

# Prescription Medication Abuse and Illegitimate Internet-Based Pharmacies

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Abuse of controlled prescription medications in the United States exceeds that of all illicit drugs combined except marijuana and has grown considerably in the past decade. Although available through traditional channels, controlled prescription medications can also be purchased on the Internet without a prescription. This issue has gained the attention of federal regulators, law enforcement, and the media, but physician awareness of the problem is scarce. This article describes the nature of the problem and its magnitude,

discusses the challenges to federal and private efforts to combat illegitimate online pharmacies, and outlines strategies for physicians to recognize and minimize the unwarranted effects of the availability of these medications on the Internet.

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Internet sales of prescription medications have grown tremendously in recent years. In 2003, online sales to U.S. consumers were estimated at \$3.2 billion, nearly 20-fold higher than that in 1999 (1). While the Internet promotes access to medications, this benefit is vitiated by the growth of illegitimate online pharmacies that sell prescription medications without an established physician-patient relationship (1-10). Controlled substances are readily available through these pharmacies and may partly account for the dramatic increase in U.S. prescription drug abuse since the early 1990s (1, 5-11).

Despite ongoing attention of federal regulators, law enforcement, and the media toward controlled substances purchased illegally online (12-16), physician awareness of this issue is remarkably scarce. The issue is particularly salient given that U.S. rates of abuse of controlled prescription medications exceed those of all illicit drugs combined except marijuana (2). Between 2004 and 2008, emergency department visits for abuse of opioid analgesics increased from 144 600 to 305 900 nationally and from 143 500 to 271 700 for nonmedical use of benzodiazepines (3). To help fill this gap, we describe the nature of the problem and its magnitude, discuss existing federal and private efforts to combat illegitimate online pharmacies and the associated challenges, and outline strategies for physicians to recognize and minimize the effects of such pharmacies.

## BACKGROUND AND EVIDENCE

Illegitimate online pharmacies have traditionally come in 2 forms, each selling ordinary prescription medications and controlled substances (schedules II through V) without a prescription originating from a typical physician-patient interaction. Questionnaire pharmacies require only the completion of an online questionnaire before a physician—whom the patient has never seen—prescribes the requested medication. Other rogue pharmacies require neither this “prescription” nor the patient’s medical history to sell the medication. Studies by the National Center on Addiction and Substance Abuse (CASA) at Columbia University have estimated that nearly 85% of Web sites offering controlled

prescription medications for sale do not require a legitimate prescription and—of the sites that do—more than one half require only that a prescription be faxed, making it possible for patients to forge prescriptions or use the same prescription multiple times (4).

Data on the prevalence and magnitude of illegitimate Internet-based pharmacies selling controlled prescription medications come from several sources, including Internet search studies, secret-shopper studies, surveys, and epidemiologic studies. One of the earliest Internet search studies from 2003 found that 53% of Web sites generated by a Google search for “no prescription codeine” offered opiate medications without a prescription; of these sites, 35% offered barbiturates, benzodiazepines, and stimulants for sale as well (5). A follow-up study in 2006 identified more than 300 Web sites—registered in 44 countries—offering opiate medications for sale without a prescription (7). Annual Internet studies by CASA from 2004 to 2008 have documented widespread offers to sell narcotics, barbiturates, benzodiazepines, and stimulants online. Its latest study—a snapshot of availability in early 2008—identified 365 Web sites advertising or selling these drugs and 206 sites offering them for sale (4).

The ability to purchase controlled prescription medications from illegitimate online pharmacies has been verified by both secret-shopper studies conducted by the U.S. Drug Enforcement Agency and General Accounting Office (GAO) (6, 7) and arrests of the persons involved in these pharmacies (8). The GAO study, for example, identified 8 illegitimate online pharmacies that shipped hydrocodone from U.S.-based pharmacies to a GAO investigator purporting to be a patient without any communication between the investigator and the physician who ultimately prescribed the medication (7). Foreign pharmacies have been implicated in similar Internet distribution as well (8).

Despite these sobering statistics, surprisingly little is known about the prevalence of individual use of controlled prescription medications obtained over the Internet. Survey evidence from small, local as well as national samples of prescription drug abusers suggests that between 1% and 11% of these individuals have purchased controlled pre-

scription medications over the Internet (9, 10). Not only is underreporting in these surveys common, but the individuals who are most likely to acquire controlled prescription medications over the Internet may not be included at all. For instance, surveys conducted at methadone clinics may include respondents who are less likely to use the Internet to acquire controlled prescription medications because of sociodemographic factors (9). Certain schedule II medications, such as methadone, are also more difficult to acquire online than other controlled prescription medications and may therefore bias estimates of Internet-based misuse downward (9, 11). Equally troubling, local drug dealers are increasingly acquiring schedule III and IV medications from online pharmacies and are distributing them locally—a phenomenon completely missed by these surveys because of the existence of an intermediary (12).

Epidemiologic studies raise similar concerns about the abuse of controlled substances obtained online. Using state-level data, one study estimated that for every 10% increase in high-speed Internet use from 2000 to 2007 (a proxy for access to Internet-based pharmacies), associated admissions to treatment centers for opioid, sedative hypnotic, and stimulant abuse increased by 1% each, whereas admissions for abuse of substances that are not purchasable online (alcohol, heroin, and cocaine) were unaffected (13).

### FEDERAL AND PRIVATE EFFORTS TO COMBAT ILLEGITIMATE INTERNET-BASED PHARMACIES

The continued presence of illegitimate Internet-based pharmacies has prompted federal and private efforts to tackle the problem. In addition to early law enforcement efforts targeting Internet pharmacy rings (8), Congress passed the Ryan Haight Online Pharmacy Consumer Protection Act in 2008. This law—named for Ryan Haight, who died at the age of 18 years after overdosing on prescription narcotics that were purchased online—prohibits the distribution of controlled prescription medications over the Internet without a prescription from a physician who directly examined the patient (14). Following the enactment, the U.S. Food and Drug Administration issued warning letters to more than 100 illegitimate Internet-based pharmacies and their associated Internet service providers threatening shutdown (15).

In addition to federal efforts, private efforts have emerged as well. Internet pharmacy verification sites, such as LegitScript and the National Association of Boards of Pharmacy, assist patients, physicians, and government agencies in distinguishing legitimate from illegitimate online pharmacies. Using this type of information, financial institutions and postal carriers have reported efforts to block financial transactions to and shipments from known illegitimate online pharmacies (16).

Despite public and private efforts, the continued presence of illegitimate Internet-based pharmacies suggests

only limited success. Regulatory efforts are stymied by these pharmacies' ability to appear, disappear, and reappear constantly—with as many as 75% of sites existing either in an unknown location or outside of federal jurisdiction (4). Although verification sites identify illegitimate Internet-based pharmacies, search engines act in opposition by continuing to feature advertisements for known illegitimate pharmacies (17) and as a result have become subject to investigation and sanction by the U.S. Department of Justice (18). Meanwhile, although several Internet service providers and financial institutions report having ceased transactions with known illegitimate online pharmacies (16), the lack of federal oversight and enforcement on both parties has limited effectiveness. Finally, at the physician level, curbing abuse stemming from illegitimate online pharmacies is challenged by potentially low awareness of the issue, difficulty in identifying a potentially new group of prescription medication abusers who may not fit into the conformed risk profiles of substance abuse (9), and limited training in addressing prescription medication and other substance abuse more generally.

The substantive challenges posed by illegitimate Internet-based pharmacies require coordinated federal-, private-, and practitioner-level approaches. At the federal level, increased enforcement of existing federal laws is needed. Either through coordination with existing private pharmacy verification services or independently, a regularly updated national registry of certified online pharmacies should be developed to assist federal regulators, law enforcement, financial institutions, and Internet service providers in identifying and shutting down illegitimate online pharmacies. Meeting these goals is costly and labor-intensive and cannot be accomplished without additional federal funding, as acknowledged recently by Senators Charles Schumer (D, New York) and Jay Rockefeller (D, West Virginia) (19). Federal oversight to ensure that financial institutions, postal carriers, Internet service providers, and Internet search engines comply with these efforts is necessary, as is coordination among these entities to address the substantial number of pharmacy Web sites that are outside of U.S. jurisdiction.

### ROLE OF PHYSICIANS IN REDUCING INTERNET-BASED SUBSTANCE ABUSE

Physicians and other health care practitioners have an important role in identifying and treating patients who acquire controlled prescription medications online. Due in part to low rates of screening and limited training on substance abuse, physicians are often unaware of substance abuse in their patients, much less abuse stemming from illegitimate online pharmacies. For example, in a large study of patients being treated for substance abuse, 45% reported that their primary physician was unaware of their substance abuse (20). The difficulty in

identifying Internet-based substance abuse is compounded by the fact that little is known about these types of patients (9). The ease with which medications can be purchased online may expand the population of patients at risk to include those that physicians previously believed were at low risk for prescription medication abuse.

Increasing awareness of illegitimate Internet-based pharmacies among physicians is the first step for physicians to help limit the purchase of controlled prescription medications by patients online. Physicians should recognize that all patients are susceptible and should educate patients about the risks of purchasing medications over the Internet without physician supervision. Health care providers should also consider questioning patients about Internet medication purchases in addition to routine questioning about over-the-counter medication use, herbal supplements, and dietary supplements. Ultimately, the evolving ability of illegitimate Internet-based pharmacies to evade federal regulation and law enforcement suggests that individualized attention to patients through physician awareness of and involvement in this issue is needed.

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