

## 414: Improving data quality through utilisation of RN data collectors

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### Objective:

The purpose of this study was to compare birth certificate data collected by clerk and registered nurse data collectors at one institution.

### Methods:

Based on published concerns regarding birth certificate data reliability and validity, the researchers utilised a unique opportunity to compare birth data collected by both clerk and RN data collectors within one north Texas institution. The multifaceted study included: secondary analysis of 1998 birth certificate data from three north Texas counties; interviews with birth data collectors in the five largest birth institutions in a north Texas county; a validation study of mother/baby medical charts; interview of local, state, and national vital statistics personnel; survey of birth data users across the United States; and secondary data analysis comparing clerk-collected birth data, from 1999, with RN-collected birth data, from 2000.

### Results:

Initial analysis of 1998 tri-county birth certificate data resulted in many questions related to the quality of the data collected. Unrealistic data, missing data, misspellings, and inconsistent use of the text field for maternal risk factors led the researchers to question the data collector as a reliable source of birth information. Interviews with birth data collectors revealed variance among hospitals regarding data collection procedures, misplaced priority on timely collection and transmission of data rather than on clinical data accuracy, variance in data collector knowledge, and poor or no understanding of the importance of birth certificate data beyond that for legal and identification purposes.

A validation study by the investigators, of mother and baby medical charts, substantiated findings from data-collector interviews and also identified the medical record as a source of conflicting information further contributing to poor quality of birth certificate data. Surveys of birth data users, across the U.S., further emphasised a lack of faith in the quality of birth certificate data. However, the majority believed that a clinical degree was unnecessary in the data collection process (even though less than 20% of respondents believed that a clerk could define many of the terms listed on the data collection form).

Finally, secondary analysis of birth data for 1999 and 2000, in one facility, showed that risk factor data collected by clerks characterised the maternal population as lower risk than the risk factor data collected by the RNs. In comparing data collected by clerk collectors to that of RN collectors, the investigators cite the following examples of differences:

- For premature rupture of membranes, clerks found 1/14,637 (0%) cases, while RNs found 469/15,713 (4.3%) cases
- For venereal diseases, clerks found 112/14,637 (1.1%) cases, while RNs found 521/15,713 (4.8%) cases
- For lung disease, clerks found 0/14,637 (0%) cases, while RNs found 260/15,713 (2.4%)

Investigators also found that a significant percentage of risk factor data was lost due to clerk collector failure to appropriately identify disease processes.

The researchers acknowledge, as a limitation, that each year of data used represented a different patient population. Populations were found to be demographically similar, however.

### Conclusions

As a result of the study, investigators concluded that there was a difference in the characterisation of the two maternal populations. A chi-square test of independence found a significant interaction ( $\chi^2[1df]=1099.044, p<.05$ ), with greater reporting of maternal medical risk in 2000 when RNs collected the data (51.6%), than in 1999 when clerks collected the data (28.4%). Investigators further concluded that the data collector is a factor that may impact quality of birth certificate data.