NV202557

Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET)

Budget Period 3 Progress Report

Organization Name & Contact Information:

High Sierra AHEC

639 Isbell Road, Suite 290

Reno, NV 89509

(775) 507-4022

Federal Tax-Exempt Number: 43-1981060

Introduction

The Surveillance for Emerging Threats Against Mothers and Babies Network (SET-NET) project collects health information for individuals exposed to health threats during pregnancy and their infants (CDC, 2021). The SET-NET surveillance gathers information about exposures and the impact of emerging diseases such as Zika, Hepatitis C, Syphilis, and Coronavirus Disease 2019 (COVID-19). The SET-NET project aims to understand the effects of new and current emerging threats on pregnant individuals and their infants. The health information collected is related to COVID-19 infections, exposures, and health threats during pregnancy and is used to inform decision-makers and public health best practices. Continued research has shown that pregnant individuals are at an increased risk for severe COVID-19-related illness, symptoms, and hospitalization with adverse outcomes such as intensive care unit (ICU) admissions (CDC, 2021). In addition, COVID-19 during pregnancy has been associated with an increased risk for adverse pregnancy outcomes and neonatal complications like preterm birth (delivering an infant earlier than 37 weeks) and stillbirths (Ko et al., 2021). Pregnancy complications may be more likely in those infected with COVID-19 than in pregnant people without COVID-19 (CDC, 2021). The COVID-19 surveillance data collected for positive pregnant individuals has implications for informing future best practices for this infectious illness and a foundational strategy for future epidemics/pandemics.

Nevada is one of the thirty-one nationwide jurisdictions participating in the SET-NET surveillance project on which the Centers for Disease Control and Prevention (CDC) collaborates closely with state, territorial, and local health partners. The High Sierra Area Health Education Center (HSAHEC), our Disease Control Specialists (DCS) team, collaborates with the Nevada Office of Public Health Investigations and Epidemiology (OPHIE) team and the CDC team. We are working on the SET-NET project, collecting, tracking, analyzing, and submitting maternal and infant health information related to COVID-19 infections. The High Sierra AHEC SET-NET project DCS team collects data for pregnant individuals who tested positive for COVID-19 in 2020 in Nevada from requested medical records (MR/EMR). The project objectives for data focus on collecting, analyzing, and submitting maternal and infant health data related to COVID-19 on behalf of the Nevada jurisdiction. Our team strives to be a trusted resource that develops and shares resources for Obstetric and Gynecological (OB/GYN) health providers,

community stakeholders, and partners. The surveillance project's data, trends, and analyses are utilized to share information with current and future public health and healthcare professionals, increasing their understanding of the emerging threats, such as COVID-19, on the vulnerable pregnant and postpartum population. The High Sierra AHEC project team works under work plan W to achieve necessary milestones for Budget Period 3. This report will highlight the collected and analyzed data, developed educational materials, and findings during BP3.

Current Project

Beginning in Budget Period 3, 2021-2022, the High Serria AHEC SET-NET underwent increased project and sample capacity for the 2020 cohort. In August 2021, High Sierra AHEC onboarded a second Disease Control Specialist as project lead to ensure that stated deadlines complete the work plan's activities and deliverables. Moving forward to January 2022, the project underwent updates to databases and project data variables. At this time, the CDC data team determined that the sample data from Nevada's jurisdiction was not appropriately weighted. The High Sierra AHEC Project staff worked with state partners and the CDC data team to remediate the sampling issue while revising and updating the project processes and quality control measures for data collection and submissions. As part of remediating the sampling concern, the CDC data team selected from the deidentified line list an additional 300 samples for the 2020 cohort of 369. In May 2022, the High Sierra AHEC project team brought on a part-time data surveillance coordinator whose primary focus was MRA for the 2020 cohort of 669 samples. The current sample data findings are preliminary and will continue to evolve as cases are still in the abstraction process and data is collected from medical records.

The High Sierra AHEC SET-NET project covers the jurisdiction of Nevada, and the following section looks at the individuals that had a COVID-19 diagnosis during pregnancy. The state of Nevada has 17 counties covering 110,000 square miles. There are three urban counties and 14 rural/frontier counties. Positive lab reports and medical records abstraction the county of residence for all COVID-19-positive pregnant individuals is collected to ensure that the sample cohort is representative of the jurisdiction's population. In Figure 1, a higher prevalence of COVID-19-positive pregnant individuals has lab results from Clark County, with 76.52% of the total cases, and 18.89% of those are included in the sampled population based on priority criteria

and random selection. The second urban county, Washoe County, had 16.04% of total positive pregnant cases, and 3.42% of those cases were included in the sampled population. Carson City has 1.27 % of the sampled population with .24% of sampled data. Our rural/frontier counties are primarily Lander, Elko, Lyon, Humboldt, White Pine, Douglas, Churchill, Nye, and Mineral. These counties have 6.21% of total positive pregnant individuals, and our sampled population includes 1.63% of those cases.

Figure 1

SET-NET Project sampled population percentages separated by county.
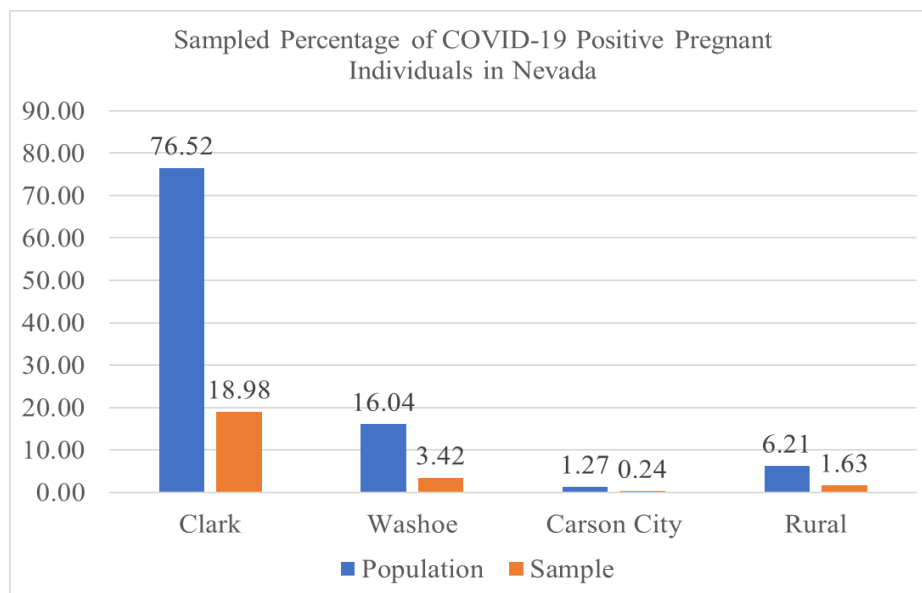
Note. Figure 1 shows the percentage of sampled cases against total cases separated by Nevada county.

During pregnancy, the individual's age plays a crucial role in their overall health, well-being, and possible complications and adverse birth outcomes (Ellington et al., 2020). Advanced maternal age is an age greater than 35 during pregnancy that can predispose pregnant individuals to adverse birthing outcomes that can affect their long-term health and/or their infant's short and long-term health (Merheri et al., 2020). The distribution of maternal age for the total number COVID-19 positive pregnant individuals across Nevada is seen in Figure 2. For comparative purposes, the maternal age distribution for COVID-19-positive pregnant persons selected for the

2020 cohort sample can be seen in Figure 3. The sample cohort's maternal age distribution closely represents the total population of COVID-19-positive pregnant persons across the jurisdiction.

Figure 2

Maternal age ranges for all COVID-19-positive pregnant persons in Nevada in 2020

Maternal Ages of COVID-19 Positive Pregnant Individuals in 2020 in Nevada
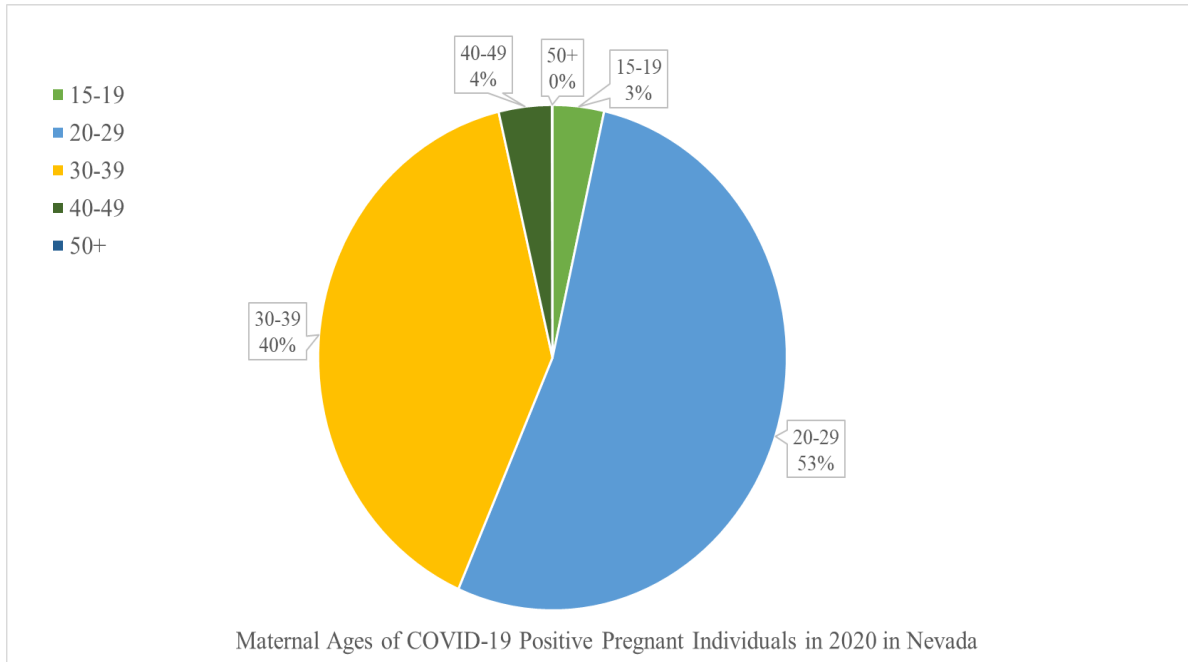
Note. Figure 3 Displays the age range for all pregnant individuals that tested positive for COVID-19 in 2020.

Figure 3

Maternal age ranges of the individuals sampled 2020 COVID-19-positive pregnant cases.

Ages of Pregnant Individuals in Sample

Legend:
- 15-19
- 20-29
- 30-39
- 40-49

4% | 4% | 41% | 51%
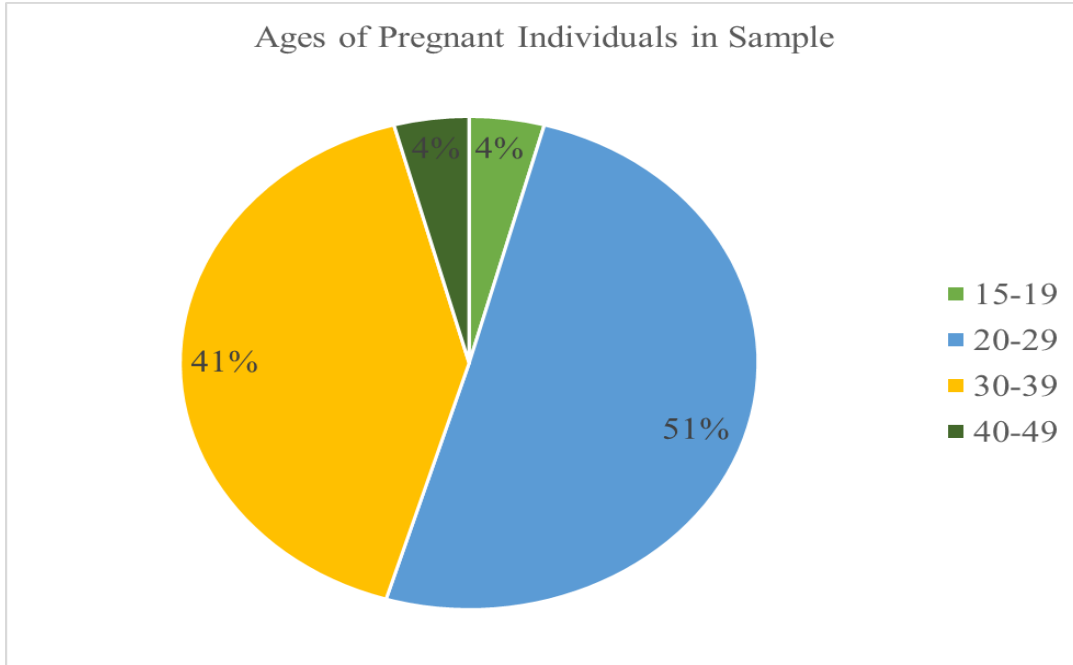
Note. The age range for projects sampled pregnant individuals that tested positive for COVID-19 in 2020

Our project staff uses accessible databases for data abstraction to collect the race, ethnicity, insurance status, and additional data applicable for COVID-19-positive pregnant individuals in the 2020 cohort. Utilizing the accessible databases, project staff can pull race and ethnicity data for pregnant individuals with positive COVID-19 lab reports. Figure 4 (below) shows the distribution of COVID-19-positive individuals by their self-identified race/ethnicity abstracted from medical records or lab reports. In Figure 4, we see that individuals identified as White and non-Hispanic represented the highest number of COVID-19-positive infections during pregnancy. Although, a few cases have race and ethnicity waiting to be determined from medical records and the abstraction process.

Figure 4

Separation of the sampled population by identified maternal race

Maternal Race of Sampled Population

- American Indian or Alaskan Native
- Asian
- Black or African American
- Multiple
- Native Hawaiian or other Pacific Islander
- Other
- Unknown
- White
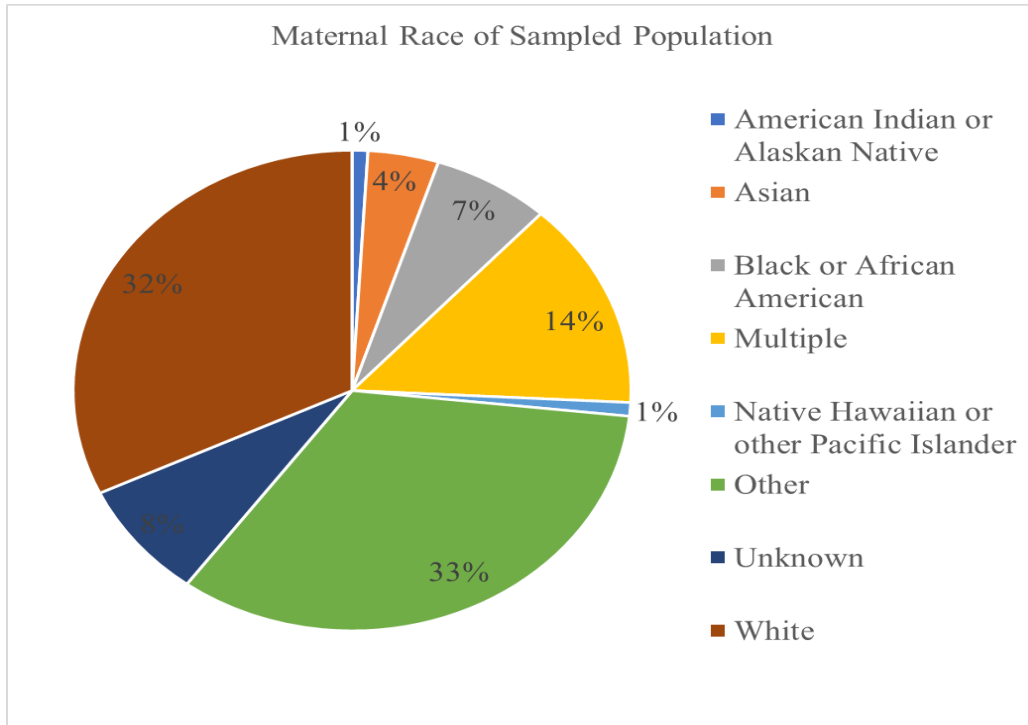
Note. Maternal race of the sampled population of COVID-19-positive pregnant individuals

The CDC has reported that the risk of COVID-19 infection among the Hispanic population is 1.6x more significant than in the white non-Hispanic population (CDC, 2021). The previous graph shows the race distribution for the 2020 cohort, and Figure 5 shows the ethnic distribution of the 2020 cohort. In addition, some sample cases in the 2020 cohort are unknown for ethnicity and have been excluded.

Figure 5

Ethnicity breakdown of the projects sampled pregnant individuals.

Maternal Ethnicity of Sampled Population
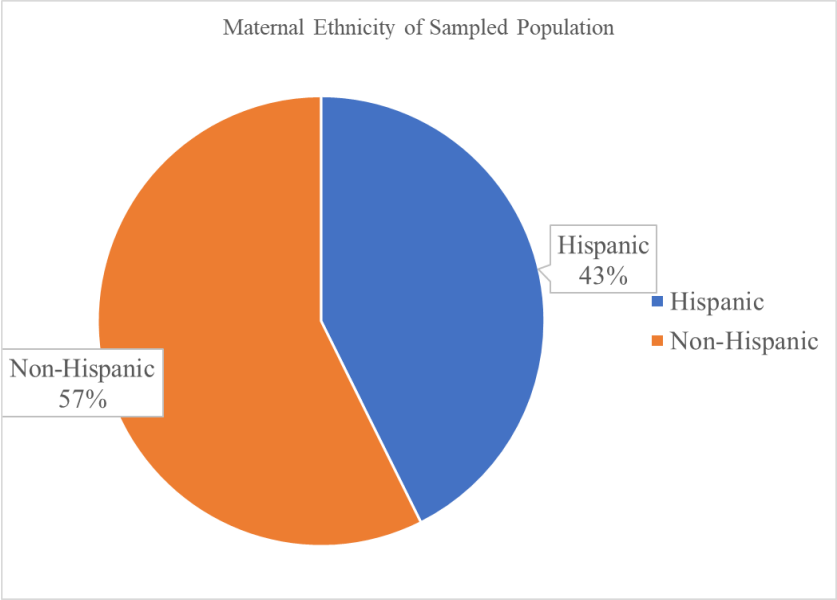
Note. The maternal ethnicity of COVID-19-positive pregnant individuals in the sampled population is shown.

During BP3, the High Sierra AHEC project abstracted the medical records and compiled an analysis of preliminary findings for the birthing trends of the sampled cohort. The preliminary data shows that more pregnant individuals have experienced a COVID-19 infection with lab test diagnosis during their third trimester (Figure 6). Of the 270 birthing persons with completed data abstraction, 131 had a third-trimester infection. While there were 98 second-trimester infection cases, only 41 pregnant individuals had the infection in the first trimester. These numbers will change as the cohort increases, and we gather more information about the samples through completed data abstraction of medical records.

Figure 6

Pregnant individuals' trimester of COVID-19 infection or lab test diagnosis

**Trimester of COVID-19 Diagnosis**
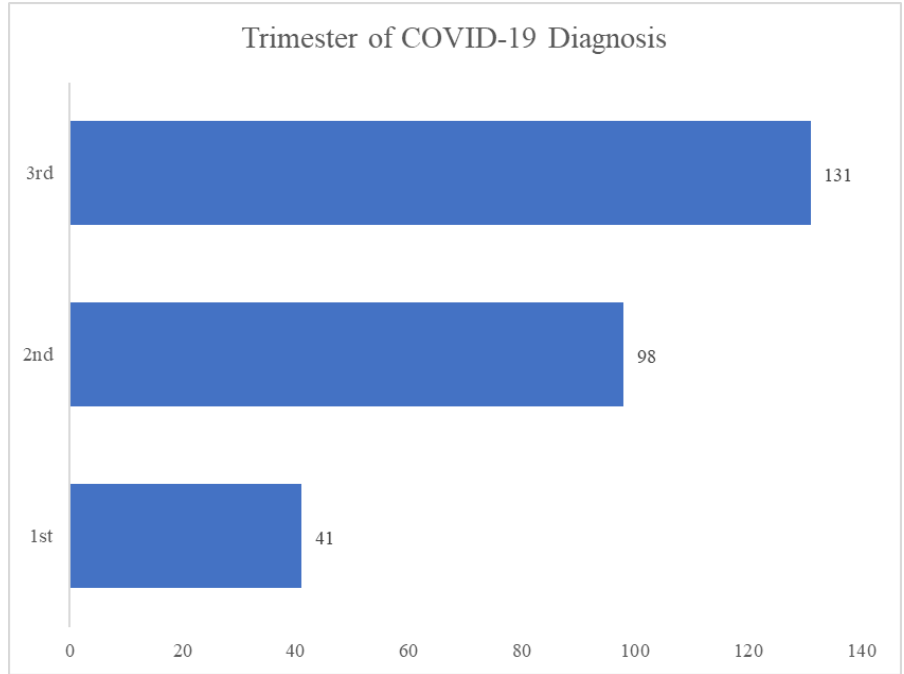
Note. The trimester that pregnant individuals received for COVID-19 positive lab diagnosis.

Through analysis of sample cases with a completed medical record abstraction, our project staff found that there were 190 vaginal births, and of those, there were 178 delivered at term (>37 weeks). However, there were twelve preterms (<37 weeks) deliveries. There have been 114 cesarean section births, and 83 of those were to term, while 31 were preterm. A chart in Figure 7 highlights the preliminary findings for pregnant individuals' birth outcomes and the term status.

Figure 7

Birthing trends of COVID-19-positive pregnant individuals from the sampled population

Birth Trends of COVID-19 Positive Pregnant Sampled Individuals
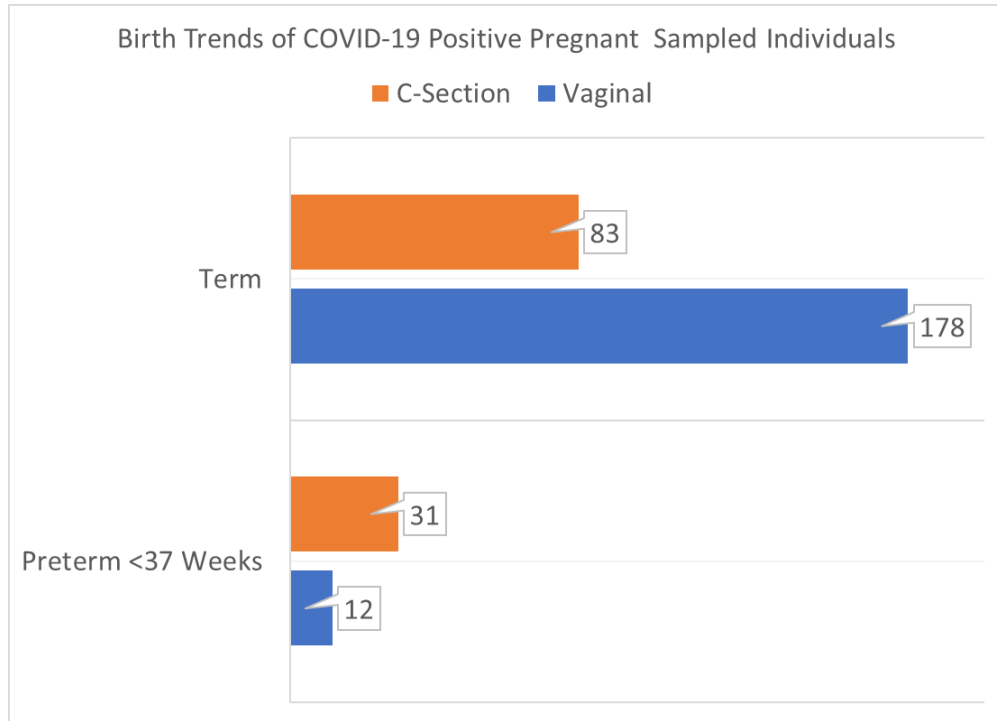
Note. The birthing trends of COVID-19-positive pregnant individuals included in the sampled population

The High Sierra AHEC project sought to understand better the impacts of COVID-19 infections on pregnant person's deliveries using the information gathered through the medical record abstraction. Our project pulled data collected for birthing individuals and their infants relating to the preterm delivery status. In figure 8, preterm births (>37 weeks) are separated by the pregnancy trimester when COVID-19 infection was present. The data shows that there are more cases of a third-trimester diagnosis of COVID-19, and additional research and data collection are needed to understand the impacts further.

Figure 8

COVID-19 Diagnosis of Preterm Deliveries

COVID-19 Diagnosis of Preterm Births
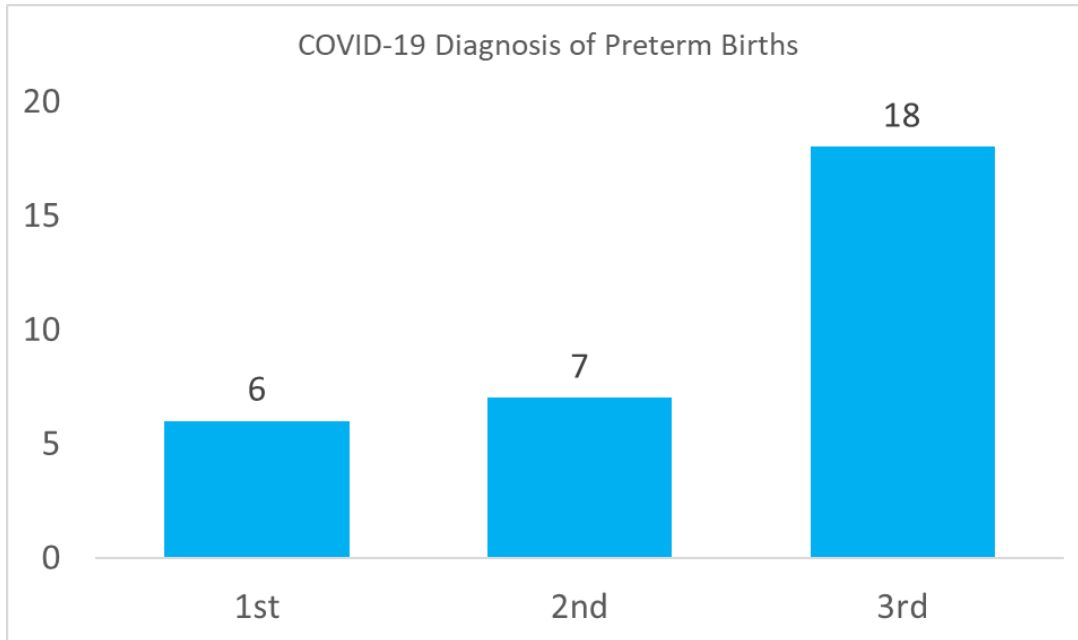
Note. The figure shows the trimester of diagnosis of the preterm deliveries in the Nevada Sample.

The High Sierra AHEC values and objectives strive to respond to current and emerging public health issues and commit to delivering innovative education that prioritizes equitable practices. Building solid relationships and partnerships to benefit the community while supporting and engaging current and future healthcare workers in Nevada anchors the SET-NET, honoring our values and commitments. The SET-NET project staff needed to understand what education was available and what was needed for OB/GYN providers and community partners.

Provider Survey

The High Sierra AHEC SET-NET project developed a provider survey early in BP3, fulfilling a required work plan milestone activity. The survey was developed and disseminated in the project's first year with the help of a Community Health Sciences (CHS) undergraduate intern. Unfortunately, it received a zero response rate, and given the survey's importance, it was reviewed when a second DCS was onboarded in August 2021. After the project staff reviewed, revised, and updated the second version of the provider survey was given an internal objective of a 5% response rate from OB/GYN providers and distributed to an email listserv with 125 OB/GYN providers. Through connecting opportunities, meetings, collaborations with

community partners, and consistent promotion, the second survey achieved a 4% response rate. After closing the response window in mid-November, it gave the project staff the time to conduct a response analysis disseminated in the Provider's Survey response analysis report. This second version of the provider survey gave valuable insight into the educational needs and patient concerns expressed to providers by those who may become pregnant, pregnant, and/or postpartum patients related to COVID-19 infections and vaccinations. This report has been disseminated to community partners and OB/GYN providers for information sharing and educational purposes.

Some of the valuable insights from the provider analysis can be seen below. Figure 8 details the offered services by providers separated by county in Nevada, except for Nye County. However, it should be recognized that Nye County is about an hour's drive from Clark County, and health services may not be offered as pregnant and postpartum individuals seek health services in Clark County.

Figure 9

Provider Responses about Nevada Counties where health services are provided

What counties does you or your practice serve(s)?
5 responses

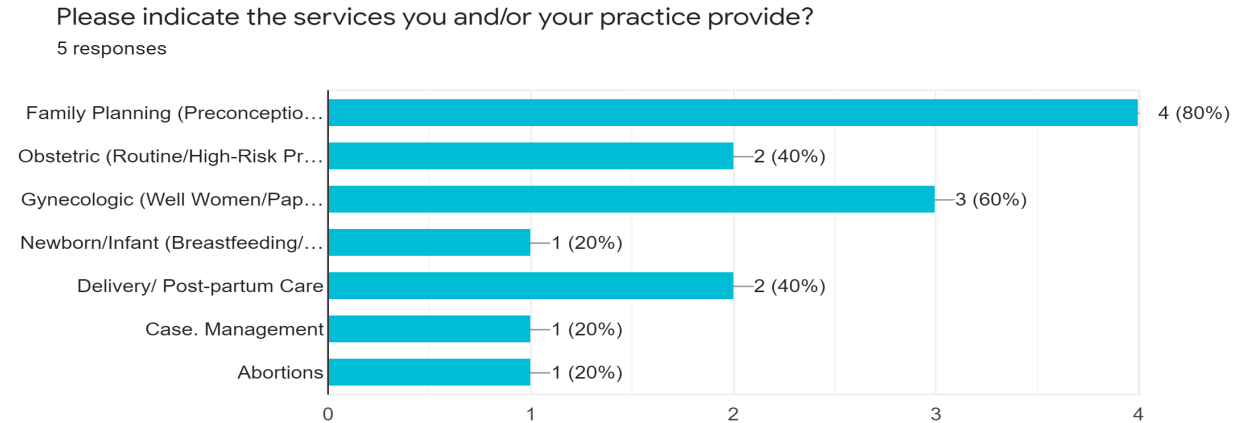| County	Value
Carson City	1 (20%)
Churchill	1 (20%)
Clark	2 (40%)
Douglas	1 (20%)
Elko	1 (20%)
Esmeralda	1 (20%)
Eureka	1 (20%)
Humboldt	2 (40%)
Lander	1 (20%)
Lincoln	1 (20%)
Lyon	1 (20%)
Mineral	1 (20%)
Nye	0 (0%)
Pershing	1 (20%)
Storey	1 (20%)
Washoe	3 (60%)
White Pine	1 (20%)
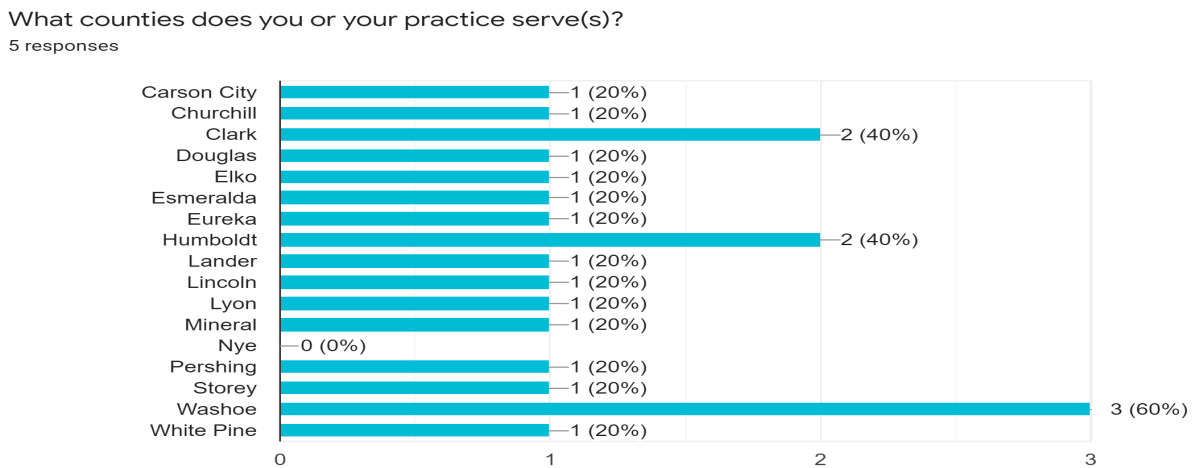
Note. The Ob/GYN providers' responses showed the counties they serve within the state.

There are various services that OB/GYN providers offer to individuals and families. However, in the responses analyzed, family planning was the most frequently noted service provided as seen in Figure 10.

Figure 10

The providers respond about the services provided for pregnant/postpartum individuals.

Please indicate the services you and/or your practice provide?
5 responses

Service	Count
Family Planning (Preconceptio…	4 (80%)
Obstetric (Routine/High-Risk Pr…	2 (40%)
Gynecologic (Well Women/Pap…	3 (60%)
Newborn/Infant (Breastfeeding/…	1 (20%)
Delivery/ Post-partum Care	2 (40%)
Case. Management	1 (20%)
Abortions	1 (20%)

Note. Figure 10 shows the health services that providers offer throughout the state.

In the COVID-19 section of the provider survey asked questions about testing, vaccinations, patient concerns, and provider educational needs. Using provider feedback and the September 2021, a CDC Health Advisory 453, our project staff share the guidance and recommendations that all pregnant individuals receive the COVID-19 vaccine to prevent severe illness and adverse health outcomes. IThe responses from providers about COVID-19 testing are seen in Figure 11.

Figure 11

Provider Responses about COVID-19 testing recommendations.

Are you requiring or recommending COVID-19 testing during a patient's pregnancy?
5 responses

- Yes- Requiring
- Yes-Reccomending
- No
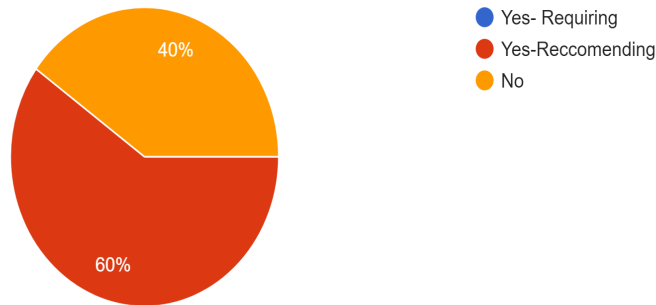
Note. The provider gathered information regarding information related to COVID-19 testing for patients..

Some providers are recommending that pregnant individuals receive COVID-19 testing, while some do not recommend it. This question in Figure 11, may need to be revised with better wording, as this question may cause provider confusion especially around if a patient is experiencing symptoms ot not. As shown in Figure 12, all providers recommend testing if signs and symptoms are experienced with a 100% (5 responses) of providers recommend COVID-19 testing for pregnant individuals experiencing symptoms.

Figure 12

The provider survey question about COVID-19 testing of pregnant individuals

At what point are you requiring or recommending COVID-19 testing?
5 responses
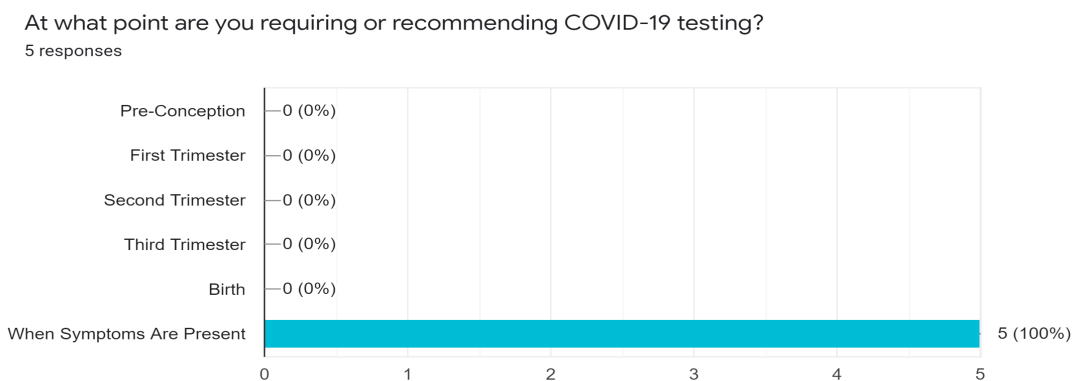
Note. The provider survey asked when OB/GYN providers require or recommend that patients get tested.

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The recommendations related to COVID-19 for prevention and best practices are consistenetly giveing priority to vaccines. The provider survey asks providers if they are recommending for their pregnant patients to get the COVID-19 vaccine. The chart in Figure 12 shows that 80% (4 responses) of providers recommend the vaccine to pregnant and postpartum individuals. There was one response from a provider not recommending the COVID-19 vaccine. The project staff reviewed the response as there is a disagreement with the current guidance. There may be several reasons for this response, such as a controversial service or a provider only providing a particular service at an exact time. Instead of recommending the vaccine, they suggest that the individual speaks with their primary care provider as the recommended vaccine may cause undue stress and burden at the time of services that they provide.

Figure 13

A provider survey question about the COVID-19 vaccine for pregnant/postpartum individuals

Are you recommending the COVID-19 vaccine for pregnant/postpartum patients?
5 responses

- Yes - for all patients
- Yes- if patient is receptive
- No
- Not Sure/ Unknown

20%

80%
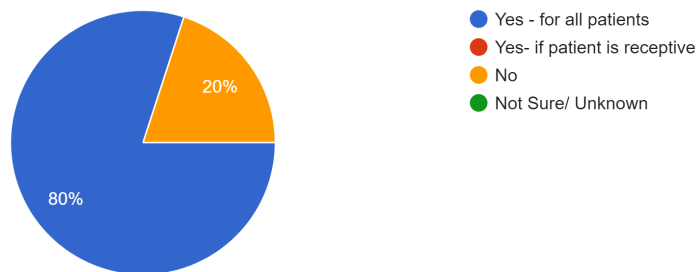
Note. The provider survey asks if OB/GYN providers recommend the COVID-19 vaccine.

Vaccine hesitancy is a challenging aspect that healthcare service providers face when connecting with their patients. Our projects commitment to healthy pregnant/postpartum persons and the communities helps to fuel a call to action to develop educational components that are trusted, credible references that are easy for providers and understandable for patients. Part of the COVID-19 vaccine discussion concerns this new vaccine and pregnant individuals' health. The provider survey asks providers to provide insight into pregnant patients' concerns. The most common concerns providers have seen are in Figure 14. The most common concern for

COVID-19 vaccines that providers heard was what the possible side effects of the vaccine could be experienced.

Figure 14

Chart of providers' responses to pregnant individuals' concerns about the COVID-19 vaccine and health care.

What are the common concern(s) you have heard from your pregnant/postpartum patients regarding COVID-19?

5 responses

Concern	Responses
Mental Health (Depression/Isol…	2 (40%)
Variants/Transmission/	2 (40%)
Breastfeeding/Antibodies	2 (40%)
Neonate Health	1 (20%)
Vaccine Effects (Fertility/Side E…	3 (60%)
Mother's Overall Health	1 (20%)
N/A	1 (20%)
Vaccines in general. Inconsiste…	1 (20%)
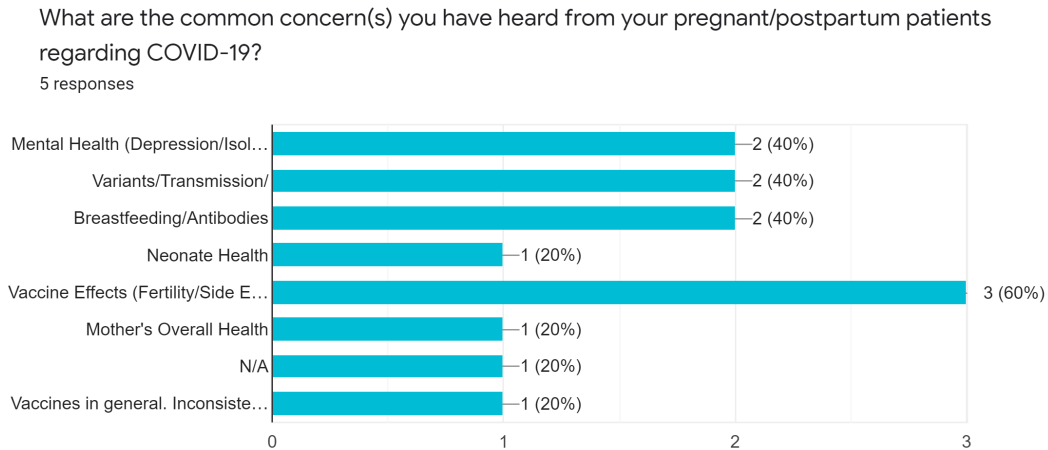
Note. A provider survey asks OB/GYN providers about common patient concerns and the COVID-19 vaccine.

Educational Materials

The provider survey provided a foundation for creating relevant education components for the projects target population. After the dissemination and response from the survey the information from the providers about their needs, their patient concerns for pregnancy, vaccination, and other concerns with this emergent diseases. This gave High Sierra AHEC project the focus for educational opportunities for communities in rural and underserved areas.

Educational components were built into the surveillance project work plan and onboarding a second DCS increased the project's capacity to develop, enhance and deliver the educational

components. The first educational component created seen in Figure 15[1], was sdisseminated to 125 OB/GYN providers and community partners. The first flyer was tailoreded to prengant individuals and addressed concerns and questions around receiving the COVID-19 vaccine during pregnantcy but may help to inform postpartum indidivuals and those who may become pregnant. A second education flyer was tailored to providers motivational interviewing tips that may help providers address vaccine hesitancy in their patients. The second educational component can be seen in Figure 16[2] and was created as a supplemental resource. After it's development, it was disseminated to the 125 OB/GYN providers' and community partners. When a Data Surveillance Coordinator(DSC)was onboarded part-time, the educational flyers were translated into Spanish to make them accessible to our Hispanic indidivudals and communties. The Spanish versions of the flyers can be seen in Figures 17[3] and 18[4]. Both of these educational flyers can be downloaded from the projects resource library, printed, and distributed through providers' offices, emails, and in-person opportunities.

In September 2021, the CDC Health Advisory Network (HAN) issused a health alert for COVID-19 vaccine recommendations for pregnant individuals was issued. The advisory was issued to bring more awareness that pregnant individuals have a low vaccination rate of just 31% (CDC, 2021). Project staff gave a short overview of this advisory to project partners and their staff members at an OPHIE meeting to help further disseminate and share information. As the pandemic continues, more pregnant people and those who may become pregnant may be at risk for severe illness and adverse birth outcomes related to COVID-19. These factors play a pivotal role in our developing educational materials and how we can serve the communities and inform best practices for this vulnerable population.

Following a discussion with our CDC partners on a monthly call, we began to reach out to the birthing facilities in Nevada to engage their COVID-19 testing policies for pregnant individuals and their infants. We conducted brief phone calls to the birthing facilities to engage infection controls, labor and delivery units, nursery units, and intensive care units for information on their testing policies. We presented the gathered information to our CDC partners, which fueled the

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[1] Figure 15 is found in Appendix A
[2] Figure 16 is found in Appendix A
[3] Figure 17 is found in Appendix A
[4] Figure 18 is found in Appdenix A

opportunity to present at key multijurisdictional meetings to present the knowledge gained from the impacts that testing may have on maternal health and COVID-19 transmission. One such meeting where the information was shared was at the SET-NET Data Use Working Group Meeting on Tuesday, February 15, 2021.

Following the CDC presentation, we connected with the CDC Foundation, and spoke about the SET-NET project and what we information can be analyzed and shared from the data we collect under the surveillance project. Our project was found to be important to share with others and led to developing webinars related to COVID-19 vaccination during pregnancy. We connected with the CDC Foundation and a our partners at Immunize Nevada, who facilitated the webinars. we co-presented with CDC Foundation and a local OB/GYN provider on the COVID-19 vaccine during pregnancy for providers and parents that were presented on Tuesday, April 12, 2022, and Tuesday, May 10, 2022. Through these established relationships out project was able to present at the Immunize Nevada community members' meeting on Thursday, April 7, 2022.

Through this relationship with Immunize Nevada our project learned of opportunity and was able to submit a proposal to present at the Nevada Health Conference about the SET-NET project, the trends we saw with vaccine hesitancy with COVID-19 among our rural and minority populations, and how to build vaccine confidence in this population. As we prepared for this presentation, the CDC invited us to present to the Data Use Working group meeting with a 30-minute presentation of our Nevada Health Conference material on April 14,2022. Following the CDC presentation, we prepared for the in-person Nevada Health Conference on Wednesday, May 25 2022.

Lastly, during this budget period, the DCS project staff worked diligently on developing a COVID-19 pregnancy dashboard and an OB/GYN Provider Resource library that would be published on the High Sierra AHEC website. The SET-NET project team developed the Provider Resource library (Figure 18) after gathering responses to the provider survey and focusing on our disseminated materials. We used our robust partnerships to collect and search for opportunities to share maternal health information, COVID-19research and guidance, and vaccinations during pregnancy. The content can be accessed through inputting an email address that is not sold just added to list for future resource sharing opportunities, and all content is separated by topics covered. The team developed a SET-NET data dashboard (Figure 19) using the deindentified data from Redcap with the surveillance measures and will be updated as information becomes available. Some information on the data

dashboard includes the county of diagnosis, birthing trends, and testing policies of the birthing facilities in Nevada. The dashboard was published on May 16, 2022, but there was technical difficulty in accessing the dashboard and after it was fine tuned it is currently available for everyone to view.

Figure 18

The High Sierra SET-NET Provider Resource Library

Note. Figure 18 shows The High Sierra SET-NET Provider Resource Library

Figure 19

The Nevada COVID-19 Pregnant Individuals Dashboard
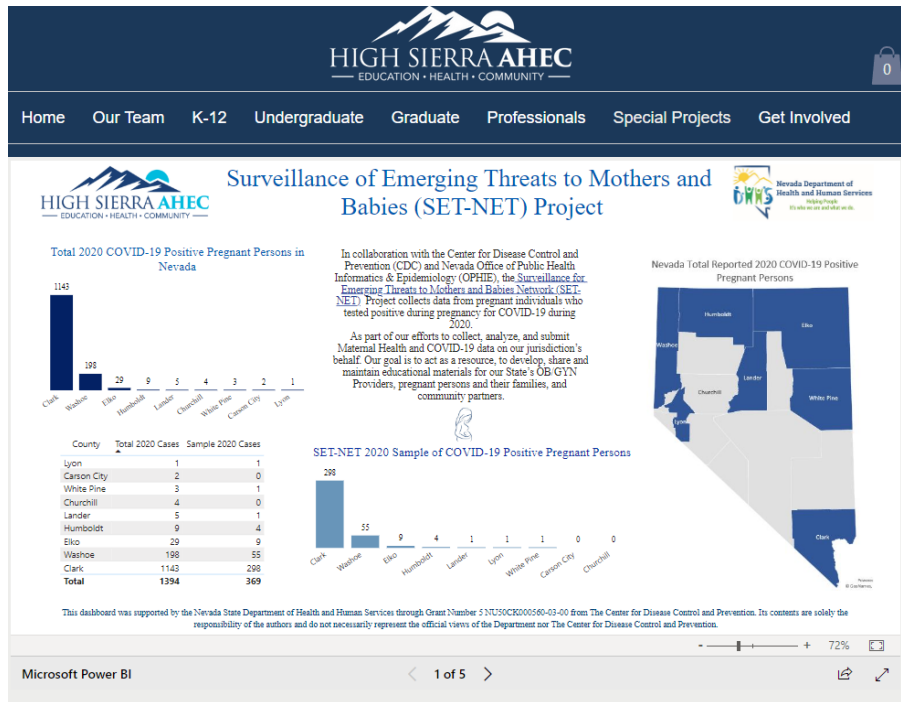
Note. Figure 19 shows the High Sierra AHEC COVID-19 Pregnancy Dashboard on their website.

Conclusions

The High Sierra AHEC staff collaborates with CDC and OPHIE partners throughout the project and seeks feedback and input for project deliverables and developed material. The project staff strive to maintain progress and quality surveillance data while staying on top of the changing COVID-19 pandemic. Keeping abreast with activities that include staying informed about new vaccine effects, treatments, and variance to be knowledgeable and address gaps in resources for the maternal and child populations. The SET-NET project staff started with a sampled population of pregnant individuals with COVID-19 positive in 2020 across Nevada a longitudinal survey of 20% of all positive COVID-19 pregnant individuals. Current data collection and abstraction are still in process on factors such as risks, COVID-19 symptoms, pregnancy outcomes, infant check-up timepoints, and facilities' COVID-19 testing policies.

The pre-pandemic data maternal health and mortality was a concerning issue in Nevada as the health of the birthing individual plays a vital role in infants' health and long-term outcomes. The COVID-19 pandemic impacted these concerning numbers with difficulties and new health concerns causing addition stress for pregnant and postpartum individuals, their families and their communities. Maternal health characteristics such as age, race, ethnicity, socioeconomic status, and geographical location impact maternal and infant outcomes.Additionally, maternal mortality is exacerbated by older age, higher body mass, and predisposed medical conditions (Bianchi, Kaeser & Cernich, 2021). The Nevada Pregnancy Mortality Surveillance System, from

2021-2017, the highest maternal mortality in Clark County was among Black non-Hispanic birthing people at 66.4 per 100,000 live births. In the SET-NET sample, 32 COVID-19-positive pregnant individuals identified as Black or African American representing 8% of the sample. The highest maternal mortality in Washoe County was among Hispanic persons at 28.2 per 100,000 live births. In the SET-NET project sample cohort selection 44% of positive pregnant individuals identified as Hispanic. The highest maternal mortality among the 14 rural counties was birthing Asian, Pacific Islander, and American Indian/American Native not-Hispanic, 263.2 per 100,000 live births. Twenty-three positive pregnant individuals identified as Asian, Pacific Islander, and American Indian/American Native, representing 6% of sampled individuals. The SET-NET projects sampled cohort for 2020 used priority inclusion criteria (ICU Admissions, Infants testing positive, and ER Visits) and a random selection to equal a percentage of the total COVID-19 positive pregnant individuals across the state. Nevada's diverse racial and ethnic groups have some representation. The small representation data for birthing persons and those who may become pregnant members of minority groups are smaller, with the possibility of experiencing barriers and disparities to achieving quality and equitable health services related to COVID-19.

The project staff recognizes that not all the material data has been collected for the complete picture, and not all infants have completed data abstraction records. The surveillance data collected uses specific timepoints throughout pregnant and infants' first year to see trends and possible long-term outcomes from COVID-19 infections, exposures, and reported congenital anomalies and disorders. The time points for 2-week, 2-month, and 6-month follow-ups for infants born in 2020/2021 to positive birthing individuals with positive COVID-19 diagnosis in 2020 have yet to occur. The data showing the third trimesters' COVID-19 infections tend to be the majority, with more c-sections having an at-birth diagnosis. A possible reason is the COVID-19 testing policy of birthing facilities. The project staff sought qualitative data to understand this trend better since the individual's health is different at all stages of pregnancy. One conclusion from our data, it is possible that pregnant individuals were asymptomatic and unaware of COVID-19 infection until delivery. There are 18 birthing facilities in Nevada, and nine of them test pregnant individuals upon admission to the labor and delivery unit. In contrast, the other nine facilities test pregnant individuals when they display signs/symptoms of COVID-19 or tested positive beforehand.

The same birthing facilities were contacted again to inquire about the COVID-19 testing protocol for infants born at their facilities. The project staff to question neonate transmission and positive COVID-19 results in infants is very low. Fourteen facilities test the neonate to see if the birthing person has signs/symptoms or a positive test. Follow the America Academy of Pediatrics (AAP) guidance for two tests (24 and 48 hours). The remaining four facilities have no formal policies regarding neonate testing and most likely leave it to the physician's orders or if neonates display signs/symptoms of COVID-19. Developing an evolving picture for pregnant individuals in

Nevada can be utilized to inform medical providers, public health partners, and decision-makers. In addition, the updated information can be shared and disseminated through educational materials and valuable resources to help mitigate transmission and provide equitable strategies for vulnerable populations.

High Sierra AHEC uses a strong foundation in education and public health to be a trusted, credible resource for rural and underserved communities. The second version provider survey was developed to gather valuable insight into providers' needs and experiences. Gaining connections with OB/GYN providers and community partners through Nevada gave project staff opportunities to connect, promote, share and open conversations that build trust for communities. The developed education components were the first steps to showing that the project staff is committed to advancing the health of pregnant, postpartum, those who may become pregnant, and their infants. Assessing barriers and challenges in our rural, underserved, racial and ethnic minorities gives information that creative strategies can be developed to make lasting positive impacts. The project staff at High Sierra AHEC continues to strive to be a trusted resource with dashboard and resource library development. Maternal and child health information for long-term outcomes related to COVID-19 is limited.

Maternal mortality and morbidity outcomes can be affected by external factors such as stay-at-home mandates, few visits to the OB/GYN provider, limited resources, and stress. The surveillance and data limitations are that the complete picture is not always achievable. There are errors in reporting as the project has seen lab reports having individuals marked as pregnant when they are not or marked pregnant and identified in the data source as male. These data errors can be challenging if included in the study as pregnancy status is not confirmed until medical records are requested and data abstraction is begun. There are delays in reporting data and incomplete reports because not all rural counties in the project jurisdiction report positive COVID-19 labs for pregnant individuals (i.g. tribal nations and capability). The rural counties may also experience positive pregnant individual tests in a more urban county or a neighboring state, and the positive test is reported there instead of county/state of residence. The lack of data reporting from rural countries raises health equity issues. There is also limited information on the clinical health effects of first and second-trimester infections. Until the MRA process begins, there is very little knowledge of the COVID-19 diagnosis/infection, and asymptomatic individuals may not test during the first and second trimesters of the stay-at-home mandates and fear of transmission.

The High Sierra AHEC project staff is committed to providing quality data abstraction and analysis with educational components and resources to further research and the health of the communities as we progress through BP4.

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Appendix A

Figure 15

High Sierra AHEC COVID-19 for Pregnant Individuals

Pregnancy and COVID-19 Vaccine

Should I get the COVID-19 vaccine if I'm pregnant, breastfeeding, or might become pregnant?

COVID-19 vaccination is recommended for all individuals aged 12 years and older, including pregnant individuals, those who are breastfeeding, trying to get pregnant, or might become pregnant. Pregnant individuals are at an increased risk for severe illness from COVID-19 that can require hospitalization, intensive care, a need for a ventilator, or special equipment for breathing, or result in death. Pregnant individuals with COVID-19 are at an increased risk of preterm birth and may be at an increased risk for other adverse pregnancy outcomes and complications.

Are COVID-19 vaccines safe for individuals who are pregnant, breastfeeding, or those that might become pregnant?

COVID-19 vaccines have growing evidence that shows that they are safe and effective for administration during pregnancy. The data currently indicates that the benefits of receiving a COVID-19 vaccine outweigh any known or potential risks of vaccination during pregnancy. COVID-19 vaccines do not cause infections and work by boosting the immune system, and there may be indications of potential for protection in newborns and infants. There is no evidence that vaccines or their ingredients cause infertility in men or women. Data collection continues on vaccine effectiveness, safety, immune responses, and newborn/infant protection.

Are there any side effects from getting the COVID-19 vaccine?

Common side effects can include tiredness, headache, muscle pain, chills, fever, and nausea. At the injection site, there may be some pain, redness, and swelling. The second shot may have more intense side effects than those experienced after the first shot. In most cases, the side effects will go away within a few days. Contact your health care provider right away if you are experiencing serious side effects.

Pregnant individuals who have received the COVID-19 vaccine, please enroll in V-safe, a smartphone-based tool that uses text and web surveys for health check-ins and lets the CDC know if you have any side effects. Participation is voluntary, and you can opt-out at any time.

https://vsafe.cdc.gov/en/

For more information visit https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/pregnancy.html

Connect with us for more information
jaimee@highsierraahec.org
natasha@highsierraahec.org
www.highsierraahec.org
775-507-4022

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Note. Figure 15 shows High Sierra AHEC COVID-19 for Pregnant Individuals in English.

Figure 16

The High Sierra AHEC COVID-19 Vaccine Flyer for Providers

Note. Figure 15 shows the High Sierra AHEC COVID-19 vaccine flyer for providers in English

Figure 17

High Sierra AHEC COVID-19 for Pregnant Individuals

El Embarazo y Vacuna COVID-19

¿Debo vacunarme si estoy embarazada, amamantando o podría quedar embarazada?

Se recomienda la vacunación contra el COVID-19 para todas las personas mayores de 12 años, incluidas las embarazadas, las que están amamantando, las que intentan o podrían quedar embarazadas. Las personas embarazadas corren un mayor riesgo de enfermarse gravemente cuando se infectan y pueden requerir hospitalización, cuidados intensivos, ventilación mecánica o provocar la muerte. Las personas embarazadas con COVID-19 también corren el riesgo de tener un parto prematuro y otros resultados y complicaciones adversos del embarazo.

¿Son seguras las vacunas COVID-19 para las personas que están embarazadas, amamantando o aquellas que podrían quedar embarazadas?

Cada vez hay más pruebas que demuestran que la vacuna contra la COVID-19 es segura y efectivo para su administración durante el embarazo. Los datos actuales indican que los beneficios de recibir la vacuna superan cualquier riesgo conocido o potencial de la vacunación durante el embarazo. Las vacunas contra el COVID-19 no causan infecciones, funcionan al estimular el sistema inmunitario y puede haber indicios de un potencial de protección en recién nacidos y bebés. Ninguna evidencia ha demostrado que las vacunas causen infertilidad en hombres o mujeres. Continúa la recopilación de datos sobre la eficacia de la vacuna, la seguridad, la respuesta inmunitaria y la protección del recién nacido/bebé.

¿Hay algún efecto secundario por recibir la vacuna COVID-19?

Los efectos secundarios comunes incluyen cansancio, dolores de cabeza, dolor muscular, escalofríos, fiebre y náuseas. En el lugar de la inyección, puede haber dolor, hinchazón y enrojecimiento. La segunda inyección puede tener efectos secundarios más intensos que los experimentados con la primera inyección. En la mayoría de los casos, los efectos secundarios desaparecerán en unos pocos días. Comuníquese con su proveedor de atención médica de inmediato si experimenta efectos secundarios graves.

Las personas embarazadas que han sido vacunadas, inscríbanse en V-Safe, una herramienta basada en teléfonos inteligentes que utiliza controles de salud y le informa a los CDC si tiene algún efecto secundario. La participación es voluntaria y puede retirarte en cualquier momento. https://vsafe.cdc.gov/en/

Para más información visite https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/pregnancy.html

Contáctenos para más información
jaimee@highsierraahec.org
natasha@highsierraahec.org
www.highsierraahec.org
775-507-4022

Note. Figure 16 shows High Sierra AHEC COVID-19 for Pregnant Individuals in Spanish.

Figure 18

The High Sierra AHEC COVID-19 Vaccine Flyer for Providers

Note. Figure 17 shows the High Sierra AHEC COVID-19 vaccine flyer for providers in Spanish