

**The NCS Herald Study - An NCS Pilot Cohort
Executive Summary
for Concept Clearance by the NCS Federal Advisory Committee**

I. Introduction

The NCS Herald Study will be a longitudinal cohort study of women, pregnancy, and children. The proposed study will pilot test potential procedures, and field test protocol items before they are applied to the NCS Vanguard and main study sites to improve the efficiency and likelihood of success of the Vanguard and main study sites.

II. Background

The need to pilot test potential portions of the NCS has been recognized since the beginning of the study's planning process. In accordance with that need, the study planners awarded a contract through full and open competition to RTI in 2002 for the purpose of conducting pilot studies to support the successful implementation of the NCS. The contract includes the capability to conduct a longitudinal cohort study of pregnancy, infancy, and childhood in North Carolina. The contract specified North Carolina as the study site in order to maximize the opportunity to leverage efforts of federal scientists from EPA and NIEHS in Research Triangle Park, NC and minimize costs.

Initial NCS pilot efforts have focused on fact-finding workshops, white papers and individual studies designed to test specific protocol items. However, the adoption of the national probability sample strategy, including household-based and pre-conception enrollment, and the recognition of the uncertainties associated with such a strategy, led to a renewed interest in fielding a small pilot cohort. The current plan for the NCS Herald Study evolved after substantial discussion concerning the purpose, size, and scope of such a study to assure optimal support to the NCS as a whole.

III. Areas the NCS Herald Study will address

A. Sampling and recruitment

There are many uncertainties with respect to enrolling women before pregnancy or within the first trimester of pregnancy through a household screening framework. The majority of past or ongoing studies of pregnancy and infancy have enrolled women (and their infants) through the medical system. While other studies have used household screening, they have been much smaller in both size and scope. The report of the NCS Sampling Workshop (March 2004) endorsed the idea of a household recruitment model for a probability sample but strongly encouraged a pilot test. For example, this pilot will provide information on:

- Definition of study segments: what is the impact (cost, community response, relevance, available administrative data, etc.) of defining communities based on census boundaries compared to elementary or middle school catchment areas?
- Household screening and enrollment: Is there an optimal number of home visits to balance cost-effectiveness and completeness of enumeration?

B. Logistics and subject burden

In the current NCS Study Plan, participants will enjoy a minimum of 15 in-person visits with study personnel, either in the home or a clinical setting. Women enrolled prior to conception may have up to four additional visits. Each visit involves the collection of interview data as well as collection of biologic or environmental samples, anthropometric measures, or developmental testing. The willingness of the study participation to engage in an intensive study, and the influence of specific study items on such willingness, will be examined. For example:

-Retention: Following the current visit schedule (8 or more visits before the child is two years old), what are the attrition and lost to followup rates in the first two years?

C. Specific protocol items

There are several opportunities to field test elements of the study protocol. This cohort will be focused on measurements that will maximize benefit to the NCS. For example:

- Validation substudies: Where the “gold standard” measure is costly or complex, (e.g., diet, chemical exposure, etc.) is there an alternative to provide similar information?
- Feasibility studies: Where the measures are desirable but difficult to obtain (e.g., biologic specimens at birth), can they be done for reasonable costs?

D. Examples of additional pilot tests

Other elements of the cohort protocol that do not increase subject burden but may impact recruitment rates or community acceptance will be evaluated. For example:

- Consent – evaluate satisfaction and response to automated video vs traditional consent
- Community engagement strategies
- Level and form of participant incentives
- Methods for reporting results to participants and other authorized parties

IV. Basic Study Design

A. The Herald Study will aim to screen approximately 10,000 households over a four-month period, resulting in approximately 250-400 births over an 18 month period.

B. Study population will be evenly split between a minimum of four sites, two rural and two metropolitan, with varying demographics and, if possible, environmental exposures. As mentioned above, some segments will be defined by Census boundaries, others by school catchments.

C. No overlap with NCS locations/PSUs in the national probability sample.

D. Women will be eligible for the study if identified at any stage of pregnancy. The pre-conception cohort will be enrolled following the criteria specified in the Vanguard RFP. Additionally, women identified through prenatal care practices, other community sources, or at delivery will be eligible for the Herald Study.

E. In-person visits, home and clinic, will follow the schedule outlined in the Vanguard RFP. However, the content of each visit will vary depending on the areas in most need of pilot testing. It is assumed that each visit will include a questionnaire and anthropometric, biologic or environmental sample collection.

F. Though not designed to address a specific research hypothesis, the Herald Study will collect information of interest to the participants including environmental exposures and measures of fetal and infant growth and development.

IV. Timeline

Results from the Herald Study can best support the Vanguard sites if they are available relatively early in the Vanguard planning process. The current timeline estimates call for the Herald Study to precede the Vanguard sites by approximately 12 months. Without undue delays in planning and gaining approvals, screening and enrollment into the Herald can begin in early 2006. The estimated start time for Vanguard screening and enrollment, without unanticipated delays, is early 2007. In addition to the 12 month lead time, the Herald Study's accelerated screening (4 months compared to five years), enrollment plan and expanded eligibility criteria (women at any stage of pregnancy compared to first trimester only) should result in the accrual of data far enough in advance to streamline the design of the Vanguard protocols.

V. Organizational structure

The Herald Study will be run through an existing EPA contract with RTI, as described above. The project will be directed by a joint sub-committee of the NCS Interagency Coordinating Committee and the Program Office consisting of Pauline Mendola (EPA), Ruth Brenner (NICHD), Warren Galke (NICHD), Sarah Keim (NICHD), Kenneth Schoendorf (CDC). Debra Walsh (EPA) is also a member of the committee. Dr. Mendola is the project officer.

VI. Status

Initial approval to proceed with the NCS Herald Study has been granted by the NCS Interagency Coordinating Committee and the Program Office on February 17, 2005.