Opioid Use Disorder at Delivery Hospitalization in Maine: Prevalence and characteristics (2009-2017)

Sarah Gabrielson
University of Southern Maine

Follow this and additional works at: https://digitalcommons.usm.maine.edu/thinking_matters

Part of the Medicine and Health Sciences Commons

Recommended Citation
https://digitalcommons.usm.maine.edu/thinking_matters/188

This Poster Session is brought to you for free and open access by the Student Scholarship at USM Digital Commons. It has been accepted for inclusion in Thinking Matters Symposium by an authorized administrator of USM Digital Commons. For more information, please contact jessica.c.hovey@maine.edu.
Introduction
A recent multistate analysis found Maine had the second highest average annual increase in opioid use disorder at delivery hospitalization since 1999, with 34.1 per 1,000 deliveries with opioid use disorder in 2012.

Purpose
To estimate the prevalence, characteristics, and geographic distribution of delivery hospitalizations with opioid use disorder (OUD) among women delivering in Maine using more recent state-level data.

Methods
- Categorized deliveries according to prevalence of OUD and other substance use, mental health diagnoses, and medical conditions - according to maternal characteristics and geographic distribution.
- Because our analysis spanned the transition from ICD-9 to ICD-10 (October 1st, 2015), we used codes from both revisions in this analysis.
- Ran log-binomial regressions to assess the trends in prevalence of OUD at delivery hospitalization over the study period.
- Calculated prevalence ratios (PR) and 95% confidence intervals (CI) for the co-occurrence of other substance use disorders, mental health diagnoses and medical conditions among women with OUD as compared with women without OUD.
- Examined trends in prevalence of OUD at delivery hospitalization by county over time, comparing deliveries by rural-urban designation of county.

Results
- The prevalence of OUD per 1,000 increased from 21.6 in 2009 to 38.0 per 1,000 in 2017 (linear trend p<.01).
- Average annual increase of 5.8% [95% CI: 4.5%, 7.2%].

- 4 out of 5 of the counties with the highest rates of opioid use disorder at delivery (>50 per 1,000 deliveries) during the 2015-2017 period were rural counties: Knox, Piscataquis, Somerset, Waldo.
- Penobscot was the only urban county (containing the metropolitan area of Bangor) with a prevalence of OUD at delivery >50 per 1,000 during the study period.

- All of the selected mental health diagnoses, other substance use, and medical conditions examined were more common (p<.01) among women delivering with OUD compared to women delivering without OUD.

Table 1. Selected maternal conditions among delivery hospitalizations in Maine, 2009-2017

<table>
<thead>
<tr>
<th>Condition</th>
<th>PR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>1.94</td>
<td>(1.92, 1.97)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Major Depression</td>
<td>1.45</td>
<td>(1.32, 1.58)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Alcohol abuse or dependence</td>
<td>1.98</td>
<td>(1.92, 2.03)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Other drug abuse or dependence</td>
<td>1.74</td>
<td>(1.64, 1.84)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Cannabis use</td>
<td>1.90</td>
<td>(1.81, 1.98)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Nicotine use</td>
<td>1.92</td>
<td>(1.82, 2.02)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Heroin use</td>
<td>1.88</td>
<td>(1.77, 1.99)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Opioid use</td>
<td>1.96</td>
<td>(1.87, 2.05)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Opioid use or alcohol abuse</td>
<td>2.00</td>
<td>(1.93, 2.06)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Opioid use or alcohol abuse or dependence</td>
<td>2.00</td>
<td>(1.93, 2.06)</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

Conclusions
- Opioid use disorder among deliveries in Maine has increased since 2009, accounting for 1 out of every 30 deliveries in 2017.
- Women with OUD at delivery were more likely to experience mental health disorders, other substance use, and complications of their substance use than women without OUD.
- The majority of counties with the highest rates of OUD at delivery (5 to <7%) are rural counties in midcoast, central and northern Maine.

Limitations
- ICD-9 to ICD-10 change at the 3rd quarter of 2015.
- Relies on the accuracy of the coding practices of medical coders at the inpatient facilities in Maine.
- Unable to confirm the presence of the diagnoses and procedures examined in this study with chart review.

Implications
- Continued prevention and treatment of OUD among reproductive age women, particularly in rural areas of Maine, is needed.
- Further examination of OUD at delivery hospitalization in Maine using linked maternal and infant data is needed to inform policy decisions and services provided to women with OUD during pregnancy.

References
- Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019. Maine Medical Center Hospital Discharge Data provided by the Maine Health Data Organization, a state agency that maintains a comprehensive health information database for every hospital-based encounter in the state. Some data and analysis were performed using software version 3.5 (SAS 9.4) Cary, NC) between December 2018 and April 2019.