

PN-ACE-010



**ESTIMED**  
**System Manual**  
**August 1, 1997**

**Management Sciences for Health**  
**1655 N. Ft. Myer Drive, Suite 920**  
**Arlington, VA 22209**

# Table of Contents

ABOUT THIS MANUAL	1
HARDWARE/SOFTWARE SYSTEM REQUIREMENTS	111
1 0 INTRODUCTION TO ESTIMED	3
1 1 Overview	3
1 2 Drug Estimation Methodology	6
1 2 1 Methods Summary	7
1 2 2 Uses for Estimates of Drug Requirements	9
1 2 3 Computer Pharmacy Concepts	12
1 3 The ESTIMED Main Menu	13
2 0 INSTALLATION AND SETUP	19
2 1 Installation Procedure	19
2 2 ESTIMED System Files	20
2 3 Configuring Report Writer	21
3 0 COMMANDS AND FUNCTIONS	25
3 1 Starting ESTIMED	25
3 2 ESTIMED Screens and Windows	26
3 3 Standard ESTIMED Commands and Functions	31
3 4 Basic Keyboard Commands	33
3 5 Basic Mouse Techniques	35
3 6 R&R Report Writer Screen Display Commands	36
4 0 FILES	41
4 1 Products	41
4 1 1 Summary of Commands	42
4 1 2 Products Information Screen	43
4 2 Therapeutic Classification	45
4 2 1 Summary of Commands	46
4 3 Validation Files	47
4 3 1 Summary of Commands	47
4 3 2 Age Groups	48
4 3 3 Pharmaceutical Form	49
4 3 4 Route of Administration	50
4 3 5 Basic Unit	51
5 0 CONSUMPTION METHOD	55
5 1 Drug Estimating Using the Consumption Method	55
5 2 Data Requirements for the Consumption Method	58

5 3 1 Summary of Commands	60
5 3 2 Budget or Facility Consumption Screen	61
5 3 3 Product Consumption	63
<b>6 0 MORBIDITY METHOD</b>	<b>69</b>
6 1 Drug Estimating Using Morbidity Method	69
6 2 Data Requirements for the Morbidity Method	72
6 2 2 Report Analysis	75
6 3 Using the Morbidity Module	76
6 3 1 Summary of Commands	77
6 3 2 Health Problem Screen	78
6 3 3 Age Groups	79
6 3 4 Treatment Protocol	82
6 3 5 Protocol Number Detail	84
<b>7 0 COMPARISON</b>	<b>89</b>
<b>8 0 ESTIMED REPORTS</b>	<b>93</b>
8 1 Standard Reports	93
8 2 Generating Reports	110
8 3 Sample Reports	114
<b>9 0 MAINTENANCE</b>	<b>141</b>
9 1 Defaults	141
9 2 Colors	142
9 3 Reindex Files	143
9 4 Backup Files	144
9 5 Restore Backup Files	144
9 6 Budget Adjustment	145
9 7 Import Data from INVEC-2	146
<b>APPENDIX A - TUTORIAL</b>	<b>151</b>
Adding an Item to the Products Database	152
Adding a New Therapeutic Classification	154
Adding Entries to Your Validation Files	155
Adding a Budget/Facility to the Consumption Method Database	156
Adding a Product to an Existing Budget/Facility	159
Adding a Treatment Protocol to an Existing Health Problem	164
<b>APPENDIX B - R&amp;R INTERACTIVE QUERY</b>	<b>167</b>
Query Structure	167
Query Commands	171
Query Techniques	174
Creating a Sample ESTIMED Query	181

APPENDIX C - THERAPEUTIC CLASSIFICATIONS	185
AHFS PHARMACOLOGIC CLASSIFICATIONS	185
WHO THERAPEUTIC CATEGORIES	188
Glossary	192
Index	197

## ABOUT THIS MANUAL

This manual is designed to serve as a training guide and reference manual for anyone using the ESTIMED program. For the learner, the basic commands and procedures for each option are explained step by step. For the experienced user, the manual has bold headings for referencing the ESTIMED procedures or commands discussed within each section. Answers to specific questions or steps for a particular procedure can be located easily by looking up the key word in the index. Concepts unique to ESTIMED and instructions on data interpretation are presented throughout the manual and can also be found in the Glossary.

Important ESTIMED features are covered in summary sections:

- 1 A summary of key ESTIMED concepts and terms in Chapter 1,
- 2 A list of ESTIMED command keys in Chapter 3,
- 3 A sample listing of all ESTIMED reports and appropriate criteria in Chapter 6, and
- 4 A step-by-step tutorial in Appendix A.

In each chapter on ESTIMED options, all data entry information is described in detail.

Throughout the manual, arrow brackets are used to notate computer keystrokes. For example, **<ENTER>** means you should press the Return or Enter key on your keyboard. **<PgDn>** refers to the Page Down key. The key names that are used correspond to those printed on your keyboard. To activate some ESTIMED functions or options, you may

- type the first letter of the command,
- highlight the function and press **<ENTER>**, or
- if using a mouse, click on the function.

Because any one of these actions can be used to access the function, the term *select* is used throughout the manual to indicate that any one of the above actions may be performed. Whenever possible, the manual has used ESTIMED notations so that what you see in the manual corresponds to what you see on your screen. See Chapter 3 for more details on key commands.

As you read through this manual, you will see three icons the Note icon, the Hint icon, and the Warning icon. These icons are used to point out special information.



- 1 The Note icon is used to point out additional information that may prove helpful while using the program.



- 2 The Hint icon is used to provide alternate ways of performing a task or completing a process.



- 3 The Warning icon is used to alert the user to potential problems. Pay close attention to your data or system and information marked with this icon.

## **HARDWARE/SOFTWARE SYSTEM REQUIREMENTS**

### **Hardware**

- 100% compatible IBM Computers (XT, AT, 386, 486, Pentium)
- 640 K RAM
- 1 floppy disk drive (3 5" or 5 25"), either low or high density
- 1 hard disk with at least 10 MB of available space (To run the reports, you will need at least 640 K of free disk space on your hard disk while ESTIMED is operating )
- A device such as an Uninterruptible Power Supply (UPS) to protect the system from surges and power failures

### **Printer**

- A dot matrix EPSON or IBM compatible printer
- The report generator supports a laser printer as well

### **Software**

- MS-DOS Operating System, Version 5 0 or higher
- A disk cache such as SMARTDRIVE There must be at least 2 MB of extended (XMS) memory free to run the reports

### **Optional Hardware/Software**

- Mouse
- Windows 3 1, Windows for Workgroups, Windows 95, Windows NT will support ESTIMED in a DOS window

### **Recommended Minimum Hardware Configuration**

- 100% Compatible Intel 486 PC
- 8 MB RAM (4096 K)
- 120 or more MB Hard Disk
- SVGA (Super Video Graphics Array) Monitor

## INTRODUCTION TO ESTIMED

---

Chapter 1 will introduce the user to the main concepts of ESTIMED. The two methodologies used by the system will be briefly discussed. This section will end with a description of the main menu.

---

## 1.0 INTRODUCTION TO ESTIMED

### 1.1 Overview

The *Estimation Model* program, or ESTIMED, is a practical tool designed to ease the process of order planning and budgeting. ESTIMED allows health planners and directors of essential drug programs to calculate drug and product needs by adjusting from historical consumption patterns or by an epidemiological approach which uses patient service/morbidity profiles and standard treatment guidelines. These two standard methods are referred to as the Consumption and Morbidity method respectively.

ESTIMED has been designed to improve the order planning and budgeting process by allowing the user to properly manage the following operations:

- ▶ developing and maintaining illustrative databases which can be used as starting places if local records are inadequate, unavailable, or not readily obtainable,
- ▶ implement a standard approach for estimating drug requirements using one or both of the standard methods, and
- ▶ generating reports which can quickly extract information from the reference databases.

In these operations, ESTIMED can save a great deal of time and assist essential drug program directors and managers. But to achieve these benefits, you must pay close attention to detail and understand the limits of the computer's capabilities!

ESTIMED is a powerful tool that can be used to address one of the biggest concerns of primary health care: *essential drugs management*. Its practical utilities is evident in the areas of order planning, training, supply management, and allows you to measure the economic consequences of purchase and drug use patterns. For the policy maker, ESTIMED shows the budgetary consequences of individual drug purchases, as well as drug purchases by therapeutic class. ESTIMED can also directly relate drug use to priority health problems and disease patterns through the use of standard and usual treatments.

There are three types of activities involved in using ESTIMED: **data collection, report analysis, and order planning**.

The **data collection** process is virtually the same as described in *Managing Drug Supply*, Second Edition.

**Report analysis** includes the computer processing activities (system set-up, data entry, data preparation, report generation, and storage of returned data) which are described in detail in appropriate chapters throughout this manual.

**Order planning** requires the individuals responsible for the drug order to review the analyses generated by the program and apply their expert judgment to adjusting the final drug order

Determining drug requirements and planning for the use of limited funds can be a tedious, time-consuming, and error-prone process. Drug information is often written and rewritten (or typed and retyped, as it were) by clerical staff who know little about the drugs and drug names. Each drug item requires several calculations to be performed, which presents opportunities for miscalculations. Moreover, once a draft drug order is prepared, budget restrictions often require modifications, in which case the whole process of typing and calculating is repeated.

Finally, if an attempt is made to calculate drug requirements on the basis of epidemiological patterns rather than past consumption, a great deal more information is needed, it must be gathered and integrated into the calculation process thereby setting the stage for further miscalculations.

The computer is a fast and powerful tool and is invaluable to planners, decision makers, and managers. Be cautioned: **The computer is only a tool**

- ▶ It cannot reason for itself
- ▶ It cannot distinguish between accurate and erroneous data
- ▶ It cannot tell the difference between rational and irrational drug therapy
- ▶ Most important—it cannot determine what drugs should be ordered. That responsibility lies in human judgment.

This computer program can, however, organize the information into useful planning reports. You must be sure that the information entered is accurate and consistent for the reports to be valid. Advantages of using a computer for planning drug requirements include its ability to

- ▶ Perform analyses that would be too time-consuming by hand,
- ▶ Accurately print and reprint large drug lists, and
- ▶ Quickly recalculate estimates and drug costs when changes are made.

Both the consumption and morbidity methods for estimating drugs contain database files that have specifically defined file structures that limit the number and type of characters that may be entered in each data field.

**Units of Measurement in ESTIMED**

Entering drug data can be a difficult and exacting task for those not familiar with the terminology. Before beginning this task, it is helpful to understand a few conventions that ESTIMED uses to identify drugs. The following table lists the major drug terms used by ESTIMED, along with definitions and examples of each term.

TERM	MEANING IN ESTIMED	EXAMPLES
Route of administration	Route through which the drug enters the body	Injectable, topical, oral preparation, inhaler, intravenous
Basic unit	Volume (or sometimes size) units in which a given drug is usually measured	Milligram, milliliter, gram, tablet, vial, ampule, suppository
Strength unit	The units in which the strength of a particular drug is usually measured	mg, ml, IU, %, gm
Strength	Concentration of active ingredients as measured by the number of strength units per each basic unit	250 mg/ml injection, 500 mg tablet, 3% ophthalmic solution
Drug code	Code that uniquely identifies a particular product name, strength, and route of delivery	AMP250T might be used as a code to represent ampicillin 250 mg tablets
Therapeutic class	Theoretical groupings of related drugs, usually ones used to treat similar conditions or containing related chemical constituents	Penicillins, beta blockers, benzodiazapines
Order unit	The volume unit in which a drug is customarily ordered or purchased by a facility	Bottle of 1,000 tablets, carton of 50 ampules
Drug cost per basic unit	The average cost across all facilities of each basic unit of a drug, which can be used by ESTIMED to calculate the cost of treatment.	Bottles of 1,000 paracetamol tablets purchased for \$2.88 cost \$0.00288 per basic unit.

Table 1-1, Units of Measurement

## 1.2 Drug Estimation Methodology

Determining drug requirements is perhaps one of the most difficult responsibilities faced by physicians, pharmacists, and supply specialists who must make decisions on what drugs to buy and use

Whereas wasteful or irrational drug use might be perpetuated by simply continuing to order on the basis of historical usage of individual drugs, severe shortages and overstocks of items can occur by ordering entirely on the basis of *theoretically-determined* health needs. Often, the lack of reliable, accessible information can make it difficult at best to determine accurately either historical usage *or* theoretical health needs based on service statistics

There is no *best* way to determine drug requirements. The approach will be selected on the basis of

- ▶ the drug and health care information available,
- ▶ the purposes of the estimate, and
- ▶ the nature of the drug supply program

Management Sciences for Health's *Managing Drug Supply (MDS)*, Second Edition provides a step-by-step explanation of how to estimate drug needs by hand. ESTIMED is an automated version intended to facilitate the often-tedious task of manipulating large numbers of drugs and calculating the costs and quantities needed. ESTIMED also provides summary statistics as well as a multitude of indicators on the status of drug usage and budgetary consequences

Owing to the methods computers employ to accomplish a given task or series of tasks, ESTIMED does not exactly follow the steps described in *MDS*. Instead, it accomplishes the complex and tedious calculations and provides a summary of the statistics or indicators about drug use which are not otherwise easily attainable by the hand-calculation methods outlined in the *MDS*. Furthermore, ESTIMED generates 17 reports that summarize the manipulated data in formats convenient for decisions and drug management. Interpretation of these reports and drug use indicators is explained in greater detail in Chapter 8, Reports

## 1 2 1 Methods Summary

**Consumption methods** rely on analysis of past consumption data gleaned from existing inventory records or surveys of drug consumption. Chapter 5 goes into greater detail. The consumption method can be summarized as follows:

**Data Entry**—involves the collection of five data sets:

- ▶ Product/drug listing (same as for the morbidity method)
- ▶ Facilities/Budget listing
- ▶ Therapeutic class list
- ▶ Validation data files
- ▶ Previous drug orders

**Report Analysis**—creation of these reports to be reviewed by planners:

- ▶ ABC Analysis by Drug
- ▶ ABC Analysis by Therapeutic Class
- ▶ Drug Allocated Quantities Report
- ▶ Drug Data Report (by Therapeutic Class)
- ▶ Drug Data Report (listed by drug)
- ▶ Drug Past Usage Report
- ▶ Drug Planning Worksheet
- ▶ Drug Request Report
- ▶ Drug Requirements/Consumption Method

**Order Planning**—use of the prior reports to arrive at a final estimate of drug needs or the final drug order.

**Morbidity methods** require information about the frequency of common health problems, treatment guidelines, and the number of people who will be treated. Refer to Chapter 6 for more information on this drug estimation method. The morbidity method can be summarized as follows:

**Data Entry**—involves the collection of these sets of data:

- ▶ Product/drug listing (same as for the consumption method)
- ▶ Facilities/budget listing (same as for the consumption method)
- ▶ Health problem profile
- ▶ Standard protocols/treatments
- ▶ Usual treatments list

**Report Analysis**—creation of these reports to be reviewed by planners

- ▶ Drug Requirements/Morbidity Method
- ▶ Health Problem and Target Cases Report
- ▶ Health Problem and Target Cases Worksheet
- ▶ Health Problem and Drug Cost/Standard Treatment
- ▶ Health Problem Report
- ▶ Health Problem and Cost Summary
- ▶ Standard Treatment Report

**Order Planning**—Use of the reports to arrive at a final estimate of drug needs for the final drug order

There are a variety of ways to use each of the methods, and ESTIMED uses both methods for comparison purposes Chapter 7 discusses the comparison of the two methods

## 1.2 2 Uses for Estimates of Drug Requirements

The two methods of estimating drug needs each have specific advantages and disadvantages. Figure 1-1 outlines the most important considerations for using each of the methods.

	<i>Consumption Method</i>	<i>Morbidity Method</i>
<b>A D V A N T A G E S</b>	<ul style="list-style-type: none"> <li>▶ Most efficient from a management perspective</li> <li>▶ Most compatible with conventional inventory control</li> <li>▶ Most commonly used method in long standing drug supply systems</li> </ul>	<ul style="list-style-type: none"> <li>▶ Useful for estimating needs for new programs</li> <li>▶ Useful in planning ration kit distribution systems</li> <li>▶ Treatment guidelines can support efforts to improve drug use by prescribers, dispensers, and patients</li> </ul>
<b>D I S A D V A N T A G E S</b>	<ul style="list-style-type: none"> <li>▶ Needs may be underestimated if shortages are not considered</li> <li>▶ Can serve to perpetuate poor prescribing</li> <li>▶ Consumption measured at central level or sentinel facilities may not reflect entire system</li> </ul>	<ul style="list-style-type: none"> <li>▶ Requires more information than consumption method</li> <li>▶ Can lead to significant shortages and overstocks if health problem profile inaccurate or treatment guidelines not followed</li> <li>▶ Can lead to costly procurement delays unless accurate health problem data and accepted treatment guidelines already exist</li> </ul>

Figure 1-1, Comparison of Consumption and Morbidity Methods

In addition to providing purchasing estimates for an existing program, the consumption or the morbidity method estimates can be used in the following ways:

- ▶ To determine order quantities
- ▶ To plan and support budgets at the local, district, regional, or national level
- ▶ To identify possible ways to improve cost-effective drug utilization
- ▶ To provide information that might be used in negotiating for additional foreign exchange allocations
- ▶ To document the need for specific donor funding
- ▶ To assess the need for specific drug products that may have been offered as gifts
- ▶ To evaluate cost-effective drug use
- ▶ To provide cost comparison to assess the impact of alternative procurement patterns, supply sources, and stock management decisions
- ▶ To compare utilization among facilities
- ▶ To promote the concept of standard treatments
- ▶ To provide information for a formulary committee

- ▶ To promote use of locally generated health data planning
- ▶ To train managers and prescribers
- ▶ To involve prescribers in the order process

ESTIMED provides you with a series of reports that calculate the data in a variety of useful formats. Figure 1-2 is a diagram listing each of these reports. Chapter 8 includes samples of each report with detailed descriptions of the contents and uses of each.

**Consumption Method**

ABC Analysis by Drug	ABC Analysis by Therapeutic Class	Drug Allocated Quantities	Drug Data Report (by Therapeutic Class)	Drug Data Report (by Drug)	Drug Past Usage Report	Drug Planning Worksheet	Drug Request Report	Drug Requirements/Consumption Method
----------------------	-----------------------------------	---------------------------	---	----------------------------	------------------------	-------------------------	---------------------	--------------------------------------

**Morbidity Method**

Drug Requirements/Morbidity Method	Health Problem and Target Cases Report	Health Problem and Target Cases Worksheet	Health Problem and Drug Cost/Standard Treatment	Health Problem Report	Health Problem and Cost Summary	Standard Treatment Report
------------------------------------	--	---	---	-----------------------	---------------------------------	---------------------------

**Both Methods**

Consumption vs Morbidity Results
----------------------------------

Figure 1-2, ESTIMED REPORTS

17

## 1 2 3 Computer Pharmacy Concepts

Computerization of the drug requirement estimation process, the procedure process, inventory control, and other aspects of essential drug programs is attractive because of the large amount of information involved and the frequent need to type drug information in various combinations on reference lists, drug order requisitions, and tender documents, to name a few. Drug names—particularly generic names—and other technical information are often unfamiliar to typists.

Efficient and accurate use of automated systems for drug-related activities requires that everyone concerned (pharmacists, physicians, managers, other health care professionals, and computer operators) become familiar with certain concepts and terms specific to computerized pharmacy. Many of the concepts presented in this section are also applicable outside the sphere of computer pharmacy.

In addition to understanding some of the terminology used in ESTIMED, it is helpful for both planners and operators to understand the structure of the drug data file (which is the foundation of computerized pharmacy) and the approach to writing treatment guidelines for use by the computer.

### ***Files, Records, and Fields***

The Product data file is one of the fundamental building blocks of computerized pharmacy in general and ESTIMED in particular. The purpose of the file is to code in a precise way for each product/drug all of the information needed by the program. The coding must be in a format that allows the computer to perform all of the necessary calculations and comparisons.

The Product data file consists of a series of records. There is one *record* for each drug, and each record contains specific items of information—in *fields*—about the drug. The structure of a database can be compared to a file of index cards. In the file box, each drug is listed on a separate card (and in the computer, each drug has a separate record). The same information is written on each card: name of drug, dosage, minimum stock level, and so on. In the computer, each of these separate pieces of information is called a *field*.

With ESTIMED, you have the option of entering your own product list into the data file or using and modifying the illustrative file provided with ESTIMED.

Computers can be very unforgiving of seemingly minor mistakes. Obvious, but easily overlooked errors in code numbers, product names, and package descriptions can lead to significantly irrational and distorted final results. Pay close attention to different strengths and package sizes. The product data file structure and, in particular, the concepts of basic units play a vital role in minimizing errors. These concepts may seem cumbersome at first, but understanding them is essential to using ESTIMED properly.

### 1.3 The ESTIMED Main Menu

The ESTIMED Estimation Model has six options that are displayed on the Main Menu when you activate the program (Figure 1-3). These options cover all of the principal ESTIMED functions. To exit the Main Menu and the program, press the <ESC> key and choose *Yes* at the exit prompt.

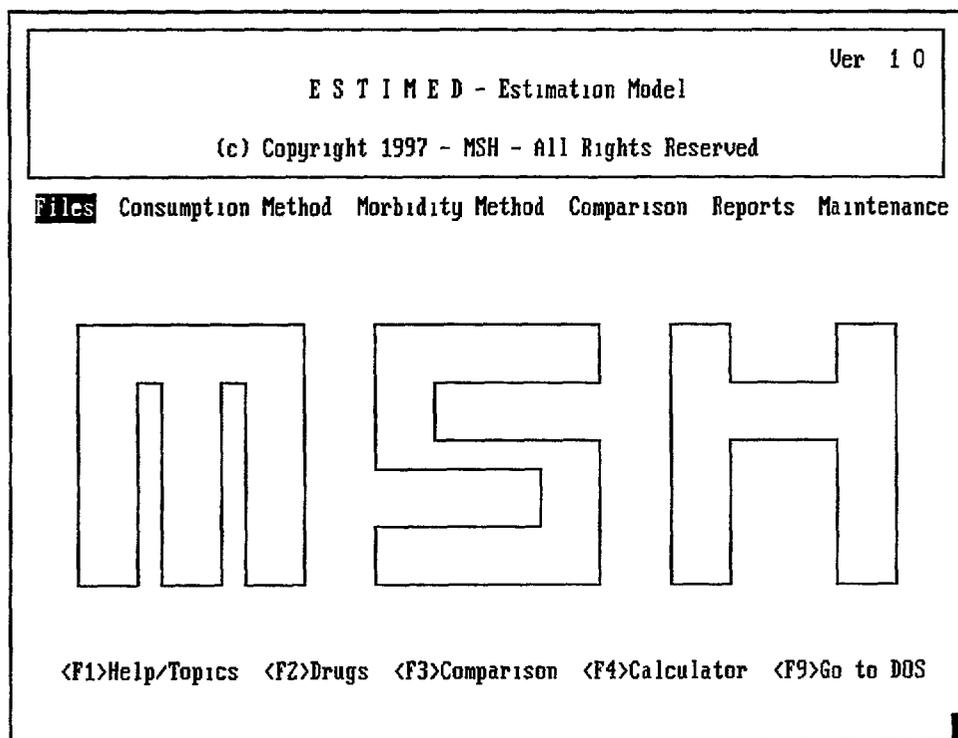


Figure 1-3 ESTIMED Main Menu

## **ESTIMED MENU OPTIONS**

### ***Files Options***

#### **Products**

The Products database is a master list of all products and drugs that may be used by any and all facilities being managed. ESTIMED comes with a standard list, however, you may add any items not included in the default list. Chapter 4 describes all the information needed to build the Product database.

#### **Therapeutic Classification**

This database contains a listing of therapeutic classes (theoretical groupings of related drugs), sorted by class identification, for example, 1 00 = anesthetics, 2 00 = analgesics, and so on.

#### **Validation Files**

This option allows you to build a database dictionary of various abbreviations and codes used throughout the ESTIMED system. These databases consist of terms common to your facility for describing consistent data such as **Age Groups, Pharmaceutical Forms, Route of Administration, and Basic Unit**.

#### ***Consumption Method Option***

This option contains a database file listing all facilities/budgets for which consumption data are being collected. If drug/product estimates are normally made using the consumption method, use this option to automate the entire process. Chapter 5 provides details for using the Consumption method.

#### ***Morbidity Method Option***

The Morbidity Method option allows users to estimate drug/product quantities using the morbidity-based method. This option requires detailed data entry information that is used to calculate quantities to order. If order planning is normally done using the morbidity method, this option should be used to automate the entire process. Chapter 6 provides details for using the Morbidity Method.

### ***Comparison Option***

The comparison database is a columnar display listing consumption and morbidity methods. It lists the amount (in drug units) used in the last reporting period and gives an estimated need of each drug entered for the next period. Refer to Chapter 7 for more information.

### ***Reports Option***

ESTIMED can generate a series of standard reports based on information entered in the main database files. These reports can be further customized using the *Interactive Report* option. Chapter 8 contains details on using the Reports option. See Appendix B for more information on using the interactive mode of Report Writer.

### ***Maintenance Options***

#### **Defaults**

**Program Constant Values** This option establishes defaults for program standards such as country, institution, date format, total budget, and currency.

#### **Colors**

If you are using a color monitor, this option allows you to set your own screen colors.

#### **Re-Index Files**

This option allows you to correct possible errors in the system after power failures or crashes by reindexing some or all of the database files.

#### **Backup Files**

As a safety precaution, the system allows you to copy pertinent files over to a disk, so that, in the event of a system failure, your data are saved.

#### **Restore Backup Files**

This feature allows you to copy files from a backup disk onto the computer hard drive. This is helpful when recovering from a system failure.

#### **Budget Adjustment**

This feature allows you to adjust the total budget for all facilities by a certain percentage.

**Import Data from INVEC-2**

This option allows users to import data from the INVEC-2 program. Data from INVEC-2 can be used to build the standard data files. This option can be used only after the export option in INVEC-2 has been used.

**INSTALLATION AND SETUP**

---

Chapter 2 contains a summary of the installation and setup procedures including tables listing necessary files to run ESTIMED. Also included are procedures for configuring Report Writer software.

---

## 2.0 INSTALLATION AND SETUP

This chapter outlines the requirements for installing ESTIMED and explains how to install and set up the program

Your computer uses a system configuration file (CONFIG SYS) to load necessary system configuration parameters. This file can be viewed or changed using any text editor. In order for ESTIMED to run properly, make sure the following minimum (higher numbers are acceptable) parameters are entered in the CONFIG.SYS file

```
files = 75  
buffers = 20
```

The parameters entered in the CONFIG SYS file control how many files ESTIMED (and any other program) can have open at one time. This file specification must be set to a minimum of 75. ESTIMED uses many database files and needs to have enough room available to open all the necessary files.

Remember, if you change your CONFIG SYS file, you must reboot the computer (i.e., turn it off and back on again) before continuing the installation process so that your changes will be effective.

### 2.1 Installation Procedure

To install ESTIMED, complete the following steps

- 1 Place the ESTIMED diskette into your floppy drive, and type **A INSTALL**, where A is the letter of the floppy drive. The automatic installation process will copy all necessary files to your hard drive. Follow any additional instructions that appear on your screen during the installation process.
- 2 Reboot the computer when done, before using ESTIMED.

## 2.2 ESTIMED System Files

ESTIMED consists of several program and database files. In addition, certain files are needed to run reports using the Runtime Version of R&R Relational Report Writer. The following tables list all the files necessary to run both ESTIMED and the R&R program.

### ESTIMED DATABASE FILES

AD_INSZ DBF	AD_RRN2 DBF	AD_RRUN DBF
AD_TXT DBF	AGEGRP DBF	APPROCH DBF
AR DBF	ARHIST DBF	BUDCON DBF
DRUGS DBF	ESTIHELP DBF	AD_INST DBF
GROUPS DBF	HEALTHU DBF	HLTHPRO DBF
RRUNOUT DBF	ISSUNIT DBF	MASTER DBF
RESULTS DBF	ROUTE DBF	VFORM DBF
RRDEM DBF	RRSTAT0 DBF	RRUNIN DBF
ZDOC2 DBF	SYSTEM DBF	THERA DBF

### ESTIMED PROGRAM FILES

ESTIMED EXE
ESTIMED CNF
ESTIHELP DBF
ESTIHELP DBT

### ESTIMED REPORT WRITER FILES

RR CNF
RR UDF
RRDEM DBF
RRDEM NTX
RRPRINT CNF
RRPRINT PCF
RRSETUP EXE
RRSETUP HFC
RRUN EXE
RRUNIN DBF
RRUNOUT DBF
RRUNP EXE

## 2.3 Configuring Report Writer

For the reports to run, the R&R Report Writer file (RR CNF) must be configured according to the location of the ESTIMED files and the printer in use. To do this, type

```
CD\ESTIMED  
C \ESTIMED> RRSETUP <ENTER>
```

Using the space bar, move to *CONFIGURATION* and press <ENTER>. Select RR CNF from the list of configuration files, then *DEFAULTS* from the subsequent menu options. Select the first item in the list and press <ENTER>. Type in the directory and subdirectory of the specified files (C \ESTIMED for example). Repeat this for the next two lines. Press <ESC> and select *Printers* from the main menu. To set up your primary printer, select **Printer 1 Type -** and choose the printer type from the available pop-up menu. Complete the printer setup by choosing the proper interface settings and customized options (if needed). Press <ESC> to return to the main menu and choose **Save** to save your configuration. Select *Quit* to leave configuration and choose *Exit* to return to the DOS prompt.

**COMMANDS AND FUNCTIONS**

---

Chapter 3 includes detailed instructions for starting ESTIMED, screen types are defined and standard keyboard and mouse functions are described

---

## 3.0 COMMANDS AND FUNCTIONS

This chapter describes the basic commands and functions needed to operate the ESTIMED program properly. Most of the commands discussed in this chapter can be used throughout the ESTIMED system.

### 3.1 Starting ESTIMED

- ▶ Make sure that the program has been installed in a subdirectory called ESTIMED (see Section 2.1 for the installation procedure)
- ▶ At the DOS prompt, type CD\ESTIMED and press <ENTER>
- ▶ At the C:\ESTIMED> prompt, type ESTIMED and press <ENTER>

The software development information page will be displayed, followed by the ESTIMED Main Menu.

The first time you run ESTIMED, a message will appear on screen prompting you to generate some necessary index files. When this appears, answer *Yes* at the prompt. This also will happen if you receive a new version of the program (an upgrade).




---

To speed the process, create a batch file called E.BAT in the root directory that contains the following:

```
C. (if <C> drive is used)
CD\ESTIMED
ESTIMED
CD\
```

---

#### Monochrome Display

If you wish to run ESTIMED in monochrome mode, type **ESTIMED M**. The program will be executed exactly the same. However, instead of having a color display, all screens will be in black and white.

#### Updating and Indexing on Startup

If you wish to reindex all files before starting ESTIMED, type **ESTIMED U** at the DOS prompt. This option causes the system to update the file structure and reindex all system files. The ESTIMED program will be executed after all files have been updated and indexed. This option should be used whenever the system has been abruptly halted, as in the case of a power outage or system failure. It must also be used when an upgrade to the program is installed.



---

ESTIMED must be started from the directory where all the files are located. If not, you will be prompted to generate the necessary index files again. To avoid this problem, do not include the ESTIMED directory in your DOS path statement.

---

### 3.2 ESTIMED Screens and Windows

ESTIMED is operated by successively activating windows for various steps in each ESTIMED procedure. The window system is easy to use and instructions about each window are clearly indicated on the screen. However, the system will be easier to use if you acquaint yourself with some basic commands and the various types of ESTIMED windows: the main menu, form windows, option windows, and browse windows.

#### **The Main Menu**

The main menu displays the main options in ESTIMED. This menu is the principal link between the different ESTIMED options and procedures. There are several ways to access the options on the main menu:

- 1 Type the highlighted letter of the option you want to use
- 2 Use the arrow keys to highlight the desired option and press <ENTER>
- 3 If available, use a mouse to click on the desired option

#### **Form Window**

A form window (Figure 3-1) is a screen version of a form containing the information needed to successfully manage survey information such as data on drugs, health problems, treatment costs, and budget data. These form windows are used to enter, modify, and view information in ESTIMED. For example, the product information screen is a *form window*.

The data presented in these form windows can be divided into two types:

- ▶ data that can be added or modified by you, and
- ▶ data generated by ESTIMED

For some of the data fields, information is entered first by you but becomes unchangeable after ESTIMED has processed it. Other form windows contain only ESTIMED-generated data, still others contain only data entered by you. Some form windows provide access to other windows and screens, including secondary form windows.

PRODUCT INFORMATION				
Code █ 0909023				
Name • Ampicillin				
Strength	Form	Basic Unit Size	Route	DMD
• 25MG/ML	• SUSP	• BOTT	• 100ML	• DRUG
Pack Size = •	1 0 BOTT	Pack Cost = •	200 00	
		• Basic Unit Cost =	1 1600 /BOTT	
WHO • M	VEN • U	Class • 06		
<F10>Order   <Ins>Insert   <Del>Delete				

Figure 3-1, Sample Form Window

### Option Window

An option window (Figure 3-2) links one window with another or one activity with another by giving you a choice of all possible options. For example, when you are entering data in the Product Information form window, an option window will give you the choice to *Accept*, *Retry*, or *Cancel* changes made to the form before allowing you to continue. This type of option window is standard throughout ESTIMED and will be displayed whenever such a choice needs to be made.

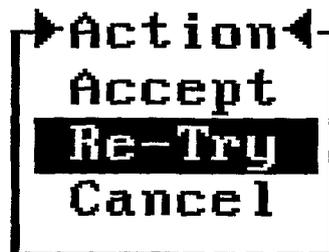


Figure 3-2 Option Window

### ***Browse Windows***

There are two types of browse windows in ESTIMED browse (or pop-up) and custom. These windows provide immediate access to master files, as well as some small validation files from several places in ESTIMED.

At different stages during an ESTIMED procedure, you will need to call up information from the master lists of products or validation files. You may either type in the code or use a pop-up browse window. This browse window is also available whenever data are to be entered from any of the main validation files. To access the pop-up browse window, select the data field and press **<ENTER>** (the field must be empty to access the browse window). Once you have located the desired data, highlight and select it with your keyboard or mouse. By doing this, you instruct ESTIMED to enter the data from this window into the blank data field.

- <PgUp>** Moves the cursor up one screen in the file
- <PgDn>** Moves the cursor down one screen in the file
- <Home>** Moves the cursor to the top of the list
- <End>** Moves the cursor to the end of the list

Your mouse may also be used to scroll through all the information in a browse window. See Section 3.5 for instructions on using the mouse to scroll in a browse window.

The second type of browse window, called a custom browse window (see Figure 3-3), displays all the information in a single record. One side of the screen contains a scrollable list of all the items in the database, and the other side displays all the information in the database about each item.

Some browse windows provide a link to another window (usually a form window) based on options selected from the browse window. These windows usually provide quick access to certain information, as well as detailed information by an attached form window. For example, the Consumption Database Field, located in the Budget/Facility Consumption form window, displays a browse window when accessed. This window provides information at a glance about the product consumption as documented in the database. Selecting a particular product from this browse window will cause another form window to be displayed that provides detailed information about the product, including the consumption data for the last 12 months and its total value.

PRODUCT FILE			
Code	Description	Class	
0509023	Ampicillin 25MG/ML SUSP 100ML	06	Route
1001	Paracetamol 500MG TAB (PO)	02	
1002	Chloroquine 500MG TAB (PO)	06 4 3	DMD DRUG
1003	Diazepam 5MG TAB (PO) 1	24	
1004	Ampicillin 250MG CAP (PO)	18 1	Pack Size
1005	Proguanil 100MG TAB (PO)	06 4 3	200 00/
1006	Tetracycline (hydrochloride) 250MG	06 2 1	1 0 BOTT
2001	Depo-Provera 150MG/ML INJ (IM) 1 ML	18 3	Cost/Unit
2002	Sodium Chloride 0.5% SOL (IV) 500ML	26	1 1600/
3001	Norplant 300MG CAPS (SC) 6 CAPS	18 3	BOTT
4001	T CU 380A (IUD) DISP	30	WHO M
5001	Nystatin 1000000IU PESS (VAG)	06 3	
5002	Preservatif (CONDOM) DISP	30	VEN U
5003	Ferrous Sulphate 60MG IRON TAB (PO)	27	
6001	Rifampicin 300MG TAB (PO)	06 2 4	
6002	Syringe 2ML DISP (IM)	30	

<F10>Order    <Ins>Insert    <Del>Delete

Search for Code

Figure 3-3 Sample Custom Browse Window

Use the following commands to find a record through a browse window (for some browse windows, there may be additional options indicated at the bottom of your screen)

**<F10> Select Order** Each database file that you access through a browse window will be sorted by one of the key fields. Usually files are sorted by the name of the item to make it easier to locate records. A few are sorted by code where this is appropriate. In most browse windows, ESTIMED gives you the option of re-sorting the file by another key. If the list is sorted by name, you can usually re-sort the list by code. In ESTIMED, the **<F10>** key (select order) allows you to change the sort order. This key activates an option window allowing you to choose your sort criteria. For example, in Files -> Therapeutic Classification, **<F10>** results in a pop-up window that asks you to Select Order by *Class Code* or *Class Description*.

**Searching for records.** ESTIMED allows you to search for a particular item automatically whenever you enter a browse window. If available, ESTIMED will display a search code field at the bottom of your screen for you to enter the search criteria. If your list is sorted by name, ESTIMED can locate any name you enter in the search field. If your list is sorted by code, it will locate any code in the database.

If your list is sorted by name, you can type the first letter or the first two letters of a name and ESTIMED will reposition the cursor at the first record in the list beginning with that/those letter(s). Similarly, if the list is sorted by code, typing the first one or two numbers of the code will reposition the cursor at the first code starting with that/those number(s).

### 3.3 Standard ESTIMED Commands and Functions

#### Moving Between Windows

The escape key (<ESC>) will take you back to the previous window displayed on your screen. If you are entering or editing data and wish to save and return to the previous window, press the <ESC> key to activate an option window prompting you to *Accept*, *Retry*, or *Cancel* your changes.

#### Editing Fields

Movement from field to field may be controlled either by the arrow keys or by using a mouse to click on each field.

In form windows, fields are identified either by an arrow or a bullet preceding the field. If you are using a mouse, the fields will be marked with the bullets, otherwise the arrow will appear. ESTIMED will automatically detect if you have a mouse driver activated on your system and will display your form windows accordingly.

Within a selected field, move the cursor using the left and right arrow keys. The <Home> key will place the cursor at the beginning of a field, while the <End> key places the cursor at the end of a field. If you have entered the wrong information into a field, you can correct it by returning to the field and deleting the information using <Del> or <Back Space>. Then you can type the correct information into the field. Additional editing functions are listed in the following table.

KEY	ACTION
<Ctrl> <←>	Moves cursor back one word
<Ctrl> <→> or <Ctrl> D	Moves cursor forward one word
<Ctrl> T	Deletes word or characters to the left of the cursor
<Ctrl> U	Clears field of any editing changes, leaving original data
<Ctrl> V	Turns Insert Mode on/off
<Ctrl> Y	Deletes from cursor position to end of line

## Saving Windows

After you have added or changed any data in a form window, ESTIMED will automatically activate the "Action" option window. If you wish to save your changes, select *Accept*. ESTIMED will save any changes you made in that window and then complete your next key command. For example, if you make changes to the product information form window and press <ESC> to return to the main products File window, ESTIMED will activate the "Action" option box. If you choose *Accept*, ESTIMED will save your changes and then return you to the product file browse window.

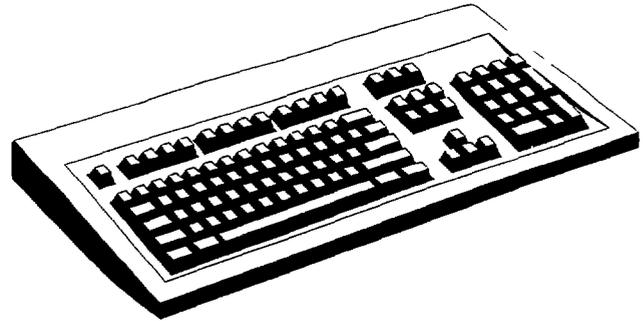
## Dates

Dates are entered in the format you establish when you set up ESTIMED. For example, if the format used is "DD/MM/YY," you must always enter dates day, month, year. You must also include a leading zero when a month or day only has one character (for example, the 1st of January 1995 should be entered 01/01/95 *not* 1/1/95).

## To Exit

To exit ESTIMED, return to the main menu and press <ESC>. An option window will appear asking if you want to exit the program. Select *Yes* or *No*. Selecting *No* will cause the program to return you to the main menu, whereas selecting *Yes* allows you to leave the program and return to the DOS prompt.

### 3.4 Basic Keyboard Commands

**<ESC>**

Takes you back to the previous window or step

**<F1> Key**

Activates an online, context-sensitive help screen. To receive help on a selected field or within a particular window, press the <F1> key. Help information on that field or window will appear on the screen. For a list of help topics, press <F1> twice.

**<F2> Key**

Used as a "hot key" to gain immediate access to the product file screen while in any other screen in ESTIMED.

**<F3> Key**

Used as a "hot key" to gain immediate access to the Comparison of results screen while in any other screen in ESTIMED.

**<F4> Key**

Displays a calculator that can be used in any window in ESTIMED.

**<F9> Key**

Used to gain temporary access to DOS while still running ESTIMED. When pressed, ESTIMED will temporarily close, giving you access to DOS. To return to ESTIMED, type EXIT at the DOS prompt. The shell allows you to execute other DOS commands or applications if enough memory is available.

**<F10> Key**

Used to activate a browse window view option menu. See Section 3.2.1 for details.

**Arrow Keys**

**Right (→)** Moves one space to the right within a selected data field or moves to the next data field when No field is selected. **In a browse window**, use this key to "pan" right to display any additional data in the window.

**Left (←)** Moves one space to the left within a data field or moves to the next data field when No field is selected. **In a browse window**, use this key to pan left to review any additional data in the window.

- Up (↑)** Moves up to the preceding data field or record
- Down (↓)** Moves down to the next data field or record
- <Home>**
- In a form window:** Moves to the first editable field at the top of the screen
- In a browse window** Moves the selection bar to the first item in the database file
- Within a selected field** Moves the cursor to the first character in the field
- <End>**
- In a form window** Moves to the last editable field at the bottom of the screen
- In a browse window** Moves the selection bar to the last item in the database file
- Within a selected field** Moves the cursor to the last character in the field
- <Ins>**
- In a browse window** Use this key to add new items to the database file. For example, to add a new provider while in the main Providers browse window, press the **<Ins>** key. This will activate a blank form window that will be used to hold information about the new item.
- <Del>**
- In a browse window** Use this key to remove any items from the database file. For example, you may use the **<Del>** key to remove an option from the list in a validation file.
- <Ctrl><Home>**
- In a form window** Use this key combination to display data for the first item in the database file.
- <Ctrl><End>**
- In a form window** Use this key combination to display data for the last item in the database file.
- <Ctrl><PgUp>**
- In a form window** Use this key combination to display data for the previous item in the database file.
- <Ctrl><PgDn>**
- In a form window** Use this key combination to display data for the next item in the database file.

### 3.5 Basic Mouse Techniques

#### Mouse Buttons

**Click** - Quickly press and release the mouse button

#### Left

Clicking the left mouse button

In any field of a record in the browse screen will select that record for editing

Anywhere in the title line of the browse window is the same as pressing the <F10> hot key

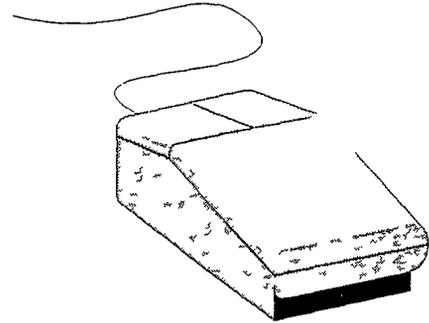
On the browse window border will allow you to move the browse window (drag the browse)

#### Right

Clicking the right mouse button will close the browse window  
This has the same effect as pressing the <ESC> key

Your mouse may also be used to scroll through all the information in a browse window You may use the following techniques to scroll

To scroll	Do the following
One line up/down	Click the up or down scroll arrow
Continuously	Point and hold down the left mouse button until the information you want comes into view
One screen	Click the scroll bar above or below the scroll box on vertical scroll bars
Pan left/right	Click the scroll bar to the left or right of the scroll box on horizontal scroll bars



### 3.6 R&R Report Writer Screen Display Commands

ESTIMED uses R&R Report Writer to create reports and can display them on the screen. For printed reports, all you have to do is specify the printer you are using.

For screen displays, however, there are a few R&R Report Writer commands that you can use to make viewing your report easier. These commands are printed and explained at the bottom of your screen as you view the report.

If you select *Display* as your destination output, your report will be displayed on your screen. Once the report has been generated, the first screen of the report will be displayed on your screen. Most reports and forms are wider than the width of your video display (80 characters), so you will only see a portion of the report. The R&R screen commands will help you view the remainder of your report. The following is a description of each command.

- (L) Line**                      Typing <L> will move the report down one line.
- (S) Screen**                    Typing <S> will move the report down one screen.
- (P) Pan**                        Typing <P> allows you to move your screen to the left and right using your arrow keys (←, →). This enables you to view any portion of the report not currently displayed on the screen.
- (W) Window**                    Using this command, you can divide your screen into two windows, allowing you to see different parts of the page at the same time. For example, while viewing a wide report where the first column is a list of item names, you may want to keep the items in a window on the left of your screen as you pan over to the right to view the rest of the information. Doing this will make it easier to see which other information on the report corresponds with the particular item.

To split the screen into two windows, type <W>. There are three additional choices:

- (S) *Split* Splits the screen into two windows. When you choose this option, you will use your arrow keys (↑, ↓, ←, →) to set the size of the windows.
- (C) *Clear* Restores a split screen to one window.
- (P) *Pan* Allows you to move around either window. The <F6> key lets you move from one window to the next.

**(C) Continuous**            Typing <C> will cause the report to scroll without stopping. You may hit the <ESC> key to pause scrolling.

**(R) Restart**                Typing <R> will restart the report from the beginning.

**(Q) Quit**                    Typing <Q> will exit the report and take you back to your previous ESTIMED screen.

In addition to the screen commands, you can use the up and down arrow keys (↑↓) to move the report up or down one line at a time.

**FILES**

---

Chapter 4 provides a detailed description of each of the main menu data files, including the data that can be entered in each screen/window

---

## 4.0 FILES

As stated in Chapter 1, the *Files* option is used to access the three main database files used by ESTIMED. These files are used to store reference information that will be used in calculating medical product use and expenditure. The three main database files under the File Menu are Products, Therapeutic Classification, and Validation Files. As with any database file, they are maintained by adding, deleting, and updating existing information. The tutorial section of this manual will take you through the steps of creating and building these three master files. Because ESTIMED is a *relational* database application, it uses data found in the three master files to standardize the analysis process. After collecting data for your survey, ESTIMED allows you to generate special reports that will aid in analyzing budget trends and medical product usage. These reports may be customized based on the information entered in the master files.

### 4.1 Products

The products database file (see Figure 4-1) is used to store information about each medical product. One record is created for each product, and the information entered here is used in all other modules.

PRODUCT FILE		
Code	Description	Class
0909023	Ampicillin 25MG/ML SUSP 100ML	06. ↑
1001	Paracetamol 500MG TAB (PO)	02
1002	Chloroquine 500MG TAB (PO)	06 4 3
1003	Diazepam 5MG TAB (PO) 1	24
1004	Ampicillin 250MG CAP (PO)	18 1
1005	Proguanil 100MG TAB (PO)	06 4 3
1006	Tetracycline (hydrochloride) 250MG	06 2 1
2001	Depo-Provera 150MG/ML INJ (IM) 1 ML	18 3
2002	Sodium Chloride 0.5% SOL (IV) 500ML	26
3001	Norplant 300MG CAPS (SC) 6 CAPS	18 3
4001	T CU 380A (IUD) DISP	30
5001	Nystatin 1000000IU PESS (VAG)	06 3
5002	Preservatif (CONDOM) DISP	30
5003	Ferrous Sulphate 60MG IRON TAB (PO)	27
6001	Rifampicin 300MG TAB (PO)	06 2 4
6002	Syringe 2ML DISP (IM)	30 ↓

Route  
DMD DRUG  
Pack Size  
200 00/  
1 0 BOTT  
Cost/Unit  
1 1600/  
BOTT  
WHO M  
VEN U

<F10>Order    <Ins>Insert    <Del>Delete

Search for Code

Figure 4-1, Products Main Window (Custom Browse)

To access the list of products, select Products from the Files menu. The main product file window will be displayed. This window displays the product code, description, class, route DMO, pack size, cost per unit, WHO, and VEN. From this screen, you can add or delete products, search for a specific product, or simply view detailed information about a product. To edit a product record, highlight the desired entry and press the <ENTER> key.

### 4.1.1 Summary of Commands

#### ***Adding a Product***

As discussed in Chapter 3, use the <Ins> key if you wish to add a new product to the database. Before adding a new product, check to make sure you are not creating a duplicate record. Although the system will check for duplicate ID numbers, it will not check for duplicate product names.

It is most important to ensure that each drug product is correctly identified throughout ESTIMED—*accuracy counts!* "Ampicillin" and "Ampisillin" will show up as two different drugs. If data are maintained against each version, you won't have a true picture of your needs and budgetary requirements when you review the reports. See Appendix A for details on how to add new products to the database.

#### ***Deleting a Product***

The <Del> key may be used to delete a product from the main product list. A product can only be removed from the main screen if there are no encounters linked to the product in either of the methods files. Pressing the <Del> key in such a case will cause an option window to appear, asking you to confirm the removal of the product. Once you select *Yes* to confirm the process, the product ID, name, and additional information will be removed from the database.

#### ***View Option***

The <F10> key is used to change the order in which items are displayed on the main screen. When you first access the product database, the products are sorted by the code. If you wish to view the products in order by their name, press <F10> and an option window will appear. Choose the appropriate option (Code, Accepted Name, Therap Class, or Vital) and press <ENTER>. ESTIMED will sort your list of products accordingly.

#### ***Moving Between Records***

You can move between records while within any form window by pressing <Ctrl> <PgDn> or <Ctrl> <PgUp>.

## 4 1.2 Products Information Screen

PRODUCT INFORMATION						
Code • 0909023						
Name • Ampicillin •						
Strength	Form	Basic Unit	Size	Route	DMO	
• 25MG/ML	• SUSP	• BOTT	• 100ML	• PO	• DRUG	
Pack Size = • 1 0 BOTT		Pack Cost = •		200 00		
				• Basic Unit Cost =		1 1600 /BOTT
WHO • M		VEN • U		Class • 06		
<F10>Order   <Ins>Insert   <Del>Delete						

Figure 4-2 Product Information Screen

The following is a summary of the data fields displayed in the products information screen (Figure 4-2)

<b>Code</b>	Drug codes uniquely identify a particular product name
<b>Name</b>	Generic name of the product
<b>Strength</b>	Strength of the product (e g , 25 mg/ml)
<b>Form</b>	This field is used to indicate the dosage form of a drug For example, acetaminophen comes in tablet <i>form</i> , which is indicated by TAB This field is linked to the Pharmaceutical Forms validation file
<b>Basic Unit</b>	The basic unit indicates the smallest unit in which a drug is produced or stocked For example, acetaminophen is produced in tablet form This field is linked to the Basic Unit validation file

---

<b>Route</b>	The <i>route of administration</i> is the route through which the drug enters the body (e g , top = topical, iv = intravenous, etc ) This field is linked to the Route of Administration validation file
<b>DMO</b>	The abbreviated reference to categorize the product as <b>D</b> rug, <b>M</b> edical Supply, or <b>O</b> ther When accessed, you'll get an option window listing these three category choices
<b>Pack Size</b>	Packaging size For example, if a bottle of aspirin contains 1,000 tablets, enter 1,000
<b>Pack Cost</b>	Price per package
<b>Basic Unit Cost</b>	Will be calculated automatically using Pack Cost and Pack Size entries
<b>WHO</b>	This field is linked to an option box and describes the status of the product <b>M</b> ain, <b>C</b> omplementary, <b>O</b> ther
<b>VEN</b>	This field is used to sort items into <i>Vital, Essential, and Nonessential</i> categories for reporting purposes When accessed, an option window is displayed listing the three category choices
<b>Class</b>	<i>Therapeutic Classification</i> Theoretical groupings of related drugs, usually ones used to treat similar conditions or containing related chemical constituents This field is linked to the validation file Therapeutic Classifications

## 4.2 Therapeutic Classification

Therapeutic class is another database file designed to maintain the various therapeutic classes under which an item may fall based on its clinical use (Figure 4-3). There are several therapeutic classification lists available, some provided by the World Health Organization. Use this database to store the therapeutic classification that is most common in your region. See Appendix C for a listing of the two primary therapeutic classifications.

Therapeutic Classes	
Class Code	Class Description
01.	ANAESTHETICS
01.1.	GENERAL ANAESTHETICS AND OXYGEN
01.2.	LOCAL ANAESTHETICS
01.3.	PREOPERATIVE MEDICATION
02.	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL A
02.1.	NON-OPIOIDS
02.2.	OPIOID ANALGESICS
03.	ANTIALLERGICS AND DRUGS USED IN ANAPHYLA
04.	ANTIDOTES AND OTHER SUBSTANCES USED IN P
04.1.	GENERAL

Figure 4-3, Therapeutic Classification

## 4 2.1 Summary of Commands

### ***Adding a Classification***

As discussed in Chapter 3, use the **<Ins>** key if you wish to add a new classification to the database. Before adding a new classification, check to make sure you are not creating a duplicate record. Although ESTIMED checks for duplicate classification codes, it does not check for duplicate names, so be sure you are not adding the same name with two different codes. See Appendix A for details on adding a new classification to the database.

### ***Deleting a Classification***

The **<Del>** key may be used to delete a classification from the main classification list. A classification can only be removed from the main screen if there are no files linked to the classification from other databases. Pressing the **<Del>** key in such a case will cause an option window to appear, asking you to confirm the removal of the classification. Once you select *Yes* to confirm the process, it will be removed from the database.

### ***View Options***

The **<F10>** key is used to change the order in which items are displayed on the main screen. When you first access the therapeutic classes database, the classifications are sorted by the code. If you wish to view the classifications in order by class description, press **<F10>** and Select Order option window will appear. Choose either Class Code or Class Description (the category in which you wish to view the database) and press **<ENTER>**. ESTIMED will sort your list of classifications accordingly.

### ***Moving Between Records***

You can move between records while within any form window by pressing **<Ctrl> <PgDn>** or **<Ctrl> <PgUp>**.

## 4.3 Validation Files

The *Validation Files* option contains several small databases used to provide standardized options throughout ESTIMED. Validation files are often accessed as browse windows and make the process of completing forms much easier. Validation files are generated and used to maintain a list of options available for many fields.

To create or access validation file databases, select *Validation Files* from the setup menu of the ESTIMED main menu.

The main purpose of these files is to allow you to develop your own data dictionary that can be used regularly to enter data in various fields thereby making data entry more consistent. Each validation file consists of a code and description. ESTIMED uses these codes as an easy way to identify specific data. For example, some people might enter TAB while others enter TABLET or Tablet as a dosage form, if TAB is used in the Validation Reference file, TAB will be entered each time.

### 4.3.1 Summary of Commands

#### *Adding an Item*

As discussed in Chapter 3, use the **<Ins>** key to add new items to a validation file. Before doing so, check to make sure you are not creating a duplicate record. Although ESTIMED checks for duplicate item codes, it does not check for duplicate names. Be sure you are not adding the same item with two different codes. See Appendix A for details on adding a new item to a validation file.

#### *Deleting an Item*

The **<DEL>** key may be used to delete an item from a validation file.

#### *View Options*

The **<F10>** key may be used here to access the menu of operations that can be performed in this browse window. The only option available for the drug list is the select order option.

Move between records while within any form window by pressing **<Ctrl><PgDn>** or **<Ctrl> <PgDn>**

### 4.3 2 Age Groups

This validation file allows you to set up different age groups that will be used to categorize all episodes. Each entry will cover a particular age range. For example, if you wish to include only those episodes under the age of 25, you might create an entry to be < (less than) 25. All numbers are expressed in years. If you wish to be more specific, you may have several groups encompassing all ages. You may generate your own database. The following sample can be used as a guideline.

Age Group	Description
Group 1	<5
Group 2	5-10
Group 3	11-18
Group 4	>18

### 4.3 3 Pharmaceutical Form

The Pharmaceutical form validation file is used to maintain a list describing the form of the product. For example, to indicate the dosage form of any item in the product database as a capsule, add the code "TAB" and description "tablets/capsules" to your database. The following table lists some sample forms. You may create your own form list based on terminology used in your environment or you may use the one listed here. The code can be up to five letters long.

Code	Description
AMP	AMPULE
CREAM	CREAM
CRTDG	CARTRIDGE
DISP	DISPOSABLE
DROPS	ORAL DROPS
ELIXI	ELIXIR
ENEMA	ENEMA
INHAL	INHALER
LIQUI	LIQUID
LOTIO	LOTION
NASAL	NASAL DROP
OINTM	OINTMENT
OPHTD	OPHTHALMIC DROPS
OPHTO	OPHTHALMIC OINTMENT
OTIC	EAR DROPS
PESSA	PESSARY
POWDE	POWDER

### 4 3 4 Route of Administration

The route of administration validation file is a database file used to describe how the drugs are administered. For example, if you defined acetaminophen in the drug database and the pharmaceutical form as tablets, the route of administration for this item would be oral. The following table contains some sample options for the route of administration validation file. You may build your own validation file or use the sample provided.

Code	Description
DROP	ORAL DROPS
INH	INHALER
INJ	INJECTABLE
IV	INTRAVENOUS
NASAL	NASAL DROPS
OPHT	EYE PREPARATION
OTIC	EAR DROPS
PO	ORAL PREP
RECT	RECTAL PREP
SC	SUBCUTANEOUS
SL	SUBLINGUAL
STRIP	DIAGNOSTIC
TOP	TOPICAL
VAG	VAGINAL PREP

### 4 3 5 Basic Unit

The basic unit validation file provides a list describing the smallest measurable unit in which a drug is produced or stocked. ESTIMED uses the basic unit as the unit of measure when calculating drug costs and when expressing the strength of a drug. The following sample table may be used, or create your own.

Code	Description
AMP	AMPULE
CAP	CAPSULE
DOSE	DOSE
GM	GRAM
KG	KILOGRAM
MG	MILLIGRAM
ML	MILLILITER
PESS	PESSARY
SUPP	SUPPOSITORY
TAB	TABLET
TS	TEASPOON = 5 ML
VIAL	VIAL

**CONSUMPTION METHOD**

---

Chapter 5 provides a detailed description of the consumption method, including the data requirements needed to use this method. Also included is a detailed description of every data field in this module.

---

## 5.0 CONSUMPTION METHOD

### 5.1 Drug Estimating Using the Consumption Method

This chapter describes the steps for data entry and order planning for the consumption method of drug estimation

In an adequately financed and well-managed drug supply program, drug requirements are usually based on recorded past consumption. However, in essential drug programs as well as other types of public drug supply programs, a consumption-based approach has the following disadvantages and advantages

#### Disadvantages:

- ▶ If there have been shortages of essential items, drug needs will be underestimated
- ▶ If past and current prescribing and dispensing practices are irrational or wasteful, these practices will be supported—if not encouraged—by consumption-based ordering
- ▶ Estimates of consumption based on supplies issued from the central medical store may not reflect current drug utilization patterns at the provider level. Stock management practices at both levels may be unpredictable and it may take months before changes in prescribing patterns at the provider level are reflected in stock consumption at the central level

#### Advantages

- ▶ When accurate consumption data are available, the consumption method is the easiest way to determine future drug needs
- ▶ The consumption method does not require epidemiological data or established treatment guidelines, either of which can be difficult to obtain or time-consuming to develop
- ▶ If consumption data are complete, consumption-based estimates should result in fewer instances of stockouts or overstocks than morbidity-based estimates if the following occur
  - stockouts have been recorded and taken into consideration
  - prescribing practices remain relatively unchanged
  - the program is not experiencing rapid growth

Determining drug requirements is perhaps one of the most difficult responsibilities faced by physicians, pharmacists, and supply specialists who must make decisions on what drugs to buy and use. Whereas wasteful or irrational drug use might be perpetuated by simply continuing to order on

the basis of historical usage of individual drugs, severe shortages and overstocks of items can occur by ordering entirely on the basis of *theoretically determined* health needs. Often the lack of reliable, accessible information can make it difficult to accurately determine either historical usage or theoretical health needs based on service statistics.

### ***Data Entry for the Consumption Method***

Data entry for the consumption method begins with determining the list of drugs eligible for order. Preferably, the list should be an officially accepted essential drug list, rather than a list taken simply from past orders or individual physician or health worker requests. The process of developing an essential drug list is described in various WHO technical report series.

The next step is to collect relevant consumption data. In an established supply system, consumption data can usually be obtained from the stock card records. Consumption data can also be obtained from customs records or import data, other government programs that provide drugs (e.g., Social Security or the armed forces in some countries), or from sampling consumption at selected health facilities.

An obvious, but frequently overlooked issue is ensuring consistency in the data. When drugs are ambiguously described, the data also become ambiguous. Consumption should be recorded according to the official generic drug name. Strengths, package sizes, and the counting unit must be explicitly stated to avoid confusion among those responsible for inputting the data.

Recording of past consumption should also include information about stockouts, adjusted to reflect the consumption that would have occurred if there had been no stockouts.

Finally, the budget available for drugs, vaccines, and other medical supplies must be determined.

### ***Report Analysis for the Consumption Method***

Once consumption data have been collected, they should be organized for analysis by an essential drug committee, a formulary committee, a pharmacy and therapeutics committee, or other qualified groups of individuals. This utilization review is the most important part of the consumption-based estimation process. It is particularly important when the projected need for drugs exceeds the available funds, when considerable past stockouts or overstocks have occurred, or when planners believe prescribing habits have been wasteful or inappropriate.

ESTIMED helps organize past consumption data to identify over- or under-used items and more cost-effective alternatives. ABC value analysis is a useful technique for identifying high- and low-usage items.

### *Order Planning for the Consumption Method*

The final step in the estimation process is order planning. In this step, the planner uses the analysis of past consumption, budget information, and available inventory information on stockouts, stock on hand, and usage patterns to make a final determination of the drug order. ESTIMED organizes this information, but the final order depends on the experienced judgment of the responsible officials.

The ESTIMED file structure is somewhat flexible, a drug product name and its description can have up to 35 characters. Although this gives a certain freedom in designating products, it is important to stick to standardized guidelines to ensure consistency in reporting and estimating. For example, if "cholera" were identified as "cholera" and "chl," it would be complicated at best to come up with accurate drug estimations for this health problem as a whole.

ESTIMED comes with a product list. If the product is similar enough to your needs, it will probably save you time to start with that database and modify them, rather than starting entirely from scratch. Of course, additions and deletions will be necessary because a national or project drug list will differ from the illustrative list and current consumption information must be added.

The **Consumption Method** uses past drug use data. ESTIMED allows for information from different facilities or budgets to be entered, compared, and combined for estimation purposes. *Facilities* can be defined as individual hospitals, separate districts within a province or region, or individual provinces or states within the country.

## 5.2 Data Requirements for the Consumption Method

The consumption method is outlined in Figure 5-1, and can be summarized as follows

### *Data Entry*

- ▶ Product listing (same as morbidity method)
- ▶ Facility listing
- ▶ Previous consumption data
- ▶ Budget

### *Drug Budget Data*

The total budget or the budget for each separate facility can be entered into ESTIMED. Additionally, the number of episodes and the age breakdowns of these episodes can be entered.

### *Essential Product List*

ESTIMED is accompanied by an illustrative drug data file.

To update the essential drug list for your project, you can proceed in two ways:

- ▶ Use the illustrative list as a starting point and delete and add drugs as needed, or
- ▶ Start an entirely new drug data file by entering complete information on all of the drugs you intend to order.

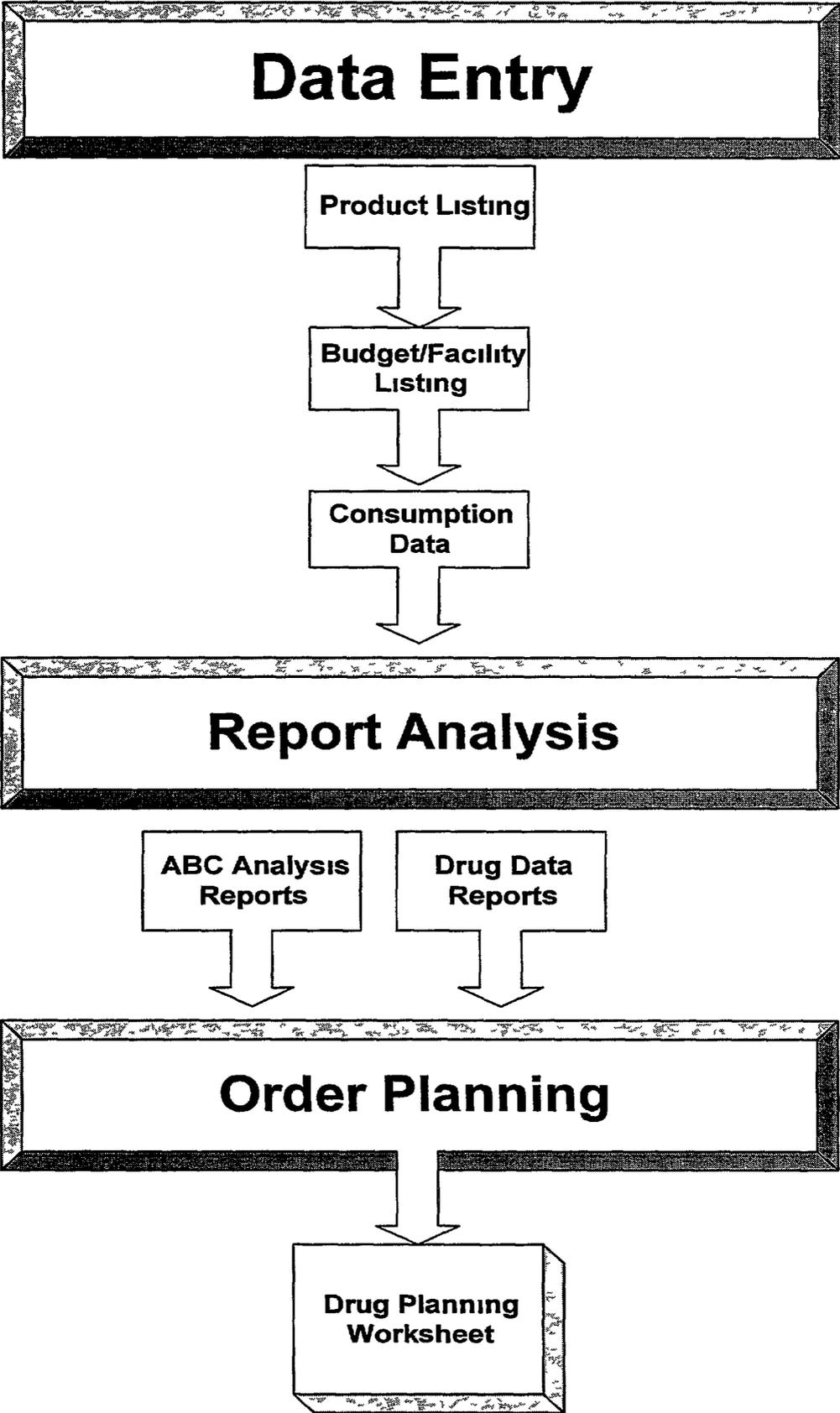
### *Therapeutic Classes*

Because ESTIMED summarizes past consumption and future orders by therapeutic class, this classification system must be defined. The illustrative database provided with ESTIMED contains the therapeutic classification system used in the WHO essential drug list. If you wish to substitute your own therapeutic classification system, you should list the categories and code numbers in the therapeutic classification validation file.

### *Consumption Data*

Finally, data on last year's consumption of drugs must be collected and entered into ESTIMED. It is essential that this information be entered using consistent packaging and counting units.

Figure 5-1 Consumption Method Steps



## 5 3 Using the Consumption Method Module

The consumption method module is designed to be used by those facilities that estimate drug quantities based on previous consumption. When selected, this option displays a custom browse window listing all facilities managed or defined budgets. This custom browse window lists the code for each facility, the facility name, the budget amount for each facility, and the total value of the products being estimated for each facility. The global budget entry at the top of the screen displays the total budget for all facilities as well as the current estimated cost for all facilities. To view detailed information about any facility or defined budget, highlight the desired facility and press <ENTER>

### 5 3 1 Summary of Commands

#### ***Adding a Budget or Facility***

As discussed in Chapter 3, use the <Ins> key to add new facilities to this database. Before doing so, check to make sure you are not creating a duplicate record. Although ESTIMED checks for duplicate facility codes, it does not check for duplicate names. Be sure you are not adding the same facility with two different codes.

#### ***Deleting a Budget or Facility***

The <DEL> key may be used to delete a facility from the Consumption Method facility list. A facility can only be removed from the main screen if there are no other records in ESTIMED linked to it. If you try to delete a facility that is referenced elsewhere in ESTIMED, you will receive this warning: "You have records in the Consumption Data that need to be deleted first." Once you have deleted all the entries to which the product is linked, pressing the <DEL> key in such a case will cause an option window to appear, asking you to confirm the removal of the drug ("OK to Delete? Yes or No"). Once you select *Yes* to confirm the process, the entire entry will be removed from the database.

#### ***Order***

The <F10> key may be used here to sort the categories of this browse window by budget/facility *name* or *code*.

Move among records while within any form window by pressing <Ctrl> <PgDn> or <Ctrl> <PgUp>

### 5 3 2 Budget or Facility Consumption Screen

Budget or Facility Consumption			
Budget/Facility Code	234		
Budget/Facility Name	Columbia		
Budget	125,000.00	% of Overall	12.5
Est. Value	89.25	% of Budget	0 1
Consumption Database • Details			

Figure 5-2, Budget or Facility Consumption Screen

<b>Budget/Facility Code</b>	Each budget or facility must have a unique code, this code is limited to six characters and it must be a unique alphanumeric code. If a duplicate code is entered, the system will not accept it and it will require you to enter another code.
<b>Budget/Facility Name</b>	The name of the facility being managed or the defined budget. This field can contain up to 30 alphanumeric characters.
<b>Budget</b>	This field should contain the total budget for this specific facility or defined budget.
<b>% of Overall</b>	This is a calculated field and contains the percentage that the current budget takes up for the overall budget for all facilities.
<b>Est Value</b>	This field contains the cost of the estimated products for this specific facility.

**% of Budget**

This field is a calculated field and displays the percentage of the facility budget that the estimated value takes up

**Consumption  
Database**

Selecting this field causes an additional browse window to appear listing all products being estimated for the specific facility See Section 5 3 3 for details

### 5 3 3 Product Consumption

This screen provides a list of all products used at each facility and displays the following information

- ▶ Product code and description
- ▶ Quantities used
- ▶ Estimated quantity
- ▶ Adjusted quantity
- ▶ Estimated value
- ▶ VEN

To add new items to Product Consumption, press <INSERT> and enter the necessary information

PRODUCT CONSUMPTION		
COL Columbia		
Code	Description	VEN
0909023	Ampicillin 25MG/ML SUSP 100ML	↑ Quantities Used 157 Estimated Qty 66 42 0/ Adjusted Qty 66 100 0/ Est Value 132 00 ↓
1001	Paracetamol 500MG TAB (PO)	
<Ins>Insert      <Del>Delete		

Figure 5-3, Product Consumption

To obtain more detailed information about each item, highlight the desired product and press <ENTER>, the consumption/estimated needs screen will be displayed. The following explains the fields presented in this screen, including the subwindows

CONSUMPTION/ESTIMATED NEEDS						
Facility/Budget		COL	Columbia			
Product	0909023	Ampicillin 25MG/ML SUSP 100ML				
Consumption Data for the last • 5 Months (in BOTT )						
•	12 •	35 •	40 •	28 •	42 •	0
•	0 •	0 •	0 •	0 •	0 •	0
Total= •	157 Out of Stock •		0 (Days) AVG/Month •			31
Safety Stock •	1 0	Stock Balance •	28			
Est Lead Time •	1 0	Procurement Period •	1 0	On Order •	0	
Estimated Qty •	66		/ of Consumption	42 0/		
Adjusted Qty •	66		/ of Estimated	100 0/		
B U Cost	2 0000		Total Value	132 00		

Figure 5-4, Consumption/Estimated Needs

**Facility/Budget**

This field contains the code and name for the facility for which this product has been defined. This field cannot be edited and is for display purposes only.

**Product**

This field contains the code and description for the product selected. This information is linked to the products database.

**Consumption Data for the Last Months**

This field should contain the total number of months for which consumption data are entered. For example, if you have consumption data for the last 6 months, type "6" in this field. Depending on the number entered in this field, the following fields will allow you to enter data for each month. Using this example, if you had consumption data for the last 6 months, you may enter the data for each month *up to* 6 months. This screen will allow you to enter information for up to the past 12 months.

**Total**

This field is a calculated field that contains the total number of the products consumed during the last period.

<b>Out Of Stock</b>	This field should contain the number of days that this item was out of stock during the last period. For example, if you have consumption data for the last 6 months and during that period you were out of a particular product for 10 days, you would type "10" in this field.
<b>Average/Month</b>	This field contains the average monthly consumption. It is automatically calculated based on the total months for the period and the total amounts, and takes into account the time out of stock.
<b>Safety Stock</b>	This field should contain your safety stock level (expressed in months). For example, if your facility is required to have 2 months supply of a product in stock, type "2" as your safety stock level.
<b>Stock Balance</b>	This field should contain your current stock balance. In other words, record the total amount of this particular product that is currently available in the facility.
<b>Estimated Lead Time</b>	Enter the total amount of time (months) required to receive a new order for this particular product. This shows the number of months between the date an item is ordered and the date the order is received.
<b>Procurement Period</b>	This field should contain the total procurement period time (in months). This shows the number of months which elapse between two orders. For example, the procurement period is six months if you order drugs twice a year.
<b>On Order</b>	This field contains quantities on order. Enter the total amount of the product that is currently on order.
<b>Estimated Quantities</b>	This field is automatically calculated to display the estimated quantity to order. This figure is calculated based on the current stock balance, safety stock, estimated lead time, procurement period, and on order figures.
<b>% of Consumption</b>	This field displays the estimated quantity as a percentage of your total overall consumption.
<b>Adjusted Quantity</b>	This field can be used to enter a specific amount to be ordered. For example, if your estimated quantity comes to a figure <i>other than</i> the amount you are required to order, enter the specific amount that you wish to actually order.

<b>% of Estimated</b>	This field shows the percentage of the estimated quantity that the adjusted quantity represents
<b>B.U Cost</b>	This field displays the cost of the product per basic unit, it is a calculated field and cannot be edited
<b>Total Value</b>	This field displays the total value of the estimated quantity of this product This is a calculated field and is equal to the adjusted quantity times the B U cost

**MORBIDITY METHOD**

---

Chapter 6 provides a detailed description of the morbidity method, including the data requirements needed to use this method. It also includes a detailed description of every data field in this module.

---

## 6.0 MORBIDITY METHOD

### 6.1 Drug Estimating Using Morbidity Method

#### Morbidity Method for Estimating Drug Requirements

In an adequately financed supply program with reliable inventory control, distribution systems, and good prescribing practices, drugs can be ordered on the basis of projections from recorded past consumption

However,

- ▶ when available funds are likely to be inadequate for projected needs,
- ▶ when available consumption information is incomplete or unreliable,
- ▶ when prescribing patterns seems inefficient or irrational,
- ▶ when a new drug supply program is being established, or
- ▶ when an existing program is expanding rapidly, then the morbidity method may be a more appropriate means of establishing drug requirements

The morbidity method requires five basic steps

- ▶ Determine the population to be served
- ▶ Determine the frequency of each health problem being treated
- ▶ Establish treatment guidelines for each health problem
- ▶ Calculate the quantities of drugs required by multiplying together the first three items and factoring in losses in the process
- ▶ If necessary, adjust the quantities required to prevent exceeding budget limitations

In theory, the morbidity method seems to provide a "truer" estimate of drug requirements. In practice, there are several cautions that should be considered when using this method

Accurate estimates of population coverage and health problem frequencies are often difficult to obtain. Inaccurate estimates can significantly misdirect drug purchases

The process of drafting standard treatments, if they do not already exist, can lead to costly delays in initiating the procurement process

If the standard treatments used to estimate drug needs are not fully communicated and adhered to by health care providers, then drug consumption can deviate significantly from projected needs. So it is possible with a morbidity-based estimate to create stockouts and overstocks that might not have occurred with consumption-based orders. However, if the treatment guidelines represent a significant

therapeutic improvement, then stock mismatches may represent an acceptable short-term cost of long-term improvements in drug use

### ***Data Entry for the Morbidity Method***

For the morbidity method, four key pieces of information must be collected or developed

**Service population and budget data** The planner must determine the service population that will be served by the drug order and the budget available. The service population may be expressed variously in terms of

- ▶ Numbers of people
- ▶ Numbers of outpatient attendances, or
- ▶ Numbers of treatments prescribed

Whatever measure of the service population is used, other information such as the health problem profile must be expressed in similar terms

**Essential drug list** As in the consumption method, it is important to begin with a list of drugs for which quantification of requirements will be necessary. Again, it is preferable for the list to be an officially accepted essential drug list, rather than a list taken simply from past orders and individual physician or health worker requests

**Health problem profile.** Next, the frequency of each health problem (symptom, diagnosis, or need for a health service such as prenatal care) must be determined. The health problems must be identified clearly enough to distinguish conditions requiring different types of drug treatment. For example, "ear pain" is not a precise enough category if external ear infections (otitis externa) are to be treated with ear drops, and internal ear infections (otitis media) are to be treated with oral antibiotics. Getting reliable health problem information is often the most difficult part of the morbidity method of estimating drug requirements. There are at least four potential sources for health problem profile data

- ▶ Existing government data,
- ▶ Survey data,
- ▶ Comparable data from similar service populations, and
- ▶ Expert panels

**Treatment guidelines** Treatment guidelines are essential for calculating drug requirements with this method. In addition, the process of writing and promoting treatment guidelines (if they do not already exist) can play an important role in improving drug use patterns. For estimation purposes, treatment guidelines must be specific with regard to dosage, frequency, and duration of treatment. For clinical purposes, however, the treatment guidelines may reflect a range of treatment regimens

***Report Analysis for the Morbidity Method***

After information on service population, budget, drug list, health problems, and treatment guidelines has been gathered, the quantities of drugs required is calculated by multiplying the number of patients being served by the frequencies of common health problems by the quantities of individual drugs needed to treat each health problem. The results of these calculations provide a draft drug order. Refer to Chapter 8 for a description of reports.

***Order Planning for the Morbidity Method***

The final step is to review the draft order produced from the calculations to determine whether it fits within the budget and whether the order must be adjusted. Depending on the size of the target population, the health profile, the treatment guidelines, and the drug prices, the final estimate of drug requirements may be higher than the available budget. It is sometimes possible to use the results of the estimate to argue for a higher budget. More often it is necessary to adjust the drug order to fit the budget. This can be a difficult task for which there is no universally appropriate approach.

## 6.2 Data Requirements for the Morbidity Method

The morbidity method is outlined in Figure 6-1 and can be summarized as follows

### *Data Entry*

- ▶ Product listing (same as consumption method)
- ▶ Health problem profile
- ▶ Age groups
- ▶ Protocol treatments
- ▶ Usual treatments list

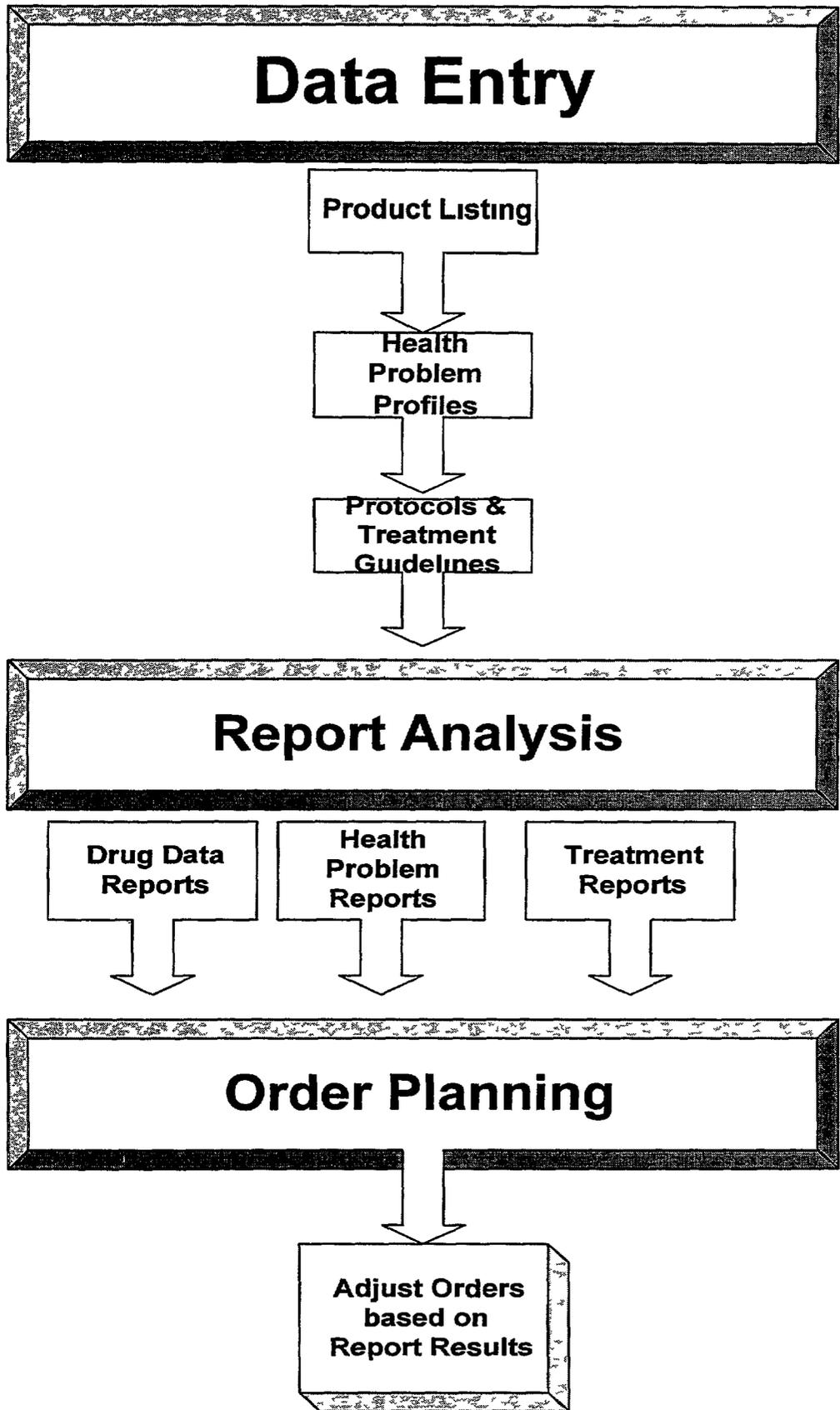
### *Report Analysis*

- ▶ Health Problem Report
- ▶ Health Problem and Target Cases Worksheet
- ▶ Health Problem and Target Cases Report
- ▶ Health Problem Drug Cost/Standard Treatment
- ▶ Health Problems and Cost Summary
- ▶ Standard Treatment Report
- ▶ Drug Requirements/Morbidity Method
- ▶ Consumption vs Morbidity Results

### *Order Planning*

Use the reports listed above to arrive at the final estimate of drug needs for the final drug order

Figure 6-1 Morbidity Method Steps



## 6.2 1 Data Entry

### *Drug Budget and Service Data*

A realistic estimate is needed of the number of patients who will be treated, the age breakdown of those patients, and the available drug budget

For the purposes of estimating drug requirements, the age breakdown is usually taken as "under age 5" and "age 5 and over," because 25% to 40% of patients needing treatment are under age 5. If this is not the case in your project, the age group definitions can be changed to meet your requirements.

### *Essential Product List*

ESTIMED is accompanied by an illustrative product data file

To update the essential product list for your project, you can proceed in two ways

- ▶ Use the illustrative list as a starting point and delete and add drugs and other products as needed, or
- ▶ Start an entirely new drug data file by entering complete information on all of the drugs you intend to order

### *Health Problem Profile*

The frequency of each health problem (symptom, diagnosis, or need for a health service such as prenatal care) must be entered. Use the database as a starting point. Delete problems that are not relevant, add other problems of importance, and modify the health problem frequencies for all problems. The other approach is to start from the beginning. The listing in the Morbidity Database is based on the International Classification of Disease (ICD) system, if possible, your health problem profile should be based on this list.

Information on the frequency of health problems can be entered as percentages, rates, or absolute numbers. ESTIMED converts these numbers to rates per 1,000 visits. Therefore, if the total number of visits entered earlier includes "other" visits, a category for "other health problems" must be included in the health problem listing even if no drugs will be needed for this category.

The health problem profile is one of the most critical and difficult parts of the drug estimation process. Information on health problem frequencies is often incomplete, inaccurate, or simply not available. The health problem identification should be specific enough to correspond to drug treatments.

### *Treatment Guidelines*

Treatment guidelines are essential for calculating drug requirements with the morbidity method. The process of writing and promoting treatment guidelines can play an important role in improving drug use. Treatment guidelines must be specific with regard to dosage, frequency, and duration of treatment. For clinical purposes, however, the treatment guidelines may reflect a range of treatment regimens.

### **6.2.2 Report Analysis**

Once data on service population, drug budget, essential drugs, health problem frequencies, and standard treatments have been entered, the reports can be produced and reviewed by the planner or planning committee. A description of each report can be found in Chapter 8.

### 6.3 Using the Morbidity Module

The morbidity method module is used to collect and store data about each health problem that may occur in any and all facilities. The information entered here can then be used to generate an estimation of drug quantities to be ordered.

When selected, the morbidity method menu option displays a browse window listing all health problems that have been defined and the code associated with each health problem.

This browse window also lists for each health problem:

- ▶ Numbers of estimated episodes treated or covered episodes,
- ▶ Treatment cost for each episode, and
- ▶ Percent of the overall budget that the particular health problem used.

To view detailed information about any particular health problem, highlight the desired field and press the <ENTER> key.

MORBIDITY METHOD			
Global Budget		Estimated Cost	
=	1,000,000 00	=	12,000 00 1 2/
Code	Health Problem		
001	CHOLERA	↑	# of Estimated Episodes
002	TYPHOID AND PARATYPHOID FEVERS		250
003	OTHER SALMONELLA INFECTIONS		
004	SHIGELLOSIS		
005	OTHER FOOD POISONING (BACTERIAL)		# of Covered Episodes
006	AMEBIASIS		0
007	OTHER PROTOZOAL INTESTINAL DISEASES		
008	INTESTINAL INFECTIONS DUE TO OTHER ORGAN		
009	ILL-DEFINED INTESTINAL INFECTIONS		Treatment Cost
010	PRIMARY TUBERCULOUS INFECTION		12000 00
011	PULMONARY TUBERCULOSIS		
012	OTHER RESPIRATORY TUBERCULOSIS		/ of Budget
013	TUBERCULOSIS OF MENINGES AND CENTRAL NER	↓	1 2/
<F10>Order    <Ins>Insert    <Del>Delete			

Figure 6-2, Morbidity Method

## 6.3.1 Summary of Commands

### ***Adding a Health Problem***

As discussed in Chapter 3, use the <Ins> key if you wish to add a new health problem to the database. Before adding a new health problem, check to make sure you are not creating a duplicate record. Although the system will check for duplicate health problem *codes*, it will not check for duplicate problem names.

### ***Deleting a Health Problem***

The <Del> key may be used to delete a health problem from the morbidity method list. A health problem can only be removed from the main screen if there are no encounters linked to it in other ESTIMED files. If you try to delete a health problem that is being used elsewhere in ESTIMED, you will get a pop-up window: "You have records in the morbidity groups that need to be deleted first." Once you have deleted all the entries to which the health problems are linked, you can proceed: "OK to Delete? Yes or No." Once you select *Yes* to confirm the process, the entire entry will be removed from the database. Pressing the <Del> key in such a case will cause an option window to appear, asking you to confirm the removal of the health problem. Once you select *Yes* to confirm the process, all entries will be deleted from the database.

### ***View Option***

The <F10> key is used to change the order in which items are displayed on the main screen. Choose the appropriate option (view by code or problem name) and press <ENTER>. ESTIMED will sort your list of products accordingly.

### ***Moving Between Records***

You can move between records while within any form window by pressing <Ctrl> <PgDn> or <Ctrl> <PgUp>.

## 6 3.2 Health Problem Screen

Health problem screen data fields

Code 001			
Health Problem Name • CHOLERA			
Est # of Episodes	250	# of Episodes Covered by Protocol(s)	0
Cost of Protocol(s) / of Budget	12000 00 1 2/		
Age Groups • Details			

Figure 6-3, Health problem screen

- Code** Each health problem is assigned a unique six-digit code. All codes must be unique; if duplicate codes are entered, the system will not accept the second code and will request another code to be entered.
- Health Problem Name** This is the name of each health problem.
- Estimated Number of Episodes** This field should contain the total number of episodes expected for this health problem. It is a calculated field based on the total expected episodes for all age groups.
- Number of Episodes Covered by Protocols** This is the total number of current episodes to be treated using this specific protocol for this health problem.
- Cost of Protocols** This calculated field displays the total cost of treatment based on each specific protocol or treatment approach. This is equivalent to the sum of the estimated treatment cost for all age groups.
- % of Budget** This is a calculated field that displays the percentage of the overall budget that this health problem uses for treatment.
- Age Groups** When selected, this field causes an additional browse window to appear that lists all age groups defined for this health problem. See the next section for details.

### 6 3.3 Age Groups

Selecting age groups from the health problem screen causes the following custom browse window to be displayed. This browse window displays the following information:

- ▶ Health problem
- ▶ Age group
- ▶ Number of past episodes
- ▶ Number of expected episodes
- ▶ Estimated cost
- ▶ Percent of budget
- ▶ Number of protocols

AGE GROUPS				
001 CHOLERA				
Age Group	Number of Episodes			
	Past	Expected		
<5	100	100	Estimated Cost	
>=5	150	150	4,182.45	
			% of Budget	# of Protocols
			↓ 0.42	1

Figure 6-4, Age Groups

To obtain more detailed information about each age group, highlight the desired age group and press the <ENTER> key. The age group information screen will be displayed. The following explains the fields presented in the age group detail screen, including subwindows.

AGE GROUP				
Problem	001	CHOLERA		
Age Group	>=5	Episodes Past	• 150 Expected •	150
Cost of Protocols	6,000 00	# of Episodes Covered by Protocols		0
AVG Cost/Episode	0 00	/ of Budget		0 60
Protocols • Details		# of Protocols		1

Figure 6-5, Age Group Details

<b>Problem</b>	This field is for display purposes only and displays the health problem currently being reviewed.
<b>Age Group</b>	This field displays the age group for which the current health problem episodes have been defined.
<b>Episodes Past</b>	This figure usually represents the total number of episodes from the past year.
<b>Expected</b>	This is the total number of expected episodes of the current health problem. This figure represents an estimate of expected cases for the specific health problem, and covers the current budget period.
<b>Cost of Protocols</b>	This is a calculated field based on information entered in the protocols detail screen. It is the total cost of all drugs used to treat the selected health problem.
<b>Number of Episodes Covered by Protocols</b>	This is the total number of current episodes to be treated using all defined protocols for this health problem.

---

<b>Average Cost Per Episode</b>	This is a calculated field that determines the cost of treatment per episode. This information is based on drug cost and data entered in the protocol detail screen.
<b>% of Budget</b>	This field is a calculated field that displays the percent that this treatment takes up in the overall budget for the facility.
<b>Protocol</b>	This field displays a browse window that lists the total number of treatment protocols. See Section 6.3.4 for details.
<b># of Protocol</b>	This displays the number of defined protocols for each health problem; several treatment protocols can be defined.

### 6.3 4 Treatment Protocol

The browse window displays the following information

- ▶ Health problem
- ▶ Age group
- ▶ Episodes per group
- ▶ All episodes
- ▶ Treatment protocols
- ▶ Episodes per protocol
- ▶ Number of prescriptions and cost

TREATMENT PROTOCOL					
001 CHOLERA					
Age Group		Episodes/Group		Episodes Covered	
>=5		150		0 =	
				Total Cost	
				6,000 00	
#	Episodes/ Protocol	%	# Rx	Cost/Episode	Total Cost/ Protocol
1	150	100	1	40.00	6000.00↑
<Ins>Insert      <Del>Delete					

Figure 6 6, Treatment Protocol

To obtain more detailed information about each treatment protocol, highlight the desired protocol and press <ENTER> The protocol screen will be displayed

PROTOCOL			
Problem	001	CHOLERA	
Age Group	>=5	Protocol #	1
# of Episodes Estimated			150
# of Episodes Covered/Age Group		0	0 /
# of Episodes for this Protocol		150	100 /
Cost/Episode	40 00	Cost of All Episodes	6000 00
Drug Breakdown • Details		# Drugs	1

Figure 6-7, Protocol

<b>Problem</b>	This field is for display purposes only and displays the current health problem being reviewed
<b>Age Group</b>	This field is for display purposes only and displays the current age group for this particular protocol
<b>Protocol #</b>	This displays the current protocol number for the health problem, several treatment protocols can be defined for each health problem
<b># of Episodes Estimated</b>	This is the total number of episodes estimated for this age group and health problem This is entered when creating the age group
<b># of Episodes Covered/ Age Group</b>	This is a calculated field that displays the total number of episodes covered by all treatment protocols for this age group
<b># of Episodes for this Protocol</b>	Enter the number of episodes that have been treated using this particular protocol

<b>Cost Per Episode</b>	This field is a calculated field based on the drug cost for the treatment
<b>Cost of all Episodes</b>	This field is a calculated field based on the total cost to treat all episodes
<b>Drug Breakdown</b>	This field displays an additional browse window listing all drugs being used in the treatment protocol (See Section 6.3.5 for details)
<b># of Drugs</b>	This field displays the total drugs used in this treatment protocol for the current health problem

### 6.3.5 Protocol Number Detail

Selecting the drug breakdown field from the protocol screen causes the custom browse window to be displayed. The browse window displays the following information:

- ▶ Protocol number
- ▶ Health problem
- ▶ Age group
- ▶ Number of episodes
- ▶ All episode costs
- ▶ Code and description of product
- ▶ Basic unit of product

This custom browse window displays additional information, including the costs of the dosage per basic unit, the basic unit cost per episode, the number of treatment days, and the cost per episode. To learn more detailed information about each drug listed in the treatment protocol, highlight the desired drug and press <ENTER>. The treatment protocol detail screen will be displayed.

TREATMENT PROTOCOL			
Problem	001	CHOLERA	
Age Group	>=5	Protocol No	1 150 Episodes = 100/
Drug Code	Description	Basic Unit (Size)	
1003	Diazepam 5MG TAB (PO)	TAB	
Number of Dose per Basic Unit	Number of Doses/Day	Number of Treatment Days	
• 1 00	• 2 0	• 10	
Dose Cost	Number of Doses/Episode	Cost/Episode	Cost of All Episodes
2 0000 *	20 00	= 40 00	6,000 00

Figure 6-8, Treatment Protocol

<b>Problem</b>	This is the health problem being reviewed
<b>Age Group</b>	This is the age group for this specific treatment This field is for informational purposes only and cannot be edited
<b>Protocol Number</b>	This field is for display purposes only and provides the current protocol number
<b>Episodes</b>	This is the total number of episodes for this treatment protocol
<b>Drug Code</b>	This field displays the drug code for the drug being used in the treatment of this current health problem for this particular treatment protocol
<b>Description</b>	This is the description of the drug
<b>Basic Unit (Size)</b>	The smallest unit in which the drug is produced or stocked This number indicates the amount of each of the basic units (i e , the size of the basic unit)

<b>Number of Dose per Basic Unit</b>	Enter the number of doses that can be give per basic unit For example, if the basic unit is TAB for a particular drug, and each dose is equal to 1 tablet, then the number of dose per basic unit is 1
<b># of Doses per Day</b>	Enter the number of dosage to be given per day
<b># of Treatment Days</b>	This is the number of days the patient should be treated with the specific dosage per episode
<b>Dose Cost</b>	The cost of the drug per dose, this number is based on the basic unit cost in the product information screen This is a calculated field and cannot be edited
<b># of Dosage per Episode</b>	This field is a calculated field that is determined by the number of dosage per basic unit times the number of dosages per day times the number of treatment days
<b>Cost/Episode</b>	This is a calculated field that displays the total cost to treat this health problem using this drug
<b>Cost of all Episodes</b>	This is a calculated field that displays the total cost to treat all episodes, this figure is generated based on the number of episodes multiplied by the cost per episode

**COMPARISON**

---

Chapter 7 provides the user with detailed descriptions of all fields in the comparison module, as well as some suggestions for using the figures here to determine which method to use when ordering drug quantities

---

## 7.0 COMPARISON

The comparison menu option is primarily used to display the difference between the consumption and morbidity methods of estimating drug quantity. When selected, the comparison menu option displays a custom browse window listing all products defined in the products database and the estimated quantities based on both of the estimation methods. The basic unit is also displayed. This screen also displays the following fields:

COMPARISON OF RESULTS				
Code	Description	Cons Method	Morb Method	BU
0505023	Ampicillin 25MG/ML SUSP 100ML	10,709	1,000	BOTT
1001	Paracetamol 500MG TAB (PO)	103	3,000	TAB
1002	Chloroquine 500MG TAB (PO)	38	1,500	TAB
1003	Diazepam 5MG TAB (PO) 1	42	3,555	BOTT
1004	Ampicillin 250MG CAP (PO)	146	250	CAP
1005	Proguanil 100MG TAB (PO)	307	0	TAB
1006	Tetracycline (hydrochloride) 250M	310	300	CAP
2001	Depo-Provera 150MG/ML INJ (IM) 1	146	0	AMP
2002	Sodium Chloride 0.5% SOL (IV) 500	46	200	UIAL
3001	Norplant 300MG CAPS (SC) 6 CAPS	207	0	SET
4001	T CU 380A (IUD) DISP	31	500	EACH
45285		0	0	
5001	Nystatin 1000000IU PESS (VAG)	244	0	PESS
Used Last Period		BU Cost =		1 1600
11011 BOTT		Estimated Cost using		
Estimated Qty		Cons Method	Morb Method	
2622 BOTT		12,422	1,160	

Search for Drug Code [REDACTED]

Figure 7-1, Comparison of Results

- Used Last Period** This field displays the quantity used of the selected drug for the last period. This information corresponds to data entered in the Consumption module.
- Estimated Quantity** This is the estimated quantity to be ordered, and reflects data entered in the Consumption module.
- BU Cost =** The basic unit cost is the cost of this drug per basic unit. This information is obtained from the product database.

**Estimated Cost Using Cons Method**      The estimated cost using the consumption method

**Morb Method**      The estimated cost using the morbidity method      These fields are calculated fields

In addition to allowing you to estimate drug requirements by either the consumption method or the morbidity method, ESTIMED will compare or combine results from the two methods. This capability can be used in several different ways.

If you are using ESTIMED to estimate drug needs for a single supply system (an entire province, for example) and you have information on previous consumption as well as health problem frequencies, then estimates of drug requirements can be made using both methods.

You may find that some parts of the health system lend themselves to consumption-based estimations while other parts of the system are more suited to morbidity-based estimates. Typically, consumption information is better for the hospitals while estimation of needs for ambulatory health centers, health posts, and other primary care units is more easily done with a morbidity approach. In this case, hospital needs could be estimated with a consumption-based approach and primary care needs with the morbidity method. After going through the estimation process for each sector, the consumption versus morbidity results report could be generated to allow comparison of the costs and types of drugs needed by hospitals and the primary care units.

**REPORTS**

---

Chapter 8 provides the necessary steps to generate detailed reports that can be used as an aid when estimating drug quantities. Reports and Results features are explained, as are methods for customizing each report type. You will learn how to direct the output of each report to the desired output device.

---

## 8.0 ESTIMED REPORTS

### 8.1 Standard Reports

This option contains several standard reports to assist you in drug estimation. It is important to remember that, as good as this feature is, it can only generate reports based on the information entered. This makes it imperative that the information entered be correct and up-to-date.

The following briefly describes all the standard reports generated by ESTIMED, followed by a sample report for each description. Many of these reports can be customized by using the R&R Interactive Query mode. See Appendix B for details.

#### ***ABC Analysis by Drug***

**Description.** This report ranks drugs in order according to the amount of money spent on each drug last year. Drugs are divided into Class A (the few drugs that account for 70% of expenditures), Class B (the drugs that account for the next 20% of expenditures), and class C (the large number of drugs that account for only the last 10% of expenditures).

**Practical Analytical Use.** This report displays a list of all drugs purchased last year, sorted in decreasing order of cost, this shows where most of the drug budget was spent. The report cannot establish whether the expenditures were reasonable, but it directs your attention to those few items that account for most of the expenditure. Review of this ABC analysis suggests items that are being overused and points to areas of potential savings.

### ***ABC Analysis by Therapeutic Class***

**Description.** In the consumption method, you review the prior year's consumption presented in the form of an *ABC* analysis in which drugs are ranked in order of decreasing expenditure. Using this information, an *ABC* analysis by therapeutic class and other drug supply information available to you through ESTIMED, the task is to determine the quantity of each drug to order for the coming year by using last year's purchase quantities as a starting point. These quantities are then adjusted for the coming year, taking into consideration the average cost for each drug, the most cost-effective and therapeutically sensible composition of the several drug choices in each therapeutic class, as well as any unusual factors that would have influenced the consumption of drugs, such as epidemics or natural catastrophes.

**Practical Analytical Use** This *ABC* analysis displays a list of all therapeutic classes in which drugs were purchased last year, sorted by decreasing order of total cost. Like the complementary report (*ABC Analysis by Drug*—the previous section), this report cannot establish whether the expenditures were reasonable, but it invites your attention to those therapeutic classes that account for most of the expenditure. This information can then be used in conjunction with the *ABC* analysis by drug to justify changes in expenditure between classes by substituting less expensive, therapeutically equivalent drugs or by eliminating drugs altogether.

### **Consumption versus Morbidity Results**

**Description** This report compares the results produced by the morbidity method with results produced by the consumption method. The use of this report depends on whether the morbidity and consumption methods are being used to generate separate estimates for the same health unit for comparison purposes, or whether they are being generated for separate health units with the intention of combining the results from the two methods for the total estimate of drug requirements.

**Practical Analytical Use** Analysis of this report depends on whether it is being used as a final step in comparing estimates made by the two methods for the same health unit, or whether it is being used as a step in combining estimates for separate health units using the two different techniques.

If consumption and morbidity estimates are being compared for the same health unit (such as an entire province), then careful attention must be paid to differences between the total drug requirements estimates as well as differences between quantities of individual drugs. If the total cost estimated from the morbidity method is substantially higher than the cost based on past consumption, it may suggest a large, unfilled need. The results of the morbidity method may be used to request more funding of drug supplies. If this is not possible, then the *Standard Treatment Report* and *Health Problems and Target Cases* reports can be used to help identify reductions in the drug order, which will have the least health impact.

Comparison of estimated requirements for individual drugs for the two methods may suggest drugs that are being over or under used. If there are significant differences between the two methods and the morbidity estimates are used for procurement purposes, it may be necessary to initiate training and education activities to encourage prescribing habits that parallel the ordering patterns.

### ***Drug Allocated Quantities Report***

**Description** This report provides a summary of last year's order by facility. This report is useful in comparing drug orders between and among facilities, various geographic areas, or projects. The report is organized by therapeutic class.

**Practical Analytical Use** This report lists all drugs used in the previous year and reflects the decisions made for each health unit in drug use. It can be used to determine a basis for next year's order. If the morbidity method is used, it can be used to compare against estimates of epidemiology based drug needs.

***Drug Data Report (By Therapeutic Class)***

**Description** This report (which is listed by therapeutic class), as well as the *Drug Data Report* (listed by drug) found in the next section, can be printed as soon as the essential drug list information is entered. It summarizes the information in the drug data file and can be used to double check the accuracy of the information in the drug data file. It should also be used whenever treatment guidelines are written or revised because it includes the correct drug name and dosage, product code, and basic unit definition. The drug data report is the same for the morbidity and consumption methods of estimating drug orders.

**Practical Analysis** Because this report is primarily informational, there is no particular analysis to be done, except to review it to be sure that all essential drugs required by the program are included.

***Drug Data Report (Listed by Drug)***

**Description** Just as with the previous report (*Drug Data Report*, listed by therapeutic class), this report can also be printed as soon as the essential drug list information is entered. It merely offers a different way to review the drug information that has been loaded, this report is the same for both estimation methods.

**Practical Analytical Use** Again, this report is informational in nature and so there is no particular analysis to be performed. Use this report to ensure all drugs that are required by the program have been properly included. Accuracy is of paramount importance in ESTIMED. Not only does this automated format afford you greater opportunity to properly predict drug requirements, but failure to ensure accurate entries can result in catastrophic *misc*calculations!

94

***Drug Past Usage Report***

**Description** This report provides a summary of last year's consumption data by budgets/facilities. The report is useful in comparing drug orders among budgets/facilities. This report is organized by therapeutic class.

**Practical Analytical Use** This report lists all drugs used in the previous year. It reflects the decisions made for each health unit in drug utilization. It can be used to determine a basis for ordering for the current budget period.

## ***Drug Planning Worksheet***

**Description** This report lists the quantity, unit cost, and total cost for each drug consumed last year and asks you to determine the desired quantities of drugs for the coming year

**Practical Analytical Use** This report helps the decision maker determine the amount of each drug to order for the coming year. It is organized by therapeutic class to allow for cost and therapeutic comparisons within each class. This organization also allows for better fund allocation among the classes. Cost subtotals are provided at the end of each class.

Using as reference the cost and quantity information from ABC analysis reports, you will be required to complete the desired number of units of each drug for the coming year. Analyzing each therapeutic class to determine the desired and affordable quantities of each drug involves consideration of several factors:

**Substitutions of therapeutic equivalents** The principal goal in analyzing therapeutic classes individually is to arrive at the most cost-effective and therapeutically sound composition of each class. One way of accomplishing this is to make therapeutically equivalent substitutions for as many of the injectables in a class as possible (because injectable preparations are frequently the most expensive form of the drug). The *Route of Administration* ("RTE") column provides this information at a glance.

**Which items are high expenditure** The ABC analysis reports identify those items that account for most of the expenditures during the last reporting period. These high-cost items merit the closest attention because reductions in the quantities ordered will result in the greatest possible cost savings. You can begin by focusing on those items that account for the top 70% of last year's expenditure, searching for less expensive alternatives and reviewing the quantities ordered last year to verify that they were not excessive.

**Imbalances between classes** *ABC analysis by therapeutic class* indicates which therapeutic classes accounted for most of the expenditure last year. If you feel that these aggregate figures represent either over- or under-expenditure for certain classes, examine those classes first and reallocate toward more essential classes where possible.

**Unusual events** This is also the place to take into consideration any particularly unusual factors that would have influenced the consumption of drugs last year, such as epidemics, natural catastrophes, political interventions, and so on. Obviously, adjustments have to be made for such extenuating circumstances.

***Drug Request Report***

**Description** This report summarizes the estimated drug requirements for each budget/facility, and is organized by therapeutic class. The figures used here indicate the quantities to order based on standard system calculations, and is equivalent to the total estimated quantities for each product.

**Practical Analytical Use** This report lists the drug requirements for the current budget period. It should reflect the decisions made using the Drug Planning Worksheet. This report can be used to double check the orders from each of the facilities and compare the order patterns for each facility.

### ***Drug Requirements/Consumption Method***

**Description** *"Drug Requirements Report Based on Quantities Allocated"* This report summarizes the estimated drug requirements for all budgets/facilities, and is organized by therapeutic class. These figures indicate the quantities to order using the adjusted quantity figures in the consumption module.

**Practical Analytical Use** This report displays the number of counting units of each drug that need to be ordered for a particular health unit for the coming year, sorted by therapeutic classification. It is the final result of the decisions made in the consumption method. If results from the morbidity method are available for comparison purposes, or if consumption data are being used to estimate requirements for a separate part of the health system, then the drug quantities from this report will be carried forward to the consumption versus morbidity results report for a comparison of the two approaches to estimating drug needs.

**Drug Requirements/Morbidity Method**

**Description** This report converts the estimate of total drug need into specific requirements for individual drug products. These requirements are expressed in terms of standard packaging and counting units to facilitate procurement activities.

**Practical Analytical Use** This report displays the number of counting units of each drug that need to be ordered for the coming year, sorted by therapeutic classification. It is the final result of the decisions made in the morbidity method. If previous consumption data are available for comparison purposes, or if consumption data are being used to estimate requirements for a separate part of the health system, then the drug quantities from this report will be carried forward to the *Consumption vs Morbidity Results* report.

If you don't need to compare or combine this output with consumption data, then ESTIMED analysis ends with this report. If you need to make any final changes in the order, they can be noted on the drug request report.

### ***Health Problem and Target Cases Report***

**Description** This report is generated with data from the *Health Problem and Target Cases Worksheet* and is provided to make a final review of the health problem profile before it is used for estimation purposes. The format and contents are exactly the same as the Worksheet, except that the adjustment percentages are printed in the appropriate column and ESTIMED has calculated the target number of episodes.

**Practical Analytical Use** This report allows you to review the targeted treatment episodes before proceeding further with the estimation process. The adjustments can be altered if it appears that other changes are necessary. If the targeted number of episodes is acceptable as printed, then no further analysis is needed.

### **Health Problem and Target Cases Worksheet**

**Description** This report summarizes the health problem profile information for the most recent year in which information is available. It expresses the treatment episodes both in terms of episodes per 1,000 consultations and in terms of actual numbers of consultations. This report then serves as a worksheet to estimate the target number of episodes during the year for which drug requirements are being calculated.

**Practical Analytical Use** The *Health Problem and Target Cases Worksheet* provides a health problem profile based on available local data or comparative data from elsewhere. You may want to review the rates for each health problem and adjust them upward or downward. These changes will be reflected in the health problem and target cases report.

It is possible to enter a global adjustment figure that will increase or decrease the rate for all health problems by the same factor. This can be done using the Budget Adjustment option under the Maintenance menu. Factors to consider in estimating the adjustment percent are:

**New or upgraded facilities** If there are any new or upgraded health facilities (hospitals, health centers, dispensaries) this year, the number of episodes treated can be expected to increase.

**Unusual events last year** A downward adjustment of the number of episodes treated should be made if there were epidemics or natural catastrophes last year that resulted in an unusually high number of episodes of any given health problem.

**Increased demand from management improvements** If other management improvements to the drug supply system (such as improved selection or procurement of drugs, or improved distribution systems) are being made this year, the demand for drugs could well increase. This should be accommodated by an upward adjustment in the number of episodes treated.

**Specific priority health problems** If specific health problems targeted as national priorities will be receiving additional attention, the adjustment percentage for these health problems should be increased accordingly (e.g., start-up of a major oral rehydration program).

These four points should be considered together to determine the overall adjustment percentage for the number of episodes treated last year.

### ***Health Problem and Drug Cost/Stand Treatment***

**Description.** This report summarizes the budgetary implications of treating specific health problems. It allows you to identify high cost health problems and to compare the cost per health problem with the percent of episodes with the problem. This is a key report which links drug expenditures with health service delivery.

**Practical Analytical Use** This report summarizes the total cost of each health problem if the standard treatment guidelines are followed and the expected number of episodes are treated. By calculating the average cost per episode treated, this report allows the planner to identify individual treatments which have high average costs and individual health problems which account for a large percentage of the total cost.

***Health Problem Report***

**Description** This report produces a listing of all health problems in your Morbidity Health Problem database, sorted by code

### **Health Problems and Cost Summary**

**Description.** This report summarizes the budgetary implications of treating the target population using the treatment guidelines. It allows you to identify high-cost health problems and compare the cost per health problem with the percentage of patients who have that problem. This is the key report linking drug expenditures with health service delivery.

**Practical Analytical Use** This report summarizes the total cost of each health problem if the treatment guidelines are followed and the expected number of patients are treated. This can be used to examine whether problems of less significance are receiving more expenditure than others of greater merit. Individual health problems can be costly because of a large number of treatment episodes, high average treatment costs, or a combination of these two factors.

If the total drug cost shown at the bottom of the report is within your drug budget, the ordering process can proceed without further adjustments (provided that stockouts, safety stock, lead time, and other supply system factors that influence drug requirements have been considered). If the estimated drug requirements exceed the available budget, the planner has several options:

- ▶ Use the reports to support requests for increased funding of drug supplies,
- ▶ Identify the high-cost treatments, adjust the treatment guidelines toward less expensive drugs, and restrict the use of expensive drugs to a smaller percent of patients,
- ▶ Identify those common but nonlife-threatening health problems that could be treated without drugs or with available traditional remedies

### **Standard Treatment Report**

**Description** This report combines the treatment guidelines you entered with cost information from the drug data file. It allows you to check the accuracy of the data entry process for the treatment guidelines and review the treatment guidelines in light of the cost per episode. Both usual treatments and standard treatments can be printed.

**Practical Analytical Use** There are two decision points in this report:

- ▶ The report gives you the opportunity for clinical review of the treatment guidelines being used in the morbidity method.
- ▶ Planners can reflect on the estimates of the proportions of therapeutic approaches to be used for each health problem.

When reflecting on the suggested proportions, planners should take into account the cost per episode of each approach, local prescribing patterns (both actual and desired), and the availability of drugs at the health facilities. For any health problem, there is always the option of providing "no drug treatment." For example, you may estimate that 80% of adults should receive "no drug treatment" for diarrhea, assuming 15% will require oral rehydrants and 5% sodium lactate compound (Ringer's solution).

## 8.2 Generating Reports

Once data have been properly loaded, you can select any of the reports for your review. To do so, select *reports* from the main menu and fill in the report name on the R&R print job request pop-up screen. If you don't know the name of the file, simply press <ENTER> and the "R&R master control file browse pop-up window displays all available reports. Scroll down and press <ENTER> when the desired report is highlighted.

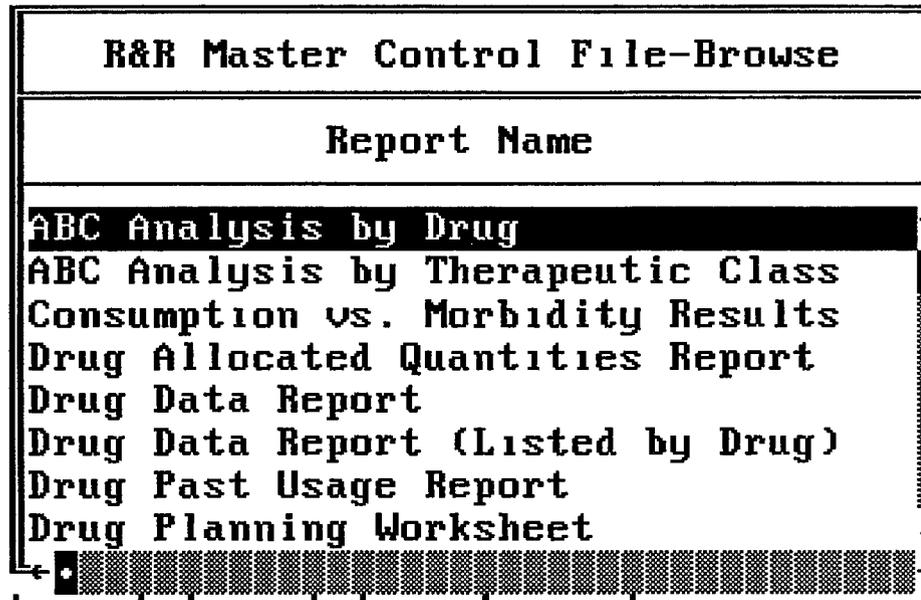


Figure 8-1, R&R Master Control File-Browse

To generate a report, select the desired ESTIMED report from the reports menu on the main screen. From the ESTIMED report generator window press the <ENTER> key to access the R&R master control file browse window. This window contains the list of all ESTIMED standard reports.

Once you've selected the report you wish to have generated, the ESTIMED print job request window will appear. Use this window to set up any special parameters for your report. The following is a description of the various parameters available for you to generate the report.

ESTIMED Print Job Request			
Report Name ... .. :	ABC Analysis by Drug		
Printer/File Dest..... :	D		
File Output Name..... :			
Number of Copies..... :	1		
Begin with page..... :	1	End page	999
Scope. .. .. . :	S		
Low Scope Value..... :			
High Scope Value..... :			
Do You Want a Query... :	S		
Preview .. .. . :	N		

Figure 8-2, ESTIMED Print Job Request

- Report Name** This field displays the name of the report you are generating.
- Printer/File Destination** This option window allows you to select the device to which your output will be directed. If you wish to have the report displayed on your computer screen, choose *Display*. Choosing *ASCII file* will cause your report to be sent to a file on your computer's hard drive. This is useful if you wish to have the report saved to disk, or if you wish to print the file at a different location. ASCII files can be printed out without requiring the original program. Selections 1-8 contain configuration options for various printers in your site.
- During the setup process (see Chapter 2), the system was configured based on the kind of printer you would be using. If you only have one printer in your facility, you can probably assume that Printer #1 has been configured for that printer.
- File Output Name** If you chose *ASCII File* as your destination, enter the file name to which you want to have the report saved.
- Number of Copies** Enter the number of copies of the report you would like the system to print. This means that once the report is generated, the system will print the specified number of copies of the entire report.

**Begin With  
Page/End Page**

Choose the page number you want the system to start printing. For example, if you generated a report with 25 pages, but the information you specifically wanted started on page 5, then enter page 5 in this field. In addition, if the report contains more pages than you wish to print, use the end Page field to specify the last page number to print.

**Scope**

This option allows you to specify a range of records in the database to be included in the report. For example, if you only wish to have the first 25 records in the database included in a particular report, use this option to specify such a scope. The option window gives you three choices, allowing you to indicate whether you want to use the existing scope - <S> As Saved with the original report, <O>-Override with current request, or <E>-Report on Entire Database. If the <O> option is selected, you will be prompted to enter a low and high scope value.

**Do You Want A  
Query?**

This option allows you to customize the report to your own specifications and criteria, in addition to the standard criteria. The option window gives you two choices, allowing you to indicate whether you want to use the criteria established with the reports by choosing <S>- *As Saved with the Original Report*, or build your own query using the *Interactive Query Interface (I)*. The Interactive interface requires a good working knowledge of R&R report writer (see Appendix B for R&R query commands). Once you've selected the desired criteria, ESTIMED will begin to generate the report.

**Preview**

The Preview option window allows you to send a sample of the report to the screen before generating the actual report. It might prove beneficial to preview the report before sending it to the printer. This would allow you to verify that all the information is correct before printing. Depending on the size of your database files and the specific report requested, these reports can become extremely long. Previewing would certainly save time and paper if you make changes to complete the report.

Option *P* causes the report to be displayed in a graphic mode. This mode displays the report in a picture or snapshot format. After viewing the report in this mode, press the <ESC> key and choose either *G* to have the report generated and printed or *C* to return to the reports menu.

Option *D* causes the report to be displayed in the standard R&R interactive view. This view displays the report in the same mode as choosing to send the report to your computer screen. See Section 3.6 for details on the R&R screen commands. Once you have completed the preview, choose *G* to generate the report or *C* to cancel and return to the reports menu.

Option *N* should be selected when you have no need to preview the report before printing.

Once you have completed the print job request form and have accepted your changes, R&R will begin generating the report based on the options chosen.

## **8 3 Sample Reports**

The following pages contain samples of the reports that may be generated using the ESTIMED reports option

ESTIMED CONSUMPTION REPORT  
 Printed 07/24/97 00 49

ABC ANALYSIS BY DRUG

ITEM CODE	GENERIC NAME/DESCRIPTION	VEN WHO	THER CLASS	COST/ISSUE UNIT	TOTAL USED	TOTAL COST	% OF TOTAL	CUM % OF TOTAL
14055	CIBA CORNING - ELECTROLYTE ANALYZER 4754	N		65,748 98000/EACH	667	43,854,569 66000	16 48%	16 48%
13870	COOLER GDM 41C 220V/50HZ	N		7,447 02290/EACH	667	4,967,164 27430	1 87%	18 35%
13905	TRACK BOARD	N	01 3	4,844 29824/EACH	667	3,231,146 92608	1 21%	19 56%
14018	REFURBISHED RIGID DISK DRIVE	N	01 3	2,864 15598/EACH	667	1,910,392 03866	0 72%	20 28%
15406	TDX GAELTEC	N		2,481 50000/EACH	667	1,655,160 50000	0 62%	20 90%
14028	SOLEINOID VALUE, CESIUM 943	N	01 3	1,997 98742/EACH	667	1,332,657 60914	0 50%	21 40%
13705	PIPET WASHER/DRYER	N	04 1	1,959 41971/EACH	667	1,306,932 94657	0 49%	21 89%
13779	POWER CONDITIONER	N		1,848 95913/EACH	667	1,233,255 73971	0 46%	22 36%
13762	QUICK STOP DOUBLE DIAL AUTOPSY SCALE	N	01 1	1,764 86040/EACH	667	1,177,161 88680	0 44%	22 80%
13889	COMPLETE TUBING KIT	N		1,614 99000/EACH	667	1,077,198 33000	0 40%	23 20%
13847	AUTOPSY SAW 230V 50/60HZ	N	01 3	1,575 80200/EACH	667	1,051,059 93400	0 40%	23 60%
04135	PARAPLASTIN 450MG INJ 100ML	N	03	1,263 22882/VIAL	667	842,573 62294	0 32%	23 92%
14017	HARD CARD 105 MB XL II	N	03	1,201 50000/EACH	667	801,400 50000	0 30%	24 22%
13833	PROBE FLEX CABLE	N	01 3	1,160 91822/EACH	667	774,332 45274	0 29%	24 51%
13748	MICRO CO2 APPARATUS	N		1,146 53945/EACH	667	764,741 81315	0 29%	24 80%
13946	MICROPIPET ADJ 200 1000UL	N	01 1	1,073 18970/EACH	667	715,817 52990	0 27%	25 07%
13700	ELECTROPHOREIN APPLICATOR 8 PLACE	N		889 06521/EACH	667	593,006 49507	0 22%	25 29%
12427	SONIC SEALER 100 3756	N	04 1	873 87921/EACH	667	582,877 43307	0 22%	25 51%
12366	MASTER HP STANDARD 4-HOLE #404A	N	01 3	743 63700/EACH	667	496,005 87900	0 19%	25 69%
13757	MICROTOME KNIFE	N	04 1	702 16509/EACH	667	468,344 11503	0 18%	25 87%
13891	SEGMENTATION VALVE TUBING KIT	N	06	623 91067/EACH	667	416,148 41689	0 16%	26 03%
14031	AIR HOSE ASSY 943	N		575 90129/EACH	667	384,126 16043	0 14%	26 17%
13866	KETO STEROID KIT	N		563 22238/EACH	667	375,669 32746	0 14%	26 31%
13894	SAMPLE PROBE TUBING KIT 010745-701	N		524 52667/EACH	667	349,859 28889	0 13%	26 44%
13930	ANTI LEB GAMMA CLONE 5ML	N		522 88577/EACH	667	348,764 80859	0 13%	26 57%
13844	GLASS HONE PLATES	N		519 87882/EACH	667	346,759 17294	0 13%	26 70%
15390	BIPOLAR CAUTERY CORD	N	04 1	499 90960/EACH	667	333,439 70320	0 13%	26 83%
13896	ELECTRODE KIT 478498 000	N	01 3	449 98867/EACH	667	300,142 44289	0 11%	26 94%
14064	DATA SHIELD BATTERY PAK	N	01 1	430 16678/EACH	667	286,921 24226	0 11%	27 05%
04134	PARAPLASTIN 150MG INJ 20ML	N		422 71029/VIAL	667	281,947 76343	0 11%	27 16%
13684	CRESOLPHTHALEIN COMPLETONE	N		415 37406/EACH	667	277,054 49802	0 10%	27 26%
13706	REPLACEMENT WASHER HOLDER	N		415 37406/EACH	667	277,054 49802	0 10%	27 36%
15417	STORAGE CABINET 15 X18 X5	N	01 3	410 40000/EACH	667	273,736 80000	0 10%	27 47%
05072	DIGOXIN 0 05MG/ML LIQ 115 ML	N	03	402 67741/BOTT	667	268,585 83247	0 10%	27 57%
13765	VAC TUBE, PHOTO & CABLE	N	01 3	394 66160/EACH	667	263,239 28720	0 10%	27 67%
13682	AUTOPSY KNIFE	N	04 1	393 49973/EACH	667	262,464 31991	0 10%	27 77%
13887	TCO2 MEMBRANE KIT	N		372 69000/EACH	667	248,584 23000	0 09%	27 86%
04136	KRYOBULIN S TIM3 FACTOR VIII 10ML	N	03	363 50971/VIAL	667	242,460 97657	0 09%	27 95%

160

ESTIMED CONSUMPTION REPORT  
Printed 07/24/97 00 49

ABC ANALYSIS BY THERAPEUTIC CLASS BASED ON LAST PERIOD CONSUMPTION

Ther Class	Description	Last Period Value	% of Total
01	ANAESTHETICS	0 00	0 00/
01 1	GENERAL ANAESTHETICS AND OXYGEN	0 00	0 00%
01 2	LOCAL ANAESTHETICS	0 00	0 00%
01 3	PREOPERATIVE MEDICATION	0 00	0 00/
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI-INFLAMMATO	0 00	0 00%
02 1	NON OPIOIDS	0 00	0 00%
02 2	OPIOID ANALGESICS	0 00	0 00%
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS	0 00	0 00%
04	ANTIDOTES AND OTHER SUBSTANCES USED IN POISONINGS	0 00	0 00%
04 1	GENERAL	0 00	0 00/
04 2	SPECIFIC	0 00	0 00%
05	ANTIEPILEPTICS	0 00	0 00%
06	ANTI-INFECTIVE DRUGS	0 00	0 00%
06 1	ANTHELMINTHIC DRUGS	0 00	0 00%
06 1 1	INTESTINAL ANTHELMINTHICS	0 00	0 00%
06 1 2	SPECIFIC ANTHELMINTHIC	0 00	0 00%
06 1 3	ANTIFILARIALS	0 00	0 00/
06 1 4	ANTISCHISTOSOMALS	0 00	0 00%
06 2	ANTIBACTERIALS	0 00	0 00%
06 2 1	PENICILLINS	0 00	0 00%
06 2 2	OTHER ANTIBACTERIAL DRUGS	0 00	0 00%
06 2 3	ANTILEPROSY DRUGS	0 00	0 00%
06 2 4	ANTITUBERCULOSIS DRUGS	0 00	0 00%
06 3	ANTIFUNGAL DRUGS	0 00	0 00%
06 4	ANTIPROTOZOAL DRUGS	0 00	0 00/
06 4 1	ANTIAMOEBIIC DRUGS AND ANTIGIARDIASIS DRUGS	0 00	0 00/
06 4 2	ANTILEISHMANIASIS DRUGS	0 00	0 00%
06 4 3	ANTIMALARIAL DRUGS	0 00	0 00%
06 4 3 a	FOR CURATIVE TREATMENT	0 00	0 00/
06 4 3 b	FOR PROPHYLAXIS	0 00	0 00%
06 4 4	ANTITRYPANOSOMAL DRUGS	0 00	0 00/
06 4 4 a	AFRICAN TRYPANOSOMIASIS	0 00	0 00%
10 1	ANTIANAEMIA DRUGS	0 00	0 00%
10 2	ANTICOAGULANTS AND ANTAGONISTS	0 00	0 00%
11	BLOOD PRODUCTS AND BLOOD SUBSTITUTES	0 00	0 00%
11 1	PLASMA SUBSTITUTES	0 00	0 00%
11 2	PLASMA FRACTIONS FOR SPECIFIC USES	0 00	0 00%

112

Consumption and Morbidity Methods  
COMPARATIVE DRUG REQUIREMENTS BASED ON BOTH METHODS

THER CLASS	PROD CODE	PRODUCT NAME & DOSAGE	TOTAL ISSUE UNIT NEEDED		TOTAL DRUG COST		% OF TOTAL COST	
			CONSUMPTION METHOD	MORBIDITY METHOD	CONSUMPTION METHOD	MORBIDITY METHOD	CONSUMPTION METHOD	MORBIDITY METHOD
01	ANAESTHETICS 01001	AMPHOTERICINE B 250 MG TAB	400		58,307 24		0 00	0 01   0 00
01 1	GENERAL ANAESTHETICS AND OXYGEN				0 00		0 00	0 00   0 00
01 2	LOCAL ANAESTHETICS				0 00		0 00	0 00   0 00
01 3	PREOPERATIVE MEDICATION				0 00		0 00	0 00   0 00
02	ANALGESICS, ANTIPIRETTICS, NONSTEROIDAL ANTI-INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT 1001	PARACETAMOL 500MG TAB	103	3000	103 00		3,000 00	0 00   0 00
02 1	NON-OPIOIDS				0 00		0 00	0 00   0 00
02 2	OPIOID ANALGESICS				0 00		0 00	0 00   0 00
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS							
	01002	CHLORAMPHENICOL 25MG/ML SUSP	0	0	0 00		0 00	0 00   0 00
	01003	CHLORAMPHENICOL 250 MG TAB	0	0	0 00		0 00	0 00   0 00
	01004	CHLORAMPHENICOL 1 G INJ	0	0	0 00		0 00	0 00   0 00
	01005	ERYTHROMYCIN 250 MG TAB	0	0	0 00		0 00	0 00   0 00
	01007	GENTAMYCIN 80MG/2ML AMP 2 ML	0	0	0 00		0 00	0 00   0 00
	01014	PENICILLIN G BENZATHINE 2 4 MU VIAL	867	1801	1,377 48		2,861 41	0 00   0 00
	01015	PENICILLIN G SODIUM 1 0 MU VIAL	867	1801	2,245 53		4,664 59	0 00   0 00
	01016	CLOXACILLIN SODIUM 250 MG TAB	867	1801	128 66		267 27	0 00   0 00
	01017	CLOXACILLIN SODIUM 25MG/ML SUSP 100 ML	867	1801	2,695 23		5,598 73	0 00   0 00
	01018	CLOXACILLIN SODIUM 500 MG INJ	867	1801	1,184 98		2,461 53	0 00   0 00
	01019	PENICILLIN V 250 MG TAB	867	1801	52 85		109 79	0 00   0 00
	01020	PENICILIN V 25MG/ML SUSP	867	1801	2,030 28		4,217 46	0 00   0 00
	01021	PENICILLIN G PROCAINE 4 8 MU INJ	867	1801	3,413 14		7,090 05	0 00   0 00
	01026	NYSTATIN 5MU TAB	867	1801	134 99		280 42	0 00   0 00
	01029	PENICILLIN G BENZATHINE 1 2 MU INJ	867	1801	559 48		1,162 19	0 00   0 00
	01030	ERYTHROMYCIN ETHYL SUCCINATE 25 MG/ML SU	867	1801	3,845 15		7,987 43	0 00   0 00

ESTIMED CONSUMPTION REPORT  
 Printed 07/24/97 00 50

ALLOCATED QUANTITIES REPORT  
 COMPARISON OF BUDGET/HEALTH UNITS

Ther Class	Description	Quantities Allocated	Total Value
01	ANAESTHETICS		
01001	Amphotericine B 250 mg TAB	145 7681/ TAB 400/ TAB(S)	58,307 24
	FACII		-----
			58,307 24
			=====
	THERAPEUTIC CLASS AS % OF TOTAL COST	1 26%	58,307 24
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI-INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT		
1001	Paracetamol 500MG TAB	1 0000/TAB 30/TAB(S)	30 00
	FACII		73 00
	MD1	73/TAB(S)	500 00
		500/TAB(S)	-----
			603 00
			=====
	THERAPEUTIC CLASS AS % OF TOTAL COST	0 01%	603 00
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS		
01002	Chloramphenicol 25MG/ML SUSP	7 4310/BOTT 390/BOTT(S)	2,898 09
	FACII		-----
			2,898 09
01003	CHLORAMPHENICOL 250 MG TAB	0 1382/TAB 380/TAB(S)	52 52
	FACII		-----
			52 52
01004	CHLORAMPHENICOL 1 G INJ	3 4355/VIAL 375/VIAL(S)	1,288 29
	FACII		-----
			1,288 29
01005	ERYTHROMYCIN 250 MG TAB	0 1492/TAB 650/TAB(S)	96 99
	FACII		-----
			96 99
01007	GENTAMYCIN 80MG/2ML AMP 2 ML	0 2583/AMP 350/AMP(S)	90 40
	FACII		-----
			90 40

114

THER CLASS	PROD CODE	PRODUCT NAME & DOSAGE	BASIC COST/UNIT	RTE	VEN	WHO
01	ANAESTHETICS 01001	AMPHOTERICINE B 250 MG TAB	145 77/	TAB PO	N	
01 1	GENERAL ANAESTHETICS AND OXYGEN		/			
01 2	LOCAL ANAESTHETICS		/			
01 3	PREOPERATIVE MEDICATION		/			
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT 1001	PARACETAMOL 500MG TAB	1 00/	TAB PO	V	
02 1	NON OPIOIDS		/			
02 2	OPIOID ANALGESICS		/			
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS					
	13527	STERILE SCRUB BRUSHES	1 39/	EACH	N	
	04006	BENZTROPINE MESYLATE 1MG/ML AMP	2 98/	AMP	N	
	13768	PIPET TIPS (FOR AUTOMATIC PIPETTORS) (#481060) 10-200UL	0 04/	EACH LAB	N	
	08024	CHLORPOMAZINE 25MG TAB	0 04/	TAB PO	N	
	04048	PHENOBARBITONE 200MG/ML INJ	2 11/	VIAL INJ	N	
	06137	POVIDONE - IODINE SOLUTION 10%	14 00/	LITRE	N	
	08085	PREDNISOLONE 5MG TAB	0 02/	TAB PO	N	
	09027	HUMAN INSULIN (REGULAR) (NOVOLIN-R) 100 U INJ 10ML	24 03/	VIAL INJ	N	
	01019	PENICILLIN V 250 MG TAB	0 06/	TAB TAB	N	
	13234	BLOOD COLLECTION TUBE - RED TOP (VACUTAINER) 10ML	0 33/	EACH	N	
	01003	CHLORAMPHENICOL 250 MG TAB	0 14/	TAB PO	N	
	08088	PROBENECID 500 MG TAB	0 16/	TAB TAB	N	
	12375	EP-21EKTASPEED FILM (POLYSOFT/PERIAPICAL)	65 93/	BOX DEN	N	
	01020	PENICILIN V 25MG/ML SUSP	2 34/	BOTT PO	N	
	08038	DIMENHYDRINATE 50MG TAB	0 02/	TAB PO	N	
	08105	CO TRIMOXAZOLE (SEPTRIN) 400/80 MG TAB	0 06/	TAB PO	N	
	08035	DIAZEPAM 5 MG TAB	0 01/	TAB PO	N	
	15352	TUBE - ENDOTRACHEAL (E TUBE) 3 0	8 05/	EACH SUR	N	
	05031	PHENOBARBITONE ELIXIR 3MG/ML PO	6 88/	LITRE PO	N	

ESTIMED CONSUMPTION REPORT  
 Printed 07/24/97 00 51

DRUG DATA REPORT

ITEM CODE	GENERIC NAME/DESCRIPTION	STRENGTH OR SIZE	PHARMAC FORM	ISSUE UNIT	ISSUE UNIT SIZE	ADMIN ROUTE	DMO CAT	PACK SIZE	PACK COST	COST/ISSUE UNIT	VEN WHO	THER CLASS
16106	2898	9/0	SUT	BOX	12 SUT	SUR	M	100 0 BOX	1 000 00	145 76810	/BOX	N
13898	4 MOLAR KCI FILL SOLUTION	477428 000		EACH		LAB	O	100 0 EACH	1 000 00	124 23000	/EACH	N
13494	4 DIMETHYLAMINO BENZALDEHYDE SOL	500ML		BOTT		LAB	O	100 0 BOTT	1 000 00	145 76810	/BOTT	N
13002	4C PLUS NORMAL	6 ML		KIT		LAB	O	100 0 KIT	1 000 00	145 76810	/KIT	N
13569	4G SUDAN BLACK			TIN	100 G	LAB	O	100 0 TIN	1 000 00	145 76810	/TIN	N
16092	759B	4/0	sut	BOX	12 SUT	SUR	M	100 0 BOX	1 000 00	145 76810	/BOX	N 04 1
16091	766B	3/0	sut	BOX	12 SUT	SUR	M	100 0 BOX	1 000 00	145 76810	/BOX	N 04 1
16107	7799G	10/0	SUT	BOX	12 SUT	SUR	M	100 0 BOX	1 000 00	145 76810	/BOX	N
13036	ABN SERUM	5 ml		EACH		LAB	O	100 0 EACH	1 000 00	145 76810	/EACH	N
13922	ABNORMAL URINE CONTROL			EACH			O	100 0 EACH	1 000 00	0 00000	/EACH	N
13201	ABRASIVE			EACH		LAB	O	100 0 EACH	1 000 00	145 76810	/EACH	N
13670	ABRASIVE POWDER COARSE			EACH		LAB	O	100 0 EACH	1 000 00	145 76810	/EACH	N
13050	ABRASIVE POWDER FINE			BOTT		LAB	O	100 0 BOTT	1 000 00	145 76810	/BOTT	N
13701	ABSORBENT PADS			EACH		LAB	O	100 0 EACH	1 000 00	71 61500	/EACH	N 04 1
13627	ABSORBENT PAPER			EACH		LAB	O	100 0 EACH	1 000 00	145 76810	/EACH	N
12198	ABSORBENT POINTS	#501		EACH		DEN	O	100 0 EACH	1 000 00	145 76810	/EACH	N
15375	ACCESSORY KIT FOR NEBULIZER SCHUCO			EACH		SUR	M	100 0 EACH	1 000 00	10 03375	/EACH	N 03
13756	ACCU FREEZE			EACH		LAB	O	100 0 EACH	1 000 00	297 17586	/EACH	N
13005	ACCUVETTES	II		VIAL	35 ML	LAB	O	100 0 VIAL	1 000 00	145 76810	/VIAL	N
04070	ACEDAPSONE	150 mg/ml	amp	AMP	5 ml	INJ	D	100 0 AMP	1 000 00	145 76810	/AMP	N 04 1
08002	ACETAZOLAMIDE	250 mg	tab	tab		PO	D	100 0 tab	1 000 00	145 76810	/tab	V
13053	ACETIC ACID GLACIAL ANALAR			LITRE		LAB	O	100 0 LITRE	1 000 00	145 76810	/LITRE	N
13573	ACETIC ACID GLACIAL GPR	2 5 L		LITRE		LAB	O	100 0 LITRE	1 000 00	145 76810	/LITRE	N
06074	ACETONE	B P	liq	litre		CPD	D	100 0 litre	1 000 00	145 76810	/litre	N
13288	ACETONE ANALAR			LITRE		LAB	O	100 0 LITRE	1 000 00	145 76810	/LITRE	N
05079	ACETYLCYSTEINE SOLUTION	4ML		EACH		D	D	100 0 EACH	1 000 00	0 00000	/EACH	N
04137	ACETYLCYSTEINE	200MG/ML	INJ	VIAL	4ML	D	D	100 0 VIAL	1 000 00	5 45984	/VIAL	N
08003	ACETYLSALICYLIC ACID	300MG	TAB	TAB	1000 TAB	PO	D	100 0 TAB	1 000 00	0 02093	/TAB	N 03
12156	ACRYLIC MATERIAL FOR TEMP CROWN			each		DEN	O	100 0 each	1 000 00	145 76810	/each	N
12131	ACRYLIC TRIMMERS			each		DEN	O	100 0 each	1 000 00	145 76810	/each	N
13170	ACTIN			EACH		LAB	O	100 0 EACH	1 000 00	145 76810	/EACH	N
04133	ACTINOMYCIN	500 MCG	INJ	VIAL	3 ML	INJ	D	100 0 VIAL	1 000 00	39 66515	/VIAL	N

116

DRUG ORDER QUANTITY REPORT  
 LISTING OF LAST QUANTITIES USED

THER CLASS	DESCRIPTION	TOTAL USED LAST YEAR	TOTAL VALUE
01	ANAESTHETICS		
01001	Amphotericine B 250 mg TAB	145 7681/ TAB 667/ TAB(S)	97,227 32
			-----
			97,227 32
			=====
	THERAPEUTIC CLASS AS % OF TOTAL COST	1 57%	97,227 32
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI-INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT		
1001	Paracetamol 500MG TAB	1 0000/TAB 101/TAB(S)	101 00
		MD1 436/TAB(S)	436 00
		/TAB(S)	0 00
			-----
			537 00
			=====
	THERAPEUTIC CLASS AS % OF TOTAL COST	0 01%	537 00
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS		
01002	Chloramphenicol 25MG/ML SUSP	7 4310/BOTT 667/BOTT(S)	4,956 47
			-----
			4,956 47
01003	CHLORAMPHENICOL 250 MG TAB	0 1382/TAB 667/TAB(S)	92 19
			-----
			92 19
01004	CHLORAMPHENICOL 1 G INJ	3 4355/VIAL 667/VIAL(S)	2,291 45
			-----
			2,291 45
01005	ERYTHROMYCIN 250 MG TAB	0 1492/TAB 667/TAB(S)	99 53
			-----
01015	PENICILLIN G SODIUM 1 0 MU VIAL	2 5900/INJ 667/INJ(S)	1,727 53
			-----
			1,727 53
01016	CLOXACILLIN SODIUM 250 MG TAB	0 1484/TAB 667/TAB(S)	98 98

DRUG PLANNING WORKSHEET

THER CLASS	DESCRIPTION		TOTAL USED LAST YEAR	TOTAL VALUE	ESTIMATED REQUIREMENTS	ESTIMATED VALUE
01	ANAESTHETICS					
01001	Amphotericine B 250 mg TAB	FACI	145 7681/ TAB 667/ TAB(S)	97,227 32	TAB(S)	
				97,227 32		
	THERAPEUTIC CLASS AS % OF TOTAL COST		1 57%	97,227 32		
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT					
1001	Paracetamol 500MG TAB	FACI	1 0000/TAB 101/TAB(S)	101 00	TAB(S)	
		MD1	436/TAB(S)	436 00	TAB(S)	
		/TAB(S)		0 00	TAB(S)	
				537 00		
	THERAPEUTIC CLASS AS % OF TOTAL COST		0 01/	537 00		
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS					
01002	Chloramphenicol 25MG/ML SUSP	FACI	7 4310/BOTT 667/BOTT(S)	4,956 47	BOTT(S)	
				4,956 47		
01003	CHLORAMPHENICOL 250 MG TAB	FACI	0 1382/TAB 667/TAB(S)	92 19	TAB(S)	
				92 19		
01004	CHLORAMPHENICOL 1 G INJ	FACI	3 4355/VIAL 667/VIAL(S)	2,291 45	VIAL(S)	
				2,291 45		
01005	ERYTHROMYCIN 250 MG TAB	FACI	0 1492/TAB 667/TAB(S)	99 53	TAB(S)	
				99 53		

118-

REQUESTED QUANTITIES REPORT  
 COMPARISON OF BUDGET/HEALTH UNITS

THE CLASS	DESCRIPTION		QUANTITIES REQUESTED	TOTAL VALUE
01	ANAESTHETICS			
01001	Amphotericine B 250 mg TAB	FACII	145 7681/ TAB 361/ TAB(S)	52,622 28
				----- 52,622 28
	THERAPEUTIC CLASS AS % OF TOTAL COST		1 62%	=====
				52,622 28
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT			
1001	Paracetamol 500MG TAB	FACII	1 0000/TAB 26/TAB(S)	26 00
		MD1	73/TAB(S)	73 00
			350/TAB(S)	350 00
				----- 449 00
	THERAPEUTIC CLASS AS % OF TOTAL COST		0 01%	=====
				449 00
03	ANTIALLERGICS AND DRUGS USED IN ANAPHYLAXIS			
01002	Chloramphenicol 25MG/ML SUSP	FACII	7 4310/BOTT 371/BOTT(S)	2,756 90
				----- 2,756 90
01003	CHLORAMPHENICOL 250 MG TAB	FACII	0 1382/TAB 376/TAB(S)	51 97
				----- 51 97
01004	CHLORAMPHENICOL 1 G INJ	FACII	3 4355/VIAL 376/VIAL(S)	1,291 73
				----- 1,291 73
01005	ERYTHROMYCIN 250 MG TAB	FACII	0 1492/TAB 376/TAB(S)	56 11
				----- 56 11
01007	GENTAMYCIN 80MG/2ML AMP 2 ML	FACII	0 2583/AMP 350/AMP(S)	90 40
				----- 90 40

119-

ESTIMED CONSUMPTION REPORT  
 Printed 07/24/97 00 53

DRUG REQUIREMENTS REPORT BASED ON QUANTITIES ALLOCATED

THE CLASS	DESCRIPTION	ESTIMATED QTY REQUIRED	ISSUE UNIT(I U )	ISSUE UNIT COST	DRUG COST	% OF TOTAL DRUG COST
01	ANAESTHETICS					
01001	Amphotericine B 250 mg TAB	400	TAB	145 7681	58,307 24	0 74%
02	ANALGESICS, ANTIPYRETICS, NONSTEROIDAL ANTI-INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT					
1001	Paracetamol 500MG TAB	103	TAB	1 0000	103 00	0 00%
03	ANTIALLERGENICS AND DRUGS USED IN ANAPHYLAXIS					
01002	Chloramphenicol 25MG/ML SUSP	0	BOTT	7 4310	0 00	0 00%
01003	CHLORAMPHENICOL 250 MG TAB	0	TAB	0 1382	0 00	0 00%
01004	CHLORAMPHENICOL 1 G INJ	0	VIAL	3 4355	0 00	0 00%
01005	ERYTHROMYCIN 250 MG TAB	0	TAB	0 1492	0 00	0 00%
01007	GENTAMYCIN 80MG/2ML AMP 2 ML	0	AMP	0 2583	0 00	0 00%
01014	PENICILLIN G BENZATHINE 2 4 MU VIA	867	VIAL	1 5888	1,377 48	0 02%
01015	PENICILLIN G SODIUM 1 0 MU VIAL	867	INJ	2 5900	2,245 53	0 03%
01016	CLOXACILLIN SODIUM 250 MG TAB	867	TAB	0 1484	128 66	0 00%
01017	CLOXACILLIN SODIUM 25MG/ML SUSP 10	867	BOTT	3 1087	2,695 23	0 03%
01018	CLOXACILLIN SODIUM 500 MG INJ	867	AMP	1 3668	1,184 98	0 01%
01019	PENICILLIN V 250 MG TAB	867	TAB	0 0610	52 85	0 00%
01020	PENICILIN V 25MG/ML SUSP	867	BOTT	2 3417	2,030 28	0 03%
01021	PENICILLIN G PROCAINE 4 8 MU INJ	867	VIAL	3 9367	3,413 14	0 04%
01026	NYSTATIN 5MU TAB	867	TAB	0 1557	134 99	0 00%
01029	PENICILLIN G BENZATHINE 1 2 MU	867	AMP	0 6453	559 48	0 01%
01030	ERYTHROMYCIN ETHYL SUCCINATE 25 MG/	867	BOTT	4 4350	3,845 15	0 05%
01035	CEPHALEXIN 25MG/ML SUSP	867	BOTT	5 3756	4,660 61	0 06%
01036	CEPHALEXIN 500MG CAP	867	CAP	0 6208	538 26	0 01%
01037	CEPHALEXIN 250MG TAB	867	TAB	0 2589	224 46	0 00%
01038	CEPHALEXIN 500MG AMP	867	AMP	2 4142	2,093 13	0 03%
01041	PENICILLIN G BENZYL 5 MU INJ	867	VIAL	2 1838	1,893 35	0 02%
01045	CLOXACILLIN 500MG CAP	867	CAP	0 2968	257 34	0 00%
02006	PETHIDINE 50MG TAB	867	TAB	0 2200	190 74	0 00%
02008	PETHIDINE HCL 100MG/ML AMP	867	AMP	1 1410	989 27	0 01%
02013	FENTANYL CITRATE 50MCG/ML AMP 2 ML	867	AMP	3 4619	3,001 46	0 04%
03004	DEXTROSE IN WATER 5/ IV 500 ML	867	VIAL	3 3104	2,870 15	0 04%
03015	DEXTROSE/SOD CHLORIDE 5/0 9% IV 1	867	VIAL	3 8868	3,369 86	0 04%
03016	DEXTROSE IN WATER 5% IV 1000 ML	867	VIAL	4 2775	3,708 63	0 05%
03018	LACTATED RINGERS (HARTMAN'S) 1000	867	BOTT	3 4785	3,015 85	0 04%
03019	DEXTROSE/SOD CHLORIDE 5/0 2% IV 1	867	VIAL	3 8884	3,371 26	0 04%
04022	ERGOMETRINE 500MCG/ML AMP	867	AMP	0 5747	498 23	0 01%
04037	MAGNESIUM SULPHATE 1GM/2ML INJ	867	EACH	1 1322	981 63	0 01%
04048	PHENOBARBITONE 200MG/ML INJ	867	VIAL	2 1134	1,832 27	0 02%
04050	PANCURONIUM BROMIDE 2MG/ML AMP	867	AMP	6 7752	5,874 06	0 07%

DRUG REQUIREMENTS REPORT BASED ON STANDARD TREATMENTS

THER CLASS	DESCRIPTION	ESTIMATED ISSUE QTY REQUIRED,UNIT(I U )	ISSUE UNIT COST	DRUG COST	% OF TOTAL DRUG COST
01	ANAESTHETICS				
01001	Amphotericine B 250 mg TAB	TAB	145 7681	0 00	0 00%
02	ANALGESICS, ANTIPIRETICS, NONSTEROIDAL ANTI-INFLAMMATORY DRUGS, AND DRUGS USED TO TREAT GOUT				
1001	Paracetamol 500MG TAB	3000 TAB	1 0000	3,000 00	0 02%
03	ANTIALLERGENICS AND DRUGS USED IN ANAPHYLAXIS				
01002	Chloramphenicol 25MG/ML SUSP	0 BOTT	7 4310	0 00	0 00%
01003	CHLORAMPHENICOL 250 MG TAB	0 TAB	0 1382	0 00	0 00%
01004	CHLORAMPHENICOL 1 G INJ	0 VIAL	3 4355	0 00	0 00%
01005	ERYTHROMYCIN 250 MG TAB	0 TAB	0 1492	0 00	0 00%
01007	GENTAMYCIN 80MG/2ML AMP 2 ML	0 AMP	0 2583	0 00	0 00%
01014	PENICILLIN G BENZATHINE 2 4 MU VIA	1801 VIAL	1 5888	2,861 41	0 02%
01015	PENICILLIN G SODIUM 1 0 MU VIAL	1801 INJ	2 5900	4,664 59	0 03%
01016	CLOXACILLIN SODIUM 250 MG TAB	1801 TAB	0 1484	267 27	0 00%
01017	CLOXACILLIN SODIUM 25MG/ML SUSP 10	1801 BOTT	3 1087	5,598 73	0 03%
01018	CLOXACILLIN SODIUM 500 MG INJ	1801 AMP	1 3668	2,461 53	0 01%
01019	PENICILLIN V 250 MG TAB	1801 TAB	0 0610	109 79	0 00%
01020	PENICILIN V 25MG/ML SUSP	1801 BOTT	2 3417	4,217 46	0 03%
01021	PENICILLIN G PROCAINE 4 8 MU INJ	1801 VIAL	3 9367	7,090 05	0 04%
01026	NYSTATIN 5MU TAB	1801 TAB	0 1557	280 42	0 00%
01029	PENICILLIN G BENZATHINE 1 2 MU	1801 AMP	0 6453	1,162 19	0 01%
01030	ERYTHROMYCIN ETHYL SUCCINATE 25 MG/	1801 BOTT	4 4350	7,987 43	0 05%
01035	CEPHALEXIN 25MG/ML SUSP	1801 BOTT	5 3756	9,681 38	0 06%
01036	CEPHALEXIN 500MG CAP	1801 CAP	0 6208	1,118 11	0 01%
01037	CEPHALEXIN 250MG TAB	1801 TAB	0 2589	466 26	0 00%
01038	CEPHALEXIN 500MG AMP	1801 AMP	2 4142	4,348 01	0 03%
01041	PENICILLIN G BENZYL 5 MU INJ	1801 VIAL	2 1838	3,933 01	0 02%
01045	CLOXACILLIN 500MG CAP	1801 CAP	0 2968	534 57	0 00%
02006	PETHIDINE 50MG TAB	1801 TAB	0 2200	396 22	0 00%
02008	PETHIDINE HCL 100MG/ML AMP	1801 AMP	1 1410	2,055 00	0 01%
02013	FENTANYL CITRATE 50MCG/ML AMP 2 ML	1801 AMP	3 4619	6,234 86	0 04%
03004	DEXTROSE IN WATER 5% IV 500 ML	1801 VIAL	3 3104	5,962 10	0 04%
03015	DEXTROSE/SOD CHLORIDE 5/0 9% IV 1	1801 VIAL	3 8868	7,000 13	0 04%
03016	DEXTROSE IN WATER 5% IV 1000 ML	1801 VIAL	4 2775	7,703 85	0 05%
03018	LACTATED RINGERS (HARTMAN'S) 1000	1801 BOTT	3 4785	6,264 76	0 04%
04018	DIGOXIN 250MCG/ML AMP	1801 AMP	0 5625	1,013 06	0 01%
04022	ERGOMETRINE 500MCG/ML AMP	1801 AMP	0 5747	1,034 96	0 01%
04037	MAGNESIUM SULPHATE 1GM/2ML INJ	1801 EACH	1 1322	2,039 13	0 01%
04048	PHENOBARBITONE 200MG/ML INJ	1801 VIAL	2 1134	3,806 14	0 02%
04050	PANCURONIUM BROMIDE 2MG/ML AMP	1801 AMP	6 7752	12,202 06	0 07%

HEALTH PROBLEM AND TARGET CASES REPORT

CODE	HEALTH PROBLEM NAME	AGE GROUP	NUMBER OF EPISODES TREATED LAST YEAR	EPISODES TREATED PER 1000 CONSULTATIONS LAST YEAR	NUMBER OF EPISODES EXPECTED THIS YEAR	EPISODES TREATED PER 1000 CONSULTATIONS THIS YEAR
001	CHOLERA	<5 >=5	100 150	25 37	100 150	20 30
002	TYPHOID AND PARATYPHOID FEVERS	<5	150	37	150	30
003	OTHER SALMONELLA INFECTIONS	<5	25	6	25	5
004	SHIGELLOSIS	<5	58	14	58	12
005	OTHER FOOD POISONING (BACTERIA)	>=5	150	37	150	30
006	AMEBIASIS	<5	1,000	246	1,000	200
007	OTHER PROTOZOAL INTESTINAL DIS	>=5	200	49	200	40
008	INTESTINAL INFECTIONS DUE TO O	<5	50	12	50	10
009	ILL-DEFINED INTESTINAL INFECTI	>=5	350	86	350	70
012	OTHER RESPIRATORY TUBERCULOSIS	>=5	35	9	35	7
013	TUBERCULOSIS OF MENINGES AND C	<5	54	13	60	12
015	TUBERCULOSIS OF BONES AND JOIN	<5	36	9	36	7
020	PLAGUE	<5	100	25	500	100
033	WHOOPING COUGH	<5	300	74	300	60
084	MALARIA	<5	1,000	246	1,500	300
9877	Other Respiratory Tuberculosis	<5	300	74	300	60
TR5	drgxwsdf	<5	0	0	37	7
=====						
SUMMARY	ALL AGES		4,058	1,000	5,001	1,000

HEALTH PROBLEM AND TARGET CASES WORKSHEET

CODE	HEALTH PROBLEM NAME	AGE GROUP	EPISODES TREATED PER		NUMBER OF EPISODES EXPECTED THIS YEAR	EPISODES TREATED PER 1000 CONSULTATIONS THIS YEAR
			NUMBER OF EPISODES TREATED LAST YEAR	1000 CONSULTATIONS LAST YEAR		
001	CHOLERA	<5	100	25	_____	_____
		>=5	150	37	_____	_____
002	TYPHOID AND PARATYPHOID FEVERS	<5	150	37	_____	_____
003	OTHER SALMONELLA INFECTIONS	<5	25	6	_____	_____
004	SHIGELLOSIS	<5	58	14	_____	_____
005	OTHER FOOD POISONING (BACTERIA	>=5	150	37	_____	_____
006	AMEBIASIS	<5	1,000	246	_____	_____
007	OTHER PROTOZOAL INTESTINAL DIS	>=5	200	49	_____	_____
008	INTESTINAL INFECTIONS DUE TO O	<5	50	12	_____	_____
009	ILL DEFINED INTESTINAL INFECTI	>=5	350	86	_____	_____
012	OTHER RESPIRATORY TUBERCULOSIS	>=5	35	9	_____	_____
013	TUBERCULOSIS OF MENINGES AND C	<5	54	13	_____	_____
015	TUBERCULOSIS OF BONES AND JOIN	<5	36	9	_____	_____
020	PLAGUE	<5	100	25	_____	_____
033	WHOOPING COUGH	<5	300	74	_____	_____
084	MALARIA	<5	1,000	246	_____	_____
9877	Other Respiratory Tuberculosis	<5	300	74	_____	_____
TR5	drgxwsdf	<5	0	0	_____	_____
=====			=====			
SUMMARY	ALL AGES		4,058	1,000	5,001	1,000

ESTIMED Morbidity Report  
 Printed 07/24/97 00 55

HEALTH PROBLEM DRUG COST REPORT BASED ON STANDARD TREATMENTS

CODE	HEALTH PROBLEM NAME	AGE GROUP	NUMBER OF EPISODES	AVG COST/ ALL EPISODES	TOTAL DRUG COST	/ OF TOTAL DRUG COST	% OF TOTAL EPISODES	RATIO / COST/ % EPISODES
001	CHOLERA	<5 ≥5	100 150	41 82 40 00	4182 45 6000 00	2 13% 3 05%	2 00% 3 00%	1 06 1 02
002	TYPHOID AND PARATYPHOID FEVERS	<5	150	10 00	1500 00	0 76%	3 00%	0 25
003	OTHER SALMONELLA INFECTIONS	<5	25	2 32	58 00	0 03%	0 50%	0 06
004	SHIGELLOSIS	<5	58	0 53	30 45	0 02%	1 16%	0 01
005	OTHER FOOD POISONING (BACTERIA)	≥5	150	58 00	8700 00	4 42%	3 00%	1 48
006	AMEBIASIS	<5	1000	77 00	77000 00	39 16%	20 00%	1 96
007	OTHER PROTOZOAL INTESTINAL DIS	≥5	200	10 00	2000 00	1 02%	4 00/	0 25
008	INTESTINAL INFECTIONS DUE TO O	<5	50	45 00	2250 00	1 14%	1 00/	1 14
009	ILL-DEFINED INTESTINAL INFECTI	≥5	350	225 00	78750 00	40 05%	7 00/	5 72
012	OTHER RESPIRATORY TUBERCULOSIS	≥5	35	10 00	350 00	0 18%	0 70%	0 25
013	TUBERCULOSIS OF MENINGES AND C	<5	60	0 53	31 50	0 02/	1 20%	0 01
015	TUBERCULOSIS OF BONES AND JOIN	<5	36	15 00	540 00	0 27%	0 72%	0 38
020	PLAGUE	<5	500	0 00		0 00%	10 00%	0 00
033	WHOOPING COUGH	<5	300	5 00	1500 00	0 76/	6 00%	0 13
084	MALARIA	<5	1500	0 00		0 00%	29 99%	0 00
9877	Other Respiratory Tuberculosis	<5	300	1 45	435 00	0 22%	6 00/	0 04
TR5	drgxwsdf	<5	37	360 00	13320 00	6 77%	0 74/	9 16
=====								
SUMMARY		ALL AGES	5001		196,647 40	100 00/	100 00/	1 00

124

ESTIMED MORBIDITY REPORT  
 Printed 07/24/97 00 57

HEALTH PROBLEMS LIST & COST SUMMARY (Sorted by Code)

CODE	DESCRIPTION	TOTAL # OF CASES	ESTIMATED COST	% OF TOTAL
001	CHOLERA	250	10,182 45	5 18/
002	TYPHOID AND PARATYPHOID FEVERS	150	1,500 00	0 76%
003	OTHER SALMONELLA INFECTIONS	25	58 00	0 03%
004	SHIGELLOSIS	58	30 45	0 02%
005	OTHER FOOD POISONING (BACTERIA	150	8,700 00	4 42%
006	AMEBIASIS	0	77,000 00	39 16%
007	OTHER PROTOZOAL INTESTINAL DIS	200	2,000 00	1 02%
008	INTESTINAL INFECTIONS DUE TO O	50	2,250 00	1 14%
009	ILL DEFINED INTESTINAL INFECTI	350	78,750 00	40 05%
010	PRIMARY TUBERCULOUS INFECTION	0	0 00	0 00%
011	PULMONARY TUBERCULOSIS	0	0 00	0 00%
012	OTHER RESPIRATORY TUBERCULOSIS	35	350 00	0 18%
013	TUBERCULOSIS OF MENINGES AND C	60	31 50	0 02%
014	TUBERCULOSIS OF INTESTINES, PE	0	0 00	0 00/
015	TUBERCULOSIS OF BONES AND JOIN	36	540 00	0 27%
016	TUBERCULOSIS OF GENITOURINARY	0	0 00	0 00%
017	TUBERCULOSIS OF OTHER ORGANS	0	0 00	0 00%
018	MILIARY TUBERCULOSIS	0	0 00	0 00%
020	PLAGUE	0	0 00	0 00%
021	TULAREMIA	0	0 00	0 00%
022	ANTHRAX	0	0 00	0 00%
023	BRUCELLOSIS	0	0 00	0 00/
024	GLANDERS	0	0 00	0 00%
025	MELIOIDOSIS	0	0 00	0 00/
026	RAT BITE FEVER	0	0 00	0 00%
027	OTHER ZOO NOTIC BACTERIAL DISEA	0	0 00	0 00/
030	LEPROSY	0	0 00	0 00%
031	DISEASES DUE TO OTHER MYCOBACT	0	0 00	0 00%
032	DIPHTHERIA	0	0 00	0 00%
033	WHOOPING COUGH	300	1,500 00	0 76%
034	STREPTOCOCCAL SORE THROAT AND	0	0 00	0 00%
035	ERYSIPELAS	0	0 00	0 00/
036	MENINGOCOCCAL INFECTION	0	0 00	0 00%
037	TETANUS	0	0 00	0 00/
038	SEPTICEMIA	0	0 00	0 00/
039	ACTINOMYCOTIC INFECTIONS	0	0 00	0 00%
040	OTHER BACTERIAL DISEASES	0	0 00	0 00%
041	BACTERIAL INFECTION IN CONDITI	0	0 00	0 00%
042	HUMAN IMMUNODEFICIENCY VIRUS (	0	0 00	0 00%
045	ACUTE POLIOMYELITIS	0	0 00	0 00%
046	SLOW VIRUS INFECTION OF CENTRA	0	0 00	0 00%
047	MENINGITIS DUE TO ENTEROVIRUS	0	0 00	0 00/

125

ESTIMED MORBIDITY REPORT  
 Printed 07/24/97 00 57

STANDARD TREATMENT REPORT

CODE	HEALTH PROBLEM NAME	AGE GROUP	APPROACH # %	PRODUCT, NAME & DOSAGE	ISSUE UNIT(I U )	# I U /DOSE	DOSE/ DAY	DAYS/ EPI	I U /EPI	COST/EPIISODE
001	CHOLERA	<5	1 100%	SETTetracycline 250MG CAP 1 Sodium Chloride 0 5/ SOL 500ML T CU 380A DISP	CAP	1 00	1 0	3	3 00	0 16
					VIAL	5 00	2 0	1	10 00	41 67
					EACH	1 00	1 0	5	5 00	0 00
					-----					
									COST/APPROCH	41 83
		>=5	1 100/	Diazepam 5MG TAB 1	BOTT	1 00	2 0	10	20 00	40 00
									COST/APPROCH	40 00
002	TYPHOID AND PARATYPHOID FEVERS	<5	1 100%	Diazepam 5MG TAB 1	BOTT	1 00	1 0	1	1 00	10 00
									COST/APPROCH	10 00
003	OTHER SALMONELLA INFECTIONS	<5	1 100%	Ampicillin 25MG/ML SUSP 100ML	BOTT	1 00	1 0	2	2 00	2 32
									COST/APPROCH	2 32
004	SHIGELLOSIS	<5	1 100%	SETTetracycline 250MG CAP 1	CAP	2 00	1 0	5	10 00	0 53
									COST/APPROCH	0 53
005	OTHER FOOD POISONING (BACTERIA	>=5	1 100%	Ampicillin 25MG/ML SUSP 100ML	BOTT	5 00	1 0	10	50 00	58 00
									COST/APPROCH	58 00
006	AMEBIASIS	<5	1 100%	Ampicillin 25MG/ML SUSP 100ML	BOTT	5 00	1 0	15	75 00	87 00
									COST/APPROCH	87 00
007	OTHER PROTOZOAL INTESTINAL DIS	>=5	1 100/	Ampicillin 250MG CAP	CAP	2 00	1 0	5	10 00	10 00
									COST/APPROCH	10 00

**MAINTENANCE**

---

Chapter 9 contains the maintenance options that can be used to customize your system environment and can be used to enhance your working environment

---

## 9.0 MAINTENANCE

The maintenance menu contains options that can be used to customize your system environment and enhance your working environment

### 9.1 Defaults

The defaults selection in the maintenance menu allows you to customize specific data entries that will remain constant through all or most of your input and database maintenance requirements. It will be one of the first chores you undertake when setting up ESTIMED and will greatly streamline your efforts.

<b>Country</b>	Entering your country in this field will allow it to be used to identify the system
<b>Institution</b>	Just as with the country listing, the institution for which you are estimating drug usage need only be entered here to identify the system
<b>Date Format</b>	Choose from the following date formats B - British (dd/mm/yy) A - American (mm-dd-yy) I - Italian (dd-mm-yy) F - French (dd/mm/yy) N - ANSI (yy mm dd)
<b>Local Currency</b>	Enter the code for the currency used (e.g., USD for U.S. dollars)
<b>Approved Budget</b>	Entering the total (or "global") budget here affects all records in ESTIMED that automatically compute the figures as they relate to the annual budget. For example, in the consumption method window, the global budget (what you enter here) is displayed at the top and the budget amount (including actual total <i>and</i> the percentage of the global budget) for that budget/facility is automatically calculated and displayed on the right side of the screen.

**List of Files to Backup/Restore**

This field allows you to specify which files should be included when performing the backup or restore feature. File extensions are used to identify the files. For example, if \* DBF \* EXE were entered in this field, the system would backup or restore all files that have the DBF or the EXE extensions. This field should contain the following \* DB\*, \* EXE, \* CNF, \* RP1, \* TXT, \* POP, \* INI, RR\* \* Each extension should be separated by a space

**Reorder Parameters** - The following data fields are used as defaults throughout the system, but can be changed during data entry

**Forecasting Period**

The forecast period corresponds to the number of months to be considered when calculating the average monthly consumption

**Procurement Period**

The procurement period corresponds to the number of months between two orders for the item. Please note this figure is expressed in months

**Safety Stock Level**

This figure corresponds to the amount of monthly supply of a product that must remain on hand. Many facilities are required to keep at least a one-month supply on hand at all times

**Estimated Lead Time**

Lead time is the number of days between the date an item is ordered and the date the order is received

## 9.2 Colors

The colors option allows you to change the program color schemes for your working environment. Each option displays a foreground and background color. Use the left and right arrows to select your foreground colors and the up and down arrows to select your background color

**Graphics**

This option determines the border and line draw colors of your screen. Select the graphics field to change the current color scheme

**Data Fields**

This option allows you to set background and foreground colors for data fields that are displayed on the screen but are not currently being edited

**Enhanced**

The enhanced option allows you to set your colors for fields that are currently selected

**Screen Text** Changing this field affects the way your field definitions are displayed. Any text on your screen not found within a data field will be affected by changes made on this option.

**Exploding Windows** Exploding windows start from a central position and expand outward until the entire window is displayed. Selecting *No* for this option will simply cause each window to appear instantly on the screen. This feature is a cosmetic choice simply based on preferences.

***The system defaults for color setup are***

<b>Graphics</b>	<b>Cyan on Black</b>
<b>Data Fields</b>	<b>Bright Cyan on Black</b>
<b>Enhanced</b>	<b>Yellow on Blue</b>
<b>Screen Text</b>	<b>Bright Red on Black</b>
<b>Exploding Windows</b>	<b>Y</b>




---

Once you have changed the color setup, you must exit the program and restart it for these changes to take effect.

---

### 9.3 Reindex Files

Use this option to have ESTIMED re-index the system index files. ESTIMED uses index files to sort items in a database. Occasionally, as you add and remove files from the system, the index files may become outdated and you may not be able to find new files in the system. Select this option to have the system files re-indexed. This feature should be selected whenever the system has been interrupted, as in the case of a power failure. Additionally, it should be performed on a regular basis (weekly at a minimum) and whenever many processes have been performed in a short period of time. This option should be used whenever problems are experienced with the system.

**Pack and Re-index All Files**

Press <ENTER> here to have all system files re-indexed, or choose a specific file to re-index from the list in the option window. Once you have made your selection, press <ESC> to begin the process. It may take up to several minutes to complete the process depending on the size of your files and the speed of your computer. Once ESTIMED has completed the re-index process, the program will return to the maintenance menu.

## 9.4 Backup Files

When working with any software application, it is absolutely essential to backup the data files on a regular basis. This is the only way you can ensure against data loss in the event of power failure or hardware/software problem. This option allows you to backup all pertinent data and program files to a floppy drive or another location on the hard drive, using the PKZip shareware program. When selected, the system prompts you to choose the correct drive to place the files.

## 9.5 Restore Backup Files

This option allows you to restore files from a backup disk that was created using the Backup option. When selected, the system prompts you to choose the correct drive to restore from (A, B, or Path). Before you select a drive, make sure you have the latest backup diskette in the correct disk drive. This feature will copy all pertinent data and program files from the target location to the hard disk where the ESTIMED program is currently located.

## 9 6 Budget Adjustment

This window allows you to make an adjustment to the total budget for all facilities. Enter the amount (in percentage) that you wish to adjust the overall budget. This number can be used to adjust the budget in either direction (up or down). To do a positive adjustment, simply enter the number (percentage) to increase the overall budget. For a negative adjustment, enter a minus (-), followed by the number.

Total Budget All Facilities	1729206.92
Adjust by what Percentage +/-	0.0

Figure 9-1, Budget Adjustment

## 9.7 Import Data from INVEC-2

This option can be used to import data from the INVEC-2 software system. If using INVEC-2, certain database files can be exported and used in ESTIMED. You will need to know the name and location of your INVEC-2 data files. The following is a description of each option available.




---

This option can only be used if the Export Data option in the INVEC-2 program is first used to create the export file.

---

IMPORTING DATA FROM INVEC 2	
FILES TO IMPORT	
Validation Files	<input checked="" type="checkbox"/>
Products List	<input type="checkbox"/>
Therapeutic Class	<input type="checkbox"/>
Facilities List	<input type="checkbox"/>
File Name (Source)	I_EXPORT
Import from Drive	
Drive:\PATH	

Figure 9-2 Importing Data from INVEC-2

### Validation Files

Enter **Y** if you wish to have the validation files from INVEC-2 imported to your ESTIMED system. Only those files necessary will be added to the system.

### Product List

Enter **Y** if you wish to have the drugs database file imported from INVEC-2. The information will be placed in the product database file. This will allow you to have the same data when using your inventory management system and when estimating quantities to order.

### Therapeutic Class

If you have developed a customized therapeutic class, importing this information from INVEC-2 will save a lot of time.

- Facilities List** Enter Y if you are using ESTIMED to estimate product quantities for the same facilities for which INVEC-2 is being used to manage
- File Name (Source)** Enter the name of the file which contains the data to import This file must be the same file created using the Export option in the INVEC-2 program
- Import from Drive** You will be prompted for the location or source of the file Your options will be A - Local drive A, B -Local drive B, or X - Path on hard drive
- Drive \Path** Enter the drive letter, and path on the disk where the export file can be found

TUTORIAL

## APPENDIX A - TUTORIAL

This chapter is designed to act as a tutorial to the ESTIMED program. The following are step-by-step instructions on performing specific functions in ESTIMED. As you complete each step, it is important that you read each screen thoroughly, and enter the information in the correct field. If you need an explanation of what is required in a specific field, refer to the reference section of this manual (Chapters 5-9) to obtain clarification. Use the *NOTES* portion to list any information pertaining to your own procedures.

## Adding an Item to the Products Database

- 1 Access Files from the Main Menu and select Products
- 2 At the main Product File screen press < Insert >

Enter the following information in the specified field and press < ENTER > after each entry

PRODUCT INFORMATION					
Code	██████████				
Name					
	Strength	Form	Basic Unit Size	Route	DMO
Pack Size =	00		Pack Cost =	000	
			Basic Unit Cost =	0.0000	/
	WHO	VEN		Class	

Figure A-1, Product Information Screen

- 3 Enter a unique code for the product
- 4 Enter the name of the product If the product you are entering is a drug, be sure to use the generic name of the drug
- 5 Enter any additional information about the product For example, if the product is a drug and the drug has another common name, you may use this field to enter the common name for the drug
- 6 Enter the strength of the drug or product
- 7 Enter the form of the product Pressing < ENTER > or the left arrow on this field will give access to a list of choices from the pharmaceutical forms validations file
- 8 Enter the basic unit for this item Pressing < ENTER > will give you access to a list of choices from the issue unit validation file
- 9 Enter the size of the products

- 10 Enter the route of administration for the product Pressing <ENTER> here will give you access to the route of administration validation file
- 11 Enter the class of the product This field gives you access to an option box, select Drug, Medical Supply or Other
- 12 Enter the number of issue units per package
- 13 Enter the cost of this product based on the package size
- 14 Enter the basic unit cost for this product
- 15 Choose the World Health Organization category from the option window, your choices are Main, Complimentary or Other
- 16 Choose an option from the vital option window, your choices are Vital, Essential or Non-essential
- 17 Enter the therapeutic classification for this product Pressing <ENTER> at this field will give access to a list of choices from the therapeutic classes validation file
- 18 Accept your entries (this is done by choosing accept from the Action Option Window)

**Notes:**

## Adding a New Therapeutic Classification

- 1 Access Files from the Main Menu
- 2 Access Therapeutic Class and press <INSERT>

THERAPEUTIC CLASSIFICATION	
Code	<input type="text"/>
Name	<input type="text"/>

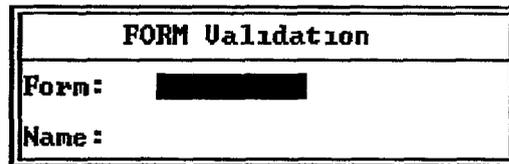
Figure A-2, Therapeutic Classification Screen

- 3 Enter a unique code or the Therapeutic Classification
- 4 Enter the name or description for the class
- 5 Accept your entries (Action Window)

Notes.

## Adding Entries to Your Validation Files

- 1 Access Files from the Main Menu
- 2 Access Validation Files
- 3 Select the desired validation database and from that main screen press **<INSERT>**



The screenshot shows a terminal window titled "FORM Validation". It contains two input fields: "Form:" followed by a blacked-out area, and "Name:" followed by a blank space.

Figure A-3, Validation Database Screen

- 4 Enter the code for the validation file
- 5 Enter the description for the validation file
- 6 Press escape to leave the database

The information entered in these validation files will be used in other modules and should be carefully considered

### Notes

## Adding a Budget/Facility to the Consumption Method Database

- 1 Access Consumption Method from the Main Menu
- 2 At the Consumption Method main screen press <INSERT>.

Enter the following information in the specified fields and press <ENTER> after each entry

Budget or Facility Consumption			
Budget/Facility Code	██████		
Budget/Facility Name			
Budget	0.00	/ of Overall	0.0
Est. Value	0.00	/ of Budget	0.0
Consumption Database Details			

Figure A-4, Budget/Facility Screen

- 3 Enter a unique code for the budget/facility
- 4 Enter the name of the budget/facility
- 5 Enter the total budget figure for this particular facility
- 6 Accept your entries

Once the above steps are completed ESTIMED will automatically go to the Consumption/Estimated Needs Screen

CONSUMPTION/ESTIMATED NEEDS						
Facility/Budget		123	Howard			
Product						
Consumption Data for the last 0 Months (in )						
0	0	0	0	0	0	0
0	0	0	0	0	0	0
Total=		0 Out of Stock		0 (Days) AUG/Month		0
Safety Stock	0 0	Stock Balance		0		0
Est Lead Time	0 0	Procurement Period		0 0		On Order 0
Estimated Qty		0		/ of Consumption		0 0/
Adjusted Qty		0		/ of Estimated		0.0/
B.U Cost		0 0000		Total Value		0 00

Figure A-5 Consumption/Estimated Needs Screen

- 7 At the product field press <ENTER> to select a product from the Product File
- 8 Enter the number of months for which your consumption information has been collected
- 9 Fill in the consumption information in basic units You may enter up to 12 months of consumption data
- 10 Enter the total for the previous year's consumption This field is calculated and should already contain the totals based on the numbers entered in the previous 12 fields
- 11 Enter the number of days that this product was out of stock during the previous consumption period
- 12 Enter your average monthly consumption, this field will already contain an average based on the figures entered in your consumption data
- 13 Enter the safety stock level in months
- 14 Enter your current stock balance, this figure should be in basic units
- 15 Enter the estimated lead time, this figure should be in months
- 16 Enter the procurement period in months

- 17 Enter any quantities that are still on order
- 18 Enter the quantity to order This field should already contain a number as the system will calculate this information for you
- 19 Enter any adjusted quantity
- 20 Accept these entries from the Action Option Window

**Notes**

## Adding a Product to an Existing Budget/Facility

To add a new product to an existing budget/facility

- 1 Select the Consumption Method from the main menu
- 2 Select the Budget/Facility for which you intend to add a new product
- 3 Select Consumption Database from the Budget/Facility window
- 4 From the Product Consumption Screen press <INSERT>

Once the above steps are completed ESTIMED will automatically go to the Consumption/Estimated Needs Screen

CONSUMPTION/ESTIMATED NEEDS					
Facility/Budget		123	Howard		
Product	██████████				
Consumption Data for the last 0 Months (in )					
	0	0	0	0	0
	0	0	0	0	0
Total=	0 Out of Stock		0 (Days) AVG/Month		0
Safety Stock	0 0	Stock Balance		0	
Est Lead Time	0 0	Procurement Period		0 0	On Order 0
Estimated Qty	0		/ of Consumption		0 0/
Adjusted Qty	0		/ of Estimated		0.0/
B.U Cost	0.0000		Total Value		0 00

Figure A-6, Consumption/Estimated Needs Screen

- 5 At the product field press <ENTER> to select a product from the Product File
- 6 Enter the number of months for which your consumption information has been collected
- 7 Fill in the consumption information in basic units You may enter up to 12 months of consumption data

144

- 8 Enter the total for the previous years consumption This field is calculated and should already contain the totals based on the numbers entered in the previous 12 fields
- 9 Enter the number of days that this product was out of stock during the previous consumption period
- 10 Enter your average monthly consumption, this field will already contain an average based on the figures entered in your consumption data
- 11 Enter the safety stock level in months
- 12 Enter your current stock balance, this figure should be in basic units
- 13 Enter the estimated lead time, this figure should be in months
- 14 Enter the procurement period in months
- 15 Enter any quantities that are still on order
- 16 Enter the quantity to order This field should already contain a number as the system will calculate this information for your
- 17 Enter any adjusted quantity
- 18 Accept these entries from the Action Option Window

**Notes**

## Adding a New Health Problem to the Morbidity Method Database

- 1 Access Morbidity Method from the main menu
- 2 From the Morbidity Method main screen press <INSERT>

HEALTH PROBLEMS			
Code	[REDACTED]		
Health Problem Name	[REDACTED]		
Est. # of Episodes	0	# of Episodes	
Cost of Protocol(s)	0.00	Covered by Protocol(s)	0
/ of Budget	0 0/		
Age Groups	Details		

Figure A-7, Health Problem Screen

- 3 Enter a unique code for the health problem
- 4 Enter the health problem name
- 5 Accept these entries from the option window

At this time ESTIMED will take you to the Age Group screen

AGE GROUP			
Problem	9877	Other Respiratory Tuberculosis	
Age Group	[REDACTED]	Episodes - Past	0 Expected
Cost of Protocols	0 00	# of Episodes	0
AUG Cost/Episode	0 00	Covered by Protocols	0
		/ of Budget	0 00
Protocols	Details		# of Protocols 0

Figure A-8 Age Group Screen

- 6 Press <ENTER> to select an age group from the Age Group Validation file
- 7 Enter the number of past episodes for this age group

- 8 Enter the expected number of episodes for the specified age group

At this point the screen will take you to the protocol information screen

- 9 Confirm the number of episodes for this particular protocol This figure should match the number of estimated episodes entered in the previous screen

TREATMENT PROTOCOL			
Problem	9877	Other Respiratory Tuberculosis	
Age Group	<5	Protocol No.	1 150 Episodes = 50/
Drug Code	Description	Basic Unit (Size)	
Number of Dose per Basic Unit	Number of Doses/Day	Number of Treatment Days	
0 00	1.0	1	
Dose Cost	Number of Doses/Episode	Cost/Episode	Cost of All Episodes
0.0000 *	0 00	= 0 00	0 00

Figure A-9 Treatment Protocol Screen

At this point the system will take you to the Treatment Protocol screen

- 10 Enter the drug code for the product that will be used to treat the specific health problem Pressing <ENTER> here will access a browse window that is linked to the products database Highlight the product from the list and press <ENTER>
- 11 Enter the number of dose per basic unit
- 12 Enter the number of doses per day
- 13 Enter the number of treatment days

At this point the system will take you back to the Protocol Number Detail screen If you have additional products to add to the list for treatment, press <INSERT> at this screen Otherwise press <ESCAPE>

Once you have completed all of these steps you may press <ESCAPE> to return to the main Morbidity Method screen

**Notes**

## Adding a Treatment Protocol to an Existing Health Problem

- 1 Access Morbidity Method from the Main Menu
- 2 Select the desired Health Problem and press **<ENTER>**
- 3 Select Age Groups and press **<ENTER>**
- 4 At the custom browse window, select the desired Age Group and press **<ENTER>**
- 5 Select Protocol Details, and at the Treatment Protocol Screen, press **<INSERT>**
- 6 Enter the number of episodes for the new treatment protocol and press **<ENTER>**
- 7 Enter the drug code for the product that will be used to treat the specific health problem Pressing **<ENTER>** here will access a browse window that is linked to the products database Highlight the product from the list and press **<ENTER>**
- 8 Enter the number of dose per basic unit
- 9 Enter the number of doses per day
- 10 Enter the number of treatment days

At this point the system will take you back to the Protocol Number Detail screen If you have additional products to add to the list for treatment, press **<INSERT>** at this screen Otherwise press **<ESCAPE>**



---

This process can only be completed if the total number of existing protocols cover less than 100% of the estimated episodes

---

R&R INTERACTIVE QUERY

## APPENDIX B - R&R INTERACTIVE QUERY

The R&R Interactive Query Mode is only available when you choose I - <I>nteractive Query from the *Want a Special Query?* option window while making your ESTIMED reports specification choices. By defining a set of rules called a query, you can specify that only certain records will be included in a report. The query you define is used to generate a report containing only those records that meet the query criteria. The query chosen must be defined each time you wish to run a special report.

This section explains how to use the Interactive Query mode to select the composite records that will be included in a report. With this command, you can define a set of selection rules called a query. When you generate the report, R&R will include only those records that meet the selection criteria. For example, the sample query below consists of two selection rules telling R&R to select all items in the Products database with a dosage form of tablets.

Include all records where (FORM is equal to "tab")

The first section of this appendix explains the structure of queries. The next two sections cover the Query commands.

- Edit, and
- Reset

The final section illustrates the use of queries by offering examples of query techniques.

### Query Structure

#### Selection Rules

Each query consists of one or more selection rules, and each selection rule consists of three elements.

- A field from a composite record, a composite record includes all fields in all databases which are used to compile the report.
- A comparison operator such as *equal to*, and
- A comparison value, which can be a field, value, list of values, or range to which the first field is being compared.

To build a rule, you must select or enter elements using the browse menus explained in the next section. For the first element, you select a field. For the second element, you select one of the comparison operators listed in the text box below. For the third element, you specify a comparison value.

### **Fields**

You begin to build a query rule by selecting a field from the browse menu that displays. After you've chosen to use the Interactive mode while generating your report, this menu contains all the fields from the databases used in your report. It also contains many calculated and total fields created in R&R. See the section in this appendix on query techniques for more information on calculated and total field queries.

### Comparison Operators

Below is a list of the comparison operators provided by R&R. Note that these comparisons are case insensitive

<u>Operator</u>	<u>Field Is</u>
equal to	Equal to entered value or selected field's value
not equal to	Not equal to entered value or selected field's value
greater than	Greater than entered value or selected field's value
greater than or equal to	Greater than or equal to entered value or selected field's value
less than	Less than entered value or selected field's value
less than or equal to	Less than or equal to entered value or selected field's value
in the range	Between two entered values or equal to either
not in the range	Not between two entered values and equal to neither
in the list	Equal to one of the listed values (up to 10 values)
not in the list	Not equal to any of the listed values (up to 10 values)

### Comparison Values

The final step in creating a query rule is to enter or select a comparison value. Depending on the field and operator you have previously selected, the value can be

- A field of the same data type as the first field you selected,
- A constant value such as a number or character string,

- If you have selected *equal to*, *not equal to*, *in the list*, or *not in the list*, a character string that defines a pattern using \* and/or ? as wildcard characters (see the section in this appendix on query techniques),
- A list of constant values, any of which can be a character string including wildcards (see query techniques), and
- A pair of constant values that define a range

### **Connectors**

Selection rules can be joined with the connectors *and* or *or*. Joining two or more selection rules with *and* means that records must meet the criteria established by all selection rules in order to be included in the report. Joining selection rules with *or* means that records must meet the criteria for at least one of the selection rules in order to be included in the report.

When R&R processes a query, connectors are evaluated left to right. You can change this order of evaluation by using parentheses as described below.

### **Parentheses**

You can use parentheses to indicate the order for evaluating connectors in a query. The connectors within parentheses are evaluated first, from the innermost level of parentheses outward, and from left to right within any set of parentheses. Without parentheses, connectors are evaluated left to right.

For example, in the following query, *or* is evaluated before *and*.

Include all records where (FORM is equal to "TAB") and where ((ISSUE\_UNIT is equal to "BOTT") or where (PACK\_SIZE is equal "1"))

The result is that the report lists only those items that are in the form of tablets and are issued in units of bottles or the package size is 1 bottle.

If the parentheses were eliminated from this query, the resulting report would be different. The report would list all items that are in the form of tablets. But it would also list all items that are in the form of tablets whose package size is 1, regardless of the issue unit.

## Query Commands

### Selecting Choices from Menus

Select choices from menus by pointing to them and press <ENTER> or the right arrow <-> Press <ESC> or the left arrow <-> to return to the previous menu or the query text

After you have made your selections from the first three menus, a selection rule will display on the screen, just below the Control Panel, and the Connector menu will display *Select and* or *or* to join another selection rule, select *done* to complete the query Selecting *done* will return you to the Query menu

### Entering a Data-Entry Choice

To enter or change a constant in the data-entry choice field in the third menu, point to the data-entry choice Then either type a new value and press <ENTER>, or press <F2> to edit the current value To enter a blank value, if the field is empty just press <ENTER> To change an existing value to a blank value, press <F2>, <ESC>, and <ENTER>

Note that character constants, which can be up to 50 characters long, should not be enclosed in quotes For example, enter CA instead of "CA" to match a two-character field containing CA You can enter characters in upper or lower case

Note that when you have selected an equality comparison (*equal to, not equal to, in the list, not in the list*), you must enter the exact value you wish to match For example, TAB matches TAB, not Tablets For approximate matching, use wildcards as described in the section on query techniques later in this appendix

### Entering Values in a List

If you are entering a list of data-entry choices, the rules above apply, but several additional keys are active You can press <ENTER> or <↓> to enter a value and move down in the list Pressing <↑> will enter a value and move you up in the list To delete a list entry, point to it and press <Del> A list can contain up to ten entries To enter a blank value, you must press <F2> before you press <ENTER>, since pressing <ENTER> by itself ends the list

### **Entering Values to Define a Range**

To enter two values that define a range, enter the first value, press <ENTER> to move to the next line, enter the second value, and press <ENTER> again. Neither value can be blank.

### **Joining Another Selection Rule**

To add another selection rule to one you have already created, select *and* or *or* from the Connector menu and continue to define another selection rule.

### **Inserting Parentheses**

Parentheses can be inserted in the appropriate positions as you build your query. You can type a left parenthesis while selecting a field from the first menu and a right parenthesis while selecting a connector from the Connector menu. In addition, parentheses can be inserted in an existing query by pointing to the appropriate place and typing them.

### **Completing a Query**

When you have defined all the selection rules you want to use in a query, select *done* from the Connector menu. You will be returned to the Query menu, where you can select *Go* to complete the interactive mode process, and have ESTIMED generate your report.

### **Editing a Query**

When a completed query is displayed on the screen, you can edit it by selecting *Edit* from the Query menu. Point to the selection rule, connector, or parenthesis you want to change by using the keys listed below.

<u>Key</u>	<u>Points to</u>
→	Next rule, connector, or parenthesis to the right
←	Next rule, connector, or parenthesis to the left
Home	First rule or parenthesis
End	Last rule, connector, or parenthesis

After you have pointed to part of a query, you can insert, append, or delete selection rules, connectors, and parentheses. To display the query menus described above, you can press <F2> or press <ENTER>. Select or enter values as the appropriate windows display.

### Inserting in a Query

To insert a new selection rule and connector before the one you have highlighted, press <Ins> and select the appropriate choices from the menus that display. Before you have made your choices, R&R displays ( ) to represent a blank selection rule and to represent a blank connector. For example:

Include all records where ( ) (NUMTREAT is greater than "0")

To insert a parenthesis, point to the place you want to insert it and type (or). Do not press <Ins>.

If you do not complete both the new selection rule and its connector, R&R deletes the blank parts when you press <ESC>. This feature prevents you from saving an incomplete query.

### Appending a Selection Rule

To add a selection rule at the end of a query, press <End> followed by <->. Then select a connector from the Connector menu. Continue the query by defining the next selection rule.

### Deleting Parts of a Query

To delete part of a query, point to it and press <Del> to delete the highlighted part or <BKSP> to delete the previous part. R&R displays ( ) in place of a deleted rule and in place of a deleted connector. Whenever you have deleted a rule and an adjacent connector, R&R removes both blank parts from the display.

## Query Techniques

### Summary

In addition to selecting records that match specified database field values, R&R queries can select records that match character or date patterns, total field values, and calculated field values. The sections below explain these query techniques.

### Pattern-Matching

#### Wildcard Characters

A pattern-matching query selects all records where the value in the selected character or date field matches (or doesn't match) a pattern you enter using special characters called wildcard characters. For example, to select all records where the value in the CODE field starts with the 1, you can create the query "Include all records where (INVCODE is equal to "1\*")". The asterisk (\*) in this query is a wildcard character that stands for any group of characters, like the asterisk in the DOS command DIR H\* DBF.

Below is a list of the wildcard characters used to define patterns in R&R queries.

<u>Character</u>	<u>Meaning</u>
?	In a character or memo query, matches any single character in the same position in the field.
*	In a character or memo query, matches any group of characters (including no characters). In a data query, matches any value in that part of the data (e.g. 1/*/90).
@	In a date query, matches any value that corresponds to that part of the system data (e.g. */@/90).

**NOTE WILDCARDS CANNOT BE USED WITH NUMERIC OR LOGICAL FIELDS**

### Using Wildcards in Character Field Queries

If the comparison you have selected is an equality comparison (*equal to, not equal to, in the list, or not in the list*), you can use the wildcard characters \* and ? to select records with character values that match the pattern you have entered. Several examples are given below.

<u>To Include All Records</u>	<u>Enter</u>
Starting with xyz	xyz*
Ending with xyz	*xyz
Starting with, ending with, or containing xyz	*xyz*
Consisting of the letter x followed by any character followed by the letter z	x?z
Containing the letter x followed by any character followed by the letter z	*x?z*

### Using Wildcards in Date Queries

You can use the \* and/or the @ wildcard character to enter special date selection rules. Use \* in place of any part of the date, as in 12/\*/90 meaning "any day in December 1990". Use @ to signify a part of the current DOS date at time of printing, as in @/15/90 meaning "the 15th of this month in 1990". It is useful to think of @ as *this* month, day, or year and \* as *any* month, day, or year.

#### Example

- 1 To select any date in 1990, enter \*/\*/90
- 2 To select any date in June of any year, enter 06/\*/\*
- 3 To select the first day of any month, enter \*/01/\*
- 4 To print a report for all items ordered this month, you would use the following selection rule

(DATEORD is equal to "@/\*/\*")

This rule would include in the report only those items in which the order date field had a value of this month, any day, and any year

- 5 To print a report of all new customers that you have signed up for the month, you would use the following selection rule

(Signup is equal to "@\*/@")

This rule would include in the report only those records in which the Signup field had a value of this month, any day, this year

- 6 To print a report of all customers who signed up in a selected year, you would use the following selection rule

(Signup is equal to "\*/\*/1990")

This rule would include in the report only those records in which the Signup field had a value of any month, any day, in 1990

### **Using Wildcards in Memo Field Queries**

R&R also allows you to use wildcard characters with query equality comparisons (*equal*, *not equal*, *in the list*, and *not in the list*) to search for and select records based on text in a memo field. However, the \* character must be the first and/or last character of the selection value.

For example, to include records that contain text starting with the word "Medical" in the Stock database memo field, enter the selection rule

(DMO is equal to "Medical\*")

Note that memo field queries are based only on the text of the memo field itself, not on any values contained in embedded data fields

### Querying for Wildcard Characters

You can use the backslash (\) escape character with query equality comparisons (*equal, not equal, in the list, and not in the list*) to select character strings that contain either the asterisk (\*) or question mark (?) wildcard characters. Entered before the wildcard character in the data entry field, the backslash tells R&R to treat the wildcard character literally (i.e., not as a pattern indicator).

For example, to match records that have a value in the Name field consisting of a question mark, create the following query:

Include all records where (Name is equal to "\?")

**NOTE** SINCE THE BACKSLASH IS ALSO USED AS A SPECIAL CHARACTER IN QUERY RULES, YOU MUST SELECT CHARACTER STRINGS CONTAINING BACKSLASHES IN THE SAME WAY. FOR EXAMPLE, \\\* WILL MATCH ANY STRING STARTING WITH A BACKSLASH

### Querying on Total Values

#### Total Selection Rules

R&R allows you to select records based on total field values:

- Reports without pre-processed totals can include total-related queries only on grand running sums and counts
- Reports with one or more pre-processed totals can include total-related queries only on pre-processed totals that reset on the highest level (most inclusive) group field for which a pre-processed total has been defined

## **Running vs Pre-Processed Totals**

In order to create effective total field queries, you need to understand the difference between running and pre-processed totals

Any total field you create with the /Field Total Create command is by default a running total, a field whose value is calculated cumulatively as each record contributing to the total is read. While you can create queries using running counts and sums with a "Grand" reset level, these queries may be difficult to formulate since only those records that meet the query will contribute to the total. In addition, since R&R tests the current record against the query before computing the running total for that record, the query will be applied based on the total value as of the previous record. See the section below for an example of a running total query.

Many total fields you create can be modified with the /Field Total Options Processing command to make them pre-processed totals, fields whose final values are calculated before the records in the report are printed. Queries on pre-processed total fields are much easier to formulate, since all records that contribute to the total will be read before the query is applied.

The only restriction on such queries is that they can use only those pre-processed totals that reset at the highest (most inclusive) group level at which a pre-processed total is defined. For example, you cannot query on a pre-processed group total if your report contains a pre-processed grand total (your pre-processed grand total would be invalidated by excluding records based on the pre-processed group total). See the section below for examples of pre-processed total queries.

## **Pre-Processed Total Queries**

In reports that contain pre-processed totals, you can query on any pre-processed total that resets at the highest group level at which a pre-processed total has been defined. You cannot query on any running totals or on any other pre-processed totals in the report.

For example, in an invoice report in which each invoice total is a pre-processed, order number group total, you could create a query that selects only those invoices with totals of \$500 or more. In an order list grouped by customer number and containing a pre-processed, customer number group total, you could create a query that selects only those customers with 10 or more orders. Because of the way in which R&R accumulates pre-processed totals, none of the running totals in these reports would be available for querying. In addition, the queries on the pre-processed order and customer totals would be invalid if either report contained higher level pre-processed totals. An error message will notify you of invalid queries when you try to display or print such a report.

## Running Total Queries

In reports that contain no pre-processed totals, you can query on grand running sums and counts. However, be aware that the total for the current composite record will not have been calculated before the query is applied. Therefore, R&R's decision as to whether to include the record will be based on the total value as of the previous composite record.

For example, when you query on a running count, the count for the current composite record will not have been calculated before the query is applied. In order to use the query to select the first N records, you must specify that the count field value be less than N rather than less than or equal to N.

To select the first three records using the Counter running total field, which counts the Name field, specify the following query rule:

(Counter is less than "3")

Without the query, the report would include the following contributors, sorted by contribution in descending order:

<u>NAME</u>	<u>CONTRIBUTION</u>
Warren	150
Clark	125
Mortimer	120
Smith	100
Jones	50

With the query, the records selected for the report would be:

<u>NAME</u>	<u>CONTRIBUTION</u>	<u>COUNTER</u>
Warren	150	1
Clark	125	2
Mortimer	120	3 ← (value of COUNTER field for this record not calculated until after query is applied)

## Querying on Calculated Fields

### Calculated Field Selection Rules

R&R allows you to select records based on calculated field values *except* those that

- Use the Pageno( ) or Recno( ) function, or
- Use totals that cannot be queried on

### Comparing a Field to an Expression

You can compare a field to an expression by using a calculated field in a query. For example, to define a query that selects all records where the value in the Amount field equals the value of the expression Discount \* Rate, create a calculated field name DiscRate whose expression is Discount \* Rate. Then select DiscRate( ) as the value in the query, as follows

Include all records where (Amount is equal to DiscRate( ))<sup>1</sup>

---

<sup>1</sup>The preceding 14 pages have been adapted from the *R&R Report Writer for dBase and Compatibles* manual, and are reprinted by permission of Concentric Data Systems, Inc., Westboro, MA

## Creating a Sample ESTIMED Query

Once you have accepted your choices in the ESTIMED Reports screen, the system will automatically take you the R&R query building screen. To define a query, select *Edit* from the menu options at the top of the screen. You may then begin to build your selection rules. In the following example, the Health Problem report, will be customized to only include those items for which the expected episode is greater than "0 "

- 1 At the R&R query screen, choose *Edit*. A small window containing a list of all fields in the database of the report will be displayed. Select the field called *NUMTREAT* and press <ENTER>
- 2 The next window that will be displayed will contain a list of options which you may use to make your comparison. Choose *greater than* and press <ENTER>
- 3 The third menu that will appear contains the list of available choices needed to complete your criteria. The first choice is a blank line, type the 0 key and press <ENTER>
- 4 To complete the query, choose *done* from the fourth menu. This will cause you to be returned to the main query menu.

At this point, you may now generate your report by choosing *Go* from the main query menu. ESTIMED will begin processing your query, and either display the results on your screen, or send it to your printer, depending on the options you selected in the ESTIMED Reports Specification screen.

### HELPFUL HINT

As you move through the list of fields in the first browse window, R&R will provide a definition of each field, in the upper left hand corner of your interactive query screen, just below the report name.

**THERAPEUTIC CLASSIFICATIONS**

## APPENDIX C - THERAPEUTIC CLASSIFICATIONS

### AHFS PHARMACOLOGIC CLASSIFICATIONS

- 4 00 Antihistamine Drugs**
- 8 00 Anti-Infective Agents**
  - 8 04 Amebicides
  - 8 08 Anthelmintics
  - 8 12 Antibiotics
    - 8 12 02 Aminoglycosides
    - 8 12 04 Antifungal Antibiotics
    - 8 12 06 Cephalosporins
    - 8 12 07 Miscellaneous B-Lactam Antibiotics
    - 8 12 08 Chloramphenicol
    - 8 12 12 Macrolides
    - 8 12 16 Penicillins
    - 8 12 24 Tetracyclines
    - 8 12 28 Miscellaneous Antibiotics
  - 8 16 Antituberculosis Agents
  - 8 18 Antivirals
  - 8 20 Antimalarial Agents
  - 8 22 Quinolones
  - 8 24 Sulfonamides
  - 8 26 Sulfones
  - 8 28 Antitreponemal Agents\*
  - 8 32 Antitrichomonal Agents\*
  - 8 36 Urinary Anti-Infectives
  - 8 40 Miscellaneous Anti-Infectives
    - Anti-Infective Agents Available from CDC
- 10 00 Antineoplastic Agents**
  - ASHP TAB on Handling Cytotoxic and Hazardous Drugs
- 12 00 Autonomic Drugs**
  - 12 04 Parasympathomimetic (Cholinergic) Agents
  - 12 08 Anticholinergic Agents
    - 12 08 04 Antiparkinsonian Agents
    - 12 08 08 Antimuscarinics/Antispasmodics
  - 12 12 Sympathomimetic (Adrenergic) Agents
  - 12 16 Sympatholytic (Adrenergic Blocking) Agents
  - 12 20 Skeletal Muscle Relaxants
  - 12 92 Miscellaneous Autonomic Drugs
- 16 00 Blood Derivatives**
- 20 00 Blood Formation and Coagulation**
  - 20 04 Antranemia Drugs
    - 20 04 04 Iron Preparations
    - 20 04 08 Liver and Stomach Preparations\*
  - 20 12 Coagulants and Anticoagulants
    - 20 12 04 Anticoagulants
    - 20 12 08 Antiheparin Agents
    - 20 12 12 Coagulants
    - 20 12 16 Hemostatics
  - 20 16 Hematopoietic Agents
  - 20 24 Hemorrhologic Agents
  - 20 40 Thrombolytic Agents
- 24 00 Cardiovascular Drugs**
  - 24 04 Cardiac Drugs
  - 24 06 Antihypertensive Agents
  - 24 08 Hypotensive Agents
  - 24 12 Vasodilating Agents
  - 24 16 Sclerosing Agents
- 28 00 Central Nervous System Agents**
  - 28 04 General Anesthetics\*
  - 28 08 Analgesics and Antipyretics
    - 28 08 04 Nonsteroidal Anti-Inflammatory Agents
    - 28 08 08 Opiate Agonists
    - 28 08 12 Opiate Partial Agonists
    - 28 08 92 Miscellaneous Analgesics and Antipyretics
  - 28 10 Opiate Antagonists
  - 28 12 Anticonvulsants
    - 28 12 04 Barbiturates
    - 28 12 08 Benzodiazepines
    - 28 12 12 Hydantoins
    - 28 12 16 Oxazolindiones
    - 28 12 20 Succinimides
    - 28 12 92 Miscellaneous Anticonvulsants
  - 28 16 Psychotherapeutic Agents
    - 28 16 04 Antidepressants
    - 28 16 08 Tranquilizers
    - 28 16 12 Miscellaneous Psychotherapeutic Agents\*
  - 28 20 Respiratory and Cerebral Stimulants
  - 28 24 Anxiolytics, Sedatives, and Hypnotics
    - 28 24 04 Barbiturates
    - 28 24 08 Benzodiazepines
    - 28 24 92 Miscellaneous Anxiolytics, Sedatives, and Hypnotics

- 28 28 Antimanic Agents
- 32 00 Contraceptives\* (e g , foams, devices)**
- 34 00 Dental Agents\***
- 36 00 Diagnostic Agents**
  - 36 04 Adrenocortical Insufficiency
  - 36 08 Amyloidosis\*
  - 36 12 Blood Volume\*
  - 36 16 Brucellosis\*
  - 36 18 Cardiac Function
  - 36 24 Circulation Time\*
  - 36 26 Diabetes Mellitus\*
  - 36 28 Diphtheria\*
  - 36 30 Drug Hypersensitivity
  - 36 32 Fungi
  - 36 34 Gallbladder Function
  - 36 36 Gastric Function
  - 36 38 Intestinal Absorption
  - 36 40 Kidney Function
  - 36 44 Liver Function
  - 36 48 Lymphogranuloma Venereum\*
  - 36 52 Mumps
  - 36 56 Myasthenia Gravis
  - 36 60 Thyroid Function
  - 36 61 Pancreatic Function
  - 36 62 Phenylketonuria\*
  - 36 64 Pheochromocytoma
  - 36 66 Pituitary Function
  - 36 68 Roentgenography
  - 36 72 Scarlet Fever\*
  - 36 76 Sweating\*
  - 36 80 Trichinosis\*
  - 36 84 Tuberculosis
  - 36 88 Urine and Feces Contents\*
    - 36 88 12 Ketones\*
    - 36 88 20 Occult Blood\*
    - 36 88 24 pH\*
    - 36 88 28 Protein\*
    - 36 88 40 Sugar\*
- 38 00 Disinfectants\* (for agents used on objects other than skin)**
- 40 00 Electrolytic, Caloric, and Water Balance**
  - 40 04 Acidifying Agents
  - 40 08 Alkalinizing Agents
  - 40 10 Ammonia Detoxicants
  - 40 12 Replacement Preparations
  - 40 16 Sodium-Removing Resins\*
  - 40 17 Calcium-Removing Resins
  - 40 18 Potassium-Removing Resins
  - 40 20 Caloric Agents
- 40 24 Salt and Sugar Substitutes\*
- 40 28 Diuretics
  - 40 28 10 Potassium-Sparing Diuretics
- 40 36 Irrigating Solutions
- 40 40 Uricosuric Agents
- 44 00 Enzymes**
- 48 00 Antitussives, Expectorants, and Mucolytic Agents**
  - 48 08 Antitussives
  - 48 16 Expectorants
  - 48 24 Mucolytic Agents
- 52 00 Eye, Ear, Nose, and Throat (EENT) Preparations**
  - 52 04 Anti-Infectives
    - 52 04 04 Antibiotics
    - 52 04 05 Antifungals\*
    - 52 04 06 Antivirals
    - 52 04 08 Sulfonamides
    - 52 04 12 Miscellaneous Anti-Infectives
  - 52 08 Anti-Inflammatory Agents
  - 52 10 Carbonic Anhydrase Inhibitors
  - 52 12 Contact Lens Solutions\*
  - 52 16 Local Anesthetics
  - 52 20 Miotics
  - 52 24 Mydriatics
  - 52 28 Mouthwashes and Gargles
  - 52 32 Vasoconstrictors
  - 52 36 Miscellaneous EENT Drugs
- 56 00 Gastrointestinal Drugs**
  - 56 04 Antacids and Adsorbents
  - 56 08 Antidiarrhea Agents
  - 56 10 Antiflatulents
  - 56 12 Cathartics and Laxatives
  - 56 14 Cholelitholytic Agents
  - 56 16 Digestants
  - 56 20 Emetics
  - 56 22 Antiemetics
  - 56 24 Lipotropic Agents\*
  - 56 40 Miscellaneous GI Drugs
- 60 00 Gold Compounds**
- 64 00 Heavy Metal Antagonists**
- 68 00 Hormones and Synthetic Substitutes**
  - 68 04 Adrenals
  - 68 08 Androgens
  - 68 12 Contraceptives
  - 68 16 Estrogens
  - 68 18 Gonadotropins
  - 68 20 Antidiabetic Agents

- 68 20 08 Insulins
- 68 20 20 Sulfonylureas
- 68 20 92 Miscellaneous Antidiabetic Agents
- 68 24 Parathyroid
- 68 28 Pituitary
- 68 32 Progestins
- 68 34 Other Corpus Luteum Hormones\*
- 68 36 Thyroid and Antithyroid Agents
  - 68 36 04 Thyroid Agents
  - 68 36 08 Antithyroid Agents
- 72 00 Local Anesthetics
- 76 00 Oxytocics
- 78 00 Radioactive Agents\*
- 80 00 Serums, Toxoids, and Vaccines
  - 80 04 Serums
  - 80 08 Toxoids
  - 80 12 Vaccines
    - Immunobiologic Agents Available from CDC
- 84 00 Skin and Mucous Membrane Agents
  - 84 04 Anti-Infectives
    - 84 04 04 Antibiotics
    - 84 04 06 Antivirals
    - 84 04 08 Antifungals
    - 84 04 12 Scabicides and Pediculicides
    - 84 04 16 Miscellaneous Local Anti-Infectives
  - 84 06 Anti-Inflammatory Agents
  - 84 08 Antipruritics and Local Anesthetics
  - 84 12 Astringents\*
  - 84 16 Cell Stimulants and Proliferants
  - 84 20 Detergents
  - 84 24 Emollients, Demulcents, and Protectants
    - 84 24 04 Basic Lotions and Liniments\*
    - 84 24 08 Basic Oils and Other Solvents\*
    - 84 24 12 Basic Ointments and Protectants
    - 84 24 16 Basic Powders and Demulcents\*
  - 84 28 Keratolytic Agents
  - 84 32 Keratoplastic Agents
  - 84 36 Miscellaneous Skin and Mucous Membrane Agents
  - 84 50 Depigmenting and Pigmenting Agents
    - 84 50 04 Depigmenting Agents
    - 84 50 06 Pigmenting Agents
  - 84 80 Sunscreen Agents
- 86 00 Smooth Muscle Relaxants
  - 86 08 Gastrointestinal Smooth Muscle Relaxants\*
  - 86 12 Genitourinary Smooth Muscle Relaxants
  - 86 16 Respiratory Smooth Muscle Relaxants
- 88 00 Vitamins
  - 88 04 Vitamin A
  - 88 08 Vitamin B Complex
  - 88 12 Vitamin C
  - 88 16 Vitamin D
  - 88 20 Vitamin E
  - 88 24 Vitamin K Activity
  - 88 28 Multivitamin Preparations
- 92 00 Unclassified Therapeutic Agents
- 94 00 Devices\*
- 96 00 Pharmaceutical Aids\*

\* Category is currently not in use in the printed version of *AHFS Drug Information 94* ®

## WHO THERAPEUTIC CATEGORIES

- |          |  |      |  |
|----------|--|------|--|
| 1        | Anaesthetics   | 8    | Antineoplastics, immunosuppressives, and drugs used in palliative care |
| 1 1      | General anaesthetics and oxygen  | 8 1  | Immunosuppressive drugs  |
| 1 2      | Local anaesthetics   | 8 2  | Cytotoxic drugs  |
| 1 3      | Preoperative medication and sedation for short-term procedures                               | 8 3  | Hormones and antihormones  |
| 2        | Analgesics, antipyretics, nonsteroidal anti-inflammatory drugs, and drugs used to treat gout | 8 4  | Drugs used in palliative care  |
| 2 1      | Non-opioids  | 9    | Antiparkinsonism drugs   |
| 2 2      | Opioid analgesics  | 10   | Blood, drugs affecting the   |
| 3        | Antiallergics and drugs used in anaphylaxis  | 10 1 | Antianaemia drugs  |
| 4        | Antidotes and other substances used in poisonings  | 10 2 | Drugs affecting coagulation  |
| 4 1      | Non-specific   | 11   | Blood products and plasma substitutes                                  |
| 4 2      | Specific   | 11 1 | Plasma substitutes   |
| 5        | Anticonvulsants  | 11 2 | Plasma fractions for specific uses                                     |
| 6        | Anti-infective drugs   | 12   | Cardiovascular drugs   |
| 6 1      | Anthelmintics  | 12 1 | Antianginal drugs  |
| 6 1 1    | Intestinal anthelmintics   | 12 2 | Antidysrhythmic drugs  |
| 6 1 2    | Antifilarials  | 12 3 | Antihypertensive drugs   |
| 6 1 3    | Antischistosomes   | 12 4 | Cardiac glycosides   |
| 6 2      | Antibacterials   | 12 5 | Drugs used in vascular shock   |
| 6 2 1    | Penicillins  | 12 6 | Antithrombic drugs   |
| 6 2 2    | Other antibacterials   | 13   | Dermatological drugs (topical)   |
| 6 2 3    | Antileprosy drugs  | 13 1 | Antifungal drugs   |
| 6 2 4    | Antituberculosis drugs   | 13 2 | Anti-infective drugs   |
| 6 3      | Antifungal drugs   | 13 3 | Anti-inflammatory and antipruritic drugs                               |
| 6 4      | Antiprotozoal drugs  | 13 4 | Astringent drugs   |
| 6 4 1    | Antiamoebic and anti-giardiasis drugs  | 13 5 | Keratoplastic and keratolytic agents                                   |
| 6 4 2    | Antileishmaniasis drugs  | 13 6 | Scabicides and pediculicides   |
| 6 4 3    | Antimalarial drugs   | 13 7 | Ultraviolet blocking agents  |
| 6 4 3(a) | For curative treatment   | 14   | Diagnostic agents  |
| 6 4 3(b) | For prophylaxis  | 14 1 | Ophthalmic drugs   |
| 6 4 4    | Antitrypanosomal drugs   | 14 2 | Radiocontrast media  |
| 6 4 4(a) | African trypanosomiasis  | 15   | Disinfectants and antiseptics  |
| 6 4 4(b) | American trypanosomiasis   | 15 1 | Antiseptics  |
| 6 5      | Insect repellents  | 15 2 | Disinfectants  |
| 7        | Antimigraine drugs   | 16   | Diuretics  |
| 7 1      | For treatment of acute attack  | 17   | Gastrointestinal drugs   |
| 7 2      | For prophylaxis  |      |  |

- |        |  |      |   |
|--------|--|------|---|
| 17 1   | Antacids and other antilucer drugs                                   | 24 3 | Drugs used for sedation and generalized anxiety disorders           |
| 17 2   | Antiemetic drugs   |      |   |
| 17 3   | Antihaemorrhoidal drugs  | 24 4 | Drugs used for obsessive compulsive disorders and panic attacks     |
| 17 4   | Anti-inflammatory drugs  |      |   |
| 17 5   | Antispasmodic drugs  |      |   |
| 17 6   | Cathartic drugs  | 25   | Drugs acting on the respiratory tract                               |
| 17 7   | Diarrhoea, drugs used in   | 25 1 | Antiasthmatic drugs   |
| 17 7 1 | Oral rehydration   | 25 2 | Antitussives  |
| 17 7 2 | Antidiarrhoeal (symptomatic) drugs                                   |      |   |
| 18     | Hormones, other endocrine drugs and contraceptives                   | 26   | Solutions correcting water, electrolyte, and acid-base disturbances |
| 18 1   | Adrenal hormones and synthetic substitutes                           | 26 1 | Oral rehydration  |
| 18 2   | Androgens  | 26 2 | Parenteral  |
| 18 3   | Contraceptives   | 26 3 | Miscellaneous   |
| 18 3 1 | Hormonal contraceptives  |      |   |
| 18 3 2 | Intrauterine devices   | 27   | Vitamins and minerals   |
| 18 3 3 | Barrier methods  |      |   |
| 18 4   | Estrogens  |      |   |
| 18 5   | Insulins and other antidiabetic agents                               |      |   |
| 18 6   | Ovulation inducers   |      |   |
| 18 7   | Progestogens   |      |   |
| 18 8   | Thyroid hormones and antithyroid drugs                               |      |   |
| 19     | Immunologicals   |      |   |
| 19 1   | Diagnostic agents  |      |   |
| 19 2   | Sera and immunoglobulins   |      |   |
| 19 3   | Vaccines   |      |   |
| 19 3 1 | For universal immunization   |      |   |
| 19 3 2 | For specific individuals   |      |   |
| 20     | Muscle relaxants (peripherally acting) and cholinesterase inhibitors |      |   |
| 21     | Ophthalmological preparations  |      |   |
| 21 1   | Anti-infective agents  |      |   |
| 21 2   | Anti-inflammatory agents   |      |   |
| 21 3   | Local anaesthetics   |      |   |
| 21 4   | Miotics and antiglaucoma drugs                                       |      |   |
| 21 5   | Mydriatics   |      |   |
| 22     | Oxytocics and antioxytocics  |      |   |
| 22 1   | Oxytocics  |      |   |
| 22 2   | Antioxytocics  |      |   |
| 23     | Peritoneal dialysis solution   |      |   |
| 24     | Psychotherapeutic drugs  |      |   |
| 24 1   | Drugs used in psychotic disorders                                    |      |   |
| 24 2   | Drugs used in mood disorders   |      |   |

Source "Essential Drugs WHO Model List revised in December 1995," *WHO Drug Information* Vol 9, No 4, 1995

## Glossary

**ABC Analysis by Drug Report** - a standard Consumption Method Report in which drugs are ranked in order according to the amount of money spent on each drug last year

**ABC Analysis by Therapeutic Class Report** - a standard Consumption Method Report in which drugs are ranked in order of decreasing expenditure

**ABC Value Analysis** - Identifies the relatively small number of items that account for the majority of spent funds. They are categorized into three classes according to the value of their annual usage. Class A items have the highest annual usage, Class B items in the middle, and Class C items account for the lowest annual usage.

**Basic Unit** - The smallest unit in which a drug can be conveniently dispensed or administered to a patient

**Basic Unit/Dose** - The number of basic units which should be taken or administered each time the medication is given

**Basic Units per Counting Unit** - Treatment guidelines are written in terms of basic units, while drugs are generally accounted for and ordered in terms of packages and counting units. For the computer to make the necessary calculations and conversions, the number of basic units in each counting unit must be specified.

**Basic Units/Episode** - The number of basic units for each episode of illness

**Consumption Methods for Estimating Drug Requirements** - Relies on the analysis of past consumption data which come from existing inventory records or from surveys of recent drug consumption.

**Cost Episode** - ESTIMED combines price information from the drug data file to calculate the expected cost for each episode.

**Cost per Counting Unit** - ESTIMED uses the cost per counting unit and the basic units per counting unit to determine the cost per basic unit.

**Counting Unit** - The units in which drugs are accounted for or purchased (e.g., case)

**Data Entry** - The first step in the consumption estimation process, it must begin with determining the list of drugs eligible for order.

**Day/Episode** - The number of days of treatment expected for each episode or each case being treated.

**Defined Daily Dose** - (DDD) based on the average dose of a drug given per 24 hour period for the main indication of the preparation. In ESTIMED, the DDD is expressed in terms of basic units per DDD.

**Dispensing Unit** - The measuring unit that describes how the basic units of a drug are customarily dispensed to the patient.

**Dose/Day** - The number of doses of the medicine given each day.

- Drug Cost per Basic Unit** – The average cost across all facilities of each basic unit of a drug, which can be used by ESTIMED to calculate the cost of treatment
- Drug Cost per Order Unit** – The average amount paid for each order unit of a particular drug, where the average applies to all facilities in the study
- Drug Data File** - one of the fundamental building blocks of computerized pharmacy, its purpose is to code each drug and incorporate all information needed by ESTIMED
- Drug Estimating and Monitoring System** - The predecessor of the ESTIMED software package
- Drug Quantity** – The number of dispensing units of a drug prescribed or dispensed per health problem
- Essential Drug List** – The WHO model list of essential drugs includes the drug codes and other information as found in the Drug Data Report
- Generic Drugs** – Drugs that are named according to their chemical constituents and usually sold off patent
- Generic Equivalents** – Drugs that are identical in chemical constituents, route of delivery, and strength, regardless of their generic or branded names
- Health Problem Code** – a four-digit code in the same format as the drug code number (e g , ## ##) that identifies an individual health problem
- Health Problem Name** – A brief name or description of a specific disease, symptom, or health service need (e g , the diagnoses of "acute bronchitis" or the symptom "headache")
- Health Problem Profile** – Includes such information as the health problem name and frequency of each health problem (symptom, diagnosis, or need for a health service such as parental care)
- Morbidity Methods for Estimating Drug Requirements** - Requires information about the frequency of common health problems, treatment guidelines, and the number of people who will be treated
- Order Planning** - The final step in the consumption-based drug estimation process, it is the step in which the planner uses the analysis of past consumption, budget information, and available inventory information to make an informed decision on the drug order
- Order Unit** – The volume unit in which a drug is customarily ordered or purchased by a facility
- Packaging** - refers to the container (e g , bottle or tube)
- Product Code Number** - A seven-digit number unique to each dosage form of each drug
- Product Code Number** – identifies the product name and dosage
- Product Name and Dosage** – The standard drug product description from the drug data file containing the generic name, strength, and dosage form
- Product Name and Dosage** - To ensure each drug product is correctly identified throughout, each product is described in a concise manner that leaves no room for confusion

**Report Analysis** - The second step in the consumption-based drug estimation process, it involves organizing collected data for analysis by a qualified group of individuals

**Route/Use** - Routes of administration (e g , oral, injection, topical, etc )

**Strength** - Concentration of active ingredient as measured by the number of strength units per each basic unit

**Strength Unit** - The units in which the strength of a particular drug is normally measured

**Therapeutic Class Code Number** - A code number that refers to the therapeutic class to which each drug belongs

**Treatment Guidelines** - Essential for calculating drug requirements with the morbidity method They must be specific regarding dosage, frequency, and duration of treatment

**VEN System** - Procurement and stock-keeping priorities set according to the potential health impact of individual drugs Vital drugs are those that are potentially life-saving Essential drugs are those effective against less severe, but nevertheless significant forms of illness, and Non-essential drugs are the normal usage drugs for minor or self-limited illnesses

## Index

- <BKSP>, 31
- <Ctrl><End>, 34
- <Ctrl><Home>, 34
- <Ctrl><PgDn>, 34
- <Ctrl><PgUp>, 34
- <Del>, 31
- <Del>, 34
- <End>, 28, 31, 34
- <ESC>, 33
- <F1> Key, 33
- <F10>, 29
- <F10> Key, 33
- <F2> Key, 33
- <F3> Key, 33
- <F4> Key, 33
- <F9> Key, 33
- <Home>, 28, 31, 34
- <Ins>, 34
- <PgDn>, 28
- <PgUp>, 28
- ABC, 56
- ABC Analysis, 93
- Accept, 27
- Adding a Classification, 46
- Adding a Health Problem, 77
- Adding a Product, 42
- Adjusted Quantity, 65
- Age Group, 80, 83
- Age Groups, 48, 78
- Allocated Quantities Report, 96
- Approved Budget, 141
- Arrow Keys, 33
- B U Cost, 66
- Backup Files, 15
- Backup/Restore, 142
- Basic unit, 5, 43, 51
  - defined, 5
- Basic Unit (Size), 85
- Basic Unit Cost, 44
- Budget, 61
- Budget Adjustment, 15, 105, 145
- Budget/Facility Code, 61
- Budget/Facility Name, 61
- buffers, 19
- Cancel, 27
- Class, 44
- Code, 43, 78
- Colors, 15, 142
- comparison, 89
- Comparison Option, 15
- CONFIG SYS, 19
- Consumption, 95
- Consumption Data, 58, 64
- Consumption method, 7, 9, 14, 56
  - Summary, 7
- Cost of Protocols, 78, 80
- Cost Per Episode, 84
- Cost Summary, 108
- Country, 141
- custom browse window, 28
- data collection, 3
- Data Fields, 142
- DATABASE FILES, 20
- Date Format, 141
- Defaults, 15, 141
- Deleting a Classification, 46
- Deleting a Health Problem, 77
- Deleting a Product, 42
- DMO, 44
- DOS prompt, 25
- Dosage PerEpisode, 86
- Dose Cost, 86
- Doses Per Day, 86
- Drug code, 5, 85
  - defined, 5
- Drug Cost, 106
  - defined, 5
- Drug Data Report, 97, 98
- Drug Planning Worksheet, 100
- Drug Request Report, 101
- drug requirements, 55, 102, 103
- Drugs, 84
- Editing Fields, 31
- Enhanced, 142
- episodes, 79, 83, 85
- Episodes Past, 80
- Estimated Cost, 89
- Estimated Lead, 142
- Estimated Lead Time, 142
- Estimated Quantity, 89
- Exploding Windows, 143
- Fields, 12
- Files, 5, 12, 19, 41
- Forecast period, 142
- Forecasting Period, 142
- Form, 43

- Form Window, 26
- Generating Reports, 110
- Graphics, 142
- Hardware
  - requirements, 111
- Health problem, 70, 104, 105
- Health Problem Name, 78
- Health Problem Profile, 75
- Import Data from INVEC-2, 16
- Importing Data, 16
- INSTALLATION AND SETUP, 19
- Installation Procedure, 19
- Institution, 141
- Key
  - commands, 1
- Last Period, 89
- Lead Time, 65
  - defined, 142
- Local Currency, 141
- Main Menu, 13, 26
- Monochrome Display, 25
- Morbidity, 95
- Morbidity Method, 9, 14, 69, 72
  - Summary, 7
- Mouse Buttons, 35
- Moving Between Windows, 31
- Name , 43
- Option Window, 27
- order planning, 3
- Order unit
  - defined, 5
- Pack Cost, 44
- Pack Size, 44
- Pharmaceutical Form, 49
- Preview, 112
- Printer, 111, 111
- Problem, 83
- Procurement Period, 142
- Procurement period, 65, 142
- Product, 64
- Product Consumption, 63
- Products, 14, 41
- PROGRAM FILES, 20
- Protocol, 83
- Query, 112
- R&R INTERACTIVE MODE
  - , 167
- R&R Report Writer, 21
- R&R Report Writer , 36
- RAM, 111
- Re-Index Files, 15
- Records, 12
- Reindex Files, 143
- report analysis, 3
- REPORT WRITER FILES, 20
- Reports, 93
- Reports Option, 15
- Restore Backup Files, 15
- Retry, 27
- Route of Administration, 50
  - defined, 5
- RR CNF, 21
- RRSETUP, 21
- Safety Stock, 65
- Safety Stock Level, 142
- Screen Text, 143
- Screens, 26
- scroll, 35
- Searching for records, 29
- Select Order, 29
- Software
  - requirements, 111
- Standard Treatment, 109
- Standard Treatment Report, 109
- Startup, 25
- Stock Balance, 65
- Strength, 5, 43
- Strength unit, 5
  - defined, 5
- System Files, 20
- Therapeutic class, 5, 94
  - defined, 5
- Therapeutic Classes, 58
- Therapeutic Classification, 14, 45
- To Exit, 32
- Treatment Days, 86
- Treatment guidelines, 70
- Validation Files, 14, 47
- VEN, 44
- View Option, 42
- WHO, 6, 44
- Windows, 26