

Deciphering maternal ethnicity from state birth certificates: A perplexing quandary

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Abstract

PURPOSE: (1) To discuss the unexpected difficulty in deciphering maternal ethnicity by analyzing 40 years of North Dakota birth certificates. (2) To report the alarming rates of North Dakota mothers refusing to divulge ethnic data. (3) To hypothesize variables responsible for what seems to be a disproportional amount of specific data not answered on the birth certificate.

BACKGROUND: It has been well established that race and ethnicity play an important role in maternal and neonatal outcomes during pregnancy. Therefore, obtaining accurate and reliable data that is representative of the population is imperative in order to document any changes and trends. According to the 2020 U.S. Census data, North Dakota with a total population of 779,094 was the 4th fastest growing (15.8%) state between 2010-2020 primarily due to a boom in oil and gas exploration. North Dakota's diversity index (the measure of probability that two people chosen at random will be from different racial and ethnic groups) also increased during this decade from 54.9% to 61.1%. The single largest non-Caucasian population in North Dakota are American Indians who reside on or near five different reservations and comprise 5.8% of the state population, a significant increase from the 2010 U.S. Census.

METHODS: Using the North Dakota Department of Health Vital Statistics computer database, we were able to analyze a total of 426,738 birth records for the 40-year period 1980 through 2019. The initial goal was to determine the ethnicity of birth mothers and to validate changes in the state population using both 5-year and 10-year reporting intervals. This simplistic concept proved to be much more challenging and nuanced than anticipated.

Except for the year 2005, the computer data seemed quite straightforward. The initial data for 2005 however, showed 14,590 births compared to only 9,408 births in 2004 and 9,876 births in 2006, a nearly 5,000 birth increase (a nearly 50% discrepancy) and the most recorded births in North Dakota since 1964. The first "revised" computer search yielded 12,821 births while a second author directed search finally yielded 9,622 births as had been estimated based on surrounding years data. The discrepancies were discovered to be due to the temporary use of "alias birth records." These so called "alias birth records" were actually place holders used until all missing birth certificate data had been received. Each time a revised birth record was received it was dutifully entered into the database but earlier versions were not removed.

RESULTS: There has been a threefold increase in the number of mothers who refused to divulge ethnic information or claimed ethnicity was unknown beginning with only 4.90% (1980-1984) but ending with 14.94% (2015-2019). This is also significantly higher than the nonresponse rate to race related questions reported in the recent U.S. Census (5.77%). North

Dakota data reflects not only an evolving ethnic diversity in a heretofore relatively homogenous population as expected but illustrates an increasing suspicion and distrust of federal databases and their validity by the U.S. population as well. Others have hypothesized that the reluctance to provide ethnic information could be attributed to a lack of literacy, privacy concerns, ambiguity of such survey questions, or even uncertainty regarding one's own ethnic identity. Without this data investigations regarding racial disparities in healthcare outcomes lack validity.

North Dakota ethnicity is predominantly European (61.2%) followed by American Indian (13.8%) and other, including Hispanic, African and Asian (8.9%). The confounding variable is the 16.1% of birth certificates where mothers listed ethnicity as either "refused or unknown." By 2019 mothers listed "not Hispanic" (91.6%), "Hispanic" (6.3%) or "Hispanic origin marked refused or unknown" (2.1%). The evolution of survey questions over 40 years produced information gaps and inconsistencies which will be addressed with charts and graphs.

DISCUSSION: With over 40 years of data on maternal ethnicity in North Dakota, we ponder how the evolution of questions related to race and ethnicity have been impacted nationally in general and in North Dakota specifically, and how they might be improved in the future. North Dakota has seen a significant increase in both the American Indian and other minority populations compared to those of European descent who originally populated this western region. With this data we can now more accurately match maternal mortality with ethnicity in our state as well.