

Prescription Opioid Prescribing in Western Europe and the United States

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ABSTRACT

Pain is universal, yet the prevalence of overdose and treatment of pain varies significantly between the United States (US) and Western Europe. Overdose deaths are seven times more common in the US compared to Western Europe. Cultural perceptions of pain, perception and treatment of opioid use disorder, pharmaceutical advertising, and rates and regulation of prescribing of opioids represent examples of factors that may be related to such differences between the US and Western Europe. As Rhode Island continues to battle the devastating and well-documented national opioid overdose epidemic, we should consider how cultural, regulatory differences, and economic factors may influence pain and its treatment.

KEYWORDS: opioids, pain, Western Europe

INTRODUCTION

In 2016, drug overdoses killed 63,632 Americans, and nearly two thirds (41,998) were due to a prescription or illicit opioid.¹ Locally, Rhode Island has an opioid death rate of 26.7 per 100,000, and it affects every city and town in the state.² In the same year, approximately 9,000 lives were lost to drug overdoses in Turkey, Norway, and the 28 European Union (EU) member states combined, despite having a considerably larger population than the US.³ In other words, for every overdose death in the 30 aforementioned nations, there are seven in the US. Opioid use impacts all ages, sexes, ethnic and socioeconomic backgrounds, and especially those in rural settings.⁴ A variety of factors contribute to this disparity, including the over prescription of legal painkillers.⁵

Chronic pain occurs at a similar rate in the US as in Western Europe.⁶ The current US opioid epidemic has a multifactorial etiology, including the desire to treat, resulting in increased advertising by pharmaceutical companies encouraging treatment of chronic pain with opioids. In addition, there was a widespread belief that opioids were safe for chronic pain.⁷ A culmination of less stringent regulation and management practices contributed to increased primary opioid exposure, lack of treatment resources, stigmatization of addiction, aggressive drug advertising, and an inherent cultural ethos which tended to overtreat pain with opioids.

ADVERTISING

The US experienced aggressive marketing of prescription opioids, claiming these medications had little risk for addiction.⁵ In addition, perceptions of pain treatment with opioids were facilitated, in part, through the conceptualization of pain as the fifth vital sign by organizations such as the American Pain Society, the Veteran's Health Administration, and the Joint Commission.⁸ Additionally, the emphasis on using patient satisfaction surveys, which often used pain relief as a proxy to indicate high quality care by the Institute of Medicine, further perpetuated a cultural shift.⁶ Concurrent with these events, sales of extended release oxycodone grew to exceed \$2 billion annually between 1996 and 2014,⁹ and the number of prescriptions for opioids in some states increased by 500% or more within the first five years of oxycodone being on the market.¹⁰ Such a phenomenon is further instigated by a cultural perception, in the US, that pain must be completely eliminated despite some pain experts emphasizing that the goal of pain relief in perioperative conditions should be a 30% to 55% improvement of perceived pain.¹¹

The US and Western Europe have very different approaches to pharmaceutical advertising. A British research group found that doctors who have frequent contact with drug representatives are more likely to prescribe new medications that are clinically unnecessary and avoid advice-only consultations.¹² These doctor-drug representative interactions are frequent in the US, although this has declined significantly in the past decade and is no longer allowed in many healthcare organizations. Alternatively, in Western Europe, it is generally prohibited to grant, offer, or promise benefits to physicians or to the organizations that employ them, and violators are actively reprimanded. For example, the medical associations in Germany penalized 163 physicians who accepted benefits from the pharmaceutical company Ratiopharm, in 2013. Such models of regulation result in lower rates of heavy marketing of prescription drugs.⁹

A 1978 agreement between the Swedish Medical Association and drug representatives requires representatives to both notify the appropriate level of government and have the meeting approved in order to talk to physicians. As a result of these requirements, many practices also adopt their own policies, such as requiring representatives to speak with all the physicians at once and getting prior approval from the department head. Furthermore, departments limit the

number of representative visits in a year, mandate representatives to inform the department head what they are going to say in the allotted time, restrict meetings to 15 minutes, and bar free gifts.¹³

Pharmaceutical companies in the US capitalize from a culture of consumerism, which typically promotes quick solutions for complex conditions, including pain. Companies increase patient demand for opioids using direct-to-consumer advertising, which is only legal in the US and New Zealand.¹⁴ Additionally, US patients may sue their practitioner for negligence if they feel their pain was inadequately controlled,¹⁵ which may further encourage appeasement of pain through use of opioids. Advertisement and doctor-drug representative interactions partially contributed to discrepancies between opioid prescribing practices in the US compared to Western Europe. While the medical community has made significant efforts to diverge from these influences in the US, it is important to note the long-term impacts such influences have had on the treatment of pain in the US.

REGULATORY OVERSIGHT

Healthcare systems and healthcare regulatory oversight differ significantly between the US and Western Europe. The vertically integrated healthcare systems in much of Europe provide centralization to more efficiently limit overprescribing while advocating safe and effective prescribing practices¹⁶ through guidelines and regulations that are effective on a national and cultural level.

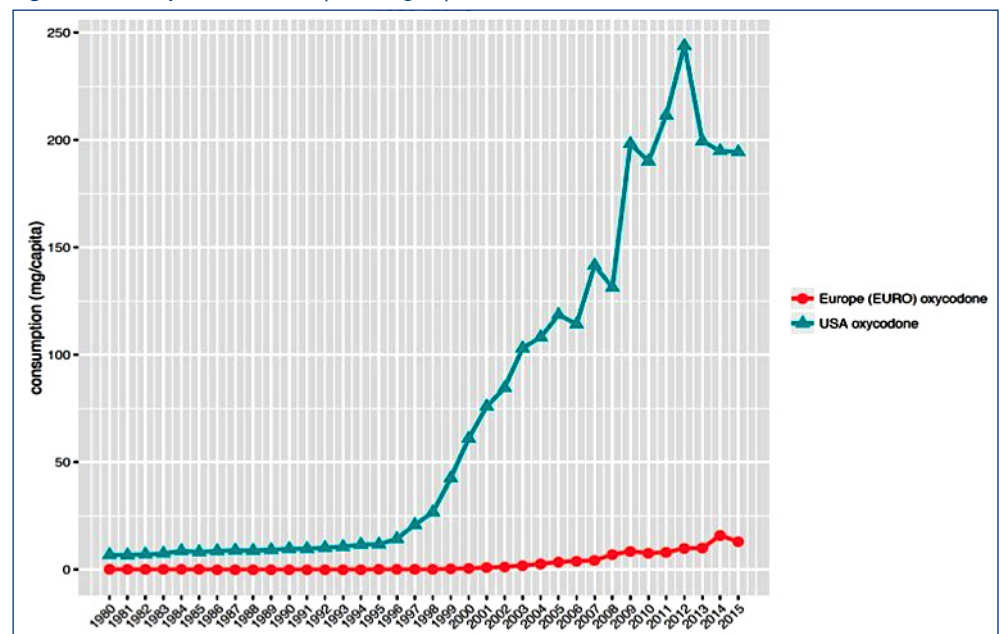
The US lacks sufficient regulatory authority as is evident by *The Ensuring Patient Access and Effective Drug Enforcement Act*. The Act, which was unanimously passed in both the House and the Senate in April 2016, restricts the Drug Enforcement Agency's (DEA) ability to investigate and discipline opioid distributors suspected of illegal behavior and prevents the DEA from being able to restrict large, suspicious narcotics shipments. After the law was passed, it was found to be partially responsible for fueling the black market and worsening the epidemic in West Virginia,⁵ where two pharmacies that served a population of only 3,000 ordered 20.8 million opioid pills.¹⁷

The US uses prescription opioids at a rate of 2.5 to 4 times higher than Western Europe⁹ while also using more potent

opioids. As of 2014, the most frequently prescribed schedule II and schedule III drugs in the US were oxycodone with acetaminophen and hydrocodone with acetaminophen, and in the United Kingdom, it was morphine and codeine with acetaminophen.¹⁴ These differences also apply to the rest of Western Europe, emphasizing that the use of oxycodone is one of the main differences between the US and Western Europe. Between 2010 and 2012 the US prescribed 7,991 defined daily doses (DDD) per million, per day of oxycodone, accounting for 15.4% of opioid prescriptions. During the same time period in Western Europe, 654 DDD per million, per day, on average, were prescribed and accounted for roughly 5.3% of opioid prescriptions.¹⁵

These prescribing differences are part of what allowed the proportion of insured persons on oxycodone in Germany to only increase from 0.04% to 0.44% from 2000 to 2010.¹⁵ A more illustrative comparison shows an alarming increase, in the US, of prescribed oxycodone from about 60 mg/capita to 175 mg/capita during versus a minor increase in Western Europe from around 0 mg/capita to 10mg/capita [Figure 1]. In the US, dentists prescribed opioids at a rate of 37 times greater than dentists in the UK in 2016. In the US, 22.3% of all prescriptions written by dentists were for opioids compared to 0.6% of prescriptions written by UK dentists. Such differences are attributable to national guidelines and formularies and different perceptions of pain management in the US. In post-operative situations, US dentists prescribed a large array of strong opioids that have a high potential risk for abuse. In the UK, national guidelines recommend nonsteroidal anti-inflammatory drugs (NSAIDs) over opioids, and a national formulary restricts dentists' prescribing option to

Figure 1. USA oxycodone consumption (mg/capita) 1980–2015



Sources: International Narcotics Control Board; World Health Organization population data

dihydrocodeine, a less potent opioid.¹⁸ National guidelines are only one contributor to the differences in opioid use between the two nations, but their efficacy in reducing the number of strong opioid prescriptions is worth further investigation.

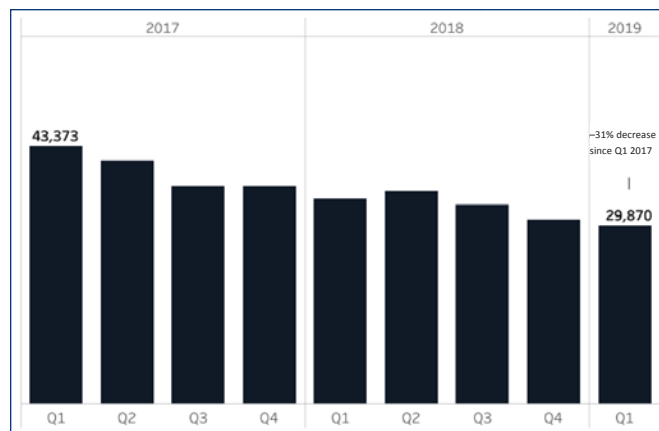
National formularies are often used in Western Europe to regulate what types of opioids may be prescribed under any set of circumstances. For example, in France, morphine is the only opioid authorized for non-cancer pain use.¹⁹ Additionally, evidence shows that low-prescribing general practitioners in the UK were more likely to come from practices that had practice formularies.²⁰ Therefore, it is no surprise that the US, which approves 15% to 18% more drugs than many European countries, has higher prescribing rates, has the most flexibility for individuals' choice of drug benefits, and has no centralized formulary. This is concerning because in many countries, the national formulary list is the most important tool to regulating the prescription process besides implementation of fixed budgets and mandatory adherence to clinical practice guidelines.

One strategy in Western Europe to limit the prescribing of opioids is the use of special prescription forms which are a different color than normal prescriptions.¹⁹ Within Italy, Portugal, and Spain doctors must travel to specific regional offices to access these prescription forms. Additionally, private Portuguese and Danish physicians are required to pay for these forms themselves.^{19,22} These policies are intended to prevent inappropriate use of opioid prescriptions. Additionally, some countries have restrictions on the length of validity for these forms. In Germany, forms are only valid for one week, and in most Western European nations, forms are valid for about three weeks.¹⁹ In contrast, prescriptions for schedule II and schedule III drugs in the US are valid for 90 days.

CONCLUSIONS

Prescribing of opioids is different between the US and Western Europe for a variety of reasons, including cultural differences, economic drivers, and regulatory levers. In recent years, changes that have occurred in Rhode Island reflect more of this European influence. The state has seen a reduction in the number of new opioid prescriptions [Figure 2] for a variety of reasons, including more judicious prescribing, regulations regarding prescribing, and decreased patient demand. Our previous study has shown that State regulations can have significant impacts on, and change, prescribing behavior toward safer standards.² Therefore, evidence-based regulations preventing the over-prescription of opioids may be an effective primary prevention strategy regarding the opioid epidemic in Rhode Island, specifically decreasing the number of new patients exposed to prescription opioids. Furthermore, our review of Western European practices indicates that the US has insufficient national regulatory oversight of opioid prescribing and drug marketing. In addition to the efforts to increase access to medication

Figure 2. Number of people receiving new opioid prescriptions (2017–2019)



Source: Rhode Island Department of Health; Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals; and Brown University. *Opioid Prescribing Data*. Prevent Overdose Rhode Island. Accessed August 20, 2019. <https://preventoverdoseri.org/prescribing-data/>.

assisted treatment, insurance reform, and increasing the numbers of qualified prescribers, Rhode Island may want to consider establishing pharmaceutical marketing restrictions, potentially using laws and regulations that have effectively addressed tobacco advertising as replicable models.

Rhode Island Department of Health; Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals; and Brown University. *Opioid Prescribing Data*. Prevent Overdose Rhode Island. Accessed August 20, 2019. <https://preventoverdoseri.org/prescribing-data/>.

On the provider level, we expect physicians to continue to build upon their practices to mitigate opioid exposure through increased pain management education and increased utilization of non-opioid medications and treatments. Abrupt cessation of opioids for existing chronic pain patients should be avoided, and instead, the goal should be to optimize the patient's function with the lowest possible doses.

As a nation, we may need to reconsider advertising pharmaceuticals of all types and the effect this has on patients driving demand. Substantial reforms have already occurred regarding the interactions between pharmaceutical representatives and prescribers, yet one wonders if there is a need for more oversight.

Healthcare entities may want to consider the implementation of practice formulary lists for acute and chronic pain medicine and of pharmacist oversight. Both of these strategies have been shown to help reduce prescribing rates.

Although there is not one solution to the opioid epidemic in Rhode Island, or the US, there are concepts we can borrow from Western European medicinal culture that may allow us to mitigate addiction and tragedy while optimizing health and wellness. Our cultural perceptions of pain, painkillers, drug marketing, and treatment for opioid use disorder are examples of these differences that could be explored.

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