

NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY III

PHYSICAL FUNCTION EXAMINATION MANUAL

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January 1993

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1. PHYSICAL FUNCTION EXAMINATION

1.1 Introduction

As the proportion of older persons in the U.S. population continues to grow, there is a critical need for data on the health and social problems of these individuals. One of the major health problems facing older people is the risk of a decreased level of physical functions. The NHANES III Survey offers a unique opportunity to assess physical functioning in older people and to explore a number of risk factors associated with decreased levels of physical functioning. The information obtained from the study will be used to characterize the range of physical impairment in the U.S. elderly population.

An individual's level of physical performance is a reflection of their overall health, and the impact of several chronic diseases common among the elderly, such as arthritis, osteoporosis and coronary heart disease, on the ability to function without limitations in the course of daily life. The assessment of physical performance incorporates aspects of strength, mobility, freedom of movement, balance and coordination. The physical function examination consists of exercises designed to measure particular aspects of musculoskeletal strength and flexibility in a standardized manner in Examinees age 60 and above.

2. EQUIPMENT

2.1 The Examination Room

The Physical Functioning examination takes place in the Body Measurements Room in the MEC. A wooden cube of chair height will be used for the exercises which require the SP to be seated. The corridor outside the room is used for the Measured Walk exercise. The room also contains a computer terminal and screen as well as equipment used in other exam components dealing with body measurements such as a scale and stadiometer.

2.2 Description of Equipment

The following is the list of equipment needed to carry out the assessment of physical functioning of the elderly:

- wooden cube of chair height;
- lock mounted in wooden block and key; and
- stopwatch.

2.3 Equipment Set-up and Packing Procedures

Equipment for this component should be kept in the Body Measurement Room. The key for the mounted lock should be stored in the lock. The starting and ending points of the course for the measured walk are in the corridor outside the room. At the end of the stand, the lock and key and the stopwatch should be secured in the Body Measurement Room for transporting to the next stand.

3. EXAMINATION PROTOCOL

3.1 Eligibility Criteria

Age

The Physical Function Examination will be given only to Examinees ages 60 years and above. There is no upper age limit.

Health Status Screener

The examination begins with a health status screener to determine whether the Examinee has any recent surgery, injury or other health conditions that might prevent him/her from standing up from a chair or walking. When the response to this question is "yes", after you describe each test, discuss with Examinee whether he/she should attempt the test given his/her physical problems. Do not assume an Examinee is too physically limited to attempt a test without discussing it with him or her.

In addition to the health status screener, the introduction to the exam which is read to the Examinee instructs him/her to indicate if he/she feels a test would be unsafe to try. In such cases the test is not attempted.

3.2 Examination Procedures

3.2.1 Encouragement

Follow the script provided as closely as possible to describe the test and how to perform it properly. You should not provide additional encouragement beyond the language provided by the detailed instructions.

To some Examinees, the detailed verbal instructions may seem unnecessary. It may help to say that you are going to explain each test to the Examinee in detail since this is the best way to make sure that everyone does the test in a similar manner.

3.2.2 Aids

Walking aids may be used on the Measured Walk test. Aids may not be used for the Single Chair-Stand, Repeated Chair-Stands, and Tandem-Stand tests.

3.2.3 Demonstrations

Demonstrate each maneuver for the participant. Remind the Examinee not to begin to do the maneuver until after you have demonstrated it.

It is very important that the examiner demonstrate each exercise correctly (elbows parallel to the floor during shoulder rotation, knee at 90 degree angle during hip flexion, etc.). Experience has shown that SP's follow more closely what the examiner does rather than what she says. If the position is demonstrated incorrectly the SP, following the example, will do the exercise incorrectly and be scored as "Unable" even though s/he may actually have been able to perform it correctly.

If the SP indicates that s/he does not understand the exercise, demonstrate it again rather than relying on repeating verbal instructions. Repeat the demonstration only once. If the SP still does not understand, go on to the next exercise. If participant does not appear to understand the maneuver, re-demonstrate. Do not coach the participant.

3.2.4 Safety Precautions and Prevention of Injuries

Obstructions that could cause accidents should be removed. The detailed protocols describe how to safely administer the tests including instructions on how to support the Examinee if required. For all test items where loss of balance is a possibility (e.g., hip flexion, knee flexion, tandem stand, measured walk), you should use the following safety precautions. Position yourself standing at the Examinee's side, slightly behind him/her. Your hands should be positioned very close to either side of the Examinee's trunk at the hip or waist level but not touching the Examinee. Be ready to place both hands on the Examinee to stabilize him/her if necessary. If the Examinee loses balance, immediately hold onto the Examinee with both hands at the trunk and stabilize him/her. If the Examinee begins to fall do not try to catch him/her; reach under the Examinee's shoulders from behind and slowly ease him/her down to the floor. This will

prevent the Examinee and you from becoming injured.

If this happens and the Examinee is not injured, help him/her up by first having the Examinee get on his/her knees or on all fours, place a chair next to the Examinee and have him/her support himself/herself on the chair as you help lift under the shoulders. Do not try to lift the Examinee alone from the floor.

3.2.4.1 Cognitively Impaired SP's

Over the course of the survey, you may encounter persons who are cognitively impaired due to stroke, Alzheimer's Disease, mental retardation or other medical problems. This impairment may affect the ability of these persons to participate fully in the physical function test by limiting their ability to move or by limiting their ability to understand instructions. Approach these SP's in a friendly and supportive way. Attempt to draw their attention; follow your script and observe protocols as with other SP's. This would mean re-demonstrating each motion once before coding an "unable" and following similar time limits. Offer words of encouragement, but do not coach. Offer each SP an opportunity to participate in those sections of the examination where skip patterns do not apply. If an SP attempts an activity, score form as you would for any other SP. If an SP does not attempt because of their impairment, score as "unable". As with other SP's, praise and thank them for their efforts, no matter how minimal. Make a note in the comments section regarding the difficulties you encountered in the examination.

3.2.5 Conducting, Scoring, and Recording the Exercises

The exercises will be scored by observation of the Examinee's performance using the following four categories: fully, partially, unable and refused. The examinee's performance will be recorded on the "Performance Test" form (Exhibit 3-1) when there is a problem with the automated system. The detailed protocols specify how to apply these categories to score each exercise.

- | | | |
|-----|---------------------------|---|
| (1) | Test performed fully: | Activity done completely and accurately, as requested and demonstrated. |
| (2) | Test performed partially: | Examinee attempts the activity but does not do it |

accurately (e.g., arms not completely extended, elbows not in proper position, etc.).

- (3) Unable to perform test: Examinee does not try the test either because he/she feels it would be unsafe or knows he/she is unable to do it for reasons related to a physical limitation or health condition, or Examinee attempts the test but can't do it at all (e.g., can't get out of a chair without human help). This would include those who cannot perform the test due to cognitive impairment.
- (4) Refused to perform test: Examinee refuses to perform the test or prefers not to for reasons that are apparently not related to a physical limitation or health condition.

3.2.5.1 Refused/Unable

If a test is not attempted because an Examinee refuses or prefers not to, for whatever reason, the examiner should clarify if the participant is refusing because of a physical limitation or health condition that would make it impossible, inadvisable, or unsafe for them to attempt the exercise. This type of refusal should be recorded as "unable". Occasionally, an SP may be unable to perform a test because of difficulty following instructions due to cognitive impairment. This should be scored as unable on the examination form. If the Examinee refuses for any other reason, enter "refused" on the Response Sheet, then record a note in the space provided about his/her reason for refusal. If a test is attempted but the examiner or the Examinee decide that the test cannot be completed, score the test as "unable" on the Response Sheet.

Exhibit 3-1. Performance Test

OMB No 0920-0237

PERFORMANCE TEST 60 YEARS OLD AND OLDER			
STAFF NO. _____		SAMPLE NO. _____	
1	Health Status Screener	1 <input type="checkbox"/> no apparent restriction 2 <input type="checkbox"/> presently in wheelchair 3 <input type="checkbox"/> recent surgery 4 <input type="checkbox"/> injury 5 <input type="checkbox"/> other health condition	
2.	Activity Shoulder - External Rotation	Right	Left
3	Shoulder - Internal Rotation	Right	Left
4	Timed Maneuver a Ability to pick up key b Ability to hold key c Time in seconds to unlock lock	1 <input type="checkbox"/> Fully 3 <input type="checkbox"/> Unable 2 <input type="checkbox"/> Partially 4 <input type="checkbox"/> Refused 1 <input type="checkbox"/> Fully 3 <input type="checkbox"/> Unable 2 <input type="checkbox"/> Partially 4 <input type="checkbox"/> Refused 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No (5) 4 <input type="checkbox"/> Refused (5) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No (5) 3 <input type="checkbox"/> Not done (5) 4 <input type="checkbox"/> Refused (5) _____ seconds 00 <input type="checkbox"/> Not done (5) 77 <input type="checkbox"/> Refused (5)	

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Exhibit 3-1. Performance Test (continued)

5.	<p>Single Chair Stand</p> <p>a In wheelchair</p> <p>b If in wheelchair ask: Can you get up from your wheel chair by yourself?</p> <p>c Use of arms to scoot forward</p> <p>d Ability to stand</p>	<p>1 <input type="checkbox"/> yes (5b) 2 <input type="checkbox"/> no (5c)</p> <p>1 <input type="checkbox"/> yes (5c) 2 <input type="checkbox"/> no (to 9)</p> <p>1 <input type="checkbox"/> yes 2 <input type="checkbox"/> no 3 <input type="checkbox"/> unable to move</p> <p>1 <input type="checkbox"/> Yes - without arms 2 <input type="checkbox"/> Yes - with arms for pushing off (7) 3 <input type="checkbox"/> Unable (9) 4 <input type="checkbox"/> Refused (7)</p>	
6	<p>Repeated Chair Stands:</p> <p>a Time to complete 5 stands</p> <p>b Chair height (floor to seat)</p>	<p>_____ seconds 77 <input type="checkbox"/> Refused (7)</p> <p>_____ stands (if less than 5)</p> <p>_____ inches</p>	
7	<p>Hipflex and Knee Flexion</p>	<p>Right</p> <p>1 <input type="checkbox"/> Fully 3 <input type="checkbox"/> Unable 2 <input type="checkbox"/> Partially 4 <input type="checkbox"/> Refused</p>	<p>Left</p> <p>1 <input type="checkbox"/> Fully 3 <input type="checkbox"/> Unable 2 <input type="checkbox"/> Partially 4 <input type="checkbox"/> Refused</p>
8	<p>Tandem stand</p> <p>a Ask: Are you able to stand by yourself without holding on to anything?</p> <p>b Number of seconds tandem stand held</p>	<p><input type="checkbox"/> yes (to 8b) <input type="checkbox"/> no (to 9)</p> <p>_____ seconds 777 <input type="checkbox"/> Refused</p>	
9	<p>Measured Walk</p> <p>a Has SP been observed to walk without help of another person?</p>	<p><input type="checkbox"/> yes (to 9c) <input type="checkbox"/> no (to 9b)</p>	

Exhibit 3-1. Performance Test (continued)

<p>b. Ask:</p> <p>Are you able to walk alone without holding on to another person? You may use a cane or walker.</p>	<p>1 <input type="checkbox"/> yes (to 9c)</p> <p>2 <input type="checkbox"/> No (10)</p>						
<p>c. Number of seconds to complete 8 foot walk</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Trial A</td> <td style="text-align: center; width: 50%;">Trial B</td> </tr> <tr> <td style="text-align: center;">_____ seconds</td> <td style="text-align: center;">_____ seconds</td> </tr> <tr> <td style="text-align: center;">777 <input type="checkbox"/> Refused</td> <td style="text-align: center;">777 <input type="checkbox"/> Refused</td> </tr> </table>	Trial A	Trial B	_____ seconds	_____ seconds	777 <input type="checkbox"/> Refused	777 <input type="checkbox"/> Refused
Trial A	Trial B						
_____ seconds	_____ seconds						
777 <input type="checkbox"/> Refused	777 <input type="checkbox"/> Refused						
<p>d. Total number of steps</p>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">_____ steps</td> <td style="text-align: center; width: 50%;">_____ steps</td> </tr> </table>	_____ steps	_____ steps				
_____ steps	_____ steps						
<p>e. Pain reported on walking?</p>	<p>1 <input type="checkbox"/> yes</p> <p>2 <input type="checkbox"/> no</p>						
<p>d. Type of floor surface</p>	<p>1 <input type="checkbox"/> linoleum/tile/wood</p> <p>2 <input type="checkbox"/> low-pile carpet</p> <p>3 <input type="checkbox"/> thick-pile carpet</p>						
<p>f. Type of device used</p>	<p>1 <input type="checkbox"/> none</p> <p>2 <input type="checkbox"/> cane</p> <p>3 <input type="checkbox"/> walker</p> <p>4 <input type="checkbox"/> other</p>						
<p>10. RESULTS OF THE EXAMINATION:</p>	<p>1 <input type="checkbox"/> Test Done</p> <p>2 <input type="checkbox"/> Test Incomplete</p> <p>3 <input type="checkbox"/> Test not done</p>						
<p>11. REASONS TEST INCOMPLETE OR NOT DONE:</p>	<p>1 <input type="checkbox"/> Insufficient time available or room not available</p> <p>2 <input type="checkbox"/> Examinee refused or uncooperative</p> <p>3 <input type="checkbox"/> Examinee medically excluded by staff or safety reasons</p> <p>8 <input type="checkbox"/> Examinee unable to physically cooperate</p> <p>9 <input type="checkbox"/> Examinee unable to understand test instructions due to language barrier</p> <p>10 <input type="checkbox"/> Examinee unable to understand test instruction due to other reasons</p> <p>12 <input type="checkbox"/> COMMENTS:</p> <p>_____</p> <p>_____</p> <p>_____</p>						

Exhibit 3-1. Performance Test (continued)

PERFORMANCE TEST 60 YEARS OLD AND OLDER	
STAFF NO. _____	SAMPLE NO. _____
4. Timed Maneuver B a. Ability to pick up key b. Ability to hold key c. Time in seconds to unlock lock	 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No (S) 4 <input type="checkbox"/> Refused (S) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No (S) 3 <input type="checkbox"/> Not done (S) 4 <input type="checkbox"/> Refused (S) _____ seconds 00 <input type="checkbox"/> Not done (S) 77 <input type="checkbox"/> Refused (S)

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3.2.6 Instructions to Examinee

The Examinee should be encouraged to perform each test if possible, however, they should also be instructed not to attempt a test if they feel it would be unsafe. Tell the Examinee the following:

SCRIPT: AS YOU KNOW, CERTAIN MOVEMENTS OF YOUR BODY BECOME MORE DIFFICULT TO DO AS YOU GROW OLDER. I WOULD NOW LIKE YOU TO TRY TO DO SEVERAL DIFFERENT MOVEMENTS OF YOUR BODY THAT INVOLVE YOUR ARMS AND LEGS.

I WILL FIRST DESCRIBE AND SHOW EACH MOVEMENT TO YOU. THEN I'D LIKE YOU TO TRY TO DO IT. IF YOU CANNOT DO A PARTICULAR MOVEMENT OR YOU FEEL IT WOULD BE UNSAFE TO TRY TO DO IT, TELL ME AND WE'LL MOVE ON TO THE NEXT ONE. LET ME EMPHASIZE THAT I WOULD LIKE YOU TO TRY EACH EXERCISE. BUT I DON'T WANT YOU TO TRY TO DO ANY EXERCISE THAT YOU FEEL MIGHT BE UNSAFE.

3.2.7 Physical Function Exam Protocol

The following protocol should be followed when conducting the Physical Function Examination. Record the responses on the Performance Test form as indicated.

Staff No.: Enter your ID number in the space provided.

Sample No.: Enter the seven digit ID number of this SP.

1. Health Status Screener

Ask each examinee "DO YOU HAVE ANY PROBLEMS FROM RECENT SURGERY, INJURY, OR OTHER HEALTH CONDITIONS THAT MIGHT PREVENT YOU FROM STANDING UP FROM A CHAIR OR WALKING?" If the answer is "yes," check the appropriate box on the form. If the Examinee is presently in a wheelchair that answer will take precedence over others. If no problems are mentioned by the Examinee, mark "no apparent restriction." Tell the examinee who says "yes" that after you describe each test to him or her, you will discuss whether he or she should attempt the test given his or her physical problem.

2. Shoulder External Rotation

Equipment: None.

Description: Each hand placed behind the neck at ear level; forearms parallel to floor and elbows pointing out away from ears. Assesses strength and motion in shoulders and arms.

Essential Ideas:

1. Head erect.
2. Elbows out.
3. Arms straight.
4. Fingers touching.

Administration: Examiner demonstrates while saying,

SCRIPT: NOW I'D LIKE YOU TO PUT BOTH HANDS BEHIND YOUR NECK AT THE LEVEL OF YOUR EARS WITH YOUR FINGERS TOUCHING. KEEP YOUR ARMS PARALLEL TO THE FLOOR AND POINT YOUR ELBOWS OUT TO THE SIDE.

Examinee performs test for both sides simultaneously; score separately for each side; Examinee should be sitting erect or standing; examiner faces Examinee to score this test.

Scoring: Check "Fully" - if the SP performed the shoulder external rotation as demonstrated and described.

Check "Partially" - if the SP's hand was held behind the neck, the forearm was not parallel to the floor or the elbow was not pointing out to the side; or the hand was not held behind the neck, the forearm was held parallel to the floor and the elbow was pointing out to the side; the hands were not behind the neck, the elbow was pointing out to the side and the forearm was not held parallel to floor;

Check "Unable" - if the SP cannot perform any or all of the components of the movement or does not attempt for health or physical reasons or due to cognitive impairment.

Check "Refused" - if the SP refuses to perform the test or prefers not to for reasons that are apparently not related to a physical limitation on health condition.

3. Shoulder Internal Rotation

Equipment: None.

Description: Each hand placed behind the back at waist level or higher (in the small of the back) with fingers touching in the middle of the back near the spine. Assesses range of motion in shoulders and arms and the ability to perform personal hygiene activities.

Essential Idea: 1. Fingers touching behind back at small of back.

Administration: Examiner demonstrates while saying,

SCRIPT: NOW I'D LIKE YOU TO MOVE YOUR ARMS BEHIND YOUR BACK AND TOUCH YOUR FINGERS TOGETHER BEHIND YOUR BACK.

Examinee performs test for both sides simultaneously; score separately for each side; Examinee should be standing; examiner should face the back of the Examinee to score this test.

Scoring: Check "Fully" - if the SP performed the shoulder internal rotation as demonstrated and described.

Check "Partially" - if the SP's arms moved around to the back of the trunk but fingers were unable to touch at waist level or above; or unable to reach sufficiently around to the back of trunk so that the hand is placed in the middle of the back near the spine;

Check "Unable" - if the SP cannot reach around to the back of the trunk past the side of the body, or does not attempt for health or physical reasons or due to cognitive impairment.

Check "Refused" - if the SP refuses to perform the test or prefers not to for reasons that are apparently not related to a physical limitation or health condition.

4. Timed Maneuver - Lock and Key Test of Manual Dexterity

Equipment: Lock mounted in a wooden block and key

Description: Examiner will record whether the Examinee can pick up and hold the key in order to open the lock. The examiner will then time how long it takes the Examinee to open the lock.

This maneuver will be performed twice to determine if there is a learning effect. DO NOT TELL THE SP THAT THE TEST WILL BE PERFORMED TWICE.

Essential Ideas:

1. Key resting in correct position on board.
2. SP's hand by side to start.
3. Start timing when Sp moves arms toward key.
4. End timing when bolt first appears.

Administration:

Inquire if the examinee normally wears glasses for reading. If s/he does, instruct him/her to put them on before doing the lock and key maneuver. If glasses are not available, proceed with test and enter comment.

Inquire if Examinee uses keys (or used if s/he does not presently use a key) with right or left hand. Unless Examinee has a major disability in the hand named, orient the task to the preferred hand.

The Examinee should hold the block with the lock flat on his/her lap. The starting position should be with the preferred hand by the side, not on the lap. If the Examinee desires, s/he can cradle the block with the non-preferred hand but should be cautioned not to use the non-preferred hand to help with the key and to keep the block flat in the lap at all times.

SCRIPT: NEXT WE WILL BE LOOKING AT YOUR HAND FUNCTION BY USING A LOCK AND KEY.

SHOW ME WHICH HAND YOU WOULD NORMALLY USE TO OPEN A LOCK. YOU MAY USE YOUR OTHER HAND TO STEADY THE BLOCK BUT NOT TO HOLD THE KEY OR HELP YOU TURN THE LOCK. THE BLOCK SHOULD REMAIN FLAT IN YOUR LAP. LET ME DEMONSTRATE THE PROCEDURE. (Examiner demonstrates, then places lock on SP's lap.)

ALTHOUGH I WILL BE TIMING YOU, I WOULD LIKE YOU TO MOVE CAREFULLY AND SMOOTHLY, TRYING NOT TO DROP THE KEY.

DO YOU HAVE ANY QUESTIONS? GOOD. OKAY, WHEN I SAY START, PLEASE BEGIN.

Scoring:

Begin timing as Examinee goes to pick up key.

- a. Ability to pick up the key - Examinee will have a maximum of 30 seconds to pick up key. If the Examinee cannot pick up key within 30 seconds, terminate the test, thanking him/her for trying. Check "no" in 4a and "not done" in 4b and c.

b. Ability to hold key - if Examinee drops key after picking it up or if Examinee cannot maneuver key to a position in which s/he can open lock without using the other hand, check "no" in 4b and "not done" in 4c. Reassure the SP but do not repeat the test.

c. For persons able to pick up the key and hold it, note the time in seconds to unlock lock in 4c. If Examinee cannot open the lock within one minute, terminate the test.

End timing when deadbolt appears or at the end of one minute, whichever comes first.

NOTE: If Examinee refuses to perform maneuver, mark "refused" in 4a, b, and c.

At the conclusion of the first effort, say to the SP, "WE WOULD LIKE YOU TO DO THE LOCK AND KEY EXERCISE AGAIN." Repeat the entire lock and key test and enter the results.

5. Single Chair Stand

Equipment:

Wooden cube of chair height. If SP is confined to a wheelchair, have him/her perform the maneuver from the wheelchair.

Description:

Ability to move forward while seated (trunk control), ability to stand up from a standard chair without using arms. This exercise is also used to screen for the ability to do repeated chair stands. Walking aids such as canes, walker or crutches may not be used.

Essential Ideas:

1. No arms, if possible.
2. SP should be seated so that feet rest on floor.

Administration:

Stand next to the Examinee to provide assistance if s/he loses his/her balance.

- a. If in a wheelchair or confined to a chair, ask: "Can you get up from your wheelchair by yourself?" If no, mark appropriately and skip to 9. If yes, mark appropriately and proceed with single chair stand.
- b. Use of arms to scoot forward.

Instruct the Examinee to sit as far back as possible on the cube with feet resting on the floor and arms folded across the chest. Explain to the Examinee:

SCRIPT: THE NEXT TESTS MEASURE THE STRENGTH IN YOUR LEGS. FIRST, WOULD YOU PLEASE FOLD YOUR ARMS ACROSS YOUR CHEST AND MOVE FORWARD ON THE CUBE WITHOUT USING YOUR ARMS SO THAT YOU ARE SITTING ABOUT HALF-WAY TOWARD THE FRONT OF THE SEAT.

Note: The Examinee should end up with his/her knees flexed to about 100 degrees and the back of his/her buttocks at about the middle of the cube. If he/she cannot move, say:

SCRIPT: O.K., TRY TO MOVE FORWARD USING YOUR ARMS.

c. Stand up once.

SCRIPT: STAND UP ONCE WITHOUT USING YOUR ARMS.

If Examinee cannot stand, say,

O.K., TRY TO STAND UP USING YOUR ARMS.

If Examinee still cannot stand, record as unable.

Scoring:

Record on the data form:

a. In wheelchair - If you observe that the SP is in a wheelchair or confined to a chair, check the "yes" box and go on to 5b. If the SP is not in a wheelchair, check the "no" box and skip to 5c.

b. Confined to wheelchair or confined to chair.

1. Check "Yes" - if SP able to get up from chair/wheelchair by his/her self.

2. Check "No" - if SP is unable to rise from chair/wheelchair unaided and go to Item 9.

c. Use of arms to scoot forward.

1. Check "Yes" - if SP can scoot forward without using his/her arms. For a "Yes" score it doesn't matter how the scoot is accomplished as long as the arms are not used for support.

2. Check "No" - if SP must use arms to scoot forward.

3. Check "Unable to move" - if SP is unable to move forward even using his/her arms.

d. Ability to stand.

1. Check "Yes, without arms" - if SP can stand without using his/her arms.

2. Check "Yes, with arms" - if SP can stand but uses his/her arms to push off and go to Item 7.

3. Check "Unable" - if SP unable to stand even using his/her arms and go to Item 7.

4. Check "Refused" - if SP refuses to try the single chairstand, and go to Item 7.

NOTE: If the Examinee refuses to try the single chair stand or is unable to stand on his/her own without using arms to push off, then do NOT attempt to administer the repeated chair stands.

6. Repeated Chair Stands

Equipment: Same as for single chair stand. Stopwatch.

Description: Time required to stand up from a chair and sit down in a chair five times. Measure time with a stopwatch.

Essential Ideas:

1. Begin timing as soon as SP begins to stand.
2. End when SP is fully erect.
3. SP cannot use arms.

Administration: Ask the Examinee to resume the sitting position he/she was in just before standing up, with feet resting on the floor and arms folded across the chest. Explain to the Examinee:

SCRIPT: PLEASE KEEP YOUR ARMS FOLDED ACROSS YOUR CHEST. WHEN I SAY "READY? STAND", PLEASE STAND UP STRAIGHT AND THEN SIT DOWN AGAIN AT YOUR USUAL PACE FIVE TIMES WITHOUT STOPPING IN BETWEEN AND WITHOUT USING YOUR ARMS TO PUSH OFF. DO YOU THINK YOU CAN DO THAT FOR ME?

Examiner is positioned standing next to the Examinee. When the Examinee is properly seated after practicing, say, READY? STAND. Start the stopwatch as soon as SP begins to stand. Stop the stopwatch when five stands have been completed and SP is fully erect or when the Examinee can no longer continue. If the Examinee stops standing/sitting and appears to be fatigued before completing five stands, confirm this by asking:

CAN YOU CONTINUE?

Scoring

If he/she says YES continue timing. If he/she says NO, stop the stopwatch.

Record the time to the nearest second in the space provided.

Record the number of stands, if the Examinee completes less than five stands, in the space provided.

Record the chair height from floor to seat in the space provided. (If using hard copy)

Check the "Refused" box if the SP refuses to try the repeated chair stands.

7. Hip Flexion and Knee Flexion

Equipment:

None.

Description:

Leg is lifted up off of the ground so that thigh is at right angle to trunk and knee is at right angle to thigh while the Examinee stabilizes himself by holding onto door frame of the exam room. One leg at a time is tested. Assesses the strength and motion in hips and legs.

Essential Ideas:

1. Lower leg at right angle to thigh.
2. Remember to demonstrate correctly. If Examiner is wearing skirt, raise as necessary to demonstrate correct leg position.

Administration:

Examinee stands in the doorway of the exam room and holds onto the door frame with one hand. Examinee lifts leg up in the air bending at the hip and knee as described while holding onto support.

Examiner stands beside the Examinee and slightly behind him/her to observe for possible loss of balance and for the amount of movement demonstrated at the hip and knee. Score one leg at a time; the order or hand used to hold onto the door frame is not important.

Examiner demonstrates the exercise and says,

SCRIPT: NOW I'D LIKE YOU TO RAISE YOUR KNEE TO MAKE A RIGHT ANGLE - LIKE THIS. DO NOT USE YOUR HANDS OR ARMS TO RAISE YOUR KNEE.

Scoring: Check "Fully" - if the SP is able to bend both hip and knee to at least 90 degrees (a right angle);

Check "Partially" - if the SP's leg is lifted from the floor but a 90 degree bend is not demonstrated at both the hip and knee;

Check "Unable" - if the SP's leg cannot be lifted up off the floor or s/he refuses for health or physical limitation or due to cognitive impairment.

Score each leg separately.

8. Tandem Stand

Equipment: Stopwatch.

Description: Static tandem balance; the ability to stand and maintain balance with the feet in a tandem position for 10 seconds.

Precautions: A few Examinees will be so unsteady on their feet that the examiner will be concerned for their safety. The examiner should exercise extra caution with such Examinees and be prepared to stabilize them. The examiner should stand near the Examinee at all times to offer support (only if needed) and to prevent loss of balance.

Essential Ideas

1. Demonstrate correctly.
2. Safeguard SP from falling.
3. Support SP until timing begins.
4. Begin timing when supporting arm is dropped.
5. Feet in correct position.

Administration:

1. Ask the Examinee.

ARE YOU ABLE TO STAND BY YOURSELF WITHOUT HOLDING ON TO ANYTHING?

Check the "yes" box, if the SP answers yes and go on to 8b. Check the "no" box, if the SP answers no and go on to Item 9.

2. Tell the Examinee,

SCRIPT: THIS TEST WILL ASSESS YOUR BALANCE. NOW I WOULD LIKE YOU TO TRY TO STAND WITH THE TOES OF ONE FOOT TOUCHING THE HEEL OF THE OTHER FOOT FOR ABOUT 10 SECONDS WITHOUT HOLDING ON.

3. Examiner should demonstrate the tandem position for the Examinee. The Examinee can place the heel of either foot in front of the toes of the opposite foot, whichever is easier. Examiner stands next to the Examinee to help him/her into the tandem position. "Cradle" the Examinee to prevent loss of balance. Tell the Examinee:

SCRIPT: YOU MAY USE YOUR ARMS, BEND YOUR KNEES, OR MOVE YOUR BODY TO MAINTAIN YOUR BALANCE, BUT TRY NOT TO MOVE YOUR FEET. TRY TO HOLD THIS POSITION UNTIL I SAY STOP.

4. When the Examinee has his/her feet in the tandem position examiner asks the Examinee if he/she is ready. Withdraw support and start timing as you say START. Examiner stops the stopwatch after 10 seconds or when the Examinee steps out of position.
5. Record time to the nearest second in the space provided.
6. If the participant cannot attain the tandem position at all, or cannot hold it long enough to begin timing, write "unable" in the white space.
7. If the Examinee will not attempt the position but appears able or if the SP refused to try the tandem walk, check the "refused" box.

9. Measured Walk

If Examinee has been observed to walk without the help of another person, proceed.

If Examinee has not been observed, ask "Are you able to walk alone without holding on to another person? You may use a cane or walker."

If yes, proceed with the measured walk. If needs a cane or walker, but these are not available, score as "No" and end examination.

If no, mark appropriately and end the examination.

Equipment: Eight foot gait course laid out with a carpenter's rule as in Exhibit 4-6.

Stopwatch.

Description: Time required to walk an 8 foot course to nearest tenth of a second. Total number of steps required to complete 8 foot course.

Note: Occasionally, an Examinee will be so unsteady on his/her feet that the examiner will be concerned for the Examinee's safety. In all instances the examiner should be close to the Examinee to support him/her if they should trip or lose their balance. The examiner may desire not to perform the test if the Examinee appears to be in imminent danger of falling, e.g., someone who is in a wheelchair but wants to try every test. However, as a general rule each Examinee should be encouraged to attempt the test. If an Examinee is too unsteady to perform the test, but tries, the score should be recorded as "0". If the examiner decides that the test should not be attempted for safety reasons, this should be recorded as "0".

Walking aids may be used on this test, but Examinee must be able to walk without assistance from another person to perform this test.

Administration:

There are two walking trials. Tell the Examinee:

SCRIPT: NOW I AM GOING TO TIME YOU AND COUNT YOUR STEPS AS YOU WALK THE COURSE. I WILL BE ASKING YOU TO WALK THE COURSE TWO TIMES; PLEASE WALK AT YOUR USUAL PACE AND STOP WHEN YOU GET BEYOND THE LINE. THEN I WILL HAVE YOU WALK BACK. The examiner then says, READY? BEGIN.

Have the Examinee position himself/herself at the starting line of the course. The Examiner then says,

SCRIPT: READY/. BEGIN.,

and starts the stopwatch when the first foot hits the floor across the start line.

The walk is complete when the Examinee's foot hits the floor across the finish line. One step is counted when either foot is placed down on the floor, including the first step and the step which first takes an Examinee's foot completely across the end line. Count the number of total steps taken with both feet during the timed walk.

Scoring:

a. If Examinee has been observed to walk without the help of another person, check the "yes" box and proceed to 9c, measured walk. If the SP has not been observed to walk with the help of another person, check the "no" box and go to 9b.

b. If Examinee is able to walk using a cane or walker, check the "Yes" box and continue to item 9c. If Examinee is not able to walk alone without help from another person or needs a cane or walker, but these are not available, check the "NO" box and skip to item 10.

c. Record the number of seconds to complete the walk in Trials A and B in the space provided. If the SP refused to complete one or both trials, check "777, Refused" box for Trial A and Trial B and go to Item 10.

SCRIPT: DID YOU HAVE PAIN WHILE YOU WERE WALKING?

d. Record the total number of steps taken to complete Trials A and B in the space provided.

e. If the Examinee says that s/he experienced pain on walking, check the "yes" box, otherwise check the "no" box.

f. Check the box indicating the type of floor surface on which the course was laid out. (Hard copy only)

g. If a walking aid was used, check the box indicating the type of device. Otherwise, check the "none" box.

10. Results of the Examination

Check the "Test Done" box if all parts of the test were completed.

Check the "Test Incomplete" box if one or more parts of the test were not completed, because either the SP was unable and/or refused and go to Item 11.

Check the "Test not done" if all parts of the test were not completed because either the SP was unable and/or refused and go to Item 11.

11. Reasons Test Incomplete or Not Done

Check the appropriate "box" to indicate the reason that the test was either incomplete or not done.

4. INTRODUCTION TO THE PHYSICAL FUNCTION AUTOMATION AND THE MEC AUTOMATION SYSTEM

4.1 Background

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

The system is composed of hardware, which are tangible pieces of equipment, and software which are the communication systems and management systems run on the hardware. The immediate hardware you will use to enter data during the Physical Function Examination is a VT320 terminal. This chapter will outline the use of a VT320 terminal to enter the data for this component. For more information on the hardware and software which makes up the MEC automation system, refer to Chapter 4 of the Home Health Technician's Manual.

4.2 The VT320 Data Terminal

The VT320 Terminal (Figure 4-1) consists of a monitor and keyboard. The keyboard (Figure 4-2) includes a main keypad for typing letters and numbers, a numeric keypad for numeric data entry, and function keys on the editing keypad. The top row of the keyboard is used for a variety of special functions including movement of the cursor. These keys and their functions are listed and defined in Figure 4-2.

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

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

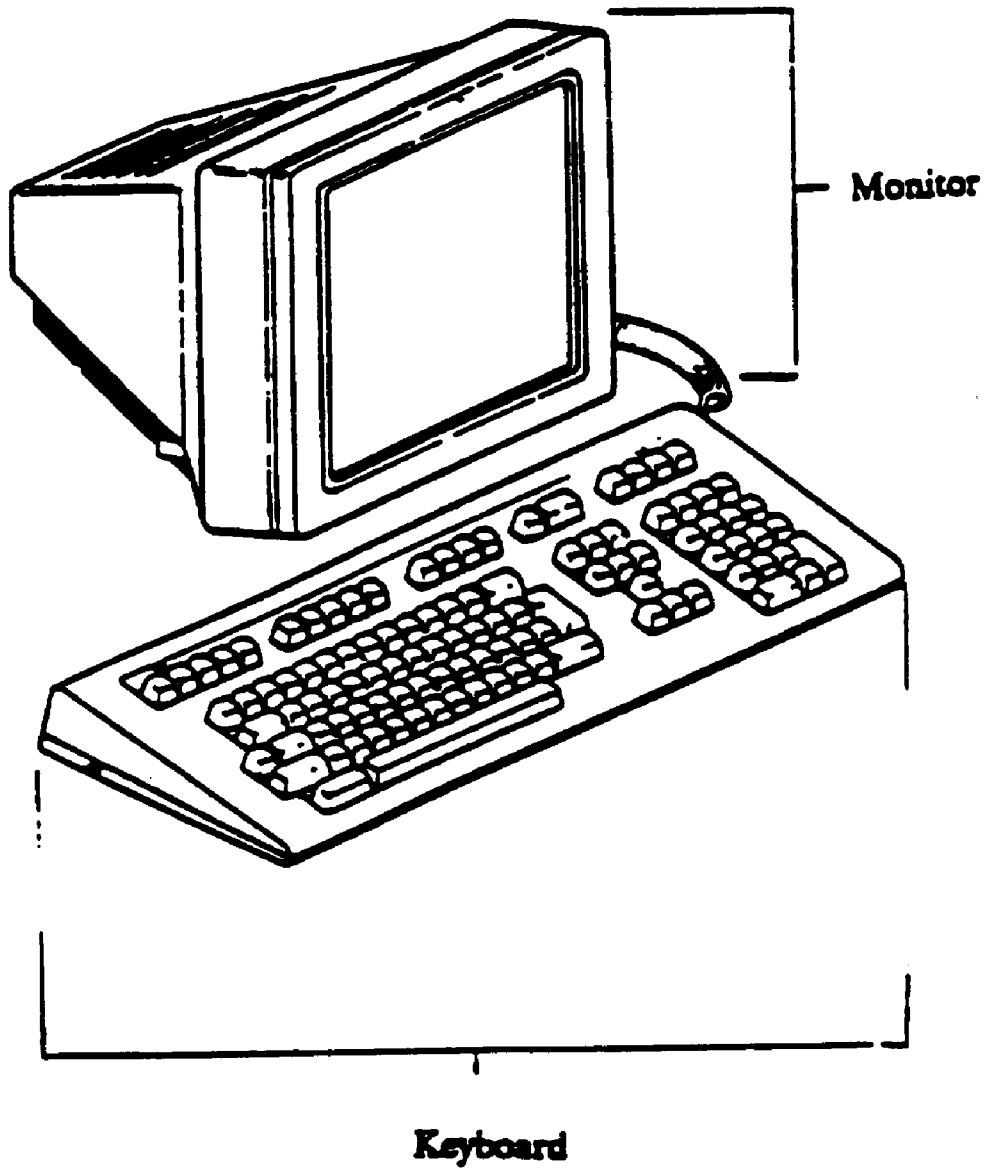


Figure 4-1. VT320 terminal

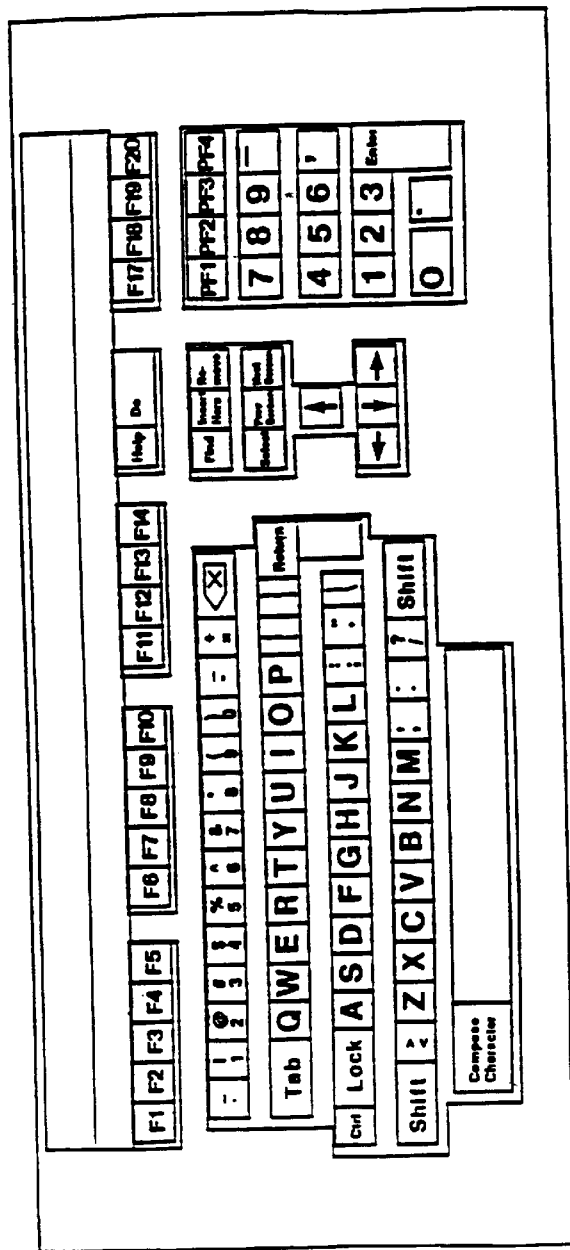


Figure 4-2. The terminal keyboard

Refer to /Figure 4-2. Begin at the top left of the keyboard and read from left to right.

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

Figure 4-2. The special function and edit keys (continued)

4.3 The Physical Function Automation Programs

Programs written for the Physical Function Examination component system enable you to enter and modify data.

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

4.4 Sequence of a Session at the Terminal

You begin a session at the terminal by turning on the terminal and logging on (establishing an electronic connection) to the MicroVAX using the VMS operating system. Once you are connected to the MicroVAX, the USER interface system is used to access specific applications (programs) within a component. Applications are accessed according to the component room you are in. Each application has a Main Menu of several choices of procedures or submenus from which you may choose to begin specific data entry, review, modification, deletion, or transmission procedures. When you have completed the selected procedures, you: (1) return to the Main Menu; and (2) Log Off (disconnect) from the MicroVAX.

4.4.1 Logging On To The System

The Log On process connects the terminal to a selected MicroVAX computer and verifies your authorization. The Log On procedures differ depending on the type of terminal you are using. The procedures for logging on to the MEC automation system with a VT320 are given in Exhibit 4-1. The narrative explanation of procedure and what is displayed on the terminal screen is in regular type; what you do is in **bold type**.

Exhibit 4-1. Logging on to the system with the VT320

1. The on/off switch is located at the rear of the base of the CRT. **Turn the switch to the ON position.**
2. The screen lights up and the cursor (a blinking box of light) appears in the upper left corner of the screen. **Locate the Return key (<Return>) on the terminal keyboard and press it two times.**
3. The screen displays a local prompt (Local >). **Type "C MEC(nc)".** (Where n = MEC 1, 2, or 3 and c = MicroVax A or B). **Press <Return>.**
4. The screen displays a prompt for a Username (USERNAME:). **Type the name of the component you wish to access.** For the Physical Function component, the username is "COMPUTER". **Press <Return>.**
5. You are now connected to the MicroVAX and ready to begin. The screen displays the Main Menu for the component name you typed in at the Username prompt.

4.4.2 The Menu System

After the Log On process is complete, you are presented with a Main Menu screen (see Exhibit 4-2) which lists choices of procedures or submenus specific for each application. The menu system relieves the burden on you of remembering all of the functions of a system and of knowing the commands to access them. Refer to Exhibit 4-2 for an example of The Physical Function Examination Main Menu screen and instructions on how to select an option on a menu. Each option on the menu is preceded by an input field. An option is selected by moving the cursor to the input field in front of the desired choice and pressing <Select>. The computer responds by displaying the SP Introduction screen.

4.4.3 The SP Introduction Screen

The SP Introduction screen is used with every component where you interview or examine a sample person. The SP Introduction screen has several functions: (1) to allow the USER to confirm the identification of the SP; (2) to create a record of the examination procedure for the SP; and (3) to identify the technician who will conduct the interview or the examination. An example of the SP Introduction screen and instructions for completing it are given in Exhibit 4-3. After completing the Introduction screen, the first screen of the Physical Function component will be displayed.

4.4.4 The Physical Function Examination Screens

Each screen of the Physical Function automation programs will display the Sample Person's name and ID number at the top of the screen, and the title "Performance Test" under the SP's name. Data is entered on each screen in the manner described below. Samples of the screens are included as Exhibit 4-4.

Exhibit 4-2. Main Menu Screen

Computer room applications

Choice top

Select one

Performance test _____	Introduction _____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

SUMMARY OF USE: What you do is in bold type.

1. The cursor appears in the input field at the left of the first choice in the menu.
2. The cursor is moved down the list of choices with **< ↓ >** or **<RETURN>** and back up the list of choices-with **< ↑ >** or **<F12>**.
3. **Move the cursor to the choice you want. Press <SELECT>.**
4. The computer will display the first screen of the program you select. For example, if you select Phlebotomy, the computer will display the SP Introduction screen.

If you select Blood Processing, the computer will display the submenu for Blood Processing.
5. If you want to end the menu program without making a selection, press **<PF4>**.

Exhibit 4-3. How to complete the SP Introduction screen

**Introduction
Technician
Tech# 9999
Name Phil D. Technician**

**Examinee
Sample# 9990001
Name John Sampler
Age 62 Years/Months Y
Sex M**

Procedures

Performance Test _____

SUMMARY OF USE: What you do is in bold type.

1. The cursor is located at the Tech # input field. **Type your four digit Tech # and press <Enter>.**
 - a. If your Tech # is in the database, your name is displayed in the Name input field and the cursor moves to the NCHS # input field.
 - b. If your Tech # is not in the database, the following message is displayed at the bottom of the screen: "Unknown Technician. Please verify Tech #".

If your Tech # is incorrect, **retype your correct four digit Tech # and press <Enter>.**

If your Tech # is correct, **press <Enter>.**
 - c. If your name still does not appear in the Name input field, see the MEC manager. Only known technicians are to access data collection applications.
2. The cursor is located at the NCHS # input field. **Type in the seven digit SP ID number and press <Enter>.**
 - a. If the Sample number is in the database, the SP's name, age and sex are displayed in the appropriate input fields, and the cursor moves to the Procedures menu at the bottom half of the screen.

Exhibit 4-3. How to complete the SP Introduction screen (continued)

**Introduction
Technician
Tech# 9999
Name Phil D. Technician**

**Examinee
Sample# 9990001
Name John Sampler
Age 62 Years/Months Y
Sex M**

Procedures

Performance Test _____

-
- b. If the Sample number is not in the database, the following message is displayed at the bottom of the screen: "Unknown examinee, please verify Sample #".

Check the Daily Appointment Schedule, the SP Control Record, and if necessary, check with the Coordinator to verify that you entered the Sample number correctly.

If the number you typed was not correct, **type the correct Sample number in the Sample # input field.**

If the number you typed was correct, either you or the coordinator must enter the Name, Age, Years/Months and Sex input fields. Check with the coordinator and MEC manager to determine the next appropriate step.

Refer to the SP Control Record, and type the SP's name, age and sex in the appropriate fields. Press <Return> after each variable is entered.

The cursor moves to the Procedures menu at the bottom half of the screen.

3. The cursor appears at the left of the first choice of the Procedures menu. Use the <↑> <↓> <F12> and <Enter> to move the cursor to the procedure you want. Press <Select>.

The first screen of the selected procedure appears on the terminal monitor.

Exhibit 4-4. Samples of screens

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Health Status Screener

- 1 = No apparent restrictions _____
- 2 = Presently in wheelchair _____
- 3 = Recent surgery _____
- 4 = Injury _____
- 5 = Other health condition _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Shoulder - External Rotation _____

Right shoulder _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Shoulder - External Rotation _____

Left Shoulder _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Shoulder - Internal Rotation _____

Right Shoulder _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Shoulder - Internal Rotation _____

Left Shoulder _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Single Chair Stand _____

a) in wheelchair _____

1 = yes _____

2 = no _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

If in wheelchair ask: _____
Can you get up from your wheelchair by yourself? _____
1 - yes _____
2 - no _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Use of arms to scoot forward. _____
1 = yes scoots forward without using his/her arms _____
2 = no uses arms to scoot forward _____
3 = unable to move or refused _____

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Ability to stand. _____

1 = yes - without arms _____

2 = yes - with arms for pushing off _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Repeated Chair Stands

Time to complete 5 stands (in seconds) _____

maximum time: 90 seconds _____

777 = refused _____

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Repeated chair stands _____

Number of stands _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Hipflex and Knee Flexion _____

Right side _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Hipflex and Knee Flexion _____

Left Side _____

1 = fully _____

2 = partially _____

3 = unable _____

4 = refused _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Tandem Stand _____
ask: Are you able to stand by yourself _____
without holding on to anything? _____
1 = yes _____
2 = no, don't know, or refused _____

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Tandem Stand _____

. Number of seconds tandem stand held _____
. maximum time = 10 seconds _____
. 777 = refused _____

—

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Measured Walk

Has SP been observed to walk without
help of another person? _____

1 = yes _____

2 = no _____

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Number of seconds to complete 8 foot walk _____

777 = refused
Trial A: _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

8 Foot Walk _____

Total number of steps _____

Trial A: _____

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Number of seconds to complete 8 foot walk _____

777 = refused _____
Trial B: _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Total number of steps _____

Trial B: _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Pain reported on walking? _____

1 = yes _____

2 = no _____

Char Mode: Replace Page 1

Count: *0

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ NCHS# 1383876

Performance test _____

Type of device used _____

- 1 = none _____
 - 2 = cane _____
 - 3 = walker _____
 - 4 = other _____
- _____
- _____
- _____
- _____

—

— — — — —

Exhibit 4-4. Samples of screens (continued)

Name SP 3876 _____ Sample# 1383876

Examination results

Select one

- Test done _____
- Incomplete _____
- Refused or uncooperative _____
- Out of time _____
- Unable to understand instructions _____
- Equipment problem _____
- Other reason _____
- _____
- _____
- _____

Comments:

Char Mode: Replace Page 1

Count: *7

The item question or description is listed on the screen, followed by the possible answers for the item. For example, on the first screen of Exhibit 4-5 the item "Health Status Screener" is followed by the answers:

- 1 = no apparent restrictions
- 2 = presently in wheelchair
- 3 = recent surgery
- 4 = injury
- 5 = other health conditions

The cursor appears in the field near the bottom of the screen. Type the code for the appropriate result (1, 2, 3, or 5), and press <Enter> or <Return>. If a valid code is entered, the computer will process the entry and display the next item in the examination. If the entry is not valid, that is, if you tried to enter something not listed, the program will display a message at the bottom of the screen, and you can correct the entry.

Each screen in the examination sequence should be completed in this manner. When the final screen of the exam is completed, the message "Press <Next> to continue" will be displayed at the bottom of the screen. Pressing the key labeled <Next> or <Next Screen> will call up the SP Examination Results screen.

4.4.5 The SP Examination Results Screen

The SP Examination Results screen is the final screen of every program used to enter information from an SP interview or examination. The purpose of the SP Examination Results screen is to allow the technician to comment on the results of the interview or examination procedure. An example of the SP Examination Results screen and instructions for completing it are given in Exhibit 4-5.

If an interview or examination is successfully completed, you select "Satisfactory test" from the list of choices presented on the Examination Results screen menu by pressing the <SELECT> key. You may also enter a comment in the Comments input field. If the examination was complete but not satisfactory, or if the examination was not done, the technician selects the appropriate choice from the menu.

Exhibit 4-5. How to complete the Examination Results screen

Name John Sampler

Sample# 9990001

Examination results

Select one

- Test done _____
- Incomplete _____
- Refused or uncooperative _____
- Out of time _____
- Unable to understand instructions _____
- Equipment problem _____
- Other reason _____
- _____
- _____
- _____

Comments:

SUMMARY OF USE: What you do is in bold type.

1. The cursor appears at the input field to the left of the first choice on the examination results menu. Use **< f >**, **< ↓ >**, **< F12 >** or **< Return >** to move the cursor to the choice which most accurately describes the results of the examination and press **< Select >**. The cursor moves to the Comments input field.
2. The cursor is located at the Comments input field. **Type any comment which is needed to adequately explain the results of the examination. Press < Return > and then press < Next Scrn >.**
If no comment is needed, press **< Next Scrn >**.
3. The Introduction screen with the SP information is displayed on the terminal screen.
The cursor is located at the first choice of the Procedures menu. If the SP has other examinations in the same room, **move the cursor to the appropriate procedure and press < Select >**.

If you are ready to examine a new SP, **press < Remove > to clear the SP Introduction screen.**

If you are ready to return to the Physical Function Menu, **press PF4, the exit key.**

The result categories are listed and defined in Exhibit 4-6. You select the choice which best explains the condition of the interview or examination. You may also enter a comment to give any additional explanation as needed.

4.4.6 Logging Off the System

"Logging off" is the process of disconnecting the VAXmate from the MicroVAX or the VT320 from the terminal server. The Log Off procedure (see Exhibit 4-7) is performed at the end of the session.

Exhibit 4-6. Physical Function Result Codes

October 20, 1989

PERFORMANCE TEST

<u>Result Codes**</u>	<u>Category</u>	<u>Instructions</u>
010/110	Tests done	All sections of the exam appropriate for the SP completed according to the protocol (including "unable" meaning cannot perform or does not attempt selected sections due to health, physical, or cognitive limitations).
011/111	Incomplete	SP refused one or more selected sections.
013/113	Refused/Uncooperative	SP initiated non-response. SP refused the entire exam for any reason. (e.g. SP or a family member sick, SP leaves early, SP comes late, etc.)
014/114	Out of Time	SP comes on time; Adequate staff in MDC; It's the end of session and no time to conduct the test.
016/116	SP Unable to Understand Instructions	SP unable to understand instructions and the entire test not done due to language, cognitive impairment, or other communication problems.
017/117	Equipment Problem	None.
018/118	Other Reasons	Limit use of this code only to reasons that can not be coded with above categories. (e.g. SP sent home or excluded by the physician or inadequate staff to conduct the test). Explain in comments.
/210	Done at prior session	SP rescheduled and this test was done at the previous visit.

Note.** Result codes: Technician/Coordinator

Exhibit 4-7. Logging off the system

1. You should be at the Main Menu screen for the component room. **Press <PF4>**. Note: If you are not at the Main Menu screen for a particular component room, <PF4> can be used to exit any program and return you to the Main Menu screen.
2. The local prompt is displayed (Local >). **Type "LO"**. Press <RETURN> or <ENTER>.

5. LOGS

5.1 Daily Log

The Daily Log consists of the SP's ID number and other identifying information as well as information on the timing and the completion status of the examination. These data are recorded automatically by the automated system; however, it is important that technicians be familiar with the hard copy version in the event that the automated system is not in operation.

The Physical Performance Test daily log sheet will be kept in the exam room. An example of the log is shown in Exhibit 5-1. Place the SP ID label in the space provided and enter the location, stand number, date and exam session at the top of the form. For each SP examined, record the following:

- SP's age;
- SP's sex;
- technician's number;
- status code; and
- comments.

Three status codes are used for the status code column. Code (C) indicates a "completed" exam, (PC) indicates a "partial complete" exam, and (NE) indicates "no exam". (PC) and (NE) both require reasons for the assigned codes. The comments section is used to note reasons why the examination was not completed (PC or NE), or any unusual occurrences, etc. The pages of the log are kept in a file until the end of the stand.

5.2. Shipment of Logs

Refer to Part I, Section No. 2, Standardized Procedures for information concerning the shipment of logs from the MEC.

Exhibit 5-1. Performance Test Log Sheet

Location _____
 Stand No. _____
 Date _____ / _____ / _____
 Session: AM PM EVE

National Health and Nutrition Examination Survey III
 PERFORMANCE TEST LOG SHEET

SP ID #	Age	Sex	Examiner ID #	Time In/Time Out	Status Code	Comments
1.				----- / -----		
2.				----- / -----		
3.				----- / -----		
4.				----- / -----		
5.				----- / -----		
6.				----- / -----		
7.				----- / -----		
8.				----- / -----		
9.				----- / -----		
10.				----- / -----		

SP: 100% C: Complete PC: Partially Complete (must include comments) N: _____ (must include comments)

6. QUALITY CONTROL

6.1 Quality Control Procedures

To ensure complete and accurate data collection several quality control procedures have been developed for this survey. This section describes procedures to be followed by technicians in carrying out the Performance Test.

6.2 Editing the Hard Copy of the Performance Test Response Sheet

If the examination is recorded on the hard copy version of the Performance Test Response Sheet the technician should review the form for completeness, accuracy and legibility before the examinee leaves the exam room so that data can be retrieved, if necessary. The technician should make the following checks:

- A response has been marked for all appropriate items;
- No conflicting responses have been marked for the same item;
- Appropriate skip patterns have been followed; and
- All entries are legible.

At the earliest possible opportunity, the data should be entered into the automated system.

6.3 Verifying Daily Examinee Schedule

The technician should check off each examinee on the schedule provided by the coordinator as s/he is about to begin Performance testing. At the end of the session, the technician should review the schedule and check it against the control section of the automated system to make sure that all examinee's who were scheduled were seen by the technician. If any examinees were missed, the technician should notify the coordinator immediate.

6.4 Observations

On a periodic basis a sample of Performance tests will be observed by NCHS personnel or consultants. The observers will assess whether exam protocols are strictly followed, that the position of the examinee at the start of each test is correct and that the technician is scoring responses correctly.

Since, in most stands, the number of elderly people examined will be relatively few, technicians will not perform the test with the same frequency as that of other components. Thus, it is especially important that technicians review protocols before performing the test and ensure that they follow the script carefully.

Variations in procedures and other problems will be reviewed with the technicians. If problems are considered to be serious by NCHS, retraining will be scheduled.

APPENDIX A

Essential Ideas and Statements to be
Read to the Examinee

PHYSICAL FUNCTION EXAMINATION

ESSENTIAL IDEAS AND STATEMENTS TO BE READ TO THE EXAMINEE

Introduction

Script: As you know, certain movements of your body become more difficult to do as you grow older. I would now like you to try to do several different movements of your body that involve your arms and legs.

I will first describe and show each movement to you. Then I'd like you to try to do it. If you cannot do a particular movement or you feel it would be unsafe to try to do it, tell me and we'll move on to the next one. Let me emphasize that I would like you to try each exercise. But I don't want you to try to do any exercise that you feel might be unsafe.

1. Health Status Screener

Do you have any problems from recent surgery, injury, or other health conditions that might prevent you from standing up from a chair or walking?

2. Shoulder External Rotation

Essential Ideas:

1. Head erect.
2. Elbows out.
3. Arms straight.
4. Fingers touching.

Script: Now I'd like you to put both hands behind your neck at the level of your ears with your fingers touching. Keep your arms parallel to the floor and point your elbows out to the side.

3. Shoulder Internal Rotation

Essential Idea:

1. Fingers touching behind back at small of back.

Script: Now I'd like you to move your arms behind your back and touch your fingers together behind your back.

4. Timed Maneuver - Lock and Key Test of Manual Dexterity

- Essential Ideas:
1. Key resting in correct position on board.
 2. SP's hand by side to start.
 3. Start timing when Sp moves arms toward key.
 4. End timing when bolt first appears.

Script: Next we will be looking at your hand function by using a lock and key.

Show me which hand you would normally use to open a lock. You may use your other hand to steady the block but not to hold the key or help you turn the lock. The block should remain flat in your lap. Let me demonstrate the procedure. (Examiner demonstrates, then places lock on SP's lap.)

Although I will be timing you, I would like you to move carefully and smoothly, trying not to drop the key.

Do you have any questions? Good. Okay, when I say start, please begin.

5. Single Chair Stand

- Essential Ideas:
1. No arms, if possible.
 2. SP should be seated so that feet rest on floor.

SCRIPT: The next tests measures the strengths in your legs. First, would you please fold your arms across your chest and move forward on the cube without using your arms so that you are sitting about half-way toward the front of the seat.

Note: The Examinee should end up with his/her knees flexed to about 100 degrees. If he/she cannot move, say:

O.K., try to move forward using your arms.

If examinee can move, say:

Stand up once without using your arms.

If Examinee cannot stand, say,

O.K., try to stand up using your arms.

If Examinee still cannot stand, record as unable.

6. Repeated Chair Stands

- Essential Ideas:
1. Begin timing as soon as SP begins to stand.
 2. End when SP is fully erect.
 3. SP cannot use arms.

Script: Please keep your arms folded across your chest. When I say "ready? stand", please stand up straight and then sit down again at your usual pace five times without stopping in between and without using your arms to push off. Do you think you can do that for me?

7. Hip Flexion and Knee Flexion

- Essential Ideas:
1. Lower leg at right angle to thigh.
 2. Remember to demonstrate correctly. If Examiner is wearing skirt, raise as necessary to demonstrate correct leg position.

Script: Now I'd like you to raise your knee to make a right angle - like this. Do not use your hand or arms to raise your knee.

8. Tandem Stand

- Essential Ideas
1. Demonstrate correctly.
 2. Safeguard SP from falling.
 3. Support SP until timing begins.
 4. Begin timing when supporting arm is dropped.
 5. Feet in correct position.

Script: This test will assess your balance. Now I would like you to try to stand with the toes of one foot touching the heel of the other foot for about 10 seconds, without holding on.

You may use your arms, bend your knees, or move your body to maintain your balance, but try not to move your feet. Try to hold this position until I say stop.

9. Measured Walk

Script: Now I am going to time you and count your steps as you walk the course. I will be asking you to walk the course two times; please walk at your usual pace and stop when you get beyond the _____. Then I will have you walk back. (The examiner then says) Ready? Begin.

10. Pain While Walking

Script: Did you have pain while you were walking?