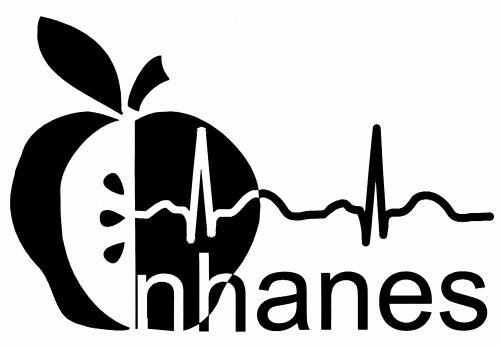
National Health
and Nutrition
Examination Survey

OBTAINING RESPONDENT COOPERATION



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1. INTRODUCTION

The Home Study Package and Interviewer's Manual, reviewed during the first part of training, provided you with the basic information needed to understand the study and perform your work. In this manual we want to focus on the survey information and materials you must be familiar with and the techniques you can use to obtain high cooperation rates on NHANES and, when necessary, convert survey nonrespondents.

In the field, you are the primary contact point between respondents and the survey, and in great measure the success of the survey is going to depend on how well you do. Therefore, here we want to focus on key aspects of the interviewing and appointment making process that are essential to obtaining the highest degree of respondent cooperation. Our discussion will be divided into two basic sections:

1. The introduction at the door prior to conducting the Screener; and
2. Completing the extended medical history interview and making the MEC exam appointment.

These sections each represent a "stage" in the respondent participation process, and for each stage, we will discuss the following kinds of issues:

- **Techniques and methods of successfully obtaining respondent cooperation.** These guidelines have been compiled from our own experience and the advice of experts in sales and public relations, and we think that they represent a powerful inventory of approaches that have a record of success.
- **Your own attitude and appearance.** This is critical because respondents take their cue about how to view the study from how they view **you**. In fact, even if all your explanations and assurances about the study don't convince someone to participate, they might do it anyway just on the strength of how you come across.
- **Materials.** These include your ID badge, brochures, fact sheets, business cards, and other materials that play an important role in creating a positive attitude towards participating in the survey.
- **Responses to questions.** Here we will provide examples of questions you might be asked about the survey, and some ways you can answer them. Although you should be familiar with these responses, one of the keys to successful interviewing is to be flexible and aware. Don't respond to questions with memorized answers, but talk to your respondents as people who have real concerns.

- **Detailed information about why each component of the MEC exam has been included.** You need to be well-informed about the MEC exam in order to answer respondent questions, allay their fears, and in general come across as a professional, competent member of the study team.

- **Special target groups.** For certain respondent groups, you will want to gear your approach to accommodate their particular needs or just to communicate in a relevant way. For example, older persons might have more trouble in terms of transportation to and from the MEC, and might require more time to answer the questionnaire or go through the exam.

2. INTRODUCTION AT THE DOOR

Your first task is to introduce yourself and the survey, and convince the respondent to cooperate in answering the Screener questionnaire – **all at once**. Because you have multiple purposes in this initial introduction, it is very important that you are prepared, know your role, and know the resources you have at your disposal to help you successfully fulfill that role.

In the CAPI Screener, there is a printed introductory statement:

Hello, I'm {INTERVIEWER'S NAME} and we are conducting a survey for the U.S. Public Health Service.

A letter was sent to you recently explaining a survey which is called the National Health and Nutrition Examination Survey and is about your family's health.

IF RESIDENT DOES NOT REMEMBER LETTER, HAND NEW COPY.

All the information that you give us is voluntary and will be kept in the strictest confidence. Your name will not be attached to any of your answers without your specific permission.

Use this to start your presentation. Learn it well enough so that you are not reading it mechanically. In some cases, the introduction along with the advance letter received by the household will be enough to convince the respondent to participate. In other cases, you must be prepared to go further. This is where the techniques and resources we will discuss in this manual come into play.

2.1 The Interviewer (YOU) as Focal Point

No doubt, you've seen commercials where a celebrity is speaking for a product. Advertisers do that because if the potential customer doesn't know the product, they will at least identify it with the spokesperson, and if they admire or like that spokesperson, they're more likely to buy the product.

We're working on the same principle. The concept of "a study" or "a survey" is often too abstract for people to have any feeling about it which would motivate them to participate. This is where you step in. You become the spokesperson, the personification of the study, and if respondents get a good feeling about **you,** they're likely to have one about the study.

RULE OF THUMB: You are the study – IN PERSON. If your respondents have good feelings about you, they will participate in the study. Encourage positive feelings as follows:

- **Be enthusiastic** about the study;
- Make it clear that you are committed to the project, and that you think it is **worthwhile and important;**
- Present a neat, clean, **professional appearance.** This is important not only for the respondent, but because even in walking around the neighborhood you present an image that will be picked up and possibly talked about among neighbors. You're a public person.

  Generally, you should dress according to the area you are working in. Avoid extremes of smartness, casualness, or exoticness. As a rule, look more like a teacher than a salesperson;

  NOTE: It is also important to keep your vehicle clean. In some situations neighborhood residents will become aware of your car as well as you. It should look like a vehicle driven by a professional;
- **Speak clearly and in a relaxed manner.** Use plain language and do not speak too fast or say too much;
- **Know the study.** If you come across as confident and knowledgeable when answering questions and providing assurances about fears, respondents will be inclined to trust you;
- **Be organized** and have all the materials you need. Again, this helps you to appear competent and knowledgeable; and
- **Be on time.** If you have an appointment, be there when you say you're going to be there. Doing so conveys the impression that you are "on top of things" and trustworthy. Being even a little late can lead the participant to believe that s/he is not really important to the study. Some potentially cooperative respondents become irate about tardiness.

SECOND RULE OF THUMB: Your respondents are people with lives, concerns, goals, values and fears, just like you. How would you feel if someone you didn't know wanted to interview you? What would make you feel at ease with a stranger who wants both your time and a lot of personal information? Here are some suggestions:

- Be **sensitive** to the respondent as an individual and as a person. Try to get a sense for who they are by paying attention to their particular living situation, their response to you, any physical limitations you notice (e.g., among the elderly), and so on;
- Show your **concern** in the way you answer respondent questions, conduct the interview, or even carry on small-talk; and
- Be **friendly, courteous, and helpful.**

2.2 General Approaches and Techniques

Here are some techniques and approaches that will be helpful to use during your introduction:

1. **Identify Yourself Clearly.** Make sure your respondent knows who you are, whom you represent, and why you are there (a health representative working on NHANES – a study sponsored by the U.S. Public Health Service).

   Use the study materials such as the ID card, business card, advance letter, and Screener Brochure to help you. Emphasize that you are not selling anything or soliciting for any charity.

2. **Sell Yourself.** As we mentioned in the last section, and as sales professionals teach, a buyer must be sold on the **seller** as much as the product. Honesty, integrity, sincerity, empathy, concern, knowledge, professionalism and a positive image motivate people to respond.

3. **Establish Rapport.** Start off on the right foot. Sometimes, offering compliments about the person's house, children, garden, pet, etc., is a good way to establish rapport. Also, be sensitive to the person's living situation, and show concern for any special needs or questions they might have.

   Remember to make your contact with the respondent friendly, while at the same time professional. Always remain neutral in your conversation. Do not discuss controversial topics—religion, politics, health remedies, etc. Do not discuss your personal opinions.

4. **Pose Yes-Answer Questions.** If you get to a stage in the introduction where you think a refusal is pending, ask questions of your respondent that will elicit a "YES" response. If a person agrees with you at various points during your presentation, it will be harder for them to say "NO" at the end. Examples of YES-answer questions could be:

   - "Would you agree that improving the nation's health care is an important goal?"

   - "Would you agree that to improve health care, we need to know what kinds of problems people are having?"

   - "In order to really understand the kinds of health problems people are having, we need the most complete and accurate information possible, wouldn't you agree?"

5. **Let The Respondent Set The Pace.** Don't use first names unless the respondent tells you to; let the respondent be the guide as to how informal you are, or how fast you go.

6. **Be "On Your Toes."** Be confident, reassuring, and ready to react promptly to a respondent's cues. Don't get into a "set interviewing routine" that keeps you from dealing with each respondent's individual concerns.

7. **Focus on the Respondent.** Don't be self-conscious, rather, focus attention on the respondent. Use good eye contact and ask questions to draw out respondent's concerns, then translate the survey in terms of how it will meet those concerns. Be sincere, listen intently, and watch body language. When someone expresses lack of interest, don't be frightened away. This person is usually the easiest to convince once you uncover their primary objections. Pretend you don't hear negative comments; generally people are only using this as a tactic to delay making a decision. You might nod and say "I understand" and continue your presentation. Be kind, not defensive. Be complimentary, not hostile.

8. **The Respondent is Needed.** Make the respondent feel they are needed, are a valuable part of the study, and that the study is a cooperative effort towards the attainment of shared goals and mutual benefits. "We can work together to help improve the kind of health care available for your family as well as others across the country."

9. **"Joining With The Neighbors," or The Civic Pride Approach.** People often decide what is right to do based on what others do. So, it can be helpful to mention that other families in the neighborhood are participating, or if you know that any important local leaders ("the mayor", etc.) are doing so … "You can join (many of your neighbors, Mayor Jones, etc.) in helping with this important work." This can be especially useful in neighborhoods with a strong sense of community.

   Keep in mind that you can never mention other survey participants outside the SPs household unless the respondent mentions them first.

Point out that studying people in the stand location (e.g., Montgomery County, New York, Los Angeles, etc.) contributes important information that will become part of the national health picture.

Mention that over the last 35 years, more than 130,000 people have participated in NHANES surveys.

10. **Start Questionnaire as Quickly As Possible.** Try to get started with the questionnaire as quickly as possible; once you begin asking the questions, the respondent may see that his/her fears about the interview are unfounded. The questions are easy to answer and nonthreatening.

11. **Know The Study.** Above all, be thoroughly familiar with all study materials so that you can readily answer a respondent's questions about the survey. Be prepared to point to relevant text in the materials to answer respondent questions.

2.3 Materials

Your Interviewer's Manual generally describes all the materials you will be using. Here we want to focus on those that are specifically intended to help in obtaining respondent cooperation by **introducing yourself and the survey** to respondents during the screening process.

These materials are useful in establishing the **legitimacy** of the study (and you as a representative), providing **information** to help the respondent realize the importance of his/her participation, and **notifying the respondent of your return** in case s/he is not home.

- **Identification Badge** (English only) – This photo ID verifies that you are an employee working on the study. It should be visible to respondents when you approach the door. It indicates that you are a "health representative working on NHANES for the U.S. Public Health Service." It generally allays concerns about who you are.

- **Advance Letter** (English and Spanish) – This letter introduces the survey and requests the respondent's participation. It is on official NCHS stationary and not only provides information about the survey, but also helps create a sense of legitimacy, since it shows that you are part of a planned study conducted by a government agency.

  In most situations, the home office will send a letter to each address just before you are assigned the case. In some areas, however, the addresses will not be adequate to mail the letter. In those cases, you will present the letter during the first contact with a household member. Make sure that each household has received an advance letter either in the mail or directly from you during your introduction.

- **Screener Brochure** (English and Spanish) – This brochure includes a brief description of the study, information about the NHANES sampling procedures, and how the respondent's household was selected. It emphasizes that eligible respondents may be asked further questions related to health and nutrition. It **does not** include information relevant to the specifics of NHANES Sample Person participation. You should have this brochure available to hand out to an eligible Screener respondent. It helps legitimize the study and gives respondents something to look at while you describe the study verbally.

- **Local Newspaper Article(s)** – In many stands we are able to obtain press coverage. When available, interviewers should have a copy of the article(s) to show/give to the respondent at the door. A good opener is "Did you see the article about our study in the (NAME OF PAPER) on (DATE)?"

  Although many respondents will say no, most will be intrigued and impressed by the newsworthiness of the study. It is an instant legitimizer.

  When a local article is not available, using one which appeared recently in a major city can be effective.

- **Business Cards** (English only) – Each interviewer will have personal business cards with his/her name, title (Health Representative), the name of the study, and the sponsor (USPHS) preprinted on each. These cards support the interviewer's professionalism.

- **Call-Back Card/Sorry I Missed You Card** (English and Spanish) – This card is left when no one is at home at a sampled address. It briefly describes the study and tells the respondent that the interviewer will return.

2.4 Answering Questions

Although in most cases the introduction is all you'll need to gain the respondent's cooperation, there will be times when you will have to answer questions before you begin (or during) the interview. But keep this in mind: respondent's questions mean they are interested and concerned. So, you need to be prepared to answer in ways that respond to that interest and concern. **Questions are not obstacles but opportunities.**

Listen to the respondent's questions and answer by providing only the information needed to handle the respondent's doubts about you or the survey. In other words, make your answers brief and to the point. Don't volunteer extra information or unnecessarily lengthy explanations, because unasked for information may be misunderstood and confuse the respondent.

As we have said many times, it is extremely important that you be thoroughly familiar with the purpose and general operation of the survey so that you can answer questions accurately. You should also be familiar with the contents of the advance letter and brochures so that, when appropriate, you can point out the written answers as you respond to questions.

If you don't know the answer to a question, admit that you don't know it. Continue with the interview, but volunteer to call your supervisor and get an answer or have your supervisor talk with the respondent if the respondent wants you to. That's one way to project integrity. Bluffing is not.

Here are some questions respondents will frequently ask about the survey when you first introduce it, and suggested answers. **REMEMBER,** in an actual interview situation you want to be flexible and personal – that is, direct your answers to the respondent's concern instead of providing a "canned" answer.

1. Who is conducting/sponsoring this survey?

This survey is conducted by the National Center for Health Statistics, a branch of the U.S. Public Health Service, in the U.S. Department of Health and Human Services.

Note: Many respondents will be more familiar with the USPHS than NCHS.

2. What's this study about?

"This study is being conducted nationwide for the U.S. Public Health Service to find out about people's health."

"The results will be used to evaluate health and nutrition programs and determine the needs for health care."

"During the past 35 years, more than 130,000 people have participated in the National Health and Nutrition Examination Survey."

3. What are you going to ask (if asked before the Screener)?

"I am just going to ask a few questions about your family and household, so that we can determine whether anyone is eligible to participate in the survey.

4. How long will it take (if asked before the Screener)?

"The interview should take less than ten minutes—just long enough for me to find out if I need to talk to you and your family in more detail."

5. Do I have to answer the questions?

"The answers you or members of your household give will be used to help develop national health policies and programs, so we hope that you will take the time to participate in this important study. All the information you provide will be kept confidential. However, your participation in this survey is voluntary."

6. Will anyone know what my family or I have told you?

"Answers will be kept confidential and will be seen only by researchers involved with this study. All the information you give us is protected under the Privacy Act of 1974."

Use the confidentiality statement in the Screener and/or use the Confidentiality Brochure as necessary.

7. What will be done with this information?

"The information you give us is put together with similar information from other respondents throughout the United States to produce totals, averages, and statistics about national health in general. The U.S. Public Health Service, health researchers across the country, physicians, and universities will then use this information to understand and respond to the health problems and needs of our population."

Examples: Previous health studies have allowed the Public Health Service to develop growth charts. Physicians use these charts to identify health and developmental problems among children.

Use/show NHANES Data Uses Sheet to review other examples.

Show respondents the catalog which lists NCHS publications.

8. How was I selected?

"Your address was randomly selected. By selecting households for interviews in this way, everyone has an equal opportunity of being interviewed and we are ensured of gaining a good understanding of the health conditions of people like you and your family."

Point to page 3 in the Screener Brochure.

9. Why don't you go next door?

"Each chosen household represents many others that were not chosen, and it is very important that we get your answers so that others like you will be represented. Once your household is chosen, we are not permitted to substitute another household for yours, so only you may answer for all those other households you represent."

10. Why is it important for older Americans to participate in this health survey?

"Older Americans are the fastest growing group of people in the U.S. By the year 2000, they will constitute 17 percent of the U.S. population and it is expected that their numbers will continue to increase dramatically over the next 50 years. Researchers need to have current information about the health status and health needs of this group."

11. How will my participation in this survey help me and other older Americans?

"Lawmakers, other public officials and physicians need this information in order to plan adequate health care programs for older persons. Organizations for older Americans need this information to improve the quality of life for older Americans and to help them live better independently."

Show AARP, NIA, or Area Agency on Aging endorsement letters if necessary.

2.5 Refusals and Other Problems

2.5.1 Contacting a Respondent

Sometimes you will encounter problems in making contact with a respondent to administer the Screener. These problems and what to do about them are covered in Section 10.1 of your Interviewer's Manual. Here we want to reiterate just a few points:

1. If no one is home, **leave a Sorry I Missed You Card** (under the door, **not** in the mailbox). You can also leave a business card.

2. If you suspect that you are in a neighborhood with many elderly respondents, give the person enough time to reach the door. Ring the bell again.

3. Remember to make visits at different times of the day and different days of the week.

4. Contact a neighbor. Probe to find out when an adult household member (or, later, a selected SP) will be home. Return at that time.

5. If possible, try and complete as much of the Screener as you can from information provided by a neighbor.

6. Remember that **any** adult household member can respond to the Screener.

7. When necessary, your supervisor can provide an apartment manager package to use in locked buildings. However, this should be used as a last resort. It is always better to try to deal with household members themselves.

8. **NOTE:** The survey also has special packages to be used on military bases and college campuses.

2.5.2 Respondent Confidentiality Issues

On occasion, study participants may be asked to serve as translators, endorsers of the study or as escorts in dangerous segments or gated communities. In previous years, study participants have also served as field interviewers or MEC/field office local clerks. When participants volunteer or are hired in this manner, they must sign the nondisclosure agreement and Westat employment forms as necessary. Only when they agree to these terms and sign the forms will they begin work as employees or volunteers of the study. It is also important to note that they should not be prompted to divulge their own names and experiences as study participants unless they do so on their own volition.

2.5.3 Refusals

Occasionally even the best interviewers receive refusals to participate in a survey. Most respondents do not refuse outright; rather, they express some hesitancy, reservation, or initial hostility. In a short-time, you will become sensitive to the firmness of the "NO" conveyed by the tone and wording of the respondent's comments. You will also learn to sense the reasons behind a respondent's hesitancy and develop ways of dealing with those "hidden" concerns.

Always listen very carefully to what the respondent has to say, and then address your remarks to the respondent's concerns. Some of the most common reasons respondents give for refusing are:

- Too busy; don't have the time;
- Not interested in the study or surveys;
- Don't want to be bothered or involved;
- Waste of time and money;
- Dislike government;

- Too ill, don't feel well enough; and
- Very healthy, don't need this.

You can respond to these concerns as follows:

- **TIME:** Point out that you only need to ask a few short questions to determine if their household is eligible for the study. This only takes about 10 minutes. When necessary indicate that you can come back.
- **NO INTEREST/INVOLVEMENT:** Emphasize the importance of the study and the prominence and legitimacy of the sponsors. Explain how worthwhile the project is by pointing out that people making decisions on government programs need good information to guide them. Use the approaches discussed in Section 2.2.
- **WASTE OF TIME/MONEY:** Indicate that by obtaining this information, policy makers/researchers/physicians can get concrete data upon which to make good health decisions. Without this information, money/resources may be wasted (not spent wisely) by implementing unnecessary/unuseful programs/policies. OR, when resources/dollars are scarce, decisionmakers need data to establish priorities.
- **DISLIKE GOVERNMENT:** The government is trying to be more and more responsive to the health needs of our population. By participating in this study, you will have the opportunity to provide the government with good health information. Also, keep in mind that all the data you provide will be maintained in strict confidence (show Confidentiality Brochure as necessary).
- **ILL:** Express sympathy (I'm sorry), mention that at this time you only need about 10 minutes of his/her time. BUT (if necessary), indicate that you are working in this neighborhood, need to come back another day anyway, and will drop by again.
- **HEALTHY:** Indicate that the government is very interested in understanding the health of all Americans—those in good health and those in poor health. It is of great interest to researchers to understand what factors (e.g., diet and lifestyle) keep people in good health.

If you find that you are not getting anywhere with a respondent, try to end the contact **before** you get a final "No." However gruff or rude a respondent may be, always maintain a pleasant, courteous manner. Above all, do not antagonize or alienate the respondent. **Try to keep the door open for future contacts.** In most situations, your supervisor will assign another interviewer to attempt the interview. If you can leave on a pleasant note, the respondent may be more receptive to the effort of another interviewer. After leaving the respondent, record the situation **completely** as noted in Section 10.2 of the Interviewer's Manual, and discuss the case with your supervisor.

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3. COMPLETING THE INTERVIEW AND MAKING THE EXAM APPOINTMENT

Once you have completed the Screener and are either attempting to conduct an extended interview with SPs or setting up examination appointments, the tasks you face are somewhat different. The emphasis moves from creating a first impression to building confidence in the survey, fielding questions, encouraging respondents to participate with more "in-depth" techniques, and handling special SP concerns or problems.

At this stage, "your foot is already in the door." Your job now is to make sure that you obtain a quality interview (or interviews) and build up enough confidence and motivation so that the SP will follow through with the exam.

3.1 General Approaches and Techniques

Here are some general approaches that you can use when you are at this stage of the interviewing process. Although some of the approaches mentioned below are similar to those noted during the screening process (Section 2.2), they are important throughout the interview, especially when convincing SPs (other than Screener respondents) to participate fully in the survey.

1. **The respondent is needed.** Continue to let the respondents/SPs in the household know that they are a vital part of the study, and that the study is a cooperative effort towards the attainment of shared goals and mutual benefits.

   "We can work together to help improve the kind of health care available for your family as well as others across the country."

   "By helping, you'll also receive a **free health exam, written results of the exam,** and **a cash payment** in appreciation for your time and cooperation."

   "When was the last time you were paid to go to the doctor? Usually works the other way, right? So, everyone wins!"

2. **Focus on the respondent.** This approach is as useful in this stage of your interview as it was during the initial phase (see description in Section 2.2).

   As you listen to the respondent, be alert for health issues s/he mentions that are important to his/her family, e.g., diabetes, heart disease, allergies, etc. When relevant (and without being insensitive), discuss these health issues as they relate to a past or

future NHANES. Have these issues been studied in past NHANES? Have findings been published?

Refer to Data Uses Sheet or articles in NHANES At A Glance. Are these issues being examined by this NHANES?

3. **Pose yes-answer questions.** As in your initial approach, continue to ask smaller questions that get a "YES" answer, instead of a big question at the end ("Will you or will you not participate?"). The idea here is that several minor decisions are easier to make than one major decision, and that if a person agrees with you at various points during your presentation, it will be harder for them to say "NO" at the end. Examples of YES-answer questions could be:

   - "Would you agree that improving the nation's health care is an important goal?

   - "Would you agree that to improve health care, we need to know what kinds of problems people are having?"

   - "In order to really understand the kinds of health problems people are having, we need the most complete and accurate information possible, wouldn't you agree?

4. **Sell yourself.** Continue to sell yourself throughout the interview. This is very important, not only with respect to the Screener respondent, but to SPs and any member of the household. Remember, you sell yourself through your friendliness, attire, and professionalism.

5. **Good rapport.** Maintain the good rapport you started with the respondent, again remaining professional but friendly (see description in Section 2.2).

6. **Participation as an opportunity.** Talk about participation in the survey as an **opportunity** to help toward an important social goal (i.e., goals listed at item 3 – YES-answer questions). Without going overboard, you can even phrase it as a "gift" – something we are giving respondents the chance to do. "It's a chance you don't often get -- to contribute directly to improving our health care."

   "Health news is so important today that every major channel has a health segment (just like the weather). Every day we see important new results of health research. This is your opportunity to be a part of that."

   "Health data from this study gives researchers important clues on the causes of disease development which eventually leads to cures."

   "Information collected from this survey will be compared to information collected in previous and future NHANES surveys. This allows health planners to find out how much various health problems and risk factors have changed in the United States population over time."

"By identifying the health care needs of the population, both government and private agencies can establish policies and plan research, education, and health-promotion programs which will help improve the current health of the population and prevent future health problems.

Finding out about the kinds of health problems that are experienced by the population as a whole, and by specific age-gender-race/ethnic groups, allows researchers to determine which subgroups of the population would benefit most from specific programs and policies."

When presenting NHANES participation as a contribution to valuable research, point out that NHANES can be beneficial not only to his/her general health but to that of his/her children and grandchildren, as well as, the general population of the United States. Conversely, non-cooperation can be interpreted, in effect, as a "vote" against medical research.

Use the articles in NHANES at a Glance, the Data Uses Sheet, and the local newspaper articles if available.

7. **Personal benefit.** Although examinees do not receive a complete physical, the "personal benefit" approach has been used successfully in the past. This approach is valid in that …

   …Respondents receive many of the tests performed during a regular physical examination and some that are not always included in a typical physical exam (i.e., physical fitness test on a treadmill). **NOTE:** With the advent of managed care, patients are very likely only to get tests that their physicians believe are needed for a particular condition.

   …Some of the results of these examinations are provided at the time of the exam, others are sent to the respondent. S/he can then give those results to their medical provider for placement in their health file.

   …Even if SPs have recently had a "given test," they could think of this as "getting a second opinion."

   …Moreover, many of these tests are analyzed by the top medical facilities in the country such as _____ vs. a local area laboratory.

   …Lastly, it may prove helpful to mention that the MEC exam, carried out in a private facility, could cost up to $2500 or more.

8. **Sampling.** One of the most common objections to participation is "Why me?" Until the sampling procedure is in some way explained, the respondent may suggest "picking someone else" or "getting someone who needs it." A brief description of how s/he was selected for NHANES can be an effective persuasion tool. **Reference page 3 of the Screener Brochure.**

The following statements/arguments may also prove persuasive:

"Because of the scientific selection process used, you/your family/your household cannot be replaced."

Also, telling an SP that s/he represents a number of other people sometimes puts the importance of their participation into a different perspective. For example, you might say something like: "Since it is impossible for us to examine everyone, we use strict, scientific sampling methods – rather like a lottery – to select a "sample group". Once selected these people represent all the other people in different geographical areas and of different backgrounds whom we could not examine."

Another persuasive comment is: "You represent about 7000 other Americans of your same age and gender."

9. **"Joining with the neighbors" or the civic pride approach.** As we suggested in Section 2.2, people often decide what is right to do based on what others do. So, it can be helpful to mention that other families in the neighborhood are participating (provide no specific names), or if you know that any important local leaders (mayor, director of public health, etc.) are doing so or have endorsed the study…"You can join (many of your neighbors, Mayor Jones, etc.) in helping with this important work." This can be especially useful in neighborhoods with a strong sense of community.

   You can also point out that studying people in the stand location (e.g., Silver Spring, McAllen, Los Angeles, etc.) contributes important information that will become part of the national health picture.

   And, mention that over the last 40+ years, close to 160,000 people have participated in NHANES surveys.

10. **Friends and family.** Friends, neighbors and other relatives can be especially effective motivators, particularly if they have been successfully examined previously. Encourage the SP to contact previously examined housemates (friends) and relatives who have participated as "satisfied examinees."

    Keep in mind that you can never mention other survey participants outside of the SP's household unless the respondent mentions them first.

11. **Contacting physician.** If the SP mentions that s/he would like to consult with his/her personal physician before making a commitment, do not discourage him/her from doing so; rather agree that it is a good idea and then ask the SP if s/he would be agreeable to having a survey representative contact the physician to provide him/her with further information about the program. The interviewer should then obtain the name, address and telephone number of the physician and inform the SP that the site office will contact his/her physician as soon as possible (via mail and telephone).

    We have developed a physician packet with survey materials geared toward convincing physicians about the importance of NHANES.

12. **Giving detailed information about the examination.** Try to answer all of the SP's questions about the MEC exam yourself if you are sure of the answers. Allow yourself plenty of time for this process. If the respondent feels you are in too much of a hurry to complete the interview and get their consent to the exam, they may simply refuse to take part.

    As necessary, use the **Exam Component Hand Card** to point out to the SP which MEC exam components s/he will receive. Respondents who ask for more detailed information about the examination than you can provide or that is provided in the SP Brochure, can be referred to the office staff. If more detail is required, the stand office can also ask a MEC staff member to contact the respondent. Remember that respondents can also get very detailed information during their actual visit to the MEC.

    Every year we will ask each of you to go through the exam. This not only increases your knowledge, but also allows you to point out that "you've taken it yourself."

13. **Quality exam staff.** Stress that all the exam staff are highly trained professionals. Each team has a licensed physician. The health techs are registered with ARRT (American Registry of Radiologic Technologists). The med techs and the phlebotomists are certified by ASCP (American Society of Clinical Pathologists). Both ARRT and ASCP are nationally recognized organizations – the best in their fields.

    For Spanish-speaking respondents, mention that some of the MEC staff are Spanish-speaking.

14. **Let respondents decide.** Give respondents the feeling that (despite your attempts at persuasion), they are in control of their decision to participate or not -- they are not being cajoled or manipulated. Appeal to **their** sense of social value, civic pride and so on.

    Again, this works much better if you have asked YES-answer questions in which respondents assert their own views. Once they have verbalized these views, participating will feel like a personal decision (assuming, of course, that in the YES-answer questions they **agree**). People are more likely to be committed to personal decisions for which they take responsibility.

3.2 Accommodating the Respondent

Sometimes the respondent may agree with all you have said about the survey, but particular problems or circumstances (such as a fear about one part of the examination, inability to take off work,

etc.) may lead him/her to be reluctant to participate. Here are some approaches for these kinds of situations.

1. **Overcoming fear or modesty.** In many cases, reluctance will be a result of fear or modesty. Most of the time, these reasons will not be admitted by the respondent. You will need to be especially sensitive to these unstated reasons. If you sense that this is occurring, explain to the respondent that the examination is neither painful nor embarrassing.

   Women should be assured that garments cover the SP completely during the entire examination and that there is no gynecological exam. [There is also a female physician on one MEC team. IF YOU ARE AT ONE OF HER STANDS, MENTION THIS TO FEMALE SPs.]

   Men may be assured that there is no prostate exam.

   When necessary, refer to the SP Consent Brochure, page 2, "No internal exam is included."

   Local newspaper publicity and other outreach activities may also help to alleviate anxieties in the minds of SPs.

   Furthermore, for SPs who feel especially uncomfortable or fearful about coming in for the exam, assure them that they can bring a family member or friend along for support if they would like. Older SPs can bring caretakers or companions.

   Some SPs (especially the elderly and/or their family) may fear that we are part of a **scam** and that we are going to charge them or their insurance carrier/Medicare/Medicaid for the exam. **Assure them of our legitimacy, write free exam on the consent form, have them call the government number if necessary (1-800-452-6115).**

2. **Examination concessions.** Most people cooperate fully once they are in the examination center, so you should try to avoid making non-participation in a particular test a condition for being examined.

   Occasionally, in the past, examination cooperation has been obtained by making certain concessions or promises about the examination or its results to the SP. For example:

   - SPs who indicate a fear of a particular procedure (e.g., blood draw), can be assured that the procedure will not be performed if they come for the examination; and

   - Arrangements can be made for non-SP household members to be interviewed and examined at the request of a related SP (guest SPs). They receive a free examination but do not get any incentive.

While there are no objections to using the above tactics, they should only be used as a LAST RESORT to obtain response and not offered immediately. Whenever a concession has been made to obtain agreement to participate in the examination, **it is imperative** that it be communicated to the stand office staff and the examination staff. **It is the responsibility of the interviewer making the concession to verbally notify the stand office and document the concession on the consent form, the CAPI consent page in the appointment module and the SPs appointment slip.** The stand office, via ISIS, will notify the exam staff.

When an SP requests certain concessions, it is important that the interviewer be able to explain any limitations in granting the SPs request. For example, our physicians cannot prescribe medication or treatment; our examination is not a certification of health, etc. Furthermore, we cannot assure SPs that our exam will be accepted by insurance companies, schools, or employers as a confirmation of health status.

NOTE: Since all concessions should be discussed during the call to the field office to schedule and confirm the appointment, any problems can be determined at this time.

3. **Flexibility in making appointments.** For SPs with busy schedules, either at home or work, remember that there are evening and weekend appointments available, **subject to NHANES appointment guidelines associated with fasting rules (i.e., morning or afternoon/evening).**

   In addition, to ensure privacy for disabled SPs, they can be scheduled for exams at times when the MEC is least busy.

4. **Notifying employers.** An SP may be reluctant to miss work either because of loss of pay or because work absence may be a mark against him/her. A visit or telephone call to the employer, with the SP's permission, might solve this problem.

   Inform the SP that **if** (and **only** if) s/he would like, the office can contact his/her employer to explain the nature of the survey and the need to examine this individual. If the respondent is willing to let us make the contact, you should obtain from him/her the name, address, and telephone number of his/her employer and the name of his/her immediate superior or anyone else s/he so designates for us to contact.

5. **Notifying schools.** A youth or his/her parents or guardians may be genuinely concerned about missing classes either because of the difficulty involved in making up assignments or because of school regulations. If weekend or evening scheduling is not feasible, the principal, a teacher or a counselor may be able to excuse the youth from certain tasks and/or persuade the youth to make up an assignment at a later date.

   Inform the SP that the office can provide him/her with a letter, to be presented to the school, explaining the nature of the survey and the need to examine this individual. If the respondent or his/her parent or guardian is willing, explain to him/her that a school excuse letter will be sent along with the reminder letter. This form should be completed by the parent or guardian and sent to the school. If further contact with the school is required, the site office can make arrangements to do so upon notification.

6. **Child/adult care.** If the respondent indicates that s/he could go to the examination center but has child care problems, point out that s/he will be reimbursed at the examination center for babysitting expenses incurred during the visit to the MEC.

   The same can be done for an SP who cares for an elderly household member (i.e., adult care).

   The amount paid per site will vary. Ask your supervisor what will be paid in the site you are working.

7. **Transportation.** Emphasize that transportation is either free (taxi) or reimbursed (mileage). For SPs that are concerned about coming to the MEC by taxi, mention the name of the taxi service to assure the SP that it is a "known company."

   If you **still** sense some reluctance on the part of the SP, then tell them that you or another staff member can drive them. If a staff member other than yourself will be driving the SP, give the staff member's name (e.g., "Donna Jones will be picking you up at…").

8. **Foster children.** If necessary, we will contact the appropriate government department to obtain permission to include foster children in the study.

3.3 Materials

During this stage of the process, the following materials can be most helpful. They help legitimize the study, help respondents understand how they fit into the public health process, and demonstrate the importance of the study.

- **Sample Person (Consent/Assent) Brochures** (English and Spanish versions) – These four brochures are chiefly used to present the examination to the SP and/or his/her parent or guardian. As you learned earlier, they are age specific.

  They are extremely useful because they provide an overview of the study, provide information about the exam components SPs will receive, and answer important questions respondents may have.

- **Overview Brochure** (English and Spanish version) – This document provides more detail about the survey than any other outreach document on the study. It is used primarily by the Advance Arrangements Team to present the study to public officials, the media, and other community leaders. It can be a useful tool to convince more educated SPs, those who are researchers themselves, or those who are health providers.

- **NHANES at a Glance** (English) – This notebook includes:

  - **Articles** from newspapers, magazines, and scientific journals which document study findings and/or promote the study. The articles cover a variety of health issues (e.g., cholesterol levels, hypertension/heart disease, asthma, smoking, lead poisoning, diabetes, exposure to sun, nutrition, etc.) and discuss their impact on the population as a whole and on different groups in the U.S. (e.g., Hispanics, blacks, Chinese, the elderly, children). Use the specific knowledge you have obtained to date from the Screener, the medical history interviews, and your conversation with the household to target health issues which may be of special interest to the particular household or SP you are working with. Point to articles in this notebook which may foster participation.

  - **Data Uses Sheet** which provides examples of information collected on previous HANES surveys and how that information has been used to benefit the U.S. population; and

  - **Endorsement letters** from various national organizations that help to legitimize the study to older Americans.

  This notebook was a very valuable aid to interviewers during NHANES III. Always carry it with you in the field. It is designed for you to show to an SP in any situation where it might help gain cooperation. These might include:

  - Large urban areas where individuals are distrustful of strangers at the door;

  - Among the elderly, where we have letters of endorsement from community and national leaders with whom they might identify;

  - SPs who are distrustful of or misunderstand the purpose of the study; and

  - Any situation where gaining the SP's cooperation depends on establishing the legitimacy and value of the study to the individual and to the community.

The notebook is updated on a regular basis.

- **AIDS Card** (English and Spanish version) – The card assures respondents that the AIDS test is completely safe, and that there is **no** risk of AIDS from any procedure in the MEC exam. It is part of the Hand Card set.

- **AIDS Brochure** (English and Spanish) – The brochure, published by the U.S. Department of Health and Human Services, provides individuals with extensive information about HIV counseling and testing and gives the reader telephone numbers to call to get more information and help. One of the numbers is for Spanish speakers and another is for deaf access.

- **Certificate of Appreciation** (English and Spanish version) – This certificate is either given to each SP at the household after s/he has scheduled an examination

appointment or mailed to the SP shortly after the exam appointment is set. It is signed by Dr. David Satcher, Assistant Secretary for Health and the Surgeon General and Dr. Edward Sondik, Director of NCHS.

- **Catalog of Publications of the National Center for Health Statistics** (English) – This catalog lists NCHS publications, including those based on past NHANES studies, and shows how any of these can be ordered.

3.4 Answering Questions

Here are more questions (with answers) that you may encounter **throughout** the interviewing process, but especially once you have determined that you have an eligible household. Again these are not "canned" answers, but guidelines. General questions about the CDC, what the study is about, confidentiality, and respondent selection were covered in Section 2.4.

1. What are you going to ask about?

"The interview asks about health problems you have (had), experiences you have (had) when seeking health care, and other health related matters. Most people find it interesting."

2. How long will it take? (If asked after Screener)

"The interview will probably take about 20 minutes for children and 45 minutes for adults. It is sometimes shorter or longer, depending on what you have to say."

"The examination will probably take about 4 hours. For children age 5 and under, it will only last about 1 hour."

3. I have always been in good health (or I have health problems), so I would not be a good person to talk to.

"Your experiences and opinions are important. We are interested in talking with all kinds of people with all kinds of experiences—healthy or otherwise."

And about the exam …

4. What does the MEC exam consist of?

"The MEC exam consists of physical and dental measurements, biochemical measurements, dietary interviewing, and an interview which covers a range of health-related topics."

If necessary, refer to the SP Consent/Assent Brochure.

5. What are the benefits for me?

- Cash payment for participating in the survey.
- Results reported to you in writing which you can give to your physician to place in your medical record.
- Valuable health measurements.

Reference the SP Consent/Assent Brochures.

6. Do I have to participate in the examination?

"No, participation in all parts of the study is completely voluntary. Of course, we hope everyone will participate in all parts of the survey, because without your participation our information on the health of Americans may not be accurate. However, we can eliminate a particular procedure if you come for the rest of the examination."

7. How will I receive the results of my examination?

"At the time of the exam you will receive some of the results. Later we will mail you the remaining results. (The mailed results include items that require more analysis equipment and/or time than we have at the MEC.)"

Reference the Hand Card which covers this issue if necessary.

8. Can I talk to my doctor before agreeing to the exam?

"Yes and if you would like, we can have a survey representative contact your doctor to provide him/her with further information about the program."

9. What if I don't have a doctor?

"If you do not have a regular place to go for medical care, we can suggest places in your area where you can go for care."

10. I am a woman, and I'm concerned about privacy.

- Garments cover the SP completely during the entire exam.
- There is no gynecological (internal) exam.
- There may be a woman doctor on staff [ONLY AT SOME STANDS.]

11. Who will pay me for hours lost at work if I come in for the exam?

"We do have evening, Saturday and Sunday sessions. However, with your permission we will contact your employer. In most cases, employers agree to let employees take time off from work in order to take the exam and still receive full pay. We also have a compensation fee to help reimburse you for your time."

12. Are the tests that I may be asked to take safe?

"We care about your safety. The tests and measurements we do have been selected because they are safe. If you are an adult and are chosen to receive X-rays, this will add a small amount of radiation to your total lifetime exposure but it is no more than you would get if you flew across the country on an airplane."

13. I am a disabled person, and I'm concerned about coming to the MEC.

- We have examined many persons with disabilities during the past 35 years.
- You can be scheduled during a session that will have few other people so we can give you more personal attention.
- Bring a friend or relative with you.

14. Who can I call if I have questions?

"You can call our local office for further information. You may also make a toll-free call to our spokesperson, Dr. Kathryn Porter, at the CDC NHANES headquarters (1-800-452-6115).

Reference the telephone number in the SP Consent/Assent Brochure.

15. How do I <u>know</u> my results will be kept confidential?

"All the health information collected is kept in strictest confidence. Our staff is not allowed to discuss your participation in this study with anyone under penalty of Federal law: Section 308(d) of the Public Health Service Act (42 USC242m) and the Privacy Act of 1974 (5USC 552a). The results of your examination will be added with the results of all others participating in this important study and will contribute to a better understanding of the health of all persons living in the United States."

Reference the SP Consent/Assent Brochure and/or the Confidentiality Brochure.

Also keep in mind that each SP Consent Brochure includes questions and answers about specific issues believed to be important to respondents. For example the brochure for persons 18+ includes Q&As for use of data, chlamydia/gonorrhea/herpes/and AIDS, drug use and sexual experience, and volatile organic compound measurement.

3.5 MEC Exam Team Responsibilities

There are 15 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:

1. One MEC manager supervises the exam staff, manages the facility, and supports exam operations.

2. 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.

3. 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.

4. Two health (MEC) interviewers administer questionnaires for physical health information.

5. 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.

6. Four health technologists (some with radiologic technology and/or other health training) take and record body measurements, recruit SP to participate in the physical activity monitor component, perform vision tests, cardiovascular fitness tests, and total body composition (DEXA) scans, administer hearing tests, and administer the Trutol solution for the glucose tolerance test.

7. 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.

8. One phlebotomist conducts the phlebotomy interview, administers the fasting questionnaire, and draws blood for laboratory tests and special studies like the volatile organic compound special study. The phlebotomist is also responsible for administering the Trutol and drawing a second blood sample for the GTT test. S/he are trained as a back-up examiner for other MEC components like body measures and the physical activity monitor.

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.

3.6 MEC Exam Components

You will need to be knowledgeable about the exam components so that you are able to answer most respondent questions easily. In this section we will present a more detailed description of the main exam components (also noted in Part I, Chapter 8 of this manual), stressing the goals of each component. Keep in mind that if the SP questions are too technical, you should remind him/her that the best place to get these questions answered is in the MEC (before each exam), but you can also have someone in the field office provide more detail before the exam. Soon after training we will encourage you to take the exam and then continue to do so every year you work on the study.

3.6.1 Physician's Exam

All SPs see the physician. The physician measures blood pressure, explains how the SP completes one female examination, and explains the meaning of the STD/HIV test results. The physician explains how SPs receive the results of STD/HIV tests so that the results remain totally confidential to the SP. The physician must be present on the MEC before any exams can be conducted, and the physician is in charge of any medical emergency that occurs on the MEC.

3.6.2 Body Measurements

All SPs will have body measurements taken. The exam will include height, weight, and other body measurements such as skinfold and arm girth. These measurements will be used to assess growth, obesity, and body fat distribution, and will provide information which can be used as a reference for later studies. Measurements of height and weight will allow for a revision of the child growth charts now in widespread use. Measuring body fat is important because it is associated with hypertension, adult diabetes, cardiovascular disease, gallstones, arthritis, and some forms of cancer. Furthermore, obesity and overweight can have an effect on the mental, physical, and social well-being of individuals.

3.6.3 Dietary Interview

Dietary information has been collected in NHANES since the 1970s. Researchers and policymakers rely on NHANES data for detailed information about the foods and beverages that are consumed by the U.S. population. In addition to providing important national reference data on food and nutrient intakes that are obtained on all survey participants, the data help us to learn about food patterns of ethnic subgroups, the adequacy of diets consumed by young children and older persons, and the contribution of food to total nutrient intakes. Total nutrient intakes from food and dietary supplements can be computed by combining NHANES Dietary Recall data with household interview dietary supplement information. Many federal agencies use NHANES data to evaluate federal regulations in the areas of food fortification and human risk assessment analyses that are used to measure human exposure to contaminants that are found in food.

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.

Two dietary interviews will be administered to all SPs. The primary dietary interview is administered in person in the MEC. At the end of the MEC dietary interview, the interviewers will schedule the SPs for a follow-up interview 3-10 days later. Dietary telephone interviewers at the Westat home office will conduct these interviews.

In addition, a self-administered form, the Food Frequency Questionnaire, will be offered to SPs who complete the MEC dietary interview. It will be mailed from and returned to the home office.

3.6.4 Health Interview

SPs age 8 and older will have a health interview in the MEC. Generally, the questions asked in the MEC are considered to be more sensitive than the questions asked in the household. The MEC "clinic" environment is believed to be a more appropriate setting for the administration of these questions. All SPs will be asked questions in a face-to-face interview. In addition, persons who are 12-59 years old

will be asked a series of more personal questions in complete privacy. The SP will listen to questions through a set of earphones and will enter responses by touching a computer screen.

Depending upon the age of the SP the interview may consist of questions about tobacco, drug, and alcohol use, reproductive health (birth control practices, pregnancy and reproductive history, sexual activity), health behaviors (physical activity, weight history), kidney conditions and bowel health, current health status and mental health, and exposure to certain chemicals. Children 8-11 years will only be asked questions about weight history.

3.6.5 Physical Activity Monitor

The purpose of the Physical Activity Monitor (PAM) component is to assess the physical activity levels of NHANES examinees 6+ years of age. Approximately 4,000 individuals are expected to participate in this component annually. NHANES examinees wear a PAM to examine physical activity patterns over a 7-day monitoring period. The monitors detect locomotion-type activities such as walking or jogging. The monitors provide a means of capturing nonstructured activities that are often difficult for survey respondents (SPs) to self-report. Minors are included in this study because they are an important target population group for the NHANES nutrition assessment component. Physical activity data are linked to other household interview and health component data and are used to track changes that occur in body weight, functional status, bone status, and health status over time.

SPs age 6+ are recruited to wear the PAM for 7 days. They are instructed to wear it under or against light clothing on the right hip, during waking hours for seven (7) full days, beginning the day after their MEC examination. The monitor is initialized using a Reader Interface Unit (RIU). It is placed on a removable elastic belt that has a Velcro closure and the belt is fitted on the SP. The health technician provides verbal and written instructions to the SP to reinforce wearing instructions. After the 7 days has expired, the SP mails the monitor to the home office using a prepaid padded envelope.

The NHANES logo and a toll-free “800” telephone number is embossed on the monitor case. Assistance will be provided by telephone if questions or problems arise during the study. English and Spanish speaking staff members are available to answer questions that arise during the study.

3.6.6 Venipuncture

SPs age 1 and older will have blood drawn. The amount drawn will depend on the person's age. (See Attachment A, page A-3 for details.) It is important to draw blood from study participants for a number of reasons:

- Knowledge can be gained about how healthy a person is by measuring for various substances in their blood. Information gathered from these tests can be compared to information gathered from interviews to get a more specific idea of the participant's overall well being;

- Blood tests can also provide early warnings of potential health problems, perhaps before physical signs appear. For example, a blood test for lead might indicate exposure to unsafe lead levels before an individual showed any physical signs of lead poisoning. This would be critical since the effects of lead poisoning cannot be reversed;

  Another example is diabetes, a leading cause of disease and death in the United States. Diabetes mellitus will be assessed by measures of plasma glucose, insulin, and glycohemoglobin in examinees ages 12 years and older. Diabetes is a large, growing, and costly public health problem in the United States and disproportionately affects racial and ethnic minorities. About 17 million Americans have diabetes and over 1 million new cases of diabetes are diagnosed each year. Diabetes is the leading cause of kidney failure, non-traumatic lower extremity amputation, and blindness in working-age adults, and an estimated $135 billion were spent on direct and indirect medical costs for diabetes in 2002. Alarmingly, type 2 diabetes (formerly considered an adult disease) is now being diagnosed in children and adolescents and there has been a large increase in diagnosed diabetes among adults <40 years of age;

- Inconsistencies between interview data and blood test results could also be of importance with regard to health issues. For example, if low levels of iron were found in the blood of a person who described their diet as containing large amounts of iron rich food, this might indicate a problem in that person's ability to absorb iron properly;

- The blood test will also indicate the presence of STDs such as chlamydia and gonorrhea, hepatitis, herpes and HIV infection;

- Blood tests help in monitoring nutritional status, one of the key goals of NHANES. What researchers discover from this data can lead to health policy recommendations—the need for more vitamin fortification, for example; and

- The blood testing also provides information about the levels of cholesterol and other blood lipids, another important study goal.

Attachment A in this manual provides important information about the blood draw (venipuncture). It is very important that you be very familiar with this data.

3.6.7 Oral Health

SPs ages 5 and older will receive an oral health exam conducted by a trained health technologist. All examinees will be checked for tooth loss, cavities, restorations, and sealants. SPs 25 years and older will also be asked some questions about denture use and will be assessed for dental function.

Although strides have been made in reducing the consequences of dental and oral diseases, these diseases continue to be among the most common in the U.S. Nearly everyone experiences some type of problem. Much work remains to be done in this area, as can be seen from the following facts:

- Ninety-four percent of adults in the U.S. have experienced caries, or cavities;
- Caries are found in 50 percent of children in the U.S. Fortunately, this is lower than in previous years;
- Dental sealants, an effective means of preventing caries are underutilized in the U.S., with only 19 percent of children aged 5-17 having them;
- Eleven percent of Americans have lost all their teeth;
- There are many subgroups in the population who reported no dental visits in the previous year, such as persons over 55 years of age, blacks and Mexican Americans, and persons with low family income; and
- Dental and oral problems are usually highly preventable if the proper steps are taken.

Much of the data available about oral health comes from NCHS surveys conducted over the past decades. This NHANES will be critical for continuing to monitor oral health status, risk factors for disease, and access to preventive and treatment services. More specifically, this NHANES will produce oral health data to monitor five oral health objectives in the Healthy People 2010 health promotion: dental caries experience, untreated dental decay, no permanent tooth loss, permanent tooth loss, complete tooth loss, and dental sealants.

3.6.8 Urine Collection

Urine is collected from SPs age 6 and older to assess kidney function, measure levels of mercury, lead, iodine and arsenic, and assess environmental exposures to pesticides such as organophosphates, phthalates, polyaeromatic hydrocarbons, phytoestrogens and perchlorates.

3.6.9 Oral Glucose Tolerance Test (OGTT or GTT)

The goal for inclusion of this test is to reassess the prevalence of diabetes and impaired glucose tolerance (IGT) in the U.S. population. Persons with impaired glucose tolerance (IGT) – 15.6 percent of the U.S. population – are at high risk for developing diabetes. Also, IGT is an important risk factor for a number of other adverse health conditions and mortality. IGT is defined on the basis of an abnormal oral glucose tolerance test (OGTT). Persons without diabetes but with an OGTT 2-hr value of 140-199 mg/dl are considered to have IGT. Recent national and international randomized controlled trials have shown that diabetes can be delayed or prevented among persons with IGT.

The GTT will allow: (1) estimation of the prevalence of IGT and, thus, prediabetes in the U.S. population; (2) surveillance of trends in the prevalence and awareness of these conditions; (3) study of the risk factors for IGT and prediabetes; and (4) examination of IGT as a risk factor for health conditions and mortality. Timely data on IGT and prediabetes are particularly important as the nation initiates efforts to prevent diabetes among persons with prediabetes. These data on IGT and prediabetes are critical to targeting, designing, and evaluating prevention efforts.

A fasting glucose blood test is performed on all participants 12 years and older who are examined in the morning session after a 9-hour fast. After the venipuncture, participants are asked to drink 75 milligrams of Trutol® and to have a second venipuncture 2 hours (plus or minus 15 minutes) after consuming the Trutol. The blood glucose level from the second venipuncture will be used to determine if an SP has IGT.

The results from the OGTT will be reported to parents of participants 12-17 years and directly to participants 18 years and older in the Final Report of Findings. If the two-hour blood glucose values are equal to or greater than 140 mg/dL, i.e., glucose levels consistent with impaired glucose tolerance or diabetes mellitus, an early report will be sent.

3.6.10 Body Composition

The body composition component will use dual energy x-ray absorptiometry (DXA) to evaluate both body composition and skeletal health. These methods will be used to: (1) monitor secular trends in overweight prevalence; (2) describe the prevalence of obesity; and (3) examine the relationship between overweight and obesity and other examination measures, including blood pressure, glucose intolerance, and a battery of indicators for cardiovascular disease. This component will use three DXA scans to assess body composition—a spine and femur scan, as well as a whole body scan.

DXA will be used to assess overall skeletal changes that often occur with age by measuring bone mineral content (BMC) and bone mineral density (BMD). In addition, total body fat and lean muscle mass measurements can give insight into the influence of age, sex, and race/ethnicity on the skeleton relative to these measures. DXA measurements can be used to determine the prevalence of osteopenia and osteoporosis. DXA measurements can also be used to provide information on early gender and ethnic changes in the rate of bone accretion and to determine the age when skeletal accretion ceases and when peak bone mass occurs. This information can be used to implement effective and timely measures with the objective of maximizing peak bone mass. Such measures may include calcium supplementation, dietary fortification, or programs promoting dairy products and other calcium and vitamin D rich foods. This information can also be used to assess the impact of factors such as diet or lifestyle on measures of bone status in various minority populations.

The DXA AP spine and femur scans will be completed on SPs 8 years and above, while the whole body scan will be completed on SPs 8 through 69 years only. Pregnancy status will be assessed on all females 12 through 59 years and menstruating 8- to 11-year-olds. If the result of the pregnancy test is positive, the SP will be excluded from the entire DXA exam. If a pregnancy test for an SP who is 8-17 years comes back positive, a second test will be done for confirmation. In addition, women aged 12 through 59 years will be asked to self-report their pregnancy status and will be excluded if they respond yes even if the pregnancy test was negative. Self-report on pregnancy status for 12-17 year old females will be asked in the Physician's Exam. Females 8 through 11 years of age will not be asked about pregnancy status.

3.6.11 Cardiovascular Fitness

One important part of overall physical fitness and functioning is cardiovascular fitness. To measure this, SPs aged 12 to 49 will be administered a submaximal treadmill test. During this test, SP blood pressure and heart rate will be monitored. This information will provide key data on many health factors including the association between physical fitness and cardiovascular disease and hypertension.

Cardiovascular disease is currently the leading cause of death in the United States for both men and women. A sedentary lifestyle (along with elevated blood cholesterol levels, hypertension, and smoking) is a major modifiable risk factor for cardiovascular disease. According to current data however, only about 24 percent of American adults currently meet the physical activity recommendations outlined in the 1996 Surgeon General's Report.

Cardiovascular fitness is defined as the body's ability to uptake, transport, and utilize oxygen. Submaximal treadmill testing will be utilized as a means to estimate cardiovascular fitness levels during NHANES. Based on variables including gender, age, BMI, and self-reported level of physical activity, SPs will be assigned to one of six treadmill test protocols, each varying in difficulty. Each of the six protocols was designed so that the SP could walk at all times. Each protocol includes a 2-minute warm-up, followed by two 3-minute stages and a 2-minute cool-down period.

SPs will be carefully screened prior to the treadmill test using questionnaires and measurements of resting heart rate and resting blood pressure. High risk (symptomatic, with disease, etc.) individuals will be excluded, so that only apparently healthy individuals will undergo treadmill testing. The combination of screening, monitoring, and the submaximal nature of the test will all contribute to the safety of this component.

3.6.12 Vision

This examination will consist of a near and distance vision acuity test, eye glass prescription determination when appropriate, and an automated refraction measurement. It will be given to SPs age 12 and older.

Eye diseases cause suffering, disability, and loss of productivity for millions of people in the United States. In economic terms, eye disease and blindness are estimated to cost the U.S. in excess of $22 billion each year. No high-quality, up-to-date information exists on the prevalence of visual impairment and the major causes of visual impairment in the general population. These data are needed in planning health services, in monitoring changes in eye disease prevalence, in research program planning, and in developing and testing hypotheses about eye disease etiology.

In addition to a need for better data on ophthalmic conditions in the population, there is a need to identify strategies for more efficiently delivering and utilizing eye care services. With the growing number of elderly persons in the population and the increasing demands on health care budgets, it is important to develop medically sound and cost-effective guidelines to screen for visual impairment, and identify patients who need referral to eye care providers.

Data collected over 20 years ago in the NHANES I (self-reported history questions and full-vision examination with dilation) continue to be the only source of national prevalence data on eye disease and visual acuity impairment, and there are no data on visual field impairment. Changes in disease definitions, population demographics, diagnostic capabilities, and treatments for eye diseases make it important to obtain new national data about eye disease. The absence of such data has forced researchers to use blindness registry data that are almost 25 years old. These studies select mostly white populations or non-nationally representative populations.

3.6.13 Ophthalmology

The ophthalmology component consists of two eye examinations completed on all SPs 40 years and above. SPs will be excluded if they have an eye infection, eye patches or blindness. The first exam is visual field testing using Frequency Doubling Technology (FDT) perimetry to test for visual field loss from glaucoma. The second exam is digital fundus photography using an ophthalmic digital imaging system to assess the presence of diabetic retinopathy, age-related macular degeneration, and other retinal diseases. The average time needed to complete both exams is 14 minutes.

The leading causes of visual impairment in the U.S. are primarily age-related eye diseases including cataract, diabetic retinopathy, glaucoma, and age-related macular degeneration. More than 3.4 million Americans aged 40 years and older are either blind or are visually impaired. Although it is

believed that half of all blindness can be prevented, the number of blind people in the U.S. continues to increase. Unfortunately, scant data exist for national estimates and trends, and current estimates are based on data that are 25 years old and not nationally representative.

Glaucoma is the leading cause of irreversible blindness and a prevalent disease associated with aging. Although glaucoma can usually be controlled by early detection and treatment, half of people with glaucoma are not diagnosed, and glaucoma is still the number one blinding disease among African Americans.

Diabetic retinopathy is the leading cause of new blindness among adults age 20-74 years. It can affect almost anyone with diabetes, and contribute both to individual and societal burden. Efficacious and cost-effective strategies to detect and timely treat diabetic retinopathy are available, but among people with diabetes, ocular eye examination is received only by about two-thirds of people for whom the exam is recommended and varies significantly across health care settings.

Age related macular degeneration (ARMD) is the leading cause of visual impairment and blindness in the United States among people 65 years and older. The frequency of ARMD is expected to increase as the population lives longer.

3.6.14 Audiometry/Tympanometry

SPs ages 12-19 and 70+ years and older will receive hearing tests. 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.

Hearing loss severe enough to interfere with speech is experienced by approximately 8 percent of adults and 1 percent of children in the United States. Hearing loss at this level has consequences for quality of life, development in children, and other problems. Occupational surveys list noise as the first or second most prevalent work hazard worldwide. The principle health consequence of

excessive noise exposure is permanent hearing loss, and the economic consequences of hearing loss are great.

The NHANES hearing component was developed by NCHS with the National Institute of Occupational Safety and Health (NIOSH) and the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS). NHANES will involve two types of hearing tests. Tympanometry obtains information on the state of the middle ear, while air-conduction audiometry measures hearing thresholds. Hearing loss due to noise exposure can be determined through air-conduction tests. NHANES is the only data system that can provide nationally representative information on the hearing status of U.S. adults.

3.6.15 Volatile Organic Compounds Exposure

The goals of this study component are to characterize exposure to selected air toxics in the population and to determine predictors of exposure. SP tap water, blood, and urine samples will be analyzed to assess levels of exposure. Household interviewers will introduce this component to SPs and collect a tap water sample on every SP 12+. When an SP comes to the MEC, the phlebotomist will collect one additional 10-mL tube of blood, and the MEC interviewer will administer a 14-item VOC questionnaire. Nothing different will be required for the urine sample. Together this information will provide critical VOC exposure data for analysis.

Hundreds of air toxics have been associated with adverse health effects in occupational studies or laboratory studies, but have not been monitored in general population groups. Information on levels of exposure to compounds is essential to determine the need for regulatory mechanisms to reduce the levels of hazardous air and water/soil pollutants to which the general population is exposed.

The data will be used to: (1) characterize the distribution of personal exposures to selected volatile organic compounds; (2) examine the relationship between personal exposure to selected volatile organic compounds and demographic, economic, and behavioral characteristics; (3) assess the effect of emissions of volatile organic compounds in communities on personal exposure levels and blood levels; and (4) investigate possible associations between personal exposures to selected volatile organic compounds and selected measures of health status.

3.6.16 Indoor Allergen Exposure and Allergic Sensitization

Asthma is a disease of enormous public health importance and economic burden. Data from this component will describe the distribution of indoor allergens and endotoxins in the beds and bedrooms of participants, the corresponding allergic sensitizations and the participants' history of allergic conditions and symptoms. This component, new in 2005-2006, addresses several Healthy People 2010 objectives on reducing exposure to allergens in the home.

There are two main components in this unique assessment. First, as part of the laboratory component in the MEC, participants aged 1 year and older will undergo venipuncture for the measurement of 20 total and allergen specific immunoglobulin E assays. This will include a panel of common indoor, outdoor and food allergens. Second, a household dust sample will be collected from the bed and bedroom floor during a revisit to the home for all examined survey participants. The dust sample, collected by vacuum, will be analyzed for ten common indoor allergens and endotoxins also being studied in the blood testing. In conjunction with these two components, a series of questions on general respiratory health, as well as asthma, hay fever and eczema will be asked during the Household Interview. The questions, the blood tests, and the laboratory analysis of the household dust samples will describe the association of these three components in a nationally-representative study population.

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4. SPECIAL TARGET GROUP CONSIDERATIONS

For certain groups that will be included in the study, it may be helpful to focus attention on their special needs or characteristics in order to obtain maximum cooperation. Four such groups include the elderly, the disabled, pregnant women, black-Americans, and Mexican-Americans.

4.1 The Elderly

Older persons are an important part of the national population and will be an important focus of NHANES. Keep in mind that:

> Older Americans (60+) are the fastest growing group in the U.S. population. By the year 2000 they will constitute 17 percent of the population and it is expected that their numbers will continue to increase dramatically over the next 50 years.
>
> The number of people over 85 is also increasing rapidly. By the year 2000 they will number about 5 million and by 2050 at least 16 million (more than 5 percent of the population).

NHANES III was the first NHANES to collect data on persons 2 months and above. Previous NHANES stopped at age 74. This NHANES will continue to collect data on this important group. This group is important not only because of its size but obviously, because of its health needs.

Experience indicates that older respondents have some unique concerns about participating in the study. Some items to watch for:

1. **Fear:** This group is going to be more concerned than others about opening the door, participating in anything new, and dealing with strangers.

   YOUR RESPONSE: Display your ID prominently, show (or remail) them an Advance Letter if they do not remember receiving one, show them the NCHS letter to the Police Department, volunteer to come back when another family member/ caretaker is home. Work with relatives/friends/caretakers. Convince the latter as a way of convincing the elderly SPs. Indicate that someone can always be with the SP during survey participation, whether at the interview level or during the MEC exam.

2. **Confidence:** This group is likely to feel less confident about their ability to perform in general, whether it be to read something properly, remember something, hear what you say, or sit through a four-hour exam, much less **get** to the exam.

   YOUR RESPONSE: Be extra-patient. Offer lots of encouraging comments, and downplay any instances of fumbling around, slowness of response, loss of concentration, or inability to recall. **Avoid putting any kind of pressure on elderly respondents,** either verbally or with body language. Allow extra time for everything. Your aim should be to make their participation **easy**.

3. **Physical Need:** Elderly respondents are more likely to have problems hearing, seeing, talking, walking, getting up and sitting down, fatigue, and so on.

   YOUR RESPONSE: Be attentive. If you think your respondent is having trouble hearing, ask "Should I repeat the question?" If you think s/he is getting tired, take a break. If s/he is having trouble getting up to get something, offer to do it yourself (e.g., get up to get vitamins).

4. **Transportation to the MEC:** If the older respondent is very apprehensive about getting to the MEC either by taxi, public or personal transportation, go ahead and offer to bring them there yourself (or have other staff person bring them). Let them know that they can bring along a companion if that will make them feel more comfortable.

4.2 Interviewing Respondents with Health Impairments

In this study you will be interviewing a number of respondents who have impairments either because of age, illness or accidental injury. In this section, we are going to discuss in more detail some of the difficulties you may encounter when interviewing respondents who have impairments. While we will discuss these impairments in relation to older people, you may also encounter younger people with some of these conditions.

When you interview an older respondent, you need to address your own attitude towards the aging and the elderly. Your fears and assumptions could create a barrier between you and the respondent. Fear or discomfort with the elderly might make you sound stiff or insincere. In general, try and be sensitive, matter-of-fact, flexible, and patient. Let the SP know that s/he is not threatened by any aspect of the study (an older respondent might, for example, fear that participating in the study will result in him/her being placed in a nursing home).

First, let's begin by talking about some of the sensory impairments you may encounter, then about some physical impairments and disorientation or confusion. Finally, we'll discuss some other types of problems that may confront you and how to handle them.

4.2.1 Auditory Limitations in Hearing

A gradual hearing loss begins about age 20. As age increases, sharpness and accuracy of hearing often diminish. This type of hearing loss may make a person misunderstand words, which is often interpreted as confusion. Inability to hear well, i.e., noise from other sources (people talking, dishwasher or TV operating, etc.) may make it difficult for a hearing impaired person. Apparently, in the English language, consonants are more important in the identification of words than vowels, i.e., they are slightly softer in sound. Unfortunately, some consonants, e.g., s, z, t, f and g, are some of the higher frequency sounds which are lost when hearing impairment occurs.

Hearing limitations may be detected by the presence of a hearing aid or by behavioral cues, such as the appearance of inattentiveness or a strained facial expression, particularly when listening. People with hearing limitations may lean toward the interviewer with their "good" sides, tilt their heads, or cup their hands behind their ears. Others with hearing problems may show none of these behavioral signs but **may answer questions inappropriately or frequently ask the interviewer to repeat questions.**

People with hearing limitations may tire easily or show annoyance because of pain or auditory blurring when the interviewer speaks too loudly. It requires a great deal of effort for them to listen and to sort and file sounds into meaningful thoughts, especially when the conversation and the interviewer are both strange to them. Hard of hearing people may tire and give up, so be patient.

In short, some of the **behavioral manifestations of hearing loss** are:

- A tendency to confuse words which sound alike or occur out of context;
- An increase in the volume of speech on the part of the hearing impaired speaker (**they** compensate);
- Positioning of the head to increase hearing in the good ear;

- Asking for statements to be repeated: becoming confused over oral statements or questions;
- Blank looks: inappropriate answers;
- Isolation and withdrawal from normal social participation; and
- Shorter attention span (especially when two people are talking at once), due to confusion.

Hearing impairment **affects daily life** in such a way that, as a result, a hearing impaired person:

- Might be incorrectly judged forgetful;
- Might be incorrectly regarded as confused;
- Might withdraw to protect his/her dignity;
- Might not hear alarms (think of all the high-pitched alarm sounds there are); and
- Might be depressed at the loss of sounds important to them, i.e., bird song, children's voices, music, etc.

Here are some **tips on communicating with hearing impaired** persons:

- Speak **slightly** louder than normal, and, of you can, lower the pitch of your voice. Remember that shouting will not make your message any clearer, however, and may sometimes distort it.
- Speak a little slower than your normal rate without making it stilted or unnatural.
- Avoid chewing, eating or covering your mouth with your hands when speaking to a hearing impaired older person.
- The best distance when speaking to elderly hearing impaired persons is from 3 to 6 feet (0.9 to 1.8 m).
- Facial expression, gestures, lip and body movements all give cues to the hearing impaired person. Therefore, good lighting on the face of the speaker is important.
- Wait until you are visible to the older person before speaking, and face the respondent when you speak. If possible, arrange the environment so that the speaker's face and body can be seen easily.
- Communication with hearing-impaired older persons is much more difficult when there are other noises.

- Never speak directly into the person's ear. This may distort your message and make your visual cues less readily understood.

- If the hearing impaired older person does not appear to understand what is being said, rephrase the statement in short, simple sentences. Of course, you may not rephrase interview questions — simply repeat an interview question.

- Whenever possible, give the hearing impaired older person a clue to the topic of conversation, such as "Now we're going to talk about things people do most days, like bathing."

- Some consonants are louder or more visible than others. For example, "p" is easier to see on the lips than "k". Therefore, some words or parts of conversations may be more easily heard or understood than others.

- Do not exaggerate sounds when speaking. This distorts the message and makes the use of visual cues from your face difficult to understand.

- Hearing impaired individuals take longer to respond; give them time.

- Do not make sudden movements that could startle the respondent who gets no prewarning from sound.

4.2.2 Limitations on Vision

Between the ages of 40-45, certain changes begin in the eyes. The lens and the muscle begin to stiffen. Many people who never wore glasses before need them to read. With advancing age, other changes take place in the eyes which can often:

a. Make the environment seem faded; and

b. Cause light refraction and a loss of some visual detail.

Some results of this can be that more light is required to see; yet glaring lights cause discomfort and, in the case of night driving, are hazardous.

Difficulties in vision may be identified by the presence of thick or dark glasses, a cloudy film over the eyes, or other discoloration of the eyes. However, some visual problems have no obvious signs. In these cases, the interviewer may be able to infer visual limitations by the manner of the respondent's mobility and balance.

People with visual loss depend upon immediate sounds and tactile sensations to maintain their sense of security. They may be fearful, distrusting, and awkward in movement.

Some of the **behavioral manifestations of visual loss** are:

- A handshake may be missed because the offered hand is not seen.
- A respondent may be unable to read letters of introduction and explanation, identification and hand cards, etc.
- The respondent may be unwilling to sign his/her name to consent forms because s/he may not be able to read some or all of the forms and may not wish to say so.
- Vision impaired individuals may be unable to recognize other people. They may also be unable to distinguish an object from its background (objects may be knocked over and/or dropped).
- Vision impaired individuals may be unwilling or unable to move about freely because of inability to see objects in their paths.

Vision impairment can **affect daily life** in such a way that a vision impaired person:

- Might mismatch clothing — select bizarre combinations;
- Might apply makeup inappropriately;
- Might wear clothing that is stained because 1) the stains weren't removed because they were not seen when they first occurred, and 2) because at the time of selection the stains may not be observed;
- Or might appear to be an inadequate housekeeper because crumbs, spills and dirt are not observed and therefore not cleaned up.

Here are some **tips on communicating with vision impaired people**:

- Before speaking, position yourself where the respondent may be able to see at least your outline or a shadowy form.
- Use a calm, reassuring voice and speak clearly and softly at first. Say who you are.
- Do not touch or shake hands until you have spoken first.
- Don't make sudden movements.

- Give letters of introduction, information, consent form, etc., to the respondent and say "here's a letter; why don't you look at it while I read it out loud, just so we both are clear about what it states." Try to do this where there is a maximum amount of light.
- Encourage the respondent to seek the help of significant others in reading such documents.
- Don't judge the respondent's cleanliness or appropriateness of choice of clothing.

4.2.3 Physical Impairments

Physical impairments have many causes, including:

- Accidents which may also be the result of sensory impairment(s);
- Osteoporosis (deterioration of the bones);
- Arthritis and rheumatism which can cause severe pain and crippling; and
- Stroke which can leave the patient weak or paralyzed.

Note that stroke patients may have hearing and visual impairments, and difficulty in speaking (slurred speech), understanding what is said to them, reading, writing, understanding writing, and confusing words. Stroke victims may also cry or laugh more easily than they did previously. It is important that as an interviewer you realize that a stroke patient who is crying may not really be upset — the crying may be an involuntary act which has little to do with an emotional upset. If you remember this, you will not be unduly upset yourself.

A. Limitations in Language Function

Limitations in language function have many causes. People with limitations in language function probably know what they want to say, but are unable to form words. (Do not assume such people lack intelligence.) People with limitations in language are especially sensitive to the attitude and moods of others and may become irritated over minor incidents. They are often frustrated about their inability to communicate. There may be marked loss of self-confidence and self-worth.

Some **tips on handing limitations in language function** are:

- Give the respondent time to answer without pressure and be attentive;
- Try to give non-spoken cues and gestures, so that the individual will feel comfortable responding in this fashion; and
- Let individuals write if they wish to and are able.

B. Limitations on Mobility

If a person is limited in mobility or has experienced paralysis, you should be careful about the physical arrangements of the interview — seating, lighting, the availability of a table — so as to minimize the need for the older person to move or to perform on his/her affected side.

When **interviewing people with physical impairments**, please remember that:

- They may not be able to sit for long and may have to move around, and
- They may tire more easily and you may have to allow them to rest or reschedule to complete the interview.

In such circumstances, please be considerate of the respondent's needs.

4.3 Pregnant Women

Improving the health of mothers and infants is a national challenge. Of every 1,000 babies born in the U.S. each year, about 9 die before their first birthday. Past NHANES have not included sufficient pregnant women to provide good data. This NHANES will identify close to 160 pregnant women per year in order to obtain reliable statistics for this group. **NOTE: This number is still not very large, thus it is very important to obtain high participation rates for this group.**

Nutritional status during pregnancy directly affects pregnancy outcome and maternal health. Nutritional needs are increased during pregnancy and the risk of pregnancy morbidity and adverse pregnancy outcomes increases, when nutritional status is compromised or inadequate. The public health impact of pregnancy morbidity is reflected in the statistics that 22 percent of pregnant women are

hospitalized for complications of pregnancy, before delivery, requiring over 2 million hospital days per year, and that 62,400 women per year are rehospitalized during the postpartum period. In the National Academy of Sciences report, Nutrition During Pregnancy, an expert committee noted specific survey needs in identifying areas for future research, "Representative data should be collected on the nutrient status of pregnant women and their usual dietary and supplement intake, especially with regard to iron and folate." They specifically recommended that national surveys such as the NHANES oversample this group to improve the data base regarding health and usual nutrient intake in relation to age, income, and ethnic background.

NHANES will provide data on the nutritional status of pregnant women to allow identification of nutrients for which risk of inadequate status exists. Nutrient intakes from diet will be estimated, including specific nutrients for which concern exists that pregnant women may not meet the RDA (vitamins B6, D, E, and folate; iron; zinc; calcium; and magnesium). Estimation of nutrient intakes from dietary supplements will provide valuable information on use of prenatal supplements that doctors prescribe and use of over-the-counter products during pregnancy. Estimation of nutrient concentrations in the blood will allow physiological measurement of nutritional status. This will permit estimation of the prevalence of anemia due to iron deficiency among pregnant women. These data will also allow estimation of the prevalence of risk factors such as alcohol intake and cigarette smoking among pregnant women.

Pregnant women will only be asked to undertake examination components for which pregnancy is not a safety or data exclusion. Thus, they will not get the following examination procedures: bioelectrical impedance, dual X-ray absorptiometry, and cardiovascular fitness (2nd and 3rd trimester).

4.4 Minority Populations

Based on 1990 Census data, blacks and Mexican-Americans are the two largest minority groups in the United States. Although strides have been made in improving the health and longevity of

the U.S. population, statistical trends show a persistent, distressing disparity in key health indicators among these two important subgroups of the population. For example:

- In 1996, **life expectancy at birth** was 76.1 years for whites and 70.2 years for blacks, a gap of 5.9 years.
- **Infant mortality** rates have fallen steadily for several decades for both blacks and whites. However, as of 1996, these rates still varied by race with whites having 6.1 deaths per 1,000 live births and blacks having 14.7.
- In 1991, the **health status** of black Americans continued to lag behind that of white Americans. The proportion reporting fair or poor health was 76 percent greater for black persons than for white persons (15.1 compared to 8.6 percent).
- **Stroke mortality** is higher for blacks than for other groups. In 1996, the death rate for stroke for blacks was 80 higher than for whites.
- Between 1980 and 1990 the overall percent of mothers who began **prenatal care** in the first trimester of pregnancy was 76 percent. Large differences among racial and ethnic groups were found. Early prenatal care was received by 58 percent of Mexican-Americans, 61 percent of blacks, and 79 percent of whites.

Until the completion of Hispanic HANES in 1985, researchers could make very few statements about Mexican-American or Hispanic health in general—little national data existed. Today data on Mexican-Americans, Puerto Ricans and Cubans is just being published, and we now know that, for example, Mexican-Americans between the ages of 20 and 44 are 2.4 times as likely to have **diabetes** as non-Hispanics, and twice as likely between the ages 45 and 74. There is still, however, a scarcity of data for Hispanics.

Vital to the health status of these two large minorities is the existence of health statistics. Reliable data are central to measuring progress in public health, and are the key to assessing the current health status of the Nation and measuring health status trends. Data are vital in recognizing the sources of and solutions to problems; identifying health disparities between segments of the population; and targeting efforts directly to specific needs.

The data available have pointed to disparities in death rates, health status, and health care utilization between minorities and non-minorities, but more detailed and continuous data are needed to enhance the understanding of the processes underlying the disparities and to provide a better basis for rational program planning, implementing, and monitoring. The effort to obtain reliable data is especially

challenging because minority populations are growing rapidly, changing rapidly, highly mobile, and, therefore, difficult to track, yet they have greater health problems than non-minorities.

NHANES will include approximately 17,000 whites and others, and 10,000 blacks and Mexican-Americans. Having a large minority sample will improve the precision of the health data for these two groups and allow comparison with other groups. It is important that you convince minority population SPs of the importance of their participation, i.e., their participation is **especially valuable** since they can have the satisfaction of knowing that they have **personally contributed** to the increased knowledge of minority health.

On NHANES III we achieved the following response rates:

Target Group	Interviewed (%)	MEC Examined (%)
Blacks	87	82
Mexican-Americans	88	82
All Others	83	72

As you can see we did very well with the minority population. We expect that we can do equally well on this NHANES.

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ATTACHMENT A

NHANES

Information for Health Representatives to Use If SPs Express Concern About the Blood Draw During the Appointment Making Process

January 2005

1. The MEC Laboratory Team

Each laboratory team includes three certified medical technologists who are experienced in...

- venipuncture—the puncture of a vein especially for the withdrawal of blood or for intravenous medication;
- hematology—a branch of biology that deals with the blood and blood-forming organs; and
- serology—a science dealing with serum and especially its reactions and properties;

... and one certified phlebotomist who is experienced in venipuncture.

The chief medical technologist is the most senior member of the team. The chief medical technologist is responsible for overseeing all the activities of the medical technologists and phlebotomist in the MEC, quality control, equipment calibration (standardization) and maintenance. On a day-to-day basis, the chief medical technologist performs the same duties as the other medical technologists.

Medical technologists rotate among three work stations in the MEC. Each work station has specific tasks associated with it, and each medical technologist is trained to perform all of these tasks. The tasks of each technologist can be briefly listed as follows:

- Specimen centrifugation, blood specimen processing, HIV urine processing;
- Hematology, urine, VOC, and vaginal swab processing and pregnancy testing; and
- Labeling vials, processing, shipping and assisting with all tasks as needed.

The phlebotomist's chief responsibilities are as follows:

- Venipuncture, VOC blood collection and administration of the glucose tolerance test, including a second blood draw; and
- Assisting with labeling vials and shipping as time allows.

2. How much blood is drawn from SPs?

The amount of blood drawn depends on the age of the SP. Generally we will draw between half a tablespoon and 7 tablespoons. This is much less than the amount drawn when you donate blood (Red Cross donation = 16 fluid ounces or one pint).

If the SP is interested in specific amounts note the following:

SP Age (Years)	Total ml	# Tubes	Fluid Ounces	Lay Person Equivalency Tablespoons
1-2	9	3	0.3	½
3-5	20	4	0.7	1⅓
6-11	34	5	1.1	2½
12+	93-105	10-12	3.5	7

3. Some times an SP might say ...

"My wife was in the MEC last week and she told me that it seemed that a lot of blood was drawn."

A good response to that might be ...

"According to your wife's age they only drew about ___ ounces (___ tablespoons) of blood but it may have seemed like more because they have to use several different tubes to collect the blood. This is necessary because we need to have separate containers in order to perform different tests. The walls of tubes are very thick and it looks like they hold more blood than they do."

4. What tests are performed on SPs?

See Table 1 attached. This table is for your information. It is too technical to present to SPs.

Table 1. NHANES Selected Blood Analyses Reported

Complete blood count

Lead

Cadmium and mercury, if abnormal

Erythrocyte protoporphyrin

RBC folate and serum folate

Glycohemoglobin

Glucose

Iron and total iron binding capacity

Serum ferritin and transferrin receptor

Vitamin B-12, if abnormal

Hepatitis B, C, if abnormal

Vitamin A, if abnormal

Biochemistry profile, including liver enzymes, electrolytes, kidney function, total protein and albumin, calcium, phosphorus, urine acid, bilirubin, alkaline phosphatase

Lipids, including cholesterol, triglycerides, HDL and LDL

Insulin

Parathryoid hormone, if abnormal

Prostate specific antigen

HIV, herpes antibody, chlamydia/GC, human papilloma virus (HPV)

Glucose tolerance test

6. What are the benefits to SPs of having blood drawn?

Different tests are done on the blood depending on the SP's age. The cost of the assays if done independently would be at least several hundred dollars. Though there are many different tests whose results will be provided to SPs to give to their physician, the following are a few well known blood tests:

Children: In babies over the age of one and young children, one of the most important tests performed is for lead exposure. Lead has a serious effect on the neurological development of children. Children of all socioeconomic classes can be exposed to lead in their environment through many different means (e.g., tap water flowing through lead pipes, house paint, etc.). A blood test for lead performed in a timely manner might indicate exposure to unsafe lead levels before an individual showed any physical signs of lead poisoning. This would be critical since the effects of lead poisoning cannot be reversed.

In this age group, we also test for anemia or low blood. This can also be a common condition in childhood that is easily correctable.

Teenagers: In addition to the two tests described for children, teenagers also have a complete blood chemistry and hematology profile and lipid analyses including cholesterol.

Adults: Many blood tests are performed on an adult's blood. Including the tests described above, tests are also conducted to determine the amount of sugar or glucose in the blood and a complete blood count.

7. Why do we need to draw blood/obtain phlebotomy data?

Over 70 biochemical analyses are performed from the blood obtained from an adult sample person. This data will be used extensively by health professionals. Some of the most important data uses are:

- To estimate the prevalence of diseases such as hepatitis A, B and C and HIV;
- To determine the extent of hepatitis B immunization in the population;
- To determine the level of lead especially in children and to ascertain the extent of anemia;

- The volatile toxicant study will also establish the normal level of volatile organic compounds in the blood. This data will be used as a baseline in investigating toxic exposures;

- Blood tests help in monitoring nutritional status. The nutrition information obtained during the household interview in the MEC interview will be correlated with the nutritional biochemistries. What researchers discover from this data can lead to health policy recommendations. Examples include the need for more vitamin fortification and more public education and outreach programs to improve dietary habits; and

- Finally the presence of abnormal levels of certain analytes will be associated with outcome measures (such as heart disease, osteoporosis, etc.) to determine risk factors for these diseases, on a national level.

To obtain all this information from the NHANES survey we must obtain blood samples on as close to 100 percent of the population selected as possible. To look at the validity of the data, we must prove to ourselves and other scientists that nonrespondents are similar to respondents. Or in other words, that there is no bias in the data. For example, if one of the characteristics of a sample person that refuses phlebotomy is that of a middle aged male who is overweight with an increased level of fat intake, the systematic nonresponse of like people would alter our estimate of the cholesterol level in the United States because such a person is at high risk for a high cholesterol level. We hope that the nonresponse is random, but the only way to assure that it is, is to reduce it to the very minimum.

8. How can the SP be sure that s/he won't get AIDS from giving blood or that the procedure is safe?

There is absolutely no chance of SPs getting AIDS from giving blood. All the equipment used in taking the blood is sterile and disposable and is only used on the SP. SPs can look at the phlebotomy room and equipment and meet the phlebotomist if they have any additional questions. SPs who express concern in the home should be encouraged to ask questions in the MEC and be assured that all their questions will be answered. Furthermore, all the phlebotomists on the project are very experienced and have performed tens of thousands of phlebotomies.

9. Is the phlebotomy going to make the SP sick (or sicker)?

Some SPs are afraid that the volume of blood taken will harm them. SPs sometimes say "my blood is already low." Point out to SPs that a maximum of only 3.5 ounces of blood is taken (less if younger). This is only 25 percent of a unit of blood and will be replaced by the body within 24 hours. Our hematology experts have assured us that this amount will not adversely affect anyone.

10. What is the benefit to the U.S. population?

Data from the NHANES survey is used by the CDC for planning and evaluating health programs in the United States. Remind sample persons of their obligations as citizens to help in health planning and assessment. If this is done in a positive straightforward way, hopefully, a reluctant participant will overcome their own fear to provide for the greater good. If you assume that an individual will act in a noble fashion regardless of the benefit to themselves, your attitude should convince at least some individuals. This is especially important with mothers of children. A mother should be made to understand that the momentary discomfort that her child undergoes can produce a large effect on the future child health programs in the United States.

11. Will it hurt?

SPs may feel a slight pinch or a mosquito bite. The discomfort should be slight and last only a few seconds.