Title: The Texas Birth Certificate Concordance Study

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Topical Issues of Focus: Using CDC funding to build on existing HIV programs, use of surveillance data to guide perinatal HIV prevention

Background/Objectives

One of the challenges surrounding perinatal HIV prevention is developing reliable data sources on HIV testing among pregnant women. Since 1997, the Texas birth certificate has had fields to record HIV testing during pregnancy and at delivery, antiretroviral therapy (AZT), as well as prenatal care information and syphilis testing information. No studies had been conducted to assess reliability or validity of this data, or to determine the criteria that birth registrars use to assess the response for these fields. The perinatal HIV testing and treatment data are important tools to determine possible reasons for transmission of perinatal HIV and are essential in the development of an effective HIV prevention strategy for Texas. The Texas Birth Certificate Concordance Study (BCCS) was developed to determine if the perinatal HIV testing data on Texas birth certificates is reliable, such that it can be used as a surrogate to surveying women or physicians concerning perinatal HIV testing statewide.

Methodology/Sampling

From the electronic Texas birth certificate records for 2001, a stratified multi-stage cluster design was used to select the hospitals and records for the study. Hospitals with fewer than 500 births were excluded. The remaining hospitals were then divided into two strata: public or private ownership. A cluster-sample method was used [1] to select fifteen clusters from each stratum of hospitals. All birth records in each stratum had an equal chance of selection. The sampling method was devised in such a way that hospitals with more births might have more than one cluster included in the final 15 clusters for that stratum. Once the 30 hospital clusters were chosen, 50 birth records were selected from each cluster for abstraction; the design required a total of 35 abstractions in each cluster to be completed; the remaining 15 extra charts of the 50-record sample provided replacements for occasional missing or absent records. To facilitate hospital searches for requested medical records, TDH included the medical record numbers (if available from the birth certificate record) for the mother *and* the infant so that all relevant records could be assembled for abstraction.

Methods

A medical record review form was designed to collect the designated data needed for this study. A pilot study was carried out at an Austin-area hospital in spring 2002 to test

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[1] Bennett S, Woods T, Liyanage WM, Smith DL: A simplified general method for cluster-sample surveys of health in developing countries. *World Health Statistics Quarterly*, 44 (3), 98-106, 1991.

the medical record review form. Medical record reviews are currently being conducted to abstract the following information:

1. Use and availability of HIV consent forms
2. HIV testing data during pregnancy and at delivery
3. Syphilis testing during pregnancy and at delivery
4. Any HIV/AIDS treatment of the mother
5. Prenatal care received by the mother
6. Type of prenatal care provider
7. Demographic data on mother and infant

As TDH conducts medical chart reviews to abstract birth data, an interview with the birth certificate registrar at each hospital is done to ascertain the methods and criteria used to fill in certain data fields on the birth certificate. A data set of approximately 1,050 records, 2,100 matching mother and infant charts, is being gathered and will be compared to known Bureau of Vital Statistics (BVS) birth certificate data. During the course of the study, abstractors do not have access to the information from the birth certificates on the data element being compared to avoid bias. (For example, an abstractor might be more or less diligent in searching for evidence of testing if he or she knew the contents of the birth certificate record.)

Concordance for specific data fields will be determined. Thus an indicator of reliability of these specific data fields will be obtained, such that perhaps BVS data can be used in the future as an easily accessed and resource-saving source for perinatal HIV testing or treatment data.

Results

By the end of December 2002, the foundation for this study had been prepared, including the statistical determination of the study sample and sample size. The variables, data elements, an abstraction form, an interview form for birth registrars, and the stratified, random statewide study sample were determined and delineated. Additionally, after conducting a pilot study at a hospital in Austin during May of 2002 for this chart abstraction process, the BCCS medical chart abstraction was begun in December 2002.

To date (April 2003), BCCS chart abstractions have been completed at 10 hospitals selected in the sampling design procedure. There appears to be a large degree of variation among hospital charts: the availability, the completeness, and the content of the records all differ. BCCS chart reviewers are specifically looking for HIV and RPR (syphilis serology) laboratory records, as well as HIV consent forms in hospital charts. Prenatal records that are contained in the mother or infant chart are also abstracted along with labor and delivery data, patient histories, and nursing notes.

Future progress and goals for 2003 are to continue and complete the chart abstraction of all 2,100 medical records and to enter the data in a suitable database for analysis. After cleaning and cross-checking the data, the analysis will focus on a McNemar's test for concordance of data between medical record data and BVS birth certificate data.

Conclusions

Birth certificate data on perinatal HIV testing could provide a less resource- intensive method of obtaining data on patterns of HIV testing among pregnant women. However, the quality of birth certificate data for this purpose is unknown. The results of this study will provide quantitative data on the quality of birth certificate data on perinatal HIV testing. This study can also provide insights on where to focus interventions to improve the quality of birth certificate data.