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Prescription Opioid Use: Pain Management and Drug Abuse In King County and Washington State

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Prescription opioid medications provide relief to many people suffering from moderate to severe pain. Two prescription opioid pain medications, methadone and buprenorphine, are also used to treat addiction to illicit or prescription opioids. Guidelines for the management of pain were released in 1996 by the Washington State Medical Quality Assurance Commission (1). These guidelines clearly state that the under-treatment of pain has negative impacts on the public and they provide physicians with specific advice for the appropriate use of opioids in the treatment of medical conditions involving substantial pain.

While crucial to the appropriate treatment of pain, prescription opioids can be also be misused resulting in harmful effects. Abuse of prescription opioid medications can impede appropriate and effective pain management by contributing to 1) stigmatization of patients on prescription opioids, 2) health care providers' fear of prescribing and dispensing opioids, and 3) under-medicating of pain patients (2).

Disentangling legitimate from illegitimate uses of these medications is complex. Recent national reports indicate an increase in prescription opioid-involved deaths. This paper presents recent data from diverse sources for the Seattle-King County area and Washington State. When examined together, these data highlight trends and potential consequences of local prescription opioid use.

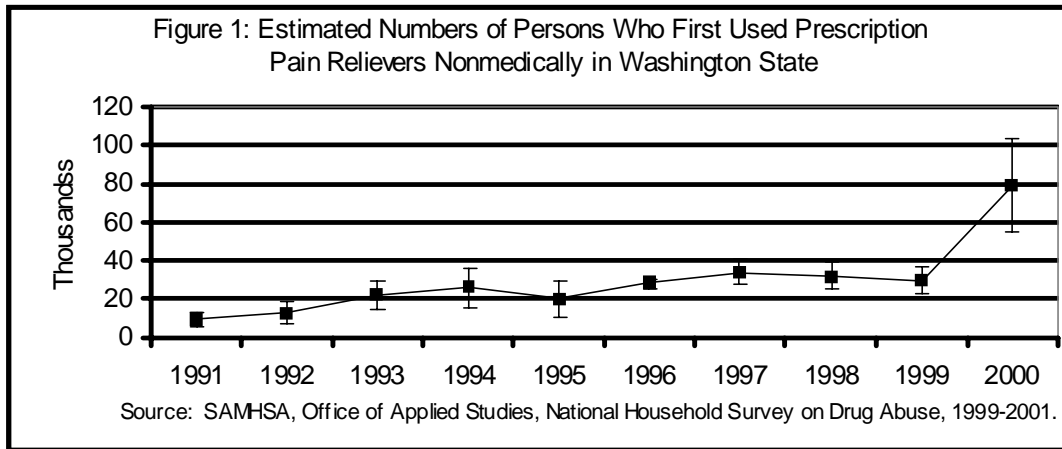
METHODS

We sought to determine whether national trends documenting increased prescription opioid use were reflected locally by examining eight data sources. Three data sources are available publicly: 1) Emergency Department data from the Drug Abuse Warning Network, 2) King County medical examiner data from annual reports and public data provided directly to the authors, and 3) Drug Enforcement Administration (DEA) data on prescription opioid medication sales to hospitals and pharmacies. Other sources, obtained by the authors, include Washington State data from the National Household Survey of Drug Abuse, Washington State Poison Center data, treatment data from the State Division of Alcohol and Substance Abuse, and State Medical Assistance Administration data on prescription medication use and drug addiction treatment. Opioid treatment program waiting list totals were provided by Public Health - Seattle & King County. Data were organized to allow interpretation and comparison of general trends across data sources. Statistical analyses were not conducted.

FINDINGS

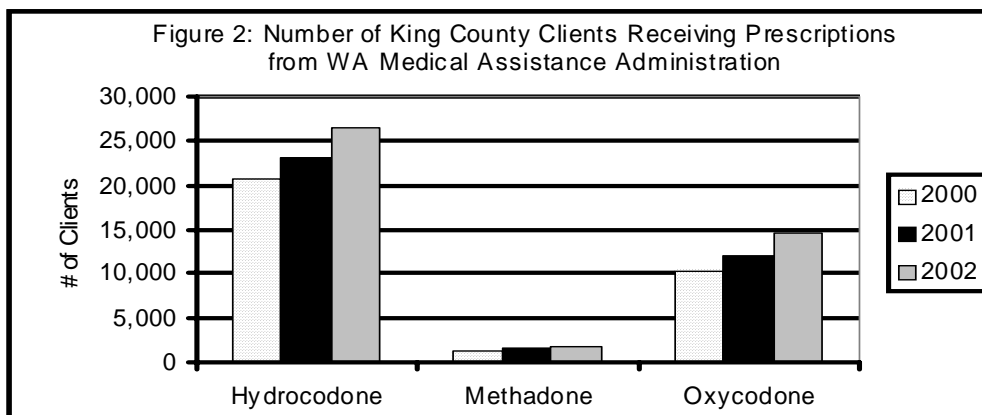
Trends in Opioid Medication Prescriptions and Use

Survey data indicate a significant increase in non-medical use of prescription pain medications, with an estimated 79,000 people in Washington State beginning such drug use in 2000 compared with an estimated 30,000 people in 1999 (3) (See Figure 1).



Sales of several prescription opioids have increased significantly; the overall volume of prescription opioids distributed to hospitals and pharmacies in the King County area increased 35% from 427,401 grams in 1997 to 576,487 grams in 2001 (4). Oxycodone (201%) and methadone (157%) prescriptions increased the most.

Opioid prescriptions have increased among clients of the Washington State Medical Assistance Administration (MAA). The number of clients receiving prescriptions for hydrocodone increased 28%, methadone 60% and oxycodone 43% from 2000 to 2002 among low income clients whose prescription costs are covered by the State's Medical Assistance Administration (5) (Figure 2). Hydrocodone was the most commonly prescribed, followed by oxycodone and methadone. These data do not include methadone administered for opioid treatment, and represent prescriptions for pain management only. Approximately 7% of King County's population was eligible to receive medical services from MAA in 2003. Prescription data for the general population were not available.

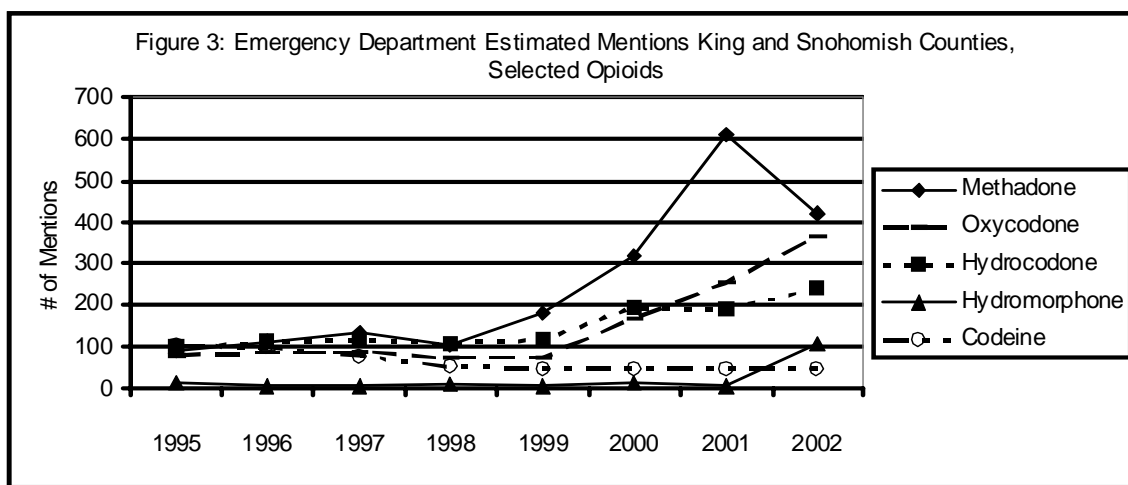


Trends in emergency department visits, deaths and poisonings

Medical complications of drug use are complex to interpret, as many episodes involve the use multiple drugs. The role of any single drug in a poly-drug-use-episode can be difficult to determine. Data may represent a person who has misused or abused a drug, but could also represent a person using the drug as prescribed who had used other drugs inappropriately, whether purposefully or not.

Emergency department reports for all prescription opioids increased 114% from 1997 to 2002 (6). Oxycodone and methadone appear to represent the majority of this increase. Data for 2002 indicate that methadone reports declined for the first time since 1998, while oxycodone reports

continued to increase. Approximately two-thirds of ED patients who reported using prescription opioids also reported using other drugs or medications making it difficult to determine the role of any single drug (Figure 3). [King and Snohomish counties combined]

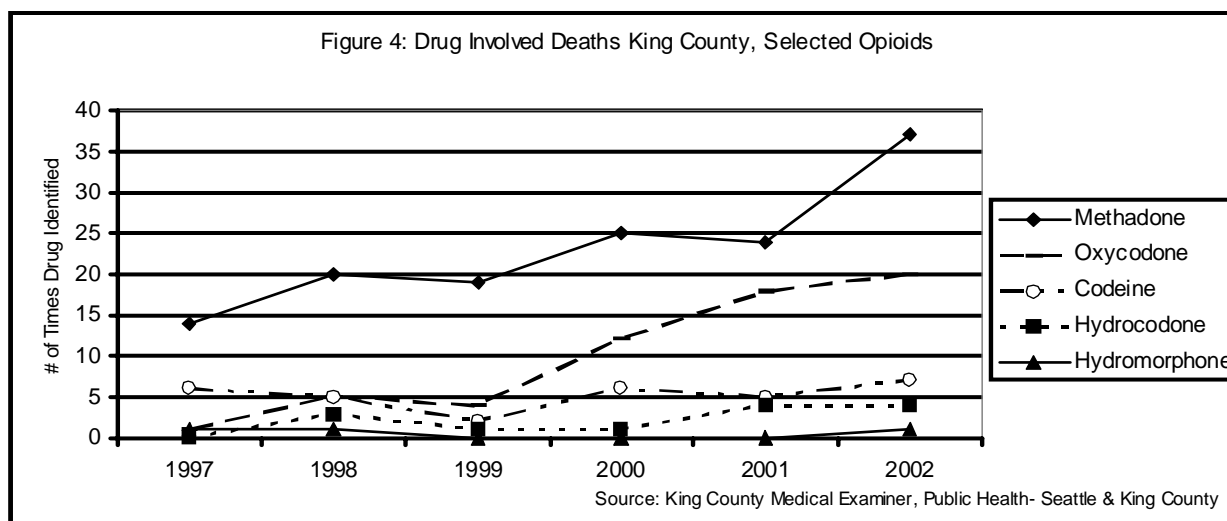


Calls to the poison center for prescription opioids increased 11% from 1997 to 2001.

Oxycodone and codeine were the drugs most commonly mentioned. Calls related to codeine decreased from 355 to 269 (-24%), oxycodone increased from 228 to 372 calls (63%) and methadone increased from 39 to 56 calls (44%) (8). [Washington State]

Deaths in which prescription opioids were identified increased 179% from 1997 to 2002,

from 28 to 78 (7) (Figure 4). The number of deaths in which oxycodone was identified increased from 1 to 20 while methadone increased from 14 to 37. Almost all (94%) deaths involving prescription opioids also involved other drugs [King County]

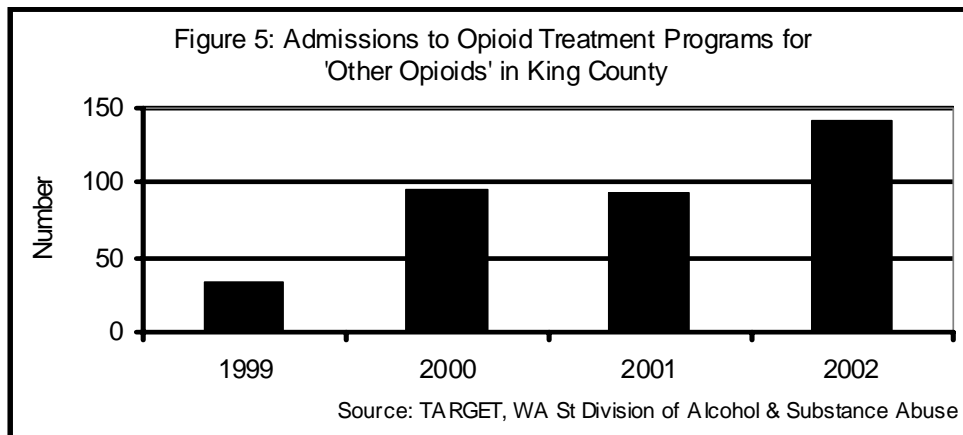


Trends in Opioid Addiction Treatment

Treatment for opioid addiction is often provided by specially licensed Opioid Treatment Programs (OTP). These programs combine addiction counseling and other services with regular doses of a synthetic opioid to maintain or gradually wean the addicted patient from heroin and/or prescription opioids.

Capacity at OTPs in King County increased from 1,900 to 3,020 treatment slots between 1999 and 2000; this capacity was maintained through 2002. A majority of these treatment slots are for private pay clients. In general, publicly funded treatment spaces are full, while privately funded spaces are available. Treatment admissions to OTPs in King County increased from 976 clients to 1,579 between 1999 and 2002 (9). Waiting lists more than tripled from 198 to 663 people from 1997 to 2002 (10).

Prescription opioid use among those entering OTP increased from 34 (3.5%) to 142 (9%) clients from 1999 to 2002 (Figure 5). The most common primary drug of abuse reported by clients in OTP was heroin, followed by alcohol, 'other opioids', and cocaine. [King County]



DISCUSSION

Prescription and survey data point to dramatic increases in prescription opioid use in recent years. The increases in prescription opioid reports in emergency departments and in drug-involved-deaths appear to be related to increases in prescriptions of these drugs. Methadone and oxycodone are the prescription opioids responsible for the largest proportion of these increases. Hydrocodone is a widely prescribed opioid, yet it has comparatively low numbers of reports in the ED. This may be due to the fact that most formulations combine hydrocodone with other medications such as acetaminophen. It is unknown which prescription opioid medications are responsible for the reported increases in prescription drug abuse and treatment admissions. All opioids can be physically dangerous. Buprenorphine, a recently approved medication for use in opioid treatment, will be important to monitor in the future.

Oxycodone

In December 1995, a new formulation of oxycodone became available that packaged high doses of the drug with a time release mechanism (11). Drug abusers quickly learned how to defeat the time-release mechanism, thereby subjecting themselves to high doses of short-acting oxycodone. In the following years the increases in deaths in which oxycodone was identified increased from 1 to 20, while ED reports tripled, far outpacing the increased rate of oxycodone prescribing.

Methadone

Methadone can be dangerous if misused because it lasts for a relatively long time in the body. The increase in the identification of methadone in deaths (164%) paralleled the increase in sales to hospitals and pharmacies of methadone (157%) from 1997 to 2001. While Opioid Treatment Programs are a potential source of methadone, the majority of methadone in OTP is consumed in front of staff, with a minority of clients receiving take-home doses. Take-home doses are sometimes not taken by clients and instead sold, traded, or given to others. To minimize such abuse, clients in OTP regularly undergo urinalysis to determine if they are taking their methadone and to determine if they are taking illegal drugs. Those prescribed methadone for pain outside the OTP system do not undergo regular drug screening.

Even with the recent increase in methadone use for addiction treatment, the overall change in the amount of methadone administered in Opioid Treatment Programs is small in comparison to the rate of increase of prescriptions and the number of people receiving prescriptions for pain. Many more people receive prescriptions for methadone for treatment of pain than are receiving treatment for opioid dependence in OTPs, both in King County and throughout Washington. Therefore, it appears that the increase in ED reports and mortalities is likely driven by methadone prescribed for pain.

Buprenorphine

In October of 2002, buprenorphine was approved in the United States for use in opioid addiction treatment (12). Physicians outside Opioid Treatment Programs can prescribe buprenorphine after receiving eight hours of training and registering with the federal government. It is hoped that buprenorphine will increase addiction treatment capacity in Washington State, especially in counties without opioid treatment programs. When used as directed, and not in combination with other drugs, it appears that the risk of overdose is lower with buprenorphine than methadone. However, overdose deaths are certainly possible with buprenorphine, and have been reported, when buprenorphine is combined with antipsychotic drugs (8), tranquilizers, and depressants such as diazepam (e.g. Valium) (14) and alcohol. Buprenorphine has not been reported in most data sources cited in this paper, but should be included in future monitoring of trends in opioid use and consequences.

SUMMARY

Maintaining the balance between providing adequate pain management and preventing misuse of prescription opioids is delicate work. The dramatic increase in prescription opioid use, legal and illegal, has had some negative effects that are measurable in terms of morbidity and mortality. Less easy to measure are the positive effects, the improvement in quality of life for the many Washingtonians suffering from pain. As pain management practice improves, and as the tools for treating opioid addiction expand, careful attention must be paid to minimize the types of negative consequences evident in recent years.

DATA NOTE- COMMON DRUG NAMES

Note that data used refer to generic names; common brand names are listed in Table 1 for reference.

Table 1 — Generic and Brand Names of Common Opioid Medications

<u>Generic Name</u>	<u>Common brand names</u>
Buprenorphine	Buprenex, Subutex, Suboxone
Hydrocodone	Vicodin, Vicoprofen
Hydromorphone	Dilaudid
Meperidine	Demerol
Methadone	Dolophine
Oxycodone	OxyContin, Percocet, Percodan
Propoxyphene	Darvon

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Note- 1)Data unavailable for most drugs for year 2000. 2) ARCOS data presented here are for the 3 digit zip codes areas of 980 and 981 which roughly correspond with King County boundaries. The population in these two zip code areas is 1,969,348 compared with 1,737,034 for King County (2000).
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