B. Collection of Information Employing Statistical Methods

B.1. Respondent Universe and Sampling Methods

Cases for the NBDPS in Atlanta are selected from the MACDP surveillance system. The collection of information for cases of selected birth defects does not employ statistical methods because all infants with these birth defects are included, not just a sample. Individual birth defects are rare occurrences so it is necessary to ascertain all cases in order to have enough cases of specific defects to study. However, the controls in the NBDPS are selected by a sampling process.

For the NBDPS, controls consist of a stratified random 0.25% sample of the approximately 50,000 yearly births occurring to residents of the five-county Metropolitan Atlanta area, a total of 100 controls per year. To allow for about a 75% response rate and the exclusions listed below, 140 prospective controls must be chosen initially. Exclusion criteria for controls are: 1) infant is actually a case or has major birth defects ascertained in MACDP; and 2) infant is not a resident of the five-county area at the time of delivery.

B.2. Procedures for the Collection of Information

State-specific birth defects surveillance data are used to identify case subjects for the NBDPS. The selection of NBDPS controls is described in Section B.1. Once the children are identified for the study, a clinical geneticist reviews the information abstracted from the medical record to determine if they meet the case definition and are eligible for the study. Once eligibility has been established, the names and contact information for the families are sent to the organizations contracted to do the interviews. The first contact is an introductory letter (Attachment M), along with a fact sheet (Attachment N), and a pamphlet (Attachment L) that are sent to the mothers. The letters are slightly different depending on the status of the eligible infant: control, living case, and died or stillborn case.

Approximately 10 days after the letter has been sent, an interviewer makes follow up phone or email contact with the family. If email contact is made, arrangements are made for a follow up phone call. During this phone call, the interviewer obtains oral consent for the interview and either conducts the interview then or schedules the interview at a time convenient for the family. The interview is conducted with a CATI (see Attachment E for a hard copy of the questionnaire). The script used in the telephone interview is in Attachment I. Again the script varies slightly depending on the status of the child: control, living case, and died or stillborn case. At the end of the interview, the mother is told that she will be receiving a kit in the mail for the collection of cheek cells. Next a cheek cell collection kit is sent to the mother that includes a letter describing the study (Attachment P), a written informed

consent (Attachment J), and instructions for collecting the cheek cells (Attachment Q). The cheek cell kits will be returned by mail to the CDC, NCEH, Environmental Health Lab where they will be processed and sent for long term storage to the CDC and ATSDR Specimen Packaging, Inventory, and Repository (CASPIR). The biologic samples can be retrieved from CASPIR at any time when needed for analysis. A letter of thanks to the family (Attachment R) follows the interview or completion of the cheek cell kit. For participants who do not complete the cheek cell kit, the thank you letter is mailed after the interview.

B.3. Methods to Maximize Response Rates and Deal with Nonresponse

The response rate during the first year of the NBDPS was approximately 60% for cases and controls. With the addition of the $20 money order in the introductory packet, interview participation rates increased initially to over 70% in 2000. Given the changing communication landscape with increasingly difficult initial contact of potential new participants, in May of 2010, NBDPS recruitment tracking and tracing procedure was revised and approved by CDC IRB to include the use of e-mail. Interview participation rates ranged from approximately 60-70% from 2005-2009.

Subjects receive a $20 money order in the cheek cell collection packet. The current average overall participation rate for the cheek cell collection portion of NBDPS is approximately 60%, and is higher than before this incentive structure was instituted.

B.4. Tests of Procedures or Methods to be Undertaken

There were no major changes to the maternal questionnaire since the last OMB approval date of April 2010.

B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

The statistical aspects of the design of the NBDPS are the responsibility of the Principal investigator:

Jennita Reefhuis, PhD

Epidemiologist & Principal Investigator, NBDPS

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Additional consultation on the development of the NBDPS was obtained from the Principal Investigators of the CBDRP (Attachment G). Abt is currently contracted by CDC to manage NBDPS contractor activities

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Analysis of NBDPS data is the primary responsibility of Dr. Reefhuis, with assistance from the Principal Investigators of the CBDRP.