Reducing the Health Consequences of Opioid Addiction in Primary Care

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ABSTRACT

Addiction to prescription opioids is prevalent in primary care settings. Increasing prescription opioid use is largely responsible for a parallel increase in overdose nationally. Many patients most at risk for addiction and overdose come into regular contact with primary care providers. Lack of routine addiction screening results in missed treatment opportunities in this setting. We reviewed the literature on screening and brief interventions for addictive disorders in primary care settings, focusing on opioid addiction. Screening and brief interventions can improve health outcomes for chronic illnesses including diabetes, hypertension, and asthma. Similarly, through the use of screening and brief interventions, patients with addiction can achieve improved health outcome. A spectrum of low-threshold care options can reduce the negative health consequences among individuals with opioid addiction. Screening in primary care coupled with short interventions, including motivational interviewing, syringe distribution, naloxone prescription for overdose prevention, and buprenorphine treatment are effective ways to manage addiction and its associated risks and improve health outcomes for individuals with opioid addiction.

KEYWORDS: Addiction; Buprenorphine; Harm reduction; Naloxone; Opioid dependence; Overdose; Primary care

Nationally, unintentional poisoning is surpassed only by automobile collisions for death caused by accidental injury. Deaths due to unintentional poisonings involving opioid analgesics now exceed those due to heroin and cocaine combined. The unprecedented increase in accidental deaths related to prescription opioids over the last decade parallels a substantial increase in the number of prescriptions for opioids in the US. Behind the increase in accidental overdose deaths is a growing problem of prescription opioid addiction. Addiction is a state in which an individual engages in a compulsive behavior that is reinforcing (that is, pleasurable or rewarding or preventing unpleasant experiences such as withdrawal) and is accompanied by a loss of control in limiting the intake of that substance. Individuals with opioid addiction, and at risk for opioid overdose, frequently present to primary care providers. An estimated two thirds of individuals with addiction see a primary care or urgent care provider every 6 months, and many others regularly interact with other medical specialties. Studies of adult and pediatric patients in primary care have found a 10% prevalence of drug or alcohol disorders and 11.3% prevalence of problematic use. Primary care providers are, therefore, uniquely poised to screen for and treat opioid addiction. Individuals who are abusing prescription opioids, in particular, seek out primary care appointments at least in part to obtain new opioid prescriptions. Prescription opioid addiction usually involves the misuse of a personal prescription or diversion of another’s prescription. Routes of diversion include family/friends “sharing” medications,
stealing medications, patients “doctor shopping” to obtain more opioids than necessary either for personal use or for sales, and purchase from the street/dealer or via the Internet.14,12

Opioid addiction meets the criteria of a chronic medical illness and demonstrates comparable heritability, etiology, pathophysiology, and treatment response to type 2 diabetes mellitus, hypertension, and asthma.9 Similar to these chronic illnesses, addiction also is difficult to treat; a cure is difficult to obtain and treatment adherence is low. Nonetheless, primary care providers can be equipped to screen, diagnose, and treat opioid addiction using established guidelines for routine screening and treatment, similar to other chronic conditions.

Given the increasing prevalence of prescription opioid addiction and the increasing risk of prescription opioid overdose among the general US population, we present a review of screening and intervention strategies for opioid addiction in primary care settings. The approach reflected in these interventions addresses addiction as a chronic disease, seeking to improve health outcomes by offering drug-using patients manageable short-term goals, even when abstinence is not immediately achievable. Implementation of these tools will enable primary care providers to reduce the negative health consequences of opioid addiction, such as opioid overdose and death among their patients.9

SCREENING AND DIAGNOSIS

Despite the comparable prevalence of addiction and diabetes in primary care settings, routine screening for addiction remains uncommon.13-15 Just as primary care providers routinely screen for diabetes, providers must institute evidence-based opioid addiction screening that can be quickly and reliably implemented to identify those individuals most in need of treatment.9,16 Many providers may feel ill-equipped to screen or treat addiction; however, the screening tools presented here can be implemented in any clinical setting without specialized training. While not an a priori requirement, providers may seek out supplemental education to become adept at implementing opioid addiction screening and intervention tools.

The appropriate screening tool for opioid addiction in primary care must be sensitive, specific, and efficient if it is going to be widely adopted. In the context of a busy primary care practice, a time-consuming screening tool might deter routine use. A single question has recently been examined for use in adult primary care that can easily be incorporated into the busiest of practices: “How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?” A response of at least one time in the last year is considered positive with a sensitivity of 100% and specificity of 74%.17 A positive screening should prompt additional screening with other short yet effective screening tools, such as the CAGE-AID and the Drug Abuse Screening Test (DAST-10). The CAGE-AID (Table 1) is a simple 4-question tool to jointly screen for alcohol and drug use and requires less time to administer than screening for all the signs and symptoms of diabetes mellitus. In a study of 124 primary care patients, the CAGE-AID had a sensitivity of 70% and specificity of 85% when 2 questions were answered in the affirmative.18 The DAST-10 is a 10-question screen (Table 2) where 2 questions answered in the affirmative are considered optimal for screening (sensitivity, 85%; specificity, 78%).19,20 The DAST-10 can discriminate between current users versus former users and has been validated in Spanish.21 The CRAFFT is a 6-question screen for adolescents (Table 3) validated in 538 adolescents aged 14 to 18 years. A CRAFFT score of 2 or higher was optimal for identifying any problem (sensitivity, 76%; specificity, 94%), any disorder (sensitivity, 80%; specificity, 86%), and drug dependence (sensitivity, 92%; specificity, 80%).22 Screening for opioid addiction should occur annually, as the development of a rapport with the patient over time may increase the degree of information disclosed.

In addition to screening assessments, physical examination and observation of behaviors during a clinical visit serve as additional tools. Signs of withdrawal, intoxication (eg, pupillary size), or needle marks should trigger the medical provider to use a formal screen, like the CAGE-AID, to assess the patient for drug addiction. Individuals who are smoking or snorting may exhibit respiratory problems, atrophy of the nasal mucosa, and perforation of the nasal septum.23

<table>
<thead>
<tr>
<th>Table 1</th>
<th>CAGE-AID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever tried to Cut down on your alcohol or drug use?</td>
<td></td>
</tr>
<tr>
<td>2. Do you get Annoyed when people comment about your drinking or drug use?</td>
<td></td>
</tr>
<tr>
<td>3. Do you feel Guilty about things you have done while drinking or using drugs?</td>
<td></td>
</tr>
<tr>
<td>4. Do you need an Eye-opener to get started in the morning?</td>
<td></td>
</tr>
</tbody>
</table>

AID = adapted to include drugs.
Two or more questions answered in the affirmative require further assessment.18

CLINICAL SIGNIFICANCE

- Addiction to opioids and related overdose are increasing nationally and also among patients seen in primary care settings.
- Lack of routine opioid addiction screening in primary care clinics results in missed treatment opportunities.
- The implementation of screening in primary care coupled with short interventions, including motivational interviewing, syringe distribution, naloxone prescription for overdose prevention, and buprenorphine treatment are effective ways to manage addiction and its associated risks.

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extensive literature on this topic.26-28 Concerns about the risk or presence of opioid addiction should not prohibit ongoing pain management. Primary care providers, however, who suspect a patient is addicted to opioids, should formally screen for this before prescribing new or additional opioids for pain. Failure to screen for addiction in patients with ongoing pain management issues can have significant and preventable morbidity and mortality. A full review of the overlap between opioid addiction and pain treatment, however, is beyond the scope of this review, and the reader is referred to the extensive literature on this topic.26-28

### Table 2 Drug Abuse Screening Test (DAST-10)

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you used drugs other than those required for medical reasons?</td>
<td></td>
</tr>
<tr>
<td>2. Do you abuse more than one drug at a time?</td>
<td></td>
</tr>
<tr>
<td>3. Are you unable to stop using drugs when you want to?</td>
<td></td>
</tr>
<tr>
<td>4. Have you ever had blackouts or flashbacks as a result of drug use?</td>
<td></td>
</tr>
<tr>
<td>5. Do you ever feel bad or guilty about your drug use?</td>
<td></td>
</tr>
<tr>
<td>6. Does your spouse (or parents) ever complain about your involvement with drugs?</td>
<td></td>
</tr>
<tr>
<td>7. Have you neglected your family because of your use of drugs?</td>
<td></td>
</tr>
<tr>
<td>8. Have you engaged in illegal activities in order to obtain drugs?</td>
<td></td>
</tr>
<tr>
<td>9. Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?</td>
<td></td>
</tr>
<tr>
<td>10. Have you had medical problems as a result of your drug use (eg, memory loss, hepatitis, convulsions, bleeding)?</td>
<td></td>
</tr>
</tbody>
</table>

Two or more questions answered in the affirmative require further assessment.19

Additional behaviors that should prompt formal screening may include: calls after hours, repeated requests for early refills, insistence that non-narcotic analgesics do not work, and perseveration during a primary care visit on the need for opioids. Prescribers should, however, be mindful that “drug seeking” behaviors may have multiple meanings.13,24 When pain is poorly treated, “drug seeking” behaviors may reflect attempts to obtain additional pain medications for actual chronic pain needs.25,26

Concerns about the risk or presence of opioid addiction should not prohibit ongoing pain management. Primary care providers, however, who suspect a patient is addicted to opioids, should formally screen for this before prescribing new or additional opioids for pain. Failure to screen for addiction in patients with ongoing pain management issues can have significant and preventable morbidity and mortality. A full review of the overlap between opioid addiction and pain treatment, however, is beyond the scope of this review, and the reader is referred to the extensive literature on this topic.26-28

### Table 3 CRAFFT Screening Tool for Adolescents

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever ridden in a car driven by someone (including yourself) who was high or had been using alcohol or drugs?</td>
<td></td>
</tr>
<tr>
<td>2. Do you ever use alcohol or drugs to Relax, feel better about yourself, or fit in?</td>
<td></td>
</tr>
<tr>
<td>3. Do you ever use alcohol or drugs while you are by yourself Alone?</td>
<td></td>
</tr>
<tr>
<td>4. Do you ever Forget things you did while using alcohol or drugs?</td>
<td></td>
</tr>
<tr>
<td>5. Do your Family or Friends ever tell you that you should cut down on your drinking or drug use?</td>
<td></td>
</tr>
<tr>
<td>6. Have you ever gotten into Trouble while you were using alcohol or drugs?</td>
<td></td>
</tr>
</tbody>
</table>

Two or more questions answered in the affirmative require further assessment.22

**INTERVENTION**

The recommended intervention for the treatment of any chronic medical condition begins with the setting and achieving of manageable short-term goals rather than expecting immediate attainment of an unrealistic long-term goal. For example, asking the diabetic with a high-fat, high-sucrose diet to abruptly change to a strict 2000-calorie American Diabetic Association diet, while starting a cardiovascular exercise program, is clearly unrealistic. This approach is equivalent to asking the prescription opioid addict to immediately cease all opioid use that day. Working with the patient to develop and reach interim goals, small steps toward the final objective, is a more practical tactic. Abstinence is the long-term goal, but not necessarily an immediate possibility. Addiction is a chronic disease requiring long-term engagement and interventions spaced over time. Furthermore, medical providers who seek to improve the health outcomes of drug-using patients should offer them treatment options without alienating them or condemning their actions. In contrast, confrontation, criticism, and unrealistic expectations inevitably lead to an avoidance of further contact with that medical provider, continued substance use, and possibly, the worsening of psychiatric conditions.29

The following 4 interventions can be readily employed in clinical practice. Primary care providers should consider integrating these strategies to the extent that it is feasible within their individual practices. The potential integration of these strategies depends on site-specific factors, including space, time, and funding.

**Motivational Interviewing**

Brief motivational interviewing (BMI) has been shown to improve patient motivation to engage in behavior change.30 Primary care providers can address drug addiction with BMI, as with other chronic medical conditions. Effective BMI sessions require providers to avoid hostility or judgment toward their patients and should be no more than 5 minutes long. Interviewing techniques include: open-ended questions, affirmation, reflective listening, and the use of summary statements.31 A meta-analysis of controlled clinical trials found that motivational interviewing had moderate benefit compared with placebo for treating problem behaviors related to alcohol and drugs.32 Although that review did not focus on primary care, the principles of BMI are the same, independent of the setting where it is implemented.33-36

**Syringe Access**

Patients who inject substances should be counseled to use sterile syringes and “works” (the additional items utilized in the injection process, such as the container that holds the solution that is drawn up in the syringe). Syringe distribution is a proven strategy for minimizing harmful effects of injection drug use, including human immunodeficiency virus (HIV) and hepatitis C transmission, without increasing
and safe opioid prescribing, including naloxone prescription. Indications for naloxone prescription include: any high-dose opioid prescription (>100 mg of morphine equivalence/day), suspected illicit or nonmedical opioid use, or an opioid prescription with a concurrent benzodiazepine prescription.58 Prescribing naloxone to someone at risk of overdose is legal in every state.59 Laws about third-party administration vary; information is available to assist prescribers in understanding applicable local laws (see the Temple Law School site, http://www.temple.edu/lawschool/phrhcs/Naloxone/ Naloxonepolicy.htm).

**Buprenorphine**

Medication-assisted treatment with buprenorphine, a partial opioid agonist, is an evidenced-based treatment for opioid addiction.60 Buprenorphine has been shown to safely and effectively treat opioid addiction in the primary care setting.61-63 Furthermore, medication-assisted treatment improves overall health status, and is associated with decreased criminal activity and improved social functioning of drug users.64-67 In order to become a buprenorphine prescriber, providers must attend a training program on opioid dependence and appropriate buprenorphine prescribing.68

Delivery of the above-mentioned strategies in the primary care setting should complement, not replace, the services provided at syringe-exchange sites, methadone maintenance programs, and other organizations. Each of these organizations offers a different pathway to treatment. Positive relationships between primary care providers and community-based needle and syringe programs will support important collaboration, such as referrals from primary care to community-based organizations for individuals who need a peer network and additional risk-reduction services (eg, condoms); and from community-based organizations to primary care for individuals who need medical services but who are wary of the medical establishment.

Some opioid-addicted patients will be more complicated to treat than can be followed in primary care, just as some diabetics require consultation with an endocrinologist. Those patients should be referred to a local treatment facility that utilizes evidence-based forms of addiction treatment.

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**Table 4 Basic Components of Opioid Overdose Prevention Education Curriculum**

1. Know the signs of an opioid overdose (eg, unresponsive, limp, slow, shallow breathing, pale or clammy, finger nails or lips turning blue, gurgling)
2. Call 911
3. Administer rescue breathing
4. Administer naloxone if no response and Emergency Medical Services have not yet arrived
5. Stay with the person until help arrives

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**Table 5 Organizations Providing Referral Information for Patients**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Resources/Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Abuse and Mental Health Services Administration (SAMHSA)</td>
<td>Opioid treatment program directory: <a href="http://dpt2.samhsa.gov/treatment/">http://dpt2.samhsa.gov/treatment/</a></td>
</tr>
<tr>
<td>Physicians who provide buprenorphine</td>
<td>Buprenorphine physician and treatment program locator: <a href="http://buprenorphine.samhsa.gov/bwns_locator/">http://buprenorphine.samhsa.gov/bwns_locator/</a></td>
</tr>
<tr>
<td>Pain Action</td>
<td>Chronic pain management materials for patients: <a href="http://www.painaction.org">www.painaction.org</a></td>
</tr>
<tr>
<td>Substance abuse treatment facilities</td>
<td>Substance Abuse treatment facility locator: <a href="http://dasis3.samhsa.gov/">http://dasis3.samhsa.gov/</a></td>
</tr>
<tr>
<td>Harm Reduction Coalition</td>
<td>Local risk reduction resources and programs, overdose prevention education, and naloxone prescribing information: <a href="http://www.harmreduction.org/">http://www.harmreduction.org/</a></td>
</tr>
<tr>
<td>Narcotics Anonymous (NA)</td>
<td>General information and meeting information for NA, a 12-step program modeled after alcoholics anonymous: <a href="http://www.na.org">www.na.org</a></td>
</tr>
</tbody>
</table>
Resources for physicians for locating appropriate referrals in the United States are listed in Table 5.

**BARRIERS**

Further research is needed on the implementation and impact of these interventions in primary care. Programs proven effective outside of primary care settings should retain their benefit within primary care settings, and clinical sites are urged to conduct evaluations of their programs to ascertain impact. Recommendations for implementation are included in Table 6. Several barriers to screening, diagnosing, and treating opioid addiction persist in the primary care setting, including:

- Primary care providers are often not (formally) educated on the screening, diagnosis, and treatment of addiction, which may result in a reluctance to perform these activities in clinical settings. Moreover, some medical providers may not be familiar with the resources for drug users within their community, and therefore, may not know where to refer patients. Table 5 outlines referral organizations for drug users, yet additional treatment options are needed in locales throughout the country. In the absence of referring, primary care providers have the opportunity to be a critical resource. According to the 2008 National Survey on Drug Use and Health, 88% of drug- or alcohol-dependent individuals aged 12 years and older needed treatment but did not receive treatment at a specialized facility, suggesting that services in primary care remain essential to meet the growing demand.

- Time constraints remain a reality in primary care practices. Screening for opioid addiction and brief motivational interventions, therefore, must remain concise if they are to be successfully adopted. Primary care providers may find that the most time- and clinically effective approach is to focus initial opioid addiction screening efforts on patients requesting opioids. Additionally, in some settings, nursing staff may be the most appropriate staff to conduct an initial screen.

- Although primary care providers could be compensated for screening for opioid dependence, they may not be aware that this is available. Commercial insurance and both Medicare and Medicaid have provisions to compensate medical providers for screening and brief interventions of drug addiction (see the Substance Abuse and Mental Health Services Administration’s Website at http://www.samhsa.gov/prevention/sbirt/coding.aspx).

- Lastly, prescribing or dispensing syringes or naloxone may raise concerns about liability. Primary care providers should follow appropriate state statutes. Failure to provide syringes or naloxone to an individual at risk of opioid overdose may actually hold a greater risk of liability. Ongoing legal reform should protect primary care providers from liability related to preventing overdose (eg, naloxone distribution) and conducting evidence-based practices that reduce the transmission of infectious diseases such as HIV and hepatitis C (eg, sterile syringe distribution).

**CONCLUSION**

Prevalence rates confirm that opioid addiction is a national problem; meanwhile, clinical experience illustrates the challenges in screening and treating opioid-addicted patients. As with other chronic diseases, the majority of patients never fully recover, and relapse is likely, even for those who reach a point of stability. Nonetheless, screening all patients to identify those in need of addiction services is critical. The interventions addressed in this paper, motivational interviewing, syringe access for injectors, overdose prevention education and prescription of naloxone, and medication-assisted treatment with buprenorphine, provide tools to address patients’ current health risks and take incremental steps to improve patients’ health outcomes. Focusing on what the patient is capable of achieving in the short term rather

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**Table 6** Recommendations for Integrating Risk Reduction Strategies for Addressing Opioid Misuse in the Primary Care Setting

<table>
<thead>
<tr>
<th>Risk Reduction Tools</th>
<th>Type of Client</th>
<th>Delivery Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief substance abuse screening</td>
<td>All clients, particularly those individuals prescribed opioid medications or with a history of substance abuse problems.</td>
<td>Administer CAGE-AID* or similar screening tool as part of routine treatment.</td>
</tr>
<tr>
<td>Motivational interviewing</td>
<td>Clients who have identified opioid use or abuse.</td>
<td>Standard procedure may be delivered by primary care provider or other clinic staff.</td>
</tr>
<tr>
<td>Comprehensive tools for safer injections, including safer injection education</td>
<td>Clients who have reported, or are suspected of injection drug use. Tools should be available to all patients, not only those identified as drug users.</td>
<td>Resources (including educational materials, syringes, alcohol wipes, etc.) distributed and discussed by the primary care provider or other clinic staff.</td>
</tr>
<tr>
<td>Naloxone prescription and distribution</td>
<td>Targeting individuals using illicit or prescribed opioids, including individuals prescribed opioids.</td>
<td>Discussion, prescription of naloxone by the primary care provider; additional education may be delivered by other clinical staff.</td>
</tr>
<tr>
<td>Buprenorphine prescription</td>
<td>Targeting individuals using illicit or prescribed opioids, seeking medication assisted treatment.</td>
<td>Discussion and prescription by the primary care provider.</td>
</tr>
</tbody>
</table>

*For a full definition of CAGE-AID, see Table 1.
than setting difficult to accomplish long-term goals is an effective approach that is applicable to all chronic illnesses, including opioid addiction.

References


64. Stenbacka M, Leifman A, Romelsjo A. The impact of methadone treatment on registered convictions and arrests in HIV-positive and HIV-negative men and women with one or more treatment periods. Drug Alcohol Rev. 2003;22(1):27-34.


