

**Modification of Diet in Renal Disease Study**

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**Volume 1, Chapter 5**

**The Clinical Center Computer Chapter**

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Volume 1 Chapter 5  
The Clinical Center Computer Chapter

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## 5.1 GENERAL GUIDELINES

This section is an overview of the computing equipment the clinical centers will be using for the MDRD study and general care and maintenance guidelines.

1. The IBM Personal Computer is a sophisticated piece of electronic equipment, and although well-built, it must be handled with care. The system should be located in an accessible area on a sturdy table free from shock and vibrations. Care should be taken to avoid spilling coffee, food, etc., on the computer components. If excessive dust is a problem, keep the keyboard covered. If excessive static electricity is a problem in the area, a static mat can be obtained to isolate the PC from shocks which can damage the memory.
2. Diskettes should be handled with care as follows:  
Do not bend diskettes. Do not touch the exposed areas of the diskette. Be careful when inserting them into a disk drive. Keep them away from temperature extremes and strong magnetic fields (which may be generated by many types of machinery and equipment). Try to fill out any label before attaching it to the diskette; if you must write on the diskette, use a felt tip pen. Diskettes should always be stored in the protective sleeve when not in use. Each center should have one or more diskette storage containers, preferably located in a safe location. Diskettes should always be labelled clearly with the contents and date.
3. LEAVE YOUR MACHINE ON AT ALL TIMES. Contrary to one's intuition, this is not detrimental to the equipment, and in fact is actually better for the electronic components than constant power ups/power downs. The primary reason for leaving the machine on is that data will be transmitted automatically by the machine during the night. However, TURN YOUR MONITOR OFF when leaving for the evening. (If your monitor does not have a separate on/off switch, turn the

brightness control all the way down.) This will help to preserve the phosphorous coating of the screen. A constant image projected to the screen will eventually leave permanent marks. A note taped in a conspicuous spot will remind yourself (and others) to leave the machine on but turn the monitor off during the night.

4. You should have a surge protector for your PC. This is a small box which plugs into the wall socket and has several outlets into which you should plug each piece of your computing equipment (PC, monitor, printer, etc.). The surge protector filters out any sudden increases in voltage which may come through the wall socket due to the wiring of your building. Such "spikes" can be detrimental to your PC and potentially cause loss of data.
5. The equipment you are using was purchased by the MDRD Study primarily for the use of the MDRD Study group at each center. At all times, first priority should be given to MDRD personnel for MDRD purposes.
6. Organization of files on your hard drive is essential. Use separate subdirectories to keep files for different uses organized. Each application software should be installed in its own subdirectory. Take the extra time to keep your machine's directories neat and clean; the resultant improvement in efficiency will pay off in the future. See Section 5.3 (PC-DOS Operating System) for details.
7. Whenever a question or problem arises, DO NOT HESITATE TO CALL THE DCC. We are always willing to help. It is often easier to correct a problem or clarify an issue as soon as it arises. See Appendix 2 for a list of DCC personnel to contact for each particular problem.

## 5.2 SUMMARY OF ROUTINE TASKS

This section describes routine tasks to be done on a regular basis by the Key Entry person, Study Coordinator, or Dietitian.

### 5.2.1 DATA ENTRY

Throughout the day, study forms will be completed by the Recruitment Coordinator, Study Coordinator, the Study Physicians, the GFR Technicians, and/or the Dietitians. Forms which are complete and ready for entry should be entered by the Key Entry person using the Datalex Entrypoint-90 software. If only a few forms are ready to enter, the Study Coordinator may at his/her discretion choose to hold those forms until the following day, when more data will be available for entry. However, please keep in mind that timeliness of data transmission will be one criterion for evaluation of the Clinical Centers.

### 5.2.2 DATA TRANSMISSION

1. At the end of the day, all data will be readied for transmission to the Data Coordinating Center using the Crosstalk automatic transmission routine (Section 5.5.2). The data will be sent during the night by Crosstalk.
2. The Data Transmission Report will be available on the printer the next morning, documenting data files transmitted and any problems which occurred. This report should be reviewed daily. See Appendix 4 for an example report.
3. If the Data Transmission Report indicates that a file was not transmitted, the Key Entry Person or Study Coordinator will proceed to resend those files using the Crosstalk system. If there are any questions, the Data Coordinating Center should be notified of the problem.

4. The Data Transmission Report should be kept in a cumulative notebook called the Data Transmission Report Log. This will provide documentation of date of transfer and type of data transferred.

#### 5.2.3 QUERY RESPONSE

1. A query is generated whenever there is an inconsistency on a data form, causing the form to be rejected from the database. A Data Query Report Form will be sent via electronic mail to the clinical center. See Appendix 4 for an example report.
2. The Study Coordinator will correct the data inconsistency on the center's file copy of the paper form. The data will be corrected via the Data Query Report Form of the query system (see Section 5.7). All queries should be responded to within two working days.

#### 5.2.4 ELECTRONIC MAIL

1. Electronic mail transmissions between MDRD personnel are an essential mode of communications. Electronic mail should be read at least once each working day. Use of the electronic mail system is described in Section 5.8.
2. A hard copy of each mail message received by the Clinical Center is to be distributed to appropriate personnel. This is critical for the smooth operation of the study team. A hard copy of each message should be filed in an appropriate location.
3. Responses to mail messages are appreciated. They should be kept concise and appropriate to the question asked. All messages should clearly indicate the specific recipient and sender. See Appendix 1 for the VAX account of each center and laboratory to which mail messages may be sent.

## 5.3 THE PC-DOS OPERATING SYSTEM

### 5.3.1. OVERVIEW

1. This section is intended as a general introduction to the organization of your IBM PC and its associated hardware and software. You do not necessarily need to know these concepts in order to use your PC for MDRD tasks, as the following instructions may be followed step-by-step to accomplish data entry, data transfer, etc. However, a basic understanding of how your computer works and is organized will assist you in using your computer more easily, especially in cases of troubleshooting.

If you would like to know more about how the PC works than is provided here, an excellent source is the book Inside the IBM PC by Peter Norton. The book assumes no prior knowledge of computers, and can be read on a more or less technical level to suit your needs and interests.

2. The physical computer consists of a SYSTEM UNIT, storage devices, input/output devices, and peripheral devices. The system unit is the heart of the computer, and consists of a number of electronic circuit boards situated in the main "box." The system unit includes the CENTRAL PROCESSING UNIT (CPU), which is the heart of the computer. The CPU executes commands, performs calculations, and manages all other components of your computer. Another essential component is the computer's memory. More specifically, the memory is known as RANDOM ACCESS MEMORY (RAM), which means that information is constantly being stored, retrieved, moved, and deleted in the memory. A portion of the memory is always occupied by very basic or low-level instructions which the computer follows to perform essential tasks of execution. As a user, you never need to think about this aspect. Most of the memory is initially unoccupied. When



you run an application, such as Datalex, a number of instructions are read into the RAM and held there. These instructions are then accessed as you work with the application. When you exit your application, these instructions are removed from the memory, and it awaits a different set of instructions from a different application. The RAM contains information only when the machine is on. When you turn your machine off, all information is lost from the machine's memory.

3. Another component of the IBM PC are the EXTERNAL STORAGE DEVICES, more simply, the DISK DRIVES. Disk drives are physical means for storing information on a permanent basis, in the sense that when the power is turned off, the information remains on the disk. Your machine has two kinds of disk drives. The first is the HARD DISK. This is a single disk which is permanently located within the main unit. This is the primary disk; it contains all of the software, or programs, that you use, including the operating system. It also stores data and text information that you use on a regular basis. The hard disk is permanently installed because such a disk can store a large amount of information. Your computer can store 10 MB, 20 MB, or more on the hard disk, depending on the type of PC you have. "MB" means one megabyte, which is approximately (but not exactly) one million bytes; you may think of a byte as one character of storage. Hence on an IBM XT you may store approximately 10 million characters of information at once on the hard disk. An IBM AT can store 20 or 30 MB's of information on its hard disk. The IBM PS/2 computers have hard disks which can contain even more information.
4. The other type of disk drive is a DISKETTE DRIVE. These are used to read and write to removable diskettes. Diskettes are useful to send information to other users, as the Data Coordinating Center distributes software to you on diskettes. Diskettes may be floppy diskettes, which are 5-1/4" in diameter

and enclosed in a flexible plastic sleeve. These are used with the IBM XT and AT. There are also microdiskettes which are 3-1/2" in diameter and enclosed in a rigid plastic case with a metal shutter. These are used in the IBM PS/2's. Diskettes hold less information than will the hard drive. The floppy disk drive on an IBM XT will use disks that hold approximately 360 thousand bytes of information, or 360 kilobytes (KB). The IBM AT floppy drive uses disks that hold 1.2 MB of information. The microdiskettes used in the IBM PS/2 will hold 1.44 MB.

5. INPUT/OUTPUT DEVICES are means for interacting with your computer as a user. You have three I/O devices: your KEYBOARD, your MONITOR, and your PRINTER. The keyboard allows you to issue commands to your computer; the monitor and printer display what you do and the computer's response.
6. PERIPHERAL DEVICES are auxillary hardware for specific uses. You have at least one peripheral device for your PC: a MODEM. The modem is a hardware device that allows you to call other computers, usually much larger "mainframe" computers, and to communicate with them over telephone lines. The modem consists of a printed circuit board which is bought separately and installed within the main unit.
7. The other half of your setup is the computer's SOFTWARE. Software refers to sets of instructions that the computer reads from a file stored on one of the storage devices, loads into memory, and then executes in order to perform some task. Software includes an operating system, and applications.
8. The OPERATING SYSTEM (in our case, DOS) is the most fundamental piece of software. It is needed for the computer to be able to function at all. The operating system understands your commands and tells the physical machine what to do in order to execute the command. Many operating system commands refer to operations

on files. A file is the most basic unit of storage from the user's point of view. A single file may contain software instructions, understandable only by the machine, or data, such as study data files which you transmit to the DCC, or text, such as a mail message. Files may be created, or modified, or deleted through a variety of operating system commands. DOS is automatically read into memory whenever the PC is turned on.

### 5.3.2 FILE SPECIFICATIONS

1. A FILE is the most fundamental unit of storage for the computer. Files are "chunks" of information stored as a unit on your hard drive or on a floppy disk. You refer to a particular file by using a file SPECIFICATION. There are limits on the format of the file specification. First, the file NAME consists of 1 to 8 characters. These may be letters, numbers, special characters or a combination of these. The file name is followed by a period (.). Following the period is the file EXTENSION, which consists of 0 to 3 letters, numbers, special characters, or a combination of these. The file extension usually is used to refer to the type of information stored in the file. For example, the extension TXT is used for files containing lines of text. A few examples of complete file specifications are:

CH4-DOS.TXT

BATCH04.CCF

1.DAT

TEMP.

WS.COM

Note that the extension is optional. However, it is best to be as descriptive as possible when naming a file within the limitations, as this will make it easier to recognize what is stored within a file without actually examining the contents.

Thus TEMP. above is not a good file specification, especially for a file you intend to keep for a length of time.

2. Some file extensions have typical meanings which should be avoided. Specifically, the extensions EXE, COM, and BAT should be avoided. The first two of these denote software files, containing instructions for the machine which are in a form unintelligible to the user. The third denotes a file containing DOS instructions to be executed sequentially by the PC. You will not need to create or modify such files.
3. To refer to a file, you must type its full specification: the file name, a period, and the file extension, without any spaces between these components. However, there is also a means of referring to groups of files having the same or similar names or extensions. This is accomplished through the use of WILDCARDS. There are two wildcard characters: \* and ?. For example, suppose you have several files on your PC with the extension CCF and would like to know exactly which ones you have. The command DIR \*.CCF would display all CCF files and only CCF files in your directory (the DIR and other commands are explained in the next section). The machine interprets the asterisk as standing for any file name. You can also use the asterisk to stand for part of a file name. For example, DIR BATCH\*.CCF would display all files beginning with the five characters BATCH, followed by any or no additional characters, and having the extension CCF. The asterisk wildcard may also be used for the extension. For example, DIR BATCH04.\* will display all files having the name BATCH04 and having any extension. Please note that the asterisk may be used only to stand for the "tail" of the name or extension. That is, the command DIR \*04.\* will not display all files whose name ends in 04, but rather all files. DOS ignores the 04 once it has read the asterisk at the beginning of the file specification.

4. The wildcard ? works similarly, but stands for a single character only. For example, DIR BATCH??.CCF will display all CCF files whose name consists of BATCH followed by none, one, or two characters. The file BATCHN12.CCF will not be displayed, since BATCH is followed by three characters. Again, the question mark may be used in the file extension as well.

### 5.3.3 FILE COMMANDS

1. File specifications as described above are used most often with certain DOS commands. The general format is

command parameter1 parameter2

Commands generally require none, one, or two parameters. The parameter is typically a file specification, which may include wild cards. The most frequently needed commands are summarized below. The reference card for DOS which came with your PC is a handy tool.

2. DIR Command

The DIR command is the directory command. The directory refers to a listing of all files on your hard drive, in the root directory or subdirectory (see section 5.3.5). Using DIR without a file specification will display all files. Using DIR with a file specification will display selected files, as described above in the discussion on wildcards. For example, DIR MYFILE.TXT will display one and only one file, if it exists. DIR \*.TXT will display all .TXT text files, if any exist. If no files matching the specification are found, the message "File not found" will be displayed. The DIR Command displays the files as in this example:

Volume in drive C is BIOSTATS-MD  
Directory of C:\

|           |       |                    |         |        |
|-----------|-------|--------------------|---------|--------|
| DLX       | <DIR> |                    | 7-01-86 | 11:31a |
| MDRD      | <DIR> |                    | 6-24-86 | 9:29a  |
| COMMAND   | COM   | 23791              | 6-10-87 | 4:35p  |
| CONFIG    | SYS   | 149                | 4-15-87 | 3:44p  |
| AUTOEXEC  | BAT   | 135                | 6-19-87 | 1:54p  |
| 5 File(s) |       | 1243136 bytes free |         |        |

The first line gives the volume label, if any. This is a just a descriptive name of the hard drive, which you need not worry about. The second line displays the name of the subdirectory whose files are being displayed (see Section 5.3.5). Next is the actual directory. Notice that the period of the file specification is not displayed; rather DOS leaves a space between file name and file extension. However, don't forget that you must use the period without any spaces when referring to files in commands. The two "files" followed by "<DIR>" refer to subdirectories of the root directory. The third column of the directory display is the size of the file in bytes. The last two columns give the date and time at which the file was created or last changed. The final line lists the total number of files. Note that subdirectories are counted as files in this total, even though they cannot be manipulated as ordinary files. The "bytes free" gives the total amount of available space on the hard disk.

### 3. TYPE Command

The TYPE Command has the format:

TYPE file1.ext

This command displays the contents of the file FILE1.EXT in order on the computer's monitor. As the screen is filled, it scrolls: contents move off the top of the screen and new contents are displayed at the bottom. If you TYPE an ASCII file, the contents will be intelligible: letters, numbers, and special symbols. If the file is non-ASCII, it will appear to consist of a jumble of letters and graphics symbols unintelligible to a human. A

non-ASCII file is interpreted by the computer as instructions or special data, and is not intended to be TYPED by the user.

#### 4. COPY Command

The COPY Command has the format:

`COPY file1.ext file2.ext`

The complete contents of file1.ext will be placed in a file called file2.ext. If file2.ext does not exist, it is created. If a file with the name file2.ext does exist, it is overwritten with the contents of file1.ext, and the previous contents of file2.ext are lost. Thus you should be very careful when using COPY not to copy over a file you do not want to lose.

A common misconception about the COPY Command is that the original file (file1.ext) is "moved" to file2.ext. This is not true; the original file remains where it was to begin with and is unchanged.

#### 5. REN Command

The REN or Rename Command has the form:

`REN file1.ext file2.ext`

This command changes the name of file1.ext to file2.ext. The file's contents are not changed, but its name is. This command does not create a new file called file2.ext, but only changes how you refer to the file.

#### 6. DEL Command

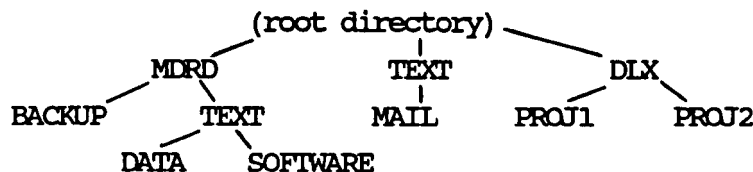
The DEL or Delete Command has the form:

`DEL filename.ext`

This command deletes or erases filename.ext from the hard disk or diskette on which it is located. Be careful, since the file is unrecoverable once deleted.

#### 5.3.4 SUBDIRECTORIES

The most basic unit of storage on your hard disk is a file. However, since typically a user will have hundreds of files, each belonging to various applications, it would be very confusing to have no way of organizing groups of files. Files can be organized into units known as a DIRECTORY. Directories are logical groups of files residing on your machine. Directories are organized in a hierarchical or tree-structured manner. When you first turn on your PC, you are in the top level directory, or ROOT DIRECTORY. The root directory may have several SUBDIRECTORIES. A subdirectory is organized one level below the root directory. A subdirectory may also have its own subdirectories. Hence there is a branching tree structure of the directories on your machine. Graphically:



Hence the subdirectories MDRD, TEXT, and DLX are one level below the root directory. MDRD has in turn two subdirectories, BACKUP and TEXT. These are one level below the MDRD directory and two levels below the root directory. Note that the subdirectory TEXT of MDRD cannot be confused with the first level subdirectory TEXT since it is below MDRD, hence a separate directory.

The guidelines for naming directories are exactly the same as those for naming files. Hence directory specifications may have an extension, although customarily extensions are not used for directories.

DOS uses a specific syntax for referring to subdirectories. The symbol \ (backslash) indicates a subdirectory. For example, \MDRD refers to the MDRD subdirectory. The backslash indicates that MDRD is a subdirectory, and since it comes first in the specification, it also



means that MDRD is one level below the root directory. To refer to the BACKUP subdirectory below \MDRD, the specification would be \MDRD\BACKUP.

Whenever you are working on your PC, you are always working in a DEFAULT DIRECTORY. This is the directory in which all files are read and stored unless you specify otherwise. That is, when you give the command TYPE LETTER.TXT the PC looks for that file only on the default directory and types it out if it is found. When you initially turn on the machine the default directory is the root directory. To change the default directory, use the command CD dirname where "dirname" refers to the directory you would like to work on. For example, CD \MDRD sets your default directory to be \MDRD. If the backslash is included in front of the directory name, the PC looks for the directory of that name one level below the root. If the backslash is omitted, the PC looks for a directory one level below the current directory. For example, if your default directory is MDRD, the command CD TEXT sends you down to the \MDRD\TEXT directory. An equivalent command would be CD \MDRD\TEXT. This fully specifies the directory to go to. This command will send you to that directory no matter what your current default directory is. On the other hand, CD TEXT will set you to \MDRD\TEXT only if your current default directory is \MDRD.

The backslash alone refers to the root directory. Thus the command CD \ would set as the default the root directory no matter from which directory you entered this command. Note that the root directory does not have a name of its own; it is referred to only by the backslash.

Creating subdirectories works exactly like changing the default directory. In this case the command is MD. Thus to create a subdirectory called MARTIN one level below the root, use the command MD \MARTIN. If your default directory is \DLX and you would like to create a subdirectory to that directory called PROJ3, use the command MD PROJ3. Again, an alternate way of doing this is to use the command

MD \DLX\PROJ3. This will work from any default directory, whereas the previous command will work only if the current default is \DLX.

One other timesaver in moving between directories works as follows. Two periods (..) refer to the directory one level above the current directory. If your current directory is \TEXT, the command CD .. would set as the default the directory directly above \TEXT, which is the root directory. If you were on \MDRD\BACKUP\DATA, the same command would set as your default \MDRD\BACKUP. Due to the tree structure of the directories, there is one and only one directory above the current default. The exception of course is the root directory, which has no directory above it. Typing CD .. when on the root will give you an error message, since it refers to a non-existent directory.

#### 5.3.5 COMMUNICATING TO OTHER COMPUTERS

The PC is a computer in its own right; it is a complete functional computer. Personal computers are known as MICROCOMPUTERS since they are the smallest computers in terms of computing power and speed. There are larger computers used for business and scientific applications requiring greater and faster computing power. The next larger class of computers are MINICOMPUTERS. The largest and most powerful are MAINFRAME computers.

The VAX computer of the DCC is a minicomputer. The VAX computer in structure is very much like your personal computer as described above; it has a CPU, memory, hard disks and peripheral devices. But the VAX has much more memory and storage space, and its CPU can process many more instructions per second than can the PC. One substantial difference is the operating system of the VAX. The operating system allows several users to use the computer at the same time; this is known as a MULTITASKING operating system. This allows the computer to run several programs simultaneously, each being used by a different user. The DOS operating system of the PC, on the other hand, can

accomodate only one user at a time and execute only one program at a time.

Users of a minicomputer or mainframe computer interact with the computer through the use of a TERMINAL. A terminal consists primarily of a monitor and a keyboard. It has no computing power of its own, but does have some electronic circuitry used to control what is displayed on the screen and to determine which keys are being pressed on the keyboard. The terminal provides an interface to the computer which carries out the user's requests.

It is possible to use a PC as a terminal to a mini or mainframe computer. This is known as TERMINAL EMULATION. The requirements are a MODEM and COMMUNICATIONS SOFTWARE. The modem is a device which is attached to the PC and to an ordinary phone line. The modem allows the PC to send information to the other computer and receive information from it also. The modem translates electronic information into an acoustic signal. The other computer also is attached to a modem, not unlike the one attached to your PC, which receives the signal over the phone line and translates it back into electronic information understandable by the computer.

Communications software is used for two purposes: it controls the modem, and emulates a terminal. The software tells the modem what phone number to dial, how fast to send the information, etc. It also causes the PC to act as if it were a "dumb" terminal attached to the other computer. The MDRD study uses the software package Crosstalk for this purpose, but there are dozens of communication packages available for the PC. When you are working on the VAX computer from your PC, your PC works exactly as if it were just a terminal. It is running the communication software needed to communicate to the mainframe, but as far as the user is concerned, you are working on the mainframe computer, not on the PC.

It is important to keep both computers distinct in your mind. When you work with the mail system or the query system, those programs are being executed on the VAX minicomputer in Cleveland. The PC knows nothing about those programs; it is only allowing you to work on the VAX by pretending it is a terminal attached to the VAX. In this setup, the VAX computer is known as the REMOTE or HOST computer, and your PC is known as the LOCAL computer. When you exit the Crosstalk system and see the > prompt, you are again working on your PC.

## 5.4 DATALEX ENTRYPOINT-90

The Datalex Entrypoint-90 software system is a data entry package which uses custom-designed screens for entry of data and generates ASCII or "raw" data files as an output. The DOC has designed entry screens corresponding to each paper form. The screens are designed to appear as closely as possible to the hard copy forms.

### 5.4.1 INTRODUCTION

1. To access Datalex Entrypoint 90, EP90 at the  $\text{C}\text{>}$  prompt and press Return. In a few moments the Entrypoint-90 logo will appear. At the top of the screen will appear the prompt "Enter Operator ID  $\text{-->}$ ." Type MDRD and press the Return key. In a few moments, the MAIN WORKSTATION MENU will appear. To enter data, proceed to Section 5.4.2, Entering Data into a Batch. See Appendix 4 for an example of this menu.
2. The Datalex Entrypoint-90 is a menu-driven system. This means that in order to tell the system what to do, you will be presented with a menu of options, from which you will choose one. Menu choices may be selected in one of two ways:
  - a. The menu choice currently selected will be highlighted. That is, the choice is displayed in inverse video, dark characters on a light background. Other choices are displayed as bright characters on a dark background. To move the highlight to other possible choices, use the arrow keys. The arrow keys are on the keypad located at the right of your keyboard. To use these keys as arrow keys, make sure that NumLock is not on. The NumLock key is located above the keypad. It toggles the function of the keypad keys. If NumLock is on, the keys will function as number keys, just like the number keys at the top of your main keyboard. If NumLock is off, the keypad keys will function as editor or cursor movement keys. Some keyboards

will have a small light above the keypad to indicate the current NumLock setting. If the light is on, NumLock is on. You want to have NumLock off so that the arrows will allow you to move the highlight bar around the menu. If you don't have such a light, you need to try the keys to determine if NumLock is on or off. IBM AT and PS/2 keyboards have a separate pad of arrow keys between the main keyboard and the keypad. In this case you do not need to worry about the function of the keypad; just use the extra arrow keys.

Use the left and right arrows (<-- and -->) to move the highlight between menu choices. When a menu choice is highlighted, pressing the Return key will select that choice and the system will proceed with that command.

Alternatively, you may use the spacebar to move the highlight. Pressing the spacebar repeatedly will loop the highlight through the choices, left to right. As above, press Return when the desired choice is highlighted.

- b. The second way to select a command without using the arrow keys is to type the first letter of the command from the keyboard. For example, to choose the Data Entry function from the main menu, type the letter D. DO NOT PRESS RETURN. The system will proceed with that command. Note that the choice does not have to be highlighted in order to be selected in this way.
3. When you are entering data in Datalex, you are working in a "batch." You may think of a batch as a workspace designed to hold your data as you enter it. After the data is entered and verified, the batch is "closed." This means that you have decided that the data in the batch is correct as it stands, and no further changes will be made to it. The batch is then ready to be "exported." This means that the data in the batch is used to create an ASCII

data file consisting of numbers and letters in a pre-defined format. It is this data file that is transmitted to the DCC.

The batch exists as a legitimate file, but you do not need to think of it as a file. It is a non-ASCII file. You can only add to or review its data via the Datalex system. The file exported from the batch, on the other hand, is an ASCII file and can be read and manipulated outside of Datalex. Datalex is an application tool used to create this data file in an easy way.

#### 5.4.2 ENTERING DATA INTO A BATCH

##### Getting into a Batch

1. Access the Datalex Entrypoint-90 System and get to the Main Workstation Menu as described in Section 5.4.1.
2. Select the option "Data Entry" from the main menu.
3. The prompt "DATA ENTRY: Enter Batch ID -->" will be displayed. This is asking for the name of the batch into which you will enter data. Type BATCHnn where nn is the form number of the type of form you wish to enter into this batch. For example, if you wish to enter some Form 12's, type BATCH12. If you wish to enter some Form 4's, type BATCH04. (Be careful to type the number 0 (zero) and not the letter O in 04.) After typing the appropriate batch name, press Return.
4. If you have currently existing batches, these will be displayed when you select Data Entry and the above prompt appears. Also, the name of the first batch will be displayed at the prompt. To specify a new batch name, simply start typing. The default batch name displayed at the prompt will disappear, and you will be able to enter the name of a new batch. If the batch corresponding to the form type already exists, select it and skip to Item 9 below.

5. The prompt "Create Batch BATCHnn from which Application -->" will appear at the top of the screen, where BATCHnn is the name you have just given to the batch. Below the prompt will appear a list of all available applications. Each application is named FORMnn where nn is the form number. Choose the application corresponding to the type of paper form you wish to enter by highlighting the application name and pressing Return. Move the highlight using the arrow keys, as you would for a menu. If you do not want to use the arrow keys, you may optionally type the name of the application at the prompt. For example: if you wish to enter some Form 12s, choose the application named FORM12. To enter Form 04s, choose the application named FORM04. Press Return when the correct application is displayed after the prompt.
6. The prompt "Enter job/billing code for Batch BATCHnn (8 chars max) -->" will appear. Press Return without typing any other characters.
7. The prompt "Enter password for Batch BATCHnn (20 chars max) -->" will appear. Press Return without typing any other characters.
8. The system will now proceed to create the batch. When finished, the screen will go blank except for the Data Entry menu across the top of the screen. You are now ready to enter data into your batch.
9. If the batch corresponding to the form type you wish to enter already exists, select it by highlighting it and pressing Return. The message "Batch BATCHnn is released" will appear with the menu choices Add to batch, Clear batch, or Quit. "Released" means that the data in the batch has been exported to a data file. This file should have been transmitted to the DCC. In this case, choose "Clear batch." This removes all data and prepares it to accept new data. If you are not sure, choose Quit. CONTACT THE DCC if you have any questions.



### Entering Data

1. From the Data Entry menu, choose the option Add by pressing the letter A. The first screen of the form will be displayed.
2. Although the electronic forms have been designed to look very similar to the paper forms, one paper page requires two to four electronic screens. The system will move sequentially between the proper screens as you enter data.
3. Enter data into the spaces (fields) by typing on the keyboard. Most data is numeric and can be entered using either the number keys above the main keyboard or the numeric keypad at the right of the keyboard. Datalex will move automatically to the next field as each field is entered. Do NOT press Return at the end of each field.
4. LEADING ZEROS: All leading zeros on numeric fields must be entered (e.g., "005.6" not "5.6"). However, when a field with leading zeros is entered, Datalex will remove the zeros when it moves on to the next field.
5. MISSING DATA: To enter a blank into a field for missing data, press Return when positioned at that field. Some items are required and the program will not allow you to leave the field blank. The computer will beep if you try to leave such a field empty.
6. SKIPPING FIELDS: Automatic skips have been programmed into the entry screens to save time during entry. This means that if the paper form indicates that based upon a response to a certain item one should jump ahead several items, the Datalex form will do so when the corresponding value is entered. Be careful to note to which item Datalex has skipped.

7. Datalex will sometimes skip a field even if the skip is not explicitly stated on the paper form. For example, on Form 12, Item 12.a asks "Has patient had a transplant?" If the response is 2 = no, then Item 12.b "Date of transplant" is not applicable and should not have been filled out. Datalex will automatically skip 12.b even though this skip is not explicitly indicated on the paper form.
8. CORRECTING DATA FIELDS: If a field is entered incorrectly, to move backwards up the screen press the function key F4, located on the left or top of your keyboard. Pressing the F4 key once will move the cursor backwards by one field. Press it repeatedly to move backwards several fields. To change incorrect data in a field when positioned at that field, merely type the correct data as usual. The old data will be overwritten by the new data. To return to where you left off, press Return repeatedly until positioned at the correct field. Pressing Return at a field already containing data will not affect the data in that field; it will simply move you to the next field.
9. Note that the F4 key for moving backwards will not work across screens. You cannot move backwards to a previous screen while in Add mode. To change data on previous screens, see Part 5.4.4 Modifying Data in a Batch.
10. ERASING DATA FIELDS: If a field was erroneously filled with data but should have been blank, position yourself at that field and press the function key F8. This will erase the field, leave it blank, and move you to the next field. Note that the spacebar will NOT work to blank out a field; you must use F8.
11. After entering the last field of the final screen of a form, Datalex will automatically move to the first screen of another form. Continue by entering the next form to be entered.

12. When you have finished entering all forms for a batch, you will be positioned at the first screen of a new form. To exit Add mode, press the Escape key, located in the upper left corner or near the keypad of the keyboard. This will return you to the Data Entry menu. You may now proceed to verify the data. Note that you may only exit the Add mode after completing entry of an entire form.

#### Verifying Data

1. All data must be entered twice into a batch. The second entry is for verification purposes. The data entered the second time is compared to the data entered the first time. All discrepancies are pointed out and the correct data must be chosen. This means of verifying data is the most accurate available and ensures a very high accuracy rate.
2. To begin verification, choose the Verify option from the Data Entry menu. The system will automatically go to the first form in the batch. The fields will go blank and the cursor will be positioned at the first field. Proceed by entering the data as before.
3. The forms will be verified in the same order in which they were entered. Thus be sure to keep the paper forms in the order entered to facilitate the verification process.
4. If the data entered in a field does not match the data entered previously in that field, the PC will beep and halt the verification process. At the top of the screen will be displayed three choices: "Old Entry (on message line), New Entry (on format), Re-enter." The data value originally entered is displayed on the message line, which is the bottom line of the screen. The data value just entered will remain displayed on the form. Determine which value is correct. If it is what was originally entered, choose the Old Entry selection. If what you just typed is correct, choose the New Entry selection. If neither is correct,

choose the Re-enter selection, which will position you on the form at that field so that you may enter the correct value.

5. The function keys F4 and F8 work as described in the previous section. Pressing F4 will move you to the previous field. Pressing F8 will erase the data currently in the field, leaving it blank.
6. When all forms of the batch have been entered a second time, you will automatically leave the Verify mode. The screen will go blank, the menu will be displayed, and the message "Verify complete" will be seen. Proceed to close the batch.

#### Closing the Batch

1. As you enter and verify data in a batch, the batch is considered as being "open." That means that data may be entered and modified within the batch. When all data has been entered and verified, and is considered correct and final, the batch should be "closed." This means that the batch is no longer accessible to changes and additions.
2. To close the batch, choose the option Batch from the Data Entry menu. You will see a submenu of two choices. Choose the Close option. The screen will go blank briefly, then the message "Batch Closed" will be displayed. You will then be returned automatically to the main Workstation menu. The closed batch can no longer be changed and is ready to be exported.
3. PROBLEMS CLOSING BATCHES: Two problems with the data may prevent the batch from being closed. First, if all the data has not been verified the batch cannot be closed. In this case the message "Batch needs verification, cannot be closed" will be displayed. If this happens, choose Quit to get out of the Batch submenu. At the Data Entry menu, choose Verify. The batch will be scanned for

unverified screens, which will be displayed. Verify the screen as usual. Unverified screens will continue to be displayed until all verification is complete. At this point you may close the batch.

4. The second potential problem is that of entered data that is outside of the allowable range for a field. In this case, the message "Batch contains errors, cannot be closed" will be displayed. Choose Quit to quit the Batch submenu. At the Data Entry menu, choose the option Correct. The batch will be scanned for fields containing erroneous data. Each such field will be displayed. Correct the data by modifying the screen containing the bad data (see Section 5.4.4) and reverify the screen. The batch can then be closed. [Note: this situation should never arise, as Datalex will not allow you to enter data outside of the defined allowable range. If it does occur, notify the DCC.]

#### 5.4.3 EXPORTING DATA FROM A BATCH

1. A Datalex batch contains data in a machine coded form understandable only to the computer. In order for the data to be transmitted and understood by the DCC's VAX, the data from the batch must be "exported." This translates the batch into a "raw data file" containing the data as readable numbers in a predefined format. These are the files which are transmitted to the DCC.
2. To export a batch, choose the Export option from the main Workstation menu. You will see the prompt "EXPORT: Enter Batch ID-->" at the top of the screen. Below will be displayed the names of all existing batches.
3. To export all existing batches at one time, at the prompt "Enter Batch ID" type BATCH\* where \* is the asterisk. At the prompt "Enter output filename" type BATCH\*.OCF. Each existing batch will be exported to a corresponding data file with the .OCF extension. When finished exporting, the system will prompt you to press

Return. This brings up the "Enter Batch ID" prompt again. Press Esc to return to the main menu.

4. To export one batch at a time, select the desired batch from the list by highlighting the desired batch using the arrow keys, or typing the name of the batch at the prompt. Press Return. You will see the prompt "Enter output filename (<ESC> to quit) —>" This is asking for the name of the file which will contain the exported data. Type the name of the batch followed by the file extension ".CCF". For example, if you are exporting a BATCH12, type for the output file name BATCH12.CCF. For a batch BATCH04, use BATCH04.CCF. Press Return. A message will be displayed as the batch is exported, and a message will be displayed when the batch is finished being exported. Press Return. This returns you to the "Enter Batch ID" prompt. If you have another batch to export, repeat the process. If you are done exporting, press Esc at the prompt. This will return you to the main menu.

#### 5.4.4 MODIFYING DATA IN A BATCH

1. Data entered into a batch may be changed as long as the batch is open. Once the batch is closed or exported, the data it contains may not be modified. If it is necessary to change data already closed and exported, complete and submit a Data Change Form, Form 25.
2. Begin at the Data Entry menu. If necessary, get out of Add or Verify mode to modify the data.
3. Each form as entered is assigned a "position number." These are assigned sequentially beginning with one. Thus the first form entered in a batch is position 1, the second is position 2, etc. If you keep the forms in order as you enter them, you will always be able to determine the position number of a given form by counting the forms.

4. Determine the position number of the form requiring modification. Choose the menu option "Pos". The prompt "Position to Record number -->" will appear. Type the position number and press the Return key. The first screen of the desired form will be displayed.
5. To reach the screen containing the data to be modified, choose the menu option "List". This will display the second screen of the form. Continue to use List repeatedly until the screen containing the data to be modified is displayed.
6. When the desired screen is displayed, choose the menu option "Modify." This positions the cursor at the first data field (skipping the ID field). Move the cursor to the desired field by pressing Return repeatedly to advance field by field. When the data to be changed is reached, change the data by typing over the current contents of the field. The new data is accepted automatically.
7. When done changing data on the screen, press Return repeatedly until the cursor moves past the last field of the screen, or press the function key F9 to skip the remainder of the screen. The message "Format modified" will be displayed. You will be back at the Data Entry menu.
8. If you change a data item on a screen after the data has been verified, you must reverify the ENTIRE SCREEN on which the data is contained. Verification is determined on a screen by screen basis, so changing any part of a verified screen requires reverifying the entire screen.

#### 5.4.5 DELETING A BAD FORM FROM A BATCH

1. At times a form may be entered into a batch incorrectly and such that it is not possible to fix it. For example, an incorrect

response which causes the form to skip several screens which should not have been skipped will cause such a problem. Datalex does not consider the intermediate skipped screens to be part of the batch at all rather than just blank, due to the organization of the system. In such a situation it is necessary to delete the form and reenter it. A form may be deleted from the batch only if the batch is open.

2. To delete a form, one thing is critical: you must be positioned at the first screen of the form. Do so by using "Pos" and the position number of the record to be deleted, as described in Part D above. Trying to delete while not at the first screen of the record will cause only a portion of the form to be deleted.
3. When positioned at the first screen of the form, choose the "Delete" option from the Data Entry menu. The safety prompt "OK to delete record?" will appear. Double check that this is the record to delete and respond by choosing "Yes". The message "Record deleted" is displayed. If this is not the record to be deleted, choose "No" to abort the Delete option.



#### 5.4.6 SUMMARY (CHEAT SHEET)

Type EP90 <Ret>  
Type MDRD <Ret>  
Choose Data Entry (press D)  
Type BatchNN <Ret>  
Type FormNN <Ret>  
Press <Ret>  
Press <Ret>  
Choose Add (press A)  
[Enter data]  
Press <Esc>  
Choose Pos (press P)  
Type 1 <Ret>  
Choose Verify (press V)  
[Re-enter data]  
Choose Batch (press B)  
Choose Close (press C)  
Choose Export (press E)  
Type BatchNN or Batch\* <Ret>  
Type BatchNN.OCF or Batch\*.ocf <Ret>  
Press <Ret>  
Press <Esc>  
Choose Quit (press Q)

<Ret> means to press the RETURN key.

<Esc> means to press the ESCAPE key.

## 5.5 THE CROSSTALK COMMUNICATIONS SYSTEM

### 5.5.1 OVERVIEW

1. CROSSTALK Mk.4 is a menu driven system for communications and file transfer with a mainframe computer. Custom communication programs have been written by the DCC which may be selected from a menu. These will send data automatically, retrieve mail, and send a file as a mail message, among other things. The system uses the Kermit file transfer protocol.
2. To get in to the Crosstalk system, type MDRDCOMM at the C> prompt and press Return. In a few moments the MDRD COMMUNICATIONS MAIN MENU will be displayed. The first selection of the list is highlighted, that is, displayed as dark characters on a light background. To move the highlight bar to a different option, use the arrow keys located on the keypad of the keyboard (make sure NumLock is off). Alternately, press the spacebar to move the highlight between menu choices. When the desired option is highlighted, press the Return key to choose the selection.

### 5.5.2 QUEUING DATA FILES FOR AUTOMATIC OVERNIGHT TRANSMISSION

1. The Crosstalk system includes the capability of having your PC wait until the middle of the night to dial the CCF VAX computer to send data files. This reduces both computing charges and phone bills, due to lower phone rates and shorter calls.
2. BEFORE YOU LEAVE AT THE END OF THE DAY: To use the overnight transmission option, you must make sure of two things:
  - a. Be certain that the date and time on your machine are correct. The machine uses the system time to determine when to start transmission. See Appendix 5 for instructions on setting the computer's date and time.

- b. Be certain that your printer is on and on-line. There is a small light labelled "Ready" or "On-Line." If the light is on, the printer is on-line. If not, press the on-line button to turn the printer on-line. The system will print out a Data Transmission Report to document the success or failure of the transmission. For an example of the report, see Appendix 4.
3. Get into the Crosstalk system.
4. Choose the option "Send Data Files Automatically" from the main menu. Press Return.
5. The program will prompt you to insert the proper backup diskette. Insert this month's backup diskette into the diskette drive A. On a dual diskette system, this is the uppermost drive. When the diskette is properly inserted, press Return.
6. The program will prompt you to check that the printer is on and on-line. When you have done so, press Return.
7. LEAVE YOUR PC ON, so that the program will run, BUT TURN YOUR MONITOR OFF. This will save wear and tear on the screen.
8. In the morning, turn your monitor back on. Collect the Data Transmission Report. Check it to see that all files were transferred. If not, send the ones which did not go through using the selective transmit option (see Section 5.5.3). Add the Report to your Data Transmission Log. Press Return to return to the Main Menu.
9. Leave the transmission system by choosing the "Quit" option.

#### 5.5.3 TRANSMITTING DATA FILES SELECTIVELY

1. Get into the Crosstalk system.

2. Choose the option "Send Data Files Selectively" from the menu and press Return.
3. A list of all available .OCF data files will be displayed. Use the arrow to move the highlight to each desired file. Press the Ins key when the highlight is on that file to select it. The Ins key is located on the keypad at the right of the keyboard, the same key as the keypad's 0 (zero). When finished selecting some or all files, press Return.
4. The program will prompt you to insert the proper backup diskette. Insert this month's backup diskette into the diskette drive A. On a dual diskette system, this is the uppermost drive. When the diskette is properly inserted, press Return.
5. The program will prompt you to check that the printer is on and on-line. When you have done so, press Return.
6. The computer will dial up and log in to your VAX account, send the selected files, log off, and print a Data Transmission Report on your printer.
7. Check the Report to see if all files went through. If not, contact the DCC for resolution of the problem. Add the Report to your Data Transmission Report Log.
8. Press Return to return to the main menu. Choose "Quit" to exit the Crosstalk system.

#### 5.5.4 AUTOMATIC NEW MAIL RETRIEVAL

1. Get into the Crosstalk system.
2. Make sure that your printer is on and on-line.

3. Choose the menu option "Get and Print New Mail Messages."
4. The system will dial up and log in to your VAX account, extract all of your new mail messages to a file, send the file to the PC, and print it. The messages will be printed one per page. You may remove the printed messages, separate them, distribute them and file them appropriately. See Section 5.8 and Appendix 3 for a general description of reading messages in the VAX Mail facility.
5. Exit the communications system by choosing the menu option "Quit."

#### 5.5.5 SENDING A PC FILE AS A MAIL MESSAGE

1. It is possible to send a file created on the PC as a mail message to the VAX account of other MDRD personnel. Create the file on your PC on whatever subdirectory you like. The file created must be an ASCII file to be usable as a mail message. That is, if you type or print the file, it should be readable and not contain any "funny" computer characters. Not all word processors create ASCII files. For example, WordStar stores text in a form intelligible only to the computer; it does not create ASCII files. A simple full-screen text editor is best.
2. Get into the Crosstalk system.
3. Choose the option "Send a Mail Message from a PC File" from the main menu.
4. The prompt "Name of file to send -->" will appear. Type the full name of the file you created, INCLUDING THE SUBDIRECTORY IT WAS CREATED ON. For an explanation of how to specify the subdirectory, see Section 5.3. Press Return.
5. The prompt "Send message to whom -->" will appear. Type the name of the VAX account to which to send the message. Press Return. You

may also use a multiple account specification such as MDRDLIST. See Section 5.8 and Appendix 1.

6. The prompt "Subject -->" will appear. Enter the subject of the message. Press Return.
7. The system will dial up and log on to your VAX account, send your file as a mail message, then log off and return to the PC. See Section 5.8.4 for a general description of sending messages in the VAX Mail facility.
8. Choose the option "Quit" to leave the system.

#### 5.5.6 CONNECTING TO THE DOC VAX

1. This option will connect you to your VAX account, and allow you to work on the VAX. You will use this option for query reporting and mail transmission/deletion primarily. (See Section 8 for deleting mail.) The PC functions as a VAX terminal in this option. This is known as "terminal emulation." See Section 5.3.6 for a general discussion.
2. Get into the Crosstalk system.
3. Choose the option "Connect to the DOC VAX" and press Return.
4. The system will automatically dial and log in to the VAX under your account. When you reach the \$ prompt, you may proceed with your work on the VAX.
5. When finished, type LOGOFF or IO at the \$ prompt and press Return. You will be logged off the VAX. The system will automatically return you to the Main Communications Menu.
6. Choose the option "Quit" to leave the communications system.

## 5.6 BACKUP OF STUDY DATA

### 5.6.1 AUTOMATIC BACKUP TO DISKETTES

1. The communication programs which send the data files to the DCC include an automatic backup procedure. The program automatically copies transmitted data files to a diskette in the diskette drive.
2. It is important to ensure that the correct backup diskette is in the diskett drive. USE ONE BACKUP DISKETTE PER MONTH. Hence a single diskette will contain all data for one month and only data for that month.
3. Make sure that the backup diskette is properly labelled with the month and year. Keep all backups together in a diskette storage container in a safe location, preferably in a separate file from diskettes used on a regular basis. You will need to use the backups only on rare occasions.

### 5.6.2 THE BACKUP NAMING CONVENTION

1. When data files are backed up the filename is changed. Data files are created as BATCHnn.OCF where nn refers to the form type. Data files are backed up using the naming convention BATCHnn.mdd where "nn" is the form type and "mdd" is a three digit code specifying the month and day that the data was transmitted. The month code is either a digit 1 through 9 specifying January through September, or the letter O, N, or D, specifying October, November, and December. Example: if a BATCH12.OCF is transmitted on April 13, the file will be backed up under the name BATCH12.413. If a BATCH04.OCF is transmitted on October 1st, the file will be backed up under the name BATCH04.001. Note that in this last specification there is a distinction between the letter "O" specifying October and the digit "0".

### 5.6.3 RETRIEVING AND RETRANSMITTING DATA FROM A BACKUP DISKETTE

1. If it is necessary to retransmit data previously sent, first send all existing data files on your PC (see Section 5.5.3). This reduces the chance of confusing the old data with the new data.
2. Choose the backup diskette which has the data to be retransmitted, and put it into the floppy drive.
3. You can search the backup files on the disk to find the one you need in two ways. To search for a particular form type, at the `>` prompt type `DIR A:BATChnn.*` where "nn" is the form number desired. This will display all data files of that form type from that month. By examining the file extension (the "mdd" part) you can determine when each was sent. If no such files exist, the message "File not found" will be displayed.
4. To search for all files sent on a particular day, at the `>` prompt type `DIR A:*.mdd` where "mdd" is the appropriate three-digit date code corresponding to the day you wish to search. This will display all data files sent on that day. By examining the file name, you can determine which form types were sent on that day. If no such files exist, the message "File not found" will be displayed.
5. To examine the contents of the file if you want to double check, type `TYPE A:BATChnn.mdd` and scan the data on the screen.
6. When the desired file has been located, at the `>` prompt type `COPY A:BATChnn.mdd \CCFSEND\BATChnn.CCF` where `BATChnn.mdd` is the complete file specification of the backup file and `BATChnn.CCF` has the same name as the backup file, but with the .CCF extension. This copies the file with the correct name to your hard disk, putting it in to the correct directory for sending.



7. Proceed to send the file using the selective send routine of the Crosstalk communications system (see Section 5.5.3).

## 5.7 QUERY SYSTEM

1. If any questions occurred in any data transmitted to the DCC, the DCC will generate a Data Query Report for each such question. The reports will be sent to the clinical center via the electronic mail system.
2. The Data Query Report will specify the form and item containing the data being questioned. A problem description will describe the question concerning the data item. The Study Coordinator should check the hard copy for the inconsistency. He or she may need to check other sources to determine what needs to be corrected. When the change is discovered, correct the paper form and respond to the query. If the Key Entry person is to respond to the query, the Study Coordinator should have a written response prepared for them.
3. To respond to the query, sign on to the VAX as described in Section 5.5.6. At the \$ prompt type QUERY and press Return. A blank Data Query Report will appear on the screen. There are 3 sections to the report. You must enter part of the first section exactly as the information appears on the Report sent to you.
4. The following items should all be copied directly from the Data Query Report you receive in the electronic mail:
  - Date Query Form Created (Query Date)  
Enter the date the query was created by the DCC.
  - Patient Identification Number  
Enter the six digit patient ID number.
  - Form Number  
Enter the number of the form which is queried.
  - Item Number Containing Invalid Data  
Enter the item number which contains a discrepancy or invalid data. Refer to the query message to determine the appropriate item number. You must enter all information in CAPITAL letters.

— Date of Visit

This is the date of the patient visit from the hardcopy form. For those few forms without an explicit date of visit field, an appropriate date from the form is used. See Appendix 6 for a complete list of which date from each form is used for this item.

5. After entering the date of visit, the following items will appear on the screen:

- Patient Name Code
- Clinical Center Code
- Visit Type
- Visit Number
- Description of the Query

6. The next four items will be completed by the Study Coordinator or Key Entry Person, as follows:

— Item Number to Be Corrected

Enter the item number which was found to contain invalid data using the complete question number. Generally, this will be the same item number as in step 4, but in some cases it will not be.

— New Data to Be Entered in Above Item

Enter the correct data value for the item number entered above.

Include a decimal point if appropriate.

— Query Description

Enter a response describing the correction. There are multiple lines on the screens which may be used for the description. Press Return after filling each line. If one or more lines are not used, press Return at the blank line to skip it. If a more detailed explanation is necessary than will fit in the space provided, send a message via electronic mail to the DCC to provide the complete error correction details. If this occurs, note

in the query response that you are providing a further explanation in a mail message.

— Date of Response to Query Report

This field will automatically be filled with the current date when you press Return. Do not type anything else into this field. The cursor returns to the "Item Number to be Corrected" field. Be sure that the cursor passes over this field by typing a Return on the last description line so there is no chance that today's date does not get entered.

7. To modify any of the information you have just entered, you may press the Return key repeatedly until the cursor is positioned at the item you wish to correct. Modify the information by just typing over it, then press Return. To set a field to blank, position yourself on the field and type the hyphen (-) character in the first column. This will set the field to missing.
8. You must now save your query response. Again, be sure that the information you have entered is correct. To save the query, type the pound sign (#) in the first character of any field, then press Return. This saves the response, and brings up a blank Data Query Report screen. If you have another query to which to respond, return to step 4. If not, continue to Step 10.
9. To exit the system when you have responded to all of your queries, type a period (.) in the first character of any field and press Return. You will be returned to the VAX \$ prompt. Exit only from a blank Query Report screen; that is, make sure you save the last query you responded to by using the pound sign.
10. Log off the VAX by typing LO at the \$ prompt and pressing Return.

## 5.8 VAX ELECTRONIC MAIL

### 5.8.1 ACCESSING THE MAIL SYSTEM

1. These instructions explain how to use VAX Electronic Mail manually to read and send messages. It is also possible to do both of these tasks automatically, using Crosstalk. See Sections 5.5.4 and 5.5.5.
2. To access the VAX Electronic Mail system, you must first log on to your VAX account by using the Crosstalk system for connecting to the DCC VAX (see Section 5.5.6).\
3. At the VAX \$ prompt, type MAIL and press Return. In a few moments you will receive the MAIL> prompt. You may also see a message "You have N new messages" where N is the number of new messages you have received since you last read your mail. If you do not see such a message, you have received no new messages since you last read your mail.

### 5.8.2 READING MAIL

1. Typing DIR at the MAIL prompt and pressing Return will display a list of messages available for reading. If you have any new messages, only these will be displayed. If you do not have any new messages, all old messages still on your system will be displayed. The directory listing includes a sequential number (1, 2, 3, etc.), whom the message is from, the date you received the message, and the subject.
2. To read the mail, simply pressing Return at the MAIL> prompt will begin to display the contents of message 1. If the message is longer than one screen can hold, the note "Press RETURN for more..." will be displayed. Press Return to display more of the message. When the whole message has been displayed, you will be

returned to the MAIL> prompt. Pressing Return again will display the contents of message 2, and so on. If there are no more messages, the note "No more messages" will be seen.

3. To read a particular message, type the number corresponding to it (seen in the directory display) at the MAIL> prompt and press Return. The contents of just that message will be displayed.

### 5.8.3 EXTRACTING MAIL

1. The most efficient way of printing your mail messages is to use the EXTRACT command. Extract creates a text file containing the text of one or more mail messages, which you may then print out all at once. One advantage of Extract is that you will not need to press Return for every screen of a long message, or even between messages.
2. After reading a particular message you would like in a file, at the MAIL> prompt type EXTRACT FILENAME.XXX where FILENAME.XXX is the name of the file you wish to contain the message. If you omit the file extension (the ".XXX" part) a default extension of .TXT will be given to the file. The system will display a message indicating that it has created the file.
3. To print out the message(s), exit the mail system by typing EXIT at the MAIL> prompt. This will return you to the \$ prompt. Set your printer to echo everything on your screen by pressing the F6 key. At the \$ type TYPE FILENAME.XXX where FILENAME.XXX is the name of the file you created with the Extract command. The entirety of the messages in the file will scroll by. When the \$ prompt reappears and the printer has stopped printing, press the F6 key again to turn the printer off.
4. A few command qualifiers of EXTRACT are available to give you greater control over the creation of text files containing

messages. A qualifier is a word preceded by a slash (/) and which follows the EXTRACT command word. The available qualifiers are:

**/ALL** This qualifier will write all current messages to the file sequentially. This is very handy for typing out all of today's messages in a single file. Create such a file and then print it out as in Step 3. NOTE: due to an idiosyncratic feature of the mail system, it is necessary to first read the last message of the mail directory. To do so, type the number of the last mail message at the Mail> prompt and press Return. This displays the content of the last message. Proceed to use the EXTRACT/ALL as described.

**/NOHEADER** This qualifier suppresses the To-From-Subject heading of the message(s) written to the file. Hence only the text of the message is sent to the file. Useful for long messages containing specific text you would like to save.

**/APPEND** This qualifier will add the selected message on to the end of an already existing file. It is useful for creating a file containing certain messages only. For example, if you want messages 3 and 5 in a file, you would read message 3, then use the command EXTRACT MARTIN.TXT. You would then read message 5, and use the command EXTRACT/APPEND MARTIN.TXT. This would add message 5 onto the end of the file MARTIN.TXT which already contains message 3. Printing out the file would then give you a hard copy of both messages.

5. Note that more than one command qualifier can be used in a single command. For example, EXTRACT/ALL/NOHEADER will write out all the messages and suppress the To-From-Subject header of each.

#### 5.8.4. SENDING MAIL TO ANOTHER USER

1. To send a mail message to another MDRD user, log in to the VAX. At the \$ prompt type MAIL and press Return. This puts you at the MAIL> prompt.
2. At the MAIL> prompt type SEND and press Return.
3. The prompt "To:" will appear. This is asking to whom the message is to be sent. You have three options:
  - a. To send the message to one other user, type the name of the user at the prompt. For example, to send a message to MDRDGASSMAN type MDRDGASSMAN and press Return. Note that all MDRD users of the VAX have account names beginning with MDRD. See Appendix 1.
  - b. To send the message to two or more specific accounts, type all desired accounts separated by commas. For example, to send a message to Dr. Klahr and Dr. Sandberg, type MDRDKLAHR,MDRDSANDBERG at the "To:" prompt and press Return.
  - c. To send the message to large groups of users associated with the MDRD study, type @MDRDLIST or another such code for a subgroup of MDRD participants at the prompt and press Return.
4. You will next see the prompt "Subj:". This is asking for the subject of the message. Type what you want to appear on the Subject line of the header of the message and press Return. If your subject exceeds one line, do not press Return at the end of the line. Just keep typing and press Return only when finished. The cursor will automatically return to the left of the screen as necessary.
5. You will see the message "Enter your message below." Type the text of your message. You should press Return at the end of each line while typing in the text.



6. When finished, hold down the Ctrl key and press the Z key. Release both keys. This sends the message and returns you to the MAIL> prompt. If you do not wish to send the message you are creating, hold down the Ctrl key and press the C key. Release both keys. This will return you to the MAIL> prompt without sending the message; the text will be lost.
7. To send another message, repeat this process. When finished, exit the mail system by typing EXIT at the prompt and pressing Return.
8. You may find it helpful to keep a hard copy of the message you are sending. Include your account name in the list to mail a copy to yourself.

#### 5.8.5 FORWARDING MAIL

1. It is possible to send the contents of a message you have received to another user by using the FORWARD command. This does not remove the message from your system; just mails a copy of it to someone else.
2. After reading the message, type FORWARD at the MAIL> prompt and press Return.
3. The prompt "To:" will appear. Type the user name you wish to send the message to, as described in Section 5.8.4, Item 3 above. Press Return.
4. The prompt "Subj:" will appear. Enter the subject of the message and press Return. Refer to Section 5.8.4, Item 4 for details.
5. The message will be sent to user or users indicated, and you will be returned to the MAIL> prompt.

#### 5.8.6 DELETING MAIL

1. As new mail messages are read, they are saved in a directory of mail messages on your VAX account. Messages are accumulated unless they are deleted. Due to the volume of mail messages and constraints on computer storage space, you must clean up your mail directory at least once a week.
2. When in the mail system, type DIR MAIL and press Return. the MAIL> prompt to list all of the messages you currently have.
3. To delete an old message without reading it again, use the Directory command as in item 2. Next to each message will be a number. Type DELETE N and press Return to delete message number N. Repeat for each message you no longer need.
4. If you want to read a message to decide whether or not to delete it, at the MAIL> prompt type N where N is the message number and press Return.
5. To delete that message, after having read it, type DELETE (DEL) at the MAIL> prompt and press Return. The message you just read will be deleted.
6. It is also possible to delete all saved messages. To do so, type DELETE/ALL at the prompt and press Return. This deletes all messages in the mail directory. Do not do so unless you have a hard copy or an extracted file of each of these messages. Hence This is the easiest way to clean up your mail directory and should be done once a week.

## 5.9 ANTHROPOMETRY PROGRAM

1. The anthropometric calculations program provides a means for automatically calculating the percent body fat, arm muscle area and percent of standard weight for a given patient based on specific anthropometric measures. In addition, it will automatically determine the standard weight and frame size based upon the elbow breadth and height measurements.
2. The program does not provide any means of retaining historical information for each patient with the exception of a hard copy report, which can be generated upon request. Range checks are built into the program for all measurements to ensure that the values entered are within acceptable limits. When unacceptable values are entered, the computer will "beep" and a message will be displayed on the bottom of the screen indicating the nature of the discrepancy.
3. Note that the program requires the entry of information such as patient ID, visit number and visit type which are not needed to perform the calculations. Although this may seem burdensome, it will aid in filing and general record keeping of the hard copy reports for future reference.
4. To start the program type the word ANTH and press RETURN at the C> prompt and the following screen will appear:

### Calculations For Anthropometric Measures

|  |                        |
|--|------------------------|
| Patient ID.....:   | Date of Calculation..: |
| Visit Type.....:   | Age.....:              |
| Visit Number.....:   | Height (cm).....:      |
| Sex (M or F).....:   | Weight (Kg).....:      |
|  | Elbow Breadth (mm)...  |
| Skin Fold Measurements   |                        |
| -----  |                        |
| Triceps (mm).....:   | Mid Arm Circ. (mm)...  |
| Biceps (mm).....:  |                        |
| Subscapular (mm):  |                        |
| % Body Fat.....:   | Standard Weight (Kg):  |
| Arm Muscle Area..:   | Frame Size.....:       |
| % of Standard....:   |                        |
| Alt-N=New Patient    Alt-M=Modify    Alt-P=Print    Alt-Q=Quit |                        |

Four options are available for use from this screen. They are New Patient, Modify, Print, and Quit. Each will be discussed individually. Each of these is invoked by pressing and holding the ALT key while pressing the corresponding letter (e.g. P for print, M for Modify etc.)

#### 5. NEW PATIENT OPTION

- a. This option will clear the screen of any previously entered data and prepares the program for entering data and calculating results for a new patient. Pressing ALT-N invokes the new patient option. The screen will appear as above with the exception that the bottom line for selecting different options no longer appears. The options, to print, modify or quit, are not accessible while entering data for a new patient.
- b. The cursor will appear in the patient ID field. Enter the patient's ID followed by a RETURN. The cursor will then appear after the next field that requires data. This process continues until all the required data has been entered.
- c. Be aware that data can be erased by using the BACKSPACE key. However, this must be done before pressing the RETURN key and proceeding to the next field. If incorrect data has been

entered and the RETURN key has been pressed you will have to use the Modify option to correct the data (see the section for modifying data).

- d. Note that after the elbow breadth measurement has been entered the program automatically determines and displays the frame size and standard weight for the current patient. Also, after the mid arm circumference measurement is entered the program calculates the percent body fat, percent standard weight and the arm muscle area.
- e. The following message may appear:

Calculated values may be in error.

Please check and correct if necessary.

This will only occur if the calculated values for percent body fat, percent standard weight or arm muscle area are outside acceptable ranges. Note that this message is only informative and will not prohibit you from performing any other functions of the program. This message will not print on the hardcopy report.

- f. The options line will then reappear on the bottom of the screen. You may print a hardcopy report, modify the data that was just entered (correct errors), enter data on a new patient or quit the program by pressing the ALT key followed by the appropriate letter.

#### 6. MODIFY OPTION

- a. If a mistake is made while entering data in a given field for a new patient and the RETURN key has already been pressed you cannot go back to that field and correct the value until you choose the modify option. The procedure for this follows:
  - 1. After a mistake is made continue entering the remaining information.
  - 2. After the mid arm circumference measurement is entered the program will perform the calculations and the options will reappear on the bottom of the screen.
  - 3. Choose the Modify option by pressing ALT-M.

4. The cursor will be placed in the patient ID field and you will proceed through the subsequent fields just as though you were entering data on a new patient.
  5. If the data is correct for a given field, press return and the value will remain unchanged. If, however, the value is incorrect press the BACKSPACE key and erase the incorrect value. Then enter the correct value and press the RETURN key. Note that the cursor will move to the next field if you press any other key without pressing the the BACKSPACE first.
  6. Continue correcting the data as described in step five until the arm circumference field is reached. At this point the program will perform the necessary recalculations and display them accordingly.
  7. The following message may appear:

Calculated values may be in error.  
Please check and correct if necessary.

This will only occur if the recalculated values for percent body fat, percent standard weight or arm muscle area are outside acceptable ranges. Note that this message is only informative and will not prohibit you from performing any other functions of the program. This message will not print on the hardcopy report.
  8. The options will reappear on the bottom of the screen and you may print a hardcopy report, modify the data that was just corrected, enter data on a new patient or quit the program.
- b. This process can be repeated as many times as necessary until all the data that has been entered is correct.

7. PRINT OPTION

- a. The print option is selected by pressing ALT-P. This will cause the following screen to appear:

Be sure that your printer is on-line.

Press RETURN to generate report.

Press ESC if report is not desired.

- b. Be sure that the printer is turned on. If you decide not to print the report, press the ESC key. Otherwise, press the RETURN key and the report will print on the attached printer.
- c. If you attempt to print to the printer and it is not turned on or it is off-line the following error will appear:

Write fault error writing device PRN

Abort, Retry, Ignore?

This error may be corrected by turning on the printer and making sure it is on-line. Then press the R key signifying you want to retry. The report will then print.

- d. The program will return you to the main screen shown in Item 5 above, with the screen containing the information for the most recently entered patient.
- e. At this point you may select the option to print another hardcopy report, modify the current data, enter data on a new patient or quit the program.

#### 8. QUIT OPTION

The quit option is invoked by pressing ALT-Q. When this option is selected the screen clears, the program terminates and you will be returned safely to the DOS prompt (the > symbol).

## APPENDICES



**APPENDIX 1**  
**MDRD VAX ACCOUNT NAMES**

The following is a list of accounts on the Cleveland Clinic's VAX computer for the use of the MDRD Study. There is an account for each clinical center, each central center or laboratory, and MDRD administrative personnel. These account names are to be used as addresses for electronic mail. To send a message to an individual at a clinical center or central laboratory, send the message to the VAX account of that center as listed below, but addressed on the subject line to the individual(s) for whom the message is intended.

**CLINICAL CENTER**

**ACCOUNT NAME**

Bowman Gray School of Medicine  
Brigham and Women's Hospital/  
Beth Israel Hospital  
Brookdale Hospital Medical Center  
Duke University School of Medicine  
Emory University  
George Washington University  
Harbor Medical Center  
New England Medical Center/  
Massachusetts General Hospital  
Ohio State University  
University of Florida  
University of Iowa Hospitals and Clinics  
University of Southern California  
University of Texas Health Science Center  
Vanderbilt University Medical Center

MDRDBOWMAN  
  
MDRDBWHBIH  
MDRDBROOK  
MDRDDUKE  
MDRDEMORY  
MDRDGWU  
MDRDHARBOR  
  
MDRDNEMCHMGH  
MDRDOSU  
MDRDFLORIDA  
MDRDIOWA  
MDRDUSC  
MDRDTexas  
MDRDVANDER

**CENTRAL CENTERS AND LABORATORIES**

**ACCOUNT NAME**

Data Coordinating Center  
Nutrition Coordinating Center  
Central GFR Laboratory  
Central Biochemistry Laboratory  
Drug Distribution Center  
Central Amino Acid Laboratory  
Health Care Financing Administration

MDRDDOC  
MDRDNOC  
MDRDGFR  
MDRDCBL  
MDRDDDC  
MDRDAA  
MDRDANDERSON

**ADMINISTRATIVE PERSONNEL**

**ACCOUNT NAME**

Jennifer Gassman  
Dr. Saulo Klahr  
Dr. Anna Sandberg  
Dr. George Williams

MDRDGASSMAN  
MDRDKLAHR  
MDRDSANDBERG  
MDRDWILLIAMS

## APPENDIX 2: WHOM TO CALL AT THE DCC FOR HELP

The following is a list of requests and problem areas which you might encounter. Listed for each is the most appropriate DCC staff member to contact for each. If more than one person is listed, ask for the first listed, then the second, etc. DCC personnel are usually available between 8 AM and 5 PM EST, Monday through Friday. The phone number is 216-444-2980.

|                                |                     |
|--------------------------------|---------------------|
| Protocol                       | Kathy, Dick, George |
| Randomizing a patient          | Dick, Kathy, George |
| General PC issues              | Martin, Joe         |
| Datalex                        | Martin              |
| Crosstalk (data transmission)  | Martin, Joe         |
| Query System                   | Kim, Kathy          |
| Electronic mail                | Martin, Joe         |
| VAX problems                   | Joe, Martin         |
| Ordering paper copies of forms | DeAnn               |
| Informed Consent Forms         | DeAnn               |
| General form questions         | Kathy, Kim          |
| Appointment schedules          | Kathy               |
| Biochemistry reports           | Kathy, Kim          |
| GFR reports                    | Kathy, Kim          |
| Blood Pressure                 | Karen               |
| Quality control reports        | Dick                |
| Flowsheets                     | Joe                 |
| Change of address or phone     | Karen               |
| QWB                            | Venita              |
| Don't know who to call         | Kathy, Dick, George |

### APPENDIX 3

#### ALTERNATIVE MAIL METHODS

1. This appendix documents alternate methods for retrieving your mail messages. Section 5.5.4 explains how to retrieve all of your new mail messages automatically through Crosstalk. You may have need to retrieve an old mail message, for example. This section will explain how to do so without using the custom Crosstalk routine.

Printing your messages as you read them:

2. To access the VAX mail system, log on to your VAX account via Crosstalk (see Section 5.5.6). Type MAIL at the \$ prompt and press Return. In a few moments the MAIL> prompt will appear.
3. To print your mail as you read it, you may turn on your printer to echo everything which appears on your screen. To do so while connected to the VAX via Crosstalk, first check to make sure that your printer is on-line. Then press the function key F6 located at the left or top of your keyboard. This will set your printer to echo everything that is seen on the screen, and will return you to the MAIL> prompt.
4. At the MAIL> prompt, press Return. This will display the contents of your first message and simultaneously print it on your printer. If the message exceeds a screen full of text, you will have to press Return again to see the next screen of text. Continue until the message has been completely displayed. This returns you to the MAIL> prompt. Repeat this process to read each new message.
5. When the last message has been read, if Return is pressed again the message "No more messages" will be displayed. Turn your printer off by pressing the F6 key again. This causes the printer to stop echoing the text on your screen. Hence the F6 key acts as a toggle switch, turning the printer on if off, and off if on.

6. To leave the mail system, type EXIT at the MAIL> prompt. This returns you to the \$ prompt.

#### Printing an extracted mail message

7. You may also print one or more messages that have been extracted to a VAX file. This method is useful for printing selected messages rather than all of them. To extract messages to a file, see Section 5.8.2.
8. Make sure your printer is on and on-line. Press the F6 key located at the left or top of your keyboard.
9. At the \$ prompt, type TYPE FILENAME.XXX and press Return, where FILENAME.XXX is the name of the file you created in extracting your messages. This command asks the VAX to type out the contents of the file. Since your printer is set to echo everything that appears on the screen, the contents of the file will be printed on your printer.
10. When the \$ prompt reappears, the file has been completely displayed by the VAX. However, your printer may still be printing, since it is slower than the display screen of your computer. Wait until your printer stops printing. Press the F6 key on the keyboard again. This stops the printer from echoing the contents of the screen.

APPENDIX 4  
EXAMPLE REPORTS AND PROGRAM MENUS

1. Datalex Entrypoint-90 Main Workstation Menu:

WORKSTATION:    Bch Dir    Data Entry    Export    Mnt/Ctrl    Quit

---

2. Crosstalk MDRD Communications Program Main Menu:

Send Data Files Automatically  
Send Data Files Selectively

Get and Print New Mail Messages  
Send a Mail Message from a PC File

Connect to the DCC VAX  
Connect to the NCC VAX

Quit

3. Example of Data Transmission Report:

\*\*\*\*\*

MODIFICATION OF DIET IN RENAL DISEASE

Data Transmission Report

\*\*\*\*\*

|                         |   |
|-------------------------|---|
| Date of Transmission:   | 10-27-88                                  |
| Status of Transmission: | PARTIAL                                   |
| Files Transmitted:      | BATCH03.CCF<br>BATCH05.CCF<br>BATCH16.CCF |
| Files Not Transmitted:  | BATCH18.CCF<br>BATCH25.CCF                |

\*\*\*\*\*

4. Example of Data Query Report:

DAILY DATA QUERY REPORT  
Report Prepared: OCT 27, 1988, 01.52 PM

CLINICAL CENTER 1

| <u>QUERY<br/>DATE</u> | <u>PATIENT<br/>ID</u> | <u>FORM<br/>NO.</u> | <u>ITEM<br/>NUMBER</u> | <u>VISIT<br/>DATE</u> | <u>VISIT<br/>TYPE</u> | <u>VISIT<br/>NUMBER</u> |
|-----------------------|-----------------------|---------------------|------------------------|-----------------------|-----------------------|-------------------------|
| 10/26/88              | 10001                 | 1                   | F01Q101                | 10/24/88              | S                     | 0.0                     |

NAMECODE: ABCD

QUERY:

THE DATE THE FORM WAS COMPLETED CANNOT BE BEFORE  
THE DATE OF THE VISIT. PLEASE CHECK Q101; DATE  
FORM COMPLETED AGAIN.

APPENDIX 5  
SETTING THE DATE AND TIME

1. Your computer will keep track of the current date and time for you. It is important that these be set correctly at all times, as application programs need them. For example, Crosstalk needs to know what time it is in order to "wake up" to send data.
2. To set the system date, type DATE at the > prompt and press Return. You will see the message:

Current date is THU 10-27-1988  
Enter new date (mm-dd-yy):

Type in the correct date in the month-day-year format as indicated, using dashes to separate the three numbers. Press Return. You are returned to the > prompt and the date is updated. If the current date as displayed is correct, pressing Return without typing anything else will leave it unchanged.

3. To set the system time, type TIME at the > prompt and press Return. You will see the message:

Current time is 16:20:22.73  
Enter new time:

Type in the correct time in the 24-hour format. Seconds are optional. Separate hours, minutes, and seconds with colons as demonstrated. Press Return. You will be returned to the > prompt and the time is updated. If the current time as displayed is correct, press Return without typing anything else to leave it unchanged.

4. If you turn off your computer, it may or may not remember the correct date and time. All IBM ATs and PS/2s do keep track of date and time when powered down since they are equipped with a battery-operated clock. The IBM XTs are not so equipped, although it is possible to buy a peripheral board with such a clock on it. If your XT does not keep the current date and time when off, it is important to set it when the computer is turned on. This will not be every day, but the occasion will arise. It is recommended that on an XT without a clock, you include the DATE and TIME statements in your AUTOEXEC.BAT file on your root directory. Then each time the computer is started, you will be prompted to enter the correct date and time.
5. The time-keeping ability of your computer (XT, AT, or PS/2) is far from perfect. It is recommended that you check the date and time periodically. On some of the clock mechanisms, the date is not incremented if the PC is not used for more than a day. Hence, it is a good idea to check the date and time on Monday morning and to update them if incorrect.



APPENDIX 6  
DATES OF VISIT FOR STUDY FORMS

Below are listed the dates of visit from each study form. These are the official dates used in the query system to indicate the date of any form. Refer to Section 5.7, Item 5 for details.

|         |  |
|---------|--|
| Form 01 | Date form completed (item 101)                         |
| Form 02 | Date form completed (item 101)                         |
| Form 03 | Date of screening (visit item 4a)                      |
| Form 04 | Date of visit (item 5a)                                |
| Form 05 | Date of this clinic visit (item 4a)                    |
| Form 06 | Date of this clinic visit (item 4a)                    |
| Form 07 | Date form completed (item 101)                         |
| Form 08 | Date form completed (item 101)                         |
| Form 09 | Date of randomization (item 6)                         |
| Form 10 | Date of medical attention (item 4a)                    |
| Form 11 | Date stop point is declared (item 6)                   |
| Form 12 | Date of follow-up visit (item 4a)                      |
| Form 13 | Date of visit (item 4a)                                |
| Form 14 | Date of last visit (item 4a)                           |
| Form 15 | Date of death (item 4)                                 |
| Form 16 | Date of GFR test (item 4a)                             |
| Form 17 | Date form completed (item 4a)                          |
| Form 18 | Date EKG done (item 4a)                                |
| Form 19 | Date of visit (item 4a)                                |
| Form 20 | Date of visit (item 4a)                                |
| Form 21 | Date specimens received from Biochemistry Lab (item 2) |
| Form 22 | Date form completed (item 101)                         |
| Form 23 | Date of visit (item 4a)                                |
| Form 24 | Date of form (item 4a)                                 |
| Form 25 | Date of form (item 4a)                                 |
| Form 26 | Date of visit (item 4a)                                |
| Form 27 | Date of visit (item 4a)                                |
| Form 28 | Date of visit (item 4a)                                |
| Form 30 | Date of transfer (item 6)                              |
| Form 31 | Date form completed (item 101)                         |
| Form 32 | Date urine collected (item 5a)                         |
| Form 33 | Date blood collected (item 5a)                         |
| Form 34 | Date specimens received from Central GFR Lab (item 1)  |
| Form 35 | Date of EKG tracing (item 4a)                          |
| Form 36 | Date sample drawn (item 4a)                            |
| Form 37 | Date of randomization (item 4)                         |
| Form 39 | Date of analysis (item 2)                              |
| Form 40 | Date of stop point review (item 5)                     |
| Form 41 | Date of death (item 4)                                 |
| Form 42 | Date of assay (item 5a)                                |
| Form 46 | Date of visit (item 4a)                                |
| Form 47 | Date of contact (item 4a)                              |