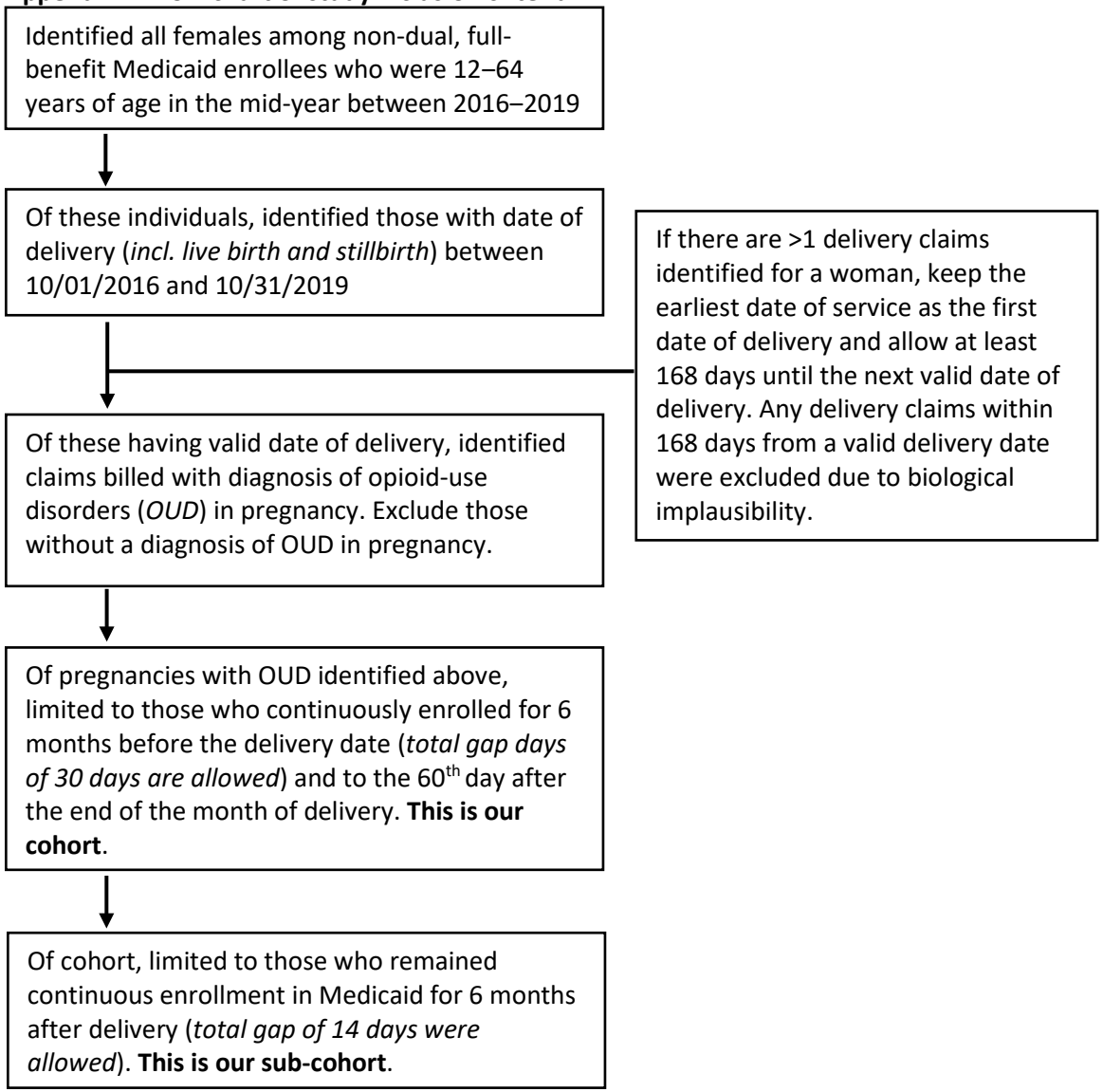
**Appendix 1. Flow chart of study inclusion criteria.**




**Appendix 2. Hepatitis C Virus Screening and Diagnosis Codes and Descriptions**

Jarlenski M, Chen O, Ahrens KA, Allen L, Austin AE, Chappell C, et al. Postpartum follow-up care for pregnant persons with opioid use disorder and hepatitis C infection. Obstet Gynecol 2022;139.
The authors provided this information as a supplement to their article.

***HCV Testing***

| ***Procedure code (CPT)*** | **Description** |
|---|---|
| *HCV antibody screening* | |
| *80055* | Obstetric Panel |
| *80074* | Acute Hepatitis Panel |
| *80081* | Obstetric Panel |
| *81599* | Multianalyte assay with algorithmic analysis |
| *86803* | Hepatitis C Ab Test |
| *86804* | Hep C Ab Test Confirm |
| *87520* | Hepatitis C direct probe technique |
| *87521* | Hepatitis C, amplified probe technique |
| *91200* | Hepatitis C quantification |
| *G0472* | HCV genotype test by DNA/RNA |
| | |
| *HCV RNA screening* | |
| *87522* | Hepatitis C quantification |
| *87902* | HCV genotype test by DNA/RNA |
| *3218F* | Transient elastography |
| *3220F* | RNA Testing Hep C Docd Done |
| *3266F* | Hep C Quant RNA Testing Docd |
| *G9203* | Hepatitis C genotype test |
| *G9207* | HCV antibody screening, for an individual at high risk |

| ***HCV Diagnosis*** | |
|---|---|
| ***ICD-10 diagnosis code*** | **Description** |
| *B182* | Chronic viral hepatitis C |
| *B1710* | Acute hepatitis C without hepatic coma |
| *B1711* | Acute hepatitis C with hepatic coma |
| *B1920* | Unspecified viral hepatitis C without hepatic coma |
| *B1921* | Unspecified viral hepatitis C with hepatic coma |
| *Z2252* | Carrier of viral hepatitis C |

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**Appendix 3. Hepatitis C Virus Medications List**

| Generic Name | Brand Name |
|---|---|
| Daclatasvir Dihydrochloride | Daklinza |
| Sofosbuvir-Velpatasvir | Epclusa |
| Ledipasvir-Sofosbuvir | Harvoni |
| Telaprevir | Incivek |
| Glecaprevir-Pibrentasvir | Mavyret |
| Ribavirin | Moderiba 1200 Dose Pack |
| Peginterferon alfa-2b | Peg-Intron + Pegasys |
| Ribavirin | Copegus + Rebtol + RibaPak + Ribasphere |
| Sofosbuvir | Sovaldi |
| Ombitasvir/paritaprevir/ritonavir | Technivie |
| Sofosbuvir/velpatasvir/voxilaprevir | Vosevi |
| Elbasvir/grazoprevir | Zepatier |
| Interferon | Infergen |

Jarlenski M, Chen O, Ahrens KA, Allen L, Austin AE, Chappell C, et al. Postpartum follow-up care for pregnant persons with opioid use disorder and hepatitis C infection. Obstet Gynecol 2022;139.
The authors provided this information as a supplement to their article.

**Appendix 4. ICD-10-CM Diagnosis Codes Used to Identify Clinical Comorbidities in Pregnancy**

| Comorbidity | | ICD-10 code |
|---|---|---|
| Anemia | | O99.02, O90.81, D64.9, D53.0, D53.8, D53.9, D50.8, D50.9, D51.1, D51.2, D51.3, D51.8, D51.9, D52.* |
| Cirrhosis/Liver disease | | K70.*, K71.*, K72.*, K73.*, K74.*, K75.*, K76.*, K77, O26.6* |
| Sequelae of injection drug use | Acquired Immunodeficiency Syndrome (AIDS) | O98.7*, B20, Z21 |
| | Intracranial/Spinal Abscess | G06.*, G07 |
| | Osteomyelitis | M86.0*, M86.1*, M86.2*, M86.9, M46,20* |
| | Endocarditis | I33.*, I39 |

| Comorbidity | | ICD-10 code |
|---|---|---|
| | Soft Skin Tissue Infection | L01.*, L02.*, L03.*, L04.*, L05.*, L08.0, L08.8*, L08.9, L88, L89.00* (excl. L89.006) L89.01* (excl. L89.016), L89.02* (excl. L89.026), L89.10* (excl. L89.106), L89.11* (excl. L89.116), L89.12* (excl. L89.126), L89.13* (excl. L89.136), L89.14* (excl. L89.146), L89.15* (excl. L89.156), L89.20* (excl. L89.206), L89.21* (excl. L89.216), L89.22* (excl. L89.226), L89.30* (excl. L89.306), L89.31* (excl. L89.316), L89.32* (excl. L89.326), L89.50* (excl. L89.506), L89.51* (excl. L89.516), L89.52* (excl. L89.526), L89.60* (excl. L89.606), L89.61* (excl. L89.616), L89.62* (excl. L89.626), L89.81* (excl. L89.816), L89.89* (excl. L89.896), L92.8, L97.*, L98.0, L98.3, L48.4*, I70.23*, I70.24*, I70.25, I70.33*, I70.34*, I70.35, I70.36*, I70.43*, I70.44*, I70.45, I70.46*, I70.53*, I70.54*, I70.55, I70.56*, I70.63*, I70.64*, I70.65, I70.66*, I70.73*, I70.74*, I70.75, I70.76*, I96, B78.1, E83.2, E08.52, E09.52, E10.52, E11.52, M72.6, T79.8XXA, T82.7XXA, T87.4*, T81.4*XA, K68.11, K61.* (excl. K61.5), K12.2 |

**Appendix 4. ICD-10-CM Diagnosis Codes *(continued)***

| Comorbidity | | ICD-10 code |
|---|---|---|
| Psychiatric Disorder | Anxiety Disorder | F06.4, F40.*, F41.*, F42.*, F43.0, F43.1*, F44.9, F45.8, F48.8, F48.9, F93.8, F99, R45.2, R45.5, R45.6, R45.7 |
| | Mood Disorder | F30.*, F31.*, F32.*, F33.*, F34.* (excl. F34.0), F39, F06.30 |
| | Schizophrenia and Other Psychiatric Disorders | F06.0, F06.2, F20.*, F22, F23, F24, F25.*, F28, F29, F32.3, F32.3, F44.89 |
| Non-opioid substance use disorder | Alcohol | F10.* (excl. F10.11, F10.13*, F10.93*) |
| | Cannabis | F12.* (excl. F12.11, F12.13, F12.23, F12.93) |
| | Cocaine | F14.* (excl. F14.11, F14.13, F14.93) |
| | Hallucinogen | F16.* (excl. F16.11) |
| | Sedative | F13.* (excl. F13.11, F13.13*) |

| | | |
|---|---|---|
| | Inhalant-related | F18.* (excl. F18.11) |
| | Other psychoactive substance | F19.* (excl. F19.11, F19.13*) |
| | Non-psychoactive substances | F55.* |
| Opioid Use Disorder | | F11.* (excl. F11.11, F11.13) |
| Tobacco Use Disorder | | F17.*, Z72.0, O99.33*, Z87.891 |

**Appendix 5. Medicaid Income Eligibility Criteria for Pregnant and Parenting People in Six States**

| State | Pregnancy income eligibility threshold, FPL[a,b] | Parenting income eligibility threshold, FPL[a,b] | Percent of deliveries covered by Medicaid[b] | N with OUD included in this study |
|---|---|---|---|---|
| Delaware | 217% | 138% | 41% | 980 |
| Kentucky | 200% | 138% | 48% | 5,578 |
| Maine | 214% | 138% | 39% | 1,260 |
| North Carolina | 201% | 41% | 41% | 5,783 |
| Pennsylvania | 220% | 138% | 34% | 7,395 |
| West Virginia | 190%[c] | 138% | 48% | 2,784 |

a Federal Poverty Level
b Kaiser Family Foundation State Health Facts
c West Virginia covers pregnant people with incomes up to 305% FPL under the Children's Health Insurance Program

**Appendix 6. Statistical Modeling Methods**

**Outcomes**

The study included three outcomes. First, HCV screening in pregnancy was a binary variable based on the presence of any HCV-testing laboratory procedure code, including antibody and RNA testing, between the estimated date of conception and the date of delivery, inclusive.

Second, HCV diagnosis was a binary variable based on the presence of any ICD-10 diagnosis code for chronic or acute HCV infection, between the estimated date of conception and the date of delivery. Because we lacked laboratory results from either RNA testing or genotypic testing, we included a range of diagnosis codes indicating HCV infection. We compared dates for HCV screening and diagnosis to determine which patients had an HCV diagnosis not preceded by an HCV test. These patients may have received a test prior to pregnancy or may have been tested during pregnancy outside of the Medicaid system (e.g., during incarceration, at syringe exchange programs, etc.) and therefore may not have received a Medicaid-covered test in pregnancy.

Third, we created a binary variable indicating any follow-up office visit for HCV or use of HCV medication in the postpartum period (either 60 days after the last day of the month of delivery or 6 months after delivery). A follow-up office visit was defined as a visit in an outpatient setting with a clinician whose subspecialty was hepatology, infectious disease, or gastroenterology; or any outpatient visits with a primary care clinician (including obstetrics/gynecology),[1] in which HCV was the primary diagnosis code recorded for the visit. Clinician specialty and subspecialty were determined by linking the National Provider ID (NPI) in the Medicaid data files to the National Plan and Provider Enumeration System data.[2] In one state where NPI was not available, a state-based taxonomy was used to determine provider


 

specialty and subspecialty. Providers with multiple specialties were included so long as they had any of the specialties or subspecialties noted. Medication use for HCV was defined based on outpatient prescription fills in the 60-day or 6-month follow-up periods for a broad list of medications that could be used to treat HCV. These included all Food and Drug Administration (FDA)-approved direct-acting antivirals (DAAs). Medications were identified in pharmacy records based on National Drug Codes.

**Statistical Analysis**

To provide adjusted prevalence estimates that were comparable across different state Medicaid populations in our study, we fit multivariable regression models. Specifically, within each state's analytic data, we fit 3 models where the outcomes were binary measures of HCV screening, HCV diagnosis, and HCV follow-up care (either an office visit or medication), respectively. Covariates included demographic and clinical characteristics that might be associated with OUD or HCV infection and differ by state. Demographic characteristics included age at delivery (<35 years vs >=35 years); race/ethnicity (Non-Hispanic Black, Non-Hispanic White, Hispanic, Other races); and residence in an urban vs rural area.[23] Race and ethnicity are measured by self-report at the time of Medicaid enrollment, and are included as covariates because race and ethnicity have been shown in prior research to be associated with OUD diagnosis and treatment.[24] Clinical comorbidities included indicators for mental health conditions and substance use disorders (mood disorders and serious mental illness, tobacco use disorder, and other nonopioid substance use disorders); utilization of medication for OUD in pregnancy (buprenorphine, methadone, both, or none); sequelae of injection drug use (HIV infection, intracranial/spinal abscess, osteomyelitis, endocarditis, soft skin tissue infection); cirrhosis or other liver disease; and anemia.

We fit multivariable regression models for all three outcomes. These models were fit for the entire study cohort who were followed-up for 60 days and 6 months postpartum, separately. We then applied marginal standardization methods to derive average predicted probabilities and associated 95% confidence intervals (CIs).[3] To produce pooled estimates across state results, we conducted a random-effect meta-analysis technique by pooling all adjusted marginal probabilities into a combined effect weighted by the inverse of the sum of within-state and between-state variances.[4] Calculation of the total variance also accounted for the cohort size of each state, and the total variance used to construct a 95% CI around global estimate. To estimate between-state variability ($T^2$), we implemented the Hartung-Knapp-Sidik-Jonkman method, which has been shown to perform better in most cases relative to the DerSimonian-Laird method.[5] We also used the Q-statistic and $I^2$ to test the statistical significance of between-state heterogeneity. We calculated 90% prediction intervals (PIs), which are a range in which estimates would be expected if we drew data from a different set of states, to examine across-state heterogeneity. We conducted the meta-analysis in R (3.6.3) using package Metafor (3.0-2).[6]


 

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