
National Health
and Nutrition
Examination Survey

MEC
INTERVIEWERS
PROCEDURES
MANUAL

Click on the Show/Hide Navigation Pane button  to display linked Bookmarks.



(Revised January 2001)

TABLE OF CONTENTS

Click on the Show/Hide Navigation Pane button  to display linked Bookmarks.

<u>Chapter</u>		<u>Page</u>
1	OVERVIEW OF THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY	1-1
	1.1 History of the National Health and Nutrition Examination Programs	1-1
	1.2 Overview of the Current NHANES	1-3
	1.2.1 NHANES Pilot and Dress Rehearsal	1-4
	1.2.2 Data Collection for NHANES Main Survey	1-4
	1.3 Sample Selection.....	1-6
	1.4 Field Organization for NHANES.....	1-7
	1.5 Exams and Interviews in the Mobile Examination Center (MEC)	1-10
	1.6 Confidentiality and Professional Ethics.....	1-20
2	OVERVIEW OF THE MEC INTERVIEW COMPONENT.....	2-1
	2.1 Purpose of the MEC Questionnaires.....	2-1
	2.2 Role and Responsibilities of the MEC Interviewer	2-2
	2.3 Procedures for Administering the MEC Interview	2-2
	2.4 Description of the MEC Questionnaires	2-3
	2.5 Data Collection Materials	2-4
3	MEC SUBSYSTEM OVERVIEW	3-1
4	EQUIPMENT, SUPPLIES, AND MATERIALS	4-1
	4.1 Description of the MEC Interview Room and Computer Equipment.....	4-1
	4.2 MEC Interview Supplies and Other Equipment	4-2
	4.2.1 Description and Use of Interview Supplies.....	4-2
	4.3 MEC Interviewer Materials	4-3
	4.4 Inventory, Equipment Setup, and Teardown Procedures.....	4-4
	4.4.1 MEC Interview Room Teardown Procedures	4-5
	4.4.2 MEC Interview Room Setup Procedures	4-5

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
5	CONDUCTING THE MEC INTERVIEW	5-1
	5.1 Component Tasks	5-1
	5.2 Obtaining Minor Assent to Participate	5-1
	5.3 Obtaining Minor Assent for Specimen Storage and Future Research	5-21
	5.4 Logging in the SP	5-24
	5.5 Conducting the Interview.....	5-24
	5.5.1 Introducing the MEC Interview to the Respondent.....	5-24
	5.5.2 Administering the Actual Questionnaire.....	5-27
	5.5.3 Recording a Status for Each Section	5-27
	5.6 Distributing the Mental Health Parent Interview Reminder Notice....	5-29
	5.7 Critical Data Items	5-31
	5.7.1 Critical Data Item Collection for SPs 12 Years of Age and Older.....	5-31
	5.7.2 Critical Data Item Collection for SPs Younger than 12 Years of Age	5-35
	5.8 Ending the Interview.....	5-39
6	MEC INTERVIEW PROTOCOL – QUESTION-BY-QUESTION SPECIFICATIONS.....	6-1
	6.1 Question-by-Question Specifications Overview.....	6-1
	6.1.1 General Rounding Rules	6-1
	6.2 The CAPI Section of the MEC Interview	6-3
	6.2.1 Beginning the CAPI Interview	6-3
	6.2.2 Respondent Selection Section (RIQ).....	6-7
	6.2.3 Current Health Status (HSQ)	6-13
	6.2.4 Kidney Conditions (KIQ).....	6-21
	6.2.5 Tobacco (SMQ).....	6-27
	6.2.6 Alcohol Use (ALQ).....	6-39
	6.2.7 Reproductive Health (RHQ)	6-45
	6.2.8 Physical Activity and Physical Fitness (PAQ).....	6-145
	6.2.9 Ending the CAPI Interview	6-161

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
6.3	Mental Health Questions for SPs Aged 8-19 Years: DISC-IV	6-163
	6.3.1 Description of the Instrument.....	6-163
	6.3.2 Structure of the Instrument.....	6-166
	6.3.3 Administering the Interview	6-172
	6.3.4 Urgent Clinical or Ethical Issues.....	6-195
	6.3.5 Working with the CDISC Software	6-195
	6.3.6 Introduction/Timeline	6-203
	6.3.7 Panic Disorder (Module A4).....	6-255
	6.3.8 Generalized Anxiety Disorder (Module A6).....	6-337
	6.3.9 Eating Disorders (Module B1)	6-421
	6.3.10 Major Depression and Dysthymia (Module C1)	6-499
	6.3.11 Procedures for Collecting Contact Information for the Parent Interview	6-649
6.4	Mental Health Questions for SPs Aged 20-39 Years: CIDI	6-653
	6.4.1 Introduction	6-653
	6.4.2 Working with the Ishell CAI System	6-654
	6.4.3 General Interviewer Instructions	6-657
	6.4.4 Probe Flow Questions	6-658
	6.4.5 Onset/Recency Questions.....	6-668
	6.4.6 Work Loss/Effort Questions	6-669
	6.4.7 Panic Disorder Question-by-Question Objectives	6-673
	6.4.8 Generalized Anxiety Disorder (GAD)	6-737
	6.4.9 Major Depression	6-775
6.5	Audio-CASI Sections of the MEC Interview	6-869
	6.5.1 Beginning the Audio-CASI Interview.....	6-871
	6.5.2 DISC Predictive Scale – Youth Conduct Disorder (YCQ) .	6-875
	6.5.3 Tobacco (SMQ).....	6-881
	6.5.4 Alcohol Use (ALQ).....	6-901
	6.5.5 Drug Use (DUQ).....	6-905
	6.5.6 Sexual Behavior (SXQ).....	6-915
	6.5.7 Kidney Conditions (KIQ).....	6-933
	6.5.8 Ending the Audio-CASI Interview	6-943
7	MENTAL HEALTH REFERRALS	7-1
	7.1 Referral Procedures.....	7-1
	7.2 Situations Requiring a Mental Health Referral.....	7-1
	7.3 Generating a Mental Health Observation	7-2

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
8	QUALITY CONTROL.....	8-1
8.1	Data Edits.....	8-1
8.2	Observation and Review of Interviews.....	8-1
	8.2.1 Procedures for Audiotaping the Interview	8-3
8.3	Data Monitoring and Review.....	8-7

List of Appendixes

<u>Appendix</u>		
A	SPANISH MEC INTERVIEW	A-1
A.1	Launching the Spanish MEC Interview	A.1-1
A.2	The Spanish CAPI Interview	A.2-1
A.3	The Spanish CDISC Interview	A.3-1
A.4	The Spanish CIDI Interview	A.4-1
A.5	The Spanish Audio-CASI Interview	A.5-1

List of Exhibits

<u>Exhibit</u>		<u>Page</u>
1-1	Floor plan of the MEC.....	1-11
1-2	MEC exams and rooms.....	1-12
1-3	Examination components.....	1-15
5-1	SP Consent/Assent/Parental Brochure.....	5-4
5-2	Child SP Assent Brochure	5-14
5-3	Consent/Assent and Parental Permission for Specimen Storage and Continuing Studies.....	5-22
5-4	Section Status screen	5-28
5-5	Mental health parent interview reminder notice	5-30

TABLE OF CONTENTS (continued)

List of Exhibits (continued)

<u>Exhibit</u>		<u>Page</u>
5-6	Verify Mailing Address screen	5-31
5-7	Verify Phone Numbers screen	5-33
5-8	Verify Social Security Number screen	5-34
5-9	Critical Data Items Section Status screen	5-35
5-10	Generating the Critical Data Item Report	5-36
5-11	Critical Data Items Report	5-37
5-12	Accessing the Critical Data Items Utility	5-38
5-13	Critical Data Items Utility.....	5-38
6-1	Telephone followup (Screen 1).....	6-650
6-2	Telephone followup (Screen 2).....	6-650
6-3	Telephone followup (Screen 3).....	6-651
6-4	Telephone followup (Screen 4).....	6-652
7-1	Utilities Menu Options.....	7-2
7-2	Observation Box	7-3
7-3	NHANES Mental Health Observation Codes.....	7-4
8-1	NHANES MEC Interviewer Evaluation Form	8-2
8-2	Sample taping schedule	8-4
8-3	Taping permission form.....	8-5
8-4	QC Recording Log.....	8-6

ACRONYMS AND ABBREVIATIONS

AOM	Assistant Office Manager
BIA	Bioelectrical Impedance Analysis
CBC	Complete Blood Counts
LED	Lower Extremity Disease
CAPI	Computer-Assisted Personal Interviewing
CIDI	Composite International Diagnostic Interview
DEXA	Dual Energy X-ray Absorptiometry
DHHS	Department of Health and Human Services
DISC	Diagnostic Interview Schedule for Children
DM	Data Manager
DU	Dwelling Unit
OM	Office Manager
FM	Field Manager
HIV	Human Immunodeficiency Virus
HHANES	Hispanic Health and Nutrition Examination Survey
ISIS	Integrated Survey Information System
MEC	Mobile Examination Center
NCHS	National Center for Health Statistics
NHANES	National Health and Nutrition Examination Survey
NHANES I	National Health and Nutrition Examination Survey I
NHANES II	National Health and Nutrition Examination Survey II
NHANES III	National Health and Nutrition Examination Survey III
NHES I	National Health Examination Survey I
NHES II	National Health Examination Survey II
NHES III	National Health Examination Survey III
SP	Sample Person
STD	Sexually Transmitted Disease

National Health
and Nutrition
Examination Survey

MEC
INTERVIEWERS
PROCEDURES
MANUAL



(Revised January 2001)

TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
1	OVERVIEW OF THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY	1-1
	1.1 History of the National Health and Nutrition Examination Programs	1-1
	1.2 Overview of the Current NHANES	1-3
	1.2.1 NHANES Pilot and Dress Rehearsal	1-4
	1.2.2 Data Collection for NHANES Main Survey	1-4
	1.3 Sample Selection.....	1-6
	1.4 Field Organization for NHANES.....	1-7
	1.5 Exams and Interviews in the Mobile Examination Center (MEC)	1-10
	1.6 Confidentiality and Professional Ethics.....	1-20
2	OVERVIEW OF THE MEC INTERVIEW COMPONENT	2-1
	2.1 Purpose of the MEC Questionnaires.....	2-1
	2.2 Role and Responsibilities of the MEC Interviewer	2-2
	2.3 Procedures for Administering the MEC Interview	2-2
	2.4 Description of the MEC Questionnaires	2-3
	2.5 Data Collection Materials	2-4
3	MEC SUBSYSTEM OVERVIEW	3-1
4	EQUIPMENT, SUPPLIES, AND MATERIALS	4-1
	4.1 Description of the MEC Interview Room and Computer Equipment.....	4-1
	4.2 MEC Interview Supplies and Other Equipment	4-2
	4.2.1 Description and Use of Interview Supplies.....	4-2
	4.3 MEC Interviewer Materials	4-3
	4.4 Inventory, Equipment Setup, and Teardown Procedures.....	4-4
	4.4.1 MEC Interview Room Teardown Procedures	4-5
	4.4.2 MEC Interview Room Setup Procedures	4-5

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
5	CONDUCTING THE MEC INTERVIEW	5-1
	5.1 Component Tasks	5-1
	5.2 Obtaining Minor Assent to Participate	5-1
	5.3 Obtaining Minor Assent for Specimen Storage and Future Research	5-21
	5.4 Logging in the SP	5-24
	5.5 Conducting the Interview.....	5-24
	5.5.1 Introducing the MEC Interview to the Respondent.....	5-24
	5.5.2 Administering the Actual Questionnaire.....	5-27
	5.5.3 Recording a Status for Each Section	5-27
	5.6 Distributing the Mental Health Parent Interview Reminder Notice....	5-29
	5.7 Critical Data Items	5-31
	5.7.1 Critical Data Item Collection for SPs 12 Years of Age and Older.....	5-31
	5.7.2 Critical Data Item Collection for SPs Younger than 12 Years of Age	5-35
	5.8 Ending the Interview.....	5-39
6	MEC INTERVIEW PROTOCOL – QUESTION-BY-QUESTION SPECIFICATIONS.....	6-1
	6.1 Question-by-Question Specifications Overview.....	6-1
	6.1.1 General Rounding Rules	6-1
	6.2 The CAPI Section of the MEC Interview	6-3
	6.2.1 Beginning the CAPI Interview	6-3
	6.2.2 Respondent Selection Section (RIQ).....	6-7
	6.2.3 Current Health Status (HSQ)	6-13
	6.2.4 Kidney Conditions (KIQ).....	6-21
	6.2.5 Tobacco (SMQ).....	6-27
	6.2.6 Alcohol Use (ALQ).....	6-39
	6.2.7 Reproductive Health (RHQ)	6-45
	6.2.8 Physical Activity and Physical Fitness (PAQ).....	6-145
	6.2.9 Ending the CAPI Interview	6-161

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
6.3	Mental Health Questions for SPs Aged 8-19 Years: DISC-IV	6-163
	6.3.1 Description of the Instrument.....	6-163
	6.3.2 Structure of the Instrument.....	6-166
	6.3.3 Administering the Interview	6-172
	6.3.4 Urgent Clinical or Ethical Issues.....	6-195
	6.3.5 Working with the CDISC Software	6-195
	6.3.6 Introduction/Timeline	6-203
	6.3.7 Panic Disorder (Module A4).....	6-255
	6.3.8 Generalized Anxiety Disorder (Module A6).....	6-337
	6.3.9 Eating Disorders (Module B1)	6-421
	6.3.10 Major Depression and Dysthymia (Module C1)	6-499
	6.3.11 Procedures for Collecting Contact Information for the Parent Interview	6-649
6.4	Mental Health Questions for SPs Aged 20-39 Years: CIDI	6-653
	6.4.1 Introduction	6-653
	6.4.2 Working with the Ishell CAI System	6-654
	6.4.3 General Interviewer Instructions	6-657
	6.4.4 Probe Flow Questions	6-658
	6.4.5 Onset/Recency Questions.....	6-668
	6.4.6 Work Loss/Effort Questions	6-669
	6.4.7 Panic Disorder Question-by-Question Objectives	6-673
	6.4.8 Generalized Anxiety Disorder (GAD)	6-737
	6.4.9 Major Depression	6-775
6.5	Audio-CASI Sections of the MEC Interview	6-869
	6.5.1 Beginning the Audio-CASI Interview.....	6-871
	6.5.2 DISC Predictive Scale – Youth Conduct Disorder (YCQ) .	6-875
	6.5.3 Tobacco (SMQ).....	6-881
	6.5.4 Alcohol Use (ALQ).....	6-901
	6.5.5 Drug Use (DUQ).....	6-905
	6.5.6 Sexual Behavior (SXQ).....	6-915
	6.5.7 Kidney Conditions (KIQ).....	6-933
	6.5.8 Ending the Audio-CASI Interview	6-943
7	MENTAL HEALTH REFERRALS	7-1
	7.1 Referral Procedures.....	7-1
	7.2 Situations Requiring a Mental Health Referral.....	7-1
	7.3 Generating a Mental Health Observation	7-2

TABLE OF CONTENTS (continued)

<u>Chapter</u>		<u>Page</u>
8	QUALITY CONTROL.....	8-1
	8.1 Data Edits.....	8-1
	8.2 Observation and Review of Interviews.....	8-1
	8.2.1 Procedures for Audiotaping the Interview	8-3
	8.3 Data Monitoring and Review.....	8-7

List of Appendixes

<u>Appendix</u>		
A	SPANISH MEC INTERVIEW	A-1
	A.1 Launching the Spanish MEC Interview	A.1-1
	A.2 The Spanish CAPI Interview	A.2-1
	A.3 The Spanish CDISC Interview	A.3-1
	A.4 The Spanish CIDI Interview	A.4-1
	A.5 The Spanish Audio-CASI Interview	A.5-1

List of Exhibits

<u>Exhibit</u>		<u>Page</u>
1-1	Floor plan of the MEC.....	1-11
1-2	MEC exams and rooms.....	1-12
1-3	Examination components.....	1-15
5-1	SP Consent/Assent/Parental Brochure.....	5-4
5-2	Child SP Assent Brochure	5-14
5-3	Consent/Assent and Parental Permission for Specimen Storage and Continuing Studies.....	5-22
5-4	Section Status screen	5-28
5-5	Mental health parent interview reminder notice	5-30

TABLE OF CONTENTS (continued)

List of Exhibits (continued)

<u>Exhibit</u>		<u>Page</u>
5-6	Verify Mailing Address screen	5-31
5-7	Verify Phone Numbers screen	5-33
5-8	Verify Social Security Number screen	5-34
5-9	Critical Data Items Section Status screen	5-35
5-10	Generating the Critical Data Item Report	5-36
5-11	Critical Data Items Report	5-37
5-12	Accessing the Critical Data Items Utility	5-38
5-13	Critical Data Items Utility.....	5-38
6-1	Telephone followup (Screen 1).....	6-650
6-2	Telephone followup (Screen 2).....	6-650
6-3	Telephone followup (Screen 3).....	6-651
6-4	Telephone followup (Screen 4).....	6-652
7-1	Utilities Menu Options.....	7-2
7-2	Observation Box	7-3
7-3	NHANES Mental Health Observation Codes.....	7-4
8-1	NHANES MEC Interviewer Evaluation Form	8-2
8-2	Sample taping schedule	8-4
8-3	Taping permission form.....	8-5
8-4	QC Recording Log.....	8-6

ACRONYMS AND ABBREVIATIONS

AOM	Assistant Office Manager
BIA	Bioelectrical Impedance Analysis
CBC	Complete Blood Counts
LED	Lower Extremity Disease
CAPI	Computer-Assisted Personal Interviewing
CIDI	Composite International Diagnostic Interview
DEXA	Dual Energy X-ray Absorptiometry
DHHS	Department of Health and Human Services
DISC	Diagnostic Interview Schedule for Children
DM	Data Manager
DU	Dwelling Unit
OM	Office Manager
FM	Field Manager
HIV	Human Immunodeficiency Virus
HHANES	Hispanic Health and Nutrition Examination Survey
ISIS	Integrated Survey Information System
MEC	Mobile Examination Center
NCHS	National Center for Health Statistics
NHANES	National Health and Nutrition Examination Survey
NHANES I	National Health and Nutrition Examination Survey I
NHANES II	National Health and Nutrition Examination Survey II
NHANES III	National Health and Nutrition Examination Survey III
NHES I	National Health Examination Survey I
NHES II	National Health Examination Survey II
NHES III	National Health Examination Survey III
SP	Sample Person
STD	Sexually Transmitted Disease

1. OVERVIEW OF THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

This chapter provides a general description of the health examination surveys conducted by the National Center for Health Statistics (NCHS) and the current National Health and Nutrition Examination Survey (NHANES). It also provides an overview of the tasks that staff perform during the survey.

1.1 History of the National Health and Nutrition Examination Programs

This NHANES is the eighth in a series of national examination studies conducted in the United States since 1960.

The National Health Survey Act, passed in 1956, gave the legislative authorization for a continuing survey to provide current 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: (1) the people themselves by direct interview; (2) clinical tests, measurements, and physical examinations on sample persons; and (3) places where persons received medical care such as hospitals, clinics, and doctors' offices.

To comply with the 1956 act, between 1960 and 1984, the National Center for Health Statistics (NCHS), a branch of the U.S. Public Health Service in the U.S. Department of Health and Human Services, has conducted seven separate examination surveys to collect interview and physical examination data.

The first three national health examination surveys were conducted in the 1960s:

1. 1960-62 – National Health Examination Survey I (NHES I)
2. 1963-65 – National Health Examination Survey II (NHES II)
3. 1966-70 – National Health Examination Survey III (NHES III)

NHES I focused on selected chronic disease of adults aged 18-79. NHES II and NHES III focused on the growth and development of children. The NHES II sample included children aged 6-11, while NHES III focused on youths aged 12-17. All three surveys had an approximate sample size of 7,500 individuals.

Beginning in 1970 a new emphasis was introduced. The study of nutrition and its relationship to health status had become increasingly important as researchers began to discover links between dietary habits and disease. In response to this concern, under a directive from the Secretary of the Department of Health, Education and Welfare, the National Nutrition Surveillance System was instituted by NCHS. The purpose of this system was to measure the nutritional status of the U.S. population and monitor nutritional changes over time. A special task force recommended that a continuing surveillance system include clinical observation and professional assessment as well as the recording of dietary intake patterns. Thus, the National Nutrition Surveillance System was combined with the National Health Examination Survey to form the National Health and Nutrition Examination Survey (NHANES). Four surveys of this type have been conducted since 1970:

1. 1971-75 – National Health and Nutrition Examination Survey I (NHANES I)
2. 1976-80 – National Health and Nutrition Examination Survey II (NHANES II)
3. 1982-84 – Hispanic Health and Nutrition Examination Survey (HHANES)
4. 1988-94 – National Health and Nutrition Examination Survey (NHANES III)

NHANES I, the first cycle of the NHANES studies, was conducted between 1971 and 1975. This survey was based on a national sample of about 28,000 persons between the ages of 1-74. Extensive data on health and nutrition were collected by interview, physical examination, and a battery of clinical measurements and tests from all members of the sample.

NHANES II began in 1976 with the goal of interviewing and examining 28,000 persons between the ages of 6 months to 74 years. This survey was completed in 1980. To establish a baseline for assessing changes over time, data collection for NHANES II was made comparable to NHANES I. This means that in both surveys many of the same measurements were taken in the same way, on the same age segment of the U.S. population.

While the NHANES I and NHANES II studies provided extensive information about the health and nutritional status of the general U.S. population, comparable data were not available for many of the ethnic groups within the United States. Hispanic HANES (HHANES), conducted from 1982 to 1984, produced estimates of health and nutritional status for the three largest Hispanic subgroups in the United States—Mexican Americans, Cuban Americans, and Puerto Ricans—that were comparable to the estimates available for the general population. HHANES was similar in design to the previous HANES studies, interviewing and examining about 16,000 people in various regions across the country with large Hispanic populations.

NHANES III, conducted between 1988 and 1994, included about 40,000 people selected from households in 81 counties across the United States. As previously mentioned, the health status of minority groups is often different than the health status and characteristics of nonminority groups, so black Americans and Mexican Americans were selected in large proportions for NHANES III. Each group comprised 30 percent of the sample. NHANES III was the first survey to include infants as young as 2 months of age and to include adults with no upper age limit. To obtain generalizable estimates, infants and young children (1-5 years) and older persons (60+ years) were sampled at a higher rate than previously. NHANES III also placed an additional emphasis on the effects of the environment upon health. Data were gathered to measure levels of pesticide exposure, presence of certain trace elements in the blood, and amounts of carbon monoxide present in the blood. A home examination was incorporated for those persons who were unable or unwilling to come to the exam center but would agree to an abbreviated examination in their homes.

In addition to NHANES I, NHANES II, Hispanic HANES, and NHANES III, several other HANES projects have been underway since 1982. These projects have been a part of the HANES Epidemiologic Follow-up Survey, a multiphase survey conducting follow-up interviews with the NHANES I population in order to provide longitudinal data on the health of the U.S. population.

1.2 Overview of the Current NHANES

This NHANES follows in the tradition of past NHANES surveys, continuing to be a keystone in providing critical information on the health and nutritional status of the U.S. population.

The major difference between the current NHANES and previous surveys is that NHANES is intended to become a **continuous annual survey**. NHANES is also linked to the National Health Interview Survey following the Survey Integration Plan proposed by DHHS. NHANES collects data from a representative sample of the U.S. population every year. This new design allows annual statistical estimates for broad groups and specific race-ethnicity groups as well as flexibility in the content of the questionnaires and exam components. New technologic innovations in computer-assisted interviewing and data processing result in rapid and accurate data collection, data processing, and publication of results.

The number of people examined in a 12-month period will be about the same as in previous NHANES, about 5,000 randomly selected subjects a year from 15 different locations across the nation.

The data from the NHANES are used by government agencies, state and community organizations, private researchers, consumer groups, companies, and health care providers.

1.2.1 NHANES Pilot and Dress Rehearsal

During 1998 and 1999 two comprehensive tests were conducted in the Washington, DC area in preparation for the main study—a pretest and a dress rehearsal. In both tests, respondents were interviewed in their home and then asked to participate in a physical examination in the MEC. Data collected during the pretest and dress rehearsal are not included in the main survey database and no analyses were performed.

The pretest evaluated household interviewing procedures and MEC procedures, including the physical exams, the examination center interviews, the field office and exam center, and the Integrated Survey Information System (ISIS). The dress rehearsal was the final trial run for all survey procedures.

1.2.2 Data Collection for NHANES Main Survey

Data collection on the NHANES main survey began early in 1999 and will continue for approximately 6 years at 88 locations (stands) across the United States. Each year approximately 7,000 individuals of all ages, in households across the United States, will be randomly selected to participate in the main survey. The study respondents include whites as well as an oversample of blacks and Mexican Americans. The study design also includes a representative sample of these groups by age, gender, and

income level. Adolescents and older persons will also be oversampled. The overall goals of data collection are to:

- Estimate the number and percentage of persons in the U.S. population and designated subgroups with selected diseases and risk factor;
- Monitor trends in the prevalence, awareness, treatment, and control of selected diseases;
- Monitor trends in risk behaviors and environmental exposure;
- Analyze risk factors for selected diseases;
- Study the relationships between diet, nutrition, and health; and
- Explore emerging public health issues and new technologies.

Randomly selected persons are invited to take part in the survey by first being interviewed in their homes. Household interview data are collected via computer-assisted personal interviewing (CAPI) and include demographic, socioeconomic, dietary, and health-related questions. Upon completion of the interview, respondents are asked to participate in a physical examination. The examination is conducted in a specially equipped and designed Mobile Examination Center (MEC), consisting of four trailers. The MEC houses the state-of-the-art exam equipment and is divided into rooms to assure the privacy of each study participant during the exams and interviews. The examination includes a physical and dental examination conducted by a physician and a dentist, laboratory tests, a variety of physical measurements, and other health interviews conducted by highly trained medical personnel.

Participants who are 50 years and older or less than 1 year old and are unable or unwilling to travel to the MEC will be offered a home examination administered by an examiner from the MEC. The household interviews and MEC exam combined will collect data in the following important health-related areas:

- Cardiovascular and respiratory disease;
- Vision;
- Hearing;
- Mental illness;
- Growth;
- Infectious diseases and immunization status in children;
- Obesity;

- Dietary intake and behavior;
- Nutritional status;
- Disability;
- Skin diseases;
- Environmental exposures;
- Physical fitness; and
- Other health-related topics.

1.3 Sample Selection

A sample is defined as a representative part of a larger group. Since it is impossible to interview and examine everyone in the U.S. for NHANES, a representative sample is taken of the U.S. population. 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 a way that accurately represents the whole population. Statisticians calculate the size of the sample needed and take into consideration the geographic distribution and demographic characteristics of the population, such as age, gender, race, and income.

An introductory letter is sent to each household in the sample. A few weeks after the letter goes out, interviewers visit each listed household and use carefully designed screening procedures to determine whether any residents are eligible for the survey. If eligible residents are present, the interviewer then proceeds to introduce the study, presents the Sample Person (SP) a survey brochure, and obtains a signed consent for the household interview. The brochure contains detailed information on the survey, the household interview, and the MEC examination.

A signed consent form must be obtained from each eligible individual before the household interview can be conducted. A refusal to sign the consent form is considered a refusal to participate in the survey. After the interview is completed, the interviewer then explains the MEC exam, obtains another signed consent form for the MEC exam, and contacts the field office to schedule a MEC appointment for the SP. All SPs aged 12 years and older must sign the Examination Consent forms to participate in the MEC examination. Parental consent is also required for SPs under 18 years of age. SPs aged 7-11 years old are asked to sign the Examination Assent Form. An additional consent form is required for consent to future general research for both adults (ages 18+) and parents of children under 18 years. This consent

form gives permission to store a small sample of blood and urine for future specimen testing. A refusal to sign the MEC consent or assent form is considered a refusal to participate in the examination phase of the survey. Examinations will not be performed on sample persons who do not sign a consent form.

1.4 Field Organization for NHANES

There are two levels of field organization for this study - the home office staff and the field staff.

- **Home Office Staff from Westat** – Project staff from Westat are responsible for overseeing the field teams and field work.
- **Field Staff** – The field staff consists of three groups of employees: Stand office staff, the interviewers, and the MEC staff.
 - **Stand Office Staff** – For the main survey, an office will be opened in every stand. Each stand office will include a study manager, an office manager (OM), a field manager (FM), three assistant office managers (AOMs), and a data manager (DM).

The **study manager** is responsible for the overall management of operations at a stand.

The **office manager** is responsible for the stand office operations and is the main conduit for the flow of work and information between the MEC and the household interviewing staff. S/he will supervise one or more local office clerks hired to assist with office activities.

The **field manager** has primary responsibility for the supervision of the household interviewers (health representatives).

The **assistant office managers** are primarily responsible for data entry into the Integrated Survey Information System (ISIS), editing data collection materials, and verification of interviewer work. They report to the office manager.

The **data manager** assists in the setup and testing of computer systems and telecommunications hookups in the field. S/he also coordinates the maintenance and repair of all field computer systems with the home office and external vendors and acts as the field “help desk” person.

- **Interviewers** – This staff is primarily responsible for identifying and enrolling the survey participants, conducting the household interviews, and appointing the study participants for the MEC exam. Specifically, interviewers will locate occupied residential dwelling units, administer the Screener to select eligible sample persons, obtain signed consents to the household interview, conduct the interviews, set up examination appointments, obtain consents for the MEC

exam, conduct field reminders for MEC appointments, and assist in rescheduling broken, cancelled, and no-show appointments.

Several times a week, interviewers visit the stand office and report to the field manager. During the course of the study, interviewers also interact on a daily basis with other field office staff and home office staff.

- **MEC Staff** – This staff of health professionals conducts the health exams. The main study includes two exam teams.

There are 17 individuals on each traveling team: 1 MEC manager, 1 MEC coordinator, 1 licensed physician, 1 licensed dentist, 3 medical technologists, 4 health technicians, 2 MEC interviewers, 2 dietary interviewers, 1 phlebotomist, and 1 home examiner. In addition, local assistants are recruited, trained, and employed at each stand to assist the exam staff.

The following section describes the steps that are always completed prior to the opening of a stand and an overview of the tasks that interviewers are expected to perform. Highlighted items are basic concepts critical to the conduct of the study.

Steps completed prior to interviewing include:

- Statisticians scientifically select certain segments in the sampling area. A segment is an area with definite boundaries, such as a city block or group of blocks containing a cluster of households.
- Twelve weeks before data collection begins, NHANES staff list the segments. Listing is the systematic recording on special forms of the address of every dwelling unit (DU) located within the segment. Commercial buildings and other structures not intended as living quarters are not listed.
- A sample of dwelling units is selected from the listing forms. This sample is the group of addresses that interviewers visit in order to conduct interviews.
- Immediately before data collection begins, an advance letter is sent to each dwelling unit with a mailing address. This letter briefly describes the study and inform the household that an interviewer will contact them in the near future.

The tasks interviewers perform when they arrive at a stand include:

1. After the successful completion of training, interviewers are given an assignment of sampled dwelling units to contact. Each assignment consists of pre-labeled Household Folders, pre-labeled Neighbor Information Forms, and the appropriate Segment Folder.
2. Using addresses on the Household Folders and listing/mapping materials in the Segment Folder, interviewers locate these dwelling units.
3. If a selected address is not a dwelling unit or is not occupied, interviewers complete the “Vacant/Not a DU Section” on the Screener Non-Interview Form.

4. In an occupied residential dwelling unit, interviewers contact an adult who lives in the selected household and administer the Screener using a laptop computer.

The Screener is an interview that lists all the individuals who live in the household, divides the household into families, and collects all the demographic characteristics necessary to immediately determine if there are persons in the household eligible for further interviewing.

All instructions necessary to determine eligibility and to select sample persons (SPs) are programmed in the CAPI Screener.

5. If all persons in a household are ineligible, no further work is done with the case. When eligible household members are identified, interviewers continue to conduct all the necessary tasks associated with the case.
6. In eligible households, the interviewer obtains a signed interview consent form prior to completing the medical history and/or the family questionnaire.
7. Next, the appropriate medical history CAPI interview is administered to eligible respondents. The questions asked depend on the age of the SP.
8. In each household containing children aged 1-5, floor and window sill dust samples are obtained. These samples provide information on lead levels in the household environment.
9. A Family questionnaire is also administered to one adult family member from each eligible family in the household.
10. Next, an appointment is scheduled for each SP, coordinating the MEC schedule and the SP schedule.
11. Interviewers then obtain signed consent form(s) for each SP for the examination, call the field office to confirm the examination appointment(s), and give each SP an appointment slip.
12. If there is more than one eligible family in a household, this process is repeated with each additional family.
13. Interviewers record the result of each contact or attempted contact with the household on the Call Record located in the Household Folder.
14. Interviewers also support the survey by conducting field reminders prior to MEC appointments and reschedule broken, cancelled, or no-show MEC appointments.
15. If an interviewer is unable to complete any of the questionnaires or procedures for any SP, an SP Card is completed. This card documents the problems encountered in completing one or more tasks.
16. Interviewers check for missed DUs and/or structures when instructed to do so. If any are found, the Missed DU or Missed Structure Procedures is implemented and appropriate forms will be completed.

17. When an interview has been completed, interviewers edit their work, carefully reviewing all forms for completeness and legibility.
18. Interviewers report in person to the FM at the stand office for regularly scheduled conferences, usually every other day. During these conferences, interviewers discuss completed cases, discuss problems with incomplete cases, receive new case assignments, and report time, expenses, and production.
19. To insure the accuracy and completeness of the survey, all interviewer work is edited by the field office staff, and then validated by recontacting respondents. After this review, supervisors provide interviewers with feedback concerning the quality of the work.
20. At the end of each stand field period, interviewers return all interviewing materials to the supervisor.

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

Examinations and interviews are conducted in Mobile Examination Centers (MEC), which is composed of four specially equipped trailers. Each trailer is approximately 45 feet long and 10 feet wide. The trailers are set up side-by-side and connected by enclosed passageways. During the main survey, detachable truck tractors drive the trailers from one geographic location to another.

Exhibit 1-1 shows a floor plan for the MEC. The interior of the MEC is designed specifically for this survey. For example, the trailers are divided into specialized rooms to assure the privacy of each study participant during exams and interviews. Many customized features have been incorporated including an audiometry room that uses a soundproof booth, a wheelchair lift, and a wheelchair-accessible bathroom available to assist participants with mobility problems. Exhibit 1-2 shows the locations of the various exams within the MEC.

Exhibit 1-1. Floor plan of the MEC

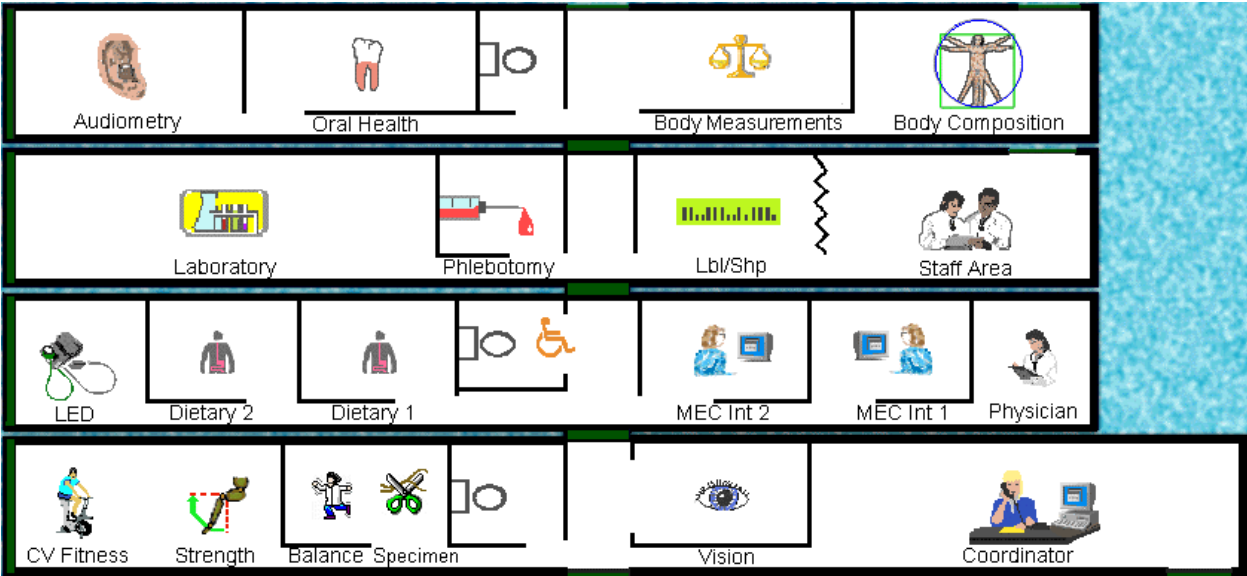


Exhibit 1-2. MEC exams and rooms

<u>Trailer</u>	<u>Room</u>	<u>Room Use</u>
Trailer 1	Reception area Vision room Balance/Specimen Collection Fitness	Welcoming and waiting area for SPs Vision tests Balance test, hair, and MRSA collection Cardiovascular fitness and muscle strength
Trailer 2	Physician MEC Interview MEC Interview Dietary Interview Dietary Interview Lower Extremity Disease	Physical examination Health interview Health interview Dietary interview Dietary interview Testing for lower extremity pulses and sensitivity
Trailer 3	Venipuncture Laboratory Label/shipping area Staff lounge	Drawing of blood samples Processing of urine and blood samples Lab area for labeling and shipping specimens Staff area that houses main computer system
Trailer 4	Total Body Composition Body measures Dental Audiometry/Tympanometry	Total body composition scans and bioimpedance Body measurements Dental exam Hearing tests

Exam Sessions. The MEC operates 5 days a week and includes weekday, evening, and weekend sessions. Two 4-hour sessions are scheduled each day with approximately 10 SPs per session. During a stand, work weeks rotate to offer a variety of MEC appointments on weekday mornings, afternoons, and evenings, and every weekend.

Exam Team Responsibilities. There are 17 individuals on each exam team. In addition, a local assistant will be hired to assist the staff in managing examinee flow. The duties of the exam team members are summarized below:

- One MEC manager supervises the exam staff, manages the facility, and supports exam operations.
- One coordinator directs the flow of SPs through the MEC examination process. The coordinator manages all SP appointments, verifies that all components are completed for each SP, and exits SPs from the MEC.
- One physician conducts the medical examination and records results, reviews the results of the complete blood count and pregnancy test, and serves as the safety officer for the MEC.

- One dentist conducts the dental exam and calls the results to a health technician who records the findings.
- Two health (MEC) interviewers administer questionnaires for physical and mental health information.
- Two dietary interviewers administer the dietary questionnaire. The interviewers record a 24-hour dietary recall of the types and amounts of foods consumed by the SP in the last 24 hours.
- Four certified radiologic technicians take and record body measurements, perform balance tests, vision tests, cardiovascular fitness tests, muscle strength assessments, lower extremity measures, total body composition (DEXA) scans, bioimpedance (BIA) tests, administer hearing tests, and collect hair and MRSA specimens. In addition, the technicians record findings for the dental examiner.
- Three medical technologists conduct clinical laboratory tests on biological and environmental specimens, record the results of the tests, and prepare and ship specimens to various laboratories.
- One phlebotomist administers the phlebotomy questionnaire draws blood from SPs, and recruits SPs for special studies.
- One home examiner performs home exams for SPs aged 50 years and older or under 1 year old who are unable or unwilling to travel to the MEC. The home exam lasts approximately 1 hour and includes the following:
 - Height;
 - Weight;
 - Skinfold measures;
 - Blood pressure;
 - Near vision;
 - Blood samples and nasal (MRSA) swab collection; and
 - Reproductive history for females.

The home examiner assists the MEC laboratory and phlebotomy staff when not performing home exams.

Each 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 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 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.

Examination Components. The full examination for an adult takes approximately 3½ hours, but the actual length depends on the SP's age. Some exams are done only on certain age groups so the exam profiles vary, even among adult SPs. The exam components are described briefly below and summarized in Exhibit 1-3:

- **Anthropometry**

The purpose of the anthropometry component is to provide: (1) nationally representative data on selected body measures, (2) estimates of the prevalence of overweight and obesity, (3) data to study the association between body measures and such health conditions and risk factors as cardiovascular disease, diabetes, hypertension, and activity and dietary patterns, and (4) data to monitor growth and development in children. A total of 11 body measurements are collected, but the number and type of measures varies with the age groups.

Exhibit 1-3. Examination components

Component	Ages
Anthropometry	All
Audiometry/Tympanometry	20-69
Balance	40+
BIA	8-49
Cardiovascular Fitness	12-49
Dietary Interview	All
Hair Collection	1-5 years, females 16-49
Muscle Strength	50+
Lower Extremity Disease	40+
MEC Interview	8+
Mental Health	8-19 years, 20-59 years (half-sample with audiometry)
MRSA sample collection	1+
Oral Health	2+
Physician Exam	All
Total Body Composition	8+
Urine Collection	6+
Venipuncture	1+
Vision	12+
VOC	20-59

■ **Balance**

Balance disorders, disequilibrium, and dizziness from vestibular disorders constitute a major public health problem. Primary disorders may be hidden by their consequences, such as falls, while subtle dysfunction may underlie difficulties in learning, writing, reading, and in everyday activities. The main objectives of the balance test are to obtain prevalence data, examine the relationship between balance disorders and other factors, and to characterize normal and disordered balance and spatial orientation. The standard Romberg test is used to measure postural sway.

■ **Bioelectrical Impedance Analysis (BIA)**

The purpose of the BIA exam is to monitor secular trends in overweight prevalence, describe the prevalence of obesity, and examine the relationship between overweight and obesity and other examination measures. BIA measures the electrical impedance of body tissues and is used to assess fluid volumes, total body water, body cell mass, and fat-free body mass.

■ **Cardiovascular Fitness and Muscular Strength**

Evaluation of physical fitness provides nationally representative data on measures of physical fitness, estimate the prevalence of persons at risk due to sedentary habit and poor physical fitness, and provide data to study the relationship between leg strength, lower extremity function, and activity limitations. Cardiovascular fitness is assessed with a submaximal treadmill test on examinees aged 12 through 49 years. Lower body strength is assessed using a timed measured walk and isokinetic strength testing of the knee extensors and flexors in examinees aged 50 and older.

- **Dietary interview**

The goal of the dietary component is to estimate total intake of foods, food energy and nutrients, nonnutrient food components, and plain drinking water by the U.S. population; and assess dietary behaviors and the relationship of diet to health. Quantitative dietary intake data is obtained for all subjects by means of a 24-hour dietary recall interview using a computer-assisted dietary data entry system.

- **Hair collection**

The purpose of the hair component is to obtain a suitable biological sample that can be used for the determination of total mercury levels in hair. Approximately 100 strands are collected from SPs aged 1-5 years and women aged 16-49 years.

- **Hearing**

The goals of the hearing exam are to obtain normative data on the hearing status of the adult U.S. population, and to evaluate certain covariates that may be related to hearing loss, such as occupational exposure. The hearing component tests adults by performing pure tone audiometry and tympanometry. Because pure tone screening by itself may not be sensitive enough to detect middle ear disease, tympanometry is conducted to provide an estimate of tympanic membrane compliance.

- **Laboratory**

The laboratory component includes the collection and processing of various biological and environmental specimens including blood for subjects 1 year and older, urine for subjects 6 years and older. On-site pregnancy testing excludes pregnant women from other examination components such as DEXA, BIA, and cardiovascular fitness testing. Complete Blood Counts (CBCs) are also performed in the MEC laboratory. All other specimen testing is performed by Federal, private, and university-based laboratories under contract to NCHS.

- **Lower Extremity Disease (LED)**

The purpose of this component is to determine the prevalence of LED and its risk factors. Simple and reproducible measures of lower extremity arterial disease are obtained. Peripheral neuropathy is evaluated by measurement of cutaneous pressure sensation in the feet. Foot deformities permit the estimation of prevalence of those at high risk for the late-stage complications of LED.

- **MEC Interview**

The MEC Interview consists of questionnaire sections designed to obtain information on health behaviors, specific conditions, medical history, and risk factors. The information collected in the interview is intended to assist researchers in analyzing the data collected in the other examination components. The interview is administered to all age-eligible subjects, or a suitable proxy, using computer-assisted interviewing software.

- **Mental Health**

The mental health assessment is used to estimate the prevalence of selected disorders in the U.S. and to describe the degree of comorbidity between mental health disorders and other medical conditions and biological risk factors. Assessments are made during the MEC Interview using relevant portions of the Diagnostic Interview Schedule for Children (DISC) and the Composite International Diagnostic Interview (CIDI) for adults.

- **Methicillin-Resistant *S. Aureus* (MRSA) Sample Collection**

A nasal swab specimen collection for Methicillin-Resistant *Staphylococcus aureus* (*S. aureus*) is obtained on SPs aged 1+ years for the purpose of estimating the prevalence of MRSA in the population. Antimicrobial resistance to *S. aureus* has increased so dramatically, particularly in the hospital setting, that currently only one treatment option exists for this organism. NHANES is the first population-based prevalence study of MRSA. No other population-based studies or national surveillance efforts are available to provide reliable national estimates for this problem.

- **Oral Health**

This component monitors oral health status, risk factors for disease, and access to preventive and treatment services. The exam consists of a series of subcomponents which assess dentition and periodontal disease.

- **Physicians' Exam**

Blood pressure assessment and discussion of testing for sexually transmitted disease are the primary elements of the physician's exam. The purpose of assessment of blood pressure is to monitor prevalence and trends in major cardiovascular conditions and risk factors and to evaluate prevention and treatment programs targeting cardiovascular disease. The physician discusses the purpose of STD testing and arranges for SPs to select a unique password with which to phone NCHS and obtain test results.

- **Total Body Composition**

This component is composed of the BIA and Dual Energy X-ray Absorptiometry (DEXA). The purpose of the DEXA scan is to gain insights into age, gender, and racial/ethnic differences in the skeleton relative to other measures of body composition such as total muscle and fat mass, as well as behavioral factors such as diet and activity. A total body scan using dual energy X-rays is performed to provide measures of bone mineral content, bone mineral density, muscle and fat mass.

- **Vision**

The vision examination consists of a near vision acuity test, a distance vision acuity test, an eyeglass prescription determination (when appropriate), and an automated refraction measurement. Information from the component may be used to estimate the prevalence of visual acuity impairment and distribution of refractive error in the U.S. population. Data are also used to evaluate screening strategies for visual impairment and eye disease, and evaluate functional impairment related to vision.

- **Volatile Organic Compounds (VOC)**

Information on levels of exposure to a selected group of volatile organic compounds is collected on a subsample of the survey population to assist in determining whether regulatory mechanisms are needed to reduce the levels of hazardous air pollutants to which the general population is exposed. Participants receive sampling badges to wear for 48 hours and return to the MEC with the badge for a second blood draw in 48-72 hours. An additional remuneration is paid for this test.

Second Exams

Approximately 5 percent of SPs aged 12-69 who are examined in each stand are asked to return for a second MEC exam. Data from the second exam is used to obtain quality control data of survey procedures. The second exam components are similar, but modified versions of the original MEC exams. SPs who return for a second exam are included as a convenient VOC sample. Two additional VOC blood tubes are drawn and a questionnaire is administered. Also, not all components are repeated. Exams are generally conducted by the same examiner who obtained the first exam.

An additional 5 percent of SPs aged 2 and older are invited to repeat only the dietary interview, either in the MEC or by telephone.

SPs who return for second exams receive remuneration for their visit and transportation.

Sample Person Remuneration. All examinees receive remuneration for the MEC visit as well as payment for transportation expenses. The MEC visit remuneration is age-related and includes an

extra incentive if the SP fasts prior to the exam. Additionally, remuneration is offered for the VOC component, the home exam, and the second MEC exam.

Report of Exam Findings. Examinees receive the results of many of the tests and exams conducted in the MEC, though some results are used only for research and are not reported.

One report, a Preliminary Report of Findings, is produced for the SP on the day of their examination and includes results that are immediately available and require no further evaluation or interpretation. Just prior to the examinee's departure from the MEC, the coordinator prints a report that includes height, weight, and body mass index, complete blood count, blood pressure, and results from the audiometry, cardiovascular fitness, lower extremity disease, vision, and dental exams. The MEC physician reviews the blood pressure and complete blood count test results for abnormalities and discusses any problems with the SP (or their parent). The dentist also discusses the dental recommendations with the SP. Approximately 12-16 weeks after the exam, NCHS mails the remainder of the examination results to the SP after appropriate clinical or quality reviews are completed. Seriously abnormal results are reported to the SP via telephone by NCHS before the remaining findings are mailed.

Certain tests, such as those for sexually transmitted diseases (chlamydia, gonorrhea, syphilis, Herpes simplex 1 and 2, bacterial vaginosis, and Trichomoniasis) and human immunodeficiency virus (HIV) are released only to the sample person using a specially devised procedure requiring a unique password.

Tests and procedures conducted in the MEC are not considered diagnostic exams and are not a substitute for an evaluation by a medical professional. No clinical treatments or health interventions of any type are performed in the MEC. If a health problem is discovered during the course of the MEC exam, the physician offers to contact the examinee's personal healthcare provider or recommend a local physician or clinic for follow-up care. If a sample person is found to have a serious condition requiring immediate attention, the local rescue squad may be summoned or the SP will be advised to seek immediate medical treatment.

Dry Run Day. At the beginning of the examination period, one-half day is devoted to calibrating instruments, practicing MEC procedures, and collecting biological specimens that serve as blind quality control samples. A dry run day is scheduled immediately prior to the first exam day of every stand to make sure that all equipment is operational, supplies are adequate, and the facility is working properly. Any problems are corrected quickly before the "real" examinations begin. All procedures in the dry run are completed as though the actual exam session was being conducted. The only difference is that

the examinees are actual volunteers who are not part of the sample for the survey. Volunteers may include local residents, local officials, or field employees or guests of NCHS.

1.6 Confidentiality and Professional Ethics

All information regarding this study must be kept strictly confidential except as required by law. This includes location of survey sites. 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 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 survey. No participant names will be included in any reports prepared about the survey and neither NCHS nor the contractor 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. A great deal of effort is expended in obtaining cooperation from many national, regional, state, and local officials and the general public. It is the responsibility of every field employee to build on the integrity of the survey to encourage continued access to study participants during current and future surveys. Professional conduct, both on and off the job, is extremely important.

Each staff member has a responsibility for promoting good public relations. The Public Health Service and the contractor will be judged by the actions of the staff both on and off duty; consequently staff must be discreet in speech and action. Personal appearance and behavior must be governed by these same considerations. Please be aware of the audience at all times and avoid statements or actions that could shed an unfavorable light on the survey.

Staff will be asked to sign a pledge of confidentiality before the survey begins. This pledge states that they are prohibited by law from disclosing any information while working on the survey to

anyone except authorized staff of NCHS and the contractor, and that they agree to abide by the contractor's Assurance of Confidentiality.

2. OVERVIEW OF THE MEC INTERVIEW COMPONENT

The MEC Interview component of the NHANES consists of the use of questionnaires to address a variety of health-related topics. The MEC questionnaires are designed to obtain information concerning particular health behaviors, thoughts, feelings, and risk factors. The questionnaires are administered to examinees 8 years of age or older. The MEC interview is not repeated for SPs receiving the second exam.

2.1 Purpose of the MEC Questionnaires

There are three main sections of the NHANES MEC Interview. The first section consists of questions in several topic areas administered through a computer-assisted personal interviewing (CAPI) system. The individual questionnaire health-related sections in CAPI are selectively administered to subjects based upon their age and sex.

The second section of the interview consists of a series of mental health questions, which are also CAPI-based, and selectively administered based upon age.

The third section of the interview is completed through the use of an audio computer-assisted-self-interviewing (CASI) system. This system is generally used for sensitive topic areas. The subject listens to a recorded voice through a headset, as well as reading the questions on the screen. The subject then indicates his or her response to a question by touching the computer screen.

Questions in each of these sections are included for specific reasons, which relate to other NHANES components. For example, alcohol consumption and tobacco use are included since previous research has demonstrated that these risk factors may affect other health functions. The main purpose of the reproductive health section is to obtain information on pregnancy and reproductive history, birth control practices, and other reproductive-health-related topics. The drug use questionnaire provides a brief assessment of the subject's use of marijuana, cocaine, and injectable street drugs. The mental health sections provide in-depth assessments of depressive disorders, panic disorder, generalized anxiety disorder, and for children, eating disorders and conduct disorder.

2.2 Role and Responsibilities of the MEC Interviewer

As MEC interviewer you are to administer the MEC Questionnaires in a standardized fashion. You must be able to obtain cooperation of the sampled person (SP) in a friendly yet professional manner, in order to gain and maintain his or her focus on the various details of the MEC interview. Since many of the topics covered in the interview are of a sensitive nature, SPs may be reluctant to respond to certain items. Therefore, an important aspect of your role is to establish a working relationship with each SP and to maintain that rapport throughout the entire interview. You must provide a supportive environment with proper encouragement and reassurances in order to avoid invalid results.

You provide an important link between the researchers who have developed the questionnaire as a means of characterizing the sample population and the sample persons whose individual answers provide the data for the researchers to analyze. Moreover, you must be able to ensure that each sample person hears and understands every item, and that each sample person provides full and meaningful responses. Then you must record all responses precisely while maintaining interaction and rapport with the participant.

The quality of the data obtained in the MEC interview depends on a high degree of consistency among interviewers in their presentation of the interview content and in their recording of the responses. In this way, the information gathered by different MEC interviewers can be combined to create a valid and reliable characterization of the respondents' health behaviors, attitudes, and experiences.

2.3 Procedures for Administering the MEC Interview

Initially, you must create a warm, accepting, and private setting in which to interview. In greeting each SP by name, and introducing yourself to each SP, you convey a positive regard for the SP.

After welcoming the SP and logging him or her into the system, you should read the introduction, which will be printed on the computer screen. Following several practice sessions and actual interviews, this language should become more comfortable and familiar to you. This will enable you to paraphrase the introduction, as long as you are careful to include all important points. Your explanation of the purpose and nature of the interview should help put the SP at ease. You should assure each SP that there are no right or wrong answers to the questionnaire items.

Following the introduction you provide for each SP, individuals may have additional questions or concerns prior to the start of the interview. If a sample person asks for a description of the

Revised 5/15/00

types of questions asked in the MEC interview, keep the description of those questions quite general. Due to the variety of questions and the sensitive nature of certain items, a detailed explanation of the topic areas may intimidate the SPs or negatively influence their participation. Tell the respondent that the questionnaire includes numerous items within several health-related areas, and that most items require only short answers or simply yes/no responses, while a few ask for more complete answers. Emphasize that each part of the questionnaire will be explained in more detail as the interview progresses. Encourage the SP to feel free to ask for clarification on any part of the interview which seems unclear or confusing. Then, proceed with presenting the questionnaire items in their designated sequence.

2.4 Description of the MEC Questionnaires

The MEC interview consists of questions on a variety of health-related behaviors, attitudes, and risk factors. As mentioned earlier, each section of the MEC interview is targeted for a specific age or age/sex group.

The sequence of the topics covered in the MEC Interview is designated for each age/sex target group as follows:

	Questionnaire Section Order	Eligibility by Age/Sex
<u>CAPI</u> ¹	Respondent Selection Section (RIQ)	SPs 12+
	Current Health Status (HSQ)	SPs 12+
	Kidney Conditions (KIQ)	SPs 20-59
	Tobacco (SMQ)	SPs 20+
	Alcohol (ALQ)	SPs 20+
	Reproductive Health (RHQ)	Female SPs 12+
	Physical Activity (PAQ)	SPs 12-15
<u>Mental Health</u> ²	Panic Disorder	SPs 8-19, 20-39 ³
	Generalized Anxiety Disorder	SPs 8-19, 20-39 ³
	Eating Disorders	SPs 8-19
	Depressive Disorders	SPs 8-19, 20-39 ³

¹ CAPI sections may be administered as a proxy interview or through an interpreter.

² Section order varies randomly for SPs 20-39 years.

	Questionnaire Section Order	Eligibility by Age/Sex
<u>Audio-CASI</u>	Youth Conduct Disorder (YCQ)	SPs 12-19
	Tobacco (SMQ)	SPs 12-19
	Alcohol (ALQ)	SPs 12-19
	Drugs (DUQ)	SPs 12-59
	Sexual Behavior (SXQ)	SPs 14-59
	Kidney Conditions (KIQ)	Male SPs 20+

2.5 Data Collection Materials

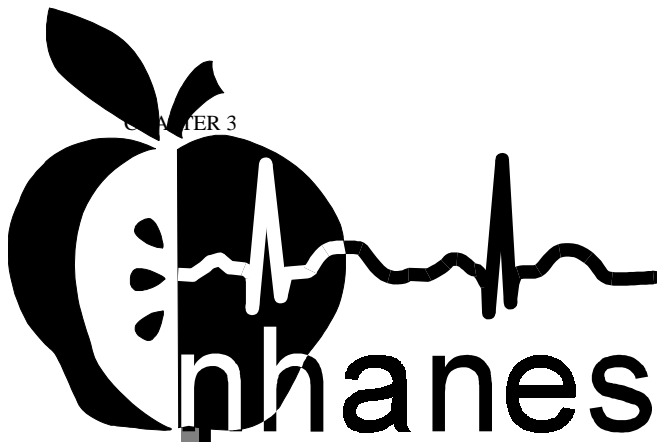
Data collection for the NHANES MEC Interview entails the use of the integrated survey information system (ISIS).

In addition to the computer-based interview, there are hand cards, a timeline, a wall poster, female hormone charts, and a list of female hormones which are used by SPs to help recall dates and to provide the SP with appropriate response categories.

The MEC questionnaires have been programmed to permit computerized administration and recording. The question-by-question specifications, which are provided in Chapter 6 of this manual, should be used as a study guide to help you learn the intent of each question prior to the start of the main study, and as a reference once the main study and the interviewing have begun.

Revised 12/15/00

³ Administered to a half sample of SPs 20-39 years.











MEC Subsystem Overview



National Health and Nutrition Examination Survey

June 22, 2001

Table of Contents

MEC NETWORK & COORDINATOR OVERVIEW	
Network Overview.....	1
MEC Coordinator	2
The Coordinator Screen Configuration.....	3
Assigning an SP to an Exam.....	4
System Blocking and Exclusions.....	4
MEC WORKSTATION	
Workstation Startup.....	6
 To Startup the Workstation:.....	6
 To Turn On the Monitor:.....	6
The MEC Desktop.....	6
The System Tray Icons	8
Right Mouse Button Menus.....	9
End of Day Procedures	9
 To Shut Down or Restart the Workstation:.....	9
MEC EXAM APPLICATION'S COMMON FEATURES	
Examiner Logon	11
 Static Examiner Logon:	11
 Rotating Examiner Logon:.....	11
SP Logon.....	12
Examination Screen Overview	13
Menu Bar Options.....	13
Tool Bars.....	15
SP Title Bar.....	16
Exam Slide Navigation	16
Quality Control	17
Warning and Error Messages.....	18
Buttons and Boxes and Lists.....	18
Section or Component Status.....	19
 Comment codes:.....	19
The Messaging Subsystem.....	21
 To Send a Message to the Coordinator:	21
SAMPLE REPORTS	
To Print a Report.....	23
 To Print a Report or Window:.....	23
Session Preview Report	23
Room Log	23
Results Report.....	24

Appendix A: Using PrintKey

PRINTKEY OVERVIEW	25
Full Screen Capture	25
Window Only Capture	25
Saving Images to a File.....	26
Printing a Screen Capture	27

List of Figures

Figure 1: NHANES Network Connectivity 1

Figure 2: Network Connectivity Scheme..... 2

Figure 3: The Coordinator Screen 3

Figure 4: MEC Workstation Desktop 7

Figure 5: Start Button Menus 8

Figure 6: Change Password Dialog Box..... 12

Figure 7: Sample Examination Screen 13

Figure 8: Quality Control Screen Sample..... 17

Figure 9: Session Preview Report..... 23

Figure 10: Room Log 24

Figure 11: Result Report..... 24

MEC Network & Coordinator Overview

Network Overview

The illustration below depicts how the MEC subsystems are connected to the FO and HO to supply the SP data necessary to conduct the multitude of examinations. The Field Office manages the Interview Teams that conduct the footwork of identifying and gathering detailed data on prospective SPs and transmits the information to the FO and HO for processing. This information is stored in databases and retrieved by the MEC subsystems in preparation for examinations. The results of FO surveys and MEC examinations are collected, analyzed, and prepared for dissemination for public, research, and examination participates in various forms.

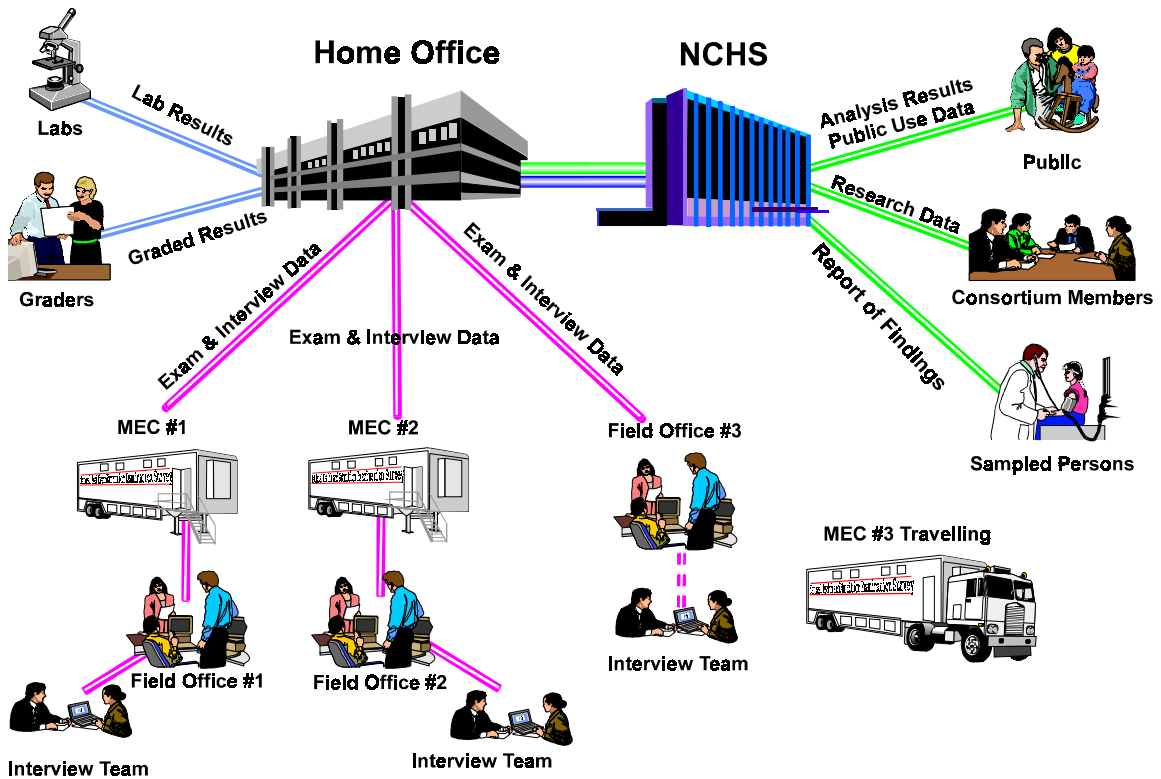


Figure 1: NHANES Network Connectivity

Each ISIS workstation is integral component of a sophisticated network that links the MEC workstations together with utility and database servers, and the Home Office. Continual status communications between the workstations and the Coordinator station enable orchestration of activities and personnel flow.

A simplified Intranet schematic is illustrated below:

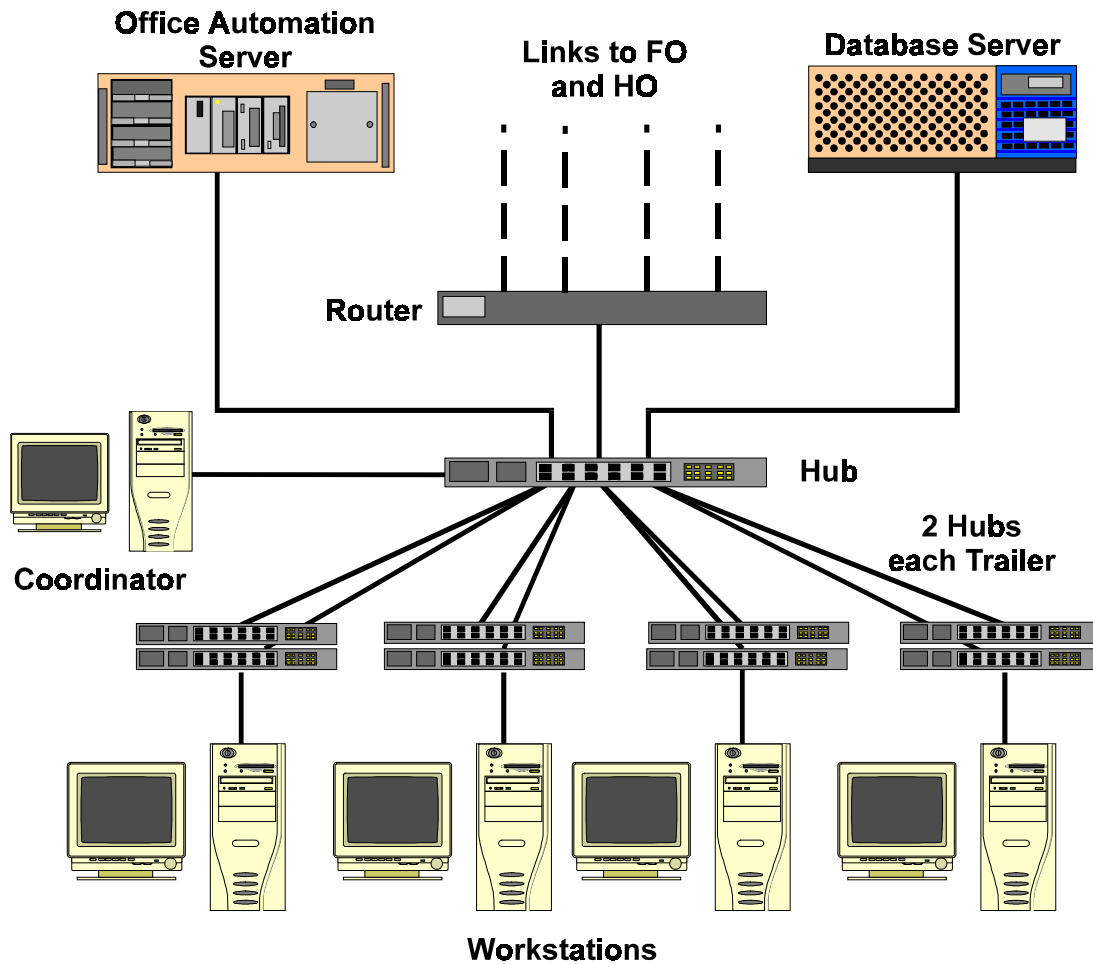


Figure 2: Network Connectivity Scheme

Each workstation connects to both the office automation server (NT Server) and the database server (Sybase) through a series of hubs. These hubs connect the servers and workstations (operating on Windows NT) within the MEC trailers to form part of the ISIS system. The MEC network communicates with both the Field Office (FO) and Home Office (HO) using primary and backup data links. The data links synchronize operational activities and transfer examination and other data as scheduled.

MEC Coordinator

The MEC Coordinator subsystem is designed to efficiently orchestrate the flow of Sample Persons (SPs) throughout the MEC examination process. Continual interaction between each workstation and the Coordinator enables smooth passing of SPs from one workstation to another. Each component examination program automatically transmits the status of the examination to the Coordinator to assist in synchronizing the next component assignment. Exams cannot be performed without specific assignment of a technician and an SP.

The MEC Coordinator subsystem receives appointments scheduled by the Field Office's Appointment Management subsystem. The Coordinator subsystem determines the appropriate examination program, called a 'profile', based on gender and age at the time of the Household Interview.

During the conduct of the session operations, the Coordinator subsystem provides a graphical representation of the location of SPs in the MEC, the status of exam components, the availability of examiners, and the availability of exam stations.

The Coordinator Screen Configuration

The Coordinator station is the nerve center for the MEC. All functions of the Coordinator are executed with the graphical interface designed to assign, monitor, and manage all activities within the MEC. The Coordinator screen, illustrated below, is organized into three major panes and a menu bar:

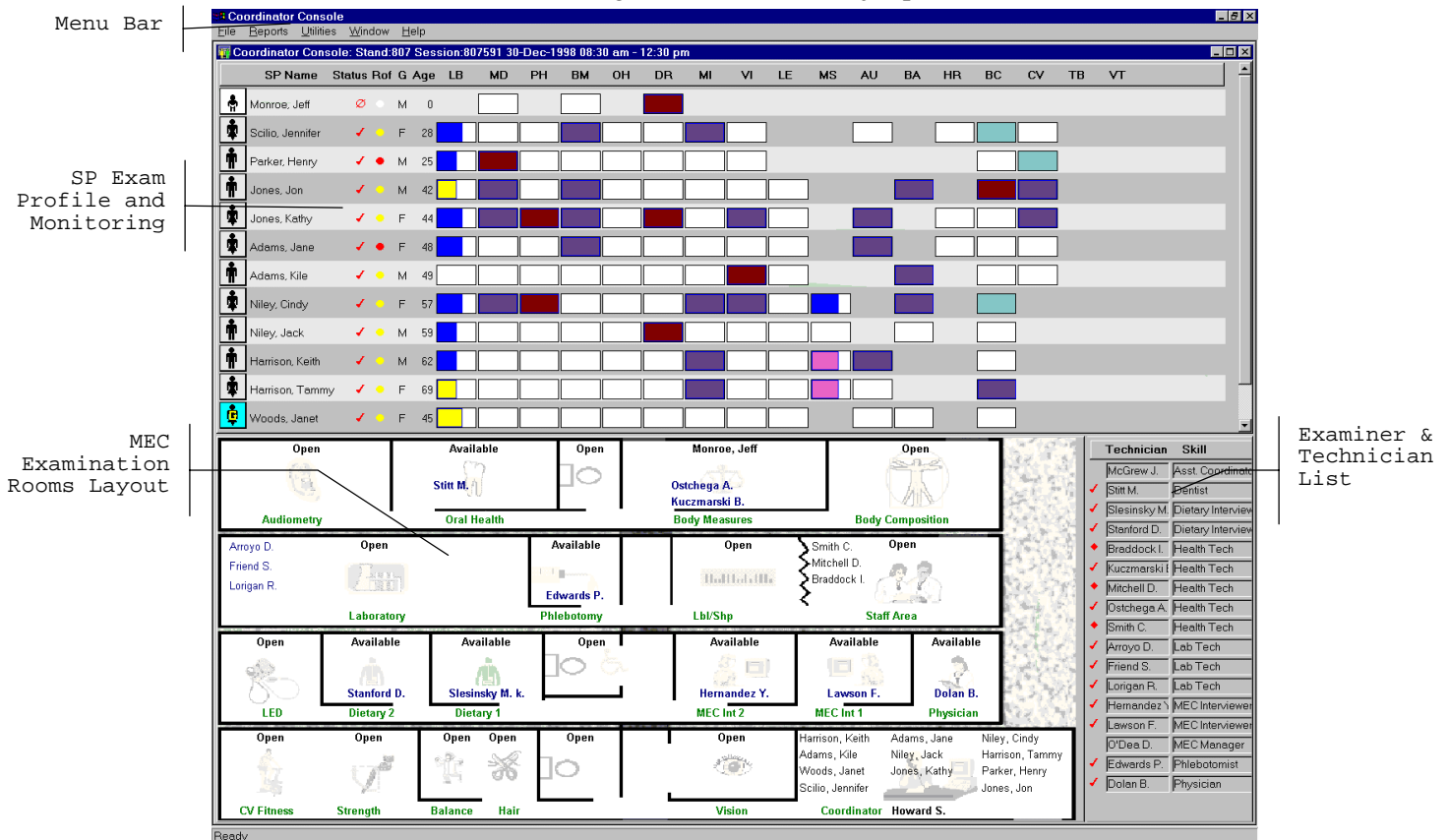


Figure 3: The Coordinator Screen

The Menu Bar provides access to options detailed in the following section.

The SP Exam Profile and Monitoring pane displays each SP exam profile, current status, and examination progress. (The actual screen shows all 10 scheduled SPs). The Examination Profile pane is designed to assist the Coordinator to rapidly assess the availability of examination components against the required examination profiles for each SP, and to manage the movement of SPs and staff.

The MEC Examination Rooms Layout visually portrays the floor plan of the MEC, availability of each examination room, assigned examiner and technician, the location of SPs, and examination status for each room.

The Examiner and Technician List shows available examiners and technicians along with their status.

Assigning an SP to an Exam

After check-in and after completion of individual examinations, the MEC Coordinator assigns the SP to new components. Assignments are based on a list of the SP's remaining required exams, available examiners, and available exam components.

Examiners are notified by a system-generated message when an SP is assigned to their component. When the examination is complete, the Coordinator system advises the examiner of the SP's next component for the SP.

System Blocking and Exclusions

Specified examinations are “blocked” or excluded for SP assignment or continuation of an examination due to medical, SP non-consent, or safety considerations. Some examinations become “unblocked” when medical conditions are verified, such as a negative pregnancy test result from the lab.

This page is intentionally blank.

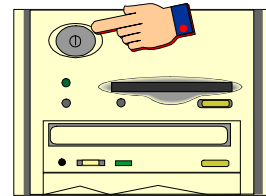
MEC Workstation

Workstation Startup

The workstation startup procedures are rarely necessary since the workstations will remain powered and running the Windows NT operating systems for the stand duration. However, at times the workstation must be completely shutdown and restarted to resolve connectivity and other operating issues. In the event that you must startup a workstation, follow these simple procedures:

To Startup the Workstation:

- Locate and press the power button as shown on the right;
- Then turn on the monitor.



To Turn On the Monitor:

- Locate and press the power button as shown.
- A small green light located near the power button will light if the monitor's power line is connected.



The MEC Desktop

After workstation startup, the MEC desktop appears. The desktop is specially tailored to support the specific MEC examination or station. An illustration of the desktop and components are shown below.

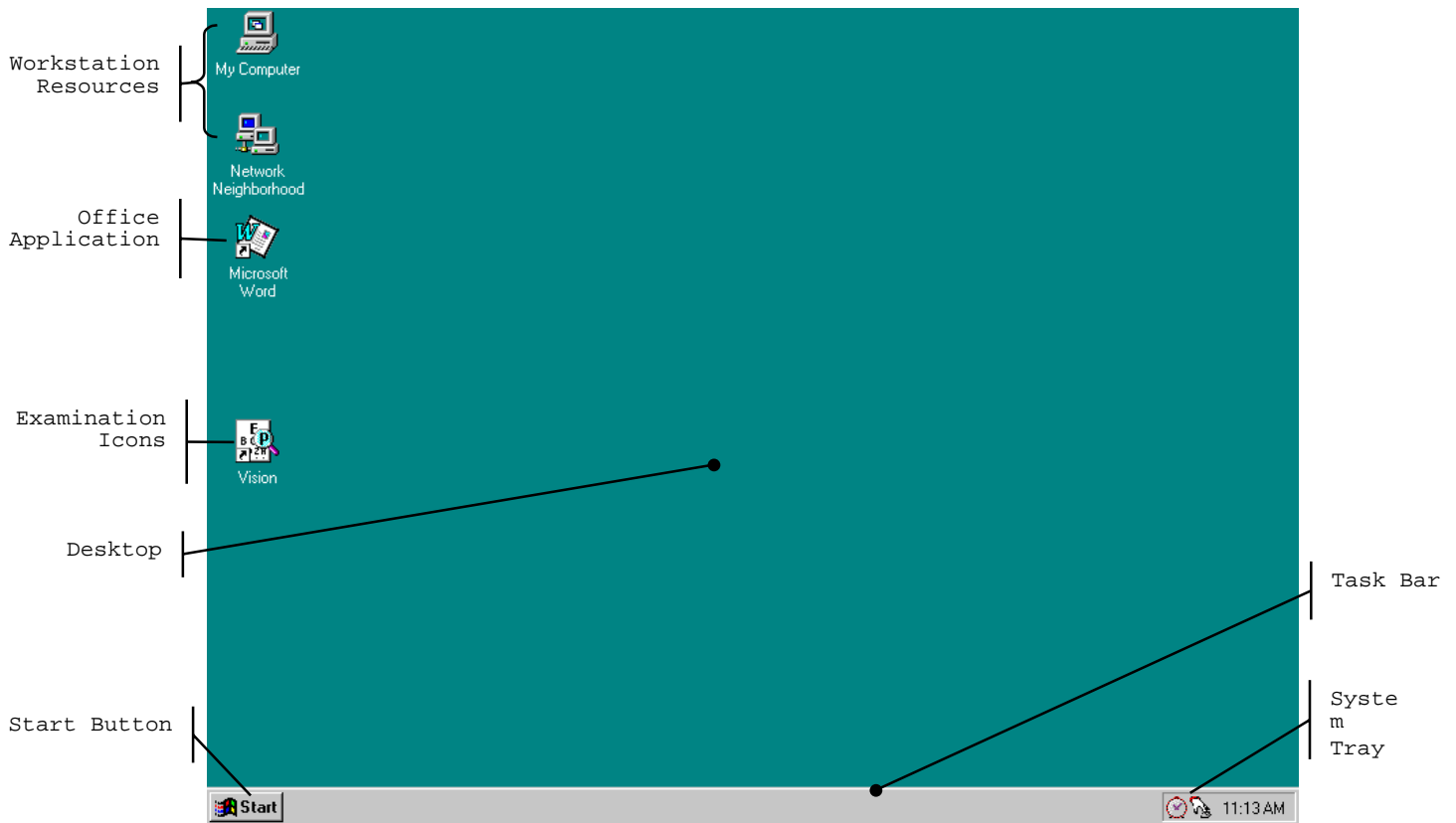


Figure 4: MEC Workstation Desktop

The desktop is similar to a real desktop, except perhaps a little neater. The desktop holds “shortcuts” to frequently used programs, such as the examination programs. Shortcuts are icons that represent a file or program located within the computer or network. The shortcuts provide a rapid means to open the program or file it represents. When an application opens, it displays on the desktop, as well as most other system activities.

Descriptions of the items that appear on all examination workstations are below.

The **Start** button, when clicked, displays a menu containing everything you need to begin using Windows. The menu options include:

- Shut Down** – Shut down menu options.
- Help** – Starts Windows NT Help.
- Documents** – Displays a list of previously opened documents.
- Programs** – Displays a list of programs you can start.

The Start button menu expands as programs are added to the system. The graphic below illustrates how the MEC desktop menu expands.

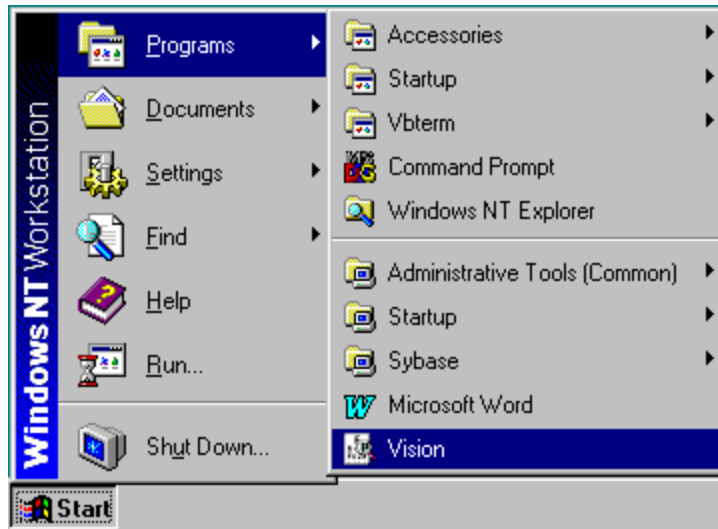


Figure 5: Start Button Menus

Note the highlighted selections. The menu expands when a small black arrow is shown on the menu's right margin. The main Start menu, the menu with the Windows NT banner on the first menu's left margin, is set by the development team. You may be asking yourself "Where is all the *fun* stuff?" The Explorer and many other Windows functions are disabled to discourage any modifications to the desktop, Start menus, and files. Inadvertent moving or deletions of files could and would cause havoc.

My Computer icon views and manages your files. Double-clicking the icon will open a window view of your computer's connected resources.

Network Neighborhood provides a view of all available resources on the network.

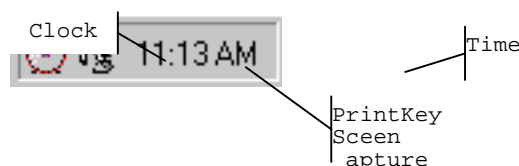
Examination Program icons (with shortcuts indicators) reside on the desktop to easily start an examination. Each examination has its own tailored icon. Double-click on the icon to open the examination program.



The **Taskbar**, located at the bottom of the Desktop, displays the Start button on the left side and the System Tray on the right side of the bar. By default, the system tray displays the current time and shows special system icons for programs that run in the background. The Physician button, shown to the right of the Start button, indicates the Physician examination component is currently running. Programs running but **minimized** are also shown as a button on the Taskbar.

The System Tray Icons

The **System Tray** holds icons that represent the programs for displaying time and a screen capture utility.



The PrintKey screen capture utility operates automatically in the background. This feature enables you to capture items for documentation and database or program error messages. See *Appendix A, Using PrintKey*, for directions on how this feature can help you.

Right Mouse Button Menus

The right mouse button provides a short menu of common actions when clicked on a desktop icon, the desktop itself, or System Tray icons. The Task Bar menu is disabled.

The right mouse menu for the **Desktop Icons** appears as shown below:

Open will open the program or file with associated application.

Send To provides an option to send the selected program or file to either the A:\ drive (floppy) or Mail.

Cut removes the icon from the desktop and places it on the system clipboard.

Copy places the contents of the clipboard to the desktop.

Create Shortcut makes another Shortcut on the desktop.

Delete permanently removes the selected item.

Rename highlights the item's name for editing.

Properties displays information on the application the icon represents and shows the path and working area of the actual application.

The right mouse menu for the **Desktop** appears when right-clicked anywhere on the desktop, as shown below:

Arrange Icons provides options to display the icons.

Line up Icons automatically rearranges your desktop in a manner you will not like.

Paste places the contents of the clipboard onto the desktop.

Paste Shortcut creates a shortcut of the item in the clipboard on the desktop.

Undo Copy restores the clipboard of the last copied item.

New provides a menu of items from which you can create, such as a new folder or document.

Properties opens the Display Properties window to view and change several properties, such as window sound, and colors. Some, if not all properties, will be disabled to ensure consistent

MEC workstations.

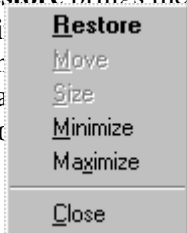
If the **System Tray** menu appears as shown on the left, you have clicked in the wrong area of the Task Bar.

Restore brings the program to the last used or default window size on the desktop.

Move reduces the program to an icon on the Task Bar. The Tray Utility program will reduce the corner icons back into the System Tray.

Size maximizes the program in a window that fills the screen.

Close terminates the program.



Note: In the event you activate this menu from the System Tray, press the **ESC** key to escape the menu. *DO NOT select Close!* You will lose the background applications.

End of Day Procedures

The current procedure is to leave your workstation operational when departing the MEC. Examinations are closed and the programs in the system tray left running.

There will be times when the system malfunctions, such as failure to respond to keyboard or mouse commands or “hangs”, you may be directed to shut down or restart the workstation.

To Shut Down or Restart the Workstation:

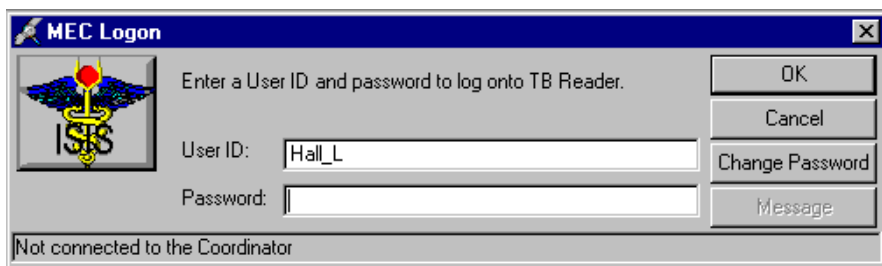
- Click on the **Start** button on the Taskbar.

- Select **Shutdown** from the Start Menu.
- The dialog box, shown below, appears.
- To shut down the system completely, select *Shut down the computer*.
- Wait for the message indicating that it is safe to turn off the computer.
- To restart the system without shutting down, select *Restart the computer*.
- The system will restart automatically.

MEC Exam Application's Common Features

MEC applications are custom built for each specific component but share a common design. This commonality provides all component applications the same “look and feel” which minimizes reorienting technicians that rotate from component to component. These features and characteristics are described below.

Examiner Logon



There are currently several types of examiner logon procedures. The logon procedure for an examination component is determined by whether the examiner is *static* or *rotates* through other components throughout a session. Static examiners include components such as Physician, Phlebotomy, Dietary, and MEC Interviewers that remain logged on throughout the session. Health technicians, such as Vision and CV Fitness, are not assigned to rooms but rotate through several examination components. These technicians are required to logon and logoff for each examination. Other examinations, such as Dental and Body Measurements, have slightly different requirements and are addressed in their specific User's Manual. The two basic approaches to logon are outlined below.

Static Examiner Logon:

- The logon screen, shown above, appears after the Coordinator assigns the examiner to the component and the assigned examiner starts the examination program.
- The **User ID** (Last Name_First Initial) will automatically appear and cannot be changed.
- Type in the **Password** and press **OK**
- Examiner logoff is automatic at the end of the session.

Rotating Examiner Logon:

- The logon screen appears when the Coordinator assigns an SP to an exam component.
- If the component involves both an examiner and a recorder, the examiner logon screens appear first, followed by the recorder logon screen.
- The **User IDs** will automatically appear and cannot be changed. Both exam technicians must logon.
- Type in the **Password**.
- Press **OK**.

- Logoff is automatic upon completion of the SP examination.

NOTE: Your password is your safeguard. All examination actions within the MEC are traced with the logon User ID and Password. Unauthorized entry and malicious actions to the ISIS system are prevented by a simple act of not ever, for any reason, give your password to another. You could jeopardize much more than study data.

After entering your password and prior to pressing **OK**, you can **change your password** by clicking on the **Change Password** button. The Change Password dialog box appears.

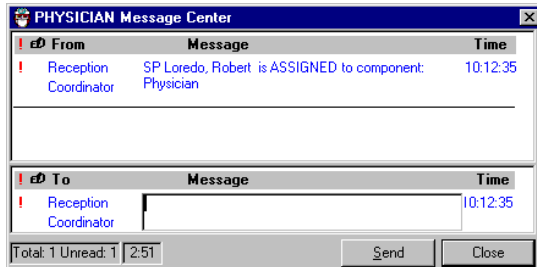
Enter your current password for access verification, followed by your new password. Confirm your new password and press **OK**.



Figure 6: Change Password Dialog Box

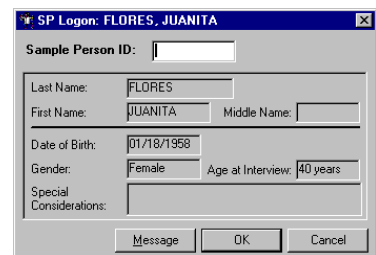
SP Logon

The MEC Coordinator checks-in each SP upon arrival and assigns the SP to an initial examination component. The action of assigning the SP to a component automatically triggers a message from the Coordinator to alert the technician that an SP is assigned.



When the examiner selects *File / Open* to begin the exam, the SP logon screen appears.

- Acquire the SP ID through the wand device or manually enter the ID imprinted on the SP bracelet.
- Verify that the SP information is correct.
- Click **OK** to proceed with the examination.
- The **Message** button opens a dialog box for sending a message to the Coordinator.
- **Cancel** stops the logon process.



Examination Screen Overview

The first examination screen appears after an SP is logged in or an existing record is opened. This example screen, shown on the next page and compressed for space, displays the basic visual appearance and design used throughout all MEC components.

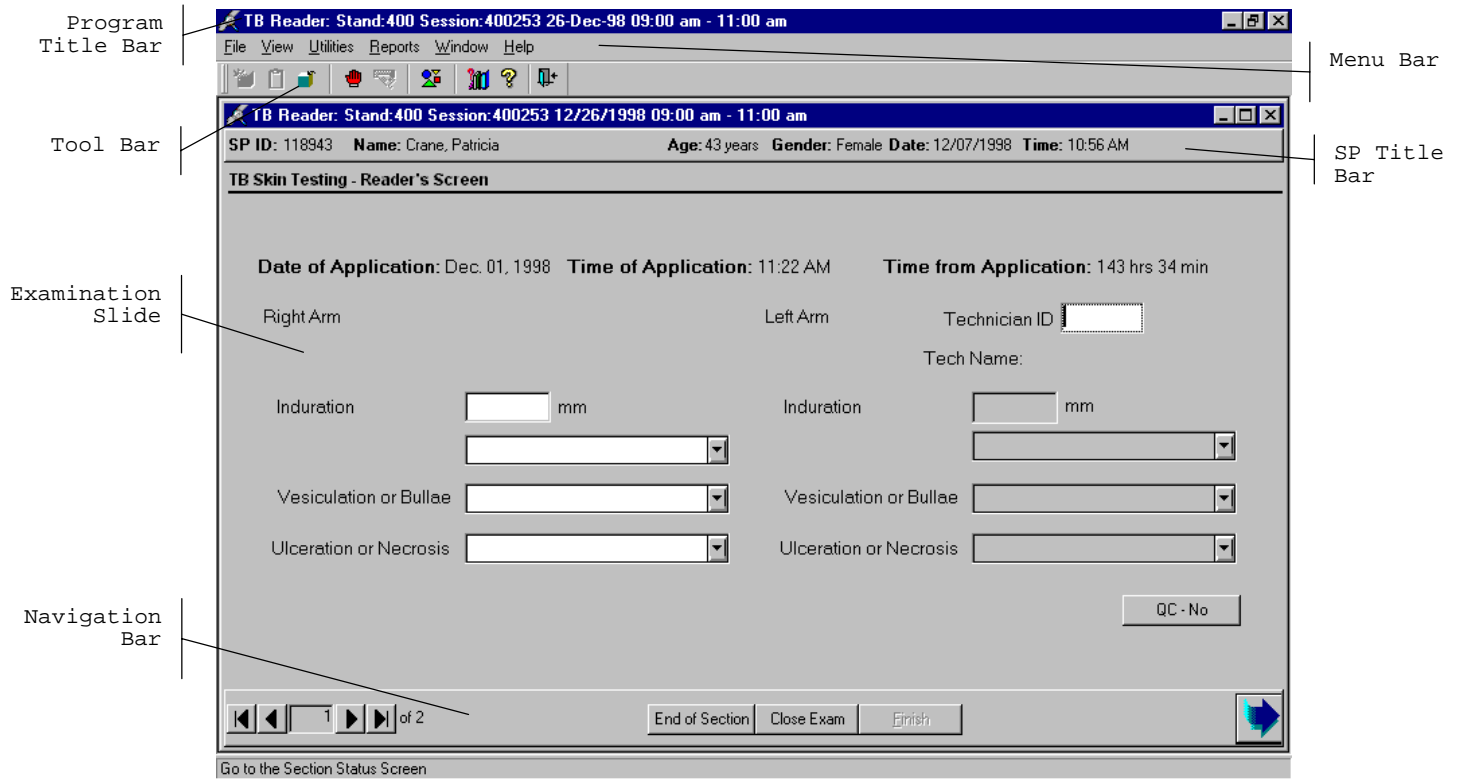


Figure 7: Sample Examination Screen

Program Title Bar shows the component program title, stand, session, and date time information.

Menu Bar displays the commands, functions, options, and information available during an examination.

Tool Bars hold buttons that execute common commands and other actions available in the menu bar. Buttons that are dimmed are not available.

SP Title Bar displays SP information during the course of the examination.

Examination Slide captures the measurements and other information.

Navigation Bar is used to move forward or back in the examination and displays the examination's relative location.

Microhelp and Status Bar displays the status of the computer, completion percentage message to the coordinator, and other information triggered by events.

Menu Bar Options

Each MEC application has tailored menu options to support the specific examination. The menu options below list all available options. The options marked with an asterisk appear on all MEC examination programs. Options are grayed (inverted) or not present when they are not available for your subsystem.

Note the underlined letters in both the Menu and Menu Option. These underlined letters, used in conjunction with the **Alt** key, provide keyboard access to the menu selection without using the mouse. For example, pressing **Alt+F+O** will open a file. The **Ctrl+keystroke**, such as **Ctrl+O**, will also open a file.

Asterisks (*) denotes menu options common to all MEC examination components.

File*	
<u>O</u> pen * <i>Ctrl+O</i>	Opens a new, Partial, or Not Done SP exam; must be assigned by Coordinator if not in standalone mode
<u>R</u> eview	Opens any existing SP examination in read-only mode; Coordinator assignment not required; no status updates sent to the coordinator system in Review mode
<u>C</u> lose *	Closes the current examination
<u>P</u> rint * <i>Ctrl+P</i>	Prints the current examination screen or report. Note the Ctrl+P shortcut keys.
<u>D</u> elete *	Deletes current exam and any associated references. Used primarily to delete an examination that clearly is in error, such as the wrong SP. Only enabled if it is a new exam and the status is not done or partial.
<u>E</u> xit *	Exits the application.
View *	
<u>F</u> irst *	Returns examination screen to first slide
<u>N</u> ext *	Advances to next examination slide.
<u>P</u> rior *	Displays previous slide IN THE SKIP PATTERN
<u>L</u> ast *	Advances to last slide.
Utilities *	
<u>Q</u> uality Control <i>Ctrl+Q</i>	Opens the quality control dialog box to initiate quality control procedures.
Exam <u>P</u> ause *	Used in case of an emergency in the MEC, such as an ill SP. Pauses the exam temporarily to stop the exam timer (in NH_Exam); sends "Exam paused" message to Coordinator.
Send <u>M</u> essage * <i>Ctrl+M</i>	Opens a dialog box to send messages to the coordinator.
Observation*	Submits an observation to the Physician for possible referral.
IC Exclude	Posts an exclusion record for those SPs who do not want HIV, STD, Genetic Testing, or Future Research performed; available only for

	Coordinator, Physician, & Phlebotomy.
<u>S</u> ettings *	Allows user to view or modify subsystem settings, including the Coordinator connection. <i>Modifying setting requires approval by the data manager.</i>
<u>T</u> oolbars*	Configures placement of toolbars.
<u>E</u> nglish <i>Ctrl+E</i>	Toggle option to set exam language to English.
<u>S</u> panish <i>Ctrl+S</i>	Toggle option to set exam language to Spanish.

Reports*

<u>S</u> ession Preview*	Lists all SPs in current session
<u>R</u> oom Log* <i>Ctrl+R</i>	Lists the SPs who have completed the component, including appt/exam and component status

Window*

<u>C</u> ascade *	Displays multiple windows overlapped and slightly offset as to show the title bar of each open window.
<u>T</u> ile <u>H</u> orizontal*	Displays open windows on top of each other and sized to fit all in the main program window.
<u>T</u> ile <u>V</u> ertical *	Displays open windows next to each and sized to fit in the main program window.
<u>L</u> ayer *	Displays open windows stacked over each other.
<u>M</u> inimize All Windows *	Reduces all windows to a button in the lower portion of the main program window.

Help*

<u>H</u> elp Topics * <i>F1</i>	Displays ISIS system help contents.
<u>N</u> HANES Procedures *	Displays component procedures manual. (not in Pilot).
<u>O</u> MB Statement.	Displays the OMB Confidentiality Statement.
<u>A</u> bout *	Displays the About dialog box.

Tool Bars

Tools Bar buttons display when the program first opens to provide an easy way to access menu commands. Buttons are dimmed to signify that the action is temporarily unavailable; such as a dimmed **Print** button when no examination is open.



The Tool Bars, labeled FrameBar and FrameBar2, are customizable through the *System | Customize Tool Bars...* menu option or the Arrange Toolbars button. The Tool Bars buttons are:



Opens a New Sample Person Examination.



Opens an Existing Sample Person Examination.



Prints the Current SP Examination.



Arranges toolbar buttons.



Modifies system configuration and settings.



Sends message to coordinator.



Quits the Exam Application.



Performs Quality Control Procedures.



Pauses the current SP examination.



Logs an Emergency for the Current SP.



Enters a Referral for the Current SP.

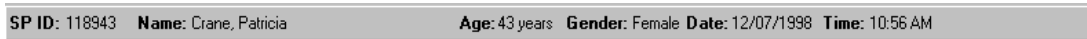


Displays NHANES Procedures.



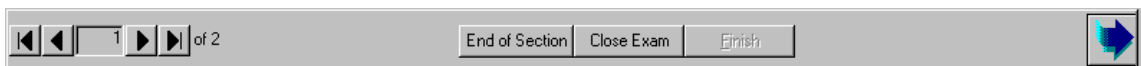
Displays program Help.

SP Title Bar








The Title Bar appears with the first examination slide after the SP is logged on. The Title Bar remains visible throughout the examination process. The example above illustrates the actual information displayed, but is not as compressed along the bar.

Exam Slide Navigation



The slide navigation bar provides a means to move forward and back through an examination. The features of this bar are:

-  View **first** slide in examination sequence. Disabled (dimmed) if current slide is first in examination sequence.
-  View **previous** slide in examination sequence. Disabled (dimmed) if current slide is first in examination sequence.
-  View **next** slide in examination sequence. Disabled (dimmed) if current slide is last slide in examination sequence.
-  View **last** slide in examination sequence. Disabled (dimmed) if current slide is last slide in examination sequence.
-  View **next** slide in examination sequence. An easy to click button.

Note the slide counter between the previous and next slide buttons. This counter aids in determining your current location in the slideshow sequence.

End of Section button advances the examination slide to the status slide for the current section or the end of the examination for single section examinations.

Close button interrupts the examination and displays the Status screen for an appropriate status code and comment.

Finish button is disabled (dimmed) until the examination is complete. Partial and Not Done examinations require a status code and comment to activate the Finish button. The action completes the current examination.

Quality Control

Several examinations incorporate medical equipment that requires periodic maintenance and inspection. These components have detailed procedures on conducting their specific inspection checks. Each subsystem notifies the examiner that QC inspections have not been performed when the examination program is started.

An example Quality Control window is shown below.

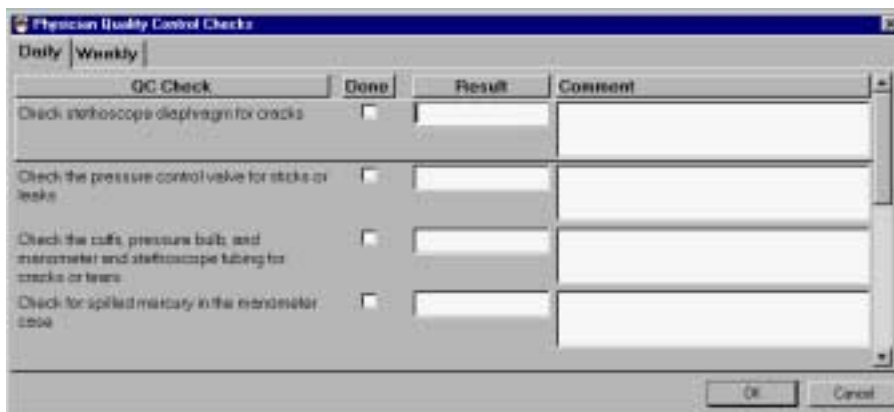


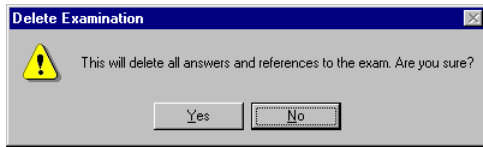
Figure 8: Quality Control Screen Sample

Included in the QC Checks are mandatory checks that must be completed prior to starting the examination program. The types of QC Checks are listed:

1. Start of Stand.
2. Start of Session.

3. Daily.
4. Weekly.
5. Middle of Stand.
6. End of Stand.

Warning and Error Messages

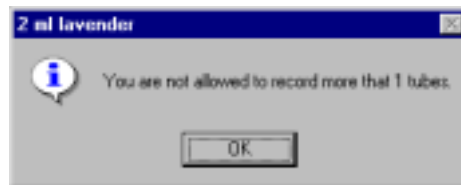


Throughout the course of an examination, warning and error messages may appear when you attempt to perform an action the program can not execute or requires your confirmation to continue the action. The message normally appears with statements explaining the error condition. Complying with the error message statement will normally remedy the error. When required to confirm an action, such as deleting records, be sure the action is necessary because in most cases the action is irreversible. Most “Oh #@%&” comments result from responding “Yes” when “No” was appropriate.

Data entry fields may have limitations on the acceptable range of values. The limitations imposed on these values are called **Hard** and **Soft Edits**.

Hard edits impose a strict limitation on values entered in a data field. A data value entered outside of the hard edit range is not accepted and a program warning displays. For example, if a vision hard edit limitation is 20/500, an entry of 20/520 will not be accepted.

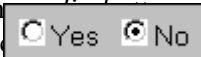
Soft edits are flexible limitations on values but prompts you for confirmation if a value exceeds the limit. For example, if a vision soft edit limitation is 20/400, an entry of 20/435 will prompt a confirmation dialog box.



Buttons and Boxes and Lists

The examination slides use a variety of methods to capture acquired data. The methods include the following data control devices.

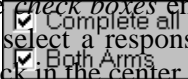
The **radio buttons** require a single response out of the responses displayed. The responses are mutually exclusive. To select a response, simply click on the appropriate button. The selected button will appear with a black dot in the center of the circle.



The **drop list** or **drop-down list**, provides a rapid means of selecting a desired response from a fixed set of responses. The drop-down list window may initially appear blank, as shown in the top example in the list of possible responses, click on the down arrow button. A scroll bar may be visible on the right side to enable you to scroll down the list. Click to select the desired response. The selected response will appear in the upper list window.



The **check boxes** enable selection to all responses that apply. The responses are not mutually exclusive. To select a response, simply click on the appropriate box. The selected box will appear with a black check in the center of the box. Click on a selected box to deselect.



The **ellipsis button** indicates additional action is available, such as browsing for records or additional information.



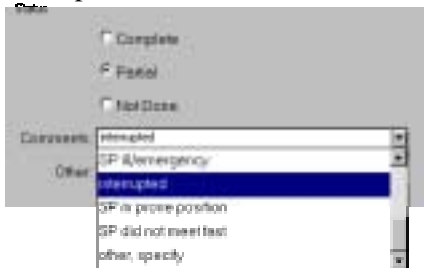
The **spin box** accepts a limited set of discrete responses. The “spin” name is derived from the up-down arrow. It can be used to “spin” the set of responses up or down. To select a response, simply click on the appropriate arrow.



click on the appropriate up or down arrow button to increment the responses. You may also type the response value in the spin window, if known.

Section or Component Status

The Section or Component Status screen displays the relative completion of the examination – **Complete**, **Partial**, or **Not Complete**. This is the last exam slide at the end of a section or a component if there are multiple sections. The status automatically displays and is not editable. Interruptions, emergencies, refusals, and other events that prematurely stop the examination will trigger this screen for appropriate incomplete comment codes. **Comments are not recorded for Complete examinations.**



Comment codes:

Component status codes indicate the degree of component examination completion. The three standard codes are:

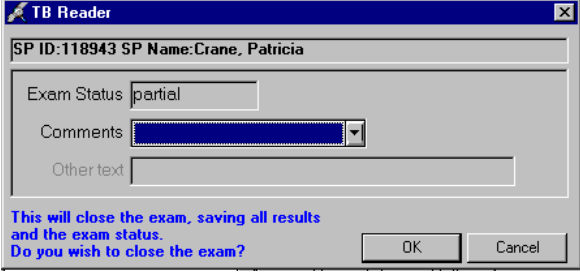
- Complete:** All sections of the component were completed or attempted.
- Partial:** At least one section of the component was not completed or attempted.
- Not Done:** No part of the component was done or attempted.

Comment codes are used to explain Partial complete or Not Done status codes. The Comment Codes defined below are common to all exams. There are other specific components and sections comment codes which are not defined here.

- Safety Exclusion:** The examinee was excluded from the component for safety reasons as defined by the protocol for the component.
- SP Refusal:** This is an SP initiated response due to refusal. The SP refuses the component for any reason other than an illness or emergency. If the SP refuses in the reception area, the Coordinator can code the exam. If the SP refuses after starting the exam, the examiner will code the refusal.
- No Time:** The SP comes on time and stays for the entire session, there is adequate staff in the MEC but at the end of the session there is no time to do the examination.
- Physical Limitations:** SP is unable to have the test due to physical problems. For example, the SP is unable to lie flat for the total body composition scan.
- Communication Problems:** SP is unable to understand and follow the instructions for the component due to language, cognitive impairment or other problem, and is unable to complete the test.
- Equipment Failure:** The component equipment malfunctioned and the test could not be performed on the SP.
- SP Ill/Emergency:** The SP became ill or an emergency occurred and the test was not performed on the SP.
- Interrupted:** An exam is interrupted, usually for a MEC-wide emergency, and cannot be completed by the SP.

Other, specify: If the above reason for a Status Code of Partial or Not Done is not explained by one of the above Comment Codes, the examiner must choose Other, specify and record a comment in the text field.

Examinations closed prior to completion are automatically assigned a **Partial** status and the examiner is prompted for an appropriate comment.



SP ID:118943 SP Name:Crane, Patricia

Exam Status: partial

Comments: [Drop-down menu]

Other text: [Text field]

This will close the exam, saving all results and the exam status. Do you wish to close the exam?

OK Cancel

Select the comment from the **Comments** drop-down list and press **OK**.

The Messaging Subsystem

The Messaging subsystem is the communication nerve center that continually informs the Coordinator on the status of each component examination progress, assigned examiner(s), components available for SPs, and other management information.

Communication between the Coordinator and examination components is readily available through the **Utilities** menu or the Send Message button on the toolbar.



To Send a Message to the Coordinator:

Or,

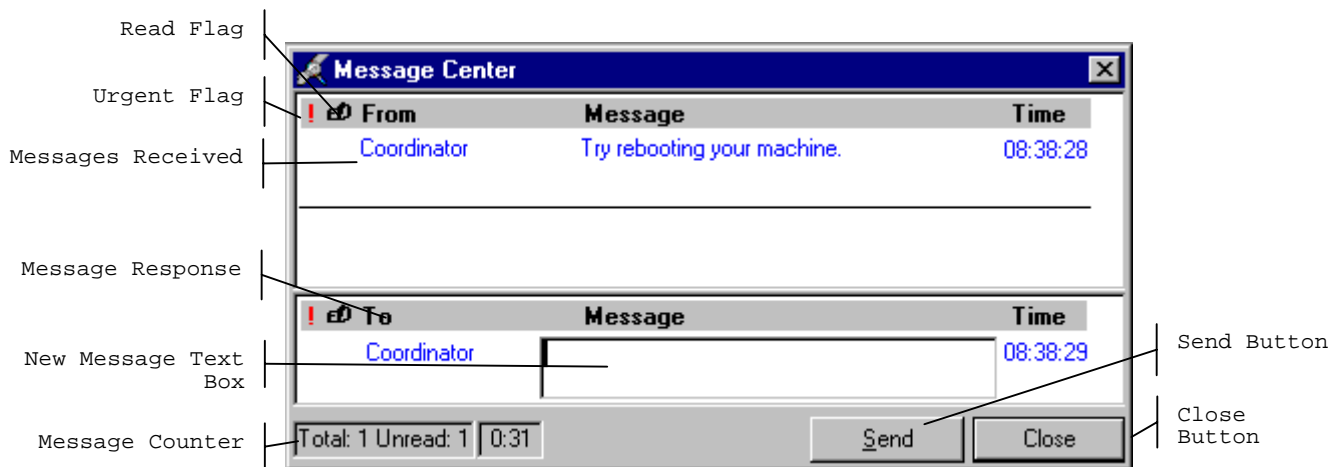
- Click on the **Send Message** button on the toolbar.
- Press *Ctrl+M* keystroke combination.

Or,

- Select **Send Message** from the Utilities menu.
- The Message Center transmittal box appears.

Messages sent to the Coordinator appear in the Message Center window on the Coordinator screen. Messages received from the Coordinator will remain visible on your screen for approximately 30 seconds.

Messages that have been flagged as “Read” (click the Read Flag column next to the read message) will be removed from the Messages Received pane during the system update, usually every 30 seconds.



- Received messages appear in the upper pane.
- Message responses are constructed in the lower pane.
- To respond to a message, select the message in the upper pane by clicking the “**Read**” flag.
- The Coordinator automatically appears in the “**To**” message response pane.

- Type your message in the **Message** text box.
- Click the **Send** button to send the message.
- Clicking the send button without including a text message automatically sends an “**Ok**”.
- Click the **Close** button to close the Message Center

Sample Reports

The Reports menu options include the Session Preview, Room Log, and Results reports. Most reports display on screen and all reports can be printed.

To Print a Report

Default printers are designated for each workstation and cannot be changed with the examination program.

To Print a Report or Window:

- Open the report.
- Select *File | Print* from the menu bar.

The report or print capable window is automatically sent to the default printer.

Session Preview Report

This report can be viewed one day in advance. The report shows SPs scheduled for the scheduled sessions with special considerations and comments to notify the team in advance.

Session Preview Report							04/30/98 11:02
Stand:	551						
Session:	551574	04/25/98	08:30 - 12:30				
SP ID	SP Type	SP Name	Age	Gender	Special Considerations	Consent Comment	
791318		Tim Broughton	7 years	M			
734079		Zack Broughton	17 years	M			
602170		Kerry Broughton	35 years	F			
508340		Allen Broughton	46 years	M			
735805		Lydia Broughton	21 years	F			

Figure 9: Session Preview Report

Room Log

The Room Log displays SPs that have completed the component and other comments.

Physician Room Log							04/30/98 11:02
Stand:	551						
Session:	551574	04/25/98	08:30 - 12:30			Total: 10 SPs	
Sp Id:	SP Name:	Gender:	Age:	Appt Status:	Comp. Status:	Comp.Comment:	
1	169910 Harris Broughton	M	35	Scheduled			
	Special Considerations:						
2	239464 Sarah Broughton	F	4	Scheduled			
	Special Considerations:						
3	479721 Sue Broughton	F	56	Scheduled			
	Special Considerations:						

Figure 10: Room Log

Results Report

The Result Report displays a detailed listing of the examination results. Each component application is tailored to the examination. However all reports reflect the itemized results in tabular form in a style consistent with the sample below.

Physician Result Report							04/30/98 11:04
Stand:	551						
Session:	551574	04/25/98	08:30 - 12:30				
Sp Id:	508340	SP Name:	Allen Broughton	Person Gender:	M	Age At Interview Yrs:	46
Appt Id:	5510669	Appt Status:	SC	Exam Status:	P	Exam Comment: SP refusal	
Section Id:	Section Name:	Section Status:	Section Comment Code:	Section Comment Other:			
1	Blood Pressure	C					
2	Fitness	N		SP refusal			
Ph Item Id:	Ph Item Text:	Ph Item Type:	Ph Result Num:	Ph Result String:			
BPQ010	Have you had any of the following in the past 30 minutes? (check each	1	1				
BPQ010A	food	1	2				
BPQ010B	alcohol	1	2				

Figure 11: Result Report

Appendix A: Using PrintKey

PrintKey Overview

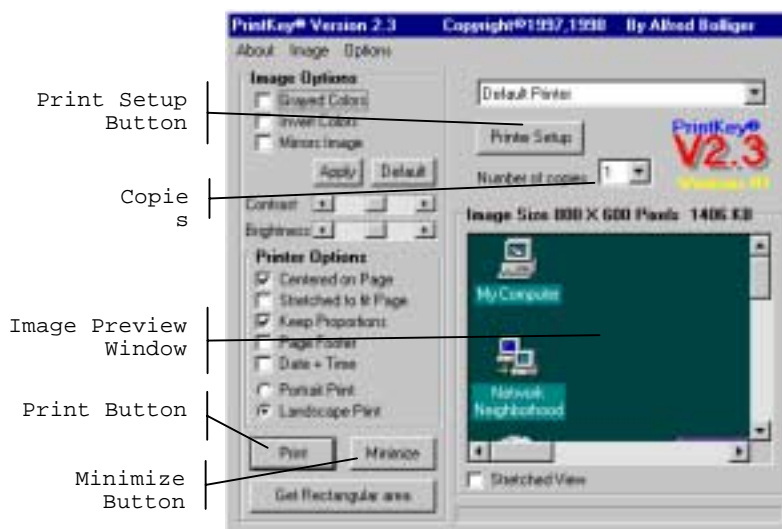
The PrintKey screen capture utility allows you to capture whole or partial screen images for immediate printing or saving to a file. Use this feature to capture any error messages that appear on the screen. Capturing the error message as it appears will enable the data manager to quickly determine the appropriate actions needed to correct the error.

PrintKey automatically loads whenever you logon a MEC workstation. It's icon appears in the system tray in the lower right corner of the screen next to the clock (looks like a little hand pushing a button). *Full Screen* and *Window Only* are two available options to capture various parts of a screen image. Full Screen captures the entire monitor screen, and Window Only captures the currently active window only, such as an error message window.

Full Screen Capture

Full screen captures are used when the entire monitor image is needed. Each image will require approximately 1.5 Megabytes of space, which is more than what 1 floppy disk can hold.

- Press the **Print Scrn** key, a screen shot of the full screen is taken and the PrintKey utility window pops up:



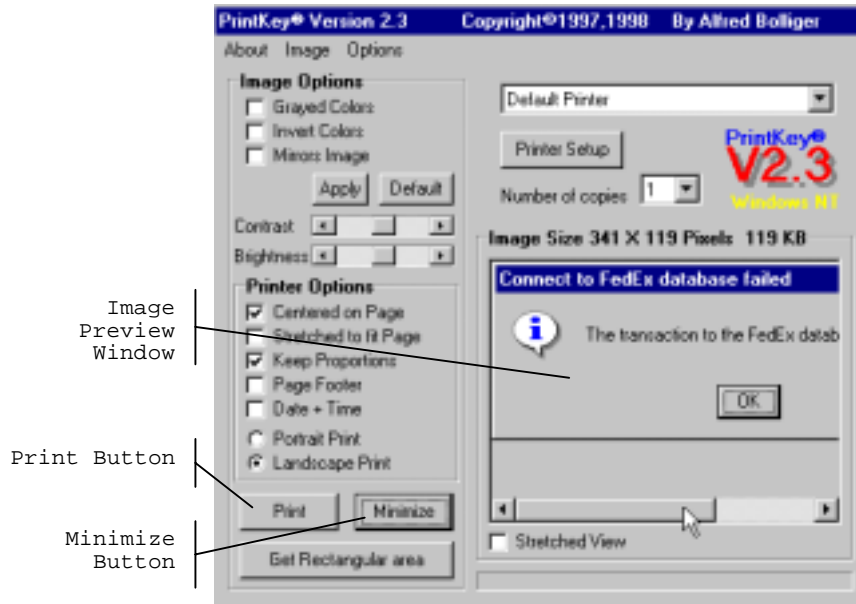
- Now you can print the image or save the image to a file.

Window Only Capture

Window only captures are used when only the current window image is needed. The window can be an error message, dialog box, or a window within an application. Image sizes will vary depending on the area the window covers on the monitor. If you want to capture information in a

program without the distraction of toolbars and other graphics, this method works best.

- Press and hold the **Alt** key, then press the **Print Scrn** key. The capture of the open window is taken and the PrintKey utility window pops up:

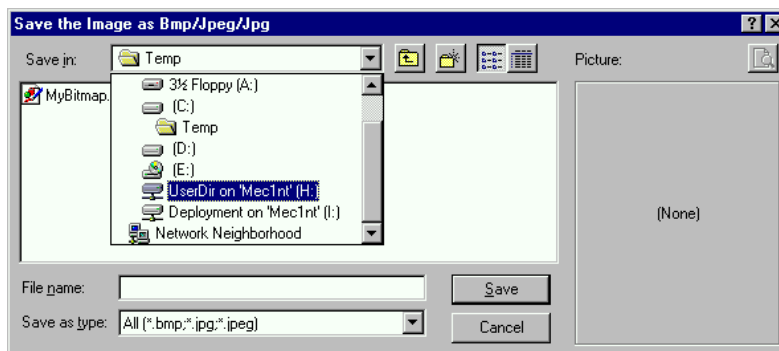


- Now you can print the image or save the image to a file.

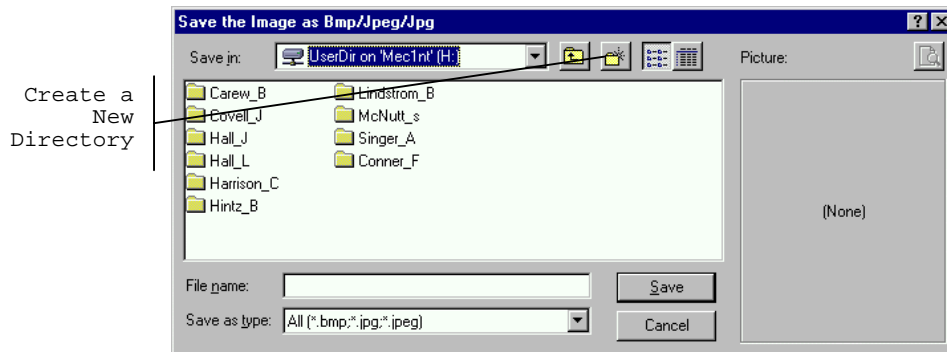
Saving Images to a File

Images captured using any technique discussed below can be saved to a file for later use. This is how you do it:

- Click **Image** on the menu bar.
- Select **Save...** or press *Ctrl+S* keys.
- The Save dialog box appears.



- In the **Save in** drop-down list, select the destination directory/folder.
- The selected directory/folder, shown below, opens and displays individual subdirectories to store your files.



- Double-click to select your subdirectory if available, or make a new directory is you do not see one with your name.
- Name your image in the **File name** field.
- Select **BMP** from the **Save as type** drop down list.
- Click **Save**.
- Click **Minimize** on the PrintKey window.

Printing a Screen Capture

To print the image

- Click on **Print** in the lower left corner to print to the default printer.
- The capture will print at your designated printer.
- Click **Minimize** to hide the PrintKey window.

4. EQUIPMENT, SUPPLIES, AND MATERIALS

4.1 Description of the MEC Interview Room and Computer Equipment

The two interview rooms in each MEC are equipped with a desk upon which the PC rests, and chairs for the interviewer and SP.

The interview rooms have sliding doors that are closed for privacy during the interview. The door remains closed for the audio-CASI portion of the interview, when the interviewer leaves the room.

The PC monitor, keyboard, and mouse rest on top of the desk, while the CPU is housed in a shelf under the desk. As the connections to the CPU are on the SP's side of the desk, it is important that the SP does not touch, bump, or otherwise come in contact with the hardware.

For the CAPI and mental health sections of the interview, the PC is oriented toward the interviewer, while for the audio-CASI section, the monitor faces the SP. The monitor is mounted on a swivel so that it can be carefully turned to face the SP at the appropriate time. The keyboard and mouse are for the interviewer's use only. The mouse will be used in the Windows setup and navigation through the ISIS screens, while both the keyboard and mouse are used to record answers in the CAPI and mental health sections of the interview.

The SP uses the PC's monitor to record his or her responses to the audio-CASI questions, as the monitor is equipped with a touch screen. The touch screen is not used for any other portions of the interview other than audio-CASI.

The SP listens to the audio-CASI questions through a set of headphones which are plugged into an external speaker. The speaker sits on a small shelf located on the wall above the monitor. A volume control knob on the speaker controls the volume for the headphones. Should the SP decline the use of the headphones, or should there be some other reason why headphones cannot be used for an SP, the headphones can be unplugged from the speaker.

A wall-mounted cabinet with lock is located on the wall to the right of the interviewer. It holds extra supplies and is used to secure interviewing materials and equipment when the MEC is traveling from one stand to the next.

4.2 MEC Interview Supplies and Other Equipment

The following supplies and noncomputer equipment are used in the MEC interview:

- Hygienic earphone covers;
- Germicidal disposable wipes;
- Trash bags;
- Tissues;
- Dry erase marker pens;
- Solar-powered calculator;
- Hand-held, voice-activated tape recorder;
- Audiocassette tapes;
- AA rechargeable batteries; and
- Battery recharger.

4.2.1 Description and Use of Interview Supplies

Earphone Covers. The Phone Guards hygienic earphone covers are used during the audio-CASI portion of the interview. Change the earphone covers for each SP, and then dispose of the used covers.

Germicidal Disposable Wipes. The Super Sani Cloth wipes are used to clean the laminated Current Year Timeline and hand cards at the end of each interview.

Trash Bags. The MEC Interview room is supplied with a small hook on which to hang a small disposable trash bag. When full, discard the bag into one of the plastic trash cans located elsewhere in the MEC.

Tissues. Tissues are provided as a general supply and for use should an SP become distraught during the mental health interview.

Dry Erase Marker Pens. Pens are used to complete the Current Year Timeline and to mark the reference period on the calendar hand cards.

Calculator. The solar-powered calculator is available for use by either the SP or interviewer to provide assistance in answering questions, particularly in the reproductive health portion of the CAPI interview.

Tape Recorder. The hand-held tape recorders are used to record interviews for review by Home Office staff. There is one tape recorder per interviewer and one backup per MEC.

Audiocassettes. Audiocassettes are available for recording the interviews.

AA Rechargeable Batteries. Rechargeable batteries are used to power the recorders. Interviewers should ensure that fully charged batteries are always available.

Battery Recharger. One Rayovac Renewal Power Station – Model PS1 is provided per MEC for shared use by the interviewers. Plug the recharger into the closest available outlet, which is usually in one of the interview rooms but may also be in the hallway outside the room.

4.3 MEC Interviewer Materials

The interviewing materials needed for successful completion of your responsibilities as a MEC interviewer include:

- Hand cards;
- An oral contraceptive wall poster;
- Laminated listing of hormone types;
- Female hormone charts (2);
- Current Year Timeline;
- Mental health referral coding sheet;
- The NHANES informational brochure and form for Consent/Parental Permission/ Assent;
- The Child Assent brochure;

Revised 12/15/00

- The Stored Specimen and Future Research Consent/Parental Permission/Assent Form;
- Mental Health Parent Interview reminder notices;
- MEC Interview QC Recording Log;
- Audio-tape permission forms; and
- Padded mailing envelopes (prelabeled with Home Office address).

The specific use of these items will be discussed in Chapters 5, 6, 7, and 8 of this manual.

4.4 Inventory, Equipment Setup, and Teardown Procedures

At the conclusion of each stand, you will complete an end-of-stand (EOS) inventory count of materials, equipment, and supplies required for the MEC interview. Accurate counting is essential since the home office uses the information to ensure that sufficient quantities of replacement supplies are shipped and to track supply usage and costs. When the inventory is complete, each examination room must be packed and all equipment secured for travel to the next stand.

Upon arrival at the next stand, all equipment and supplies must be unpacked and set up in preparation for the start of examinations at the new stand. Shipments of replenishment supplies must be verified against the packing list.

Revised 12/15/00

4.4.1 MEC Interview Room Teardown Procedures

Following is the list of tasks (and the responsible staff person) required to prepare the room for travel.

Task	Responsible Staff Person
1. Disconnect computer equipment (keyboard, mouse, speaker, headphones)	Data manager
2. Pack computer equipment	Data manager
3. Secure monitor swivel stand for travel	Interviewer
4. Pack loose supplies (earphone covers, dry erase pens, tissues, wet cleaning cloths, hand cards/charts, batteries, trash bags) in cabinet and plastic storage containers	Interviewer
5. Pack interviewing equipment (calculator, tape recorder, battery charger) in cabinet and plastic storage containers	Interviewer
6. Lock/secure cabinet door	Interviewer
7. Secure chairs for travel	Interviewer
8. Lock room door in open position for travel	Interviewer

4.4.2 MEC Interview Room Setup Procedures

The following list of tasks and responsible staff member comprise setup procedures for the MEC interview room.

Task	Responsible Staff Person
1. Set up monitor swivel stand	Advance Team
2. Unpack and set up computer equipment (monitor, CPU, keyboard, mouse, speaker, headphones)	Advance Team
3. Connect computer equipment	Advance Team
4. Unlock cabinet door	Interviewer
5. Unpack loose supplies (earphone covers, dry erase pens, tissues, wet cleaning cloths, hand cards/charts, batteries, trash bags) from cabinet and plastic storage containers	Interviewer
6. Unpack interviewing equipment (calculator, tape recorder, battery charger) from cabinet and plastic storage containers	Interviewer
7. Set up chairs	Interviewer
8. Unlock room door	Interviewer