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Claims for contraceptive services among young women filling chronic opioid prescriptions☆,☆☆

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ABSTRACT

Objective: To describe claims for contraceptive services among reproductive-aged women filling chronic opioid prescriptions.
Study design: Using a large US commercial claims database, IMS Lifelink+, we identified women aged 15–44 years who filled chronic opioid prescriptions (defined as a 90-day supply of opioids without a 30-day gap over a 180-day time period) and had continuous pharmacy and medical enrollment for at least 90 days prior to and 180 days following their index opioid prescription. After excluding women with any claims for pregnancy-related services, we describe claims for contraceptive prescriptions.
Results: We identified 16,074 women with claims for chronic opioids who had filled an average of 135±28-day supply of opioids over a 180-day period. Of these, 23.4% (n=3759) had a claim for prescription contraception in the 90 days prior or 180 days following their index opioid claim. Of those who had claims for prescription contraception, 70% (n=2642) received oral contraceptives; only 2% had claims related to a long-acting reversible contraceptive (i.e., a contraceptive implant or intrauterine device).
Conclusions: Commercially insured women filling chronic opioid prescriptions may have unmet needs for prescription contraception.
Implications: Efforts are needed to ensure that the reproductive health needs of women filling chronic opioid prescriptions are met.

1. Introduction

Chronic pain is a public health problem that disproportionately impacts women [1,2]. A study of reproductive-age women during 2008–2012 found that more than a quarter of privately insured women and more than a third of Medicaid-enrolled women fill an opioid prescription yearly [3]. As a result, prescription opioid use during pregnancy has become relatively common with more than 20% of Medicaid-enrolled [4] and 14% of privately insured women filling an opioid prescription during pregnancy [5].

In utero opioid exposure has been associated with neural tube defects [6], cardiac birth defects [7] and neonatal abstinence syndrome [8,9]. This, along with the opioid epidemic in the United States, prompted the Centers for Disease Control and Prevention's (CDC's) *Guideline for Prescribing Opioids for Chronic Pain* to advise discussion of family planning before initiating opioid therapy for reproductive-age women [10]. The current study describes claims for prescription contraception among women of reproductive age filling chronic opioids and examines factors associated with having no contraceptive claims.

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2. Materials and methods

2.1. Data source

The study utilizes the Intercontinental Marketing Service (IMS) Lifelink+ database, which contains claims from over 90 US commercial health plans for inpatient and outpatient services, as well as retail and mail order prescription records. We used claims data from 2006 to 2015 to identify claims for opioid prescriptions filled by women aged 15–44 years using the codes specified in Appendix 1 (claims for prescriptions having an allowed amount or paid amount equal to or less than zero, and individuals missing valid age and/or sex data, were excluded). We then identified the subpopulation of women with claims indicating chronic opioid use, defined as having received a 90-day supply of opioids without a 30-day gap within a 180-day period. The first claim for an opioid prescription within this chronic use period was identified as the "index prescription." We also excluded individuals who did not have continuous pharmacy and medical enrollment for at least 90 days prior to and 180 days following the index opioid prescription. In addition, we excluded women with a pregnancy and/or delivery code 90 days prior and 180 days post the index prescription, as well as women with coded indicating hysterectomy and/or absence of cervix (using the codes listed in Appendix 2). To characterize chronic opioid use, we calculated the maximum days of use within the 180-day postindex period used to assess chronic use and the days required to reach chronic use.

2.2. Contraception

We identified claims for contraception among those with claims for chronic opioids by analyzing inpatient and outpatient claims data and pharmacy records. Contraceptive claims were categorized into the following: oral contraceptives, intrauterine device (IUD), contraceptive implant, depot medroxyprogesterone acetate (DMPA) injection and other (e.g., patch, ring, diaphragm). The diagnosis and procedure codes used to identify contraception are listed in Appendix 3. Of note, the 9 months of claims data we examined for every index prescription limits the ability to accurately identify women using an IUD, implant or permanent contraception. Duration of oral contraceptive use was based on the days supplied of the prescription claims. As oral contraceptive claims accounted for the majority of contraception, we further characterized oral contraceptive claims by describing claims for oral contraceptives over the entire 9-month study period.

2.3. Covariates

The study population was stratified into the following age groups: 15–18, 19–24, 25–29, 30–34, 35–39 and 40–44. We also characterized the cohort by the following classifications of opioid use: (a) Schedule III and IV only, (b) schedule II short-acting only, (c) schedule III and IV along with schedule II short-acting and (d) long-acting alone or in combination with other opioid types (Appendix 1). Codes indicating pain etiologies (i.e., back pain, arthritis, headache, musculoskeletal) were categorized as shown in Appendix 4, and mental health diagnoses (i.e., alcohol use disorder, opioid use disorder, nonopioid substance use disorder, major depressive disorder, posttraumatic stress disorder) were identified using the codes shown in Appendix 5.

2.4. Analysis

Claims for contraceptives and covariates were described as frequencies and percentages. To identify factors associated with claims for contraceptives, we used *t* tests for continuous variables and χ^2 tests for categorical variables. Analyses were carried out using SAS v9.3 (SAS Institute Inc., Cary, NC, USA).

The study was reviewed by the Institutional Review Board at the University of Arkansas for Medical Sciences and was determined to not be human subjects' research.

3. Results

Of 8,968,066 individuals with claims data, women of reproductive age with claims for chronic opioids account for 16,074 (0.9%). Fig. 1 displays the application of the inclusion and exclusion criteria. We

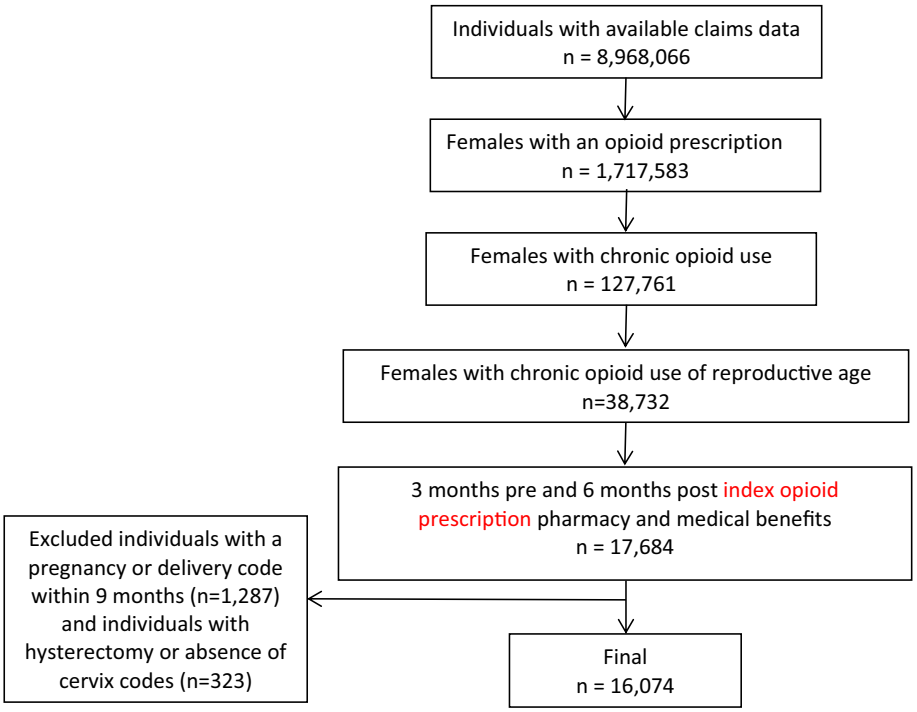

Fig. 1. Flowchart of inclusion and exclusion criteria.

Table 1
Comparison of demographic and opioid characteristics among women of reproductive age with and without contraceptive claims

Characteristic	With contraceptive claims (n=3759)	Without contraceptive claims (n=12,315)	p value
Age			
Mean ± SD, years	31.47±6.95	36.13±6.42	<**.01**
Pain disorder (%)			
Musculoskeletal pain	1501 (39.93)	5005 (40.64)	.44
Back pain	1943 (51.69)	6521 (52.95)	.18
Arthritis	1082 (28.78)	4002 (32.50)	<**.01**
Headache	941 (25.03)	2726 (22.14)	<**.01**
Psychiatric diagnosis (%)			
Major depressive disorder	730 (19.42)	2115 (17.17)	<**.01**
Posttraumatic stress disorder	88 (2.34)	165 (1.34)	<**.01**
Alcohol use disorder	66 (1.76)	161 (1.31)	**.04**
Opioid use disorder	235 (6.25)	572 (4.64)	<**.01**
Other substance use disorder	176 (4.68)	397 (3.22)	<**.01**
Opioids administered during chronic opioid use (%)			
Schedule III and IV	894 (23.78)	2451 (19.90)	<**.01**
Schedule II short-acting	1413 (37.59)	5260 (42.71)	<**.01**
All short-acting	1211 (32.22)	3637 (29.53)	<**.01**
Long-acting alone or in combinations	241 (6.41)	967 (7.85)	<**.01**

identified 16,074 women of reproductive age with claims indicating chronic opioid use; these women filled a mean of 135.0±28.5 days of opioid within a 90-day period. Over forty-one percent of chronic opioid claims were for short-acting schedule II products.

The demographic characteristics of study participants are shown in Table 1. Although 31.6% (n=5083) had a single pain diagnosis, 29.0% (n=4653) had two pain diagnoses, 15.1% (n=2420) had three pain diagnoses, and 3.2% (n=518) had four pain diagnoses. However, 21.2% (n=3400) had no claims with codes related to pain specified for this study (e.g., arthritis, back pain, headache, etc.; Appendix 4).

Among the 16,074 women of reproductive age filling chronic opioids, 23.4% (n=3759) had a contraceptive claim at any point during the 90 days prior or 180 days after their index opioid prescription. Overall, 16.4% (n=2642) of women with claims for chronic opioids had a claim for an oral contraceptive and 3.3% (n=523) had claims for DMPA in the 90 days before or 180 days following their index opioid claim. Even fewer, 2.0% (n=316) had claims related to a contraceptive implant or IUD during this time period. Among the 2642 women filling chronic opioids with a claim for an oral contraceptive, 36.6% (n=967) received a contraceptive supply that covered all 180 days following their index opioid prescription.

4. Discussion

This analysis of a large claims database found that women of reproductive age filling chronic prescriptions for opioids may have unmet need for family planning services. Less than a quarter of women filling chronic opioids had any claims for contraceptive services within the 3 months before or 6 months following receipt of opioids. These results confirm previous studies that have also demonstrated that women with opioid use disorder have lower rates of contraception use than women who are not using opioids [11].

The study has multiple limitations. First, the study data are limited by the inability to capture all claims for contraceptive methods, such as female and male sterilization, condoms, natural family planning, abstinence and withdrawal. Also, women actively trying to conceive were unable to be identified. Attempts to identify female sterilization were completed by excluding women with inpatient or outpatient codes for a hysterectomy or absence of cervix; however, a 9-month window likely did not capture all. Additionally, 9 months of claims data limits the ability to accurately identify all LARC users as LARC methods can last 3–12 years. Next, the Lifelink+ database does not capture prescription claims paid for out of pocket, those obtained from an outside provider (e.g., Planned Parenthood) or samples provided by providers. This limitation was minimized by requiring 9 months of continuous pharmacy and medical enrollment. Additionally, the Lifelink+ database is a strictly commercial claims database, and findings need to be generalized with caution. These findings cannot be generalized to publicly insured women or those who are uninsured. Additionally, the Lifelink+ database provided deidentified data and did not allow us to compare race, ethnicity, education, employment and other sociodemographics.

Oral contraceptives and DMPA injections accounted for the majority of claims for contraceptives. Our finding that oral contraceptives were filled by 16.4% of study participants closely mirrors rates of national use of oral contraception, which the National Survey of Family Growth estimated at 16% [12]. Our finding of few claims related to IUD and implant use is not surprising given that we examined less than a year surrounding each index procedure and these methods can be used for 5 or more years. Subdermal implants and IUDs, which are the most effective methods for prevention of pregnancy, are recommended as first-line contraceptives the American College of Obstetricians and Gynecologists [13]. The convenience of these methods may be appreciated by women with substance use disorders [14].

In conclusion, additional efforts are needed to ensure that CDC recommendations are met regarding discussions of reproductive life planning before initiating opioid therapy for young women [10]. For women who are not consistently using contraception, pregnancy testing should be considered with routine urine toxicology screens. By encouraging open discussion of reproductive health needs, clinicians can best partner with patients to optimize maternal and infant health outcomes.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.contraception.2019.01.004.

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