1 Description
Venipuncture is performed to obtain laboratory results that provide prevalence estimates of disease, risk factors for exam components, and baseline information on health and nutritional status of the population.

Blood specimens are collected on participants aged one year and older at the mobile examination centers (MECs). Specified phlebotomy protocols are performed upon each participant based on the participant's age at time of interview and sex.

The phlebotomy component of NHANES includes the collection of blood, and other biological and environmental specimens. The blood collection procedure consists of administering a questionnaire to screen for conditions that excludes the participants from the blood draw and determines fasting status, a blood draw, and collecting specimens for special studies.

2 Eligible Sample
• Participants aged 1 year and older who do not meet any of the exclusion criteria

3 Exclusion Criteria
• Hemophiliacs
• Participants who received chemotherapy within last 4 weeks or anticipate chemotherapy within next 4 weeks
• The presence of the following on both arms: rashes, gauze dressings, casts, edema, paralysis, tubes, open sores or wounds, withered arms or limbs missing, damaged, sclerosed or occluded veins, allergies to cleansing reagents, burned or scarred tissue, shunt or IV.

4 Data Collection Methods
The MEC phlebotomist draws blood from the participant’s arm. The volume of blood drawn by age follows.
• 1-2 years, 9 ml (0.3 ounces), 0.6 tablespoons
• 3-5 years, 22 ml (0.7 ounces), 1.5 tablespoons
• 6-11 years, 38 ml (1.2 ounces), 2.5 tablespoons
• 12 years and over, 89-92 ml (3.0 ounces), 6.3 tablespoons
5 Examination Protocol
Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM).

6 Survey Staff
The NHANES 1999-2000 staff consists of two phlebotomists. The American Society for Clinical Pathologists or a similar organization certifies the phlebotomists. The MEC phlebotomists complete comprehensive training in pediatric phlebotomy techniques, including instruction by a pediatric nurse practitioner.

7 Data Collection Forms
Detailed specimen collection and processing instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM). Each chapter in the LPM specifies the procedure to be used for preparation of the participant, specimen collection, labeling, processing, and preservation, and conditions for specimen transport that are appropriate for that method.

8 Quality Control Procedures
The phlebotomists' performance is monitored using several techniques. NCHS and contract consultants use a structured quality assurance evaluation during unscheduled visits to evaluate both the quality of the phlebotomy work and the quality-control procedures. Each staff person is observed for equipment operation, specimen collection, and preparation, and constructive feedback is given to each staff. Formal retraining sessions are conducted annually to ensure that required skill levels are maintained.

The NHANES quality control and quality assurance protocols meet the 1988 Clinical Laboratory Improvement Act mandates. Detailed quality control and quality assurance instructions are discussed in the NHANES Laboratory/Medical Technologists Procedures Manual (LPM).

9 Data Processing/Preparation Steps
Automated data collection procedures for the survey were introduced in NHANES 1999. In the mobile examination centers (MECs), data for the phlebotomy component is recorded directly onto a computerized data collection form. The system is centrally integrated and it allows for ongoing monitoring of much of the data.

10 Analytic Notes
Use PHAFSTHR and PHAFSTMN to determine in hours and minutes how long the participant fasted.

Use PHDSESN to determine the session in which the participant was examined.
11 Special Notes on Using the Dataset

The analysis of NHANES 1999-2000 phlebotomy data must be conducted with the key survey design and basic demographic variables. The NHANES 1999-2000 Household Questionnaire Data Files contain demographic data, health indicators, and other related information collected during household interviews. They also contain all survey design variables and sample weights for these age groups. The phlebotomy file includes auxiliary information such as how long the participant fasted, the time of day of the venipuncture, and the conditions precluding venipuncture. The household questionnaire and phlebotomy files may be linked to the laboratory data file using the unique survey participant identifier SEQN.