Nonmedical Use of Opioid Analgesics Obtained Directly From Physicians: Prevalence and Correlates

In light of significant risks associated with opioid use, physicians are encouraged to monitor patients to whom they prescribe them. Guidelines have endorsed physician-initiated treatment agreements and urine drug testing, despite equivocal efficacy. Nonmedical use of opioids has increased in conjunction with opioid prescribing and is associated with addiction, overdose, and death. To understand the impact physicians can have on nonmedical use of opioids, studies that examine the sources of these opioids are needed. This study investigates the source of opioids used nonmedically, the features of patients who obtain these opioids from physicians, and the extent to which nonphysician sources are used.

Methods. Data Source and Study Population. We used data from the National Survey on Drug Use and Health, an annual survey of the civilian, noninstitutionalized population. We restricted our analysis to those 18 years and older and combined survey data from 2006 through 2008.

Study Variables. Respondents who indicated that they had "used [an opioid analgesic] that was not prescribed for you or that you took only for the experience or feeling it caused" in the past month were asked for the source(s) of the opioids. We divided sources into 2 groups: (1) "physician," which included the responses "single physician" or "2 or more physicians," and (2) "nonphysician," which included the responses "free from friends or family," "purchase from friends or family," "purchase from a dealer," "purchase from the Internet," "prescription forgery," "theft from friends or family," "theft from physician offices," and "theft from a pharmacy.

Respondents were classified into (1) having a physician source, including those who indicated a physician source with or without also indicating a nonphysician source and (2) having only nonphysician sources.

Age, sex, race/ethnicity, income, education, employment, and marital status were included as covariates. Data on lifetime and current (past year) substance use and dependence were obtained via self-report. Three binary substance use disorder variables were created: past-year alcohol abuse or dependence; past-year opioid analgesic abuse or dependence; and past-year other substance (stimulants, hallucinogens, heroin, inhalants, marijuana, and/or sedatives) abuse or dependence. The Kessler 6 inventory was used to measure psychological distress. Overall health was based on the question, "Would you say your health in general is excellent, very good, good, fair or poor?"

Statistical Analysis. We evaluated multivariable associations between independent variables and the binary dependent variable (having a physician source of opioid analgesics) using logistic regression. We then restricted the sample to those respondents with a physician source of opioids and performed frequencies of nonphysician sources. We used SAS version 9.1 (SAS Institute Inc, Cary, North Carolina) and SUDAAN version 9.0.1 (Research Triangle Institute, Research Triangle Park, North Carolina) to account for the sampling methods and nonresponse, using sample weights that normalized data to annual census distributions.

Results. From 166 453 respondents, 3238 were 18 years or older, reported nonmedical use of opioids, and indicated an opioid source. Of the 3238 respondents, 855 (30.7%, percentage adjusted for sampling strategy) reported having a physician source of opioids.
On multivariable analysis (Table), age 50 years and older (adjusted odds ratio [AOR], 2.5; 95% confidence interval [CI], 1.4-4.5) and past-year opioid analgesic abuse and/or dependence (AOR 2.0; 95% CI, 1.5-2.7) were associated with having a physician source of opioids. Past-year abuse and/or dependence on other substances was associated with having only nonphysician sources (AOR, 0.6; 95% CI, 0.4-0.9).

Among those with a physician source, 465 of 855 (64.0%, percentage adjusted for sampling strategy) had no nonphysician source (eFigure; http://www.archinternmed.com), and of the full study sample, 20% reported physician sources only. Of the respondents with a physician source, 36% also had at least 1 source involving friends or family.

Comment. In this large community sample, we found that 31% of respondents with nonmedical use of opioids reported obtaining these medications directly from a physician, and 20% reported obtaining opioid analgesics exclusively from physicians. This suggests that public health efforts to mitigate nonmedical opioid use that occurs outside the sphere of the physician-patient relationship (eg, medication sharing, dealer purchase, theft) may result in substantial benefits. Furthermore, physicians need to be cognizant of the risks not only to patients to whom they prescribe opioids, but also to those with whom the prescription recipient lives or associates. While younger individuals are more likely to nonmedically use opioids,7,8 our findings reveal that older age is a risk factor for obtaining nonmedically used opioids from a physician. This is partly because older patients visit physicians more frequently9 and are more often seen for pain issues.10 Our data suggest a continued need for physician and public health efforts to curb the increase in nonmedical use of opioids.

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sis. Study concept and design: Becker and Fiellin. Acquisition of data: Becker. Analysis and interpretation of data: Becker, Tobin, and Fiellin. Drafting of the manuscript: Becker and Fiellin. Critical revision of the manuscript for important intellectual content: Becker, Tobin, and Fiellin. Statistical analysis: Becker. Administrative, technical, and material support: Becker. Study supervision: Fiellin.

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HEALTH CARE REFORM

Effect of Computerized Physician Order Entry on Radiologic Examination Order Indication Quality

Order information is critical to perform the appropriate examination and interpretation. Of 58 paper radiograph requisitions, 1 study found that 91% lacked appropriate indications, 10% were not in the medical records, 20% were without indications, 34% had inadequate/incomplete information, and 27% contained different information than in the medical records. Another study of 150 inpatient paper orders for chest radiographs found that 29% were missing current indications and 31% were missing appropriate indications. The large volume of diagnostic radiologic examinations performed annually (approximately 599 million in 2006 for the United States), the potential cost of incomplete and repeated examinations and the potential for decreased quality of care motivated an investigation of the improvements afforded by computerized physician order entry (CPOE).

Methods. Until spring 2008, our inpatient practice was paper based and clerks entered radiologic examination orders. After implementation of CPOE, indications were required in 2 free-text fields (signs and symptoms and presumed diagnoses) with review and approval by the attending physician.

Order indications were assessed 2 months prior to, 1 month immediately after, and 3 to 4 months after implementation of CPOE. We assigned medical abbreviations a low score because of their nonuniqueness and the ease of making a typographical error. Other classifications included the following: incomplete (blank fields or terms such as routine or doctor’s orders without additional information); inadequate (either field contained prior surgery status, line or intubation checks, and the other contained terms such as per protocol or routine); nonapplicable (indication not relevant to the anatomic site, eg, radiograph abdomen with “change in mental status”); reasonable (sufficient information); or, excellent (relevant or valid reason).

Data were retrospectively collected from all inpatients, 18 years or older, with radiologic examination orders during January, May, or August 2008. This study was approved by The Cleveland Clinic institutional review board and granted a waiver of informed consent.

Results. The frequency of “reasonable” or “excellent” indications was calculated. The time before or after CPOE implementation, hospital unit, specialty of the ordering health care provider, and imaging modality were evaluated along with 2-way interactions with order month. Clinical significance was considered with the doubling of the percentage of complete and meaningful indications; P ≤ .05 was considered statistically significant. Logistic regression analysis assessed the outcome variable as a function of CPOE intervention. Test times were the predictor variable. Generalized estimating equations were used to account for multiple studies per patient.

A total of 37 494 imaging orders from 6332 inpatients were investigated: 15 081 from January, 8734 from May, and 13 679 from August 2008 (Table). Not all units had CPOE implemented by May 1; hence, the number of orders is smaller in May. A reduction in hospital census likely contributed to the 8% decrease in the number of inpatient radiologic examination orders for August compared with January. All units had CPOE implemented for at least 3 full months as of August 1. A statistically significant increase from 6.4% (965 of 15 081 orders) to 21.6% (2955 of 13 679 orders) in “reasonable” and “excellent” quality indications between January and August resulted from CPOE implementation (overall,