EXPLORING UNINTENDED PREGNANCY AMONG WOMEN WITH OPIATE DEPENDENCE
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HYPOTHESIS
Among reproductive-age female patients of two central Maine family medicine practices, those with a diagnosis of opiate dependency experience unplanned pregnancy more than those without this diagnosis.

We are exploring the following questions:
1. Are there differences in the incidence of planned vs. unplanned pregnancy that are associated with being in active substance abuse treatment versus not in substance abuse treatment?
2. Are there differences in the incidence of planned vs. unplanned pregnancy that are associated with type of current opiate dependence treatment (buprenorphine vs. methadone)?
3. Are other variables associated with unintentional pregnancy, such as mental health conditions, age, gravidity/parity, or payer (federal, commercial, self-pay)?

BACKGROUND
The opiate epidemic has greatly impacted our local communities in central Maine. Of infants born in Maine in 2015, 995 of ~12,400 births were substance exposed, representing 8% of births and requiring longer hospital stays adding significant financial and social cost to our state.1 Among opiate users, contraception utilization is low, and 87% of births are unplanned.2 Lundsberg et al. (2018) found that opioid use in the month before conception led to a nearly 3-fold greater risk of poorly timed or unplanned pregnancy compared to those who did not use opioids.3

RATIONALE: This retrospective study is designed to collect baseline data on unintended pregnancy and associated characteristics in women with opiate use disorder (OUD) in our family practice settings. We anticipate this data will inform future interventions that could ultimately improve maternal, fetal and newborn health in the setting of OUD and related co-morbidities. This study values the first of the Tenets of Osteopathy which recognizes the importance of considering the body as a unit, including body, mind and spirit.4

METHODS
This is an observational study using retrospective chart reviews to collect electronic health record (EHR) data.

Primary chart reviews were conducted by family medicine residents, OMSIII & OMSIV from University of New England College of Osteopathic Medicine (UNECOM), along with undergraduate students from Colby College, over a 4-year period.

Secondary chart reviews were conducted by resident & attending physicians to ensure data integrity.

SETTING
Maine-Dartmouth Family Medicine Residency clinics serve patients across central Maine:

Family Medicine Institute (FMI), Augusta, ME
Maine-Dartmouth Family Practice (MDFP), Waterville, ME

POPULATION: Female patients, 18 – 40 years old (Date of birth 1/1/95-12/31/75), positive pregnancy test 1/1/2013 – 12/31/2015

SELECTION: 1024 potential patients identified using billing charges and problem lists, with 960 found to fit inclusion criteria. In order to be eligible, women had to be patients of either the FMI or MDFP practice at the time of the positive pregnancy test, so further exclusion of ineligible charts was determined through primary and secondary chart reviews. Of the 828 primary chart reviews completed, a random sample of 323 pregnancies were selected for secondary review with 251 found to be eligible and 72 found to be ineligible, and this sample was used for this preliminary data analysis.
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RESULTS

Preliminary results found significantly more pregnancies were unplanned among opiate dependent women than among women without opiate dependence.

(55% opiate dependent vs. 36% non-opiate dependent with P<0.002)

CONCLUSION

A random sample of 251 pregnancies suggests that unplanned pregnancy in our patient population is more likely among women with opiate dependence as compared to their peers without this diagnosis. This research study is a work in progress, and further analysis of the complete data is needed.

See additional conclusions by clicking HERE.

REFERENCES

METHODS

**Study Design:** Retrospective study involving a chart review of Maine Dartmouth Family Practice (MDFP) and Family Medicine Institute (FMI) patients, two residency-based practices in central Maine. Report generated identifying all female patients between age 18 and 40 with confirmed pregnancy between Jan 1, 2013 and Dec 31, 2015.

- Collected variables:
  - gravidity and parity
  - ICD9/10 codes related to:
    - substance use
    - pregnancy
    - mental illness
  - patient-reported intentionality of pregnancy
  - means of pregnancy diagnosis

**Primary chart reviews** were conducted by
- family medicine residents
- third and fourth-year UNECOM medical students
- undergraduate students at Colby College

**Secondary chart reviews** of completed chart reviews were conducted by senior resident and attending physicians to ensure data integrity.

**Data Collection Sheet**

- **Objective:** Retrospective study exploring unintended pregnancy among women with opiate dependence
- **Method:** Review of medical records
- **Outcomes:** Gravidity, parity, ICD9/10 codes for substance use, pregnancy, mental illness, patient-reported intentionality of pregnancy, means of pregnancy diagnosis

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METHODS

Total Patients Identified
\[ N = 960 \]

Total Pregnancies Identified
\[ N = 1,101 \]

Primary Reviews conducted to date
\[ N = 828 \]

Random Sample of 323 charts for Secondary Chart Review

Eligible pregnancies
\[ N = 251 \]

Ineligible pregnancies
\[ N = 72 \]
Chi squared analysis was performed to explore the intentionality of pregnancy stratified by the following variables:

- Age
- Opiate dependence
- Engagement in Medication Assisted Treatment (MAT)
- Type of active treatment (buprenorphine vs. methadone)
- Payer type (as proxy for income level: federal/self-pay/commercial)
- Gravidity/Parity
- Presence/absence of co-occurring mental health
- Practice Location
- Pregnancy Outcome

A preliminary analysis of 251 charts (69 opiate-dependent, 182 non-opiate-dependent) has been conducted to date.
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RESULTS

This is a graphic representation of data comparing planned versus unplanned pregnancy rates in those with and without opioid dependence.

A significantly higher proportion of pregnancies among opiate dependent women were unplanned than among women without opiate dependence:

55% Unplanned in Opiate Dependent  
vs.  
36% Unplanned in Non-Opiate Dependent
(with P<0.002)

**More Results**

***P<0.002
**P<0.02
*P<0.05

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Among women with opiate dependence, those who were not in medication assisted treatment were more likely to have an unplanned pregnancy (P<0.02).
Women with opiate dependence appear to be more likely to have a diagnosis of depression (55% in opiate dependent vs. 42% in non-opiate dependent) and were significantly more likely to have a diagnosis of anxiety (61% in opiate dependent vs. 39% non-opiate dependent).
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RESULTS

Pregnancy Outcomes between the Non-Opiate Dependent and Opiate Dependent populations were similar.
### INTERESTING FINDINGS

Despite a small N, our preliminary data describes some interesting trends which call for further exploration as we extend our analysis to the complete data set.

<table>
<thead>
<tr>
<th></th>
<th>Opiate Dependent (N=69)</th>
<th>Non-opiate Dependent (N=182)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27.5</td>
<td>26.6</td>
</tr>
<tr>
<td>Multips</td>
<td>60 (87%)</td>
<td>134 (74%)</td>
</tr>
<tr>
<td>Primips</td>
<td>8 (12%)</td>
<td>44 (24%)</td>
</tr>
<tr>
<td>Public Insurance</td>
<td>56 (81%)</td>
<td>97 (54%)</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>8 (12%)</td>
<td>76 (42%)</td>
</tr>
<tr>
<td>No Insurance</td>
<td>5 (7%)</td>
<td>8 (4%)</td>
</tr>
<tr>
<td>Tobacco</td>
<td>51 (74%)</td>
<td>53 (29%)</td>
</tr>
<tr>
<td>Cannabis</td>
<td>20 (29%)</td>
<td>21 (12%)</td>
</tr>
<tr>
<td>Cocaine</td>
<td>8 (12%)</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Benzo</td>
<td>2 (3%)</td>
<td>1 (0.05%)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>4 (6%)</td>
<td>10 (6%)</td>
</tr>
</tbody>
</table>
This study is a work in progress. The data we’ve gathered from a random sample of 251 charts suggest the following preliminary results:

1) Unplanned pregnancy in our patient population is more likely among women with opiate dependence as compared to their peers without this diagnosis.
2) Initial data analysis suggests a greater number of intentional pregnancies among women with opiate dependence receiving medication assisted treatment (MAT) for opiate use disorder compared to those not receiving MAT at the time of pregnancy diagnosis.
3) The data suggest higher rates of anxiety among women with opiate dependence, but analysis of the full data set is necessary to confirm a link between opiate dependence and mental health diagnoses.
4) Analysis of the full data set is incomplete, so final conclusions cannot be drawn at this time noting that observations may change and further study is warranted.