Utah Department of Health & Human Services

August 2025

Utah health status update

Key findings

- Stillbirth is ~3.6 times more likely for Utah women who didn't receive prenatal care, and each additional prenatal care visit lowered the odds of stillbirth by 3.7%.
- White mothers were 36.1% less likely to experience stillbirth than non-White mothers.
- Mothers who had previous children were more likely to have a stillbirth than those who had not had children.

In-depth evaluation of contributing factors of stillbirth in Utah, 2019–2023

The DHHS Office of Vital Records and Statistics (OVRS) studied stillbirths and live births in Utah between 2019 and 2023. OVRS found several contributing factors that increased the likelihood of stillbirths: whether the mother had prenatal care, the frequency of prenatal care visits, the mother's race, whether the mother has living children (or children who passed away after birth), whether the mother was married to the father of the pregnancy, and the mother's weight.

We compared Utah fetal death certificate data between 2019 and 2023 with Utah birth certificate data for the same period.[1] We only compared the data from mothers who were Utah residents and isolated all variables in both sets of data that could have an impact on stillbirth outcomes.

Our original analysis in the March 2025 Spotlight article looked at the bivariate relationship between various characteristics and stillbirth outcomes. Those findings highlighted that women who experienced a stillbirth were between 1.76 and 2.6 times more likely to have smoked during pregnancy, were between 3 and 10 times more likely to have not received prenatal care during pregnancy, and averaged around 4 fewer prenatal care visits when compared to live birth mothers.

Our most recent findings build on the previous data by conducting a multivariate logistic regression analysis looking at those relationships further by introducing control variables. This type of analysis allows us to identify what factors are more directly related to the risk of stillbirths and which are characteristics that are related only secondarily. After controlling for 22 variables, we were able to isolate 5 different factors that we found to be significant predictors of stillbirth.

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Prenatal care

Whether the mother received prenatal care, and the number of prenatal care visits the mother received, were important predictors of whether they would have a stillbirth. Mothers who did not receive prenatal care had 3.6 times higher odds of experiencing stillbirth, and each additional prenatal care visit lowered the odds of stillbirth by 3.7%.

Mother's race

The race of the mother also had a marked influence on the odds of a mother having a stillbirth. White mothers were 36% less likely to experience stillbirth compared with their non-White counterparts. These findings generally reflect existing research on stillbirths, with some studies noting Black mothers have 2 times the risk of stillbirth as White mothers.[2]

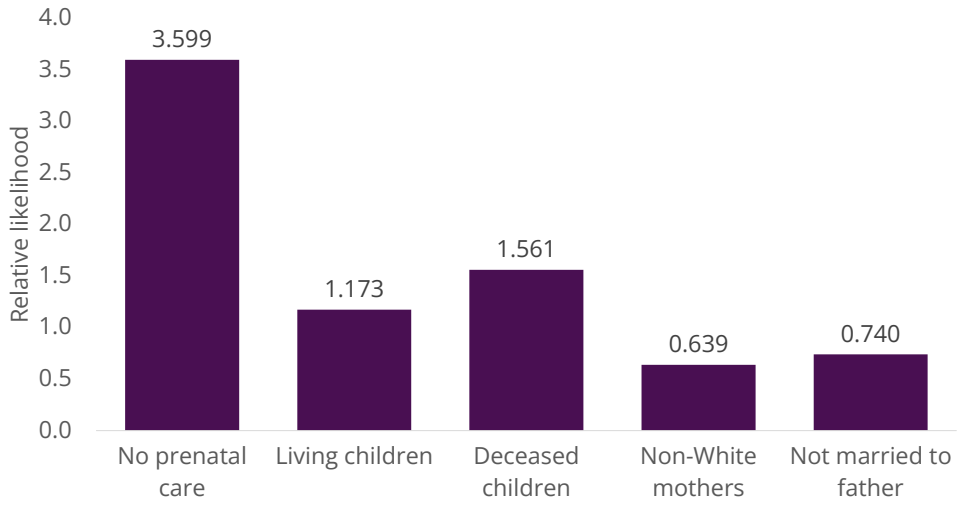
Previous pregnancy

Mothers who had previously given birth were more likely to have a stillbirth. Mothers with a living child were 17.3% more likely to have a stillborn than those who had no prior children. Even more significant, if a woman had a child who had died prior to their current pregnancy, they were 56% more likely to have a stillbirth than those who had no prior children. We could find no previous research that found an increased risk of stillbirth based upon if a mother had previously had children.

Figure 1. Stillbirth predictors and explanation of data

Predictor	OR	p-value	Meaning
No prenatal care	3.599	0.0017	Stillbirth was **~3.6 times more likely** for women who received no prenatal care.
Living children	1.173*	<.0001	Each living child increases stillbirth risk by **17.3%**.
Deceased children	1.561	0.0316	Mothers who had previous deceased children were **56%** more likely to have a stillbirth.
Weight at beginning of pregnancy	1.016	<.0001	Higher pre-pregnancy weight slightly increases risk **(1.6% per pound)**.
White/non-White mothers	0.639	0.0026	White mothers had **36% lower odds** of stillbirth.
Number of prenatal care visits	0.922	<.0001	More prenatal visits reduce odds by **7.8%** per visit.
Married to father	0.740	0.0261	Being married to the father of the pregnancy reduced stillbirth odds by **26%**.

Figure 2. Increased risk factors of stillbirth (odds ratios)



Social and economic factors

A mother's economic status and social support network are known to have a significant impact on health outcomes. This is likely multifactorial, influencing access to care and protective behaviors. We have very

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limited data related to these factors, but we were able to identify 2 proxies. First, we looked at the use of SNAP benefits. This nutritional support program for low income people is a way to identify people who have very limited resources. We did not find an association between SNAP benefit enrollment and stillbirths. Second, we looked at marital status. While obviously multifactorial, marital status can be used as a proxy for social support networks. We found that for mothers who were married to the father, stillbirth rates were 26% lower than those who were not married or married to someone different than the father. This agrees with previous studies.[3] For stillbirths, Balayla et al. found that unmarried women had a 24% higher risk of stillbirth compared to married women.[3] While it is likely that marriage is not the only factor causing this difference, it suggests social networks can impact pregnancy outcomes.

Mother's weight

We found that the mother's weight at the beginning of pregnancy was associated with a slight increase in the risk of stillbirth, with each pound of weight associated with a 1.6% increase in odds of stillbirth. Obesity in particular has been identified in many studies as a factor that increases the odds of stillbirth between 2–5 times compared with non-obese women.[4] When we looked specifically at mothers who were obese (BMI ≥ 30), we found no increased risk of stillbirth when controlling for other variables, despite an increased risk when looking at weight in general, which is likely due to confounding variable effects.

Other relationships

While the 5 aspects above were seen to be significant and impactful on stillbirth outcomes there were other variables in our model that were seen to have an effect on stillbirth outcomes, but were not significant (p-value > 0.05); or variables that were only significant prior to introducing control variables. When introducing the control variables, the mother's smoking status was no longer a factor seen to increase stillbirth outcomes. This is notable because in our original bivariate analysis, before introducing control variables, smoking was seen to be such a strong predictor of stillbirth outcomes. After further analysis, what seems likely is that the disparities were likely due to one or many cofounding variables, which were the actual primary cause of the disparities.

Closing thoughts

While we can only speculate as to the complexities of why these variables contribute more toward stillbirths among women in Utah, we can draw some simple lessons from the data. First, racial disparities between White and non-White mothers need to be further investigated to bridge the racial divide between mothers. As Rammah et al. conclude in their recent study on race and stillbirth outcomes, "much of the [racial disparity of stillbirths] remains unexplained," and that "future research should explore additional individual [...] contributors to these."[5] Indeed, we believe there is an opportunity to draw from the large reservoir of research on racial disparities and healthcare more broadly to address these disparities. Aligning statewide interventions in that direction will help reduce stillbirth mortalities.

Secondly, our findings underline the importance of frequent prenatal care to reduce the risk of stillbirth. This is one of the most glaring, modifiable factors a mother can do to reduce stillbirth, and one of the most important factors that health providers and various stakeholders can emphasize. Prenatal care

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appointments are primary for identifying health risks that contribute to higher levels of stillbirth and offer early interventions and constant monitoring to mitigate or alleviate those risks. Smoking cessation assistance, lowering high-blood pressure, losing weight, controlling diabetes, and various other factors are helped by frequent check-ups where resources can be made available.

1. Data was taken from the Utah Office of Vital Records and Statistics.

2. Gregory ECW, Valenzuela CP, Hoyert DL. Fetal Mortality: United States, 2021. Natl Vital Stat Rep. 2023 Jul;72(8):1-21. PMID: 37498278.

3. Balayla J, Azoulay L, Abenhaim HA. Maternal marital status and the risk of stillbirth and infant death: a population-based cohort study on 40 million births in the United States. Womens Health Issues. 2011 Sep-Oct;21(5):361-5. doi: 10.1016/j.whi.2011.04.001. PMID: 21689945.

4. Yao, R., Ananth, C. V., Park, B. Y., Pereira, L., & Plante, L. A. (n.d.). *Obesity and the risk of stillbirth: A population-based cohort study.* Perinatal Research Consortium.

5. Rammah, A., Drake, J., Moussa, I. et al. Racialized Economic Segregation and Disparities in the Risk of Stillbirth. J. Racial and Ethnic Health Disparities (2025). https://doi.org/10.1007/s40615-025-02511-9.

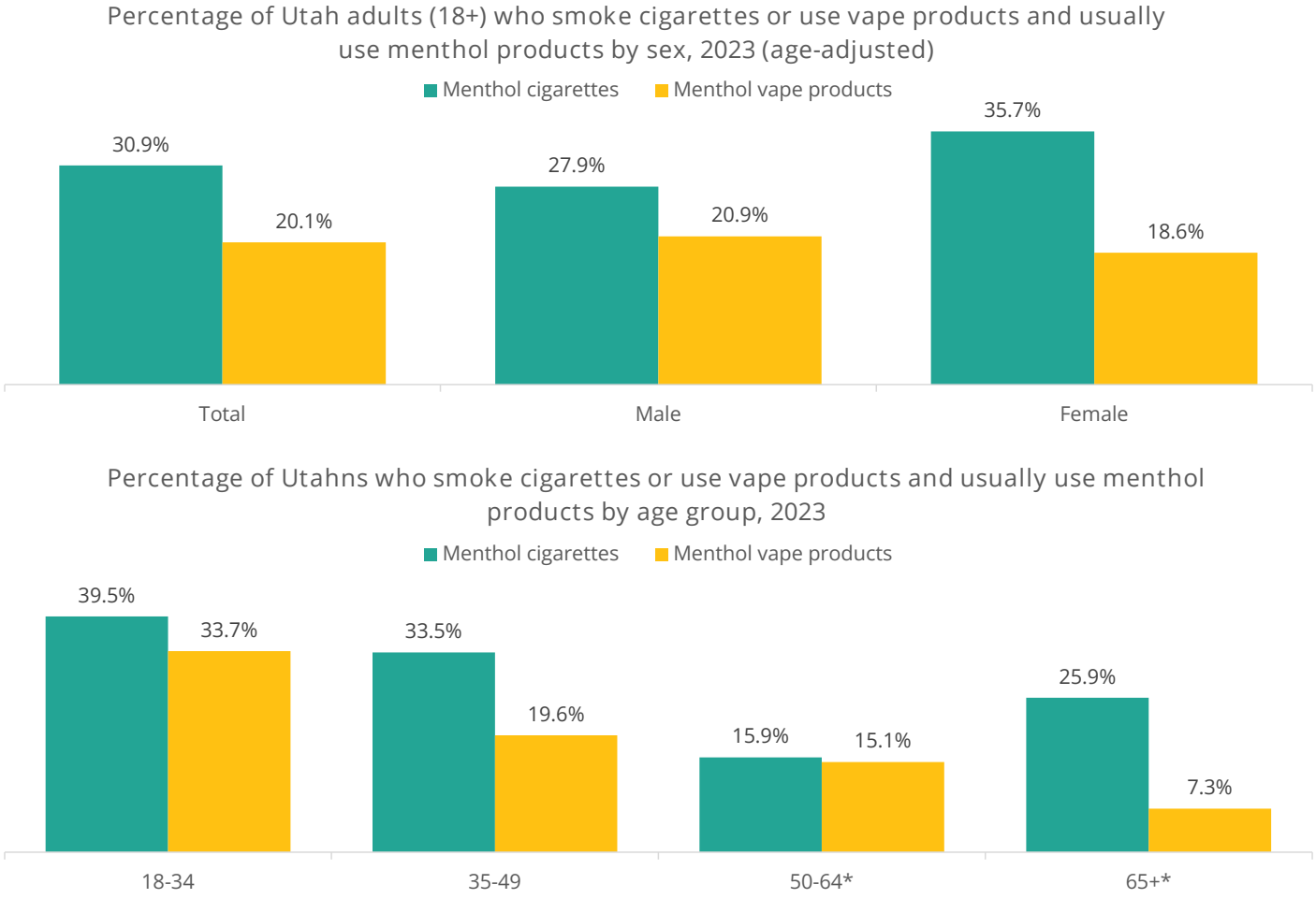
Spotlights

Utah Department of Health & Human Services
August 2025

Use of menthol-flavored tobacco in Utah

Menthol is used as a flavor in many tobacco products. Menthol has a cooling effect on the mouth and throat, and it suppresses coughing. Menthol makes it easier for youth and young people to try tobacco products and get addicted to nicotine. Restricting the sale of menthol tobacco products is expected to discourage youth and young adults from starting tobacco use.[1] Studies also suggest that some groups who smoke menthol cigarettes (younger people, members of racial/ethnic minorities) find it harder to quit smoking than those who smoke cigarettes without menthol.[2]

Figure 1. Use of menthol-flavored tobacco products among Utah adults, 2023



*Use caution in interpreting; the estimate has a coefficient of variation > 30% and is therefore deemed unreliable by Utah Department of Health and Human Services standards.
Source: Utah Behavioral Risk Factor Surveillance System

Nearly one-third of Utah adults who smoke cigarettes usually smoke cigarettes with menthol flavors. One in 5 Utah adults who use vape products or electronic cigarettes use products with menthol flavors. In Utah, women, those who identify as Hispanic, and those in younger age groups report higher use of menthol flavored cigarettes. Utahns younter than age 35 are also more likely to report use of vape products with menthol than Utahns in older age groups. (Source: Utah BRFSS 2023)

Menthol tobacco products play an important role in younger Utahns' decision to use tobacco and nicotine products. Sales restrictions for menthol products are expected to decrease smoking, vaping, and other tobacco use among Utah

youth and young adults. Utah Tobacco and Nicotine Quit Services (1-800-QUIT-NOW; waytoquit.org) ask about menthol product use during intake and offer help for those who attempt to quit menthol tobacco products. Quit services include phone and web-based counseling, text messages, email, and quit medications.

Healthcare providers play an important role in promoting quit attempts and increasing the likelihood of successful quitting. Resources for healthcare providers can be accessed on the Way to Quit site. These resources include a handout that describes Ask. Advise. Connect, an evidence-based process for assisting people who use tobacco products quit and connect them to resources.

1. U.S. Centers for Disease Control and Prevention. Menthol Tobacco Products Are a Public Health Problem. Retrieved on 7/2/2025 from https://www.cdc.gov/tobacco/menthol-tobacco/public-health-problem.html

2. Foulds J, Hooper MW, Pletcher MJ, Okuyemi KS. Do smokers of menthol cigarettes find it harder to quit smoking? Nicotine Tob Res. 2010 Dec;12 Suppl 2(Suppl 2): S102-9. doi: 10.1093/ntr/ntq166. PMID: 21177366; PMCID: PMC3145377.

Spotlights

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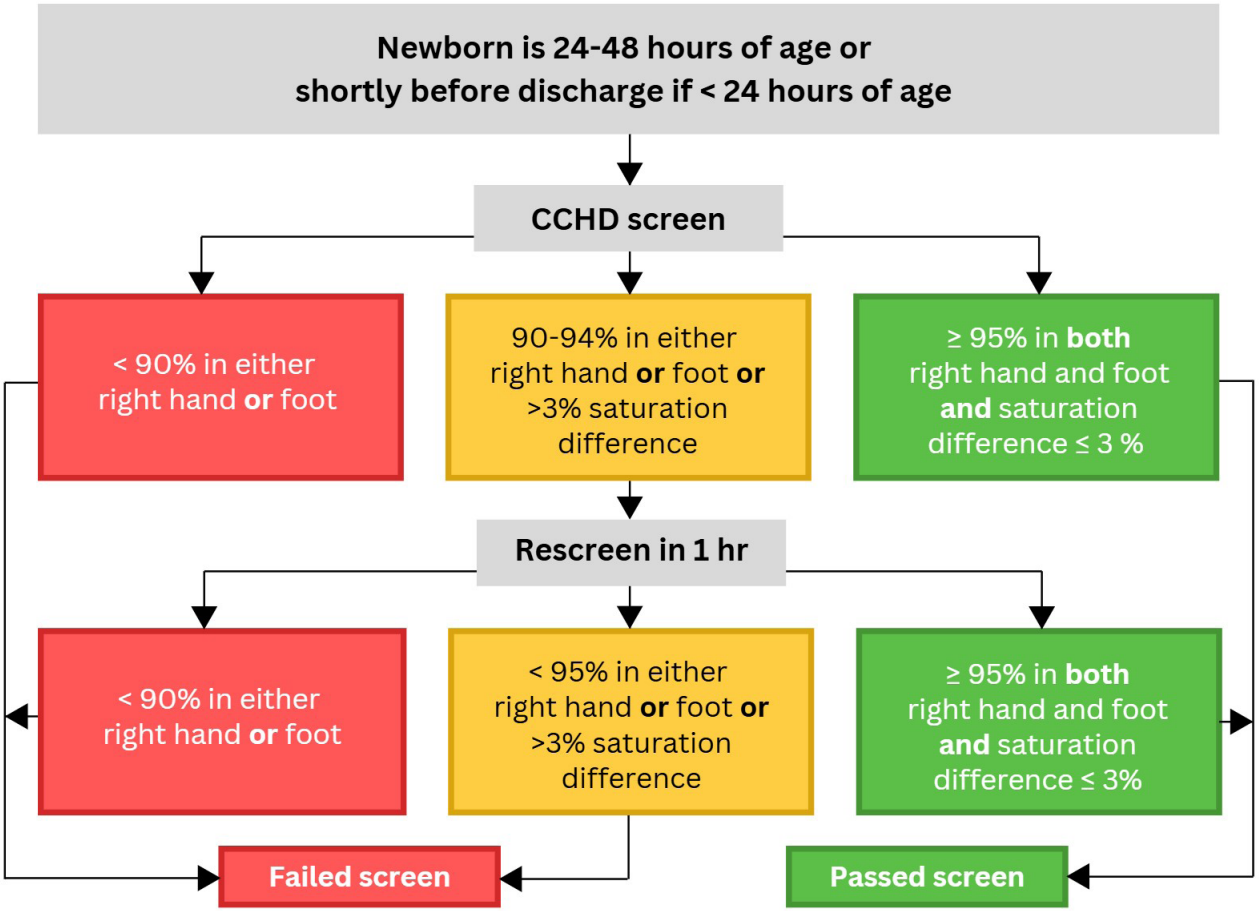
New critical congenital heart disease (CCHD) screening protocol

Congenital heart disease (CHD) is a birth defect that impacts how blood moves through the heart and affects nearly 1% of births in the U.S. About 25% of babies with CHD will have what is known as critical congenital heart disease (CCHD), which means they will need to have surgery or other procedures to repair the defect in the first year of their life.[1] Some CCHDs can be detected during pregnancy but others may be found after a baby is born through newborn screening. Newborn screening for CCHD involves a simple bedside test called pulse oximetry that measures the amount of oxygen in a baby's blood. Low oxygen can be a sign a baby may have a CCHD and their doctor will perform further tests to confirm.

While newborn screening is very important in identifying CCHD, some types of CCHD are difficult to identify through pulse oximetry and might be missed by newborn screening. Healthcare providers follow guidelines to read screening results and decide if a baby should have more tests to diagnose CCHD. As of January 2025, the American Academy of Pediatrics (AAP) recommends new guidelines for newborn CCHD screening, requiring a passing oxygen level of ≥ 95% in both hand and foot measurements and one rescreen instead of two.[2]

Figure 1. Recommended algorithm for CCHD newborn screening from AAP



To understand the effect this change in protocol for interpreting screening results would have, the Utah Birth Defect Network applied the new guidelines to the pulse oximetry results of babies who have CCHDs that were not caught by newborn screening. This analysis identified cases of CCHD that could have been identified by newborn screening if the new protocol was used.

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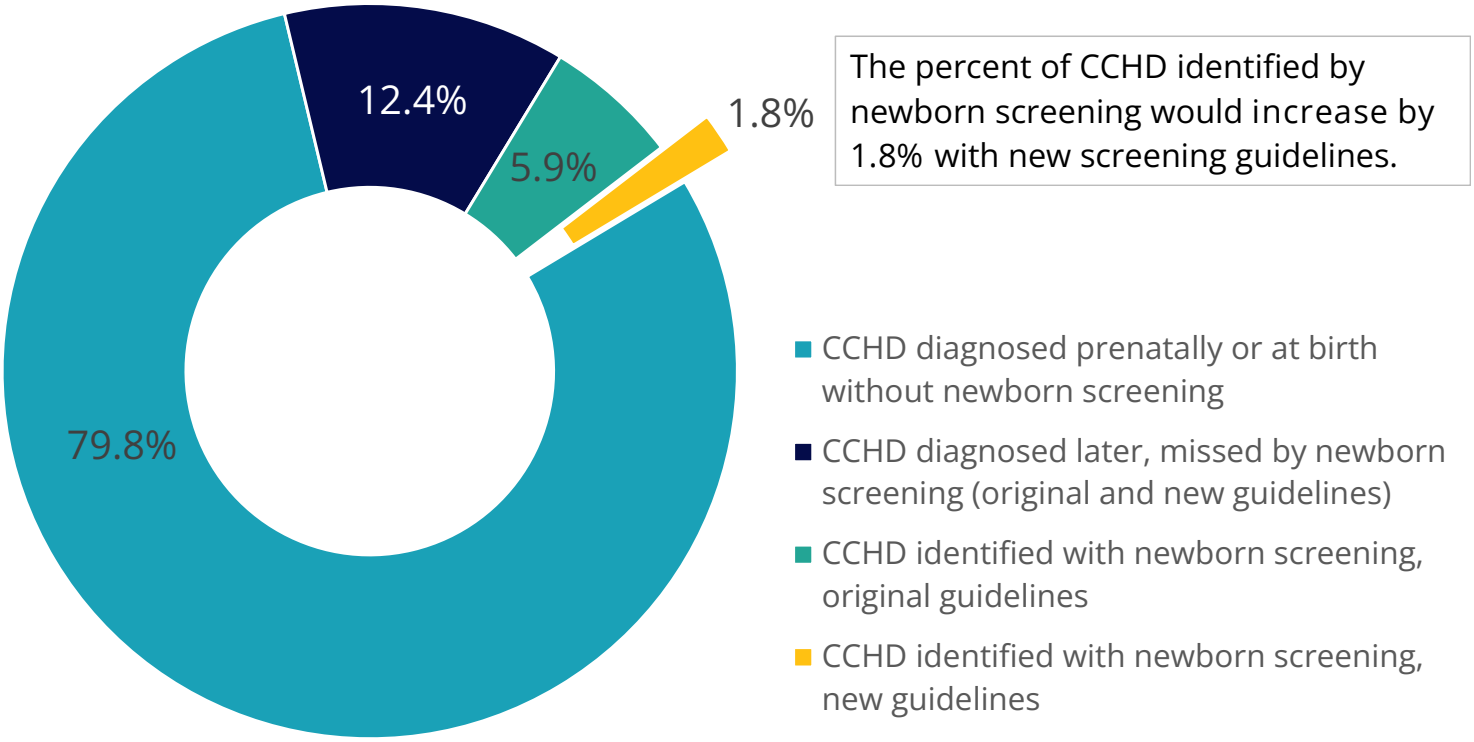
Between 2018 and 2022, a total of 79 cases were missed by newborn screening and later diagnosed with a CCHD. Ten (12.6%) of these missed CCHD cases would have been rescreened and potentially identified if the new protocol was applied. Following the new protocol could have prevented a delay in diagnosis and treatment.

Figure 2. Percentage of Utah live born infants with CCHD identified by newborn screening, 2018–2022



A total of 555 liveborn Utah infants were diagnosed with CCHD between 2018 and 2022. Figure 2 shows that with the original guidelines, 5.9% of all live born CCHD cases were caught with newborn screening. An additional 1.8% of cases would have been identified with the new AAP guidelines. Although more research is needed to understand why some CCHD cases continue to be missed by newborn screening and how to better capture them, the new AAP guidelines could reduce the number of missed CCHD screenings in Utah infants. The Utah CCHD Newborn Screening Program recommends healthcare providers and midwives use the updated AAP protocol (see Figure 1) to interpret CCHD newborn screening pulse oximetry results.

1. Centers for Disease Control and Prevention. (n.d.). Data and statistics. Centers for Disease Control and Prevention. https://www.cdc.gov/heart-defects/data/index.html

2. Oster, M. E., Pinto, N. M., Pramanik, A. K., Markowsky, A., Schwartz, B. N., Kemper, A. R., ... & COMMITTEE ON FETUS AND NEWBORN Eichenwald Eric MD Ambalavanan Namasivayam MD Guillory Charleta MD Hudak Mark MD Kaufman David MD Martin Camilia MD Lucke Ashley MD Parker Margaret MD Pramanik Arun MD Wade Kelly MD. (2025). Newborn Screening for Critical Congenital Heart Disease: A New Algorithm and Other Updated Recommendations: Clinical Report. Pediatrics, 155(1), e2024069667.