ORIGINAL ARTICLE

Primary care survey of the value and effectiveness of the Washington State Opioid Dosing Guideline

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ABSTRACT

Purpose: *To evaluate the acceptability and usefulness of the Washington State Opioid Dosing Guideline (Guideline) developed for primary care providers for the treatment of chronic noncancer pain. The Guideline contains innovative tools, such as an online dosing calculator, and recommendations to assist providers, including a "yellow flag" threshold of 120 mg/d morphine equivalent dose (MED) at which specialty consultation is recommended.*

Methods: *Using a convenience sample, an anonymous web-based survey was conducted among primary care providers in Washington (WA) state. Physician/administrative leaders in four regional and two statewide healthcare systems and associations distributed the electronic links to primary care providers in their organizations.*

Results: *Six hundred fifty-five (n) providers completed the survey representing 20 percent of the total number contacted. The majority (89 percent) of providers in this sample treat chronic pain patients, and more than half (54 percent) have frequent concerns about addiction, tolerance, and diversion. Forty-five percent had read and applied the Guideline in their practice. The majority of these providers found the Guideline to be helpful and 86 percent find the threshold of 120 mg/d MED dose reasonable or too high. Some key best practices such as tracking pain and function using structured instruments and use of urine drug testing are infrequently used.*

Conclusions: *Results from this survey suggest that the recommendations and tools given in the Guideline, including the threshold of 120 mg/day MED dose, are acceptable and useful to a large majority of primary care providers in WA state. Substantial additions to the Guideline based on needs identified in this survey were added in June 2010 and wider dissemination is planned.*

INTRODUCTION

In the mid-1990s, concern for undertreatment of chronic noncancer pain (CNCP) led to the revision of regulations governing the use of opioids.[1,2] In Washington (WA) state and elsewhere, new rules that eased regulations were adopted (1999 in WA) by the boards governing licensed professionals with authority to prescribe these drugs.[3,4] Many of the new, permissive regulations developed in the late 1990s referred to "model guideline" language such as "No disciplinary action will be taken against a practitioner based solely on the quantity and/or frequency of opioids prescribed."[3] Over the next decade, in WA and across the United States, observations of increased morbidity and mortality associated with unintentional prescription opioid poisoning emerged.[5-8] These deaths occurred concomitant with the use of dramatically increasing opioid doses, especially of longer acting Schedule II opioids.[6] In WA workers' compensation, the average daily dose of these longer acting opioids increased more than 50 percent in just a few years, from 80 mg/d morphine equivalent dose (MED) in 1998 to more than 140 mg/d MED by 2002.[6]

The WA Agency Medical Director's Group (AMDG), in collaboration with actively practicing physicians and academicians who specialize in pain management, convened five 3-hour meetings in 2006 to develop a pilot educational guideline to address the emerging critical public health problem. A combination of the best available evidence and a consensus of expert opinion, the *Interagency guideline on opioid dosing for chronic non-cancer pain: An educational pilot to improve care and safety with opioid treatment* (Guideline) was published online in April 2007.[9] The Guideline consists of two parts: Part 1 addresses how to safely initiate chronic opioid therapy, how to assess and monitor treatment, and how to taper or discontinue opioids when indicated. The key recommendation of Part 1 is that providers seek consultation before increasing opioid doses beyond 120 mg/d MED if clinically meaningful improvements in pain and function have not been achieved. Part 2 provides information on managing treatment at doses above 120 mg/d MED. The Guideline includes other innovations, including a web-based opioid dosing calculator that allows a prescribing provider to calculate the total daily MED from all opioids. Substantial dissemination efforts, following online publication, included dozens of talks to provider groups, availability of 2 hours of free online continuing medical education, and listing on the National Guideline Clearinghouse.[10] In addition, the Guideline was provided as a link on the Washington State Medical Association Web site as a best practice, and its recommendations were incorporated in a large integrated health system's electronic health record system.

In early 2009, the AMDG conducted a survey among primary care providers in WA to assess the acceptability and usefulness of the recommendations and tools given in the Guideline and to identify ways to improve it. This report describes the results from the interim evaluation of the Guideline based on the survey of primary care providers.

METHODS

Study design

We conducted an anonymous, cross-sectional, and web-based survey in January and February 2009 using a convenience sample of medical providers in WA state. This analysis was reviewed by the Washington State Institutional Review Board and determined to not involve human subjects. An institutional review board exemption was provided.

Survey development

A 21-item survey was designed by the AMDG in collaboration with investigators at the University of Washington. The survey was pilot tested among 14 members of the AMDG including physicians and pharmacy staff. Questions addressed demographic and practice characteristics, chronic pain patient volume, opioid prescribing practices and concerns, experience with the Guideline including practitioner's sense of the impact of the Guideline on health outcomes, and ideas to improve the Guideline.

The survey was organized in three sections. Section 1 collected information from all providers on practice characteristics, use of best practices, and experience with opioid prescribing for CNCP. Section 2 asked about providers' familiarity with and use of the Guideline. Providers not familiar with the Guideline were directed to Section 3, which addressed questions about demographics (ie, training and practice location), whereas providers familiar with the Guideline were asked a series of questions about tools in the Guideline, acceptability of the 120 mg/d MED "yellow flag" dose, and use, accessibility, and access to pain specialist consultations.

Survey participants

The Guideline was developed and targeted to primary care providers. To conduct a survey among primary care providers in WA, electronic links to an online survey page were distributed via e-mail to six healthcare organizations. The organizations surveyed included a statewide association of family physicians, a large, regional health maintenance organization, two physician-owned preferred provider organizations, and two occupational health regional centers. We limited analysis to providers self-identifying as primary care. However, in the analysis, we also included occupational medicine and rehabilitation medicine providers because these providers are frequently first-line providers for patients with CNCP. Providers who selected the "other" category were included when they identified themselves as practicing geriatrics, pediatrics, or women's health.

Survey distribution

A physician or administrative leader in each healthcare organization was contacted and asked to facilitate the administration of the survey. All agreed to partici-

pate and each was sent an introductory message describing the purpose of the research with a link to the web-based survey to be e-mailed to providers within their respective organizations. The survey was available to providers for roughly 60 days. Up to three follow-up web-based teleconferences (webinars) were conducted with each leader to review the response numbers and early results of the survey within their organization. Reminder e-mail messages were sent to all providers by the organizational leader ~2 and 4 weeks after the initial e-mail to improve the response rate.

Statistical analysis

We used SPSS version 16.0 to complete descriptive statistics, cross-tabs, and χ^2 tests to identify differences across the six practice groups. We used zip code data to define urban and rural practice locations in WA state using Rural Urban Commuting Area (RUCA) codes (version 2.0).[11] The definition of "rural" included large rural cities or towns and small rural towns.

RESULTS

Six hundred fifty-five (19.5 percent) providers included in the e-mail listserve records of the six healthcare organizations responded to the evaluation survey. We had no practical method to determine the accuracy or completeness of the e-mail lists. Thus, the 19.5 percent figure should not be viewed as an accurate indication of the survey's response rate. After limiting the analysis to primary care providers, 553 responses were included in the analysis.

The demographic and practice characteristics of providers are given in Table 1. The substantial majority indicated that they treat patients with CNCP (89 percent) and practice in urban areas (86 percent). Fifty-eight percent estimated that their individual panel includes between 10 and 50 patients with CNCP and 22 percent estimated more than 50 patients with CNCP. Ninety-five percent identified their principle area of practice as primary care and 93 percent of respondents were physicians. Two providers reported having certification in pain medicine.

The estimated use of common best practices when prescribing opioid treatment for CNCP is reported in Table 2. The majority of providers reported commonly employing (respondents answered "often" or "always or almost always") opioid treatment agreements (69 percent), reviewing patients' histories for substance abuse (96 percent), and assessing history for the past

Table 1. Provider and practice characteristics

	N (percent)
Sex	
Male	295 (60)
Female	197 (40)
Provider type	
MD	449 (88)
DO	25 (5)
ARNP	14 (3)
PA	21 (4)
Location	
Urban	414 (86)
Rural	65 (14)
Treat patients with CNCP	
Yes	488 (89)
No	63 (11)
Average number of patients with CNCP treated weekly	
1-4	224 (47)
5-9	152 (32)
10-14	59 (12)
>15	39 (8)
Number of active patients with CNCP	
<10	90 (19)
10-25	160 (34)
26-50	114 (24)
51-100	63 (13)
>100	42 (9)
Percentage of patients with CNCP prescribed opioids, percent	
0 (have DEA no.)	10 (2)
1-24	170 (36)
25-49	115 (24)
50-74	125 (26)
75-100	53 (11)

Abbreviations: MD, Medical Doctor; DO, Doctor of Osteopathy; ARNP, Advanced Registered Nurse Practitioner; PA, Physician Assistant; DEA, Drug Enforcement Agency.

Table 2. Use of best practices*		
	Never or almost never/sometimes	Often/always or almost always
When prescribing opioid medications for your patients with chronic noncancer pain, how often do you employ the following practices?		
Prepare formal opioid agreement	144 (31)	316 (69)
Review the past or the current history of the patient with any substance abuse (alcohol, tobacco, and illicit drugs)	18 (4)	443 (96)
Use random drug screening	279 (62)	174 (38)
Use patient educational tools (eg, handouts) regarding chronic noncancer pain	328 (72)	129 (28)
Track pain using an assessment tool such as a visual analog scale	322 (71)	135 (30)
Track physical function using a validated instrument such as the SF-36, QuickDash, and Oswestry Disability Index	407 (89)	53 (12)
Conduct an assessment of the past or the current history of mental health conditions	56 (12)	405 (88)
*Values are given as N (percent).		

or the current mental health conditions (88 percent). Much less commonly used (respondents answered "never or almost never" or "sometimes") were random urine drug screening (38 percent), patient education tools such as handouts for CNCP (28 percent), and tracking of pain (30 percent) and function (12 percent) using validated instruments.

The responses from providers regarding their experience when treating CNCP with opioids are given in Table 3. Most providers (54 percent) reported having frequent concerns about psychological dependence, addiction, or diversion when prescribing opioids, 44 percent had occasional concerns, and 2 percent responded that they were not concerned about dependence, addiction, or diversion. Providers reported that they manage most of their patients (70 percent) on opioid doses below 60 mg/d MED; 7 percent of the patients with CNCP were managed on doses of 120 mg/d MED or more.

The exposure, acceptability, and usefulness of the Guideline and the tools within it are reported in Table 4. Slightly less than half (45 percent) of providers had read and applied the Guideline in their practice, 38 percent were not familiar with the Guideline, and 17 percent had read but not applied the Guideline. Among those who had read and not applied the Guideline in their practice, qualitative comments cited difficult access to pain specialists as hindering their ability to follow the recommendations. With regard to the 120 mg/d MED threshold dose, 75 percent reported this recommendation was reasonable and 11 percent

Table 3. Experience using opioids when treating CNCP	
	N (percent)
When prescribing opioids for chronic noncancer pain, please check which statement most accurately reflects your experience	
I treat most of my patients with chronic pain comfortably without concerns about development of psychological dependence, addiction, or diversion.	8 (2)
I am usually comfortable treating patients with chronic pain, but I do have occasional concerns about development of psychological dependence, addiction, or diversion.	199 (44)
I regularly treat patients with chronic pain, but have frequent concerns about development of psychological dependence, addiction, or diversion.	243 (54)
	Average percent
For the patients you are managing with opioids for chronic noncancer pain, what percent of your patients are managed on	
<60 mg morphine equivalents per day	70
Between 60 and 120 mg morphine equivalents per day	23
≥120 mg morphine equivalents per day	7

Table 4. Familiarity with the guideline and acceptability of elements	
	N (percent)
Familiarity with the Guideline	
Not familiar with the Guideline	167 (38)
Have read and applied in practice	200 (45)
Have read, but not applied in practice	74 (17)
Which of the following regarding this "yellow flag" threshold dose is true of your experience with the Guideline. The threshold dose recommendation is	
Too high	31 (11)
Reasonable	207 (75)
Too low	37 (14)
Please check which statement is true of your experience with the Guideline. For managing my patients, the threshold dose recommendation is	
Very useful	106 (39)
Somewhat useful	141 (52)
Not useful at all	27 (10)

Table 5. Experience in accessing pain management	
	N (percent)
In the last 6 months, have you tried to obtain a pain management consultation from a pain management expert?	
Yes	239 (86)
No	40 (14)
If yes, were you successful?	
Yes	106 (45)
Yes, I succeed but it is a challenge	79 (33)
No, I am not usually successful	52 (22)
If you were not successful in obtaining a pain management consultation, it was because (check all that apply)	
Patient had no insurance	58 (62)
Patient had public insurance	61 (65)
Practice in rural WA and do not have access	24 (26)
Practice in an urban area and do not have access	19 (20)

felt the threshold dose was too high. Only 14 percent considered the dose as too low. Ninety percent reported that the threshold of 120 mg/d MED dose to be "somewhat" or "very useful" for managing their patients.

The experience with accessing pain management specialists is reported in Table 5. Among this subset of providers, who were familiar with the Guideline, 86 percent reported that they try to obtain a pain management consultation, with 78 percent reporting that they were successful. Among those reporting success, however, 43 percent reported that obtaining the consultation was challenging.

Three questions were asked about the potential impact of the Guideline on patient management. Most providers (65 percent) reported that the Guideline "has had no impact" on the frequency of opioid prescribing, 30 percent reported "less frequently" prescribing, and 5 percent reported more. The survey did not discriminate as to whether "less frequently" meant fewer prescriptions, lower doses, or fewer patients treated. Thirty-five percent reported that the Guideline had no impact on how they felt that they could manage their patients, although 40 percent reported managing more effectively and 4 percent less effectively. When asked about the impact of the Guideline on patients' health outcomes, 58 percent felt it had not influenced health outcomes, although 40 percent felt outcomes had improved.

The results from questions did not differ statistically across the six groups surveyed or between physicians practicing in urban versus rural settings.

DISCUSSION

This interim evaluation of the Guideline demonstrates that providers who are familiar with and have applied the Guideline in their practice find it to be acceptable and useful, although close to half of those surveyed were unfamiliar with it or had not used the Guideline in practice. With regard to the threshold of 120 mg/d MED dose, the vast majority found this level to be reasonable or too high; a relatively small percentage of patients (7 percent) were treated above this dose level. A decade after changes to state regulations made prescribing of opioids for CNCP more permissive, more than half (54 percent) of the respondent prescribers still reported frequent concerns about dependence, addiction, or diversion. Despite this level of concern, the infrequent use of best practice tools that could help to reduce the risk of adverse effects from opioid treatment, such as urine drug screening and tracking pain and function, was reported.

In primary care, the treatment of chronic disease requires adequate time and guidance to manage complex patients.[12] A minority of very challenging patients may give primary care providers pause in using opioids, in general for CNCP. An unpublished study of the University of Washington medical students who spent time in community-based practicum settings documented wide concern among medical students regarding caring for patients with CNCP on opioids. This concern per se was given as a possible reason to avoid going into postgraduate training in primary care.[13] In addition to this problem is the challenge of the paucity of clear case definitions for presence/absence of addiction, dependence, and tolerance.[14]

The Guideline was updated in June 2010.[9] The AMDG and collaborating clinical advisors used information from this survey as well as more recent scientific evidence to inform the substantial update. Since the original Guideline publication, new evidence has emerged of a strong association between opioid dose levels and risk of morbidity and mortality, supporting the threshold of 120 mg/d MED.[15,16] Recently, the Centers for Disease Control and Prevention have also recommended the same threshold of dose for consultation in patients whose pain and function are not improved.[17]

The reason for our finding of infrequent use of some critical best practice tools may relate to structured instruments being perceived to be overly lengthy and perhaps burdensome in practice. The tools in the updated Guideline are the most highly validated and brief instruments that are publicly available. In addition, as intimated in a recent editorial from the White House Office of National Drug Control Policy, appropriate "payment" for best practices would be important in improving opioid prescribing practice in the United States[18]; the updated Guideline contains a Quick Reference Card with current payment levels for providers specific to provision of best practices when provided under WA state funded insurance programs.

Our survey also identified the apparent capacity problem related to accessing pain specialty consultations. We are currently exploring the innovative use of electronic and telephonic means of consultation and on the development of more advanced educational opportunities to allow primary care providers to become pain proficient mentors for their colleagues in local practice settings.

Over the course of five meetings between July 2009 and May 2010, the AMDG and collaborating physicians reconvened to update the Guideline. Revisions to the Guideline were informed by evaluation findings and newly published evidence. The low reported use of key best practices by providers led to the addition of substantially improved practical resources including brief tools for tracking pain and function, screening for past and current substance abuse, for alcohol abuse, and for depression, and clear guidance on the complex topic of using random urine drug screening. Additionally, on the basis of the reported acceptance and utility of the threshold of 120 mg/day MED as a "yellow flag" indicator, the committee agreed to end the pilot phase of the Guideline. In September 2010, we received Centers for Disease Control and Prevention grant funding to complete a more formal evaluation of the AMDG dosing guideline in WA state. Findings from this original survey will be used for some baseline comparisons.

Limitations

This survey has several important limitations. Although the number of respondents far surpassed the original target of 200 providers, the low estimated response rate raises questions about the representativeness of the data reported here. We had no practical method of assessing potential nonresponse bias. However, responses were consistent across the groups surveyed on many of the primary questions, including acceptability of the 120 mg/d MED "yellow flag" dose, discomfort with prescribing opioids due to fear of addiction, dependence, or tolerance, and the proportion of patients typically given lower versus higher doses. In addition, although the questions in our survey have face validity, they were not subjected to formal validation. Despite these limitations, our findings of concerns about tolerance, addiction, and diversion, and of infrequent use of some best practices are consistent with other surveys of primary care providers.[19-23]

CONCLUSIONS

Primary care providers need substantial support and tools, and perhaps incentives, to more comfortably and effectively treat patients with CNCP with opioids. The Washington State Opioid Dosing Guideline provides valuable and useful information and practical tools for primary care providers. The dissemination of the Guideline, at 45 percent, is insufficient; however, enhanced efforts at broader dissemination are planned, and increasing media attention on the critical public

health issues will hopefully contribute to improve the best practice care for this very complex clinical problem.

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