THE ROLE OF DENTISTRY IN ADDRESSING OPIOID ABUSE

ACADEMY OF GENERAL DENTISTRY WHITE PAPER
Introduction

Opioid and non-opioid analgesics are utilized in dentistry for the management of post-operative pain. Non-opioids, including acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), are effective in the management of mild to moderate pain, including the initial management of pain.1

The Institute of Medicine (IOM) has noted opioids “can be safe and effective for acute postoperative pain, procedural pain, and patients nearing the end of life who desire more pain relief,” when “used as prescribed.” However, the IOM has also “acknowledge[d] a serious crisis in the diversion and abuse of opioids and a lack of evidence for the long-term usefulness of opioids in treating chronic pain.” 2

Sales of opioids have quadrupled between 1999 and 2010, and dosage calculated in morphine milligram equivalents (MME) per person has increased over seven-fold from 96 MME per person in 1997 to 710 MME in 2010.3 Fatality solely from opioid abuse exceed the combined fatalities from suicide, motor vehicle crashes, and cocaine and heroin use.4

Opioid abuse has risen to epidemic levels in the United States. This issue is being addressed by federal and state governments, private industry, health practitioners, and other stakeholders. In recent years, some publications have purported the dental profession to be a significant contributors to the opioid crisis. The purpose of this white paper is to examine the veracity of these claims by a review of the contemporary literature on the role of dentistry on the opioid epidemic. The development of organizational policy based upon this review is also presented.

Background of Prescription Opioid Issues of Abuse and Misuse

The United States has experienced an epidemic of abuse and misuse of opioid medications. Over the past two decades, knowledge of factors leading to addiction were not widely identified or disseminated. Nonetheless, it is incumbent on the health care community to ensure appropriate use of opioid medications.

One of the Food and Drug Administration’s (FDA) charges is to assess the safety and effectiveness of pharmaceuticals. In an effort to facilitate transparency, the agency compiled a timeline5 of their activities relating to the misuse and abuse of opioid medications. From 1911 to the 1990’s, opioid medications were predominantly used for the management of acute pain and chronic cancer pain.

OxyContin® was approved by the FDA on December 12, 1995. Abuse of the formulation was occurring by 2001 as the formulation could be broken, chewed, or crushed for rapid release delivery. Reports of overdose and death from prescription drug products, particularly opioids, increased dramatically. In January 2003, the FDA sent the manufacturer of OxyContin, Purdue Pharma L.P., an extensive warning letter about minimizing serious safety risks and promoting the drug for uses beyond proven safety and effectiveness claims.

In 2007, the FDA Amendments Act granted the FDA authority to require certain post-market measures be implemented to further drug safety, i.e., the Risk Evaluation and Mitigation Strategies (REMS). Other federal agencies, including the Drug Enforcement Agency (DEA) and the Substance Abuse and Mental Health Services Administration (SAMHSA), launched various programs to educate the public and assist in efforts to forestall opioid abuse.

In addition to labeling changes and post-marketing surveillance requirements, abuse deterrent formulations were slowly introduced. After more than a decade of problems with opioid formulations, the FDA in 2016 developed a comprehensive action plan to reassess the agency’s approach to opioid medications.

Pharmacies

While the use and abuse of opioid medications is a national issue, there are notable sections of the country with more severe and complex problems. For example, in the state of West Virginia, during a six-year period drug wholesalers shipped 780 million opioids to pharmacies within the state. That number equates to more than 400 pills for every person living in West Virginia. One pharmacy in Mingo County received 9 million hydrocodone pills in 2 years. In retrospect, the West Virginia Board of Pharmacy failed to enforce appropriate regulations to audit pharmacies dispensing high volumes of opioids.

Pain clinics- the so-called “pill mills”– located in Michigan, Florida, and other states, serve no legitimate medical purpose. These clinics charge customers cash payments in return for narcotics. In many ensuing court cases, most prescriptions in this environment were found to be medically unnecessary.

State Lobbying

A 2016 investigation by the Center for Public Integrity and the Associated Press® revealed that state lobbyists funded by a coalition of pharmaceutical companies and allied groups were instrumental in deterring state legislatures from enacting limitations on prescriptions of opioids. Drug manufacturers adopted a state strategy to include hundreds of lobbyists working behind closed doors to weaken measures for more stringent opioid prescription requirements.

The use and abuse of opioid medications in the U.S. is due to multiple factors. Congressional investigations7 have been initiated to determine how marketing practices affected sales, prescribing patterns, continuing medical education (CME) accreditation agencies, and state medical board policies.

Review Methods

Databases including PubMed and Medline, as well as resources provided by the United States Centers for Disease Control and Prevention (CDC), and a broader Google search, were employed to retrieve contemporary manuscripts addressing the opioid epidemic. Given the recent boom in opioid distribution, only manuscripts dated within the last twelve years and that specifically addressed dentistry were included as primary resources. However, additional manuscripts were retained as general references for clinical background information on opioid and non-opioid analgesics, and dosage conversion metrics between varying opioids. Given that the intent of this paper was to survey current literature in an effort to assess the role of dentistry to the extent necessary to derive an organizational policy, rather than to produce a clinical study, a formal systematic review process was not followed.

Findings

Number of Prescriptions:

Recent studies attribute 8%6 to 12% of all opioid prescriptions are written by dentists.8 Dentists are the leading prescribers when the metric is the percentage of number of prescriptions to persons aged 10 to 19 years, accounting for over 30% of the number of these prescriptions.9

In addition to labeling changes and post-marketing surveillance
Prolonged/multiple prescriptions:
The literature suggests opioid addiction and abuse may be more likely
affiliated with prolonged or repeated prescriptions than with one-time
prescriptions. “Patients consuming opioids regularly for more than a
week may develop some degree of dependence.”

According to Volkow et. al. (JAMA, 2011), “On average, across all
physician specialties included in this analysis, 56.4% (44.8 million)
of opioid prescriptions were dispensed to patients who had already
filled another opioid prescription within the past month (FIGURE 2).”
However, as illustrated by FIGURE 2 below, this number is in stark
contrast to prescription patterns of dentists, with repeated prescriptions
accounting for less than 30% for prescriptions provided by dentists.

Thus, contrary to prescription patterns of general practitioners and
specialists in medicine, dentists are far less likely to provide refills or
multiple prescriptions to the same patient.

Dosage and duration:
Higher dosages may be more likely to result in addiction and abuse
than lower dosages, although both carry risk. Most general dentists
that prescribe opioids provide only single-fill prescriptions of 10-20
doses to be taken over the course of 2 to 5 days.

Considering a prescription of 4-6 doses per day (every 6 hours or every 4
hours) of hydrocodone/acetaminophen at 5 mg / 300 mg as an example,
the maximum daily dosage of hydrocodone would be 20 to 30 mg of
hydrocodone. Given the approximate 1-to-1 correlation between dosage
of hydrocodone and MME, this would correlate to at most 20 to 30 MME/
day, over the course of up to 5 days, with no refills. In contrast, a study of
the Veterans Health Administration (VHA) patients found that patients that
died of opioid abuse were prescribed an average of 98 MME/day, with a
duration of 90 days of continuous prescription with an allowance for up
to a 30 day gap for obtaining a refill.

The Centers for Disease Control and Prevention (CDC) states 20-50
MME/day as relatively low dosages. While the CDC has identified
higher dosages of opioids as primarily associated with higher risk of
overdose and death, it also cautions such relatively low dosages should
not be ignored.

Where prescriptions are obtained:
“Most abusers report they obtained prescriptions on their own or
medications from friends and relatives that had been prescribed
opioids.”

Among persons aged 12 or older in 2009-2010 who used pain
relievers non-medically in the past 12 months, 55% obtained pain
relievers from a friend or relative for free. Among the remaining
45%, 11.4% bought them from a friend or relative (which was
significantly higher than the 8.9% from 2007-2008), and 4.8%
especially stole them from a friend or relative. However, only one
in 6 or 17.3% indicated that they received the drugs through a
prescription from one doctor, while only 4.4% received pain relievers
from a drug dealer or other stranger, and 0.4% bought them on the
Internet, with no significant changes from 2007 to 2008.

However, “among those who reported getting the pain reliever from a
friend or family member for free, 80 percent reported that the friend or
family member had obtained the drugs from one prescriber.” Based
upon the results of a 2010 survey of dentists in West Virginia, “When
asked about doses of IR [immediate release] opioids that dentists
suspect patients have left after a third-molar extraction, 41 percent
of dentists expected patients to have leftover drugs. It is unknown,
however, whether dentists informed patients about how to secure
medication so that it was not diverted or how to dispose of unused
medication.”

Figure 2. New vs Continuing or Switch/Add-on Opioid Prescriptions
Dispensed by US Retail Pharmacies as a Function of Specialty, 2009
Shown are unprojected data. Prior prescriptions (dispensed within
the past month) could be from the same or a different prescriber or specialty.
GP/FM/DO indicates general practitioner/family medicine/osteopathic
physicians; IM, internal medicine

AGD Policy Statement
In light of the above findings, the Academy of General Dentistry (AGD)
adopts the following as the policy of the AGD on the role of dentistry in
opioid abuse:

…The dosage and duration of each prescription, and the number of
multiple or refill prescriptions to the same patient, must be considered
in any assessment of the effect of dentistry upon the epidemic of opioid
addiction in the United States;

…Assessments of the causation of opioid addiction based solely upon
the number of prescriptions written results in an overestimation of the
dental profession’s effect on opioid addiction;

…It is nonetheless incumbent upon the profession of dentistry and all
dental associations to support and further the education of dentists,
dental staff members, and the public to recognize the indicators of
propensity and likelihood of opioid addiction, and to understand,
consider, and utilize alternative pain management strategies.

Conclusion
Opioid abuse is an ongoing epidemic in the United States. The number
of opioid prescriptions written by dentists rank among the highest of
health care professionals. However, dentists rank among the lowest in
prescribing multiple or refill opioid prescriptions to the same patient,
and also in the dosage of each opioid prescription. Studies suggest
that these latter factors are of far greater significance in assessing the
likelihood of opioid dependence or death from opioid abuse.

On the other hand, despite lower dosages and shorter durations
of prescription, surveyed dentists believed that their patients have
“leftover” opioids. Studies suggest that a majority of opioid abusers obtain their drugs from friends or family with these “leftover” prescriptions. Therefore, although assessments based solely upon the number of prescriptions exaggerate the effect of dentistry on opioid abuse, it is nonetheless incumbent upon dentistry and dental associations to support and further the education of dentists, dental teams, and the public on opioid addiction, and to understand, consider, and utilize alternative pain management strategies, including non-opioid analgesics, when appropriate and effective.

Resources

U.S. Surgeon General’s Call to End the Opioid Crisis
FDA Fact Sheet- FDA Opioids Action Plan
CDC Guideline for Prescribing Opioids for Chronic Pain- U.S., 2016
Prescription Drug Monitoring Programs
Royal College of Dental Surgeons of Ontario: The Role of Opioids in the Management of Acute and Chronic Pain in Dental Practice
Pennsylvania Guidelines on the Use of Opioids in Dental Practice
New Jersey Law Limits Opioid Prescriptions
National Alliance for Model State Drug Laws
Pain Management: Alternative Therapy

References

3. Manchikanti et al., at ES22.
4. Id.
8. Volkow ND, McLellan TA. Characteristics of Opioid Prescriptions in 2009. JAMA. 2011 April 6; 305(13): 1299-1301. doi:10.1001/jama.2011.401. (“Overall, the main prescribers were primary care physicians (general practitioner/family medicine/osteopathic physicians) with 28.8% (22.9 million) of total prescriptions, followed by internists (14.6%, 11.6 million), dentists (8.0%, 6.4 million), and orthopedic surgeons (7.7%, 6.1 million).”)
10. Volkow et al. (“For patients aged 10 to 19 years, dentists were the main prescribers (30.8%, 0.7 million), followed by primary care physicians (13.1%, 0.3 million) and emergency medicine physicians (12.3%, 0.3 million).”)
12. Volkow et al.
13. CDC, “Calculating Total Daily Dose of Opioid for Safer Dosage”
14. Denisco et. al., at p. 803
16. Id.
17. Volkow et al., at p. 1.
19. Manchikanti et al., at ES22
20. Denisco et al., at p. 802
21. Denisco et al., at p. 803