

# Prescription Opioid Use and Misuse Among Older Adult Rhode Island Hospital Emergency Department Patients

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## ABSTRACT

Because of the multitude of financial, health, and social problems associated with prescription opioid misuse, effective methods of identifying older adults who are misusing these medications are needed. We conducted a pilot investigation to determine the prevalence of previous and current prescription opioid use among older adults visiting the Rhode Island Hospital Emergency Department and their need for opioid misuse interventions. Among 88 randomly selected older adults ( $\geq 65$  years of age) presenting to the ED with sub-critical illness or injury, 19% (95% CI: 11–27%) were current opioid users and 6% (95% CI: 4–8%) would require an intervention for prescription opioid misuse. We identified problems of improper acquisition, diversion, provider refusal to prescribe opioids, hoarding, and inappropriate use of opioids among this population. Emergency medicine clinicians should query their older adult patients about prescription opioid misuse and associated problematic behaviors.

**KEYWORDS:** prescription opioids, prescription drug misuse, older adults, emergency department, substance abuse, screening

## INTRODUCTION

Prescription opioid misuse among older adults is a growing concern in the United States (US).<sup>1–4</sup> At least one in four older US adults uses psychoactive medications with abuse potential, many of which are opioids.<sup>6</sup> It is estimated that the number of older adults with substance abuse problems will double to over five million by 2020.<sup>16,17</sup> The problem of prescription opioid misuse among older US adults can be attributed in part to: (1) an aging cohort of “baby boomers,” who as a group have used more psychoactive drugs than previous generations; (2) a changing pattern of abused substances over time among older adults (i.e., increase in drug abuse, less alcohol use); and (3) the increasing availability of prescription opioids for the treatment of pain.<sup>3,7,8</sup> In fact, hydrocodone is now the most commonly prescribed medication in the US, more than any blood pressure, cholesterol, or diabetes medication.<sup>5</sup> Because of the multitude of financial, health, and social problems associated with prescription opioid misuse, it is vital to develop effective methods of identifying older adults who are misusing these medications.

The emergency department (ED) is a prime environment to examine the growing problem of prescription opioid misuse among older adults. In 2009, an estimated 1.1 million US ED visits were directly related to prescription drug misuse, an increase of 98% from 2004.<sup>14,15</sup> Given the projected increase in the US older adult population in the coming years, it is likely that ED visits by older adults with prescription opioid misuse will also increase. Emergency medicine clinicians must be prepared to provide the appropriate care for this population in need.

The problem of prescription drug abuse has become increasingly apparent in Rhode Island in recent years. Rhode Island is in the top quintile of states for misuse of prescription drugs, specifically pain relievers and sedatives.<sup>21</sup> In 2010, Rhode Island had the 13th highest drug overdose mortality rate in the country, predominately from prescription drugs.<sup>22</sup> However, the prevalence of prescription opioid use among older adults in Rhode Island is not well known. To address this knowledge deficit, we conducted a pilot investigation to determine the prevalence of previous and current prescription opioid use among older adults visiting the Rhode Island Hospital ED and the need for opioid misuse interventions among this population using screening methods adapted from other clinical settings.

## METHODS

### Study Design, Setting, and Selection of Participants

This pilot study was conducted during June–July 2011 at the Rhode Island Hospital ED, which is a Level 1 trauma center with an annual census of over 100,000 adult visits per year. Trained undergraduate research assistants (RAs) collected data for the study during randomly selected eight-hour shifts scheduled between 7 am to midnight, 7 days/week over a four-week period. RAs conducted an initial eligibility review of ED patients using the ED electronic medical records (EMRs), and then conducted an in-person assessment among patients who appeared to meet study criteria. EMRs of ED patients were selected for review through a random selection process. ED room numbers were compiled in a randomized list generated before each 8-hour shift. RAs reviewed the EMRs of patients in the randomly selected rooms in the order of the list. Patients whose EMRs indicated that they were  $\geq 65$  years of age, had an Emergency Severity Index score of 3 to 5 (i.e., were not critically-ill or

injured), spoke English, had no contact precautions, and had no indications of dementia or cognitive disabilities (e.g., delirium) were approached for study participation. Through a brief interview, the RAs identified and excluded those who were cognitively impaired or indicated they were taking prescription opioids for cancer-related pain. Patients were considered cognitively impaired if they could not identify their name, their present location, or the approximate time of the day. The study was approved by the hospital's institutional review board.

### Methods, Measurements and Data Analysis

All study participants completed questionnaires created by the study authors about their demographic and health care characteristics and their prescription opioid use behaviors on SurveyMonkey Pro™ using a tablet computer. RAs instructed study participants on use of the tablet computer. Participants who reported current daily opioid use were asked to complete the Prescription Drug Use Questionnaire, patient version (PDUQp). The PDUQp is a 31-item, 20-minute questionnaire with good internal reliability (Cronbach's  $\alpha=0.81$ ). It was designed to detect prescription drug misuse among 18–65-year-old chronic pain patients in other clinical settings.<sup>18</sup> Its domains assess pain, opioid use patterns, social/family factors, and substance abuse history. Affirmative responses to questions on the PDUQp receive a score of 1 (except for item 6, which is reverse scored), and the total score is a sum of all relevant items on the questionnaire. Item 1 (“Do you have more than one painful condition?”) is not included in the total score. The total score for the PDUQp ranges between 0 and 30. A score of  $\geq 5$  has a sensitivity of 100% and a score of  $\geq 15$  has 100% specificity for identifying problematic opioid use. The PDUQp authors recommend using a cutoff score of  $\geq 10$  to detect both opioid misuse and abuse, as this score has ideal sensitivity and specificity. Participant responses to the questionnaire on demographic and health care characteristics, self-reported pain, and prescription opioid use behaviors for those with previous or current daily opioid use were stratified and summarized using medians and interquartile ranges (IQRs) or proportions and corresponding 95% confidence intervals (CIs), as appropriate. PDUQp responses were tabulated and scored as recommended.

## RESULTS

### Study enrollment, participant descriptions and prescription opioid prevalence and misuse

One hundred older adult Rhode Island Hospital ED patients were approached for participation. Two patients were excluded for inability to read English. Three were excluded because they were receiving prescription opioids for metastatic cancer, and 7 refused to participate. Of the 88 participants, 28 (32%; 95% CI: 22–42%) reported never having taken a prescription opioid; 43 (49%; 95% CI: 39–59%)

reported prior, but not current, prescription opioid use; 17 (19%; 95% CI: 11–27%) reported current daily prescription opioid use.

The demographic and health care characteristics, self-reported pain, and prescription opioid use history of those with prior or current prescription opioid use are shown in Table 1. As compared to previous opioid users, most of those currently using prescription opioids reported problems with pain and almost half had been referred to a pain management specialist. Improper acquisition and diversion of prescription opioids, provider refusal to prescribe opioids, prescription opioid hoarding, and inappropriate use were reported with varying frequency. For all of these self-reported items, problematic opioid use behaviors were higher among current prescription opioid users than previous users. No participants reported ever having stolen prescription opioids, having had theirs stolen, having been treated for an opioid overdose, or having taken methadone or buprenorphine.

### PDUQp responses by current opioid users

Composite PDUQp scores for the 17 current opioid users are displayed by age in Figure 1. PDUQp scores ranged from 3 to 12. The median score was 8 (IQR 5–10). Five of the 17 current users (6% of the 88 participants screened for opioid use; 95% CI: 4–8%) had PDUQp scores  $\geq 10$ , which is the recommended cutoff for further intervention.

## DISCUSSION

Age-related physiological changes, co-existing chronic health conditions, and social issues, such as isolation, make older adults a unique at-risk population with regards to opioid use and misuse. In addition to the development of addiction disorders, older drug misusers may be at heightened risk for adverse events often associated with opioid use, such as delirium, falls, fractures, pneumonia, and increased all-cause mortality.<sup>9–13</sup> Many of these conditions are first evaluated in the emergency medicine setting, which makes understanding the extent of prescription opioid use and misuse among older adult ED patients highly relevant.

Of particular significance to our community, in our sample of 88 older adult Rhode Island Hospital ED patients, we observed that over two-thirds have current or prior experience with prescription opioid use and nearly one in five are currently using opioids. Of even greater concern, 5 out of the 17 current opioid users surveyed met criteria for opioid misuse and might benefit from an intervention. This observation coincides with a disturbing trend in the US of escalating use of prescription opioids, sales of which increased 149% from 1997–2007.<sup>5</sup> As such, along with the growing population of older adults, EDs can expect to be taking care of more older adults with prescription opioid problems. Participant self-reported prescription opioid use behaviors also highlighted several noteworthy behaviors indicative of misuse. These behaviors suggest that even if patients do not meet

PDUQp author-recommended criteria for an intervention, a significant number of older adult ED patients currently using prescription opioids require instruction on proper medication use and screening for misuse behaviors.

## LIMITATIONS

This study had several limitations. All participants were English-speaking and white, which limits its external validity to older adult ED patients with other demographic characteristics. Because cognitively impaired patients were not included, external validity to this population is unknown. This exclusion is particularly relevant since some older adult ED patients with cognitive impairment are at greater risk of prescription opioid-related side effects, or their impairment may be related to opioid use or misuse. Future studies can investigate opioid misuse among this select group. The PDUQp, although it has been evaluated among chronic pain patients, has yet to be formally assessed among older adult ED patients, and so its validity cannot be verified. Prescription opioid misuse determination was contingent upon self-reported information and is therefore subject to recall and social acceptability biases. In order to minimize bias, the RAs ensured participants that their responses were confidential. Because this investigation was a pilot study, the sample size and scope was limited; however, these preliminary findings should motivate a more comprehensive investigation of this topic.

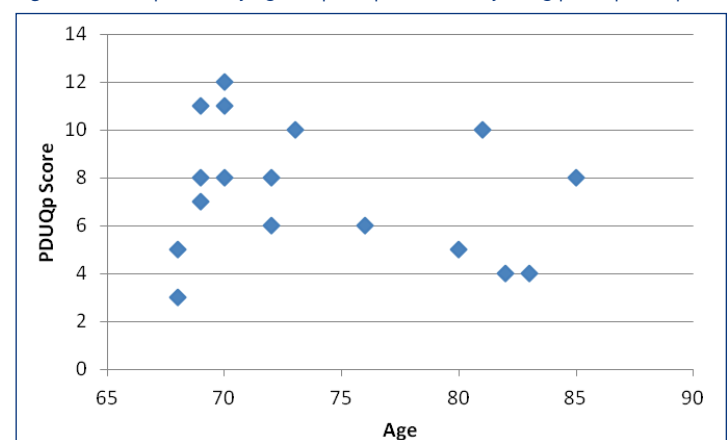
## CONCLUSION

In this small, single center pilot study among 88 older adult Rhode Island Hospital Emergency Department patients, 17 (19%) were current opioid users and 5 (6%) had PDUQp scores indicative of prescription opioid misuse. Given these findings, the increasing prevalence of chronic opioid use, and problems of opioid overdose in our state, more attention appears needed to address prescription opioid use and misuse among older adult emergency department patients in Rhode Island.

**Table 1.** Characteristics of Past and Current Prescription Opioid-Using Older Adult Emergency Department Patients and Problematic Prescription Opioid Use Behaviors

	Prior Prescription Opioid Users n=43	Current Prescription Opioid Users n=17
<b>Demographic and health care characteristics</b>		
Median age, IQR (years)	77 (72-82)	72 (69-80)
	%	%
Gender (female)	58.1	58.8
Race (white)	100.0	100.0
Marital status (currently married)	44.2	23.5
Education status (high school graduate)	81.4	76.5
Employment status (retired)	90.7	100.0
Housing status (living alone)	34.9	52.9
Health care insurance status (insured)	100.0	94.1
Regular health care (primary care provider)	97.7	94.1
Previous substance abuse treatment (ever treated)	4.7	11.8
Previous depression/suicide attempt treatment (inpatient)	7.0	5.9
<b>Self-reported pain</b>		
Pain present for more than three months	44.2	88.2
Pain preventing activities of daily living	46.5	82.4
Ever referred to a pain management clinic	7.0	47.1
<b>Problematic prescription opioid use behaviors</b>		
<i>Improper acquisition and diversion</i>		
Bought prescription opioids online	0.0	5.9
Bought prescription opioids from a place other than a pharmacy	0.0	11.8
Went to emergency department for prescription opioid refill	0.0	17.6
Obtained prescription opioids in someone else's name	0.0	5.9
Received prescription opioids from friends or family	2.3	17.6
Consumed opioids prescribed to someone else	0.0	17.6
<i>Problems with clinical providers</i>		
Clinician ever refused to write opioid prescription	4.7	11.8
Changed provider because inadequate pain treatment	0.0	23.5
<i>Hoarding</i>		
Ever saved prescription opioids for future use	18.6	58.9
Have old prescription opioids needing replacement	2.3	5.9
<i>Inappropriate use</i>		
Used prescription opioids when not having pain	2.3	5.9

**Figure 1.** PDUQp scores by age for participants currently using prescription opioids



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