ASSESSING DATA COMPLETENESS AND QUALITY FOR ALCOHOL SCREENING DURING PREGNANCY

Results of Pilot Testing

PR%F Alliance

MN Community MEASUREMENT

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Contents

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Executive Summary

Prenatal alcohol exposure (PAE) is a leading and preventable cause of birth defects and neurodevelopmental deficits in the United States, with consequences that can last a lifetime. Fetal alcohol spectrum disorders (FASD) encompass a range of physical, cognitive, and behavioral disorders resulting from PAE, including Fetal Alcohol Syndrome (FAS), partial FAS (pFAS), alcohol-related neurodevelopmental disorder (ARND), alcohol-related birth defects (ARBD), and neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE). Recent studies estimate that 1 to 5 percent of U.S. first-grade children are affected by FASD.

Given the significant role of healthcare providers in influencing beliefs about alcohol use during pregnancy, it is crucial to address common misconceptions and encourage abstinence from alcohol during pregnancy. Despite recommendations from the U.S. Preventive Services Task Force (USPSTF) and the American College of Obstetrics and Gynecology (ACOG) to screen all adults, including pregnant women, for unhealthy alcohol use, a gap remains in effectively implementing these guidelines. Data shows that while 80 percent of pregnant individuals report being asked about alcohol use during healthcare visits, only 16 percent of those who reported current drinking were advised to stop or reduce their alcohol consumption.

In response to these challenges, MN Community Measurement (MNCM) partnered with Proof Alliance in March 2023 for a Phase 1 project aimed at understanding current practices in screening for alcohol use during pregnancy and informing measure development activities. Based on the findings, MNCM recommended developing a comprehensive library of alcohol screening questions to accurately capture screening practices across medical groups.

Phase 2 of the partnership, initiated in September 2023, involved incorporating this library into MNCM's Process Intelligence Performance Engine (PIPE) for collecting social risk factor data. The preliminary results, based on data from 150 clinics across Minnesota and neighboring states, reveal significant gaps in documentation and education regarding alcohol use during pregnancy.

Key findings include:

- Only 1,548 out of 38,711 pregnant individuals (5%) had recorded discussions about alcohol use during pregnancy.
- Of the 1,548 individuals analyzed, 53 (3.42%) either self-reported or were diagnosed with alcohol use during pregnancy.

- Discrepancies were noted between the high prevalence of alcohol use documented in national surveys and the lower prevalence captured in this report, highlighting the need for improved documentation and education.

Moreover, data quality concerns were identified, including the misassignment of ICD-10-CM codes intended for mothers to newborns and the use of codes before their official implementation, suggesting potential administrative errors.

This report underscores the need for enhanced screening, documentation, and education efforts at the provider and patient levels to ensure comprehensive prenatal care. Addressing these gaps is essential for reducing the incidence of PAE and improving maternal and child health outcomes.

Background

Prenatal alcohol exposure (PAE) is a primary and preventable cause of birth defects and neurodevelopmental deficits in the United States. Its consequences encompass a spectrum of intellectual and behavioral challenges manifesting at any point during childhood and persisting throughout an individual's lifetime. Fetal alcohol spectrum disorders (FASD) serve as an overarching term encompassing various physical, cognitive, and behavioral disorders resulting from PAE. This includes Fetal Alcohol Syndrome (FAS), partial FAS (pFAS), alcohol-related neurodevelopmental disorder (ARND), alcohol-related birth defects (ARBD), and neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE). Recent prevalence studies indicate that approximately 1 to 5 percent of U.S. first-grade children are affected by FASD.[1,2]

Given the influence of pre-pregnancy alcohol use beliefs on alcohol consumption during pregnancy, healthcare providers play a pivotal role in dispelling common misconceptions. It is imperative for care providers to actively challenge notions such as the perceived harmlessness of consuming one drink per day. Encouraging individuals to abstain from alcohol throughout pregnancy and while attempting to conceive becomes paramount, emphasizing the associated health benefits for both the individual and the potential child.[1] PAE screening emerges as a crucial measure benefiting those who consume alcohol before pregnancy, representing one of the most critical public health endeavors to prevent FASD.[1]

Both the U.S. Preventive Services Task Force (USPSTF) and the American College of Obstetrics and Gynecology (ACOG) recommend screening adults for unhealthy alcohol use, including pregnant women, and providing brief behavioral counseling interventions to reduce unhealthy use.[3,4] A recently published study reports that about 80 percent of pregnant people reported being asked about their alcohol use during their most recent health care visit, but only 16 percent of those who reported current drinking were advised to stop or reduce their alcohol use. [5]

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[1] Dozet D, Burd L, Popova S. Screening for Alcohol Use in Pregnancy: a Review of Current Practices and Perspectives. Int J Ment Health Addict. 2023;21(2):1220-1239. doi: 10.1007/s11469-021-00655-3. Epub 2021 Sep 22. PMID: 34580577; PMCID: PMC8457028.

[2] NIAAA. "Fetal Alcohol Spectrum Disorders." National Institute on Alcohol Abuse and Alcoholism, U.S. Department of Health and Human Services, 2023, www.niaaa.nih.gov/research/fetal-alcohol-spectrum-disorders.

[3] US Preventive Services Task Force. Screening and Behavioral Counseling Interventions to Reduce Unhealthy Alcohol Use in Adolescents and Adults: U.S. Preventive Services Task Force Recommendation Statement. Journal of the American Medical Association 322(18): 1899-1909. 2018. Doi:10.1001/jama.2018.16789

[4] American College of Obstetricians and Gynecologists (ACOG) At-risk drinking and alcohol dependence: obstetric and gynecologic implications. Obstet Gynecol 2011;118:383–8. https://www.acog.org/clinical/clinicalguidance/committee-opinion/articles/2011/08/at-risk-drinking-and-alcohol-dependence-obstetric-andgynecologic-implications

[5] Luong J, Board A, Gosdin L, Dunkley J, Thierry JM, Pitasi M, Kim SY. Alcohol Use, Screening, and Brief Intervention Among Pregnant Persons – 24 U.S. Jurisdictions, 2017 and 2019. Morbidity and Mortality Weekly Report 72(3): 55-62. 2023

In March of 2023, MN Community Measurement (MNCM) entered into an agreement with Proof Alliance for an initial Phase 1 three-month project to better understand current practices surrounding screening for alcohol use during pregnancy and to inform measure development activities aimed at reducing risks to the fetus related to alcohol consumption during pregnancy. At the end of phase 1, due to the variation in approaches to screening in medical practices, MNCM recommended developing a library of alcohol screening questions in existing patient reported outcome (PRO) tools and homegrown questions that are being used by medical groups that can be used to accurately capture screening for alcohol use during pregnancy. The method for developing and maintaining this library of questions would follow a similar methodology recently developed by MNCM for collecting and harmonizing data from medical groups about social risk factors (SRF) such as food insecurity and housing instability. The appendix has a list of the ICD10CM codes that were used to define if a patient had positive alcohol usage during pregnancy. A list of the questions and answers can be obtained from the report authors at request.

Phase 2 of the agreement with Proof Alliance started in September 2023, which included the development of the library of alcohol screening questions and incorporation of the library into MNCM's Process Intelligence Performance Engine (PIPE) data infrastructure for collecting social risk factor data. Medical groups started submitting SRF data in early 2024 as part of their data submission into PIPE. MNCM assessed the quality and completeness of data received and the preliminary results and analysis for alcohol use during pregnancy are included in this report.

Methodology

Summary on Recommended Screening Tools from Phase I

MNCM conducted a specific analysis of the recommended tools to evaluate their suitability for identifying current drinking behavior during pregnancy. MNCM staff presented their research results on each guideline–recommended survey tool to the workgroup. MNCM's detailed analysis of 14 tools examined each question and response options and scoring mechanisms. Evaluation focused on the tool's ability to identify current alcohol use, quantity, frequency, and validation for use in pregnant persons or in an OB/GYN setting. On close inspection, MNCM's analysis found that the guideline-recommended tools are better suited for identifying risky drinking in the general population and do not enable accurate measurement of current drinking behavior during pregnancy. Although many guideline groups recommend specific tools for screening, they are often in the context of screening all adults or women seeking OB/GYN care.

TOOL	RECOMMENDED BY				TOPIC(S)			
	ACOG	SOCG	USPSTF	WHO	Pregnancy specific*	Identifies Current Use (Within 1 month)	Identifies Quantity	Identifies Frequency of Use
4 P's Plus			^	^	●	●	●	
5 P's					●	●	●	●
ASSIST				^		†		●
AUDIT			●				●	●
AUDIT-C	●	●	●	^	●		●	●
CAGE								
CRAFFT								
NET				^	●		●**	
SASQ		●	●				●**	●**
SMAST				^				
SURP-P				^	●	●	●	
T-ACE	●	●	^	^	●		●	
TQDH				^	●		●	●
TWEAK			^	^	●		●**	

^ Not formally recommended, but listed as a tool for potential use in pregnancy
*Developed and/or validated for use in pregnant persons and/or OB/GYN setting
† Identifies drinking within 3 months
** Identifies risky drinking quantity (e.g., 5 or more drinks)

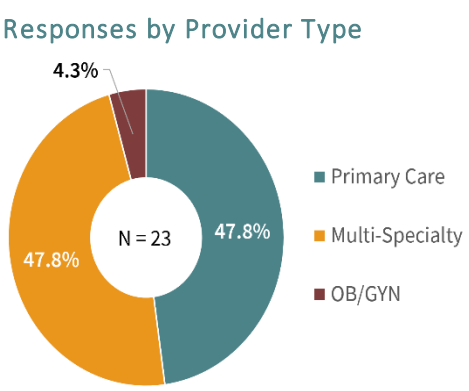
Summary of Medical Group Survey Results from Phase I

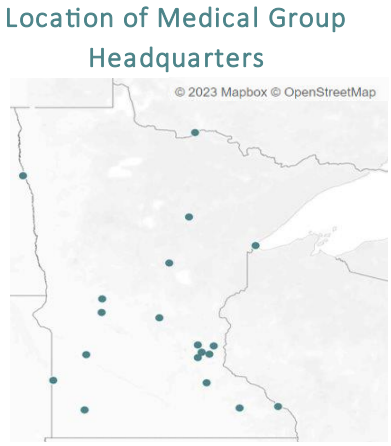
MNCM surveyed multiple medical groups about their current screening practices for alcohol use during pregnancy which provided valuable insights for potential measure development. MNCM staff identified 159 medical groups registered with OB/GYN and/or Family Practice specialties based on its data collection for quality measures in Measurement Year 2021. MNCM's contacts from these medical groups were emailed a link to the survey in mid-May and asked to respond by end of May. 14.5% (23) of medical groups responded to the survey, representing 215 clinics. As shown below, the survey responses included a mix of provider types and included groups across Minnesota.

Most medical groups are not exclusively using evidence-based, guideline-recommended patient-reported outcome (PRO) tools. Only 16% of respondents use PRO-based tools exclusively, while 85% use a combination of PRO tools and custom-developed questions. Additionally, 53% rely solely on homegrown questions. Although PRO-based tools are effective in identifying risky drinking behaviors in the general population (including higher levels of alcohol use), they are less effective in identifying any alcohol use among pregnant patients (even low levels), which is critical for providing necessary education, brief interventions, and referrals.

The frequency and timing of screenings vary significantly among medical groups. While all respondents screen pregnant patients for alcohol use at the first prenatal visit, the timing of this visit varies and is often beyond the provider's control. Screening frequency differs, with 35% screening only at the first visit, and 65% screening at every antenatal visit, once per trimester, or at other intervals. The sensitive nature of alcohol use screening poses major barriers, including patients' reluctance to share sensitive information and provider discomfort in addressing the issue.

Despite these barriers, 77% of respondents perform brief interventions for positive screens, though billing for these services is infrequent and inconsistent. Screening results are typically stored in discrete fields within electronic health records (EHRs), facilitating data extraction and use. However, the inconsistent use of billing codes suggests that interventions are not standardized, indicating a need for clearer definitions and processes.





Pilot Participants for Phase II

Recruitment for participation in this project included all medical groups in Minnesota, currently onboarded to MNCM's PIPE data portal. PIPE is a method for capturing all ambulatory clinic data used in the process of healthcare delivery in structured files regardless of what electronic health record the medical group uses. PIPE files include demographics, encounters, blood pressures, lab values, and medications to name a few, and are ideally suited for testing new measures whose construct is based on these structured fields. PIPE offers the medical groups the chance to participate in the project without the burden of additional data abstraction and submission.

This report utilizes data from three medical groups that represent 150 medical clinics in Minnesota and neighboring states and had patients with primary addresses represented in 48 states. Urban and rural counties are both represented in this report.

Data Analysis Approach for Phase II

- Analytical Tools
  - Data analysis was performed using Python.
- Data clean up
  - **Age Criteria:** To account for administrative errors, individuals had to be 13 years of age or older. This was implemented after observing inappropriate diagnosis codes among children under 13, including 14 cases where the recorded gender was male, and all were 10 years old or younger. This age threshold also aligns with the lower range used to define the control population.
  - **Diagnosis Code Validity:** Diagnosis codes were considered valid if they were identified from 2022 onwards. Codes dating back to 2007 indicated potential administrative errors, as all diagnosis codes were ICD-10-CM, implemented in 2016.

- **Handling Multiple Records:** For patients with multiple records, if any instance indicated alcohol use, the individual was categorized as "Positive" for alcohol use in the subsequent tables, regardless of other instances where alcohol use was not recorded.
- **Group Classification:** Based on the questionnaire results included in this report, individuals were classified into two exclusive groups: those with a positive indication of alcohol use during pregnancy and those with no recorded alcohol use during pregnancy.

- Data Validation
  - **Initial Validation:**
    - Reviewed the social history data file's source code to verify data extraction methodology.
    - Confirmed file format for data accuracy.
    - Uploaded an initial sample dataset from one month into the PIPE production environment to identify and review errors, leading to portal adjustments for updating the approved value set.
  - **Comprehensive Validation:**
    - Uploaded a full year of data for 2023 Measurement Year and conducted a detailed error review.
    - Extracted and meticulously examined a dataset of 50,000 records for consistency and reasonableness.
    - Validation checks included:
      - Verifying the number of records per patient.
      - Identifying conflicting responses.
      - Assessing the number of patients categorized under each social risk factor (SRF).
    - Conducted an audit on 8 out of 30 records for each SRF identification method, including question-response records, encounter diagnoses, and problem list diagnoses to ensure data accuracy and reliability.
- Social Risk Factors Other Than Alcohol Use During Pregnancy
  - **Observation Period:** Observed social risk factors documented from 2022 measurement year onwards for individuals who received either a diagnosis indicating alcohol use during pregnancy or completed a questionnaire about alcohol use during pregnancy.
  - **Multiple Documentations:** If an individual had multiple documentations for the same social risk factor:
    - Reported as positive if any instance was marked positive (overrides if a patient was recorded as negative)
    - Reported as negative if any instance was marked negative and subsequent instances were marked as unable to ask or patient refused.
- Control Population Identification
  - **Identification Criteria:** Individuals were included in the control population if they had a pregnancy diagnosis within their medical encounters or problem list. Specifically, ICD 10-CM diagnostic codes related to:
    - Pregnancy, childbirth, and the puerperium (O* codes).
    - Weeks of gestation (Z3A* codes).
    - Pregnant state (Z33* codes).
    - Encounters for supervision of a normal pregnancy (Z34* codes).
    - Encounters for antenatal screenings (Z36* codes).
  - **Date Range:** Recorded between 01/01/2022 and 12/31/2023.

- **Accuracy Measures:** To ensure accuracy and account for administrative errors, individuals had to be female and within the age range of 13-55. Age was determined using the mean date of assessment in the population of interest (05/25/2023).

- Result Comparisons
  - Compared individuals who received either a diagnosis or had a documented discussion against the full control population.
  - Separated individuals who received either a diagnosis or had a documented discussion into two groups: one indicating diagnosed or self-reported alcohol use during pregnancy and the other indicating self-reported no alcohol use during pregnancy.

Results

Population vs Control Cohort

There were 1,518 patients who had an alcohol use during pregnancy questionnaire completed, and 30 individuals who had a diagnosis for alcohol use during pregnancy. This represented 1,548 total unique individuals. There was no overlap between these groups. Questionnaires and diagnoses had dates of services from 1/3/2023-12/29/2023.

Of the 1,548 patients, 1,488 patients (96.12%) had a diagnosis code associated with pregnancy.

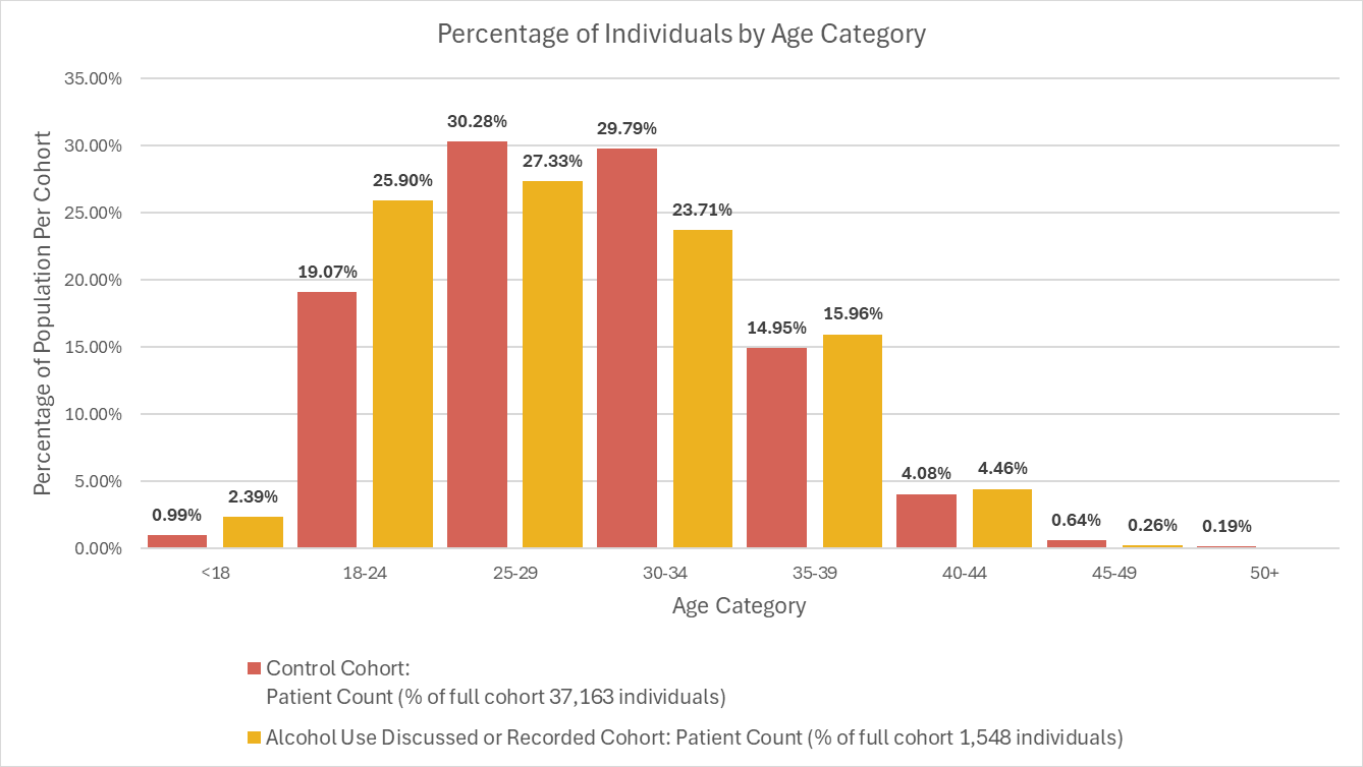
The control population represents 37,163 individuals.

Of note, not all 1,548 patients were noted as using alcohol during their pregnancy. The comparison against the control is looking at the population that had documented discussions or diagnoses indicating alcohol use during pregnancy. *The control population may have received discussions with care providers, but it was not documented in a way that this report could capture*.

TABLE 01: BASE DEMOGRAPHIC SUMMARY FOR PREGNANT POPULATION

Demographics	Control Population	Alcohol Use Discussed or Recorded	Total Population
Number of Unique Patients	37,163	1,548	38,711
Pregnancy coding indicated: Patient Count (%)	37,163 (100%)	1,488 (96.12%)	38,651 (99.84%)
Number of States Represented (Primary Address for Patients)	48	5	48
Number of Primary Clinics Represented	150	27	150
Number of Zip Codes Represented (Primary Address for Patients)	3,600	150	3,600
Average Age (Min-Max)	29.57 (13-55)	28.72 (14-46)	29.55 (13-55)
Age < 18: Patient Count (%)	369 (0.99%)	37 (2.39%)	406 (1.05%)
18-24: Patient Count (%)	7,087 (19.07%)	401 (25.9%)	7,488 (19.38%)
25-29: Patient Count (%)	11,254 (30.28%)	423 (27.33%)	11,677 (30.22%)
30-34: Patient Count (%)	11,069 (29.79%)	367 (23.71%)	11,436 (29.6%)
35-39: Patient Count (%)	5,557 (14.95%)	247 (15.96%)	5,804 (15.02%)
40-44: Patient Count (%)	1,516 (4.08%)	69 (4.46%)	1,585 (4.1%)
45-49: Patient Count (%)	239 (0.64%)	4 (0.26%)	243 (0.63%)
50+: Patient Count (%)	72 (0.19%)	0 (0.00%)	0 (0.00%)

GRAPH 01: PERCENTAGE OF INDIVIDUALS BY AGE CATEGORY



Both cohorts have a normalized distribution across age ranges as can be seen in table 1 and graph 1.

TABLE 02: PREFERRED LANGUAGE FOR FULL POPULATION

Preferred Language	Control Cohort: Patient Count (% of full cohort 37,163 individuals)	Alcohol Use Discussed or Recorded Cohort: Patient Count (% of full cohort 1,548 individuals)	Total Population: Patient Count (% of both cohorts 38,711 individuals)
English	33,861 (91.11%)	801 (51.74%)	34,673 (89.54%)
Spanish	2,277 (6.13%)	637 (41.15%)	2,914 (7.53%)
Somali	357 (0.96%)	61 (3.94%)	418 (1.08%)
Other Preferred Language*	668 (1.8%)	49 (3.17%)	717 (1.85%)

*For a specific language to be displayed either the control cohort or the alcohol use discussed or recorded cohort must have had 1% or more of their population represented.

GRAPH 02: PERCENTAGE OF INDIVIDUALS BY PREFERRED LANGUAGE

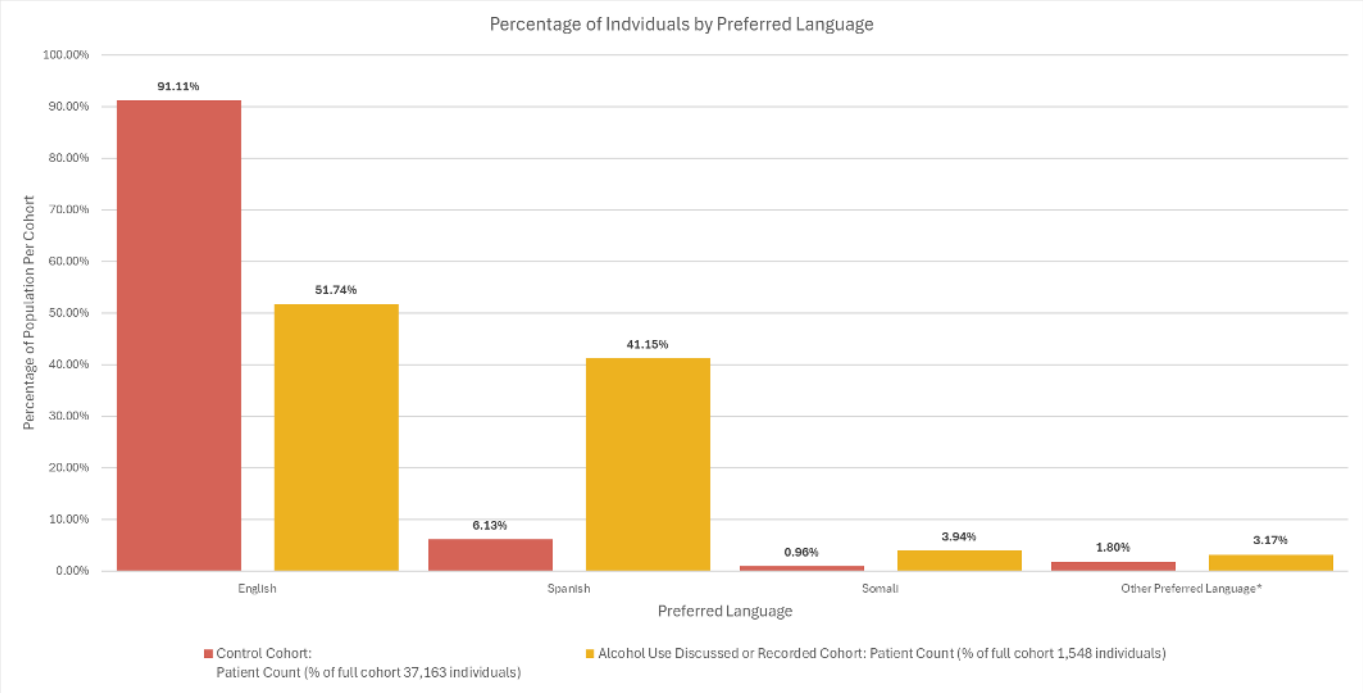
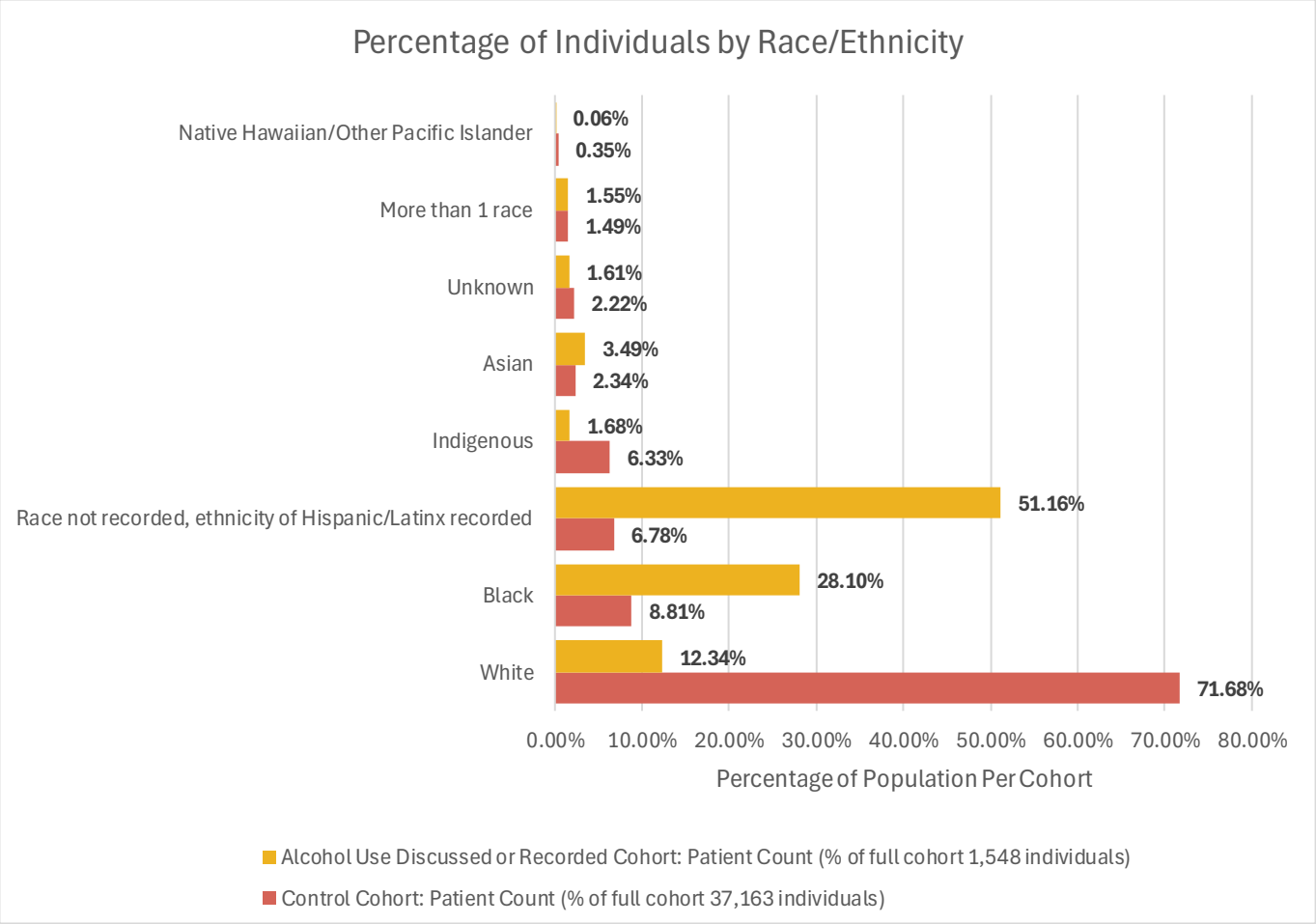


TABLE 03: RACE/ETHNICITY FOR FULL POPULATION

Race	Control Cohort: Patient Count (% of full cohort 37,163 individuals)	Alcohol Use Discussed or Recorded Cohort: Patient Count (% of full cohort 1,548 individuals)	Total Population: Patient Count (% of both cohorts 38,711 individuals)
White	26,639 (71.68%)	191 (12.34%)	26,830 (69.31%)
Black	3,273 (8.81%)	435 (28.1%)	3,708 (9.58%)
Race not recorded, ethnicity of Hispanic/Latinx recorded	2,518 (6.78%)	792 (51.16%)	3,310 (8.55%)
Indigenous	2,353 (6.33%)	26 (1.68%)	2,379 (6.15%)
Asian	869 (2.34%)	54 (3.49%)	923 (2.38%)
Unknown	826 (2.22%)	25 (1.61%)	851 (2.2%)
More than 1 race	554 (1.49%)	24 (1.55%)	578 (1.49%)
Native Hawaiian/Other Pacific Islander	131 (0.35%)	1 (0.06%)	132 (0.34%)

GRAPH 03: PERCENTAGE OF INDIVIDUALS BY RACE/ETHNICITY



From the analysis, non-white, and non-native English speakers were more likely to receive the questionnaire for alcohol use during pregnancy than their white and English-speaking counterparts.

TABLE 04: SUBSTANCE USE DISORDER DOCUMENTED FOR FULL POPULATION

Substance Use Disorder (ICD10CM Code)	Control Cohort: Patient Count (% of full cohort 37,163 individuals)	Alcohol Use Discussed or Recorded Cohort: Patient Count (% of full cohort 1,548 individuals)	Total Population: Patient Count (% of both cohorts 38,711 individuals)
Alcohol related disorders (F10*)	261 (0.70%)	16 (1.03%)	277 (0.72%)
Cannabis related disorders (F12*)	518 (1.39%)	30 (1.94%)	548 (1.42%)
Cocaine related disorders (F14*)	19 (0.05%)	4 (0.26%)	23 (0.06%)
Hallucinogen related disorders (F16*)	5 (0.01%)	1 (0.06%)	6 (0.02%)
Inhalant related disorders (F18*)	3 (0.01%)	0 (0.00%)	3 (0.01%)
Nicotine dependence (F17*)	693 (1.86%)	35 (2.26%)	728 (1.88%)
Opioid related disorders (F11*)	324 (0.87%)	8 (0.52%)	332 (0.86%)
Other psychoactive substance related disorders (F19*)	729 (1.96%)	23 (1.49%)	752 (1.94%)

Other stimulant related disorders (F15*)	309 (0.83%)	10 (0.65%)	319 (0.82%)
Sedative, hypnotic, or anxiolytic related disorders (F13*)	5 (0.01%)	0 (0.00%)	5 (0.01%)

Substance use disorders were similarly documented across both populations. With the highest percentages being seen with nicotine dependence and other psychoactive substances.

Results on Alcohol Usage Capture (Positive vs Negative Alcohol Usage Captured During Pregnancy)

TABLE 05: QUESTIONNAIRE SUMMARY

Questions	Response	Count of Reponses Recorded*
Since you knew you were pregnant how often on average do you drink?	Don't drink	1,499
Since you knew you were pregnant how often on average do you drink?	Less than once a month	9
Since you knew you were pregnant how often on average do you drink?	At least once a week, but not daily	6
Since you knew you were pregnant how often on average do you drink?	At least once a month, but not weekly	4
Since you knew you were pregnant how often on average do you drink?	Every day	1
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	Don't drink	1,342
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	1 to 2	12
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	3 to 4	3
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	5 to 6	2

*A patient can be recorded more than once

TABLE 06: ICD10CM SUMMARY

ICD10CM Code	Code Description	Patient Count*
O99.310	Alcohol use complicating pregnancy, unspecified trimester	13
O99.311	Alcohol use complicating pregnancy, first trimester	7
O99.312	Alcohol use complicating pregnancy, second trimester	7
O99.313	Alcohol use complicating pregnancy, third trimester	5

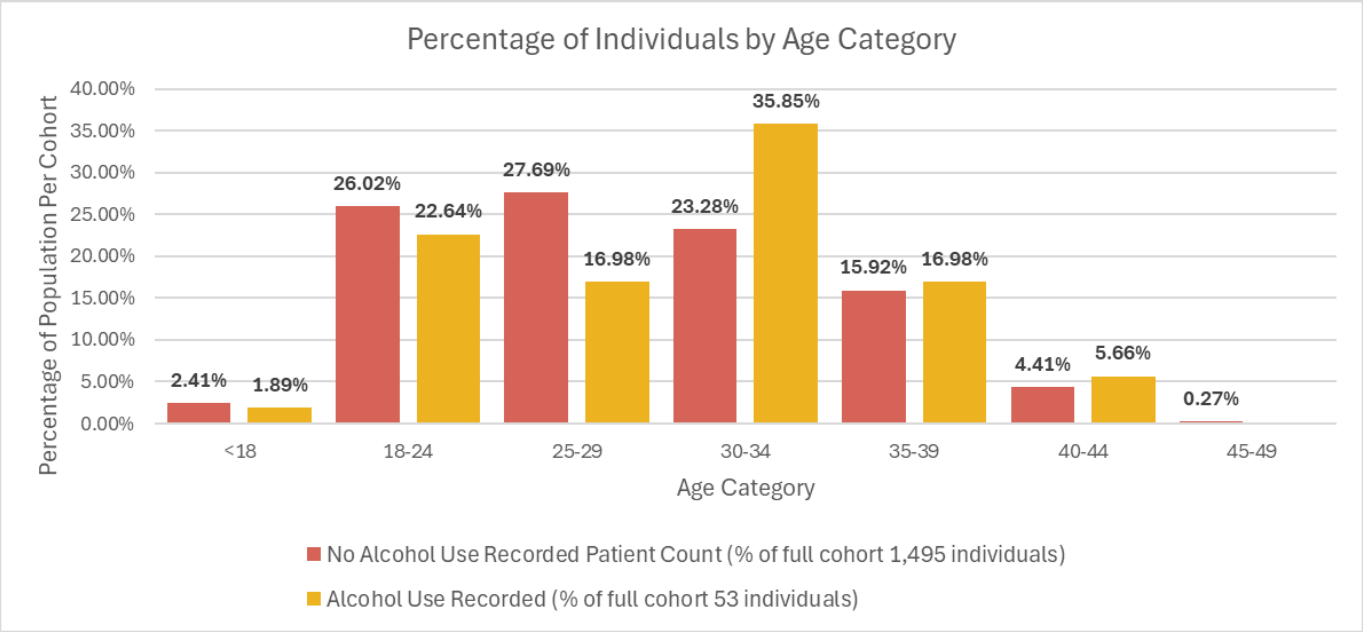
*A patient can be recorded more than once

TABLE 07: BASE DEMOGRAPHIC SUMMARY VS RECORDED ALCOHOL USE

Base Demographics	No Alcohol Use Recorded	Alcohol Use Recorded
Number of Unique Patients	1,495	53
Average Age (Min-Max)	28.68 (14-46)	29.86 (17-40)

Number of States Represented (Primary Address for Patients)	3	3
Number of Primary Clinics Represented	13	18
Number of Zip Codes Represented (Primary Address for Patients)	129	38
Age < 18: Patient Count (%)	36 (2.41%)	1 (1.89%)
18-24: Patient Count (%)	389 (26.02%)	12 (22.64%)
25-29: Patient Count (%)	414 (27.69%)	9 (16.98%)
30-34: Patient Count (%)	348 (23.28%)	19 (35.85%)
35-39: Patient Count (%)	238 (15.92%)	9 (16.98%)
40-44: Patient Count (%)	66 (4.41%)	3 (5.66%)
45-49: Patient Count (%)	4 (0.27%)	0 (0.00%)

GRAPH 04: PERCENTAGE OF INDIVIDUALS BY AGE CATEGORY



When comparing results across alcohol usage, the age distribution is less normalized compared to the full population. Individuals recorded as having alcohol use during pregnancy were, on average, older, with the largest proportion falling within the 30-34-year-old age category.

TABLE 08: LANGUAGE PREFERENCE AND ALCOHOL USAGE IN PREGNANT INDIVIDUALS WITH DOCUMENTED ALCOHOL USE OR ALCOHOL DISCUSSIONS

Preferred Language	No Alcohol Use Recorded Patient Count (% of full cohort 1,495 individuals)	Alcohol Use Recorded (% of full cohort 53 individuals)
English	761 (50.9%)	40 (75.47%)
Spanish	624 (41.74%)	13 (24.53%)
Somali	61 (4.08%)	0 (0.00%)
Oromo	17 (1.14%)	0 (0.00%)

Preferred Other Language*	32 (2.15%)	0 (0.00%)

*For a specific language to be displayed either population must have had 1% or more of their population represented.

GRAPH 05: PERCENTAGE OF INDIVIDUALS BY PREFERRED LANGUAGE

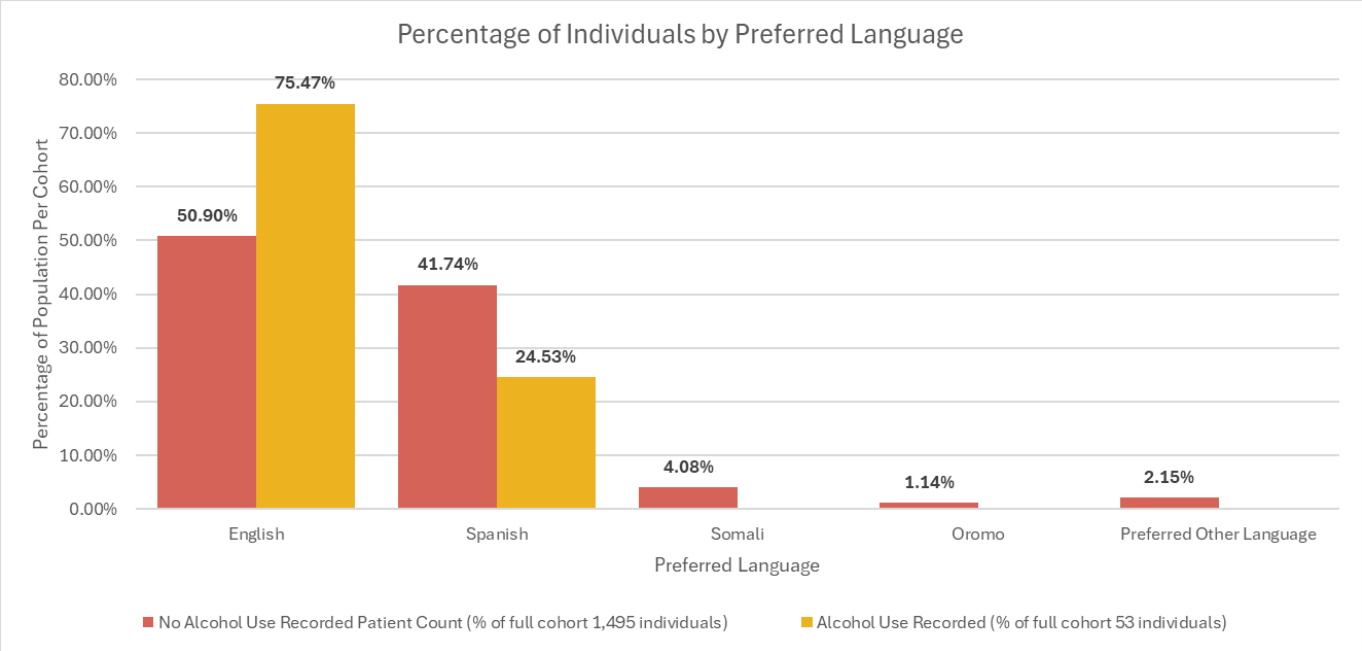
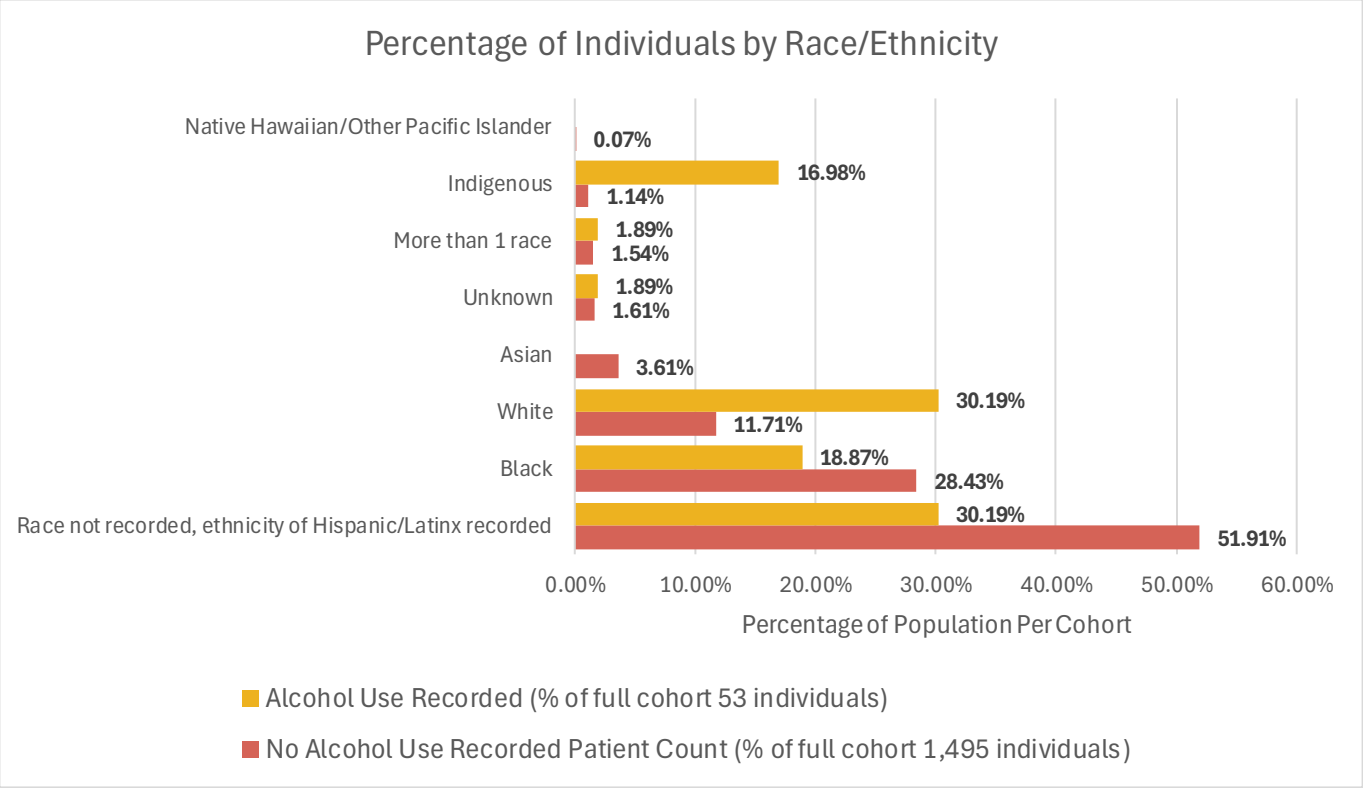


TABLE 09: RACE VS RECORDED ALCOHOL USE

Race	No Alcohol Use Recorded Patient Count (% of full cohort 1,495 individuals)	Alcohol Use Recorded (% of full cohort 53 individuals)
Race not recorded, ethnicity of Hispanic/Latinx recorded	776 (51.91%)	16 (30.19%)
Black	425 (28.43%)	10 (18.87%)
White	175 (11.71%)	16 (30.19%)
Asian	54 (3.61%)	0 (0.00%)
Unknown	24 (1.61%)	1 (1.89%)
More than 1 race	23 (1.54%)	1 (1.89%)
Indigenous	17 (1.14%)	9 (16.98%)
Native Hawaiian/Other Pacific Islander	1 (0.07%)	0 (0.00%)

GRAPH 06: PERCENTAGE OF INDIVIDUALS BY RACE/ETHNICITY

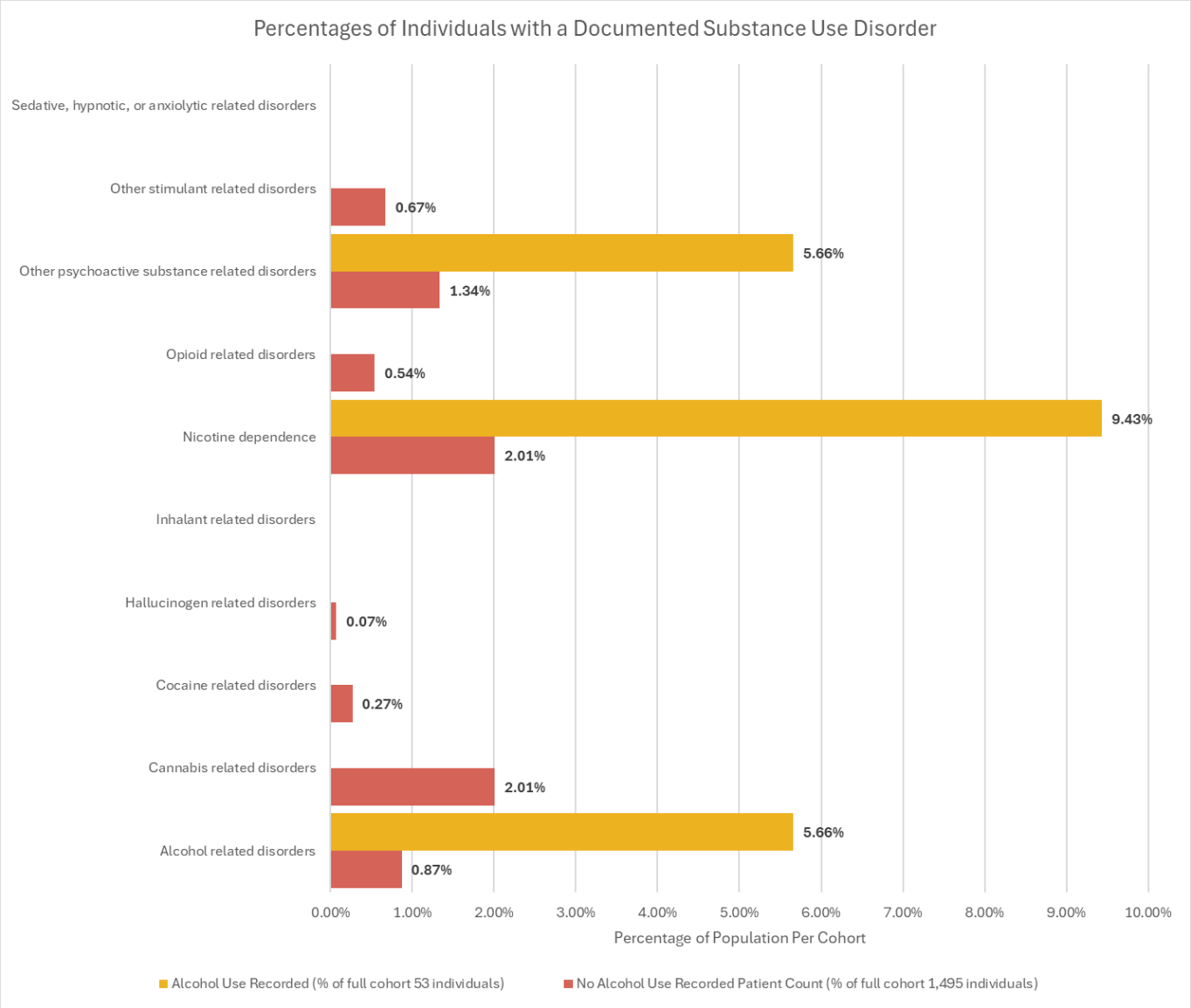


While Hispanic and non-native English-speaking individuals were more likely to receive a questionnaire on alcohol use during pregnancy, this did not correlate with higher percentages of positive alcohol use during pregnancy.

TABLE 10: SUBSTANCE USE DISORDER RECORDED VS RECORDED ALCOHOL USE

Substance Use Disorder (ICD10CM Code)	No Alcohol Use Recorded Patient Count (% of full cohort 1,495 individuals)	Alcohol Use Recorded (% of full cohort 53 individuals)
Alcohol related disorders (F10*)	13 (0.87%)	3 (5.66%)
Cannabis related disorders (F12*)	30 (2.01%)	0 (0.00%)
Cocaine related disorders (F14*)	4 (0.27%)	0 (0.00%)
Hallucinogen related disorders (F16*)	1 (0.07%)	0 (0.00%)
Inhalant related disorders (F18*)	0 (0.00%)	0 (0.00%)
Nicotine dependence (F17*)	30 (2.01%)	5 (9.43%)
Opioid related disorders (F11*)	8 (0.54%)	0 (0.00%)
Other psychoactive substance related disorders (F19*)	20 (1.34%)	3 (5.66%)
Other stimulant related disorders (F15*)	10 (0.67%)	0 (0.00%)
Sedative, hypnotic, or anxiolytic related disorders (F13*)	0 (0.00%)	0 (0.00%)

GRAPH 07: SUBSTANCE USE DISORDER RECORDED VS RECORDED ALCOHOL USE



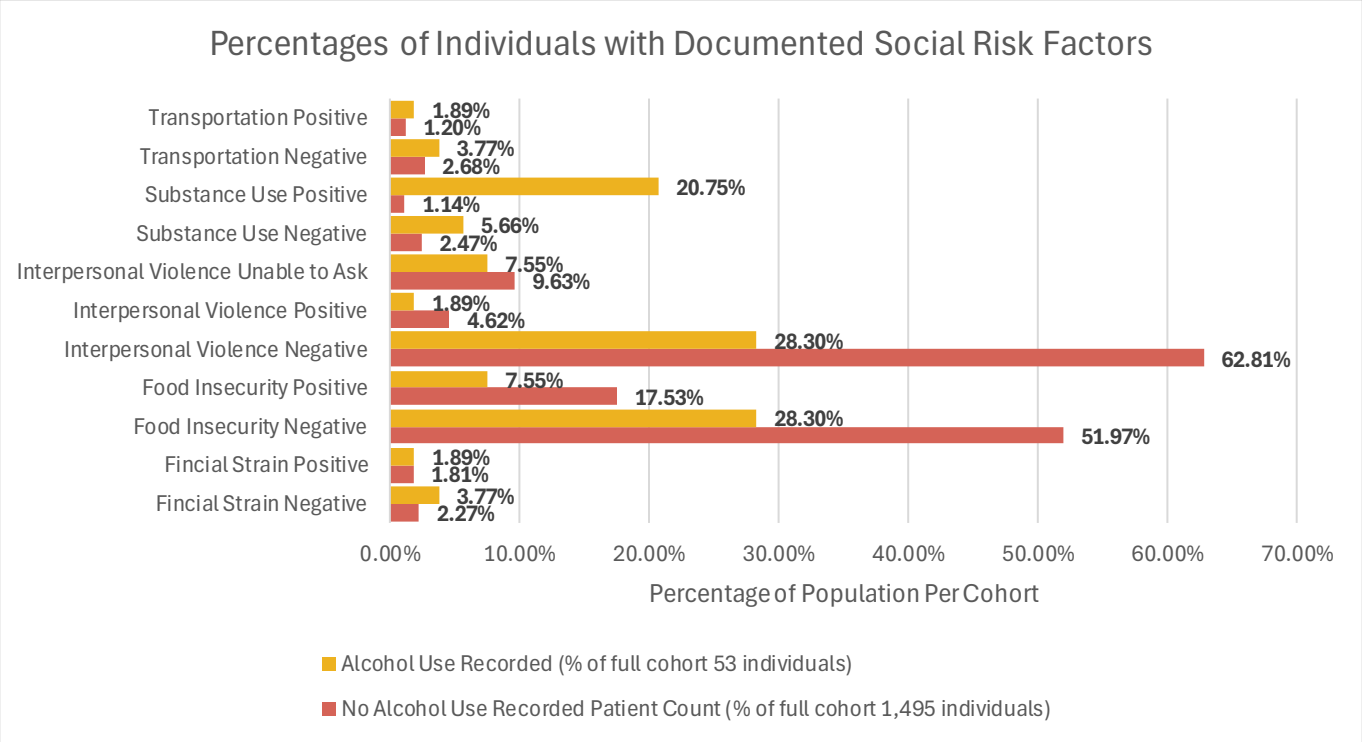
Substance use disorders were infrequently documented within this population. Among individuals with a recorded positive indication of alcohol use during pregnancy, there was a higher likelihood of concurrent documentation for nicotine dependence, other psychoactive substance-related disorders, or alcohol-related disorders. However, the documentation for each of these conditions did not exceed 10%.

TABLE 11: SOCIAL RISK FACTOR RECORDED VS RECORDED ALCOHOL USE

Social Risk Factor	No Alcohol Use Recorded Patient Count (% of full cohort 1,495 individuals)	Alcohol Use Recorded (% of full cohort 53 individuals)
Financial Strain: Negative	34 (2.27%)	2 (3.77%)
Financial Strain: Positive	27 (1.81%)	1 (1.89%)
Food Insecurity: Negative	777 (51.97%)	15 (28.30%)
Food Insecurity: Positive	262 (17.53%)	4 (7.55%)

Interpersonal Violence: Negative	939 (62.81%)	15 (28.30%)
Interpersonal Violence: Positive	69 (4.62%)	1 (1.89%)
Interpersonal Violence: Unable to Ask	144 (9.63%)	4 (7.55%)
Substance Use: Negative	37 (2.47%)	3 (5.66%)
Substance Use: Positive	17 (1.14%)	11 (20.75%)
Transportation: Negative	40 (2.68%)	2 (3.77%)
Transportation: Positive	18 (1.20%)	1 (1.89%)

GRAPH 08: SOCIAL RISK FACTOR RECORDED VS RECORDED ALCOHOL USE



Individuals documented with either a discussion about alcohol use during pregnancy or identified by a provider as having alcohol use during pregnancy were more likely to be assessed for other social risk factors. Notably, when comparing those with recorded alcohol use to those without, individuals positive for alcohol use were significantly more likely to have a positive substance use flag, with 20.75% identified in this group compared to 1.14% in the group without recorded alcohol use.

Discussion

Among the 1,548 individuals analyzed, 23 had a positive result from the alcohol use questionnaire, and 30 were clinically diagnosed with alcohol use during pregnancy. In total, this accounts for 53 individuals, representing 3.42% of the study population, who either self-reported or had physician-documented alcohol use during pregnancy.

In comparison, a study analyzing 2015–2018 data from the National Survey on Drug Use and Health found that approximately 1 in 10 (9.8%) pregnant individuals reported current alcohol use.[6] Additionally, the Centers for Disease Control and Prevention (CDC) reported that between 2018 and 2020, 13.5% of pregnant adults in the United States reported current drinking, with 5.2% reporting binge drinking within the past 30 days.[7]

The discrepancy between the high prevalence of documented alcohol use during pregnancy in national surveys and the lower prevalence observed in this report underscores the need for enhanced documentation and education efforts at both the provider and patient levels.

A significant concern emerges from the broader dataset: out of 38,711 individuals documented as pregnant between 2022 and 2023, only 1,548 (5%) had any recorded discussion of alcohol use during pregnancy. This indicates a substantial care gap, with over 95% of pregnant individuals having no documented screening and education on the risks of alcohol use during pregnancy. Furthermore, the data suggests inconsistencies in the frequency of administering the questionnaire, with certain populations being overrepresented and others underrepresented compared to their general population proportions.

Another objective of this report was to assess data quality related to the documentation of alcohol use during pregnancy. It was found that newborns occasionally received ICD-10-CM codes intended for their mothers. Additionally, some ICD-10-CM codes appeared in records before their official implementation in 2016, indicating potential administrative errors.

To further underscore the importance of prenatal screening for alcohol use, it is essential to recognize its direct impact on maternal and child health outcomes. Comprehensive prenatal screening not only identifies individuals at risk but also provides critical opportunities for early intervention. Effective screening can lead to timely counseling and support, which are crucial in preventing the adverse effects of prenatal alcohol exposure (PAE) on fetal development. Studies have shown that early identification of alcohol use during pregnancy, coupled with targeted behavioral interventions, can reduce the risk of Fetal Alcohol Spectrum Disorders (FASD) and associated complications such as low birth weight, preterm birth, and developmental delays.[8,9] By integrating systematic screening practices into prenatal care, healthcare providers can actively contribute to the reduction of these negative outcomes, ultimately promoting healthier pregnancies and improving long-term health trajectories for both mothers and their children. The lack of comprehensive screening, as highlighted by the substantial care gap in this report, underscores the missed opportunities for such critical interventions.

This report highlights critical areas for improvement in prenatal care. By addressing these documentation and educational gaps, healthcare providers can ensure more comprehensive support for all pregnant individuals. This, in turn, can help reduce the incidence of PAE and improve maternal and child health outcomes.

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[8] Popova S, Dozet D, Pandya E, Sanches M, Brower K, Segura L, Ondersma SJ. Effectiveness of brief alcohol interventions for pregnant women: a systematic literature review and meta-analysis. BMC Pregnancy Childbirth. 2023 Jan 24;23(1):61. doi: 10.1186/s12884-023-05344-8. PMID: 36694121; PMCID: PMC9872314.

[9] Dozet D, Burd L, Popova S. Screening for Alcohol Use in Pregnancy: a Review of Current Practices and Perspectives. Int J Ment Health Addict. 2023;21(2):1220-1239. doi: 10.1007/s11469-021-00655-3. Epub 2021 Sep 22. PMID: 34580577; PMCID: PMC8457028.

What's Next

Data Capture

Effective data capture, particularly through Patient-Reported Outcomes (PROs), is crucial for ensuring that individuals receive appropriate and timely care. PROs provide valuable insights into patients' experiences, symptoms, and responses to treatment, offering a direct perspective that complements clinical data. Capturing this information accurately and consistently is essential for identifying health issues, tracking progress, and tailoring interventions to meet individual needs.

Standardizing the questions used in PRO tools and the methods of documentation is pivotal to achieving reliable and actionable data. Consistent question formats and documentation practices allow for better comparison across different populations and settings, facilitating more accurate assessments of care quality and outcomes. This standardization helps ensure that all patients are asked the same critical questions in the same way, reducing variability and potential biases in the data. By implementing standardized practices, healthcare providers can enhance the quality of care, identify gaps in service delivery, and make informed decisions that improve patient outcomes. Effective data capture and standardization not only support individualized care but also contribute to broader efforts in quality improvement and public health initiatives.

As a state leader in data collection and standardization, MNCM is committed to advancing these efforts by collaborating with our partners to further enhance data consistency and quality. We will continue to work with stakeholders across the healthcare system to refine and expand standardized practices, ensuring that our approaches to data capture and documentation meet the highest standards. By doing so, MNCM aims to set a benchmark in the industry, driving improvements in care delivery and health outcomes through rigorous data management and a commitment to excellence in patient-centered practices.

State and Federal Policy

To be written by proof alliance

Limitations

The primary limitation of our analysis is the significant discrepancy between the total population size and the number of documented cases. Out of 38,711 individuals, only 1,548 had any documented discussion or screening for alcohol use during pregnancy, representing a substantial data coverage gap. Within this subset, only 53 individuals (23 identified through questionnaires and 30 through diagnosis codes) tested positive for alcohol use during pregnancy.

This small number of identified cases presents challenges in drawing meaningful conclusions or generalizing findings, as the limited sample size lacks the statistical power necessary for reliable inferences. This increases the risk of Type II errors (false negatives), where real associations or effects may go undetected. Furthermore, the results reported here do not align with national averages from the Centers for Disease Control and Prevention (CDC) or the National Institute on Alcohol Abuse and Alcoholism (NIAAA), indicating a likelihood of underreporting and missed cases of PAE within our dataset. This discrepancy suggests that many patients suffering from PAE may not have been identified or documented, further highlighting the need for improved screening and data collection practices.

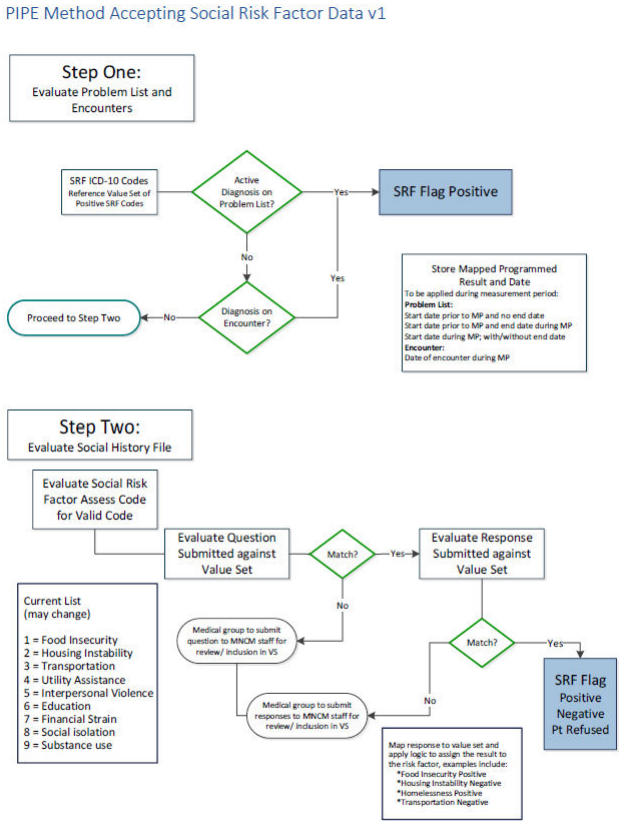
Another limitation of this analysis is that two of the medical groups involved in the study did not have any documented questionnaires related to alcohol use during pregnancy. This absence of documentation does not necessarily imply that these medical groups failed to discuss alcohol use with their patients. Rather, it reflects a gap in data collection that prevents us from identifying and verifying such discussions in this report. The lack of

recorded information from these groups limits the completeness and accuracy of the dataset, making it difficult to assess the true extent of alcohol use screening across all participating medical groups.

Moreover, while Patient-Reported Outcome (PRO) tools are valuable, they have limitations. Variability in patients' health literacy and understanding of the questions can lead to inconsistent responses. Additionally, subjective experiences, influenced by individual expectations and circumstances, can introduce bias. Challenges related to the timing and frequency of data collection, as well as language barriers, can further affect the accuracy and reliability of the data collected.

Appendix

PIPE Method Accepting Social Risk Factor Data v1



Question and Responses for PAE Represented

TABLE 12: QUESTIONS AND RESPONSE

Questions	Response
Since you knew you were pregnant how often on average do you drink?	Don't drink
Since you knew you were pregnant how often on average do you drink?	Less than once a month
Since you knew you were pregnant how often on average do you drink?	At least once a week, but not daily
Since you knew you were pregnant how often on average do you drink?	At least once a month, but not weekly
Since you knew you were pregnant how often on average do you drink?	Every day
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	Don't drink

Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	1 to 2
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	3 to 4
Since you knew you were pregnant, on a day or night you did drink, how many drinks did you have?	5 to 6

TABLE 13: ICD10CM CODES UTILIZED TO DEFINE SRF FOR PAE

Code	Code Description
O35.4XX0	Maternal care for (suspected) damage to fetus from alcohol, not applicable or unspecified
O35.4XX1	Maternal care for (suspected) damage to fetus from alcohol, fetus 1
O35.4XX2	Maternal care for (suspected) damage to fetus from alcohol, fetus 2
O35.4XX3	Maternal care for (suspected) damage to fetus from alcohol, fetus 3
O35.4XX4	Maternal care for (suspected) damage to fetus from alcohol, fetus 4
O35.4XX5	Maternal care for (suspected) damage to fetus from alcohol, fetus 5
O35.4XX9	Maternal care for (suspected) damage to fetus from alcohol, other fetus
O99.310	Alcohol use complicating pregnancy, unspecified trimester
O99.311	Alcohol use complicating pregnancy, first trimester
O99.312	Alcohol use complicating pregnancy, second trimester
O99.313	Alcohol use complicating pregnancy, third trimester
O99.314	Alcohol use complicating childbirth
O99.315	Alcohol use complicating the puerperium