If there are threats to health and safety that do not involve medical emergencies or crimes on the program premises, reports can be made to law enforcement only if patient-identifying information is not disclosed. The restrictions do not apply to reporting incidents of child abuse or neglect to state authorities under state law; however, the restrictions continue to apply to the original alcohol or drug abuse records maintained by the program. Information may also be disclosed if there is both a court order to authorize disclosure, as well as a subpoena or similar legal mandate issued to compel disclosure. If presented with an arrest warrant, the healthcare provider cannot acknowledge the patient is on the premises unless the patient gives authorization, or if there is a court order authorizing disclosure. If law enforcement asks to speak with a patient, the provider may respond by informing them of a need to speak with supervisors, then discussing with the patient his willingness to provide written release if they are willing to speak with law enforcement.

Case 7

A new patient presenting for buprenorphine-naloxone assisted treatment discloses that she is a PGY4 general surgery resident in a city 90 min away. She admits to intravenous heroin use ("20-30 bags a day"), along with cocaine and alprazolam. She reports that she is missing days of work due to heroin use, and has occasionally used heroin and cocaine while in the hospital, and before surgery just to "feel right." She states that she presented to this distant provider because she did not want to be treated by anyone who might be affiliated with her training program.

Question: When is a Physician Considered "Impaired"? How Should Management of This Patient be Approached? Is There any Obligation to Notify Either the State Medical Board or her Residency Program Director?

Discussion When the health of the physician has declined to the point of causing interference with his or her ability to safely engage in professional activities, the physician is said to be impaired. Medical professionals have an obligation to intervene when it appears that the health of a colleague is compromised by addiction. In many states, it is legally permissible to report health professionals to the state's impaired

professionals program rather than to the professional licensing boards. Generally, impaired professional programs offer treatment programs while protecting confidentiality and the licensure of the professional. These programs also aim to prevent workplace safety concerns and harm to patients. Physicians caring for colleagues should not disclose patient information, except as required by law, ethical or professional obligation. Exceptions to the confidentiality of the physician and physician-patient relationship occur if the treating professional determines that the condition of the person constitutes a danger to public safety if the impaired colleague was to continue practice. In this case, the severity of the addiction with her self-reported use during patient care compels the treating physician to notify the state impaired professional program.

Case 8

A 23-year-old woman attends an outpatient treatment program and office-based buprenorphine clinic. She has been doing well while maintained on 16 mg/day of buprenorphine. Recently though, she has missed group sessions and provided a urine for drug screening that tested positive for clonazepam and amphetamine. One of the other members in her group reported that they saw a "urine bottle fall out of her purse" as it spilled next to her chair in a group session; her counselor was unaware of this event.

Question: What are the Policies Regarding the use of Illicit Substances or Urine Adulteration or Substitution During Substance Abuse Treatment?

Discussion Policies should be determined by an individual provider or clinic. Typically, these policies provide balanced rules that seek to limit abuse, diversion, and harm from the administered medications, while providing the patient with direction, structure, and accountability. To increase awareness of program policies and expectations for patients, it is advisable to use special acknowledgment and treatment consent forms that describe program policies. Information regarding model buprenorphine policies and contracts for office-based buprenorphine programs are available from the Substance Abuse Mental Health Services Administration (SAMHSA) website [14].

Abnormal urine drug screens can be a first sign of dysfunction and relapse. The initial response is directed at helping the patient stabilize and recover their sobriety. For example, in many office-based buprenorphine programs, urine drug screens positive for non-prescribed or illicit substances prompt an increase in support services rather than a decrease (unlike a contract agreement for management of pain in primary care or specialty pain clinics). Increased support may include more therapeutic group attendance, individual counseling, referral to a more intensive treatment setting, or more frequent visits

to the physician for medication management with enhanced accountability using observed dosing or additional “check-ins” with the patient’s counselor. Adulteration or substitution of urine is often considered a “positive urine drug screen.” Sometimes, if patients are not receiving enough of an opioid agonist to attenuate craving and withdrawal, dose increases can be helpful. This serves to both alleviate cravings for opioids, as well as limit the euphoria obtained from use.

The provider response also depends on the specific area of difficulty or conflict. Monitoring during buprenorphine treatment includes not only testing for illicit drug use in order to demonstrate effectiveness and sobriety, but also confirms compliance with the presence of buprenorphine, and adequate concentrations when levels or metabolite ratios are assayed. If there were signs that the patient was skipping doses or manipulating their dosing in order to use part way through a prescription, the response would be different. While providers avoid using a lower dose of a medication as a behavioral tool, limited circumstances (e.g., chronic non-compliance with treatment recommendations, or co-ingestion of sedatives or alcohol that can lead to overdose) may necessitate an “administrative” taper. Patients whose urine drug testing do not confirm appropriate buprenorphine levels may be diverting their medications. If there is concern for diversion of the medication, the response may be to limit the amount prescribed at one time, or to observe medication administration.

Responses to marijuana use, especially in states where medical marijuana or recreational marijuana is legal, vary widely. If the marijuana use does not interfere with treatment or the function of the patient, many programs do not address use as intensely as other drug use (such as heroin, non-prescribed opioids, or stimulants). Our panel would typically not sanction the patient for marijuana use, but direct more attention to counseling and focus on addressing the patient-reported motivation behind marijuana use. Patients who reported untreated pain as the reason behind marijuana use would be directed at alternative strategies to control the pain including mindfulness, physical therapy, yoga, and stretching. If the marijuana was used to regulate sleep or mood, the provider could recommend alternatives such as melatonin for insomnia, and confirm the patient has adequately addressed mental health resources.

Section III: Special Populations and Addictive Disorders

Case 9

The toxicology service is consulted from the emergency department (ED) as the county jail staff has brought in a 21-year-old Hispanic woman who is 18 weeks pregnant. She was arrested on a warrant, and has been incarcerated for just over

24 h. During that time, she developed nausea, irritability, diaphoresis, anxiety, and yawning. She was noted to have stigmata of intravenous drug use (IVDU), and told the intake officers that she was going into heroin withdrawal.

Question: What is the Initial Approach to This Patient's Care?

Discussion Heroin use during pregnancy is associated with fetal growth restriction, fetal death, and preterm labor [15]. Moreover, opioid withdrawal in pregnancy (especially during the first and third trimester) is associated with poor fetal outcomes, such as miscarriage and premature delivery [16]. Withdrawal symptoms in pregnant patients should be managed with medication. Initiation of methadone or buprenorphine is indicated during the acute care encounter, and can be initiated (or continued) by physicians even without a Drug Addiction Treatment Act (DATA) 2000 waiver (the waiver authority for physicians to prescribe buprenorphine in an office-based setting outside of a registered opioid treatment program). If a patient is hospitalized for reasons other than addiction (such as complications due to pregnancy, or delivery), physicians may administer opioids such as methadone or buprenorphine to initiate or continue maintenance treatment. Under these circumstances, the hospital treatment team does not require registration as an opioid treatment program, nor do they need a DATA 2000 waiver.

Pregnant patients must be connected to treatment resources prior to discharge from the ED or hospital. In most states, pregnant patients are prioritized for treatment; medication-assisted treatment programs will often initiate the intake process within 1–2 business days.

Question: What is the Safety of Methadone, Buprenorphine, or Buprenorphine-Naloxone Combination in Pregnancy and in Lactation?

Discussion Both buprenorphine and methadone, classified as category C drugs by the Food and Drug Administration, have been found in studies to be safe and effective when used in pregnant women [17]. While methadone has long been the standard of care for treatment of withdrawal and dependence in pregnancy, buprenorphine has a favorable profile, including less severe neonatal abstinence syndrome (NAS) after birth [17]. Additionally, buprenorphine has potential to be more accessible with both office-based settings and treatment programs, compared to methadone maintenance programs in clinic settings only. If buprenorphine is used, the induction can proceed after confirming that the patient is in withdrawal. The Clinical Opioid Withdrawal Scale (COWS) can be used to assess withdrawal symptoms, and to track improvement after treatment with methadone or buprenorphine.

In pregnancy, the buprenorphine-only formulation is recommended over the buprenorphine-naloxone co-formulation.

Concerns have been raised about the safety of naloxone for the fetus. There are some data to suggest that naloxone causes maternal and fetal hormonal changes [4]; however, the clinical implications of this finding have not been demonstrated. There is additional concern over the possibility of inducing withdrawal if the mother injects buprenorphine-naloxone intravenously. Limited studies do suggest that the use of combination buprenorphine-naloxone is safe in pregnancy [18]; however, until the safety concerns have been adequately studied, patients on Suboxone® who become pregnant are recommended to transfer to buprenorphine-only formulations [15].

Post-partum, both buprenorphine and methadone are considered to be compatible with lactation [17]. Buprenorphine is excreted in breast milk; however, given the low oral bioavailability of buprenorphine, infant exposure is 10–20 % of available buprenorphine. The amount of methadone found in breast milk appears to be low (less than 1 % of the maternal dose) [19]. While studies do not demonstrate that buprenorphine in breast milk attenuates NAS, there are some reports describing attenuation in infants breast-fed by mothers taking methadone [6].

Question: What is the Approach to Diagnosis and Management of Neonatal Abstinence Syndrome (NAS)?

Discussion NAS is a generalized disorder characterized by signs and symptoms of irritability, gastrointestinal dysfunction, respiratory distress, and vomiting. NAS typically presents with 72 h after birth, in cases of in utero methadone or buprenorphine exposure; however, studies suggest that neonates exposed to buprenorphine require less medication and a shorter duration of treatment for NAS [20]. Many hospitals have protocols to treat NAS, using scale systems for severity and a combination of non-pharmacological and pharmacological treatments, with opioid and non-opioid medication options [21].

Case 10

A 16-year-old boy is brought in to the Pediatric ED after his mother returned home and found him with slurred speech and “falling all over the kitchen!” He opens his eyes, sighs loudly, and turns away during the exam. The patient has been using marijuana, and has been caught drinking several times. When the patient is more awake, he and his mother have a loud and animated discussion about him “snorting her Xanax® again.” The mother asks for help with his continued drinking and drug use.

Question: What are Some Available Resources for Assessment and Treatment of Drug and Alcohol Abuse in Adolescents?

Discussion Adolescent substance use should be identified and addressed as early as possible. Drugs exert long-lasting effects

on the developing brain [22]. The CRAFFT (Car, Relax, Alone, Forget, Friends, Trouble) questionnaire for alcohol and drug use disorders in adolescents (Fig. 3) is both validated and frequently used [23]. A total score of 2 or higher (5 questions, each “yes” is 1 point) indicates a positive screen and the need for additional assessment. Questions cover topics such as riding in a car with a driver under the influence of drugs or alcohol, using substances to relax or fit in or while alone, forgetting things while using substances, having others concerned about use, or getting into trouble while using alcohol or drugs.

Adolescents can benefit from a drug abuse intervention, even if they are not “addicted” to a drug. Guides on treatment for adolescent substance use disorders indicate that motivational interviewing is a useful technique for discussing substance use, even with adolescents who are not interested in change or not ready to commit to change [24]. Treatment options include follow up with a primary care clinician, outpatient psychosocial addiction medicine treatment, family-based behavioral therapies, or pharmacological treatments. Several medications are approved by the FDA to treat addiction to opioids, alcohol, and nicotine. In most cases, though, little research has been conducted to evaluate the safety and efficacy of these medications for adolescents; however, some healthcare providers prescribe “off-label”, especially in older adolescents. Buprenorphine in particular has demonstrated potential efficacy in this population based on two research studies [25, 26]. In some states, methadone is approved for adolescents between the ages of 16 and 18 after they have failed two other treatments, and with their parents’ approval.

The best approach to treatment includes supporting the adolescent’s life needs, such as those related to medical, psychological, and social well-being. Adolescents who abuse drugs frequently suffer from other conditions including depression, anxiety disorders, ADHD, oppositional defiant disorder, and conduct problems. Many adolescents who abuse drugs have a history of physical, emotional, and/or sexual abuse or other trauma. Tobacco use often accompanies other drug use and needs to be addressed as part of substance use disorder treatment [27]. Pharmacologic treatments for tobacco use disorder include bupropion, varenicline, or nicotine replacement therapies [28].

Case 11

A 17-year-old boy is brought to the ED because his father states he has been “buying Suboxone® again, and I found it in his room!” The father is demanding that he be admitted to “detoxify” and referred to an inpatient treatment facility. The father refuses to take the patient home, saying, “I can’t have him around his younger brothers.” However, the father

Fig. 3 CRAFFT questionnaire for alcohol and drug use disorders in adolescents

CRAFFT Questions

- Have you ever ridden in a **C**ar driven by someone (including yourself) who has been “high” or had been using alcohol or drugs?
- Do you ever use alcohol or drugs to **R**elax, feel better about yourself or fit in?
- Do you ever use alcohol or drugs while you are **A**lone?
- Do you ever **F**orget things you did while using alcohol or drugs?
- Do your family or **F**riends ever tell you that you should cut down on your drinking or drug use?
- Have you ever gotten into **T**rouble while you were using alcohol or drugs?

demands to be updated with information regarding his son’s care.

Question: How are Issues of Confidentiality Addressed for Adolescents With Substance Use Disorders?

Discussion Laws on various provisions can vary across states, including the definition of a minor (typically under age 18), the ability of a minor to consent to substance abuse treatment, parental notification of treatment, and the disclosure of medical records. HIPAA only allows parents to have access to the medical records of a minor child if that access does not conflict with a state or other confidentiality law. However, US Code §290dd-2 and 42 CFR Part 2.12 protect any information about an adolescent, if the adolescent has applied for or received any treatment related to his substance use disorder or referral services from a treatment program. Written consent from the adolescent is required to communicate with parents. Exceptions to the requirement for written consent can be made if the patient does not have the capacity to consent because of an extreme substance use disorder or a medical condition, or because disclosure is necessary due to substantial threat to the life or well-being of the adolescent or someone else.

Case 12

A 66-year-old female presents to the ED somnolent and with myoclonus. Her sister found her unresponsive. She had an open bottle of Lyrica® (pregabalin) spilled on the bed, with other pills on her dresser and “around the room.” The patient has chronic kidney disease, diabetes mellitus, hypertension, chronic pain, and arthritis (status post-bilateral total knee arthroplasty), all of which has been “worsening” over the past month per her sister. She is arousable to painful stimuli, but confused and mumbling. She has myoclonus. Her respiratory rate is eight breaths per minute. Her creatinine is elevated to 2.3 mg/dL from baseline 1.4 mg/dL. She was in the ED the month prior for smoke inhalation after nearly burning her house down when “she fell asleep in a chair with her cigarette going.” She is on multiple medications, including long-acting morphine sulfate, pregabalin, gabapentin, cyclobenzaprine, metformin, glyburide, and lisinopril. She was also found with an empty bottle of her son’s tramadol.

Question: What Medication Regimen Changes are Warranted? What if the Patient is Resistant? For Example, if She States That She “Will Just Go to Another Doctor and Get the Same Pills...”

Discussion Benzodiazepines (especially those with long-acting metabolites and those metabolized by the CYP450 systems), antihistamines, and typical antipsychotics are among the medications not recommended for use in the elderly [29]. Opioid dose requirements decrease with age because of decreased gastrointestinal motility, decreased overall metabolism, decreased liver functioning, changes in kidney function, and changes in opioid receptor sensitivity. Due to decreased renal function, medications that have active metabolites or themselves are primarily excreted via the kidneys should be decreased or substituted: morphine sulfate, pregabalin, gabapentin. Care should be taken with glyburide, metformin, and lisinopril in the setting of decreased renal function. Cyclobenzaprine has sedating and anticholinergic effects and thus not recommended for extended use in the elderly population. Reasons that the patient may be taking her son’s tramadol should be explored, and subsequent management addressed. Before abruptly discontinuing medications, the potential for withdrawal should be addressed, as withdrawal may also cause delirium in the elderly.

Question: How are Elderly Patients Assessed for Substance Use Disorders?

Discussion Prescription drug abuse among older adults is prevalent; however, providers may be misled by their perceptions, and miss subtle clues that indicate substance misuse among the elderly. Concerning signs for substance abuse in the elderly include increased falls, increased daytime somnolence, self-medication, minor traffic accidents, and trauma without a known mechanism (bruises, scrapes, burns). Collateral reporting from family is often helpful. To screen the elderly for alcohol or substance use disorders, the CAGE [30] questionnaire or the Michigan Alcohol Screening Test [31] for older adults can be used. Providers should preface questions about alcohol or drug use with a link to a medical condition, and minimize use of stigmatizing terms. Providers should screen for cognitive functioning using an orientation, memory, and concentration test or the Mini Mental State

Examination [32] with a drawn clock task; depression can be screened for using the Geriatric Depression Scale [33]. When planning for treatment, the ideal programs will involve the least intensive treatment options and cater to geriatric needs.

Conclusion

The management of co-occurring opioid use disorder and pain occurs frequently in both the emergency department as well as primary care settings. The treatment of chronic and acute pain with opioid therapies should be accompanied by careful monitoring for appropriate use of prescribed therapies and for the presence of relative contraindications to use of opioids therapies, such as alcohol misuse, diversion, or untreated opioid use disorder. Treatment of acute pain in patients receiving opioid-assisted therapy requires an informed plan by working with the patient and the healthcare providers involved in the care of the patient and knowledge of the pharmacokinetics and pharmacodynamics of opioids, including buprenorphine and methadone.

Understanding of policy and regulations surrounding treatment of substance use disorder is important for clinicians in a variety of clinical settings. In the emergency department or hospital setting, providers often encounter patients in opioid withdrawal; providers may use buprenorphine or methadone to treat withdrawal in these settings under CFR Section 1306.07. Special privacy protections at both the federal (42 CFR Part 2) and state level are afforded to patients with substance use disorders. These laws extend to the treatment of impaired physicians; however, there is an obligation to report to the appropriate regulatory bodies when there is a concern of danger to public health with continued practice. Policies at the clinic or provider level guide the approach to management of patients who continue to use illicit substances during substance use disorder treatment while simultaneously providing structure, direction, and balance for patients receiving treatment for their disorder.

Assessment and management of substance use disorders in pregnant, pediatric, or elderly requires an understanding of the unique needs of each population. Patients who are pregnant should be prioritized for treatment of substance use disorder due to the negative effects of illicit substances and withdrawal on both the mother and fetus. Adolescent substance use presents unique issues for confidentiality and treatment strategies. Elderly substance use requires careful clinical assessment and an understanding of the medical and social needs of this population. By using management strategies advised in the preceding cases, the clinician can develop a framework to navigate the complex management of addiction in these special populations.

Appendix

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