

National Health and Nutrition Survey III
Coordinator Manual

September 1996

Westat, Inc.
1650 Research Blvd.
Rockville, MD 20850

TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
1	OVERVIEW OF THE NH ANES III	1-1
	1.1 Introduction and Purpose of the Survey	1-1
	1.2 History of the Health and Nutrition Examination Survey	1-8
	1.3 About Westat	1-10
	1.4 Pretest and Main Survey Schedules	1-11
	1.4.1 Pretests	1-11
	1.4.1.1 Purpose of the Pretests	1-11
	1.4.1.2 Summary of the Pretests	1-12
	1.4.2 Schedule for the Main Survey	1-13
	1.5 Sample Design	1-13
	1.6 Personnel and Reporting Relationships	1-15
	1.7 Advance Arrangements for a Stand	1-17
	1.7.1 Schedule for Advance Arrangements	1-17
	1.7.2 Community Outreach Activities	1-19
	1.8 Data Collection	1-20
	1.8.1 The Automation System	1-20
	1.8.2 Household Interviews	1-20
	1.8.2.1 Advance Letter	1-20
	1.8.2.2 Household Screening Interview	1-21
	1.8.2.3 Informed Consent	1-22
	1.8.2.4 Extended Household Interviews	1-22
	1.8.2.5 Exam Appointments	1-23
	1.8.2.6 English and Spanish Study Materials	1-23
	1.8.3 Exams and Interviews in the Mobile Examination Center (MEC)	1-23
	1.8.3.1 The MEC	1-23
	1.8.3.2 Exam Sessions	1-24
	1.8.3.3 Exam Team Responsibilities	1-27
	1.8.3.4 Exam Components	1-28
	1.8.3.5 Sample Person Renumeration	1-28

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
	1.8.3.6 Report of Exam Findings	1-32
	1.8.3.7 Dry Run	1-32
	1.8.4 Home Exams	1-33
	1.8.5 Special Studies	1-35
	1.8.5.1 Volatile Toxicants Study	1-35
1.9	Confidentiality and Professional Ethics	1-36
2	OVERVIEW OF THE CO ORDINATOR ROLE	2-1
	2.1 Description of the Coordinator's Position	2-1
	2.2 Responsibilities of the Coordinator	2-2
	2.3 Relationship to Other NHANES III Staff	2-3
	2.4 The Mobile Examination Center	2-6
	2.4.1 Coordinator's Area	2-7
	2.4.2 Examination Center Operations	2-8
	2.4.2.1 Examination Center Schedule	2-8
	2.4.2.2 Coordinator's Work Schedule	2-9
	2.4.2.3 Examination Components	2-10
3	COORDINATOR RESPON SIBILITIES AND ACTIVITIES	3-1
	3.1 Preparation for the Exam Session	3-1
	3.1.1 Appearance of the Coordinator and Reception Area	3-2
	3.1.2 Verification and Distribution of the Daily Appointment Schedule	3-2
	3.1.3 Preparation of SP Charts and Other Materials	3-3
	3.1.3.1 Sample Person Labels	3-3
	3.1.3.2 Box Labels	3-4
	3.1.3.3 Preparing Sample Person Charts	3-5
	3.1.3.4 Verifying Consent Forms	3-5
	3.1.3.5 Data Retrieval for Household In struments	3-6
	3.1.3.6 Vitamin and Mineral Pages	3-6

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
	3.1.4 Receipt and Management of Cash	3-6
	3.1.4.1 Cash for SP Exams	3-6
	3.1.4.2 Cash for Mileage Reimbursement and Other Expenses	3-7
	3.1.5 Maintaining the Inventory of Supplies for the Coordinating Area	3-7
	3.1.6 Maintaining the Visitor's Log	3-7
	3.2 Conducting the Examination Session	3-9
	3.2.1 Beginning the Examination Session	3-9
	3.2.1.1 Setting the Session	3-9
	3.2.1.2 Greeting and Checking In Sample Persons	3-10
	3.2.1.3 Transportation Arrangements	3-13
	3.2.1.4 Prepare Examinee and Obtain Urine Specimen	3-14
	3.2.2 Managing the Examination Session	3-16
	3.2.2.1 Types of Examinees and Exams	3-17
	3.2.2.2 Obtaining Urine Specimen Result	3-19
	3.2.2.3 Assigning Components and Managing Flow ...	3-20
	3.2.2.4 Component Status Codes	3-24
	3.2.2.5 Examinee Flow Issues	3-25
	3.2.3 Concluding the Exam Session	3-27
	3.2.3.1 Exiting Examinees	3-28
	3.2.3.2 Postexam Session Procedures	3-31
4	INTRODUCTION TO THE MEC AUTOMATION SYSTEM	4-1
	4.1 Background	4-1
	4.1.1 The MEC Automation System Hardware	4-1
	4.1.1.1 The Data Terminal	4-1
	4.1.1.2 Description of the Keyboard	4-2

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
5.4	Review Status Reports	5-17
5.4.1	How to Use the Review Status Reports	5-18
5.4.2	How to Use the Procedures Screen	5-20
5.4.3	How to Use the Examinations for Current Session Screen 5-20	5-20
5.4.4	How to Use the Examinee Schedule Screen	5-20
5.4.5	How to Use the Appointment Schedule Screen	5-24
5.4.6	How to Use the Session Summary Screen	5-24
5.4.7	How to Use the Special Considerations Screen	5-24
5.4.8	How to Use the Search for Sample Number by Name Screen	5-28
5.4.9	How to Use the Appointment Time and Transportation Screen	5-28
5.4.10	How to Use the Date and Time of Day Screen	5-32
5.5	Record Examinees Temperature	5-32
5.5.1	How to Use the Record Examinees Temperature Screen	5-32
5.6	Set Result Codes for Returning Examinees	5-34
5.6.1	How to Use the Set Results Codes for Returning Examinees Screen	5-34
5.7	Issue Sample Number	5-34
5.7.1	How to Use the Issue Sample Number Screen	5-36
5.8	Set Current Session	5-36
5.8.1	How to Use the Set Current Session Screen	5-38
6	FORMS AND LOGS	6-1
6.1	Overview of Examination Center Forms and Logs	6-1
6.2	Examinee Folder	6-1
6.3	Examination Forms	6-2
6.3.1	Control Record	6-3

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
6.4	Nonexamination Forms	6-5
6.4.1	Daily Appointment Schedule	6-5
6.4.2	Pregnancy Test Card	6-7
6.4.3	Exit Interview	6-7
6.4.4	Visitor's Log	6-10
6.4.5	Transmittal Form	6-10
7	QUALITY CONTROL	7-1
7.1	Summaries of Completion Rates, Examiner Productivity, and Data Reviews	7-1
7.2	Direct Observation	7-1
7.3	Replicate Exams	7-2
7.3.1	Partial Replication	7-2
7.3.2	Complete Repli cation	7-2
7.3.3	Home Replication	7-3
7.3.4	Expert Replication	7-3
7.3.5	Laboratory Replication	7-4
7.3.6	Bench Replication	7-4
7.4	Coordinator Responsibilities for Replicate Exams	7-4

List of Appendixes

Appendix

A	Status Codes for Exams	A-1
---	------------------------------	-----

List of Exhibits

Exhibit

1-1	Reporting Relationships	1-16
1-2	Stand Schedule	1-18
1-3	Floor Plan of MEC	1-25

TABLE OF CONTENTS (continued)

List of Exhibits (continued)

<u>Exhibit</u>		<u>Page</u>
1-4	Examination Components by Age Groups	1-29
1-4a	NHANES III Examination Components	1-30
1-5	Estimated Number of Minutes for Each Exam Component	1-31
1-6	Home Exam Components	1-34
3-1	Coordinator Supply List	3-8
3-2	Translation of Simple Codes into Examination Schedules	3-18
3-3	Examination Staff Component Assignments	3-21
4-1	The Special Function and Edit Keys	4-3
5-1	The Coordinator Menu System	5-4
5-2	Coordinator System Tasks and Screens	5-5
5-3	Coordinator System Menu Screen	5-6
5-4	Check-In Examinee Screen	5-8
5-5	Identify Examinee Screen - Blank	5-9
5-6	Identify Examinee Screen - Data	5-10
5-7	Examinee Schedule Screen	5-14
5-8	Check-Out Examinee Screen	5-16
5-9	Review Status Reports Screen	5-19
5-10	Procedures Screen	5-21
5-11	Examinations for Current Session - Spirometry	5-22
5-12	Examinations for Current Session - Blood Draw	5-23

TABLE OF CONTENTS (continued)

List of Exhibits (continued)

<u>Exhibit</u>		<u>Page</u>
5-13	Appointment Schedule Screen	5-25
5-14	Session Summary Screen	5-26
5-15	Special Considerations Screen	5-27
5-16	Search for Sample Number Screen - Blank	5-29
5-17	Search for Sample Number Screen - Data	5-30
5-18	Appointment Time and Transportation Service	5-31
5-19	Examinee Temperature Screen	5-33
5-20	Set Result Code Screen	5-35
5-21	Issue Result Number Screen	5-37
5-22	Set Current Session - Blank	5-39
5-23	Set Current Session - Data	5-40
6-1	Control Record	6-4
6-2	Daily Appointment Schedule	6-6
6-3	Pregnancy Test Card	6-8
6-4	MEC Exit Questionnaire	6-9
6-5	Visitor's Log	6-11
6-6	Record of Transmittal Form	6-12

1. OVERVIEW OF THE NHANES III

1.1 Introduction and Purpose of the Survey

The Third National Health and Nutrition Examination Survey (NHANES III) is being conducted by the National Center for Health Statistics (NCHS) of the United States Public Health Service. Data collection began in September 1988 and will continue for approximately 6 years (two 3-year rounds) at 88 locations across the U.S. The main survey was preceded by three pretests which were held between September 1987 and March 1988 in Los Angeles, California, Washington, D.C. and Tampa, Florida. Another pretest called the "Dress Rehearsal" was conducted in October 1988, just prior to the start of the main survey.

Approximately 40,000 individuals two months of age and older will be randomly selected from households across the U.S. to participate in the survey. Selected persons will be invited to take part in the survey by completing interviews in their homes and by receiving examinations at the Mobile Examination Center (MEC). The detailed interview includes demographic, socioeconomic, dietary, and health-related questions. Upon completion of the interview, respondents will be asked to voluntarily participate in additional interviews, extensive physical and dental examinations and biochemical tests, all conducted by highly trained medical personnel in a mobile examination center (MEC).

The purpose of NHANES III is to assess the health and nutritional status of adults and children in the United States. NCHS will use the data collected in this survey to define the normative distribution of:

- Specifically-defined diseases and other conditions of ill health;
- Nutritional disorders;
- Potential risk factors; and
- Normative health-related measurements, such as height, weight, and blood pressure.

At the conclusion of the study, prevalence rates will be computed for blacks, Mexican-Americans, Puerto Ricans, and other groups including whites, by age, sex, and income level. To assist in obtaining these rates, the survey will oversample blacks, Hispanics, the elderly and children.

The diseases and other medical conditions to be studied include, but are not limited to, the following:

- Cardiovascular disease (heart disease);
- Cancer;
- Chronic obstructive lung disease, including:
 - Asthma;
 - Chronic bronchitis; and
 - Emphysema;
- Diabetes;
- Kidney disease and other urologic disorders;
- Gallbladder disease;
- Osteoporosis;
- Arthritis and related musculoskeletal conditions, including:
 - Rheumatoid arthritis; and
 - Osteoarthritis;
- Infectious diseases, including:
 - Immunization to childhood diseases;
 - Exposure to hepatitis A or B;
 - Exposure to human immunodeficiency virus (HIV); and
 - Exposure to sexually transmitted diseases, such as herpes simplex 1 and 2;

- Oral health problems, such as:
 - Caries;
 - Periodontal disease;
 - Tooth loss;
 - Soft-tissue lesions;
 - Trauma assessment;
 - Occlusal and dentofacial characteristics; and
 - Tooth restoration and prosthesis conditions;
- Allergies to:
 - Certain foods, animals, insects and molds;
- Mental health conditions, for example:
 - Depression;
- Hearing loss;
- Retinal Disease; and
- Nutritional disorders, such as vitamin and mineral deficiencies.

Risk factors are those aspects of a person's lifestyle, constitution, heredity or environmental exposures which may increase his/her chances of developing a certain disease or condition. Some of the risk factors to be included in this study are:

- Tobacco usage;
- Alcohol consumption;
- Physical activity;
- Sexual practices;
- Occupational exposures;

- Reproductive health, such as oral contraceptive use and breastfeeding practices;
- Weight;
- Dietary intake; and
- Stress.

The results of this survey will benefit the American people in two important ways. First, data on the distribution of health problems and potential risk factors in the population provide researchers with important clues to the causes of disease development. This survey will provide the data researchers need to establish hypotheses of disease causation which can be tested in future epidemiologic and clinical research studies. Secondly, information collected from this survey will be compared to information collected in previous HANES surveys and future HANES surveys in which study participants will be asked to be examined and interviewed again sometime in the future. This will allow researchers to determine the extent to which various health problems and risk factors have changed in the U.S. population over time. By identifying the health care needs of the population, agencies of the government and private sector can establish policies and plan research, education, and health-promotion programs which will help improve the current health status of the population and prevent future health problems.

By computing prevalence rates for the population as a whole and for specific age-race-sex groups (e.g., 30-35 year old white females), researchers can determine which subgroups of the population would benefit most from specific programs and policies. For example, information collected in this survey will help FDA decide whether to implement calcium fortification regulations for the nation's food supply and how best to implement the fortification program, if needed. Data from this survey will be used to revise the growth charts which are used widely by pediatricians to monitor the growth of children.

Study participants are first interviewed at their homes and asked detailed demographic, socioeconomic, and health-related questions. Extensive physical examinations by highly trained medical personnel, additional health interviews, dietary interviews, and biochemical tests on biological specimens are then conducted in specially equipped mobile examination centers (MECs). Persons who cannot or will not come to the MEC for the full-scale examination are asked to undergo certain parts of the exam at their homes.

In addition to using these data as a baseline for future follow-up studies and analysis, some blood and urine specimens collected in this survey will be stored. Biological specimen banking will be of value in the future as new techniques are developed to measure exposure to environmental contaminants or disease agents or when new health problems are recognized. Biological specimen banking will be used to permit future laboratory analyses for:

- Estimating the prevalence of factors of current interest but for which acceptable testing protocols do not yet exist (e.g., pesticides);
- Estimating the prevalence of factors of emerging importance (e.g., chlamydia subtypes, various types of non-A, non-B hepatitis); and
- Conducting studies to look for the specific causes of diseases (e.g., bacteria, viruses, toxic materials).

Four areas have been selected for special emphasis in NHANES III: child health; health of older Americans; occupational health; and environmental health.

Child Health. NHANES III will help researchers assess the physical and emotional health status of children in the U.S. Communicable diseases, such as influenza, measles, and chickenpox, are not the only causes of illness and disability in the young. The focus of the childhood component of NHANES III will be on:

- Chronic diseases (heart and lung diseases);
- Allergic conditions;
- Immunity to various infectious diseases;
- Nutritional status;
- Cognitive functioning (ability to function in the activities of daily life);
- Physical growth;
- Disorders of hearing and dentition; and
- Blood lead levels.

Older Americans. The U.S. has experienced dramatic growth in the number of older people during this century. These demographic changes have major implications related to health care needs, public policy, and changing research priorities associated with older Americans. Recognizing this, NCHS is working with a consortium of public health service agencies to improve information on the health of the elderly. NHANES III is designed to fill many of the gaps in our knowledge of the health of older people. The survey component for older persons focuses on physical health status and aspects of functional health status. The key components for this part of the survey are:

- Osteoporosis and the evaluation of lower extremity function, including risk of falls and fractures;
- Musculoskeletal function, focusing on osteoarthritis, as a major cause of disability in older persons;
- Nutrition, including the evaluation of obesity;
- Cardiopulmonary diseases, which are major causes of illness and death in older persons;
- Physical function (individual's capacity for self-care);
- Cognitive function (ability to function in the activities of daily life); and
- Social function (ability to live independently).

Occupational Health. This component of the survey will focus on exposures in the workplace, such as noise, chemicals, and dust, which may be associated with specific health problems, such as neurological problems, lung disease, and musculoskeletal injuries.

Environmental Health. The environmental health research topic for NHANES III focuses primarily on studying exposure to toxic metals and chemicals, such as pesticides, by examining blood specimens for levels of various metals and chemicals in the blood.

Westat is a survey research firm which has been awarded a contract by NCHS to carry out data collection activities for the survey. Westat is responsible for selecting the survey sample, scheduling and

planning study procedures, developing the survey materials, such as manuals and forms, hiring and training field personnel, making advance arrangements for each stand, conducting community outreach activities, setting up and maintaining field offices and Mobile Examination Centers (MECs), scheduling and conducting screening interviews and extended interviews in the household, conducting interviews and physical examinations in the MECs, designing and carrying out quality control procedures, transmitting data to NCHS, and shipping biological specimens to various laboratories in the U.S. The examination and interview components of this survey have been designed in close collaboration with the Federal agencies which will use the resulting data for program planning and regulatory and research purposes. The following agencies have been involved in designing NHANES III:

Agencies of the National Institutes of Health, Public Health Service

- National Heart, Lung and Blood Institute (NHLBI);
- National Cancer Institute (NCI);
- National Institute of Child Health and Human Development (NICHD);
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK);
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS);
- National Institute of Dental Research (NIDR);
- National Institute of Mental Health (NIMH);
- National Institute of Neurological and Communicative Disorders and Stroke (NINCDS); and
- National Institute on Aging (NIA).

Other Federal Agencies

- Environmental Protection Agency (EPA);
- Food and Drug Administration (FDA);
- National Institute of Occupational Safety and Health (NIOSH); and
- National Institute of Environmental Health and Safety (NIEHS).

1.2 History of the Health and Nutrition Examination Survey

The National Health Survey Act, passed in 1956, provided the legislative authorization for a continuing survey to collect statistical data on the amount, distribution, and effects of illness and disability in the United States. In order to fulfill the purposes of this Act, it was recognized that data collection would involve at least three sources: the people themselves by direct interview; clinical tests, measurements, and physical examinations on sample persons interviewed; and places where persons received medical care such as hospitals, clinics, and doctors' offices.

To collect data by interview and physical exam, NCHS conducted four separate examinations surveys between 1959 and 1976. The first Health Examination Survey (HES I) focused mainly on selected chronic diseases of adults aged 18 - 79. HES II and HES III, conducted between 1963 and 1970, focused primarily on the growth and development of children.

The fourth survey introduced a new emphasis: the study of nutrition and its relationship to health status. This had become increasingly important as researchers began to discover links between dietary habit and disease. In response to this concern, under a directive from the Secretary of the Department of Health, Education and Welfare, the National Nutritional Surveillance System was undertaken by NCHS. The purpose of this system was to measure changes in nutritional patterns over time. However, a special task force recommended that the continuing surveillance system be expanded to include clinical observation and professional assessment as well as the recording of dietary intake patterns. Thus, the National Nutritional Surveillance System was combined with the Health Examination Survey to form the National Health and Nutrition Examination Survey, NHANES.

NHANES I, the first cycle of the NHANES studies, was conducted between 1971 and 1974. This survey obtained a national sample of about 21,000 persons between the ages of 1 and 74 years of age. Extensive data on health nutrition were collected by interview, physical examination, and a battery of clinical measurements and tests from all members of the sample.

The planning process for NHANES II was carried out in 1974 and 1975 in collaboration with other Federal agencies. Throughout the planning stage there was continual awareness of the necessity of making the data collection for NHANES II comparable to the first NHANES survey so that NHANES I data could serve the purpose of providing a baseline for assessing changes overtime. This means that many of the same measurements had to be taken the same way on the same age segment of the U.S. population in both surveys. The NHANES II survey began examinations in February 1976 with the goal of interviewing and examining 21,000 persons between the ages of 6 months and 74 years. This survey was completed in 1980.

In addition to NHANES I and NHANES II, a special survey of the U.S. Hispanic population, HHANES, was undertaken to provide information on the health and nutrition status of Hispanics comparable to that obtained for the general U.S. population. The survey was completed in 1984. A fourth NHANES project, the NHANES Epidemiologic Followup Survey, was recently completed. This study was an effort to conduct followup interviews with the sample population, now aged 35-84, who were interviewed and examined in NHANES I between 1970 and 1974.

NHANES III is the third cycle in the NCHS series of surveys to collect data on the health and nutrition of the people of the United States through interviews and physical examinations. As in previous NHANES cycles, the survey's primary purpose will be to produce descriptive statistics that can be used to measure and monitor the health and nutritional status of the civilian, noninstitutionalized U.S. populations.

The plan is to administer a household interview and a 4-hour examination consisting of medical procedures, biochemical tests, and questionnaires to 40,000 sample persons aged 2 months and older over a period of approximately 6 years. The survey will be conducted in 2 rounds of about 3 years each in approximately 88 locations across the country.

NHANES III will serve to collect public health data for use in evaluating the health status of the U.S. population and determining how health status is affected by social and economic conditions. The wide range of statistics produced will be valuable for:

- Estimating the prevalence of selected diseases and conditions;
- Assessing health and nutritional status;
- Determining needs for health care;
- Analyzing relationships between health measures and risk factors; and
- Evaluating aspects of health and nutrition.

A number of longitudinal studies which use NHANES III data as baseline data are planned. These studies will follow the sample persons interviewed and examined during NHANES III over a period of years to attain measures of changes in health status and to study human growth and development in detail.

1.3 About Westat

Westat is an employee-owned research firm founded in 1961 and located in the Metropolitan Washington, DC area (Rockville, Maryland). Westat is recognized as one of the leading research firms engaged in survey research, program evaluation, mathematical and statistical analysis, and computer applications. Although primarily involved in conducting surveys for agencies of the Federal Government, the company has also served local government agencies, universities, professional societies, nonprofit institutions, and commercial enterprises.

The professional staff of more than 450 includes statisticians, epidemiologists, psychologists, sociologists, survey managers, market research analysts, economists, and computer systems analysts with specialized knowledge in health, labor, housing, and education. A highly trained nationwide field staff of supervisors, interviewers, and survey assistants provides additional support to the organization.

A large number of the studies Westat manages are concerned with the health of various subgroups of the population. The success of these projects can be attributed in part to the company's ability to enlist the cooperation of individuals and groups in the communities where the studies are conducted. For instance, it may be necessary to obtain cooperation from state or local government officials, professional associations, hospital administrators, citizen groups, and individuals.

Many of Westat's studies in the area of health involve nationwide data collection efforts in hundreds of different communities. For example, in 1979-80, Westat enlisted 38,000 U.S. school children in a study to estimate the prevalence of dental caries (cavities) and other oral health problems in that population. A second dental survey conducted in 1986-87 involved 45,000 school children. Fourteen teams, each with a dentist, a data recorder, and 2 coordinators, traveled to schools across the U.S. to collect data from students via dental examinations and interviews.

1.4 Pretest and Main Survey Schedules

1.4.1 Pretests

1.4.1.1 Purpose of the Pretests

Before any large-scale data collection effort is started on a survey, one or more pretests are conducted. During a pretest, field procedures and data collection instruments are tested and evaluated, then refined by the researchers. Field procedures are carried out just as they would be in the main study, but during the pretest a much smaller group of sample persons is selected. After the completion of a pretest, a series of meetings is held and suggestions for improving the field procedures and data collection instruments are incorporated into the plans for the main study. In this way, potential problems are resolved before the main survey begins, although it is inevitable that some unanticipated problems will arise as the study progresses.

1.4.1.2 Summary of the Pretests

Since NHANES III is so large and complex, four pretests were scheduled from September 1987 through December 1988. The first three pretests were conducted at different sites to evaluate the performance of the field procedures in various locations. The fourth pretest, or "Dress Rehearsal" was conducted in October 1988 and was intended to provide a final practice of all procedures before the main survey was initiated. Following is a summary of the pretests, the locations, the number of sampled persons (SPs), and the procedures tested.

Pretest I

LOCATION: Los Angeles, California

DATE: October 1987

DURATION: Six weeks

NUMBER OF SPs: 450

Questionnaires and interviewer field procedures were tested and evaluated.

Pretest II

LOCATION: Washington, D.C.

DATE: October - December 1987

DURATION: 9 weeks

NUMBER OF SPs: 600

MEC procedures and examinations tested.

Pretest III

LOCATION: Tampa, Florida

DATE: February - March 1988

DURATION: Six weeks

NUMBER OF SPs: 500

All office, interviewing and MEC procedures tested.

Pretest IV ("Dress Rehearsal")

LOCATION: College Park, Maryland

DATE: October 1988

DURATION: 6 weeks

NUMBER OF SPs: 450

Final testing of all procedures

1.4.2 Schedule for the Main Survey

Data collection for the main survey of 40,000 sample persons (SPs) began in September 1988 and will be conducted in 2 cycles of approximately 3 years in length. Field office staff, interviewers, and 2 examination teams will travel to approximately 44 locations throughout the U.S. in each cycle. The average stand size will be about 450 SPs (within a range of 300-600 SPs). At any given time during the survey, examinations will be conducted at two stands simultaneously for 10 1/2 months of the year. There will be breaks of about 2 weeks around Christmas and about 2 weeks during the summer.

1.5 Sample Design

A sample is defined as a representative part of a larger group. Surveys involve studying a sample of persons rather than conducting an expensive and time-consuming census whereby every person in the population of interest is studied. Since it is impossible to interview and examine everyone in the U.S. for NHANES III, a representative sample is taken of the nation's population. At the conclusion of the study, estimates will be made of the prevalence of various health conditions and risk factors for the entire U.S. population, based on what is learned from the sample of people studied in the survey. By studying a representative sample of the population, it is assumed that the findings would not have been too different had every person in the U.S. been studied. Because generalizations about the population will be made, it is extremely important that the sample be selected in such a way that it accurately represents the whole population. Statisticians must calculate the size of the sample needed and take into consideration the geographic distribution and demographic characteristics of the population such as age, sex, race, and income.

After a decision has been made on the size and characteristics of the sample, the next step is to determine the method of drawing the sample. For NHANES III, a multi-stage approach is being used.

Stage 1: Sampling PSU's.

The U.S. is divided into geographic regions called Primary Sampling Units (**PSU's**). Each PSU is a county or small group of contiguous counties. At the home office, Westat statisticians randomly select 88 PSU's to be included in this study. The probability (likelihood) of a PSU being selected depends on its size (i.e., the more people who live in the PSU, the more likely it will be sampled). Each PSU that is selected is called a **stand**. Exam teams will travel to each of the 88 stands to conduct exams and interviews in the MECs.

Stage 2: Sampling BG/ED's.

Each selected PSU is comprised of block groups (**BGs**), defined by the Census Bureau, or enumeration districts (**ED's**). The home office randomly selects BG/ED's to be included in the study. Similar to Stage 1, the probability of a BG/ED being selected depends on its size.

Stage 3: Sampling segments.

Each BG/ED is comprised of **segments** which are clusters of homes. Segments are randomly selected to be included in the study. The larger the segment the more likely it is to be selected. Project staff called listers go to each segment and, using special forms, list the addresses of all dwelling units (houses, apartments, mobile homes) in that area.

Stage 4: Sampling households from the field listing.

Not all households in a stand are selected for the study. Home office project staff randomly select households from the field listings.

Stage 5: Selecting eligible persons (screening).

Field interviewers go to each sampled household identified in Stage 4. The interviewer administers a 10-minute screening questionnaire (Household Screener Questionnaire) to determine the household composition and sex/race/age/ethnicity characteristics of the household members. Depending on the characteristics of the household, only certain households are selected for the final sample. Interviewers have written instructions from the home office on how to conduct this stage of sampling.

Stage 6: Choosing Sample Persons in the selected households.

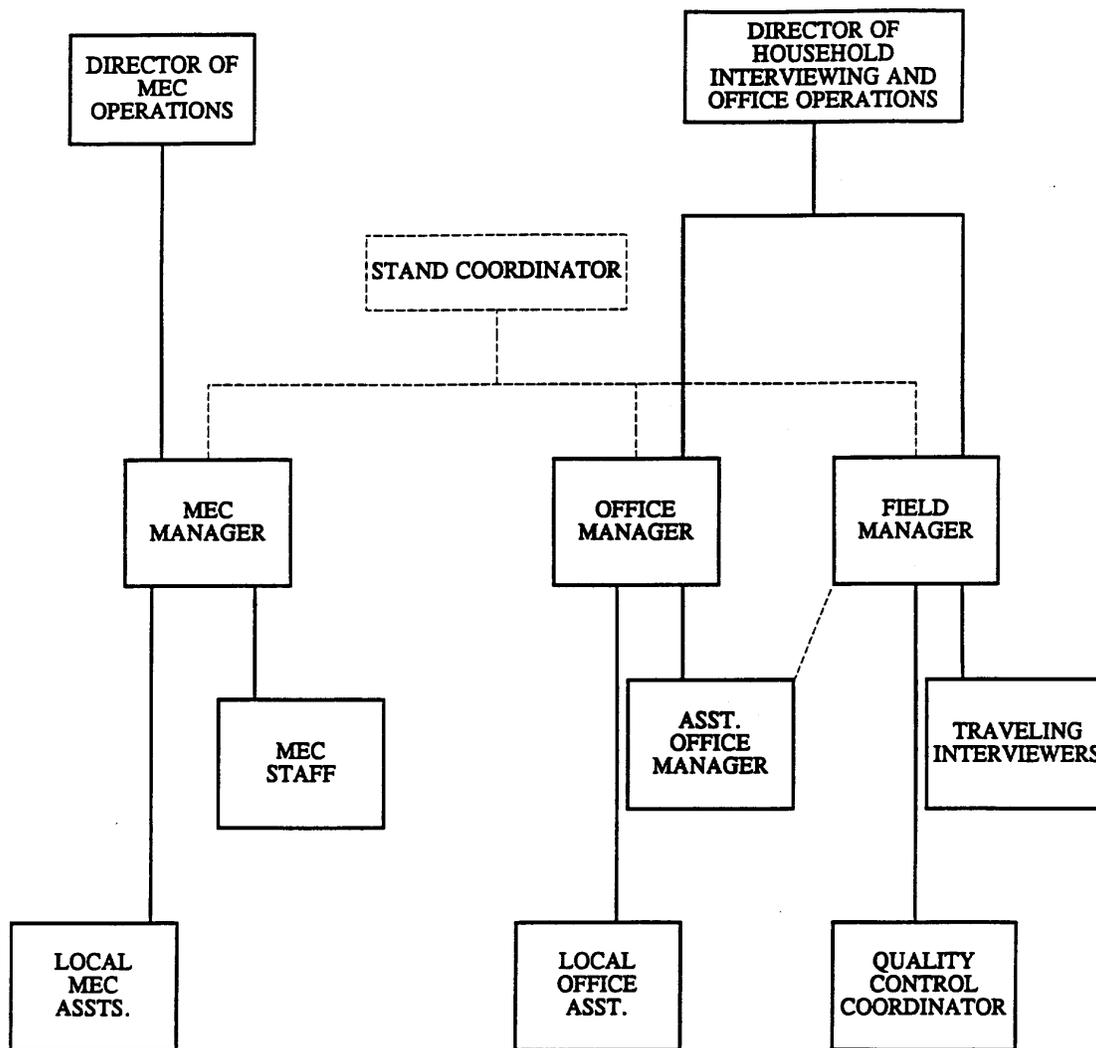
Following the screener sampling instructions, in a typical household 2-3 persons will be selected. However, in some households we may select none and in others as many as 10. Each individual selected for the study is called a **Sample Person (SP)**.

1.6 Personnel and Reporting Relationships

There are two different organizations conducting NHANES III. The National Center for Health Statistics (NCHS) is the government agency sponsoring, and ultimately responsible for, the survey. NCHS has contracted with Westat to conduct the field operations for the survey. NCHS staff and consultants from both NCHS and Westat participate in staff training programs and pretest activities, and periodically visit the field operations during the main survey.

As a member of the exam team staff, you are an employee of Westat and will report directly to Catherine Novak, Director of MEC operations for the Westat staff. Exhibit 1-1 shows the formal reporting relationships for the project. Renee Slobasky serves as the NHANES project director for the Westat home office. Dr. Carla Maffeo, technical director for examinations at Westat's home office, is responsible for technical issues, such as how an exam procedure or biochemical test should be done. Exam or personnel matters should be discussed with the Director of MEC operations. The MEC manager, who is responsible for day-to-day activities of the MEC at the stand, should be consulted for such questions regarding the automated system, equipment, supplies, data collection, sterilization of instruments, storage and shipment of data and specimens, and administrative issues.

Exhibit 1-1. Reporting relationships



A Stand Coordinator is also designated for each stand and will be responsible for coordinating stand activities with the other on-site managers.

1.7 Advance Arrangements for a Stand

1.7.1 Schedule for Advance Arrangements

Exhibit 1-2 summarizes the schedule for a stand. Advance arrangements begin in Westat's home office at least 10 weeks prior to the start of interviewing at a stand. Members of the advance arrangements team study maps and familiarize themselves with the layout of a stand, location of sampled segments, major highways and arteries, public transportation, and sites that appear appropriate for location of the MEC. Once they have a basic knowledge of the layout of the area, they contact local officials identified by our outreach program as prospective knowledgeable informants and make arrangements to visit the prospective stand.

The field office is opened at least 1 week prior to the start of household screening and interviewing. During that week the rental furniture and office equipment arrive, supplies shipped to the site from the home office are unpacked, telephones are installed, and computer systems are tested. A member of the advance arrangements team is at the stand during this period.

At least 1 week before examinations begin, the MEC is delivered to the prearranged site. The MEC manager will be on hand to receive the trailers and direct their location and leveling by the shipping firm, to oversee the hookup of electricity and plumbing lines by local contractors, and to verify the presence of the previously arranged security. After the trailers are set up, examination staff members unpack, calibrate and test the equipment. Medical and laboratory supplies delivered to the MEC are unpacked and stored. These preparations are scheduled and managed so that the MEC is ready for its dry run prior to the first scheduled examinations.

Exhibit 1-2. Stand schedule

Weeks	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
ADVANCE ARRANGEMENTS	X																						
LISTING	X																						
FIELD OFFICE OPEN									X									X					
INTERVIEWING										X								X					
TRAILERS AT STAND														X									X
TRAILER SET-UP													X	X									
DRY RUN																X							
EXAMINATIONS																						X	
CLOSE STAND																							X

1.7.2 Community Outreach Activities

Westat and NCHS have developed a comprehensive and effective outreach program. This program is directed from the Westat home office under the supervision of the Director of Advance Arrangements, Jack Powers. Outreach activities are initiated prior to entering a stand and continue throughout the period of interviewing and examinations.

The purpose of the outreach activities is to inform public officials and potential participants about NHANES III. In informing public officials, regardless of whether their active support is sought, it is hoped that by providing information the study will be recognized as a legitimate and important research effort. The goal of outreach programs directed to potential sample persons is not only to provide information, but to encourage them to take part in an important study.

Westat directs the outreach program to audiences at the national, regional, state and local levels. Through Westat, public officials receive a letter from NCHS describing the survey, a fact sheet explaining technical aspects of the study, and a brochure.

It is important to establish a positive relationship with local health officials and other community representatives as their active support will help legitimize the survey. These persons can also assist during advance work by providing an introduction to other community officials whose cooperation may be important to the survey.

Westat has developed a community outreach program to be activated in each stand incorporating various types of media. The goal is to reach as many of the target populations as possible via radio, television and newspapers in each community. Posters and flyers, in English and Spanish, will be distributed and posted in highly frequented areas, such as churches and community centers, shopping centers and high-rise apartment buildings.

Another purpose of the outreach program is to identify local physician's and dentist's offices or clinics to which the examination reports of findings may be sent for those SPs who are referred for immediate medical or dental care but who report no regular source of health care.

1.8 Data Collection

Data for NHANES III are collected in two phases:

- Household interviews in which SPs are asked detailed demographic, socioeconomic, and health-related questions; and
- Extensive physical examinations, dental examinations, health and dietary interviews, and laboratory tests on biological specimens conducted in mobile examination centers (MECs).

The household component and MEC component are discussed in more detail in the following section.

1.8.1 The Automation System

An automated system has been developed for survey control and capture of interview and examination data in the field. In the MEC, this system will collect, record, account for and transmit examination and interview data. In addition, the computerized flow system will process examinees through the MEC. A more detailed explanation of the MEC Automation System is given in The NHANES III Laboratory Automation System Manual.

1.8.2 Household Interviews

The field interviewers conduct all household interviews and schedule appointments for examinations in the MEC.

1.8.2.1 Advance Letter

As mentioned in Section 1.5, certain households are sampled for the survey. Before an interviewer contacts a household, the Westat home office mails an advance letter to the household.

The advance letter is an important tool for introducing and legitimizing the study. The letter clearly states the purpose and importance of the study, a respondent's rights as a participant, including the confidentiality of information given and the voluntary nature of participation, and indicates that an interviewer will be coming to the household in the near future.

1.8.2.2 Household Screening Interview

Upon arriving at a home, interviewers are instructed to show the advance letter at the door (if the respondent has not seen or does not remember the letter), the screener brochure, and his/her survey I.D. badge.

- **The Household Screener Questionnaire** is administered to one eligible respondent living in the selected dwelling unit who is at least 17 years of age and preferably the head of the household. It includes an introduction, a household enumeration section (including a series of questions identifying secondary families), and an eligibility criteria section collecting information on age, sex, and race or ethnic background. The Screener takes about ten minutes to administer. Once the interviewer has determined that at least one person in the household is eligible to participate in the survey, he/she attempts to administer the family questionnaire, the medical history interview and make an examination appointment. During this process, each selected respondent receives a sample person brochure.
- **The screener brochure** contains a brief description of the study and provides answers to typical questions a respondent might have during initial contact.
- **The sample person brochure** contains more detailed information on the extended interview and examination component of the study. The interviewer distributes this brochure to eligible respondents upon completion of the screening. The brochure describes the examination to be conducted in the MEC and, like the screener brochure and advance letter, emphasizes the purpose and importance of the study, voluntary participation and confidentiality of the information provided. It also includes the Informed Consent Form.

1.8.2.3 Informed Consent

- **Consent form.** The last page of the Sample Person Brochure contains the consent form. The SP must sign the form as an indication of his/her willingness to participate in the study. If the SP does not wish to sign the consent form at that time, he/she may bring the signed form to the MEC at his/her scheduled exam time, or may have additional questions answered at the MEC before signing the form. A refusal to sign the consent form is considered a refusal to participate in the examination phase of the study. Examinations will not be conducted on sample persons who do not return a signed consent form. To participate in the household interviews, an SP only needs to give verbal consent.

For minors the signature of a parent or guardian is required on the consent form. Minors over the age of 12 years are also asked to sign the form as an indication of agreement to participate.

By signing a consent form, a person gives permission for the SP to have the extensive physical exam in the MEC (or the home health examination). A copy of the Home Health Exam Fact Sheet will be given to each SP who is offered the home examination option.

1.8.2.4 Extended Household Interviews

- **The Family Questionnaire** is administered to one eligible respondent in each family who is at least 17 years of age and preferably the head of the household. Information is collected on family relationships, demographics, health insurance, housing, and income. It also contains instructions for within household sampling.
- **The Sample Person Questionnaire** is administered to each sample person or an eligible proxy. A detailed health history is collected on each sample person. The extended interviews require about 40 minutes for each SP. There are two versions of the SP Questionnaire, one for adults and one for youths. Information about SPs who are 2 months to 16 years old is obtained through direct interviews with a proxy, such as the child's parent.

1.8.2.5 Exam Appointments

Interviewers make appointments for SPs to receive physical examinations at the MEC. The interviewer calls the field office to obtain an exam appointment time. If the SP agrees to the time, the information is entered into the field office Automated Survey Management System.

1.8.2.6 English and Spanish Study Materials

The advance letter, brochures, consent form, and household questionnaires are printed in both English and Spanish. Bilingual interviewers use the language with which the respondent feels most comfortable.

1.8.3 Exams and Interviews in the Mobile Examination Center (MEC)

1.8.3.1 The MEC

Examinations and interviews are conducted in specially equipped and designed mobile examination centers (MECs) each consisting of four trailers. Each trailer is approximately 45 feet long and 8 feet wide. The trailers are drawn by detachable truck tractors when moving from one geographic location to another. At an examination site, such as a hospital parking lot, the four trailers are set up side-by-side and connected by enclosed passageways. At any given time during the survey, there are two MECs set up at two different stands and a third MEC is either in transit or in for maintenance.

Exhibit 1-3 shows a floor plan for the MEC. The interior of each MEC is designed specifically for this survey and incorporates many customized features. For example, the trailers are divided into specialized rooms to assure the privacy of each study participant during the exams and interviews. Also, the audiometry room is soundproofed and the X-ray room shielded with lead. The MEC houses all of the state-of-the-art equipment and supplies necessary for the exams and biochemical tests conducted in the MEC.

1.8.3.2 Exam Sessions

The MEC remains at a stand for approximately 6 weeks (range 4-8 weeks). During that period, the MEC operates 5 days a week including weekday, evening and weekend sessions. Two 4-hour sessions are scheduled each day with 10 examinees per session.

Exhibit 1-3. Floor plan of MEC

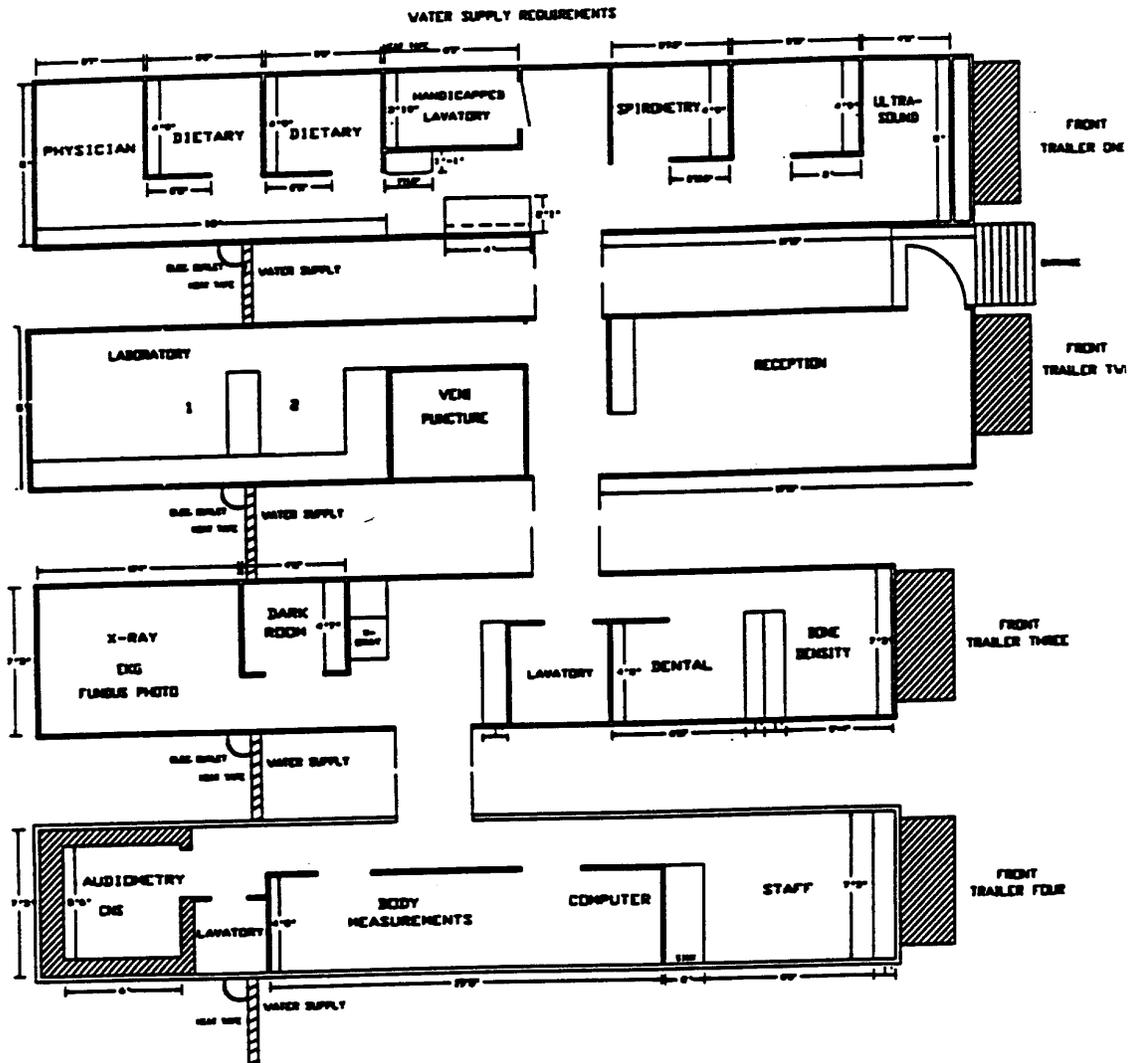


Exhibit 1-3. Floor plan of MEC (continued)

<u>Trailer</u>	<u>Room</u>	<u>Room Use</u>
Trailer I	Physician Dietary Dietary Interview Spirometry Ultrasound	Physical examination by a physician Dietary and food frequency interview Dietary and food frequency interview Cognitive test and neurological tests Tests lung function Ultrasound exam for gallstones
Trailer II	Waiting Area Reception Venipuncture Lab	Waiting area for sample persons Welcoming station and public waiting room Drawing of blood samples, GTT Centrifugation preparation and analysis, blood processing, hematology and blood chemistry laboratory
Trailer III	X-ray/ECG/ Fundus Photography Dental Bone Densitometry	X-rays of hand, knee; test heart function Photo of the fundus of the eye Dental exam by a dentist Measures bone density
Trailer IV	Audiometry Body Measurements/ Allergy Computer Lounge	Hearing tests Height, weight, and other physical measurements/Allergy testing Storage of collected data Staff

1.8.3.3 Exam Team Responsibilities

The two exam teams travel from stand to stand to conduct the exams and interviews in the MECs. There are 16 individuals on each traveling team. In addition, a local assistant will be recruited, trained, and employed at each stand to assist the exam staff. The duties of the exam team members are summarized below.

- One coordinator directs the flow of SPs through the MEC examination process. The coordinator manages all SP appointments, prepares the SP examination folders, and verifies that all exam components have been conducted and recorded before the SP leaves the MEC.
- One physician reviews the SP's medical history, conducts the medical examination, and records the results of the exam. The physician also reviews the X-rays, the results of the blood test (CBC) and the ECG.
- One dentist conducts the dental exam and "calls" the results to a health technician who records the dentist's exam findings.
- One health interviewer administers questionnaires for cognitive and neurological tests and records the results.
- Two dietary interviewers administer the SP dietary questionnaire. During the interview the interviewer records (a) a 24-hour dietary recall of the types and amounts of all foods and beverages consumed by the SP in the last 24 hours and, on selected SPs, (b) food frequency information regarding how often certain types of foods were consumed by the SP in the past month.
- Four certified radiologic health technologists take and record body measurements, X-rays, bone densitometry, pulmonary function tests (spirometry), ECGs, photos of the fundus of the eye, administer audiometry and allergy exams, and record the dental exam findings. The duties of the health technicians are assigned on a rotating basis.
- One certified ultrasonographer performs sonography of the gallbladder, and also assists health technicians in performing selected other tests such as allergy, audiometry, spirometry and body measurements.
- Three certified medical technicians/technologists conduct clinical laboratory tests on blood and urine specimens, record the results of tests, and prepare and ship specimens to various laboratories.
- One certified phlebotomist administers the phlebotomy questionnaire, draws blood from SPs, and administers Trutol for the glucose tolerance test (GTT).

- One home health technician conducts home exams, and works as a health technologist and a laboratory technologist when there are no home exams scheduled.

Each MEC staff member is part of a team of professional persons with specific assignments that must be completed in order to accomplish the overall objective of the National Health and Nutrition Examination Survey. Each individual must be aware of and respect the job demands placed upon other staff members, maintain an attitude of tolerance and consideration for fellow members of the team, and willingly perform any extra tasks that may be assigned to support other staff members in the performance of their duties. MEC staff members may be requested to perform tasks not directly related to their specific professional skills in order to implement the overall data collection plan. Team members will rotate periodically to prevent the introduction of bias into the exam results due to "team effects" .

1.8.3.4 Exam Components

Each SP exam takes up to 4 hours. The actual length of time depends on the age of the SP, as some exam components are only done on certain age groups (adult SPs tend to receive more extensive exams). Exhibits 1-4 and 1-4a present lists of exam components for each age group. Exhibit 1-5 presents an estimate of the number of minutes for each exam component.

Some blood specimens are analyzed in the MEC by the medical technologists while other specimens are sent to various laboratories in the U.S., such as the Centers for Disease Control (CDC), and have special storage and shipping specifications.

1.8.3.5 Sample Person Remuneration

SPs who complete all or part of the exam in the MEC are given a monetary token of appreciation for their time and effort. This remuneration is in addition to the payment for transportation expenses. Adult examinees will receive \$30 or \$50, depending on whether they accept an appointment at a particular time. Also adults who receive special components, such as the volatile toxicants study, will receive additional remuneration. Children will receive \$30.00.

Exhibit 1-4. Examination components by age groups

<u>2-11 mos.</u>	<u>1-5 yrs.</u>	<u>6-19 yrs.</u>	<u>20 yrs. +</u>
Physician exam	Physician exam	Physician exam	Physician exam
Body measurements	Body measurements	Body measurements	Body measurements
Dietary interview	Dietary interview	Bioelectrical impedance	Bioelectrical impedance
Dental exam	Dental exam	Dietary interview	Dietary interview
	Venipuncture	Dental exam	Dental exam (up to 74)
		Tympanic impedance	Venipuncture
		Venipuncture	Urine collection
		Audiometry	Cognitive tests (60+)
		Urine collection	Neurological tests (20-59)
		Cognitive tests	Allergy skin test (20-59)
		Allergy skin test	Spirometry
		Spirometry	Joint X-ray (60+)
		MEC questionnaire	Electrocardiogram (40+)
			Glucose tolerance test (40-74)
			Ultrasound (up to 74)
			Bone densitometry
			Physical function (60+)
			Fundus photography (40+)
			MEC questionnaire

Exhibit 1-4a. NHANES III Examination Components

<u>Components</u>	<u>Ages</u>
Physician exam	all
Phlebotomy	1+
GTT	40-74
Body measures	all
24-hour recall	all
Food frequency	6-19
ECG	40+
Bioelectrical impedance	12+
Spirometry	8+
Dental	2 mos-74
Bone densitometry	20+
Ultrasound	20-74
Allergy (adult half sample)	6-59
Physical function	60+
Cognitive function	60+
MEC questionnaire-adult + Dis	20+
MEC questionnaire - youth	6-19
MEC questionnaire - proxy youth	20-39
CNS (half sample)	20-59
Cognitive testing-child	6-19
Joint X-ray	60+
Audiometry/tympanometry	6-19
Urine collection	6+
Fundus photography	40+

Exhibit 1-5. Estimated number of minutes for each exam component

EXAM COMPONENTS	SAMPLE PERSON LENGTH OF TIME (IN MINUTES)
Physical Exam	10
Body Measurements	9
Bioelectrical Impedance	3
Dietary Interview	19
Food Frequency (12-16)	12
Fundus Photography	6
Dental exam	8
Tympanic Impedance	5
Venipuncture, GTT	19
Audiometry	10
Cognitive and Neurological Tests and Health Interview	30
Allergy Skin Test	7
Spirometry	11
X-rays of Hand, Knee	8
Electrocardiogram (ECG)	13
Ultrasound	10
Bone Densitometry	16

1.8.3.6 Report of Exam Findings

For each SP examined in the MEC, the routine blood pressure and dental findings will be reported to the examinee prior to his/her leaving the MEC. A report of all other findings will be generated by the automated system at NCHS summarizing the findings of the physical exam and biochemical tests. This Report of Findings form will be produced **after** the stand is closed, and **mailed** to the SP. The dentist completes a report of the dental exam findings which is also given to all SPs. Additionally, for SPs who are referred for immediate medical or dental care, a report is sent to the SP's personal physician, dentist or clinic. If the SP does not have a personal physician, dentist or clinic, a list of community clinics will be shown to the SP by the MEC coordinator who will encourage the SP to choose one; the report of the physician's/dentist's findings is then sent to that clinic. If the SP refuses to choose a health care provider, the report of the physician or dentist's findings is given to the SP.

In the MEC, in those instances when the physician or dentist finds a condition that warrants immediate attention from the ECG, hematology, X-ray, dental, or blood pressure results, or from an unexpected incident, the physician or dentist will contact the SP's health care provider by telephone.

1.8.3.7 Dry Run

At the beginning of each stand, members of the MEC staff will devote one-half day to calibrating instruments and practicing MEC procedures. Since the MEC will be moving from one stand to another, it is important to check the equipment before exams begin to make sure everything is working properly. If there are problems with any of the equipment, including the automated system, the stand manager must be informed so that malfunctions can be repaired before the real exams begin. In addition to calibrating instruments, the dry run will give MEC staff an opportunity to practice their assigned duties, including setting up equipment and supplies, verifying instrument quality control results, sterilizing instruments, processing examinees through the MEC, interacting with other MEC staff members and examinees, performing exam procedures, recording exam results on the automated system, completing required forms, and shipping data and specimens to Westat and various laboratories. All procedures in the dry run will be completed as though the actual study were being conducted. The only difference is that in the dry run the examinees will be volunteers who are not part of the actual sample for the main

study or pretests. To solicit volunteers from the community, someone from the field office may post an advertisement at a local grocery store. Other volunteers may include local officials who want to see first-hand the type of exams to be conducted, field office staff, field interviewers, and MEC staff.

Problems identified during the dry run will be discussed by the MEC manager and MEC staff. Based on the results of the dry run, certain procedures may need to be modified or additional quality control procedures may be instituted by the home office in order to overcome or alleviate identified problems.

1.8.4 Home Exams

An examination in the home will be available for selected SPs who are wheelchair or bed-bound or unable or unwilling to go to the MEC for an examination. The household interviewers will determine when an SP should be offered the home exam, and the field office will schedule the appointment. If the SP is reluctant to participate in a MEC exam, every attempt will be made to persuade the SP to agree to an exam, either at the MEC or in his/her home. Because of equipment and staffing considerations, only certain exam components can be conducted in the home. For instance, any equipment required for the home exams must be portable and relatively compact when packed. Exhibit 1-6 lists the exam components which are conducted in the homes of SPs. As with the full-scale MEC exam, the components of the exam depend on the SP's age.

The home examiner conducts the examination of SPs in the home. All tests are completed on-site with the exception of the blood tests, which are prepared and shipped from the MEC. After completing an SP exam, the home examiner will return to the MEC with the blood tubes and enter the results of the home examination phlebotomy into the automated system in the laboratory. The blood is processed and shipped with the blood collected in the MEC.

SPs who complete the home exam are given \$15 as a token of appreciation for their time and effort. This is less than the remuneration for the MEC exam because the home exam is less extensive.

Exhibit 1-6. Home exam components

	AGE		
	2-11 months	20-59 years	60+ years
<u>COMPONENTS</u>			
Body Measurement (Height, Weight, Mid-Arm Girth & Tricep Skinfold)	X	X	X
Head Circumference	X		
Venipuncture		X	X
Spirometry		X	X
Cognitive Tests			X
Physical Function Exam			X
Infant Food frequency	X		
Selected Conditions/Medicine, Vitamin & Mineral Usage/Tobacco/ Reproductive Status		X	X
<u>TIME (Minutes)</u>	10	40	50

1.8.5 Special Studies

At times during the study, special projects may be implemented to obtain information about a specific area of interest, as NHANES III provides an unusual opportunity to capture large amounts of data in an efficient manner. The volatile toxicant study is one such special study.

1.8.5.1 Volatile Toxicants Study

The volatile toxicant study is being sponsored by the toxicology branch of the CDC as an additional component of NHANES III. Extra blood and urine samples are to be collected from 45 volunteers at each stand and analyzed by CDC for selected variables. Volunteers are paid \$10 for participating in the study.

Recruitment for the study will begin on the first day of exams at each stand and continue until 45 sample persons have volunteered. Only sample persons between the ages of 20 and 59 are eligible for the study. The phlebotomist is responsible for recruiting sample persons at the time of the first venipuncture. Because the MEC itself may be a source of some of the chemicals CDC is measuring in this study, the blood and urine samples must be collected as soon as possible after the sample person enters the MEC.

If a sample person agrees to participate in the study, one 10 ml gray top tube and one 10 ml non-silicone coated red top tube are obtained on the first draw. If this is not possible, the sample person will be asked if a second stick can be performed. If the SP is over the age of 40 years and will have a second venipuncture for the glucose tolerance test, the additional blood may be drawn at that time.

The required 45 ml of urine is obtained from the urine specimen which is collected when the sample person first enters the MEC, assuming that the first specimen is of sufficient volume to allow this. If the required amount of urine cannot be obtained from the initial sample, a second urine specimen will be collected.

The sample person is also asked to complete a self administered questionnaire as part of the volatile toxicants study. The phlebotomist collects the questionnaires from the coordinator at the end of the session and mails the questionnaire with the urine samples to CDC.

1.9 Confidentiality and Professional Ethics

All information collected for this study must be kept strictly confidential except as required by law. Since this study is being conducted under a contract with the National Center for Health Statistics, the privacy of all information collected is protected by two public laws: Section 308(d) of the Public Health Service Act (42 U.S.C. 242m) and the Privacy Act of 1974 (5 U.S.C. 552a).

Each person working on the study must be continuously aware of the responsibility to safeguard the rights of all the individuals participating in the study. Each study participant should be treated courteously, not as a sample number. Never divulge names or any other information about study participants except to the research team. Refrain from any discussions about study participants, in or out of the MEC, which might be overheard by people not on the survey staff. All of the members of the research team are under the same legal, moral and ethical obligations to protect the privacy of the SPs participating in the study.

When the study is finished, all of the collected information will be summarized by NCHS in a report. No participant names will be included in any reported results. Neither NCHS nor Westat is allowed to release information that would identify study participants without the consent of the participants.

Cooperation from the public is essential to the success of survey research. Westat expends a great deal of effort in obtaining cooperation from national, regional, state, and local officials and the general public. It is the responsibility of each person working for Westat to build on the company's reputation of integrity so that we can continue to have access to study participants during current and future studies; therefore, professional conduct both on and off the job is very important.

As you travel across the country for this study, you may find yourself to be very much in the public eye, particularly in the smaller towns where your presence is easily recognized. Each staff member has a responsibility to the Public Health Service and to Westat for promoting good public relations. The Public Health Service and Westat will be judged by the actions of the staff both on and off duty; consequently, you must be discreet in speech and actions. Your personal appearance and behavior must be governed by these same considerations. Be aware of the customs of the area and avoid any actions which might be interpreted unfavorably by the public, for example, parking a Westat vehicle in a questionable location. Please be aware of your "audience" at all times and try to avoid statements or actions that could shed an unfavorable light on Westat, the Public Health Service, or the survey.

You will be asked to sign a pledge of confidentiality before the survey begins. This pledge states that you understand that you are prohibited by law from disclosing any information obtained while working on the study to anyone except authorized staff of NCHS and Westat and that you agree to abide by the Assurance of Confidentiality.

This chapter of the manual was designed to provide you with general information about the study, including the advance work that Westat and NCHS completed prior to your joining the study staff. The remainder of this manual explains in detail your responsibilities in this study.

2. OVERVIEW OF THE COORDINATOR ROLE

2.1 Description of the Coordinator's Position

The MEC coordinator is a unique position. It is a specially designed role created to manage the examinee flow of the NHANES III examination session. The primary responsibility of the coordinator is to guide the sample person through each of the scheduled examinations for his or her age group, matching the SP exams to available staff members trained to perform the exams. More than any other staff member, the coordinator controls the pace and efficiency of an exam session.

As part of the exam session activities, the coordinator greets and registers each sample person, pays SPs, and makes sure that the necessary transportation is arranged. A local person is hired at every stand and trained by the MEC coordinator to serve as a full-time assistant coordinator to support the coordinator during exam sessions.

In consideration of the oversampling of Hispanic Americans included in the survey, the coordinator is required to be fluent in Spanish as a courtesy to sample persons, as well as to facilitate movement of Spanish-speaking SPs through the examination. The coordinator also assists in translating information, instructions, and questions for Spanish-speaking sample persons and for other MEC exam staff. In stands with a large number of predominantly Spanish-speaking SPs, the assistant coordinator must also be Spanish-speaking.

The coordinator's goal is to obtain all of the exams scheduled for each sample person in the session. Completion of all exams is a daily challenge which requires the constant attention of the coordinator. Although the coordinator role has existed in other NHANES surveys, there are more components, more staff, and older sample people than in any previous HANES survey. During the course of an exam session, the coordinator is challenged not only to maximize efficiency for sample persons and staff alike, but also to integrate older sample persons (over age 75) into the flow, make decisions between diverse and sometimes competing exam priorities, and maintain a fair balance in the assignment of exams to staff members.

In fact, the role of coordinator is so crucial to the successful collection of survey data that the examination staff is required to defer to the coordinator's decisions regarding flow, exam priorities, and assignments. Relationships between the coordinator and the exam staff, field management staff (including the MEC manager), the Westat home office, and the National Center for Health Statistics are extremely important to the operation of the survey, and are discussed in greater detail in subsequent sections of this manual.

This manual also includes sections on the specific responsibilities of the coordinator, guidelines for determining priorities and conducting the examination session, the use of the automated system, and quality control procedures. The section on the automated system was written as a separate chapter to allow quick access to technical information that may be valuable in the future.

2.2 Responsibilities of the Coordinator

The coordinator has a variety of responsibilities, though the most important ones concern exam session flow. In addition to the exam session activities, the coordinator must prepare for the sessions, conclude the sessions, and interact and collaborate with many different survey personnel. A summary of the coordinator's responsibilities is provided below:

- Greet each sample person, enter person into coordinator's automated system, verify SP information such as name, date of birth and age and check into current session;
- Provide SPs with an exam gown, obtain urine specimen, and take oral temperature;
- Use the automated coordinator system to track and coordinate flow of SPs through the MEC;
- Make component assignments for SPs to examination staff members;
- Reconcile the Daily Appointment Schedule, report SP no shows to field office, and confirm Consent Forms;
- Pay sample persons and insure that transportation is arranged or reimbursed;
- Remain in the exam center with at least five other exam staff until all sample persons have left;
- Complete and review specified parts of sample person record;

- Maintain appearance of reception area and coordinator's station;
- Prepare and maintain sample person chart;
- Maintain Visitor's Log and distribute visitor's badges as needed;
- Train and supervise local assistants to serve as assistant MEC coordinators;
- Maintain inventory of supplies assigned to coordinator; and
- Transmit data to NCHS and Westat Home Office as scheduled.

Each of these responsibilities and the tasks that are required to complete them are discussed in further detail in Chapter 3, Coordinator Responsibilities and Activities.

2.3 Relationship to Other NHANES III Staff

The NHANES III survey is supported by NCHS staff members and consultants, Westat home office staff, field staff, and field examiners. During the course of the survey, the coordinator will work with individuals from all of these groups. However, on a daily basis, the coordinator will work most closely with the field examiners and the field management staff.

Staff from NCHS

The NHANES III survey is planned, monitored, and analyzed by staff from two main branches at the National Center for Health Statistics, the Survey Operations Branch and the Survey Planning branch. Staff members from both branches will visit the field on a regular basis to observe exams and MEC operations, conduct quality control activities, assist with MEC setup and teardown procedures, and review equipment and trailer maintenance issues.

The coordinator should provide information or assistance to NCHS staff members as needed, though examination sessions activities should always receive first priority. If NCHS visitors instruct the coordinator to change any operational or protocol procedures, however, the coordinator should check with the MEC manager or Westat home office staff before implementing the changes. They will confirm the new procedures and make sure that no necessary details have been overlooked.

Westat Home Office Staff

The NHANES III survey is supported by several Westat home office staff and consultants as described in Chapter 1, Section 1.6. The coordinator will most frequently be working with the staff responsible for supervision of the daily field operations, the Director of MEC Operations, and the Director of Household Interviewing. In addition, a Director of Outreach Activities determines the movement and location of the MEC, selects the field office, arranges housing for the field staff, and assists NCHS with publicity and public relations activities.

Though the coordinator will report to the MEC manager on a daily basis, all examination team staff will be supervised by the Director of MEC Operations. Home office staff and consultants will visit the MECs frequently to observe operations, review procedures, conduct staff meetings, and conduct quality control activities. The coordinator will need to allow home office staff and consultants access to exam rooms and MEC activities without adversely affecting the exam session flow. As with the NCHS visitors, the coordinator must remember to check with the appropriate Westat home office staff before implementing any new procedures or changes that the home office staff or consultants may suggest.

Whenever possible, the coordinator and exam team will be given advance notice of the visits of home office staff and consultants.

Field Management Staff

Each stand is managed by one of the three NHANES III Management teams. A MEC manager, field supervisor, and office manager comprise the management team, which is supported by two assistant office managers. The MEC manager directs the examination team and manages the receipt, setup, operation, and maintenance of the Mobile Examination Center. The field manager supervises the field interviewers, and the office manager oversees all operations of the field office at the site. One of the managers also serves as the stand coordinator, and in this role is the most senior person at the stand. The stand manager is ultimately responsible for all operations of the stand.

As mentioned previously, the coordinator will report to and work closely with the MEC manager on a daily basis. The coordinator will also work closely with the office manager and assistant managers in conducting daily activities such as delivery of MEC appointment schedules, scheduling of

home exams, receipt and reconciliation of cash to pay SPs, arranging transportation for SPs, and reporting appointment show rates.

Examination Staff

A description of the exam team is provided in Chapter 1. The coordinator works with all members of the team, but especially with the Chief Laboratory Technician and the Chief Health Technician, who serve as resource persons for the lab and health technician staff, respectively, and with the medical technologist/phlebotomist who is responsible for completing all blood draws in the session.

The coordinator will direct the flow of examinees and exam components for the examination team. "Flow" is a term used to describe the orderly interfacing of exam staff, SPs, and exam components. When flow is optimal, all exam components for all SPs are completed in the session. It is essential that the coordinator understand what exams each staff member performs and assigns the exam components to the appropriate staff members and SPs. A more detailed discussion of this process is included in Chapter 3, Section 3.2, Conducting the Examination Session.

Field Interviewers

The coordinator will also work with field interviewers who accompany sample persons to the MEC. Field interviewers may provide transportation for SPs, complete interviews in the MEC, and assist SPs in other ways to keep their examination appointments. Interviewers may also assist in locating SPs who do not show for their exam appointment.

Local Assistant

At each stand the field office, with the assistance of the MEC manager, will hire a local person to assist the coordinator during the examination sessions. In stands with large Spanish-speaking examinees, the assistant coordinator should be fluent in English and Spanish, and may assist with translations for SPs and staff for information not related to the conduct of exams.

The local assistant or "Assistant Coordinator" is a full-time position with the following duties:

- Assist the SPs in getting changed for exams;
- Insure that urine samples are collected and delivered to laboratory;
- Assist coordinator in facilitating SPs movement in the MEC;
- Help the coordinator watch children playing in the reception area;
- Prepare the SP clothes basket for the following day;
- Act as a chaperone for the physician when indicated;
- Give feedback to the coordinator on SP and exam staff location;
- Assist coordinator in MEC setup and packup; and
- Assist coordinator in packing and shipping.

The coordinator is responsible for training the local assistant at the start of the stand, usually at the time of MEC setup, and for supervising the work of the local assistant. Problems in the performance of duties or attendance should be referred immediately to the MEC manager.

In addition to training the local assistant to perform the listed duties, the coordinator may also choose to provide additional instruction in completing inventory checks, stocking coordinator supplies, or any other small task that could assist the coordinator during exam sessions. The assistant coordinator should not check-in examinees, make exam component assignments, pay or exit examinees, handle cash, or enter data into the coordinator system.

The local assistant is hired only to work during exam sessions. However, if the coordinator has a need for additional help outside the sessions, the MEC manager should be consulted to determine if extra hours may be paid to the assistant.

2.4 The Mobile Examination Center

Though a description of the Mobile Examination Center and its operation is provided in Chapter 1, this section offers some additional information to assist the coordinator in better understanding the physical layout of the MEC, exam session operations, and the role of the coordinator.

The space that contains the coordinator station and reception area is positioned approximately in the middle of the four trailers that comprise a Mobile Examination Center. Three bathrooms are located in the MEC for both SP and staff use--a large, handicapped accessible bathroom in trailer 1 which accommodates wheelchairs and is equipped with handrails, and two small bathrooms in trailers 3 and 4.

In the physician's exam room (trailer 1), the end wall swings out to allow access to a hydraulic lift, installed on the outside end of the trailer. Sample persons who are in wheelchairs or cannot climb stairs can be brought into the exam center by the MEC manager through this entrance.

Emergency exits are available for every trailer. The end wall of the laboratory area swings out to permit use as an emergency exit (although there are no steps) and easy loading of supplies. The coordinator should know where all of the MEC exits are located.

Plastic bins for SPs clothes are stored in trailer 3, on the counter opposite the X-ray developer (X-omat). A shelf on the wall near the X-ray sink can be used to store bins of clothes during the session.

Examiners are instructed to be available to the coordinator for assignment throughout the exam session. However, when examiners need a break or wish to avoid congregating at the coordinator's station, they should retreat to the staff lounge in the fourth trailer. It may occasionally be necessary for the coordinator to check the staff lounge when trying to locate an examiner. The coordinator should also use the staff room to take breaks, when the schedule allows.

2.4.1 Coordinator's Area

The coordinator's area in the MEC is located in the reception area, which occupies the entire front half of the second trailer and includes the "official" visitor's entrance to the MEC. A desk with locking drawers and a file, a telephone, computer terminal, and safe comprise the coordinator's center of operation. Also included in the area is a large floor-to-ceiling closet for storage of supplies. Built-in padded benches are provided for sample persons and visitors, and a collection of toys is available to entertain children. Additional storage space for coordinator supplies is located beneath the bench seats.

The other half of the trailer is devoted to the phlebotomy and laboratory space. A diagram of the trailer is shown in Chapter 1, page 1-23.

2.4.2 Examination Center Operations

2.4.2.1 Examination Center Schedule

The MEC remains at a stand for approximately 5 weeks and operates 5 days per week, including weekdays, evenings, and weekend sessions. Work weeks usually run from Tuesday through Saturday and from Thursday through Monday. Two 4-hour sessions are scheduled each day, and ideally average about 10 examinees, though the schedule can vary considerably during the course of the stand.

Three additional days--setup day, dry run day, and teardown day--are included in each stand schedule to conduct the set up of the exam center, test equipment, and close out the stand. On setup day, the exam staff checks and completes supply inventories, unpacks and stocks supplies, assembles equipment, and prepares the exam center for examinations. Dry run day is used to conduct a simulated exam session with a small number of volunteer examinees, usually no more than four, for whom the staff administer abbreviated component protocols. The purpose of this exercise is to conduct a rehearsal for the first day of exams in the stand and to identify any equipment or supply issues before the actual examination sessions begin. The field office manager is responsible for finding and scheduling the volunteers who receive no remuneration but do receive the results of tests performed during the exam. Also, tours and public relations activities are scheduled on dry run day to avoid conflicts with exam operations and confidentiality issues. The last day, teardown day, occurs at the end of the exam period and is used to ship specimens, data, and survey forms, conduct inventories, pack supplies and equipment, and prepare the MEC for transport. It is the last day of the stand for all staff.

The field office maintains the appointment schedule and follows several guidelines for scheduling SPs:

- Examinees assigned to the standard GTT are given morning appointments and examinees assigned to the modified GTT are given afternoon or evening appointments.
- Ten appointments are scheduled per session. If additional examinees must be added into the session, no more than two SPs are scheduled. On occasion, more than two additional SPs may be scheduled into the session if slots are extremely scarce.
- All SPs are scheduled to arrive at the start of the session (8:30 a.m., 1:30 p.m., or 5:30 p.m.). In busy sessions, two SPs scheduled for the GTT can be appointed to arrive 15 minutes earlier than the others to allow a head start in beginning the GTT blood draws.

- The number of examinees aged 60 years and older is usually limited to three per session. In extreme situations, four may be appointed.
- SPs requiring special assistance, such as wheelchairs, are scheduled into sessions with fewer appointments.

Though every effort will be made to adhere to the guidelines listed, extreme situations, such as stands with a large elderly population, may require that the guidelines be amended to accommodate the unusual demand. In these situations, the MEC manager and exam staff will be notified and ways of handling the problems will be discussed with the staff in advance.

2.4.2.2 Coordinator's Work Schedule

To insure that the MEC is ready to receive the SPs as they begin to arrive, the coordinator should report to the exam center at least 15 minutes before the first scheduled SP appointment (i.e., 8:15 a.m. for an 8:30 a.m. appointment). Some SPs will undoubtedly arrive early and it is important that SPs do not encounter a locked door or a deserted MEC on arrival. The coordinator should immediately unlock the front door and turn on the terminal at the coordinator's station. The MEC Manager will also usually arrive prior to the start of the session and prepare the facility to begin exams, including activating the automated data entry system.

The assistant coordinator should also report to the MEC 15 minutes prior to the first scheduled SP appointment, and should be trained to contact the MEC manager as soon as possible if s/he cannot report to work as scheduled. The MEC coordinator should report any lateness or work absences to the MEC manager.

Examination staff members are required to report to the MEC 10 minutes prior to the start of exams but may elect to arrive earlier if they prefer more preparation time. The MEC manager will check to be sure all staff report for duty on time.

In the event of illness, the coordinator should contact the MEC manager as soon as it is clear that s/he will not be able to report for work. The MEC manager is trained to support the coordinator and will serve as a substitute coordinator when necessary. However, since the managers must also still fulfill their other responsibilities, it is extremely important that the coordinator let the manager know as soon possible if s/he will not be able to report for work.

The coordinator and other examiners must remain in the MEC while the session is in progress, leaving only when absolutely necessary and with the knowledge and permission of the MEC manager. All examination staff will remain in the MEC until the last examinee has exited the center. However, when the session runs beyond the scheduled time, the MEC Manager may elect to dismiss the staff except for the coordinator, the physician, and three other staff members, who then remain until all SPs have exited the MEC at the end of the session. The physician must always be in the MEC if examinees are present, and usually the coordinator will need to remain to exit the SP. At the end of the session, the coordinator will then turn off the computer terminal at the coordinator's station and lock the front door before exiting the MEC.

2.4.2.3 Examination Components

The examination components are the actual interviews, tests, and procedures performed as part of the MEC exam for each sample person. Each adult SP exam takes up to approximately 4 hours, though the actual length of time depends on the age of the SP, as some exam components are conducted only on specific age groups. In Chapter 1, Exhibit 1-4 displays a list of examination components for each age group, and Exhibit 1-5 shows the estimated average minutes required for completion of each exam component. In general, adults over 40 years of age require the longest exam at about 3 and one-half hours of exam time. Children under 5 years of age usually need the least amount of time, about 40-60 minutes.

To select the appropriate exam components for each examinee, the coordinator will consult the automated system for the schedule of exams designated for the examinee's sample code (sample person, replicate, guest, etc.). A set of exams will be displayed for each examinee, along with the status of the particular exam. This information is also available from the Control Record, which is completed for every examinee and contains the list of exam components, the age range eligible for each exam, and the time of the exam. When the automated system is down, the coordinator will rely entirely on the Control Record to assign and track exams. The sample codes and schedule of exams for each code is described in Exhibit 3-2.

3. COORDINATOR RESPONSIBILITIES AND ACTIVITIES

The coordinator's responsibilities involve many areas of activity, most of which are devoted to maintaining the coordinator's area and supplies, managing the exam session, and making preparations necessary to conduct the exam session smoothly. A brief introduction to these responsibilities was provided in the last section, but in this chapter each responsibility and the activities required to accomplish it will be described in detail.

To minimize confusion and provide a useful reference document for the coordinator, the areas of responsibility and related tasks have been categorized into three sections -- preparations for the exam session, conducting the exam session, and postexam session activities.

3.1 Preparation for the Exam Session

The coordinator is responsible for completing all of the exam session preparations prior to the start of the exam session. Activities that must be completed in advance of the session include:

- Straighten coordinator station and reception area;
- Verify and distribute the Daily Appointment Schedule;
- Prepare sample person charts and other materials;
- Verify and complete SP Consent Forms;
- Deliver household interviews to MEC interviewers for data retrieval;
- Deliver vitamin and mineral pages to MEC physician;
- Receive and manage cash for SP exams and mileage;
- Maintain inventory of supplies for coordinator area; and
- Maintain the Visitor's Log.

A description of each of these activities is provided in the following sections of the manual.

3.1.1 Appearance of the Coordinator and Reception Area

The coordinator is responsible for preparing the reception area and coordinator's station to receive SPs and for maintaining the appearance of the reception area and coordinator station during exam sessions. Since the reception area is the first impression most sample persons receive of the MEC, and is the place where SPs wait between exams, it is important that the area appears orderly and professional.

While magazines and newspapers can be available for sample persons as a means of offering a more comfortable environment, the coordinator should keep the desk free of clutter, such as newspapers, magazines, soda cans, food, and any other items that appear inappropriate.

No smoking is permitted in the MEC, therefore visitors, sample persons, and staff must step outside to smoke. Posters, pictures, signs, and any other materials must be reviewed and approved by the MEC manager or Westat home office staff before being placed or hung in the exam center.

3.1.2 Verification and Distribution of the Daily Appointment Schedule

The Daily Appointment Schedule is produced one day in advance of the MEC sessions and contains the list of sample persons scheduled for exam appointments in each session on that day. Names, address, study identification numbers, transportation arrangements, and any special notes--such as SP needs wheelchair--are contained on the schedule. It also indicates whether data retrieval will need to be conducted for the household interview, which is important information for the MEC interviewer and is discussed in greater detail in Section 3.1.3.5.

Prior to the start of the session, the coordinator should verify the schedule with the field office, reproduce copies of the appointment schedule, and distribute the schedule to all team members. Although the Daily Appointment Schedule is available one day in advance, the schedule can change between sessions or overnight. Therefore, it is important that the coordinator call the field office manager or assistant manager and verify the SPs scheduled for appointments in the next session. Any change in the scheduled SPs, or SP information, should be recorded on the coordinator's copy of the schedule and reported to all team members.

At this time the coordinator should also take note if any individuals scheduled for the session require special consideration, such as a wheelchair or a translator. The coordinator should plan to discuss the needs of the SP with the MEC manager, and if appropriate, the chief technicians and physician to ensure that the necessary arrangements are made in advance and that the SP moves smoothly through the exam center. In some instances, the coordinator and MEC manager may find it advisable to alert the entire staff to a special situation (e.g., SP is blind).

3.1.3 Preparation of SP Charts and Other Materials

The coordinator is responsible for preparing examinee charts (or folders), verifying Consent Forms, delivering the household interviews requiring data retrieval to the MEC interviewer, and distributing the vitamin and mineral pages of the household questionnaire to the MEC physician. A description of the chart (or folder) is included in Chapter 6, Forms and Logs.

3.1.3.1 Sample Person Labels

The sample person label, or NCHS sample number label, is one of the most important items the coordinator will handle. Each sample person is assigned a unique seven-digit number. The first three numbers denote the stand in which the exam is conducted, the next three numbers denote the sampled person's identification within the stand, and the final number is a check digit. A set of bar coded labels corresponding to each sample number will be generated for use on data forms, logs, specimens, and other materials such as ECG tracings and body measurement photos.

Within each stand, some individuals who are not sample persons will also be examined and will also be assigned seven-digit identification numbers. Such individuals may be dry run volunteers, surpluses, invited guests, or replicates. These nonsample persons are assigned seven-digit identification numbers with the middle three digits between 001 and 050 to distinguish them from SPs¹. Additional labels in the series printed for the stand will be designated for laboratory quality control, partial replicates, and home exams.

¹ This series of numbers was extended to 070 in Cycle 2.

Dry run day volunteers are scheduled only on dry run day, as discussed in Section 2.4.2.1. Surpluses are individuals to whom the exam is offered as a courtesy, for example a family member of an SP. They may not receive some exam components and are not given remuneration; however they are provided with the results of their tests. Guests are invited participants, frequently a survey consultant or analyst who are interested in receiving only a subset of exams or perhaps only one particular exam. Guests also receive no remuneration and may not receive exam results, depending on the components selected. Replicates are sample persons who voluntarily complete a second MEC exam for quality control purposes and for which they receive remuneration.

Two types of bar coded labels are produced for all examinees, a small label for tubes and vials, and a 1x1 inch label for all unique examinee forms and materials. The laboratory labels are given to the staff to place on tubes and vials while the 1 x 1 inch labels are placed in the examinee folder that accompanies the examinee while he or she circulates throughout the MEC. These labels should be affixed to all items unique to that examinee, such as ECG tracings, body measurement photos, spirometry tracings, and X-rays. The examiners performing the protocols are responsible for placing the labels on the component items and on the room logs. The coordinator should also ensure that the labels appear on the Control Record and urine specimen cup. In addition, labels should be placed on the Exit Interview. However, labels should not be placed on items, other than room logs, that contain information for more than one SP, such as ECG diskettes and spirometry tapes. A different label, known as a box label, should be created for items containing information on more than one SP. Unused SP labels should be sent to NCHS at the end of each stand.

3.1.3.2 Box Labels

Box labels are large bar coded labels with two alphabetical characters followed by a four-digit number and a check digit, such as BB 6041 3. These labels are used to track items that contain information on more than one sample person. These items include laboratory systems, ECG diskettes, ultrasound tapes, and bone density diskettes. Examiners must remember to coordinate the box label with the number requested by the automated system when entering data and to change box numbers in the computer when new labels are started for new tapes or diskettes. A new set of box label numbers are issued for each stand. These numbers are not unique to the stand, except for the lab shipments, so surplus labels can be saved for use at the next stand. Surplus box labels from the lab can be given to the other examiners for use at the next stand.

3.1.3.3 Preparing Sample Person Charts

Sample person charts or folders can be prepared in advance or as soon as the Daily Appointment Schedule is available. A manila folder is created for each SP and contains the unique set of bar coded labels with the sample person's NCHS identification number, a copy of the Control Record, and any other information pertinent to the SP that may be of importance to the exam team. Each sample person is assigned a unique identification number and a corresponding set of labels is created to allow correct labeling of specimens and forms.

Charts prepared for SPs who do not show for MEC appointments should be kept in the coordinator's desk until the appointment is rescheduled.

3.1.3.4 Verifying Consent Forms

The coordinator is responsible for checking that each sample person on the Daily Appointment Schedule has a completed and signed Consent Form on file. The top copy of the signed Consent Form for each SP scheduled for a MEC exam will be sent to the MEC by the field office on that day, along with blank Consent Forms for SPs who have not signed the form. A note will be included on the schedule for SPs with missing Consent Forms. If the Consent Form is not signed, the coordinator must ask the sample person to read and sign it before beginning the exam. If the SP refuses to sign the Consent Form, the person cannot, under any circumstances, receive any portion of the MEC examination. Sample persons who refuse the exam must be reported to the field office immediately.

All signed Consent Forms, including any obtained on that day, should be returned to the field office at the end of the second session of the day.

3.1.3.5 Data Retrieval For Household Interviews

Household Interview Questionnaires for SPs that have missing or questionable responses are delivered to the MEC on the day that the SP is scheduled for the MEC exam, so that the MEC interviewer can obtain the information during the MEC interview.

Questionnaires are delivered to the MEC interviewer prior to the start of the session, collected at the end of each session, and returned to the field office at the end of the second session of the exams.

3.1.3.6 Vitamin and Mineral Pages

Reproduced copies of the vitamin and mineral pages of the adult household questionnaire will be delivered by the field office to the MEC along with the other materials listed above. The coordinator is responsible for delivering the pages to the MEC physician for reference in the event of an emergency. The pages should be returned to the field office at the end of the exam day or shredded by the MEC manager.

3.1.4 Receipt and Management of Cash

The field office manager or assistant manager will issue cash to the MEC coordinator to pay sample persons for their participation in the exam, to reimburse SPs for their mileage to and from the MEC, or for other incidental expenses, such as baby-sitting.

3.1.4.1 Cash for SP Exams

The coordinator will receive cash from the field office on a daily basis to pay for the SP exams to be conducted that day. The payment for each SP will be placed in a separate envelope. Upon receipt of the money, the coordinator will verify the amount of money received, sign an interim receipt for the money, and place all monies in the MEC safe and lock it. All monies will be reconciled with the field office at the end of each exam day. Cash should be kept locked in the safe at all times.

3.1.4.2 Cash for Mileage Reimbursement and Other Expenses

At the beginning of each exam week, the office manager or assistant office manager will issue the coordinator \$100 for which the coordinator will sign an interim receipt. This cash will be used to pay \$.20 per mile for SPs who drive to the MEC or to pay for baby-sitting services if necessary. If \$100 is insufficient for the week, the coordinator must notify the office manager that additional funds are needed. The cash for the week should be kept locked in the coordinator's safe as described above.

3.1.5 Maintaining the Inventory of Supplies for the Coordinating Area

The coordinator is responsible for maintaining the supplies assigned to the coordinating area, and for ensuring that adequate supplies are available for each exam session. At the start and end of each stand, the coordinator will complete an inventory of all supplies and will notify the MEC manager if an insufficient amount of any kind is noted during the stand. The assistant coordinator can be trained to help the coordinator conduct this inventory and restock supplies during the stand. The list of supplies assigned to the coordinator's area is shown in Exhibit 3-1.

3.1.6 Maintaining the Visitor's Log

The Visitor's Log is kept in the MEC in a notebook at the coordinator's station. The log serves as a record for all nonexam staff and non-SPs who enter the MEC during a stand. While the MEC manager is responsible for making sure that all visitors sign and date the log, the coordinator maintains the log and obtains visitor's signatures during a session when the MEC manager is not available. More information on the Visitor's Log is provided in Chapter 6, Forms and Logs.

After the visitor has signed the log, the coordinator should make sure they receive and wear a visitor's badge to identify them to the exam team and other field staff. The badge is to be returned when the visitor leaves. Visitors should not be permitted to view the MEC or observe exams without the permission of NCHS staff and SPs must also consent to being observed.

Exhibit 3-1. Coordinator Supply List

- Paper Gowns - adult and x-large
- Paper Gowns - child
- IVAC Covers
- Paper Pants - adult (small, medium, large, and x-large)
- Paper Pants - child
- Slippers - adult (small, medium, large, and x-large)
- Slippers - child
- Control Records
- Exit Interviews
- Office Supplies - pens, rubberbands, tape, paper clips, etc.

3.2 Conducting the Examination Session

3.2.1 Beginning the Examination Session

The coordinator is responsible for beginning the examination session and for notifying the exam team that the session has started. Before assigning the first exam, the coordinator should check with the MEC manager, chief laboratory technician, and chief health technician to determine if all staff members are present and that equipment and exam rooms are ready for use. Any staff absences or equipment problems should be reported to the coordinator immediately so alternative staff and SP component assignments can be made.

During the exam session, the coordinator should be prepared to conduct the following activities:

- Bring up automated coordinator system and set the current session;
- Initiate the exam "flow";
- Greet SPs, check in examinees, and prepare them for exams;
- Check the Daily Appointment Schedule and inform staff of changes; and
- Manage SP transportation arrangements.

The procedures discussed in this section of the manual are primarily concerned with the noncomputer related functions of the coordinator. Although the coordinator's responsibilities for operating the coordinator's system are presented, the specific details regarding the entry of information into the system and navigation through the screens are included in the more detailed section on the coordinator's system contained in Chapter 5, Using the Coordinator's Automated System.

3.2.1.1 Setting the Session

The coordinator should plan to set the session on the MEC automated system immediately after ensuring that the coordinator station and reception area are ready to receive SPs and before exam staff members begin arriving. Setting the session identifies and activates the SP information from the field office for the current exam session, thus permitting the entry of SP data into the MEC automated system. Until

the coordinator sets the session, the examination staff will be unable to access the data entry programs in component rooms that are fully linked to the coordinator system.

Several examiners--the MEC interviewer, dietary interviewer, dentist, and the medical technologists--should be able to access their data entry programs as they are on stand-alone data entry systems; however they will not have any SP identifying information from the coordinator system. Because these examiners will not be able to confirm the accuracy of the SP demographic information with the coordinator system, they should only use the stand-alone feature in an emergency situation such as when the coordinator system is not functional (otherwise data entry errors may occur and discrepancies in SP information can be created). Such discrepancies complicate cleaning and analysis of data and can lead to loss of SP information.

In order for the coordinator to set the session, the MEC manager must first create the session on the MEC manager system, then load the update diskette from the field office into the MEC automated system. Programs from the MEC manager system are used to execute both of these tasks. To create the session, the manager selects the day, date, and time ("AM," "PM," or "EVE") of the session, and activates it for use by the coordinator system. Sessions are normally set only 1 day in advance, although if necessary it may be possible to create up to 2 days of sessions without experiencing problems with the system.

After the session is created, the manager will then load the field office update disk. This disk contains the SP information needed by the coordinator to register or check in SPs to the exam session. The SP name, NCHS identification number, date of birth, date of interview, race/ethnicity, transportation arrangements, and any pertinent comments for the coordinator, such as SP in wheelchair, are included on the disk. Some of this information also appears on the appointment schedule and comment sheet sent to the coordinator prior to the exam session.

Once the session is set, the coordinator then proceeds to greet and check in the SPs as they begin to arrive. These procedures are described in the next section.

3.2.1.2 Greeting and Checking In Sample Persons

As examinees arrive, the coordinator should greet the SP, introduce himself or herself, and address the SP formally (as Mr., Mrs., Miss, or Ms.) unless the SP states that they prefer their first name.

The coordinator should already be aware of whether the SP has signed a Consent Form. If a signed form does not exist, the coordinator should obtain one from the SP. It is important that the coordinator encourage the SP to participate but should not alienate the SP with aggressive tactics.

At this stage of the check-in process, the coordinator may need to answer SP questions about the survey, mobile exam center, and the exam components. It is important to respond carefully and completely to these questions, as the answers may influence a reluctant examinee's decision to participate. If the coordinator cannot answer specific component questions, the MEC manager or the examiner for that component should be consulted to obtain the information.

Each SP must be registered or checked in by the coordinator before being sent to the first exam component. Normally the coordinator will perform the check-in process using the automated system; however, the manual procedure is available when the computer is down and the entire MEC is on hard-copy forms and stand-alone data entry systems. After the session has been set, the coordinator will have access to the SP information that has been loaded into the MEC system from the updated field office diskette. This diskette contains the most recent version of the Daily Appointment Schedule with the names and demographic information of all SPs with MEC appointments for the day. This diskette should be loaded in advance of the exam session by the MEC manager.

If the manager created the session but could not load the field office diskette, the coordinator will need to manually enter each SP and their demographic information into the automated system. When manual entry of SP information is required, it is important that the information be entered correctly. Accurate entry is best achieved when SP data are entered before the SPs arrive. Entering the information before SPs arrive reduces the time required to process the registration of each SP and facilitates the start of the exam session. In some instances, however, the coordinator will not have advance notice that manual entry is required. When notice is short, the coordinator should briefly explain the problem to the SP, apologize for the inconvenience, and proceed to verify and enter the information into the system.

Verifying SP Information

To check the SP into the current session, the coordinator must first confirm that a signed Consent Form is available for that SP. Then, the coordinator should verify the examinee's name (including proper spelling), date of birth, age, calculated age (age at interview), preferred language (either English or

Spanish), and sex, all of which appear in the automated system when the coordinator accesses the SP by NCHS sample number. Other information supplied by the system includes race, ethnicity, sample code, and fasting status.² The coordinator may correct only the date of birth, age, sex, and language field in the automated system. This data may also be corrected manually. If corrections are made, the coordinator must also inform the field office of these changes by telephone.³ The other data cannot be edited. If any items are missing or if the coordinator suspects that data may be incorrect, he or she must inform the field office to make the necessary corrections. Items that are blank can be filled in by the coordinator but the correct information must first be obtained from the field office. The coordinator should never try to guess race or ethnicity of an SP or enter any other unverified information into the system or on the Control Record.

It is critically important that the coordinator confirm the name, age, date of birth, and sex of the SP. The age questions can be asked directly of the SP. The coordinator should confirm sex by observing the SP but should not directly ask the SP about their gender unless there is an omission or confusion in the field office files. The coordinator should be as discreet and diplomatic as possible during this activity as it must be conducted at the coordinator station where there is no privacy.

Check-In Examinee Procedure

After confirmation of information is completed, the coordinator should proceed to check in the examinee by selecting that SP for the current session from the Check-In Examinee Screen on the coordinator system. This will enter the examinee into the session and allow the examination staff to access the SP information for data entry of exam components. All examinees belonging to one family should be checked in at the same time to facilitate flow in the exam center. At this point the automated system will also stamp the record with the time the SP began the session; however, the coordinator should note the time and record the start time on the Control Record.

The Control Record is a hard-copy form on which the outcome of SP exams is recorded. It serves as summary documentation of the exams and procedures completed for each SP during the session. One Control Record is created for each SP, placed in the examinee's manila folder with the bar code labels

² Education level and base weight were added in Cycle 2. Neither field could be edited by the coordinator; however, if the education field was blank, the coordinator was instructed to retrieve this information and report it to the field office.

³ In Cycle 2, a log form was created for the coordinator to complete and return to the field office if any SP information was corrected in the MEC.

containing the examinee's NCHS number, and circulated with each SP throughout the exam session. The Control Record is described in greater detail in Chapter 6, Forms and Logs.

When the automated system is down, the coordinator will use the Daily Appointment Schedule and Control Record to check examinees into the session. After the automated system is restored, the coordinator should manually enter the SP information into the correct session.

No-Shows and Late Examinees

Approximately 15 minutes after the scheduled arrival of SPs for morning, afternoon, or evening appointments, the field office staff should call the MEC coordinator to determine if there are any no-shows. If there are no-shows, the field office staff will attempt to contact the missing SP and arrange to get them to the MEC or reschedule them for another appointment. The coordinator should carefully check each SP as they report to the MEC and pay special attention to the arrival of families to be sure all SPs are correctly identified.

Sample persons may arrive late for a variety of reasons. The coordinator should assume that all SPs who do not arrive on time for their appointment are still en route until the field office staff contacts the SP and confirms a cancellation or reschedules an appointment. The coordinator should be prepared for the arrival of a late SP and should expedite their check in and preparation process so components may be completed as soon as possible. Exam staff should be notified as soon as the late SP arrives and a plan for managing the late SPs should be prepared in advance with the chief technicians and the MEC manager. Advance planning allows all staff members to be prepared to smoothly move into action when the SP arrives and to prevent further loss of exam time.

3.2.1.3 Transportation Arrangements

The coordinator will be informed of the examinee's transportation arrangements through the Daily Appointment Schedule and by the field office information provided on the daily diskette. Examinees will either provide their own transportation or take a cab provided by the survey. Occasionally examinees may be brought to the MEC by an interviewer. Other arrangements unique to a particular site may also be

made to assist SPs. In these instances, and in any other situations that will be handled in an atypical manner, the field office will notify the coordinator of the specific arrangements that have been made.

For transportation by taxi, the field office will attempt to arrange a voucher system to pay for cab fare. With this arrangement, the taxi company will provide vouchers that the coordinator can give to the cab drivers when they drop off or pick up SPs. The field office will provide the required number of vouchers on a daily basis.

Occasionally the taxi company will require a cash payment for transporting examinees. In this situation, the field office will supply the coordinator with additional cash to cover this expense as part of the regular provision of monies to the MEC. The coordinator must obtain a receipt from the cab driver each time a cash payment is made for a cab fare.

As part of the check-in process, the coordinator should verify the examinee's transportation arrangements and make sure that a ride home is available. If no arrangement was made or if the plan has changed, the coordinator should call and reserve a cab or notify the field office manager to assist with some other form of transportation.

3.2.1.4 Prepare Examinee and Obtain Urine Specimen

After the check-in process is completed, the coordinator will proceed to prepare the examinee for exams by taking their temperature, asking them to change from their street clothes into an exam gown, and to provide a urine specimen.

Taking the Examinees Temperature

The coordinator will use the IVAC thermometer to obtain the examinee's temperature. The unit should be kept plugged in and ready on the coordinator's desk. To take the temperature, the coordinator should place a disposable paper sheath over the probe and place the probe in the SP's mouth. The unit will beep when the value is ready. The coordinator should read the value and record it in the automated system and on the Control Record. The value will usually have three numbers with one decimal

place (such as 98.6 degrees); however, some SPs may have an elevated temperature. A value of 101 degrees or greater should be reported to the MEC physician as early in the session as possible.

Assisting Examinee to Change Clothes

The coordinator or assistant coordinator will give each examinee a paper gown, paper pants, and disposable slippers to use for the exam period. A variety of sizes of each item are provided and the SP should be given the most appropriate size. The assistant coordinator will then escort the SP to one of the MEC bathrooms to change clothes. Elderly SPs and children may need assistance to change clothes. The large handicapped accessible bathroom should be used when additional space is needed, such as for SPs with walkers or when more than one child is changing clothes.

When the SP returns from the bathroom, the SP's clothing should be folded and placed in one of the plastic bins provided for this purpose, and stored on the wall shelves in the X-ray area until the SP has completed the exam. Some SPs may refuse to change into the paper garments or will agree to only a partial change of clothing. The coordinator should attempt to gain the SP's cooperation in changing clothes, but in the event they refuse, the exam staff should be notified of the SP's status and some modification of exam procedures may need to be made.

Obtaining the Urine Specimen

At the time the SP enters the bathroom to change clothes, the coordinator or assistant coordinator will also give the SP a urine collection cup and ask the SP to provide a urine specimen. All SPs ages 6 years and older should be asked to provide a urine specimen. The following procedures should be followed for obtaining the urine specimen:

- Instruct the SP to wash his or her hands with soap and water;
- Hand the SP a labeled specimen collection cup and instruct the SP to open the collection cup immediately prior to voiding;
- Instruct the SP to leave the cap up while voiding, then recap the filled container immediately;

- Instruct the SP that the inside of the cup and the cap should not be touched or come into contact with any parts of his or her body, clothing, or external surfaces. Exposure of the sample to air should be minimized and
- When the SP exits the bathroom, take the specimen collection cup and deliver it immediately to the lab. A latex glove may be worn to carry the cup to the lab.

SPs who refuse to change clothes should still be asked to provide a urine specimen and given the instructions listed above. The coordinator and assistant coordinator should be prepared to help SPs who may need assistance and remain by the bathroom to make sure the specimen is obtained.

3.2.2 Managing the Examination Session

The coordinator is responsible for directing and maintaining the flow of activities in the MEC. When flow is optimal, all exam components for all SPs are completed in the session. There is no set order in which exams are performed or SPs are examined. Instead, the coordinator uses a set of guidelines and exam priorities to match SPs requiring exam components to the appropriate examiner. The exam team must collaborate and communicate with the coordinator continually throughout the session. All exam team members must obtain the SP exam component and task assignments only from the coordinator, and must return the SP to the coordinator when the exam or task is completed. SP assignments are not negotiable; staff may not refuse assignments, trade, or "steal" SPs. Circumventing the coordinator leads to disorderly flow and ultimately to incomplete or inaccurate exams. The only exceptions to this rule occur when the physician feels that, in the best interest of the sample person, the order or performance of an exam should be altered or perhaps even canceled.

The MEC manager will work closely with the coordinator, making sure that the exam team provides feedback to the coordinator and does not attempt to complete different exams or obtain SPs without the coordinator's consent. Also, the MEC manager and exam team staff must keep the coordinator informed of their location and that of the SP to assist the coordinator in making accurate and reliable component assignments and decisions.

The coordinator should expect to conduct the following activities during the exam session:

- Assign component exams to examiners and SPs and ensure that all SP exam components are completed;

- Manage examinee flow; and
- Manage cash for mileage reimbursement and SP payments.

3.2.2.1 Types of Examinees and Exams

Two general categories of examinees exist: sample persons and nonsample persons. The sample person is an individual who has been randomly selected to participate in the study, and therefore receives the highest priority. Sample persons cannot be replaced; each person is unique and important to the study. Sample persons may receive a MEC exam and/or a home exam. SPs who receives the home exam will be examined in their own homes and the coordinator will check the SP into a current session so that lab data can be entered for the home examinee. Sample persons who receive the MEC exam will follow a list of exams selected according to their age.

Nonsample persons are examinees whose data are not considered part of the survey database, although the data might be used for another purpose, such as quality control analyses. This category of examinee includes dry run examinees, replicates, surpluses, and guests. Dry run examinees, as explained previously, are volunteers arranged specifically for an abbreviated MEC session at the start of the stand. Replicates are sample persons who are repeating their MEC examination for quality control reasons. Surpluses are usually examinees related to the sample person for whom exams are done as a courtesy. Guests are invited visitors who are interested in one or more component or in the operations of the MEC and may elect to receive one component or a complete set of exams. The exam protocol for guests is also abbreviated.

The field office assigns each examinee a sample code that tells the coordinator what exam schedule to administer. Exhibit 3-2 displays the list of sample codes and exam schedules available for each one. S is for sample persons between the ages of 20 and 59 who receive either the central nervous system exam or the allergy exam, depending on whether their sample number ends in an odd or even check digit, respectively. Replicates with original ID numbers that end in an even number receive an R code, while replicates whose original ID end in an odd number receive a Q code. These codes assist the coordinator in correctly assigning the CNS and allergy components, regardless of the check digit on the replicate number. Home examinees, or H codes, receive no exam in the MEC but the blood sample taken from the SP is processed in the lab, so the coordinator must check the home examinee into a session to provide access for

Exhibit 3-2. Translation of Sample Codes into Examination Schedules

NHANES 3

Code	Sample	Age Range	Odd/Even	Schedule
S	Sample person	1 - 11 M	0 1	Standard
		1 - 19 Y		Standard
		20 - 59 Y		Standard, allergy
		20 - 59 Y		Standard, CNS
		60 - 130 Y		Standard
R	Replicate	1 - 11 M		Standard
	Replicate, even sample #	1 - 19 Y		Standard
		20 - 59 Y		Standard, allergy
		60 - 130 Y		Standard
Q	Replicate, odd sample #	20 - 59 Y 60 - 130 Y		Standard, CNS Standard
P	Hard copy	1 - 11 M		Everything or anything
		1 - 130 Y		Everything or anything
H	Home examinee	1 - 11 M		None
		1 - 130 Y		None
G	Guest	1 - 11 M		Abbreviated guest exam
		1 - 130 Y		Abbreviated guest exam
E	Special examinee	1 - 11 M		Everything or anything
		1 - 130 Y		Everything or anything
D	Dry run	1 - 11 M	0 1	Standard
		1 - 19 Y		Standard
		20 - 59 Y		Standard, allergy
		20 - 59 Y		Standard, CNS
		60 - 130 Y		Standard

the laboratory staff. P, for paper or hard copy, is not a sample person. It is a code that indicates the exam was recorded on hard-copy forms while the automated system was down and entered into the system, after it was restored.

Fasting Codes

The field office will also assign a code to each sample person to designate their fasting status for the Glucose Tolerance Test. This series of codes is more detailed than the Standard and Modified sample codes previously described, which simply indicate the long (12-hour) fast versus the short (6-hour) fast. The fasting codes specify whether the SP is eligible for the standard or modified GTT, eligible for only the short fast, not eligible, or excluded. This information is very useful to the coordinator in determining whether the SP should receive the second blood draw for the GTT. The codes are listed below:

- S Standard fast (12 hours);
- M Modified fast (6 hours);
- T Teen (6-hour fast);
- U No fast (SP < 12 years old); and
- E Excluded from fast.

The codes will be printed on the Daily Appointment Schedule and will also be entered onto the field office disk for inclusion in the Coordinator Automated System. The codes appear on the Check-In Examinee Screen, which is described in Chapter 5. If the fasting status information is not printed on the Daily Appointment Schedule or entered in the automated system, the coordinator should check with the field office manager to obtain the correct code. The coordinator should not try to determine the fasting status of the SP. Any other questions about the fasting status or code for an SP should be directed to the field office manager.

3.2.2.2 Obtaining Urine Specimen Result

Before proceeding with exam component assignments for women ages 20 to 59 years, the coordinator should check for the result of the urine pregnancy test. Women who test positive cannot

receive the bone densitometry component and should not be sent to the bone density exam room. The lab staff will test all urine samples for eligible females and provide the results of the test to the coordinator on a Pregnancy Test Card.

Women with negative tests may proceed with the exam components, including bone densitometry. Women with positive pregnancy test results should be directed at the earliest opportunity to the physician, who will inform the SP of the test results. The coordinator should not discuss the test results with the SP as the information is sensitive and confidential. Prior to sending the women into the physician's room, the coordinator should inform the physician of the need to discuss the test results with the SP and, if possible, arrange for the woman to receive her physician exam component at the same time.

If no specimen or result can be obtained for the SP, the coordinator cannot assign the SP to bone densitometry and should inform the health technicians that the SP will not receive that component.

After the physician informs the SP of the result, the Pregnancy Test Card may be discarded as the test result information will be recorded in the laboratory automated system. An example of the Pregnancy Test Card appears in Chapter 6, Forms and Logs.

3.2.2.3 Assigning Components and Managing Flow

After the SP has completed the check-in process, changed, and provided a urine specimen, the coordinator can then begin to choose the order in which the exam components will be performed. Since there is no fixed method of completing the components, the coordinator usually matches an available examiner with the component to be completed for the SP and assigns exams in this manner until all components are completed. The SP and examiner return to the coordinator after each exam for assignment to a new component. To make accurate and efficient assignments, the coordinator needs to know what component each examiner administers. Exhibit 3-3 provides a summary of the components performed by each examiner.

Exhibit 3-3. Exam Staff Component Assignments

EXAM COMPONENTS	EXAM STAFF							
	Physician	Phlebotomist	Dentist	MEC Interviewer	Dietary Interviewer	Health Technician	Sonographer	Home Health Technician
Allergy						X	X	X
Audiometry						X	X	
Body Measures			X			X	X	X
Bone Density						X		
CNS				X		X	X	X
Dental Exam			X					
Dental Recording				X		X	X	X
Dietary Interview					X			
ECG						X	X	
Fundus Photography						X	X	
MEC Interview				X				
Phlebotomy		X						*
Physical Assessment				X		X	X	X
Physician Exam	X							
Spirometry						X	X	X
Tympanometry						X	X	
Ultrasound							X	
X-ray						X		

*Can substitute for phlebotomist in the event of illness or other absence.

To assist the coordinator in making continuous component assignments for all examinees and examiners throughout the session, a set of limited guidelines and priorities have been developed as a reference. These guidelines and priorities are also observed by all examiners. The following guidelines are used by the coordinator to make decisions during the session:

- Adult SPs, especially those over 60 years of age, receive priority in component assignments because they receive more exams and thus have less time available to wait;
- SPs over 60 years of age may receive blocked exams to reduce walking time and to conserve energy. Fundus photography, ECG, and X-rays are often blocked. The coordinator decides whether to assign blocked or unblocked components;
- SPs over 60 years of age may also receive expedited exams, in which the coordinator makes the next assignment without having the SP return to the coordinator's area. This reduces walking time and conserves the SP's energy;
- The pulmonary function test must be completed before the SP is sent to the allergy exam;
- Phlebotomy should be completed as early as possible in the session except for children, who receive phlebotomy as the last exam. Adults scheduled for the GTT receive the highest priority for phlebotomy;
- The body measurement and allergy exam should be administered as a blocked procedure to eligible SPs;
- Ultrasound exams should be performed before glucola is administered to SPs receiving the GTT, otherwise the gallbladder image will be unsatisfactory;
- Some dietary interviews may require one person to complete the interviews for several family members if they are most familiar with the food preparation; and
- If possible, on busy days SPs should be sent early and steadily to body measures, the physician exam, and the MEC interview as these components tend to get backed up.

The coordinator needs to keep in mind several other factors that affect the assignment of components to examiners. Both the dental exam and the body measurements procedure require two examiners and the coordinator must be sure to account for this in estimating exams that remain to be completed. The physician requires a chaperone for examinees ages 8 to 11 years. It is preferable to use the assistant coordinator, but any available examiner may be used if no exams are pending.

In addition to these guidelines, the coordinator can also refer to a set of exam priorities to assist in making decisions at the start of busy sessions, during the last hour of the session, or when time is running short for an SP. When selecting components to assign under these time constraints, the coordinator should try to complete the following components, for which each SP is eligible, in the order of priority shown:

- Phlebotomy;
- Dietary interview;
- MEC Interview;
- Physician exam;
- Ultrasound exam; and
- Physical Assessment (SPs ages 60 years and older).

Beyond these guidelines, the coordinator must still keep in mind any delays at component stations for problems such as equipment malfunctions, allow time during the morning session for equipment calibrations, and compensate for staff shortages if an examiner is absent. Several screens in the coordinator schedule assist the coordinator in tracking the completion of exams. The Examinee Schedule Screen displays the list of exam components that must be completed for each SP along with the status codes of each of the exams so the coordinator can quickly tell which exams have been completed and which still need to be done. The coordinator can also use the Procedures Screen to determine how many exams of each type must still be completed. For example, the coordinator can select body measurements and see how many SPs will require the body measurement component and how many have been completed. More information on the features of the automated system is provided in Chapter 5, The Coordinator's Automated System. The Control Record can also be used to track exams for individual SPs. When the automated system is down, it will be the only record available to assign and track exams.

Approximately one hour before the session ends, the coordinator checks every SP exam schedule for uncompleted components. Then, still following the guidelines and priorities, the coordinator attempts to ensure the completion of the required components in the time remaining in the session. The last examiner of the day also completes the Exit Interview, though the coordinator may obtain the interview if no examiners are available.

While sample persons represent the majority of MEC appointments, the coordinator must also manage the examination process for guest and replicate examinees. Guests receive fewer exams, while replicates repeat their original MEC visit, which includes receiving exams from the same examiners who performed the original tests. If it appears that exams on all examinees cannot be completed, the coordinator attempts to complete sample person exams first, then replicates, guests, and surpluses, respectively.

3.2.2.4 Component Status Codes

The outcome of every exam or interview component scheduled for an examinee in the MEC must be recorded in the coordinator's system. Outcomes of components are recorded as result codes and are used to monitor response (completion) rates for the exam components.

Result codes are represented in the automated system and on the Control Record as three-digit numbers, starting with either 0 or 1. Codes that begin with 0, such as 010, are examiner-entered codes, which are copied into the coordinator's system. Codes that begin with 1, such as 110, are coordinator-originated codes, which are entered directly into the automated system by the coordinator.

The majority of status codes are entered into the MEC automated system by the individual examiners and copied into the coordinator's system data files. However, a few components are not linked to the coordinator's system and must be recorded in writing on the Control Record by the examiner and entered into the coordinator's system by the coordinator. Components that must be entered by the coordinator include phlebotomy, the physician exam, the MEC interview, dietary interview, and dental exam.⁴

Some codes are most frequently entered by the coordinator. The refusal codes (013/113) are entered by the coordinator when the SP refuses to even enter the exam room. Codes for equipment failure are also entered by the coordinator when the equipment will not be functional for a significant period of time, thus making it impossible to perform the component. The coordinator also usually enters the 210 code for returning examinees who have previously received some exam components but could not complete the exam in the first session.

⁴ The phlebotomy component and the physician exam component were eventually linked to the coordinator system during the second year of the survey.

The coding scheme is standardized, although the meanings of the codes are customized to the particular component. For example, while a 017 code generally means the component could not be obtained due to equipment problems, in the allergy component it means no needles or allergens were available. In the performance test component, there are no equipment issues and the code is not used.

A complete list of the status codes for each exam is shown in Appendix A. Result codes are entered into the Examinee Schedule screen of the coordinator's system.

3.2.2.5 Examinee Flow Issues

The flow of examinees through the exam session can be affected by any event or circumstance that delays or interferes with the completion of a component. Delays are usually caused by problems in one of three major areas: staffing problems, physical facility problems, or examinee problems. Unexpected events outside of these three sources can also occur, but they are less common and harder to anticipate.

Staff problems that interfere with the exam session are most frequently caused by the absence of one or more examiners. Ideally, the examiner can notify the MEC manager of their need to be absent (due to illness, family emergency, etc.) sufficiently in advance of the session to permit the arrangement of a substitute examiner. Some examiners are cross-trained on several components and can shift their exam participation to accept more exams than would usually be performed by the missing examiner. A backup examiner can also be arranged by the home office; however, travel time to the stand must be figured into the decision to send a backup examiner from another team, from the home office, or from their home. Without advance notice, the coordinator and MEC manager will need to assess the staff coverage available at the stand and alter the flow of examiner assignments to try to use the available resources. Arranging for a replacement for a missing examiner in extreme instances will be impossible. When this occurs, it may be possible to still perform the components, but the coordinator should be aware that all examinees may not receive the components. For example, if a health technician is absent, the home examiner may help perform some of the components of the missing examiner. All examinees may not receive all of the components because the home examiner may not have sufficient time to perform the component. Or, if the absent examiner is the only one who performs a particular component, such as the gallbladder ultrasound exam, the component may not be performed at all. If the component cannot be performed, the examinee

should be informed and the coordinator should ask the examinee to return at another time to obtain the missing component.

Another source of potential interruption to examinee flow can originate from a facility problem. Facility problems can occur in a limited area (e.g., malfunctioning equipment in an exam room) or can affect the entire facility (e.g., the loss of electricity or water). The coordinator can manage problems with equipment in a specific room by redirecting staff and SP assignments around the problem component until the equipment can be serviced. However, facility-wide issues such as loss of electricity or power cannot be circumvented and will usually result in the rescheduling of examinee exams.

Examinee problems are the most common source of interference with the flow of exams and can occur for many reasons. Examinees may arrive late or decide to leave the exam session early, requiring the coordinator to adjust exam assignments to maximize component completion in the time available. Older examinees often require more time for every task and component and, as a result, a large number of elderly examinees in a session can cause delays throughout the exam center. Examinees sometimes become ill and must remain in an exam room until they can proceed or be examined by the MEC physician. For example, an examinee may feel faint after the venipuncture and need to remain in the room for an extra amount of time, delaying the availability of the room for the next venipuncture. Examinees who have reservations about particular components also require extra time from the examiners to explain the procedure, answer questions, and try to obtain cooperation to perform the component. Medical emergencies also interrupt the flow of exams until the examinee is expedited from the MEC and the session can be resumed. Most of these events occur without warning so the coordinator must communicate the delays clearly and efficiently with the exam team to collaborate on the best way to obtain the exams for the affected component.

Finally, unforeseen circumstances sometimes arise that interfere with exams or cause disruption of the entire session. Weather events can be a source of such interference and in the case of sudden storms or tornadoes can require exams to be suspended with very little notice. If exams can be resumed, the coordinator and MEC manager must assess the remaining time and component priorities to obtain the maximum number of components.

Regardless of the source of the interference or delay, the coordinator's responsibility is to keep the exam session flowing as much as possible around the problem. If exams must be suspended, the coordinator is responsible for assessing component priorities when exams resume and directing the staff in the most optimum manner to complete as many components as possible. Communication with the exam

staff and in some instances with the field office is a critical element in maximizing the completion of exams and the coordinator must be alert and responsive to the communication needs of other staff.

If sessions become constrained by time and space, the coordinator should implement a few departures from standard procedure that are acceptable in unusual instances. Delays in the check-in process for examinees, which can trigger problems for the entire exam session, may be managed by sending some examinees to components that do not require changing into gowns. By sending some examinees to components that do not require changing clothes, such as a dietary interview, MEC interview, or CNS procedure, the coordinator can relieve a temporary bottleneck at the start of the session and then direct the examinees into the bathroom to change clothes when the bottleneck is over. In extremely busy sessions the coordinator may also elect to have the examinee change clothes in a component room instead of the bathroom as another means of avoiding a bottleneck. This strategy works best for those components that require a paper gown to be worn, such as the ECG or physician exam. Depending on the extent of the delays affecting the session, the coordinator may also elect to implement the guidelines for time-constrained sessions to ensure completion of the priority exams for all SPs. If the flow of exams can be restored, then the coordinator can lift the priority ordering if sufficient time remains to complete exams.

In general, decisions regarding the management of exam session delays will be based on the judgment of the coordinator and MEC manager. As the exam session proceeds, decisions regarding flow should be re-assessed frequently and adjusted as necessary to accommodate the pattern of the exam completion rates. For example, if problems in one component subsequently disproportionately affects one or two other components, the coordinator will need to alter the assignment of exams to try to offset the impact and maximize completion of the affected components.

3.2.3 Concluding the Examination Session

As the examination session enters the last hour, the coordinator should assess the status of all examinees and determine the best approach to insuring that all components will be completed. Also, some examinees will begin to finish exams by the second hour, so the coordinator will be exiting examinees and adjusting exam session flow accordingly. Procedures for concluding the exam session are divided into procedures for exiting examinees and procedures for closing the exam center.

3.2.3.1 Exiting Examinees

As examinees approach the end of their exam schedule, the coordinator should check both the Control Record and the Examinee Schedule screen on the automated system to make sure that all required components were completed or reconciled (refused, excluded, etc.). A result code for each component should be recorded on the Control Record and recorded in the automated system. Any missing codes should be investigated with the examiners and resolved by entering the code or completing the component. When the coordinator has confirmed that all components and codes are recorded, the exit procedures can be initiated.

Referrals

Some examinees may require a referral to local physicians or dentists for further evaluation of problems noticed during the exam. The dental examiner and physician are responsible for discussing these referrals with the examinee. Following that discussion, the dental examiner will complete a referral form and give it to the examinee during the dental exam. Examinees may elect to seek followup care from their own dentists or physicians. Those examinees without care providers may elect to accept a referral to a local provider who has agreed to accept examinees referred from the survey. The dentist or physician will discuss the need and recommendation for the referral, but the coordinator should be prepared to assist the examinee in contacting the care provider. Depending on stand, the coordinator may simply provide the examinee with the name and contact information for the provider or contact the provider on behalf of the examinee to make an appointment. Arrangements for making referrals are completed as part of the advance arrangements activities for the stand. The exam team should be briefed on the procedures at the start of the stand.

Problems with the referral process should be reported immediately to the MEC manager, the field office, and the home office so that the issues can be addressed quickly. Delays in addressing referral problems make it difficult to provide sample persons with timely information and could result in an inefficient referral process.

Checking Out Examinees

After the examinee has completed all of the components for their age category, the coordinator should send the examinee to change into their street clothes. During a busy session, the coordinator may elect to have an examinee dress as soon as the last exam requiring a gown is completed. The examinee then completes the remaining components in street clothes. By doing this, the coordinator reduces the number of examinees that must be routed through bathrooms during the last hour of exams.

Once the examinee is dressed and has completed all exams, including the Exit Interview, the coordinator selects the Check-out Examinee screen from the coordinator system. The coordinator selects the examinee's name on the exam schedule and the Examinee Schedule screen is then presented. The coordinator confirms that a result code is present for all components and then proceeds to the Pay Examinee screen. The Pay Examinee screen allows the coordinator to review the incentive payments and transportation reimbursements for the examinee. The coordinator should verify the regular incentive, which is \$30.00 for all examinees. The bonus is an additional \$20.00 for eligible examinees (derived from fasting status and appointment time). Examinees may also receive the volatile toxicant bonus, which is \$10.00 for consenting examinees, and any mileage or taxi reimbursement. Taxi fare is usually managed by using vouchers with the taxi company, thus avoiding the direct exchange of cash. In some locations this arrangement cannot be made and cash is used to reimburse examinees.

At the bottom of the screen, a total amount of reimbursement is provided and the coordinator should reimburse the examinee from the cash available in the MEC safe. The coordinator should ask the examinee to produce their examination vouchers, which were mailed from the field office with the reminder notice and fasting instructions for the exam appointment. The coordinator fills in the examinee name, then has the examinee endorse the voucher to serve as a receipt for the payment of incentives and bonuses. The expense of transportation, whether mileage or taxi fare, is recorded in a separate receipt book and signed by the examinee. The coordinator then confirms the total payment to the examinee and exits the Pay Examinee screen, which returns to the Coordinator Main Menu.

It is important that all components are completed and all incentives and reimbursements recorded because once the Pay Examinee screen is exited, the examinee's record can no longer be accessed for any data entry. If the examinee needs to leave but plans to return, the coordinator should not exit the examinee until it is clear they will not return for that session. The examinee record can be accessed during

a subsequent session by using the “Set Result Code for Returning Examinee” feature. New data can then be recorded for the examinee.

Transportation Arrangements

The coordinator’s last responsibility in the exit process is to ensure that the examinee has transportation to their home. Some examinees will have their own transportation and will leave the exam center as soon as their exit process is completed. Examinees who use taxis provided by the survey may have to wait for the taxi to arrive after completing the exit process. To minimize the examinee’s wait for a taxi, the coordinator should notify the taxi company of the need for a taxi and the number of examinees requiring transportation. Some families may require more than one taxi to accommodate all members of the family.

If the taxi does not arrive in a timely fashion the coordinator should try one more time to request the taxi. Further delay should be reported to the field office manager, who can assist in resolving the problem through a company representative. Also, should the coordinator encounter a problem with the driver of the taxi regarding the destination of examinee or payment of the fare, the MEC manager and field office manager should be notified of the disagreement and resolution or be asked to intervene in solving the problem.

The coordinator must remain in the exam center until all examinees have exited the MEC. Five other examiners, including the MEC physician, must also wait with the coordinator to provide assistance in the event of an emergency. After the last examinee has departed, the coordinator and remaining staff may leave the MEC. The coordinator should make a point to thank every examinee for their participation and remind them that they will receive a copy of their exam results in the mail.

3.2.3.2 Postexam Session Procedures

After all examinees have exited the MEC, the coordinator should complete the following activities:

- Reconcile all incentive payments, vouchers, and cash receipts with cash on hand. This reconciliation is also conducted with the field office manager;
- Return all household questionnaires to the field office;
- Collect Daily Appointment Schedules and send them to field office for shredding or lock them in desk drawer until time for shipping;
- Collect Exit Interviews and deliver them to field office;
- Collect all Control Records and lock them in desk drawer until time for shipment;
- Check all exam rooms to make sure all examiners have completed work, shut down the exam rooms, or make appropriate arrangements if examiners are still working;
- Make sure the Daily Appointment Schedule for the next appointment session is available;
- Turn out lights in the reception area and lock the front door to the MEC; and
- Exit through the staff lounge door and make sure it is locked if rest of staff is gone.

At the end of each exam day, the coordinator will meet with the field office manager to return Daily Appointment Schedules, Consent forms, taxi vouchers, and signed payment receipts and to reconcile cash expenditures. Any discrepancies should be resolved or reported immediately to the home office staff.

The exam team is responsible for shutting down each exam room at the end of the session, which includes turning off equipment, putting away forms and logs and preparing the room for the next day of exams. Exam rooms that are left improperly or are not shut down should be reported to the MEC manager. The coordinator is not responsible for shutting down the rooms but for checking all exam rooms and the staff lounge to be sure that the staff has concluded activities (except for the lab staff who may need to work slightly later than the rest of the team). The coordinator should also check that all examinees and visitors are gone. The coordinator should put away her supplies, lock papers in the desk, log off the computer, and turn off the terminal on the coordinator's desk. In addition, the coordinator should straighten the reception area, replacing magazines and brochures in the racks, discarding any trash or old

papers, and stacking toys in the toy box. The reception area should be prepared to receive examinees for the next exam session.

The MEC manager is responsible for making the final MEC inspection of the day to check facility functions, turn off the computer and lights, and secure the facility. If the MEC manager is not present at the end of the last session of the day or if staff members are working past the end of the session, the last staff person to leave the MEC is responsible for locking the staff exit door.

Shipping Forms and Logs

The coordinator is responsible for collecting the Daily Appointment Schedules, Consent Forms, Control Records, and Exit Interviews and storing them until shipment or delivery to the field office manager. Forms with confidential information should be kept locked in the coordinator's desk while in the MEC.

Instructions for shipping forms to NCHS are discussed in Chapter 6, Forms and Logs. Unused sample person labels should be returned to NCHS at the end of each stand.

End of Stand Activities

At the end of the stand the coordinator is responsible for the following activities:

- Returning and reconciling all cash, receipts and forms with the field office;
- Packing and shipping forms to NCHS;
- Returning unused sample person logs to NCHS;
- Completing an inventory of supplies for the coordinator area; and
- Packing the reception area, including the coordinator's desk and preparing the desk for shipping.

Upon completion of these activities, the coordinator should review the inventory with the MEC manager, then ask the MEC manager to inspect the packed reception area. After the reception area is inspected and no further duties remain, the MEC manager will approve the coordinator for travel status.

4. INTRODUCTION TO THE MEC AUTOMATION SYSTEM

4.1 Background

The purpose of the MEC Automation System is to automate the data collection for NHANES III with the primary goal of improving the timeliness and quality of the data. The system has been designed to make data collection and manipulation an easy and reliable process.

The system is composed of hardware, which are tangible pieces of equipment, and software, which are the communication systems and management systems that run on the hardware.

4.1.1 The MEC Automation System Hardware

The MEC automation system hardware is provided and serviced by Digital Equipment Corporation (DEC), and consists of two industrial MicroVAX computers running VMS (a DEC operating system) and ORACLE, VAXmates running MS-DOS and DECNET-DOS, and VT320 terminals and printers connected to the MicroVAX computers through terminal servers and an Ethernet network.

4.1.1.1 The Data Terminal

Two types of data terminals are used on the MEC, the VT320 which is known as a "dumb" terminal and the VAXmate that is known as a "smart" terminal. The VT320 has two components: a cathode ray tube (CRT), commonly called a video screen or monitor, and a keyboard. It is connected to the MicroVAX through a computer that is called a terminal server. The VAXmate has a monitor, a keyboard, and a floppy disk drive. It is a personal computer that is directly connected to the MicroVAX. The main difference between the two types of terminals is that the VAXmate is a computer that can function and run software programs independently of the MicroVAX, including a program that directs the VAXmate to function like a VT320.

4.1.1.2 Description of the Keyboard

The keyboard for the data terminal has four groups of keys, four indicator lights, and two audible indicators. The keys are grouped by function.

- Main keypad,
- Editing keypad,
- Numeric keypad, and
- Top-row function keys.

Throughout this manual, references to specific keys are enclosed in angle brackets (< >).

The main keypad is similar to a standard typewriter keyboard. The alpha and numeric keys are used to type letters and numbers. The editing keypad has six editing keys and four arrow keys. Pressing an arrow key moves the cursor in the direction of the arrow. The keys of the numeric keypad are used to enter any numeric data, such as coded questionnaire responses or examination results or an examinee's identification number or age.

Every stroke of a terminal key creates a specific electronic signal to be transmitted to the computer. For this reason, alpha and numeric keys cannot be used interchangeably and a space cannot be used indiscriminately. For example, the USER cannot type "l" (the letter l) in place of "1" (one) and vice versa. If a key is inadvertently pressed which sends an invalid signal to the system, the system is programmed to reject the signal and to display an error message on the terminal screen.

There are several keys including <Return>, the edit keys and arrow keys, the top row of the numeric keypad, and the top row function keys which have special functions. The keys are listed and defined in Exhibit 4-1.

Not all of the special function keys are valid or useful at all times. If a function key is not useful at a particular time, the programmers have provided an error message that will display at the bottom of the terminal screen when the key is pressed.

Exhibit 4-1. The Special Function and Edit Keys

<u>KEY</u>	<u>FUNCTION</u>
<F1> (Hold Screen)	Freezes the screen display. Turns on/off the Hold Screen light.
<F9> (Print Screen)	Option 1 prints the screen display. Option 5 prints ORACLE errors.
<F12> (Previous Field)	Moves the cursor to the previous field.
<F14>	Replace vs. Insert text.
<F17>	Redraws the screen display; the cursor will remain in the same location.
<F20>	Deletes characters from a field. Press once to delete all characters to the right of the cursor. Press twice to delete all characters in field.
< > (Backspace)	Moves the cursor back to delete a character within a field.
<Insert Here>	Inserts information at the cursor location.
<Remove>	Clears old SP information and resets the form to be used again.
<PF4>	Exits a program.
<Return>	Enters data and moves the cursor to the next field.
<Select>	Enters a selection from a list of choices.
<Prev Scrn>	Displays the previous screen.
<Next Scrn>	Displays the next screen in a program; also commits data to the MEC database.
< ↑ > (Up arrow)	Moves the cursor to the previous field.
< ↓ > (Down arrow)	Moves the cursor to the next field.
< ← > (Left arrow)	Moves the cursor back within a field.
< → > (Right arrow)	Moves the cursor forward within a field.
< > (Space bar)	Moves the cursor to the right to delete a character within a field.

The keyboard has four indicator lights which should always be off. If <Hold Screen> is inadvertently pressed during a session at the terminal, the Hold Screen indicator light turns on and the display on the screen is frozen. Pressing <Hold Screen> again releases the screen and turns off the Hold Screen indicator light.

The keyboard has two audible indicators, a key click and a bell. The key click is the clicking sound that is heard when a key is pressed. The warning bell sounds whenever the USER receives an error message.

4.1.2 MEC System Software

The MEC system software functions on several levels: (1) the VMS operating system; (2) the database management system, ORACLE; and, (3) the USER interface.

4.1.2.1 VMS Operating System

VMS is an operating system for the VAX similar to DOS on a microcomputer. It controls the communication between the MicroVAX systems hardware. DECNET, which is part of the VMS operating system, controls the communication between the two MicroVAX computers, the MicroVAX and the VAXMate, and the MicroVAX computers and the terminal servers. The USER (coordinator, health technician, or laboratory technician) interfaces with the VMS system during the Log On and Log Off procedures.

4.1.2.2 ORACLE

ORACLE is a relational database management system with special applications for programming data entry procedures. As a relational database management system, ORACLE manages the MEC database by organizing the data in two dimensional tables and providing a language, SQL (Structure Query Language), and several facilities by which programmers may communicate with ORACLE to enter, modify, and retrieve the data. USERS (the coordinator, the health and laboratory technicians) do not use SQL. They may, however, at some time during a session at the terminal, see a SQL error message from

ORACLE displayed at the bottom of the terminal screen. ORACLE error messages are the result of programming errors or a problem with data management which could result in inconsistencies in the data; they will be discussed further in Section 4.2.3.3 Making Corrections.

4.1.2.3 The USER Interface System

USER interface programs have been written for the coordination system and the examination component system by NCHS programmers using special applications of ORACLE. Both the coordination system and the examination component system use a MENU system to allow the USERS to quickly choose one of several programs in each system.

The programs for the coordination system are used to check sample persons (SPs) into the MEC, to build a list of required exam components, to schedule SPs, MEC examination stations and MEC staff to complete required components, and to check SPs out of the MEC.

Programs written for the examination component system enable USERS to enter, modify, and delete data, to print reports, logs, worksheets or shipping transmittals, and to transmit data from a component instrument to the MicroVAX and from the MicroVAX to a floppy diskette. Several of the components including Dietary, use programs written with software other than ORACLE. These programs are run independently on the VAXmates and then the data are transmitted to the MicroVAX.

The data entry programs have been written so that the information presented on the screen appears as a written record on a physical form, that is, as though it were a page of a questionnaire or a log. When the information requested on a screen is entered (by the USER), it is committed to the data base, just as a written record is stored in a file drawer.

4.2 Sequence of a Session at the Terminal

A USER begins a session at the terminal by turning on the terminal and logging on (establishing an electronic connection) to the MicroVAX using the VMS operating system. Once a USER is connected to the MicroVAX, the USER interface system is used to access specific applications (programs) within a component. Applications are accessed according to the component room the USER is

in. Each application has a Main Menu of several choices of procedures or submenus from which the USER may choose to begin specific data entry, review, modification, deletion, or transmission procedures. When the USER has completed the selected procedures, s/he: (1) returns to the submenu and then to Main Menu, or returns directly to the Main Menu; and (2) logs off (disconnects) from the MicroVAX.

4.2.1 Logging On To the System

The log on process is essential; it connects the terminal to a selected MicroVAX computer and verified USER authorization. The log on procedures differ depending on the type of terminal the USER is accessing. The procedures for logging on to the MEC automation and coordinator systems with a VT320 are given in Chapter 5.

If at some time during a session at the terminal, the USER is disconnected from the system without logging out, the USER may type "Resume" at the local prompt, which will reconnect the terminal to the MEC(nc) system.

4.2.2 The Menu System

After the log on process is complete, the USER is presented with a Main Menu screen which lists choices of procedures or submenus specific for each application. Each option on the menu is preceded by an input field. Selecting a particular option by moving the cursor to the input field in front of the desired choice and pressing <Select>, displays the appropriate submenu or the first screen of a selected procedure.

4.2.3 Entering Data

When the alpha and numeric keys are pressed, the characters that are typed appear on the video screen in a space called the input field, which is marked by a blinking square of light referred to as the "cursor". However, the typed characters are not recognized by the computer until <Enter> or <Return> is pressed. Each time <Return> is pressed, the computer is signaled to read and assess validity of the set of characters (an entry) in the input field. If the entry is an invalid one, the computer is programmed to reject

the entry and to display an error message at the bottom of the screen. The entry must be corrected before the USER can successfully complete the application procedure.

4.2.3.1 Moving from Field to Field on the Same Screen

A "screen" is a series of input fields formatted as though it were a page in a questionnaire or a log or some other type of paper data collection form. The USER can move the cursor from one input field to another by using the down arrow key or <Return> to move the cursor forward and using the up arrow key or <F12> to move the cursor back.

4.2.3.2 Moving Forward and Backward from Screen to Screen

When responses have been entered into all of the input fields on a screen, the USER presses <Next Screen> to display the next screen in a procedure. Pressing <Next Screen> will also commit data to the MEC database at several pre-programmed intervals in the procedure. If any of the entries are invalid, the computer will reject the data and display an error message at the bottom of the screen. Also, if the USER has reached the end of a particular procedure, pressing <Next Screen> signals the computer to return to the menu from which the procedure was selected.

On some occasions, the USER may want to review or correct data from a screen that has been removed from the terminal display. Pressing <Previous Screen> will signal the computer to retrieve and display the information that was on the terminal screen immediately before the present display. If necessary, the USER can back up through every screen in a program by pressing <Previous Screen> until the Menu Screen is reached.

4.2.3.3 Making Corrections

In order to correct an entry in an input field, the USER may want to move the cursor back and forth within one input field to change or delete a character. The < ←> moves the cursor back within an input field and the < →> moves the cursor forward within an input field. Once the USER has correctly

positioned the cursor within the input field, s/he can type over the old entry. The space bar, < >, or <F20> can also be used to delete characters and reposition the cursor within an input field.

If at any time during a session at the terminal, the USER receives an ORACLE error message, the USER should use <F9> to print the screen which was being displayed on the monitor when the ORACLE error occurred. If the USER receives a USER interface system message, for example, a message stating an entry was out of range, the USER should use the up arrow key or down arrow key to return to the input field, then retype and reenter the variable.

4.2.4 The SP Introduction Screen

The SP Introduction Screen is used with every component where a technician interviews or examines a sample person. The SP Introduction Screen assists the USER to confirm the identification of the SP; creates a record of the examination procedure for the SP; and records the technician who will conduct the interview or the examination.

4.2.5 The SP Examination Results Screen

The SP Examination Results Screen is the final screen of every program used to enter information from an SP interview or examination. The purpose of the SP Examination Results Screen is to allow the technician to comment on the results of the interview or examination procedure.

If an interview or examination is successfully completed, the USER selects "Satisfactory test" from the list of choices presented on the Examination Results Screen menu. The technician may also enter a comment in the comments input field. If the interview or the examination was complete but not satisfactory, or if the interview or examination was not done, the technician selects "Test complete but unsatisfactory" or "Test not done" from the menu. Selecting either of the last two choices signals the computer to display another menu with a list of possible conditions specific to the type of interview or examination that may have contributed to an incomplete or unsatisfactory test. The technician selects the choice which best explains the condition of the interview or examination. The technician may also enter a comment to give any additional explanation as needed.

4.2.6 Edit Checks in the System

There are basically three types of errors that can be detected by the computer: consistency errors, range errors, and ORACLE errors. Edit checks are designed to detect all types of errors. Consistency errors are errors which occur in situations in which conflicting information has been entered, usually at separate but related questions.

The second type of error is referred to as a "range" error. For every question, the computer has been programmed to accept a range of answers. If the answers provided are "out of range", the computer will not accept them. It responds by displaying an error message at the bottom of the terminal screen. The USER can correct error by reading the message carefully and following its instructions.

ORACLE errors and ORACLE error messages are the result of programming or data management problems. They rarely occur, but when they do, the USER should press <F9> and choose option "1" to print the information that is displayed on the screen at the time the ORACLE error occurred, and also option "5" to print the error information. The USER should follow the instructions given in the ORACLE error message and if possible, complete the program. If it is not possible to complete the program, the USER should press <PF4> to exit the program.

4.2.7 Logging Off the System

"Logging off" is the process of disconnecting the VAXmate from the MicroVAX or the VT320 from the terminal server. The Log off procedure is performed at the end of the day before the terminal is turned off. If the USER is on a VT320 or a VAXmate, pressing <PF4> at a Main Menu display will automatically disconnect the VAXmate from the MicroVAX or the VT320 from the terminal server.

5. USING THE COORDINATOR'S AUTOMATED SYSTEM

5.1 Introduction

Coordinators have seven basic tasks to perform during the course of a session:

1. Pre-session preparation;
2. Examinee check-in;
3. Take examinees temperature;
4. Examination scheduling;
5. Examinee check-out;
6. Issue NCHS numbers for replicate examinations; and
7. Session summary.

The coordinator's automated system is designed to facilitate the performance of the coordinator in these tasks. The system is menu driven and user-friendly. All of the programs that make up the coordinator's automated system can be accessed from the main menu of the coordinator's automated system. This menu is called the Coordinator System Menu screen and it is accessed from the Log On process.

The following sections of this chapter describe the use of the Coordinator's automated system, including how to log on and off the system, how to use the Coordinator System Menu screen, and how to use each of the programs called from the Coordinator System Menu to complete the tasks described above.

5.1.1 Logging On The System

"Logging on" means connecting your terminal to the VAX computer where the data are stored. Complete the following steps to log on to the VT320 terminal at the coordinator's desk.

- Turn on the terminal using the ON/OFF switch at the rear of the base of the terminal. Press the Return key 2 or 3 times.
- At the local prompt (Local>), type "C MEC(nc)", where n = the number of your MEC 1,2, or 3, and c = A or B, for MicroVAX A or B and then press Return. The Main Menu for the MEC system will be displayed. (Use MicroVAX A unless otherwise instructed by your MEC manager.)
- Move the cursor to the Coordinator position on the screen and press Select. The Coordinator's Main Menu will be displayed.

5.1.2 Logging Off The System

"Logging off" means disconnecting your terminal from the VAX. You must log off your terminal when you are not using it, i.e., at the end of each session. Complete the following steps to log off the VT320 terminal at the Coordinator's desk.

1. At the Main Menu for the MEC system, press PF4. The local prompt will be displayed (Local>). (If you are not at the Main Menu, PF4 can be used to exit any program and return you the Main Menu.)
2. Type LO and press <Return>. The screen will display "logged out port _____."
3. Turn the terminal off using the ON/OFF switch.

5.2 Valid Keys for the Coordinator's System

Listed below are the keys of the terminal keyboard that are valid, i.e., the keys that are defined and functional for the coordinator's automated system.

Number Keypad	-	Enters numeric data
Alpha Keys	-	Enters Comments, names, etc.
Enter, Return	-	Moves cursors to next field
F12	-	Moves cursor to previous field

Insert Here	-	Calls the Comment Screen
Next Screen	-	Moves the cursor to the next screen
Prev Screen	-	Moves the cursor to the previous screen
PF4	-	Exits exam and calls Result Screen
F9	-	Prints current screen or program error
Select	-	On screen 5.2, section Upper Extremities/Joint Manifestations, (screen MCP), puts an 'X' in the field to indicate positive findings
Left Arrow	-	Left and Right arrow are used in fields wider than one character, move the cursor left or right within the field
Right Arrow	-	

5.2.1 The Coordinator System Menu

The Coordinator System Menu screen is the main menu for the coordinator's automated system. It is the first screen to appear on the terminal monitor after you log on to the VAX. Each of the choices listed on the menu represents a program and the screen or series of screens making up the program that the coordinator will use to complete coordinator tasks. Exhibit 5-1 displays a diagram of the programs and screens that constitute the coordinator's automated system. Exhibit 5-2 displays each of the seven main tasks that the coordinator performs during the course of a session and gives a guide to the automated system programs and screens that are used to accomplish each task.

The following sections explain how to use the Coordinator System Menu screen and the programs and screens for each of the choices on the Coordinator System Menu in the order that they appear on the menu. For ease of reference, the programs and screens will be described in the order that they appear on the Coordinator System Menu and submenus.

5.2.2 How to Use the Coordinator System Menu Screen

1. The cursor will appear to the left of the list of choices. Refer to Exhibit 5-3.
2. Move the cursor using the down arrow key to move down the list, and the up arrow key to move up the list. Move the cursor to the choice you want and press <Select> to call the program for that choice.
3. Press PF4 to exit the menu screen and log off.

Exhibit 5-1. The Coordinator Menu System

Coordinator System Menu

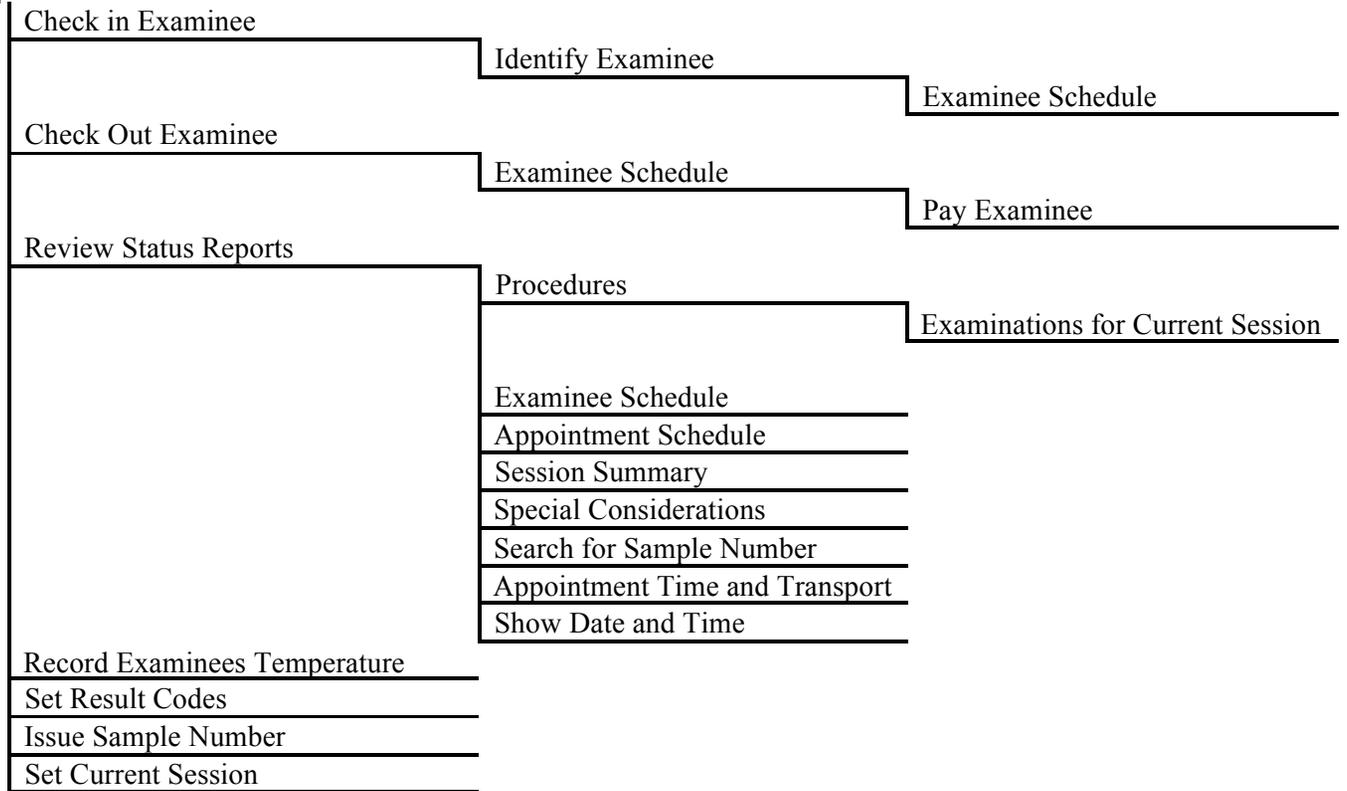


Exhibit 5-2. Coordinator System Tasks and Screens

Task	Screens
Presession Preparation	Log on Set current session Special considerations Appointment time and transportation mode
Examinee Check-In	Check-in examinee Identify examinee
Take Examinee Temperature	Record examinee temperature
Examination Scheduling and Tracking	Review status reports: Procedures Examinee schedule Appointment schedule Special considerations Search for sample ID # Appointment time and transportation mode Show date and time
Check-out Examinee	Self result codes
Check-out Examinee	Check-out examinee
Replicate, Special, Unscheduled Exams and Problems	Issue sample number Search for sample number by name Set result codes
Session Summary	Session summary Appointment time and transportation mode

Exhibit 5-3. Coordinator System Menu Screen

__DUA1: [USER.MKE.COORD]MAINMENU.LIS;1

28-FEB-1990 16:06

Page 1

Coordination system _____

Choice _____

Select one

__ Checkin examinee _____
__ Checkout examinee _____
__ Review status reports _____
__ Record examinee's temperature _____
__ Set result codes for returning examinee _
__ Issue sample number _____
__ Set current session _____
__ _____
__ _____
__ _____

Checkin_examinee _____
Checkout_examinee _____
Reports _____
Temperature _____
Return _____
Issue_sp_no _____
Set_shift _____

Char Mode: Replace Page 1

Count: *7

5.3 Check In Examinee

When an examinee arrives at the MEC, the coordinator is responsible for enrolling them in an examination session and also for verifying their identity and personal attributes. Using the Check In Examinee screen (Exhibit 5-4) and the Identify Examinee screens (Exhibits 5-5 and 5-6), the coordinator verifies an examinee's name, birthdate, stated age, and sex, and resolves any uncertainties so that the examinee will have the same age and sex for all exam components. As the coordinator verifies the examinee's identifying information, s/he reviews the field office comments that appear on the screen for special considerations. If necessary, the coordinator may make adjustments to the examination schedule at this time.

Instructions for using the Check In Examinee screen and the Identify Examinee to check in an SP are given in Sections 5.3.1 and 5.3.2., respectively.

5.3.1 How to Use the Check In Examinee Screens

This screen, (Exhibit 5-4), is called from the Coordinator System Menu screen.

1. The list of sample persons scheduled for the current session will be displayed. The list will include sample number, name, age and sex.
2. Move the cursor to the sample number of the SP that you want to check in. Press <Select>.
3. The Identify Examinee screen will be displayed. (See Section 6.2 for instructions on how to use the Identify Examinee screen.)

5.3.2 How To Use the Identify Examinee Screen

This screen, shown without and with data in Exhibits 5-5 and 5-6, is called from the Check In Examinee screen.

1. The sample person identification information will be displayed. Verify the information displayed on the screen by reviewing the SPs control record, and by asking the SP pertinent questions.

Exhibit 5-4. Check-in Examinee Screen

__DUA1: [USER.MKE.COORD]CHECKIN1.LIS;1

28-FEB-1990 16:06

Page 1

Checkin examinee

Choice _____

Select one

Sample #	Name	Age	Sex
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---

Char Mode: Replace

Page 1

Count: *0

Exhibit 5-5. Identify Examinee Screen - Blank

_DUA1: [USER.MKE.COORD]CHECKIN3.LIS;1 28-FEB-1990 16:06 Page 1

Identify examinee

Sample # top ____

Name _____
Date of Interview _____
Date of Birth _____
Calculated age _____ Years/months _____
Reported age _____ Years/months _____
Sex _____
Ethnicity _____ Race _____
Sample _____
Fasting Status _____
Language _____

Comments _____

Char Mode: Replace Page 1 Count: *0

Exhibit 5-6. Identify Examinee Screen - Data

_DUA1: [USER.MKE.COORD]CHECKIN3.LIS;1 28-FEB-1990 16:06 Page 1

Identify examinee

Sample # 1200682

Name Augustine M. Flores
Date of Interview 05-JAN-1990
Date of Birth 28-AUG-1906
Calculated age 83_ Years/months Y
Reported age 83_ Years/months Y
Sex M
Ethnicity 1 Race 4
Sample S Sample person
Fasting Status S Standard -- morning / fasting __
Language S

Comments Spanish only _____

Char Mode: Replace Page 1 Count: *1

2. If any of the information is discrepant, use the up and down arrows or press <Return> to move the cursor to the field that contains the incorrect information. Type in the correct information following the specifications given below:

- Name: Refer to the Daily Appointment Schedule and to the SP to verify the SP's name. Type in the SP's first name, any middle name or initials, and last name. Press <Return> to move to the next field.
- Date of Interview: Refer to the SP and field office manager (FOM) to verify the date of the interview. This should only be done if date of interview is blank or after current date. Type in the date of the interview using the following format: DD-MMM-YYYY. Press <Return>.
- Date of Birth: Refer to the SP to verify the SP's date of birth. Type in the correct date of birth using the following format: DD-MM-YYYY. Press <Return>.
- Calculated Age: The automated system automatically calculates the SP's age from the SP's date of birth and the date of the interview.
- Reported Age: Verify the SP's age with the SP. If the SP's reported age is different from the calculated age, consult the field office manager to establish correct age. Press <Return>.
- Sex: Refer to the SP to verify the SP's sex. Type in the correct sex using "F" for Female and "M" for Male. Press <Return>.
- Race/Ethnicity: Refer to the field office manager to verify the SP's ethnicity. Race or ethnicity should only be verified if the fields are blank or appear incorrect. Type in the correct code number supplied by the FOM for race/ethnicity. Press <Return>.
- Sample: Refer to the Daily Appointment Schedule or field office manager to verify the SP's sample category. Type in the correct code letter for sample using the code scheme listed below:

<u>Code</u>	<u>Category of Exam</u>	<u>Type of Exam</u>
S	Sample Person	Standard Standard, allergy Standard, CNS
R	Replicate, Even SP#	Standard Standard allergy
Q	Replicate, Odd SP#	Standard Standard, CNs
P	Hardcopy	Entry from hardcopy forms

H	Home Examinee	Home exam
G	Guest	Guest exam
E	Special Examinee	All exams available
D	Dry Run	Dry Run Exam

To access the scheme for the sample codes in the automated system, position the cursor at the Sample field and press <Next Screen>. The sample code scheme will be displayed on the screen. Position the cursor at the appropriate code and press Select, then press <Next Screen>. The Identify Examinee screen will be displayed. The Sample field will contain the code you selected. Press <Return> to move to the next field.

- Fasting Status: Refer to the Daily Appointment Schedule to verify the SP's fasting status. If necessary, type in the correct letter for fasting status using the code scheme given below:

S = Standard fast (12 hours)
M = Modified fast (6 hours)
T = Teen (6 hour fast)
U = No fast (SP <12 years old)
E = Excluded from fast (SP >11 years old)

Press <Return>.

- Language: Refer to the Daily Appointment Schedule and to the SP to verify the SP's language. Type in the correct letter for language using the code scheme given below:

E - English
S - Spanish

Press <Return>.

- Comments: Comments from the field office will be entered in the field.

3. When you have verified that all of the information on the Identify Examinee screen is correct, press <Next Screen>. The Examinee Schedule screen will be displayed. (Instructions for using this screen are given in Section 5.3.3)

OR

The following message will be displayed: "SP is already checked into this shift or no examinations were selected". If the SP is already entered into the session, it is not necessary to enter them again. If this message is displayed the first time the SP data is entered, review the other SPs entered into the session and check for errors in identification. If none are located, contact the data processing manager at NCHS. The

"No Examination Selected" message means a sample code needs to be entered for the SP.

5.3.3 How to Use the Examinee Schedule Screen

This screen is shown in Exhibit 5-7 and can be accessed from the Check In Examinee program, the Check Out Examinee program, and the Review Status Reports program. Use this screen to review the list of examinations scheduled for an SP and the result of each exam, and to enter or update the result code.

1. All of the examinations for which the SP has been scheduled will be listed on the screen. If you are in the check in program, the result code and result code fields will be blank. If you are in the check out program, each examination should be followed by a result code and a result. Please note: If an exam does not have an assigned result code or has an incorrect result code, you must investigate and assign the correct result code before the check-out process can be completed.
2. Use the up and down arrows or press <Return> to position the cursor at the result code field you wish to enter or change, then type in the appropriate code.
3. When you have completed your data entry for this screen, press <Next Screen>.
 - If you are in the Check In Examinee program, the Check In Examinee list screen will be displayed.
 - If you are in the Check Out Examinee program, the Pay Examinee screen will be displayed. See Section 5.3.6 for instructions on how to use the Pay Examinee screen.
 - If you are in Review Status reports program, the Review Status Reports screen will be displayed. See Section 5.4 for instructions on how to use the Review Status Reports screen.

5.3.4 Check Out Examinee

When an examinee has completed the examination schedule, or when time for the session has run out, or when an examinee has to leave early, the coordinator checks out the examinee. During the

check out procedures, the coordinator first accesses the Check Out Examinee Screen and the Examinee Schedule screen to review the examinee's records and verify that all exams have been performed. The Pay Examinee screen is then accessed to determine how much an examinee is to be paid.

Instructions for using the Check Out Examinee screen, the Examinee Schedule screen, and the Pay Examinee screen, are given in Sections 5.3.5 and 5.3.6, respectively.

5.3.5 How to Use the Check Out Examinee Screen

This screen is called from the Coordinator System Menu Screen and is shown in Exhibit 5-8.

1. All of the SP's that have been scheduled and entered for the current session will be displayed on the screen. The cursor will appear at the Sample Number field for the first SP listed on the screen.
2. Use the up and down arrows or press <Return> to move the cursor to the Sample number SP who is to be checked out. Press <Select>. The Examinee Schedule screen will be displayed. See Section 5.4.4 for instructions on how to use the Examinee Schedule screen.

5.3.6 How to Use the Pay Examinee Screen

This screen is called from the Examinee Schedule screen while in the Check Out Examinee program.

1. The Sample Number, Name, and Fasting Status of the SP will be displayed at the top left of the screen. The cursor will appear at the first field under Select Payments Made.
2. Follow the instructions below to select the payments to be made to the SP. Use the up and down arrows or press <Return> to position the cursor at the appropriate fields on the Select Payments Made menu.
 - Regular: All SPs will receive a regular payment. Position the cursor at the Regular field and press <Select>. "30.00" will appear in the amount column.
 - Bonus: SPs who scheduled appointments at their assigned times (AM, PM, or EVE) will receive a Bonus payment. If the SP is in this category, position the cursor at the Bonus field and press <Select>. "20.00" will appear in the amount column.

Exhibit 5-8. Check-out Examinee Screen

__DUA1: [USER.MKE.COORD]CHECKOUT1.LIS;1 28-FEB-1990 16:06 Page 1

Checkout examinee

Choice _____

Select one

Sample #	Name	Age	Sex
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---
---	-----	-----	---

- Toxicant Study: If the SP is aged 20 to 59 and volunteered for the Volatile Toxicants study, s/he should receive a \$10.00 payment. Position the cursor at the Toxicant Study field and press <Select>. "10.00" will appear in the amount field.
 - Mileage: If the SP used his/her own transportation, they should be reimbursed for the number of miles they traveled. Move the cursor to the Mileage field and press Select. The cursor will move to the Miles field. Refer to the SP to obtain the number of miles traveled to and from the MEC and enter that number into the Miles field. Press <Return>. The appropriate payment based on cents/mile will appear in the Amount column.
 - Taxi: If the SP used a taxi that was not arranged by the field office to travel to and from the MEC, she/he should be reimbursed for the fare. Position the cursor at the Taxi field and press <Select>. The cursor will move to the Fare field. Refer to the SP receipt to determine the appropriate fare. Type in the dollar amount using the following format: DD.CC. Press <Return>. The dollar amount will be displayed in the Amount column.
3. As you select each payment to be made, the total amount of money to be paid to the SP will be calculated in the Total row of the Amount column. After you have selected all of the payments to be made to the SP, refer to the Total row of the Amount column to determine the total amount of money to be paid to the SP. Press <Next Screen> to return to the Coordinator Main Menu.

5.4 Review Status Reports

Typically at any time during the course of a session, the coordinator will need to review the composition of the group of examinees with appointments and any special considerations they may require. Reports like these will be grouped under the Review Status Reports menu item of the Coordinator System Menu. The list of Review Status Reports procedures that will allow you to access these reports includes the following:

- Procedure schedules - selecting this item calls up the Procedures screen which displays a list of all exam procedures for the current session. Selecting a procedure from the Procedures screen will call up the Examinations for Current Session Screen. This screen will list all SPs scheduled for the selected exam procedure and the status of the exam for each SP;
- Examinee schedule - selecting this item will call up the Examinee Schedule which is used to review the list of examinations scheduled for an SP and the result of each exam, and to enter or update the result code;

- Appointment schedule - selecting this item will call up the Appointment Schedule screen. The screen will list the attributes of appointed examinees. The status column will have codes such as A, I, W or L representing absent, idle, working, and left to indicate whether an SP is absent, is waiting, is being examined, or has left. This display may be useful late in the session to show who has left and who is still being examined;
- Session summary - selecting this item will call up the Session Summary screen. This screen will display the count of all scheduled exams by result of the exam. The coordinator may use this screen to see an overview of the results of an exam session;
- Special considerations - selecting this item will call up the Special Considerations screen. Typically, the coordinator will review this screen before each session to identify any special instructions or comments received from the field office pertaining to examinees scheduled for the session;
- Search for NCHS number by name - selecting this item will call up the Search for Sample Number by Name screen which is used by the coordinator to access a sample person's ID number by inputting all or part of the SP's name;
- Appointment time and transportation - selecting this item will call up the Appointment Time and Transportation screen. This screen is used by the interviewer to access information concerning each examinee's appointment time and method of transportation to and from the examination center; and,
- Show date and time of day - selecting this item will call up the Date and Time of Day screen. This screen can be used at any time to check the current date and time of day.

Instructions for using the Review Status Reports screen and all of the screens called from Review Status Reports screen are given in Section 5.4

5.4.1 How to Use the Review Status Reports Screen

This screen is called from the Coordinator System Menu and is shown in Exhibit 5-9.

1. The cursor will appear at the Procedure schedules selection on the menu.
2. Use the up and down arrows or <Return> to move the cursor to the program you wish to select. Press <Select>.
3. The first screen of the program you selected will be displayed on the CRT.

Exhibit 5-9. Review Status Reports Screen

_DUA1: [USER.MKE.COORD]REPORTSMENU3.LIS;1 28-FEB-1990 16:06 Page 1

Review status reports _____

Choice _____

Select one

___ Procedure schedules _____
___ Examinee schedule _____
___ Appointment schedule _____
___ Session summary _____
___ Special considerations _____
___ Search for Sample number by name _____
___ Appointment time and transportation _____
___ Show date and time of day _____
___ _____
___ _____

Procedures _____
Examinee _ schedule _____
Appointment _ schedule _____
Summary _____
Special consideration2 _____
Sample_no _____
Time_transport _____
Time _____

Char Mode: Replace

Page 1

Count: *8

5.4.2 How to Use the Procedures Screen

This screen is called from the Review Status Reports screen and is displayed in Exhibit 5-10.

1. The cursor will appear at the first of 21 selections on the procedures list, i.e., 1st blood draw.
2. Use the up and down arrows to move the cursor to the procedure you wish to review for the current session. Press <Select>.
3. The Examinations for Current Session screen will be displayed. See Section 5.4.3 for instructions on how to use the Examinations for Current Session screen.

5.4.3 How to Use the Examinations for Current Session Screen

This screen is called from the Procedures screen. Examples are displayed in Exhibit 5-11, and 5-12.

1. The procedure you selected from the Procedures screen will be displayed in the upper left corner of the screen.
2. The Sample Number and status of the exam for each SP that has been checked in to the current session and scheduled for the selected procedure will be listed on the screen.
3. The status listed for an SP will be the result of the exam as defined by the Result Codes.
4. After you have viewed the screen, press <Next Screen> to return to the Procedures screen.

5.4.4 How to Use the Examinee Schedule Screen

Refer to Section 5.3.3 for instructions on how to use the Examinee Schedule screen.

Exhibit 5-10. Procedures Screen

_DUA1: [USER.MKE.COORD]REP_PROC.LIS;1

28-FEB-1990 16:06 Page 1

Procedures

Select one

- 1st blood draw_____
- 2nd blood draw_____
- Urine specimen_____
- Bone density_____
- Xray_____
- ECG_____
- Fundus photograph_____
- CNS test_____
- Allergy_____
- Spirometry_____
- Audiometry_____
- Body measures_____
- Gallstone ultrasound_____
- Performance test_____
- Dental exam_____
- Physician's exam_____

Char Mode: Replace

Page 1

Count: 16

5.4.5 How to Use the Appointment Schedule Screen

This screen is called from the Review Status Reports screen and is displayed in Exhibit 5-13.

1. The cursor will be located at the bottom left corner of the screen.
2. All of the SP's scheduled for the current session will be listed. The age, sex, status, i.e., A-absent, I-idle, W-working, or L-left, and sample code for each SP will also be listed.
3. Press the down arrow to view the next page of examinees.
4. Press <Next Screen> to return to the Review Status Reports screen.

5.4.6 How to Use the Session Summary Screen

This screen is called from Review Status Reports screen and is shown in Exhibit 5-14.

1. The total count, grouped by result, of each procedure completed during the current session will be listed.
2. Use the down arrow or press <Return> to move down the list, and the up arrow to move up the list.
3. Press <Next Screen> to return to the Review Status Reports screen.

5.4.7 How to Use the Special Considerations Screen

This screen is called from the Review Status Reports screen and is shown in Exhibit 5-15.

1. The cursor will appear in the bottom left of the screen.
2. The Sample number for every SP who is scheduled for the current session and to whom special consideration should be given, will be listed along with a comment describing the special conditions of the SPs visit.
3. Use the down arrow or press <Return> to display the next page of Sample numbers and comments. Use the up arrow to move back up the list.
4. Press <Next Screen> to return to the Review Status Reports screen.

Exhibit 5-14. Session Summary Screen

__DUA1: [USER.MKE.COORD]SESS_SUMM.LIS;1

28-FEB-1990 16:06

Page 1

Session summary

Procedure	Count	Result
1st blood draw_____	2_____	Blood drawn, all tubes_____
1st blood draw_____	1_____	Refused or uncooperative_____
Urine specimen_____	2_____	Urine sample obtained, full cup_____
Bone density_____	1_____	Scan complete_____
Allergy_____	1_____	_____
Allergy_____	1_____	Readings done_____
Spirometry_____	1_____	Satisfactory test_____
Audiometry_____	1_____	Tympanometry done_____
Body measures_____	4_____	All measurements done_____
Gallstone ultrasound_____	1_____	Exam complete_____
Dental exam_____	3_____	Exam complete_____
Physician's exam_____	4_____	Exam complete_____
Exit interview_____	1_____	Done at prior session_____

Comment

Char Mode: Replace

Page 1

Count: 13

5.4.8 How to Use the Search for Sample Number by Name Screen

This screen is called from the Review Status Reports screen and is shown in Exhibits 5-16 and 5-17.

1. The cursor will appear in the upper left corner of the screen at the Name field.
2. Type in the first and last name (in that order) of the person whose sample number you wish to determine. Use capital letters for the first letter of each name. Press <Return>.
3. If the person's name, exactly as you have typed it, has been previously entered into the coordinator's automated system, the Sample Number, name, and date of birth will be listed below.
4. If the spelling you have used is different than the spelling used by the field office or if the SP has never been entered into the system, the following message will be displayed at the bottom of the screen: "Query caused no records to be retrieved." Press the up arrow key to move the cursor back to the Name field.
5. To view the Sample Numbers assigned to all of the SPs scheduled for the session, use the space bar to delete the name currently in the Name field. Press <Return>. A list of the Sample Number, name and birthdate for all of the SPs scheduled for the session will be displayed. Use the down arrow or press <Return> to display the next page of the list.
6. Press Next Screen to return to the Review Status Reports screen.

5.4.9 How to Use the Appointment Time and Transportation Screen

This screen is called from the Review Status Reports screen and is shown in Exhibit 5-18.

1. The cursor will appear at the bottom left of the screen.
2. The sample number, name appointment time, and method of transportation for each SP scheduled for the current session will be displayed on the screen.
3. Use the down arrow or press <Return> to view the next page of the examinees.
4. Press <Next Screen> to return to the Review Status Reports screen.

Exhibit 5-18. Appointment Time and Transportation Service

__DUA1: [USER.MKE.COORD]APPTIME.LIS;1

28-FEB-1990 16:06

Page 1

Appointment time and transportation

Sample#	Name	Appointment	Transportation
8885781	Jeffrey Sxxxx	_____	___
8880119	Tony J Rxxxxx	_____	___
8882049	Juan M Exxxxxx	_____	___
8884297	Ashlie R. Rxxxx	01:30 PM_	S_
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___
_____	_____	_____	___

5.4.10 How to Use the Date and Time of Day Screen

This screen is called from the Review Status Reports screen.

1. The current day, month, year, and time of day in hours, minutes, and seconds will be displayed on the screen.
2. Press <Next Screen> to return to the Review Status Reports screen.

5.5 Record Examinees Temperature

The coordinator will take each examinee's temperature soon after the examinee arrives at the MEC. The temperature will be recorded using the Record Examinees Temperature screen which is accessed from the Coordinator System Menu. Instructions for using the Record Examinees Temperature screen are given in Section 9.1.

5.5.1 How to Use the Record Examinees Temperature Screen

This screen is called from the Coordinator System Menu screen and is shown in Exhibit 5-19.

1. The cursor will appear at the Sample Number field.
2. Type in the SP's seven digit sample number.
3. The SP's name will appear in the Name field and the cursor will move to the Temperature field.
4. Type in the value for the SP's temperature using the following format: TTT.T. Press <Next Screen> to store the entry and return to the Coordination System Menu.

Exhibit 5-19. Examinee Temperature Screen

__DUA1:[USER.MKE.COORD]TEMP.LIS;1

28-FEB-1990 16:06

Page 1

Record examinees temperature

Sample# _____

Name

Temperature _____

Char Mode: Replace Page 1

Count: *0

5.6 Set Result Codes for Returning Examinees

On occasion, the coordinator may need to update an SP's examination result code for an examination that was done in a previous session. The coordinator may access the Set Result Codes for Returning Examinees screen from the Coordinator System Menu to accomplish this task. Instructions for using the Set Result Codes for Returning Examinees are given in Section 5.6.1.

5.6.1 How To Use the Set Result Codes for Returning Examinees Screen

This screen is called from the Coordinator System Menu screen and is shown in Exhibit 5-20.

1. The cursor will appear at the Sample Number field.
2. Type in the seven digit sample number of the SP for whom you wish to enter a result. Press <Return>.
3. The examinations for which the SP is scheduled during the current session and the examinations completed in a previous session will be displayed on the screen. The cursor will move to the first result code field.
4. Use the down arrow or press <Return> to position the cursor at the result code field you wish to change or enter. Type in the appropriate result code for the examination. Press <Return>.
5. After you have updated the result code list for the SP, press <Next Screen>.

5.7 Issue Sample Number

It is the coordinator's responsibility to link NCHS numbers and schedule exams for replicate examinees and issue a nonsample identification number for persons such as a guest or consultant who have been invited to participate in the examination. This is a two-step process. The coordinator must first obtain an NCHS number from the field office and, in situations where the SP is a replicate, link the original NCHS number to the new NCHS number, using the Issue Sample Number screen. The coordinator will then use the Identify Examinee screen to issue a sample code to the examinee. In cases where the examinee SP is not a replicate, the Identify Examinee screen must be used to enter all identifying information about the examinee.

Instructions for using the Issue Sample Number screen are given in Section 5.7.1.

5.7.1 How To Use the Issue Sample Number Screen

This screen is called from the Coordinator System Menu screen and is shown in Exhibit 5-21.

1. A new seven digit sample number will be displayed in the New Sample Number field. This is the number assigned to the replicate or special examinee. The cursor will move to the Alias for Sample Number field.
2. If the examinee is a replicate, type in the original seven digit Sample Number of the SP. The name of the SP will appear in the Name field. Confirm the name, then press <Next Screen>. If the examinee is a guest or special visitor, just press <Next Screen>.
3. The Identify Examinee screen will be displayed. Follow the instructions given in Section 6.2 to verify (replicate) or enter (special examinee) the necessary information at the Identify Examinee screen.
4. Press <Next Screen> to return to the Coordinator System Menu screen.

5.8 Set Current Session

Before each session begins, the coordinator will have to set the current session, that is, simply enter the current session -- Morning, Afternoon, or Evening into the computer. This must be done before the MEC manager uploads the scheduled session from the field office diskette into the MEC automated system. The MEC manager must upload the field office diskette into the MEC System before the coordinator can begin the check-in process for any examinee scheduled for the current session.

Exhibit 5-21. Issue Sample Number Screen

__DUA1: [USER.MKE.COORD]ISSUESPNO.LIS;1

28-FEB-1990 16:06

Page 1

Issue Sample number

New sample: 1200011

Alias for sample # _____

Name _____

Char Mode: Replace Page 1

Count: *0

5.8.1 How To Use the Set Current Session Screen

1. The cursor will appear at the Tech Identification Number field. Type in your four digit tech number, then press <Return>.
2. Your name will appear in the Name field. The cursor will move to the menu at the lower half of the screen. Move the cursor to the field representing the current session and press <Select>. This screen is shown in Exhibits 5-22 and 5-23.
3. Press <Next Screen> to return to the Coordinator System screen.

Log On to the system (refer to instructions given in Section 5.1.2.);

- Set the current session (refer to instructions given in Section 5.8);
- Review SP "records" from the field office to plan for any special considerations an SP may require;
- Access the Special Considerations screen to identify SPs to whom special consideration should be given (refer to instructions given in Section 5.4.7); and,
- Receive money from the field office to pay examinees or reimburse them for travel expenses.

Exhibit 5-22. Set Current Session - Blank

__DUA1:[USER.MKE.COORD]SETSESS.LIS;1

28-FEB-1990 16:06

Page 1

Set current session

Tech# _____

Name _____

Select one

Char Mode: Replace Page 1

Count: *0

Exhibit 5-23. Set Current Session - Data

__DUA1:[USER.MKE.COORD]SETSESS2.LIS;1

28-FEB-1990 16:06

Page 1

Set current session

Tech# 9005

Name WESTAT PROGRAMMERS_____

Select one

__ Morning_____

__ Afternoon_____

__ _____

Char Mode: Replace Page 1

Count: *2

6. FORMS AND LOGS

6.1 Overview of Examination Center Forms and Logs

The majority of information and data collected in the examination center will routinely be entered directly into the data entry system by the examiners and coordinators during the examination sessions. However, some tasks require the use of hard copy forms, and a set of hard copy examination forms exists for all of the examination components. The forms are also used in the event of a computer system failure during an exam session, and allow the examiners to continue collecting data which can be entered after the system returns to normal operation. The SP status code “P” for paper entry is used to enter data from hard copy exam forms.

There are two main types of forms or logs used in the MEC; examination forms and nonexamination forms. Examination forms are used during exam sessions when the computer system is down to record the findings of examinations or interviews. A log is also used in every exam room to track the SPs examined each day. One hard copy form, the Control Record, is always used, regardless of the status of the computer system, to record exams conducted on every SP. It also assists the coordinator in verifying that all exams are completed on each SP. Nonexamination forms are forms used to collect or document information that is not derived from an examination. Such forms include the Daily Appointment Schedule, Exit Interview, the Pregnancy Card, and transmittal forms.

6.2 Examinee Folder

The examinee folder is a manila folder that contains a copy of a Control Record and a page of labels printed with the sample person’s NCHS sample number. The folder is circulated with the examinee. The Control Record is used by each examiner to record the exam components completed for the examinee. Sample labels are placed on all exam forms, logs and data items to standardize labeling of data and to minimize errors in the recording of sample numbers. The coordinator prepares the folder at the beginning of each exam session and collects the folder at the end of the session. Completed Control Records are stored and sent to NCHS every week with the unused SP labels. Instructions for shipping forms to NCHS are included in Section 6.4.5.

6.3 Examination Forms

If the MEC automated system fails, or if the computer terminal in one exam room fails and hard copy examination forms must be used during an exam session, it is the coordinator's responsibility to check the forms after each exam and make sure the completed form was placed in the SP folder. An exam form will be included in the folder only if the examination was required for the SP, so the coordinator should use the Control Record to determine what forms should be present in the folder. Potential exam forms include:

- Allergy Test form
- Audiometry/Tympanometry form
- Body Measurements form
- Bone Density form
- ECG form
- Fundus Photography form
- Dental Examination form (4 forms)
- Dietary Exam forms (Recall and Food Frequency)
- Gallbladder Ultrasound form
- Glucose Challenge
- Joint Radiographs (X-ray) form
- MEC Interview form (includes WISC and WRAT form)
- Performance Test
- Physician Exam form
- Spirometry
- Venipuncture 1 and 2 form

There is no form for the Neurobehavioral Test (CNS test) because if the computer fails the test cannot be administered. The yellow copy of the Adult Blood Pressure Report form and the Dental Report of Findings form may also be included in the folder. The coordinator should check to make sure

that the appropriate forms are present, and then that the form is filled in and labeled with the examinee's NCHS sample label. Instructions for completing these forms are provided in the respective examiner's manuals.

6.3.1 Control Record

The coordinator is responsible for ensuring that the Control Record is completed on every examinee. An example of the Control Record is shown in Exhibit 6-1.

Prior to the exam session, the coordinator should complete the top portion of the form using the information provided by the field office on the Daily Appointment Schedule and on the field office diskette. The following items should be completed:

- Sample number (SP label should be placed here)
- SP age - in months and years
- Sex
- Examination date
- Date of birth
- GTT priority (Fasting status code)
- Pregnancy status (Females 18-59 years)
- SP Name

The coordinator must also remember to check the examinee's temperature and record this information in the Temperature section of the Control Record, as well as in the coordinator system, during the check-in process.

After each exam is completed, the coordinator should check that the in and out time, staff (examiner) number and result code, if required, are recorded on the Control Record. If the result code is recorded on the form for the dietary interview, MEC interview, dental exam, physician exam or venipuncture, the coordinator must remember to record the code in the coordinator system. Also, the

CONTROL RECORD

NOTICE - Information contained on this form which would permit identification of any individual or establishment has been collected with a guarantee that it will be held in strict confidence, will be used only for purposes stated for this study, and will not be disclosed or released to others without the consent of the individual or the establishment in accordance with section 308(d) of the Public Health Service Act (42 USC 242m).

Sample No _____	a. Age <input type="checkbox"/> Mos <input type="checkbox"/> Yrs _____	b. <input type="checkbox"/> Male <input type="checkbox"/> Female	c. Coordinator _____	d. Examination Date _____/_____/_____ Month Day Year
e. Date of Birth _____/_____/_____ Month Day Year	f. Temperature _____	g. GTT priority _____	PREGNANT: <input type="checkbox"/> YES - NO BONE SCAN <input type="checkbox"/> DK - NO BONE SCAN <input type="checkbox"/> NO	

Name (First, Middle, Last)

Procedure	Age Group	Time		Staff
		In	Out	
Physician's Exam	All	____ : ____	____ : ____	_____
Body Measurements	All	____ : ____	____ : ____	_____
MEC Interview	All	____ : ____	____ : ____	_____
24-hour Recall	All	____ : ____	____ : ____	_____
Venipuncture	1 and older	____ : ____	____ : ____	_____
Dentist's Exam	1 and older	____ : ____	____ : ____	_____
Urine Specimen	6 and older	____ : ____	____ : ____	_____
Allergy Test	20-59 Even 6-19 All	____ : ____	____ : ____	_____
Audiometry/Tympanometry	6-19	____ : ____	____ : ____	_____
WISC and WRAT	6-16	____ : ____	____ : ____	_____
Spirometry	8 and older	____ : ____	____ : ____	_____
Exit Interview	12 and older	____ : ____	____ : ____	_____
Food Frequency	12-16	____ : ____	____ : ____	_____
Bone Densitometry	20 and older	____ : ____	____ : ____	_____
Gallbladder Ultrasound	20-74	____ : ____	____ : ____	_____
CNS	20-59 Odd	____ : ____	____ : ____	_____
ECG	40 and older	____ : ____	____ : ____	_____
Fundus Photography	40 and older	____ : ____	____ : ____	_____
Glucose Challenge	40-74	____ : ____	____ : ____	_____
Venipuncture 2	40-74	____ : ____	____ : ____	_____
Joint Radiographs	60 and older	____ : ____	____ : ____	_____
Performance Test	60 and older	____ : ____	____ : ____	_____

arrival time and exit time should be recorded for each examinee. Arrival time is the time the examinee first entered the exam center and exit time is the time that the exit process is completed by the coordinator.

In addition, the coordinator should record the completion time for the urine specimen and the Exit Interview. The Exit Interview is described in Section 6.4.3.

6.4 Nonexamination Forms

A number of nonexamination forms will be also used during the exam session and to complete administrative tasks. Nonexamination forms include the Daily Appointment Schedule, Pregnancy Test Card, Exit Interview, Visitor's Log, and Transmittal Form.

6.4.1 Daily Appointment Schedule

The Daily Appointment Schedule (DAS) is created by the field office and will be provided to the coordinator each day prior to the first scheduled examination. The coordinator will copy the schedule and distribute it to the MEC exam team. A copy of the schedule should be kept in each examination room. However, because it contains confidential information it should not be posted in plain view but stored discreetly with the exam room log. Examiners will use the schedule to track examinees through the MEC, anticipate the number of examinees for each component, and reconcile exams in each room.

An example of the Daily Appointment Schedule is shown in Exhibit 6-2. The appointment date and time are provided for each examinee as are name, NCHS sample number, fasting status, age, sex, race, and ethnicity. The coordinator should use this information to confirm identification of the examinee at the time of the exam. If information is missing, or if an examinee is not on the schedule, the coordinator should contact the field office manager to obtain the correct information.

Other information available on the DAS includes language (English, Spanish, or other), transportation plans (self, taxi, other) and remarks, which are printed on a separate page. Remarks offer information pertinent to the examiners such as SP requires wheelchair, has vision or hearing impairment, or uses oxygen. This information is helpful in anticipating and understanding the special needs of examinees and in planning the management of the exam session.

Exhibit 6-2. Daily Appointment Schedule

10/19/89 NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY
 DAILY APPOINTMENT SCHEDULE FOR STAND 114
 FOR FRIDAY OCTOBER 20, 1989

<u>APPT</u> <u>TIME</u>	<u>NCHS</u> <u>NUMBER</u>	<u>AGE/SEX</u> <u>LANGUAGE</u>	<u>ER</u>	<u>NAME</u>	<u>TRANS</u>	<u>RMK</u>
08:30 AM	S 888 042 6	39 F E	3/2	Mary DXX	S	*
08:30 AM	S 888 298 4	60 M E	3/2	John DXX	S	*
08:30 AM	S 888 509 6	72 M E	3/2	Bill JXXXXXX DATA RETRIEVAL	FAM	*
08:30 AM	S 888 511 8	71 F E	3/2	Anna JXXXXXX DATA RETRIEVAL	FAM	*
09:00 AM	U 888 525 8	4m M E	3/2	Bill WXXXXXXX DATA RETRIEVAL	FAM	S

01:30 PM	M 888 055 8	48 M E	3/2	James SXXXX	S	*
01:30 PM	M 888 451 0	33 F E	3/2	Jean SXXXX	S	*
01:30 PM	T 888 452 9	14 F E	3/2	Jane WXXXXXXXX	S	*
01:30 PM	U 888 453 7	8 M E	3/2	Paul JXXXX	S	*
01:30 PM	M 888 482 0	67 F E	3/2	Rita JXXXX DATA RETRIEVAL	FAM SP	*
01:30 AM	U 888 483 9	17m M E	3/2	Jack HXXXXX DATA RETRIEVAL	FAM	S

After the examination session, the DAS should either be stored in a locked drawer and returned to NCHS with the weekly shipment of forms or sent back to the field office to be shredded.

6.4.2 Pregnancy Test Card

The Pregnancy Test Card is a form completed by the medical technicians to confidentially notify the coordinator of pregnancy test results. Exhibit 6-3 shows the Pregnancy Test Card. The coordinator excludes women SPs with positive pregnancy tests from the bone density exam, and reports the positive test to the physician. It is the responsibility of the MEC physician to notify the SP of the positive test with the SP and to explain the need to omit the bone density examination.

Since the result of the pregnancy test is recorded in several places in the automated system, it is not necessary to retain the card. The Pregnancy Test Cards should be sent to the field office at the end of the day to be shredded and discarded.

6.4.3 Exit Interview

The Exit Interview is obtained on all examinees ages 12 years and older, and is conducted as a proxy interview on examinees ages 6-11 years. As the examination schedule for an SP nears completion, the coordinator assigns the Exit Interview to the examiner performing the last examination and the interview is conducted in the privacy of the exam room. If an examiner is not available, the coordinator may administer the interview in a private setting. The purpose of the interview is to obtain the examinee's impression of their experience in the exam center, and to find out if they are willing to participate in a replicate examination.

A copy of the Exit Interview is shown in Exhibit 6-4. The interviewer should fill in their technician number (Staff Number), check whether the SP completed the venipuncture, place the SP label under the Sample Number space, and fill in the SP's age, preferred language, and sex before beginning the interview. The interview can be conducted in English or Spanish and both versions are printed on the two-sided form.

Exhibit 6-3. Pregnancy Test Card

Date _____ / _____ / _____

Session _____

Tech No. |_|_|_|_|

Sample No.

PREGNANT: YES - NO BONE SCAN
 DK - NO BONE SCAN

NO

MEC EXIT QUESTIONNAIRE

AGES 12+
PROXY AGES 6-11

STAFF NO.: ____ _

a. Venipuncture

Yes No

b. Sample Number

c. Age

____ _ Years

d. Language of Interview

English Spanish

e. Sex

Male
 Female

We have three final questions to ask you about your participation in this survey.

1. Do you have any comments about the interviewer who came to your house or the questions that were asked?

No

Yes--Specify _____

2. Do you find any part of the examination unpleasant?

No

Yes--Specify _____

CHECK ITEM. REFER TO AGE OF SP.

12+ YEARS (3a)

6-11 YEARS (3b)

3a. As part of our quality control program, we need to examine some individuals a second time. Would you be willing to participate in this examination again, including having your blood drawn? You will receive an additional payment.

No Yes

3b. As part of our quality control program, we need to examine some individuals a second time. Would your child be willing to participate in this examination again, including having his/her blood drawn? Your child will receive an additional payment.

No Yes

The interviewer then proceeds to read the SP the two questions on the form, recording verbatim any information offered in response. It is important for the interviewer to read the questions exactly as written and to remain nonjudgemental and impartial while transcribing the SP's responses. Upon completion of the questions, the interviewer should check the age box appropriate to the SP, then follow the skip patterns to question 3a or 3b.

Completed Exit Interviews are given to the coordinator who delivers them to the field office at the end of each day. The field office will screen the interviews to identify volunteers for replicate exams. The interviews are then sent to NCHS with the weekly shipments.

6.4.4 Visitor's Log

The Visitor's Log (Exhibit 6-5) is kept in the MEC and serves as record for all nonexamination staff, and nonexaminees who enter the MEC during a stand. Relatives or friends of examinees who accompany examinees to the MEC and wait in the reception area are not required to sign the log. A separate log is kept for each stand and sent to Westat with the MEC manager's report at the end of the stand. The MEC manager is responsible for ensuring that all MEC visitors are approved by NCHS and escorted through the center, and that all visitors sign and date the log. The log is kept in a notebook at the coordinator's desk.

In the absence of the MEC manager, the coordinator assumes responsibility for completing the Visitor's Log. However, before permitting any visitors to enter the MEC, the coordinator should confirm that the visit was arranged by the field office or MEC manager and approved by NCHS.

6.4.5 Transmittal Form

Two types of transmittal forms will be used to ship materials to NCHS and to consultants and reviewers. The coordinator will only use the Record of Transmittal, a three-part form shown in Exhibit 6-6, to ship Control Records to NCHS. One Record of Transmittal is used for each type of form being shipped, so one Record of Transmittal will be used to record the Control Records.

Exhibit 6-6. Record of Transmittal Form

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
Centers for Disease Control
National Center for Health Statistics

NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY III
RECORD OF TRANSMITTAL

TO:	BOX NUMBER(S)	DATE	STAND NUMBER
		TOTAL NUMBER OF RECORDS	
		TOTAL NUMBER OF BOXES	
		COMPLETED BY	

Here are the _____ (Type of Record) _____ (Deck Number) For _____ (Stand Location) _____
 Examinations were conducted from _____ (Date) through _____ (Date)

Sample numbers of records included are circled below:

001	041	081	121	161	201	241	281	321	361	401	441	481	521	561	601	641	681	721	761	801	841	881	921	961
002	042	082	122	162	202	242	282	322	362	402	442	482	522	562	602	642	682	722	762	802	842	882	922	962
003	043	083	123	163	203	243	283	323	363	403	443	483	523	563	603	643	683	723	763	803	843	883	923	963
004	044	084	124	164	204	244	284	324	364	404	444	484	524	564	604	644	684	724	764	804	844	884	924	964
005	045	085	125	165	205	245	285	325	365	405	445	485	525	565	605	645	685	725	765	805	845	885	925	965
006	046	086	126	166	206	246	286	326	366	406	446	486	526	566	606	646	686	726	766	806	846	886	926	966
007	047	087	127	167	207	247	287	327	367	407	447	487	527	567	607	647	687	727	767	807	847	887	927	967
008	048	088	128	168	208	248	288	328	368	408	448	488	528	568	608	648	688	728	768	808	848	888	928	968
009	049	089	129	169	209	249	289	329	369	409	449	489	529	569	609	649	689	729	769	809	849	889	929	969
010	050	090	130	170	210	250	290	330	370	410	450	490	530	570	610	650	690	730	770	810	850	890	930	970
011	051	091	131	171	211	251	291	331	371	411	451	491	531	571	611	651	691	731	771	811	851	891	931	971
012	052	092	132	172	212	252	292	332	372	412	452	492	532	572	612	652	692	732	772	812	852	892	932	972
013	053	093	133	173	213	253	293	333	373	413	453	493	533	573	613	653	693	733	773	813	853	893	933	973
014	054	094	134	174	214	254	294	334	374	414	454	494	534	574	614	654	694	734	774	814	854	894	934	974
015	055	095	135	175	215	255	295	335	375	415	455	495	535	575	615	655	695	735	775	815	855	895	935	975
016	056	096	136	176	216	256	296	336	376	416	456	496	536	576	616	656	696	736	776	816	856	896	936	976
017	057	097	137	177	217	257	297	337	377	417	457	497	537	577	617	657	697	737	777	817	857	897	937	977
018	058	098	138	178	218	258	298	338	378	418	458	498	538	578	618	658	698	738	778	818	858	898	938	978
019	059	099	139	179	219	259	299	339	379	419	459	499	539	579	619	659	699	739	779	819	859	899	939	979
020	060	100	140	180	220	260	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860	900	940	980
021	061	101	141	181	221	261	301	341	381	421	461	501	541	581	621	661	701	741	781	821	861	901	941	981
022	062	102	142	182	222	262	302	342	382	422	462	502	542	582	622	662	702	742	782	822	862	902	942	982
023	063	103	143	183	223	263	303	343	383	423	463	503	543	583	623	663	703	743	783	823	863	903	943	983
024	064	104	144	184	224	264	304	344	384	424	464	504	544	584	624	664	704	744	784	824	864	904	944	984
025	065	105	145	185	225	265	305	345	385	425	465	505	545	585	625	665	705	745	785	825	865	905	945	985
026	066	106	146	186	226	266	306	346	386	426	466	506	546	586	626	666	706	746	786	826	866	906	946	986
027	067	107	147	187	227	267	307	347	387	427	467	507	547	587	627	667	707	747	787	827	867	907	947	987
028	068	108	148	188	228	268	308	348	388	428	468	508	548	588	628	668	708	748	788	828	868	908	948	988
029	069	109	149	189	229	269	309	349	389	429	469	509	549	589	629	669	709	749	789	829	869	909	949	989
030	070	110	150	190	230	270	310	350	390	430	470	510	550	590	630	670	710	750	790	830	870	910	950	990
031	071	111	151	191	231	271	311	351	391	431	471	511	551	591	631	671	711	751	791	831	871	911	951	991
032	072	112	152	192	232	272	312	352	392	432	472	512	552	592	632	672	712	752	792	832	872	912	952	992
033	073	113	153	193	233	273	313	353	393	433	473	513	553	593	633	673	713	753	793	833	873	913	953	993
034	074	114	154	194	234	274	314	354	394	434	474	514	554	594	634	674	714	754	794	834	874	914	954	994
035	075	115	155	195	235	275	315	355	395	435	475	515	555	595	635	675	715	755	795	835	875	915	955	995
036	076	116	156	196	236	276	316	356	396	436	476	516	556	596	636	676	716	756	796	836	876	916	956	996
037	077	117	157	197	237	277	317	357	397	437	477	517	557	597	637	677	717	757	797	837	877	917	957	997
038	078	118	158	198	238	278	318	358	398	438	478	518	558	598	638	678	718	758	798	838	878	918	958	998
039	079	119	159	199	239	279	319	359	399	439	479	519	559	599	639	679	719	759	799	839	879	919	959	999
040	080	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840	880	920	960	

Sample numbers of records not included and reasons why listed below:

Complete the Record of Transmittal as follows:

- Provide the address of NCHS and the name of the person in charge of receipt control at the top of the form, along with the box number if it is known.
- On the upper right-hand side of the form, complete the date of shipment, stand number, total number of records (forms), total number of boxes and the coordinator's name. Total number of boxes will usually be blank as the coordinator's shipment will be included in a box with materials from other examiners.
- In the middle portion of the form fill in the type of records being sent, the location of the stand and the dates of the examination period for which the forms were completed. These dates will usually reflect one week of exams as forms are sent weekly to NCHS.
- On the bottom section of the form, in which numbers from 001 through 999 are shown in sequenced columns, circle the NCHS number (the three-digit number exclusive of stand number and check digit) of each examinee for whom a form is being transmitted. The total number of NCHS numbers circled must equal the total number of forms being shipped. If a discrepancy exists, it must be explained on the last portion of the form.

After the Record of Transmittal is complete, the coordinator should bundle the Control Records together and place the original copy of the Transmittal form on the top of the forms. The yellow copy of the Transmittal form should be given to the MEC manager to be mailed to NCHS with the rest of the yellow Transmittals from the exam center. The pink copy of the form should be placed in the box to be sent to Westat. The MEC manager is responsible for ensuring that materials prepared for shipment by the exam staff are mailed promptly.

7. QUALITY CONTROL

A number of activities will be used in the examination center to monitor exam productivity and quality but most activities will fall into three categories: (1) summaries of component response rates, examiner productivity, and data reviews; (2) direct observations of exam procedures; and (3) replicate examinations.

7.1 Summaries of Completion Rates, Examiner Productivity, and Data Reviews

Component completion rates and result code reports will be used to track the response rate to each exam component and the reasons for nonresponse. Summaries of component response and reasons for nonresponse will periodically be provided to the exam staff to assist in identifying and addressing problems of nonresponse. Staff who perform multiple exams will also receive feedback at regular intervals summarizing how many of each type of exam was performed to assist the examiners and coordinator to evenly distribute the exams among the team members.

In addition to the summaries of component completion rates and examiner productivity, NCHS staff and consultants will review component data from questionnaires and exams. Findings from the data reviews will be used to identify areas of staff performance that require refresher activities, additional training, or practice to maintain protocol standards.

7.2 Direct Observation

Observations of exams, interviews, and MEC operations will also be conducted by NCHS staff, expert consultants, and Westat quality control staff at regular intervals to provide another measure of protocol adherence and examination/interview quality. Direct observation techniques offer the examiners an opportunity to clarify protocol procedures, ask questions of the consultants, and report observations and problems. Every component and operational procedure will be observed periodically as part of this effort.

7.3 Replicate Exams

The third category, replicate examinations, includes several different types of exams. Replicate examinations are exams that are repeated either at the same time as the original exam, or soon after the original exam, as a means of comparing the consistency of results. However, there are several different ways to conduct the replications and the methods vary with the component and the goal of the replication. On NHANES III, six types of replicate exams will be conducted: partial replicates, complete replicates, home replicates, "expert replicates", laboratory replicates, and bench replicates.

7.3.1 Partial Replicates

Partial replicates are used to evaluate interexaminer variation and are conducted for a small percentage of examinees in one component. The most frequent use of this technique is applied in the body measurements component. The automated system randomly selects an examinee for replication, and the examiners immediately perform the replicate body measurements following completion of the original exam. These replicates are always performed in the same session as the original examination and the replicate data are entered into the automated system.

No special arrangements are needed to conduct these replicates. The examinee's original NCHS sample number is used to record the replicate information, and in most instances the coordinator will not be aware that the replicates need to be done and will not participate in the process.

7.3.2 Complete Replicates

Complete replicates are examinees who are recruited by the field office to voluntarily return to the MEC to repeat their entire original examination. To be eligible, the examinee must have had blood drawn on the first visit, and must be willing to repeat all of the original exams, including venipuncture. Twenty examinees will be reexamined as replicates in every stand.

Complete or "full" replicates receive the same remuneration and transportation arrangements as on the first visit. These replicates will be assigned a new NCHS number in the nonexaminee series (0-070) and are known to the staff. The coordinator and staff are informed that the examinee is a replicate, and the coordinator must insure that the exact same components are repeated by the same examiner(s).

To accurately repeat the original exam, the coordinator uses the Control Record from the original visit, or calls up the examinee schedule from the coordinator system. In the system, a link will be provided to the examinee's original examinee number so the coordinator can determine whether to repeat the CNS or allergy exam. It is the coordinator's responsibility to ensure that all replicate exams are conducted correctly.

7.3.3 Home Replicates

Ten examinees in each stand who receive the MEC exam will be recruited to be reexamined in the home. The home examination protocol will be used to perform the exam and examinees will be reimbursed \$15.00 at the time of the exam. The coordinator will check-in the home exam replicates into the MEC coordinator system so that the results of the blood processing can be entered, but the coordinator will have no other responsibilities for these replicates.

7.3.4 Expert Replicates

"Expert" replicates are replications of exams performed by NCHS-designated staff or consultants who serve as the standard for the protocol exam. In this technique, the examination staff perform the protocol exam, and the expert standard repeats the examination on the same SP in the same session. This differs from the partial replicate in that the entire protocol exam is performed and an expert provides an ideal standard of comparison for the exam staff. The dental examination, body measurements, and the physician exam are the components that will most frequently use this method of quality control. It is also possible that the body measures component and the allergy component may also use an expert standard to perform some partial replicate exams as another means of reviewing performance.

The replicate data obtained using the expert replicate technique will be entered into the automated system using the examinee's NCHS sample number. The coordinator will not need to make any arrangements to assist with the conduct of expert replicates except to allow some extra time when assigning exams so the SP can receive the second exam in the examination room.

7.3.5 Laboratory Replicates

Laboratory replicates are split duplicates of blood specimens performed in the MEC laboratory using dry run and guest blood specimens. Extra sample person labels with a unique series of numbers will be used to label these split samples. The med techs will enter the collection of these specimens into the automated system using the unique ID labels. The coordinator does not participate in this process.

7.3.6 Bench Replicates

Bench replicates are blind controls, that is, samples with known values, and split duplicates of specimens created at the CDC laboratory. The samples will also be labeled with a special laboratory label. The coordinator will not participate in this process.

7.4 Coordinator Responsibilities for Replicate Exams

The coordinator will be responsible for assisting the examiners to conduct partial and expert replicates by assigning sample persons to the exam rooms in a timely manner and by allowing sufficient time for the extra exams to be conducted. If the replicate exams begin to place a strain on the completion of exams for other examinees, the coordinator and MEC manager will work together to expedite examinee flow and obtain the required number of replicates.

For complete replicates, the coordinator will be responsible for ensuring that all of the exams originally conducted on the examinee are repeated using the same examiners.

APPENDIX A

STATUS CODES FOR EXAMS

APPENDIX A
TABLE OF CONTENTS

STATUS CODES FOR EXAMS

	<u>Page</u>
Allergy Injections.....	A-1
Allergy Readings.....	A-2
Audiometry - Air Conduction.....	A-3
Audiometry - Tympanometry.....	A-4
1st Blood Draw.....	A-5
2nd Blood Draw.....	A-6
Body Measurements.....	A-7
Bone Density.....	A-8
CNS.....	A-9
Dental Exam.....	A-10
Dietary Interviews.....	A-11
ECG.....	A-12
Exit Interview.....	A-13
Fundus Photo.....	A-14
Gallbladder Ultrasound.....	A-15
MEC Interview.....	A-16
Performance Test.....	A-17
Physician Exam.....	A-18
Spirometry.....	A-19
Urine Collection.....	A-20
X-Ray.....	A-21

APPENDIX A

ALLERGY INJECTIONS

I-V

Result Codes**	Category	Instructions
011	Injection Done	All allergens injected according to the protocol and readings will be taken later.
012	Safety Exclusion	SP excluded for safety reasons only, per protocol (e.g., SP currently have breathing problem, severe eczema, infection on arms or history of severe reaction to allergy skin testing).
013	Refused/Uncooperative	SP initiated non-response. SP refused some or all allergens for any reason (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.). Explain in comments.
014	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of the session and no time to do the exam.
015	Physically Unable to Cooperate	SP unable to have the test due to physical problems (e.g., amputee).
016	SP Unable to Understand Instructions	SP unable to understand instructions due to language, cognitive impairment or other communication problems and no allergens injected.
017	Supply Problem	Out of allergens or needles.
018	Other Reasons	Limit use of this code only to reasons that cannot be codes with above categories (e.g., SP sent home excluded by the physician or inadequate staff to do the test, etc.). Explain in comment.

Note**: Result codes: Technician.

APPENDIX A (CONTINUED)

ALLERGY READINGS

Result Codes**	Category	Instructions
010/110	Reading Done	All readings taken according to the protocol.
012/112	Safety Exclusions	SP excluded for safety reason only, per protocol (e.g., <u>adverse reaction</u> with nasal congestion, trouble breathing, throat or chest tightness, general itching, dizzy, faint or sneezing).
013/113	Refused/Uncooperative	SP initiated non-response. SP refused for any reasons and readings cannot be taken (e.g., SP leaves early, SP or a family member sick, etc.)
014/114	Out of Time	It's the end of session and no time to take the readings.
015/115	Physically Unable to Cooperate	SP physically unable to cooperate to have reading done.
016/116	SP Unable to Understand Instructions	SP unable to understand instruction and reading not done due to language, cognitive impairment, other communication problems.
017/117	Equipment/Supply Problems	No ruler to take readings.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician, emergency or inadequate staff to do the readings, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and allergy test was completed at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

AUDIOMETRY - AIR CONDUCTION

A-3

Result Codes**	Category	Instructions
011	Air Conduction Test Done	Air conduction test (hearing test) completed according to the protocol. Tympanometry will be done later.
012	Safety Exclusion	SP excluded for safety reasons only, per protocol (e.g., drainage or discharge in <u>both ears</u>).
013	Refused/Uncooperative	SP initiated non-response. SP refused the test for any reason and data cannot be collected (e.g. SP or a family member sick, SP leaves early, SP comes late, etc.).
014	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of the session and no time to conduct the test.
015	Physically Unable to Cooperate	SP physically not able to do the test (e.g., SP unable to wear head set or cannot operate the button).
016	SP Unable to Understand Instructions	SP unable to understand instructions and test not done due to language, cognitive impairment or other communication problems.
017	Equipment Problem	Hardware or software problems.
018	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home excluded by the physician or inadequate staff to do the test, etc.). Explain in comment.

Note**: Result codes: Technician.

APPENDIX A (CONTINUED)

AUDIOMETRY - TYMPANOMETRY

Result Codes**	Category	Instructions
010/110	Tympanometry Done	Tympanometry test completed according to the protocol.
012/112	Safety Exclusion	SP excluded for safety reasons only, per protocol (e.g., tubes or discharge in <u>one or both</u> ears).
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the test for any reasons and data cannot be collected (e.g., SP or a family member sick, SP leaves early, SP comes late, SP quits in the middle of the exam, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the test.
015/115	Physically Unable to Cooperate	SP physically unable to do the test (very rare; e.g., SP's both ears covered with bandage).
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and test not done due to language, cognitive impairment, or other communication problems.
017/117	Equipment Problems	Hardware or software problems and test cannot be done.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the test, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and audiometry test was completed at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

1ST BLOOD DRAW

A-5

Result Codes**	Category	Instructions
110	Blood Draw, All Tubes	All tubes fully or partially filled (not including volatile toxicant tubes).
111	Blood Draw, Some Tubes	Only a few tubes filled.
112	Safety Exclusion	SP excluded only for safety reasons, per protocol (e.g., hemophilia, or SP on cancer chemotherapy).
113	Refused/Uncooperative	SP initiated non-response. SP refused, SP or family member sick, SP leaves early, SP comes late and no blood drawn.
114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to draw blood.
115	Unable to Puncture Vein	Phlebotomy attempted but the draw was unsuccessful.
116	SP Unable to Understand Instructions	SP is unable to understand instructions due to language, cognitive impairment or other communication problems and no blood drawn.
117	Equipment/Supply Problems	Venipuncture equipment malfunction or tubes not available to draw blood.
118	Other Reasons	Limit use of this code only to reasons that can be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to draw blood). Explain in comments.
210	Done at Prior Session	SP rescheduled and 1st blood draw was completed at the previous visit.

Note**: Coordinator Codes.

APPENDIX A (CONTINUED)

2ND BLOOD DRAW

Result Codes**	Category	Instructions
110	Blood Draw	Blood vial at least partially filled.
112	Safety Exclusion	SP excluded only for safety reasons, per protocol (e.g., SP currently using insulin).
113	Refused/Uncooperative	SP initiated non-response. SP refused Dextol or the 2nd draw for any reason and no blood drawn (e.g., SP or a family member sick, SP leaves early, SP comes late).
114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to administer Dextol and draw blood second time for GTT.
115	Unable to Puncture Vein	Phlebotomy attempted but the draw was unsuccessful.
116	SP Unable to Understand Instructions	SP is unable to understand instructions due to language, cognitive impairment or other communication problems.
117	Equipment/Supply Problems	Venipuncture equipment malfunction or tubes not available to draw blood or no Dextol available.
118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to draw blood). Explain in comments.
210	Done at Prior Session	SP rescheduled and 2nd blood draw was completed at the previous visit.

Note**: Coordinator Codes.

APPENDIX A (CONTINUED)

BODY MEASUREMENTS

Result Codes**	Category	Instructions
010/110	All Measurements Done	All measurements done and data collected according to the protocol.
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the exam or uncooperative for any reason and measurements cannot be taken (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.)
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to take the measurements.
015/115	Physically Unable to Cooperate	SP physically unable to go through the exam and no measurements taken.
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and measurements not taken due to language, cognitive impairment or other communication problems.
017/117	Equipment/Supply Problems	Hardware or software problems and no measurement taken.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to take the measurements, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and measurements were taken at the previous visit.
002/	Some Measurement Done	One or more measurement not taken. Define reasons 21-29.
021/	Height/Length and Weight Only	
022/	Examinee Uses Walker, Cane or Braces	
023/	Equipment Problem (e.g., Missing Measuring Tape)	
024/	Examinee in Street Clothes	
025/	Examinee Pregnant	
026/	Artificial Body Parts	
027/	Amputee	
028/	Examinee Wheelchair Bound	
029	Other Reasons	

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

BONE DENSITY

Result Codes**	Category	Instructions
010/110	Scan Complete	Entire proximal femur was scanned.
012/112	Safety Exclusions	SP excluded for safety reasons only, per protocol (e.g., pregnancy confirmed or suspected by lab or SP).
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the exam for any reason and scan was not obtained (e.g., SP leaves early, SP or a family member sick, SP comes late, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to do the exam.
015/115	Physically Unable to Cooperate	SP physically unable to do the exam (e.g., SP has fractured both hips, both hips replaced, cannot lie still, SP cannot get on the table even with help or obese and does not fit under the scan arm).
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and no scan obtained due to language, cognitive impairment, or other communication problems.
017/117	Equipment Problem	Hardware or software problems and no scan was obtained.
018/118	Other Reasons	Limit use of this code only to reasons that can be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the exam, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and scan was obtained at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

CNS

6-V

Result Codes**	Category	Instructions
010/110	Satisfactory Test	Test completed according to the protocol.
013/113	Refused to Start Test	SP initiated non-response. SP refused to initiate the test for any reason.
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the test.
015/115	Physically Unable to Cooperate	SP has physical handicap that makes it impossible to initiate or complete the test (e.g., has pre-existing condition which would affect validity of the test, is physically unable to see monitor or to manipulate response buttons).
016/116	SP Unable to Understand Instructions	Language or other communication problems (e.g., cannot read or understand English or Spanish, inability to conceptualize task requirements or to follow instructions).
017/117	Equipment Problems	Failure of equipment or power supply (e.g., NES expiration date passed, computer malfunction).
018/118	Other Reasons	Limit use of this code, only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the exam). Explain in comments.
/210	Done at Prior Session	SP rescheduled and CNS test was completed at the previous visit.
002	Unsatisfactory Exam	Test is completed but with difficulty and is unsatisfactory or test is incomplete. Define reasons with codes 21-24.
021	Examinee Very Frustrated or Angry	Test incomplete or unsatisfactory because examinee was too frustrated or angry.
022	Examinee Inattentive	Test incomplete or unsatisfactory because examinee was inattentive.
024	Other Reasons	Explain in comments.

Note**: Result codes: Technician.

APPENDIX A (CONTINUED)

DENTAL EXAM

Result Codes**	Category	Instructions
110	Exam Completed	All components completed according to the protocol (including medical exclusions).
111	Exam Incomplete	One or more parts of the exam appropriate for the SP not done.
112	Safety Exclusion	SP excluded for safety reasons only, per protocol.
113	Refused/Uncooperative	SP initiative non-response. SP refused the exam for any reason (e.g., SP have pain, SP or a family member sick, SP leaves early, SP comes late, etc.).
114	Out of Time	SP comes on time; Dentist is on duty; It's the end of session and no time to do the exam.
115	Physically Unable to Cooperate	SP physically unable to cooperate and cannot go through the exam (e.g., SP extremely obese, have back pain, etc.).
116	SP Unable to Understand Instructions	SP unable to understand instructions and exam was not done due to language or other communication problems.
117	Equipment/Supply Problem	Hardware or software problems or supply shortage.
118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or no dentist to do the exam, etc.). Explain in comments.
210	Done at Prior Session	SP rescheduled and dental exam was completed at the previous visit.

Note**: Result codes: Coordinator.

APPENDIX A (CONTINUED)

DIETARY INTERVIEWS

Result Codes**	Category	Instructions
110	Interview Complete	Dietary interview procedures completed. Code "Complete" even if data retrieval is unfinished or if the interview is "unreliable".
111	Interview Incomplete	Code "Incomplete" if SP left dietary station before completing the dietary interview due to personal time constraints and there is no chance of conducting data retrieval (e.g., no telephone).
113	Refused or Uncooperative	SP initiated non-response. SP refused dietary interview or would not comply with instructions from the dietary interviewer. Also, if SP leaves because SP or family member became ill, or SP comes late and no data were collected.
114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the interview.
115	Physically Unable to Understand	Seldom used for dietary component. Code reserved for instances when a physical problem such as massive obesity prevents SP from completing a component -- could not fit in chair, office, etc.
116	SP Unable to Understand Instructions	Code if unable to conduct the dietary interview due to language, mental, or handicap condition (deaf, mute, etc.) and a proxy is not available.
117	Equipment Problem	Use this code if the recall was not saved and a hard copy interview was not obtained. Printer problems not included.
118	Other Reasons	Code reserved for special circumstances such as when the MEC closes early due to an emergency or SP sent home by the physician and above categories cannot be used for coding. Explain in comments.
210	Done at Prior Session	SP rescheduled and dietary interview was completed at the previous visit.

Note**: Result codes: Coordinator.

APPENDIX A (CONTINUED)

ECG

Result Codes**	Category	Instructions
010/110	ECG Obtained	ECG tracing obtained according to the protocol.
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the exam for any reason and no tracing obtained (e.g., SP leaves early, SP or a family member sick, SP comes late, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to do the exam.
015/115	Physically Unable to Cooperate	SP physically unable to cooperate with the exam and tracing not obtained (e.g., SP has back problems or SP cannot get on the table even with others help, etc.).
016/116	SP Unable to Understand Instructions	SP unable to understand instruction and tracing not obtained, due to language, cognitive impairment or other communication problems.
017/117	Equipment/Supply	Hardware problems, out of paper or other supplies.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the exam, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and ECG was obtained at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

EXIT INTERVIEW

Result Codes**	Category	Instructions
110	Interview Completed	Interview completed.
113	Refused/Uncooperative	SP refused to be interviewed for any reason.
114	Out of Time	No time to conduct the interview.
115	Physically Unable to Cooperate	SP physically unable to do the interview.
116	SP Unable to Understand Instructions	SP unable to understand instructions due to language or other communication problems.
118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories. Explain in comments.
210	Done at Prior Session	SP rescheduled and exit interview was completed at the previous visit.

Note**: Result codes: Coordinator.

APPENDIX A (CONTINUED)

FUNDUS PHOTO

Result Codes**	Category	Instructions
010/110	Photo Taken	Exam satisfactory and photo taken according to the protocol.
013/113	Refused/Uncooperative	SP initiated non-response. SP refused to do the exam for any reason and photo not taken (e.g., SP or a family member sick, SP leaves early or SP comes late, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to do the exam.
015/115	Physically Unable to Cooperate	SP physically unable to do the exam and picture cannot be taken (e.g., both eyes removed, both eyes have bandages, etc.).
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and photo not taken due to language, cognitive impairment or other communication problems.
017/117	Equipment Problem	Hardware problem and picture cannot be obtained (e.g., camera not working, equipment broken, etc.).
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the exam). Explain in comments.
/210	Done at Prior Session	SP rescheduled and exam was completed at the previous visit.
002/	Photo Taken, Not Satisfactory	Unsatisfactory exam. Define reasons with codes 22-27.
022/	Movement	
023/	No Fixation	
024/	Corneal Change	
025/	Pupil Not Dilated	
026/	Severe Lens Opacity	
027/	Vit Hem or Opacity	

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

GALLBLADDER ULTRASOUND

Result Codes**	Category	Instructions
010/110	Exam Complete	Examination successfully completed according to the protocol (with or without fast). At least one scan of the gallbladder obtained.
012/112	Safety Exclusions	None.
013/113	Refused/Uncooperative	SP initiated non-response. SP refused exam or uncooperative for any reason (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.).
014/114	Out of Time	SP comes on time; Sonographer on duty; It's the end of session and no time to conduct the exam.
015/115	Physically Unable to Cooperate	SP unable to do the exam due to physical problems (e.g., bad back, obese, wheelchair bound).
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and scan was not obtained due to language, cognitive impairment, or other communication problems.
017/117	Equipment/Supply Problems	Hardware problems or supply shortage and no scan obtained.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or no sonographer to do the exam, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and ultrasound exam was done at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

MEC INTERVIEW

Result Codes**	Category	Instructions
110	All Interviews Completed	All parts of the interview, appropriate for the SP, completed according to the protocol.
111	One or More Tests Not Done	One or more parts of the interview appropriate for the SP not done (e.g., WISC and WRAT not done).
113	Refused/Uncooperative	SP initiated non-response. SP refused interview for any reason or uncooperative (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.).
114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the interview.
115	Physically Unable to Cooperate	SP physically unable to cooperate with the interview (e.g., extremely obese, cannot sit in the chair, etc.) and no data collected.
116	SP Unable to Understand Instructions	SP unable to understand instructions and interview not done due to language, cognitive impairment, or other communication problems.
117	Equipment Problem	Hardware or software problems and interview cannot be conducted.
118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or no interviewer to conduct the tests). Explain in comments.
210	Done at Prior Session	SP rescheduled and MEC interview was completed at the previous visit.

Note**: Result codes: Coordinator.

APPENDIX A (CONTINUED)

PERFORMANCE TEST

Result Codes**	Category	Instructions
010/110	Tests Done	All sections of the exam appropriate for the SP completed according to the protocol (<u>including "unable" meaning cannot perform or does not attempt selected sections due to health, physical, or cognitive limitations</u>)
011/110	Incomplete	SP <u>refused one or more</u> selected sections.
013/113	Refused/Uncooperative	SP initiated non-response. SP <u>refused the entire</u> exam for any reason (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the test.
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and the <u>entire</u> test not done due to language, cognitive impairment, or other communication problems.
017/117	Equipment Problems	None.
018/118	Other Reasons	Limit use of this code, only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to conduct the test). Explain in comments.
/210	Done at Prior Session	SP rescheduled and this test was done at the previous visit.

Note**: Result codes: Technician/Coordinator.

APPENDIX A (CONTINUED)

PHYSICIAN EXAM

Result Codes**	Category	Instructions
110/010	Exam Complete	All parts of the exam completed according to the protocol.
111/011	BIA Not Done	Bioelectric Impedance not done for any reason. Explain in comments.
113/013	Refused/Uncooperative	SP initiated non-response. SP refused the whole exam for any reason (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.).
114/014	Out of Time	SP comes on time; Physician is on duty; It's the end of session and no time to do the exam.
115/015	Physically Unable to Cooperate	SP physically unable to participate in the exam (e.g., wheelchair bound, extremely obese, back trouble). The examiner should try to complete the exam.
116/016	SP Unable to Understand Instructions	SP unable to understand instructions and exam was not done due to language, cognitive impairment, or other communication problems.
117/017	Equipment Problems	Hardware/equipment or software problems and exam cannot be done.
118/018	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or, no physician in the MEC, emergency closing, etc.). No safety exclusions. Explain in comments.
/210	Done at Prior Session	SP rescheduled and physician's exam was completed at the previous visit.

Note**: Result codes: Coordinator/Examiner.

APPENDIX A (CONTINUED)

SPIROMETRY

Result Codes**	Category	Instructions
010/110	Satisfactory Test	3 valid reproducible curves obtained.
012/112	Safety Exclusions	SP excluded for safety reasons only, per protocol (e.g., chest or abdominal surgery within past 3 weeks or recent heart attack).
013/113	Refused/Uncooperative	SP initiated non-response. SP refused to do the test for any reasons (e.g., SP or a family member sick, SP leaves early or SP comes late, etc.).
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to conduct the test.
015/115	Physically Unable to Cooperate	SP unable to perform the test due to physical handicap or other physical reasons.
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and test not done due to language, cognitive impairment or other communication problems (e.g., SP retarded, etc.)
017/117	Equipment/Supply Problems	Hardware/software malfunction or out of pen, tracing paper, calibration problem, etc.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to conduct the exam, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and spirometry test was done at the previous visit.
002/	Unsatisfactory Exam	Unsatisfactory results. Define reasons with codes 21-26.
021/	Less than 3 reproducible curves	
022/	Cough Detected (within 1st second of expiration)	
023/	Early Termination, insufficient effort (if maneuver lasts less than 6 seconds and no plateau in curve)	
024/	Acute Illness (e.g., Flue, Pneumonia, Viral Infection)	
025/	COPD (e.g., Bronchitis, Emphysema, Asthma)	
026/	Ate heavy meal	

APPENDIX A (CONTINUED)

URINE COLLECTION

Result Codes**	Category	Instructions
110	Urine Sample Obtained, Full Cap	Adequate amount of urine specimen obtained.
111	Partial Urine Sample Obtained	Adequate amount of urine specimen <u>not</u> obtained.
113	Refused/Uncooperative	SP initiated non-response. SP refused to give urine specimen for any reason and no specimen collected (e.g., SP or a family member sick, SP leaves, SP comes late, etc.).
114	Out of Time	No time to collect specimen (should never happen).
115	Physically Unable to Cooperate	SP unable to give urine due to physical handicap.
116	SP Unable to Understand Instructions	SP unable to understand instructions due to language, cognitive impairment or other communication problems.
117	No Container	Out of urine collection kit.
118	Other Reasons	Limit use of this code only to reasons that can be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to collect specimen, etc.). Explain in comments.
210	Done at Prior Session	SP has been rescheduled and urine specimen was collected at the previous visit.

Note**: Result Codes for Coordinator.

APPENDIX A (CONTINUED)

X-RAY

Result Codes**	Category	Instructions
010/110	Both Views Taken	Exam satisfactory, films of both hands and knees obtained according to the protocol.
012/112	Safety Exclusions	SP excluded for safety reasons only, per protocol (e.g., exposure limit reached).
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the exam for any reasons (e.g., SP or a family member sick, SP leaves early, SP comes late, etc.)
014/114	Out of Time	SP comes on time; Adequate staff in MEC; It's the end of session and no time to do the exam.
015/115	Physically Unable to Cooperate	SP physically unable to do the exam (e.g., amputee, wheelchair bound).
016/116	SP Unable to Understand Instructions	SP unable to understand instructions due to language, cognitive impairment, or other communication problems.
017/117	Equipment Problem	Hardware problems, out of films or problems with processor.
018/118	Other Reasons	Limit use of this code only to reasons that cannot be coded with above categories (e.g., SP sent home or excluded by the physician or inadequate staff to do the exam, etc.). Explain in comments.
/210	Done at Prior Session	SP rescheduled and x-ray was completed at the previous visit.

Note**: Result codes: Technician/Coordinator.