RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS PCC Suite

(BJPC)

QMan User Manual
Volume III: Power User's Guide

Version 2.0
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Preface

The purpose of this manual is to provide information specific to the QMan by reviewing the Power User's Guide.

Table of Contents

1.0   Subqueries: Advanced Tools and Methods

1.1   Changing Contexts

To find clinical attributes, QMan must switch contexts, on the fly, in the middle of his search. The process of changing contexts to evaluate a subset of attributes is called SUBQUERY. All clinical attributes are evaluated with subqueries. Consider the following criteria.

Demographic Attributes	Clinical Attributes
Sex	Weight
Age	DX
Tribe	RX
SSN	Lab Values

In this search, AGE, SEX, WEIGHT, and TRIBE are all attributes of PATIENT. However, DATE, and VALUE are attributes of WEIGHT. In order to carry out the full analysis, you temporarily switch contexts from PATIENT to WEIGHT. If all the WEIGHT criteria are met, then the subquery will evaluate as a "hit." If all the PATIENT criteria are met, then the entire search will be considered a "hit."

1.2   Analytic Methods

1.2.1   Subquery Conditions

QMan's approach to subqueries is relatively straightforward. Whenever he encounters a clinical attribute, he switches contexts. For each patient, he locates all the entries of the clinical attribute and stores them in a temporary holding area. When all the entries for a patient have been collected, QMan examines them one-by-one and applies the set of subquery criteria in the order you specified. If, at any point, an entry fails to meet the criteria, it is tossed out of the holding area. If any entries remain after all values have been checked, the subquery evaluates as a "hit," and QMan goes on to repeat this process for the next patient.

So far, you have learned about three classes of logical conditions which can be used in subqueries:

Boolean: uses the following symbols for number: >, <,   <>, =, '=, etc.

Alphanumeric: contains the following for text: starts/ends with, follows, etc.

Temporal: uses the following for dates: before*, after*, during*, on, etc.

Those marked with a "*" apply to all clinical attributes. The conditions are defined in detail in later chapters.

In fact, there are many other conditions which you can use to build sophisticated subqueries:

Ordinal: last*, first*, highest, lowest

Computed: average, total count*, sum, change, span

Quantitative: at least,* at most*

Relative: relative age*, relative date*

Global: all*, any*, null*, exists, not null*, etc.

Those marked with a "" apply to all clinical attributes. The conditions are defined in detail in later chapters.

The ordinal, computed, and quantitative conditions differ from the rest because they depend on the other entries in the holding area to be evaluated. For example, when you evaluate a weight with a Boolean condition (e.g., WEIGHT>250 lbs.), result is completely independent of the other weights in the holding area. However, when you evaluate a weight with an ordinal condition (e.g., HIGHEST 3 WEIGHTS) the result absolutely depends on what other weights are in the holding area at that moment.

Suppose you must find all weights over 250 lbs. To find weights over 250 lbs, QMan can examine each weight individually and immediately sort out the ones that are over 250 lbs.

Now you want to find the highest three weights. This time, knowing about an individual value is not sufficient to make a decision. QMan must wait until he knows all the values. Only then can QMan find the highest three values and eliminate the others.
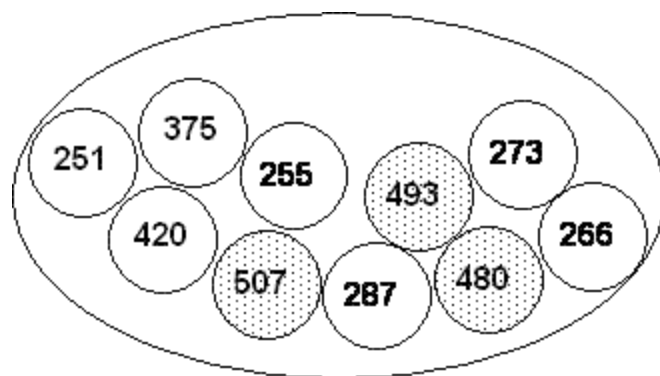
Figure 1-1: Finding the 3 highest weights

1.2.2   Effect of Criteria Order on Results

Whenever you use an ordinal, computed, or quantitative condition in a subquery (i.e., one that depends on the other entries in the holding area for evaluation), the order in which you enter the subquery conditions will affect the results! Until now, you have been able to enter attributes and conditions in any order without affecting the outcome. In subqueries, however, you must take great care. Seemingly insignificant variations in the order in which criteria are applied might, in fact, have a very significant effect on the results. Consider the following example for patient X.

WEIGHT	DATE
60	1985
70	1986
80	1987
90	1988
100	1989

Subquery #1

1. LESS THAN 89 POUNDS
2. LAST 2

In applying the first criterion, we are left with the 60-, 70-, and 80-pound values. Applying the second criterion to these three weights, we are left with the 70- and 80-pound values (2 "hits").

Subquery #2

1. LAST 2
2. LESS THAN 89 POUNDS

In this subquery, the order of the criteria is reversed. By applying the first criterion, we are left with two values, 90 and 100. However, neither of these values meets the second criterion, so there are no "hits."

Here are a few other things you need to know about subqueries. Whenever you use a generic condition (NULL, ALL, etc.), the subquery will automatically terminate and no other conditions can be added. If you enter several conditions and then enter NULL, the effect will be to "invert" the subquery. Suppose you enter VALUE > 100, DATE AFTER 1988, NULL. QMan will locate all patients who did not have a value greater than 100 after 1989.

If you use a computed condition, such as AVERAGE, all of the individual values in the holding area will disappear, and they will be replaced by a single value that has a totally different meaning (e.g., units) than the values which preceded it. Once a value has been reduced to singularity, many of the usual conditions such as AFTER, HIGHEST, LAST, become meaningless and can no longer be accessed in this context. However, the Boolean operators usually remain in effect; for example, AVERAGE WEIGHT LESS THAN 200.

Only the values and the dates of the last clinical attribute entered will be displayed (see "Rule of Last" in Volume I). Moreover, no other elements or intermediate values from the subquery will be displayed.

We will build some subqueries using the special conditions you have just learned about in later chapters.

1.3   Subqueries with Multiple Context Switches

Until now, you have only been allowed to see two subquery attributes: VALUE and DATE. There are, in fact, many other subquery attributes which are useful for research, QA, and management. They fall into three categories:

- Visit-related
- Category-specific
- Multi-level

Visit-Related Attributes

Each entry placed in the holding area during a subquery is linked to a unique VISIT. The attributes of the VISIT become the attributes of the entry; however, yet another context shift is required to evaluate the visit attributes. For example, suppose you want to find all males with weights over 300 lbs. recorded at the Sells Clinic in 1988.

Subject	Query	Subquery	Sub-Subquery
Patient =>	Sex = Male		
	Weight =>	Value > 300	
		Date > 1/1/88	
		Vist =>	Location = Sells

In this example, 2 context switches are required: PATIENT to WEIGHT and WEIGHT to VISIT.

The following visit attributes are available for use in subqueries: after, before, between (dates), clinic, date visit entered into PCC, location of encounter, purpose of visit, provider, relative age , service category, visit type.

Visit attributes are treated just like VALUE and DATE in the subquery. They are accessed directly as is demonstrated in the following examples.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: SEX <Enter>

CHOOSE FROM:
        M       MALE
        F       FEMALE
Value: F <Enter>  FEMALE
Computing Search Efficiency Rating..................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      SEX IS FEMALE     [SER = 1.17]

Attribute of LIVING PATIENTS: SBP <Enter>

SUBQUERY: Analysis of multiple SYSTOLIC BPS

First condition/attribute of "SYSTOLIC BP": OVER 140 <Enter>

Next condition/attribute of "SYSTOLIC BP": AFTER <Enter>
Exact date: 1/1/89 <Enter>  (JAN 01, 1989)

         Subject of subquery: SYSTOLIC BP
         GREATER THAN 140
         AFTER JAN 1,1989

Next condition/attribute of "SYSTOLIC BP": CLINIC <Enter>
     1   CLINIC
     2   CLINICAL IMPRESSIONS
CHOOSE 1-2: 1 <Enter>

Enter CLINIC: DIABETIC <Enter>            06
Enter ANOTHER CLINIC: <Enter>

The following have been selected =>

     DIABETIC

         Subject of subquery: SYSTOLIC BP
         GREATER THAN 140
         AFTER JAN 1,1989
         CLINIC (DIABETIC)
```

```
Next condition/attribute of "SYSTOLIC BP": <Enter>
Computing Search Efficiency Rating................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      SEX IS FEMALE     [SER = 1.17]
         Subject of subquery: SYSTOLIC BP
         GREATER THAN 140
         AFTER JAN 1,1989
         CLINIC (DIABETIC)

Attribute of LIVING PATIENTS:
```

Figure 1-2: Sample query with multiple context switches

1.4   Category-Specific Attributes

Clinical attributes fall into the following categories:

- Contract Health Services
- Dental Services
- Diagnostic Examinations
- Hospitalizations
- Immunizations
- Lab Tests
- Measurements
- Medications
- Patient Education Topics
- Diagnoses or Purposes of Visits
- Procedures
- Providers
- Skin Tests

Within each category, there may be specific attributes. For example, for LAB results, you can search on the DATE and VALUE as well as a flag which indicates that the value fell outside normal or critical limits. For medications you can search on the VALUE (i.e., what was prescribed), DATE, QUANTITY DISPENSED, AND DAYS PRESCRIBED. A complete listing of category-specific attributes is found in the table on the next page.

Data Category	Access to Attribute	Special Output Available	Subquery Attributes
ADA Codes	Indirect	Yes	Operative Site Units
Purpose of Visit	Indirect	Yes	Cause of Injury
(Diagnoses)			Date of Injury
			First/Revisit
			ICD Narrative
			Place of Accident
			Primary/Secondary
			Provider Narrative
			Special Cause of DX
			Stage
Exams	Direct	No	Positive/Negative Result
Hospitalization	NA	Yes	Admission Type
			Admitting Diagnosis
			Admitting Service
			Discharge Date
			Discharge Service
			Discharge Type
			Number of Consults
Immunizations	Direct	No	Contraindicated
			Lot Number
			Reaction
Lab Results	Direct	Yes	Abnormal/Normal
Measurements	Direct	No	None
Medications	Indirect	Yes	Quantity Dispensed
Patient Education	Indirect	No	Level of Understanding
			Provider of Education
Procedures	Indirect	Yes	Infection
			Operating Provider
			Principal Provider
			Reason for Procedure (DX)
			Procedure Date
Skin Tests	Direct	No	Date Read
			Result (Pos/Neg)
Treatments	Indirect	No	Number of Treatments
			Provider of Treatments

1.5 Multi-Level Subqueries

All of the attributes discussed thus far bear an explicit relationship to the entries which are evaluated during a subquery. Now we're going to make one clinical attribute an attribute of another clinical attribute. Why would you want to do that? Actually, many of the queries that you generate, particularly those related to quality assurance, involve linking two clinical attributes. Consider the following query:

Find all cases in which a patient was given a prescription for HYDROCHLOROTHIAZIDE (a diuretic), and determine whether the patient also had a SERUM POTASSIUM test to determine the side effects of the diuretic within 6 months of the prescription. So the attribute of the prescription (hydrochlorothiazide) actually becomes another clinical attribute (serum potassium).

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: RX <Enter>

Enter RX: HCTZ <Enter>
     1    HCTZ   HYDROCHLOROTHIAZIDE 50MG
     2    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 30S
     3    HCTZ   HYDROCHLORTHIAZIDE 25MG TAB         N/F
     4    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 60S
     5    HCTZUD  HYDROCHLOROTHIAZIDE 50MG TAB UD
CHOOSE 1-5: 1 <Enter>  HYDROCHLOROTHIAZIDE 50MG
Enter ANOTHER RX: HCTZ <Enter>
     1    HCTZ   HYDROCHLOROTHIAZIDE 50MG
     2    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 30S
     3    HCTZ   HYDROCHLORTHIAZIDE 25MG TAB         N/F
     4    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 60S
     5    HCTZUD  HYDROCHLOROTHIAZIDE 50MG TAB UD
CHOOSE 1-5: 2 <Enter>  HYDROCHLOROTHIAZIDE 50MG TAB 30S
Enter ANOTHER RX: HCTZ <Enter>
     1    HCTZ   HYDROCHLOROTHIAZIDE 50MG
     2    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 30S
     3    HCTZ   HYDROCHLORTHIAZIDE 25MG TAB         N/F
     4    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 60S
     5    HCTZUD  HYDROCHLOROTHIAZIDE 50MG TAB UD
CHOOSE 1-5: 3 <Enter>  HYDROCHLORTHIAZIDE 25MG TAB
Enter ANOTHER RX: HCTZ <Enter>
     1    HCTZ   HYDROCHLOROTHIAZIDE 50MG
     2    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 30S
     3    HCTZ   HYDROCHLORTHIAZIDE 25MG TAB         N/F
     4    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 60S
     5    HCTZUD  HYDROCHLOROTHIAZIDE 50MG TAB UD
CHOOSE 1-5: 4 <Enter>  HYDROCHLOROTHIAZIDE 50MG TAB 60S
Enter ANOTHER RX: HCTZ <Enter>


     1    HCTZ   HYDROCHLOROTHIAZIDE 50MG
```

```
      2    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 30S
      3    HCTZ   HYDROCHLORTHIAZIDE 25MG TAB          N/F
      4    HCTZ   HYDROCHLOROTHIAZIDE 50MG TAB 60S
      5    HCTZUD  HYDROCHLOROTHIAZIDE 50MG TAB UD
CHOOSE 1-5: 5 <Enter>  HYDROCHLOROTHIAZIDE 50MG TAB UD
Enter ANOTHER RX: <Enter>
The following have been selected =>

     HYDROCHLOROTHIAZIDE 50MG
     HYDROCHLOROTHIAZIDE 50MG TAB 30S
     HYDROCHLORTHIAZIDE 25MG TAB
     HYDROCHLOROTHIAZIDE 50MG TAB 60S
     HYDROCHLOROTHIAZIDE 50MG TAB UD

Want to save this RX group for future use? NO// Y <Enter>  (YES)
Group name: HCTZ <Enter>             TEST


SUBQUERY: Analysis of multiple RXS


First condition/attribute of "RX": POTASS
      1    POTASSIUM,PERITONEAL FLUID
      2    POTASSIUM,SERUM
      3    POTASSIUM,URINE
CHOOSE 1-3: 2 <Enter>
```

Figure 1-3: Sample multi-level subquery

How can a SERUM POTASSIUM be an attribute of a medication??!! As we continue to follow the dialog, the relationship will become clear.

```
Do you want to screen each RX according to the
SERUM POTASSIUM values obtained on the SAME visit? YES// N <Enter>  (NO)

Well then, do you want me to screen each RX according to
SERUM POTASSIUM values obtained on TEMPORALLY RELATED visits? YES//
```

Figure 1-4: Screening according to serum potassium values

In this example, the medication and the lab result were implicitly related by time. Either they were entered on THE SAME VISIT or their VISITS ARE TEMPORALLY related in a way that you defined. In this case, we are not just interested in serum potassium values obtained on the same visit as the prescription. We want to see serum potassium values obtained within 6 months before or 6 months after the prescription for hydrochlorothiazide.

```
Enter the relative starting point of the time frame: -6M <Enter>
Enter the relative ending point of the time frame: +6M <Enter>

SUBQUERY: Analysis of multiple SERUM POTASSIUMS

First condition/attribute of "SERUM POTASSIUM":

     Select one of the following:

          1  FIND ALL LIVING PATIENTS who have a SERUM POTASSIUM recorded
          2  CANCEL this attribute


     What do you want to do: FIND// <Enter>  ALL LIVING PATIENTS who have a
SERUM POTASSIUM recorded

Next condition/attribute of "RX": <Enter>
Computing Search Efficiency Rating.........

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      RX (HYDROCHLOROT/HYDROCHLOROT...)  [SER = 22.96]
         Subject of subquery: RX
         SERUM POTASSIUMS ENTERED FROM 6 MOS BEFORE TO 6 MOS AFTER EA. RX

Attribute of LIVING PATIENTS:
```

Figure 1-5: Sample query by time frame

The jump from medication to lab result is more than a simple context switch. You are actually moving to a DEEPER LEVEL of subquery. This sub-subquery, if you will, has its own separate clinical attribute and its own realm of context. The ability to do sub-subqueries is a complex, powerful, and necessary part of QMan. For instance almost all QA searches live here. QMan allows you to traverse as many levels as you wish.

But beware! Each time you go down one level, the search complexity increases geometrically. By the time you have traversed 3 or 4 levels, you will have outstripped the computer's ability to complete the search in a timely manner, and you will have exceeded your internal PC's ability to fully comprehend what you are trying to accomplish!

2.0   Release Notes

BJPC Version 2.0 Patch 2 contains the following modifications and enhancements. The identification number listed in the parentheses (e.g., CR274) refers to the specific change request (CR) requirement.

2.1   Designated Provider Specialty Management (BDP)

The following modifications apply to the BDP application:

- Do Not Display Flag: Added functionality to allow the site to flag a provider category to not be displayed in the Demographic component of the health summary. This was accomplished by adding a new field to the BDP DESG SPEC PROV CATEGORY file called "DISPLAY ON HEALTH SUMMARY." The option called Add Local Provider Categories was renamed Add/Edit Provider Categories and this field was added to the list of data elements to update. (CR295)

- New Specialty Categories: Added three new categories: HIV Case Manager, HIV Provider, and Public Health Nurse. (CR274 and CR102)

- Populate New Specialty Categories: Added a post-init action that copies the existing HIV Case Manager and HIV Provider from the HIV Management System to this package. (CR274)

2.2   PCC Data Entry (APCD)

The following changes apply to the APCD application.

Family History Modifications

- Modified the FHX mnemonic to be a list manager-based interface that allows the user to add, edit, or delete Family History entries.(CR216 and CR320)

- Modified the entry of family history to stuff the ICD narrative if no provider narrative is entered. (CR 324)

2.2.1   Visit Re-Linker Log

Created a log to track all visits modified through the visit re-linker process. These visits have had one or more V File entries moved or re-linked to another visit. A report lists all visits that were modified by the re-linker process, and options are provided to purge the log and to display a visit by its Internal Entry Number (IEN) to make review of the visits easier. This is a prospective change, meaning that only visits affected by the re-linker after the installation date of this version (Version 2.0) of the IHS PCC Suite will be logged and reported. (CR013)

2.2.2   Visit Delete/Merge Log

Created a log to keep track of all deleted or merged visits. A report lists all deleted or merged visits, and an option to purge the log is provided. The visit delete option was modified to prompt for a reason for the visit deletion; this prompt is optional. This is a prospective change, meaning that only visits deleted or merged after the installation date of this version (Version 2.0) of the IHS PCC Suite will be logged and reported.

These options can be found on the following menu under the PCC Supervisor menu: (CR239)

- VRLR List of Visits Modified by the Visit Re-Linker
- PVRL Purge Visit Re-linker Log
- PVDM List of Visits Deleted/Merged
- PUDM Purge Visit Delete/Merge Log
- VIEN Display a Visit by Visit IEN

2.2.3   3M Present on Admission

Added Present on Admission as a prompt in the 3M coder interface. (CR254)

2.2.4   Personal History (PHX)

Added two new fields: Multiple Birth? and Multiple Birth Type to the PHX mnemonic. (CR244)

2.2.5   Problem List Note Narrative Length

Expanded the Note Narrative to 160 characters. (CR323)

2.2.6   Provider Narrative Length

All mnemonics that prompt for provider narrative will accept up to 160 characters for the provider narrative. This has been increased from 80 characters.

2.2.7   Patient Education (PED): Readiness to Learn

Added Readiness to Learn and re-sequenced the prompts according to the Education workgroup recommendations. (CR242)

2.2.8   Asthma Control (ACON)

Added a new mnemonic, ACON, to update and record a patient's asthma control. (CR240)

2.2.9   POV Stage

Disabled the stage prompt for asthma severity when an asthma diagnosis is entered; this function has been moved to the new Problem List Classification. (CR278)

2.2.10   Problem List Classification Field

Added a new field in the BGP ASTHMA DXS taxonomy, Classification, to be prompted for when an asthma diagnosis is entered. Allowable values are 1, 2, 3, or 4, which stand for 1-Intermittent, 2-Mild Persistent, 3-Moderate Persistent, and 4-Severe Persistent. The following mnemonics were updated: PL, PO, and MP. (CR207, CR276)

2.2.11   Reproductive Factors Mnemonics

FP and RF mnemonics have been restructured to prompt for reproductive history with individual fields rather than a string.

2.3   PCC Health Summary (APCH)

The following changes apply to the APCH application.

2.3.1   Patient Wellness Handout Management

Created a new menu for managing patient wellness handouts (PWHs). The user can now select from 14 components to create a customized PWH.

Menu

- PWH - Generate a Patient Wellness Handout
- DEF - Update Default PWH for a Site
- AAP - Print Asthma Action Plan
- MPWT - Create/Modify Patient Wellness Type
- TPWH - Number of PWHs Given to Patients Report

The following PWH components are available:

ACTIVITY LEVEL	HEIGHT/WEIGHT/BMI
ALLERGIES	HIV SCREENING
ASK ME THREE QUESTIONS	IMMUNIZATIONS DUE
BLOOD PRESSURE	IMMUNIZATIONS RECEIVED
CANCER SCREENING	MEDICATIONS
CHOLESTEROL	PATIENT GOALS

DIABETES CARE	QUALITY OF CARE TRANSPARENCY REPORT CARD

Two standard PWH types are distributed with this version:

- **Adult Regular:** Contains all 14 components

- **Medication Reconciliation:** Contains Medications and Allergies

A PWH log was created. Each time a PWH is generated, the log records the patient to whom the handout was given, the date, the location, and the user who generated the handout. A report has been developed to tally PWH production.

The default wellness handout to be used at a site can be defined by updating that field in the PCC Master control file using option DEF Update Default PWH for a Site.

2.3.2   Health Summary Component (New) for Tallying Patient Wellness Handouts

Created a new component to list the PWHs given to a patient.

2.3.3   Health Summary Component (New) for Patient Wellness Handout

Created a component to display the full PWH for a patient.

2.3.4   Health Summary Component (New) for Meds - Controlled Substances

Created a component to list all prescriptions for controlled substances.

2.3.5   Health Summary Component Modification: Lab

Added the date and time of lab results to both the LAB DATA - MOST RECENT BY DATE and the LABORATORY DATA - MOST RECENT components. (CR171)

2.3.6   Health Summary Component Modification: Medication

Modified the text "on hold" to "active but not yet dispensed."

2.3.7   Health Summary Component Modification: Family History

Modified the format to sort by the new Relationship field and display the new fields, and renamed the component to FAMILY HEALTH HISTORY. The component now displays the following fields: Relationship (to patient), Relation Description, Status (e.g., Living, Deceased, etc.), Diagnosis, Age at Onset; Multiple Birth (Y/N), and Type (e.g., Twin, etc.). If Status is "deceased," Age at Death and Cause of Death are displayed. (CR225, CR325)

2.3.8   Health Summary Component Modification: Reproductive Factors

The previous Reproductive Factors (REPFAC) string display (GPLCSATA) has been changed to the following string, which is a concatenation of the new Reproductive History Component fields with each field separated by a semicolon. The entire string will be displayed for any patient who has *at least one value* in any of the Component fields.

Total number of Pregnancies; Full Term; Premature; Abortions, Induced; Abortions, Spontaneous; Ectopic Pregnancies; Multiple Births; Living Children

2.3.9   Reminder (New): Osteoporosis Screening

Added a reminder for osteoporosis screening in women ages 65 and older; the logic is consistent with the Clinical Reporting System (CRS) performance measure. The screening is due every two years. The reminder is turned off in the default package; to see this reminder on a health summary a site must activate the reminder and attach it to the summary types. (CR237)

2.3.10   Reminder (New): Assessment of Function

Added a reminder for assessment of function as an annual screening for patients 65 and older. Assessment of function includes assessing ability for toileting, bathing, shopping, etc. This data is captured in PCC using the EL mnemonic and it populates the V Elder file. The reminder is turned off in the default package; to see this reminder on a health summary, a site must activate the reminder and attach it to the summary types. (CR188)

2.3.11   Reminder Modification: Pap and Mammogram Reminders

Modified the Pap and Mammogram health maintenance reminders to use the next due date in Women's Health only if it is more current than the due date in Health Summary reminders. (CR257)

2.3.12   Reminder Modification: Alcohol Screening

Added a check for Current Procedural Terminology (CPT) codes using the BGP ALCOHOL SCREENING CPTS taxonomy (99408, 99409, G0396, G0397, and H0049) in both PCC and the Behavioral Health module, making the reminder more consistent with the CRS performance measure. (CR109)

2.3.13   Reminder Modification: Adult MMR 2-DOSE Version

Fixed this reminder to look for CPT codes, diagnosis codes, and procedure codes for the measles, mumps, and rubella (MMR) vaccines. (CR109)

2.3.14   Reminder Modification: Diabetes Screening

Changed category to "General." (CR109)

2.3.15   Reminder Modification: Colorectal Scope/XRAY

Modified logic to reference BGP COLO PROCS and BGP SIG PROCS taxonomies, rather than individual procedure codes. (CR109)

2.3.16   Asthma Action Plan (New Report)

Added the asthma action plan from the asthma register system to the health summary. This menu option can be found under the new PATIENT WELLNESS HANDOUT menu. The action plan has been redesigned according to the Asthma Workgroup specifications and includes new fields added in this PCC version as well as the previous version. (CR281)

2.3.17   Problem List Display

Added classification to the problem list display if it is entered. (CR277)

2.3.18   Supplement Modifications: Asthma

Redesigned the asthma supplement according to the Asthma Workgroup specifications and included new fields added in this PCC version as well as the previous version. (CR289)

2.3.19   Reminders and Best Practice Prompts Text Modifications

Updated the description, logic, display text, and tooltips for all reminders and Best Practice prompts.

2.3.20   Best Practice Prompts Modifications

Updated the logic and text for the following Best Practice prompts:

- ASTHMA: ACTION PLAN
- ASTHMA: ADD/INCREASE INHALED STEROIDS
- ASTHMA: CONTROL CLASSIFICATION
- ASTHMA: FLU SHOT
- ASTHMA: INCREASED RISK FOR EXACERBATION
- ASTHMA: PRIMARY CARE PROVIDER
- ASTHMA: SEVERITY CLASSIFICATION

2.4   PCC Management Reports (APCL)

The following changes apply to the APCL application.

2.4.1   Activity Reports

Modified certain reports to prompt the user for two additional filters, Location of encounter and Clinic, which limit the report to a selected set of locations or clinics. The following reports, listed by discipline group, were updated: (CR205)

- TSPR Time and Patient Services by Provider

- TSSU Time and Patient Services by Service Unit

- PPPR Primary Problem by Provider

- PPLO Primary Problem by Facility

- PPSU Primary Problem by Service Unit

- INPR Number of Individuals seen by Provider

- INSU Number of Individuals seen by Service Unit

- AGE Patient Services by Age and Sex

- TEN Top Ten Primary Diagnoses

- TSCR Time and Services by Provider for Chart Reviews

2.4.2   DEMO PATIENTS Report Filter

All PCC Management reports have been updated to prompt users whether to include a site's Demo/Test patients in their reports.

To use this feature, the site's demo patient search template must be updated to include all of its Demo/Test patients. This option is locked with the security key APCLZ UPDATE DEMO TEMPLATE, which should be assigned to the user or users who manage this list of patients. Choosing the new option, DPST Update the Demo/Test Patient Search Template (under OTH Other PCC Management Reports/Options in the PCC Management Reports menu), adds the Demo/Test patients to the list.

The following prompt now displays when a management report is run:

```
Select one of the following:
     I      Include ALL Patients
     E      Exclude DEMO Patients
     O      Include ONLY DEMO Patients
Demo Patient Inclusion/Exclusion: E//
```

Type **E** to exclude any patient who is on the Demo/Test patient list from the report. Type **I** to include all patients, including the Demo/Test patients, or type **O** to include only the Demo/Test patients. (CR287)

2.4.3   PGEN/VGEN Menus

Updated to allow the user to select one of three menu display options for the Selection, Print, and Sort items: (1) in a predefined order (the original display option); (2) in alphabetical order by item title; or (3) in order by category group. (CR251)

2.4.4   PGEN/VGEN

Added the new Select/Sort/Print options listed below:

- Date of Last Osteoporosis Screen: Added as a PGEN Select, Sort, and Print item because it is a new health maintenance reminder. (CR226)

- Readiness to Learn: Removed as a Health Factor PGEN and VGEN Select, Sort, and Print item, because it is no longer a health factor. (CR242)

- Upcoming Appointments: Added as a PGEN Select and Print item and a VGEN Print and Sort item. When used as a Select item, the user can select the appointment date range and appointment clinics. The report lists only patients who have an appointment in one of those clinics during that date range, and the Print item displays only upcoming or pending appointments. Walk-in and chart requests are excluded from the pending appointment display in the Print item. (CR126)

- Problem List Date of Onset: Added as a PGEN and VGEN Select and Print item. If used as a Select item, the user must enter the beginning and ending date and may specify a particular set of diagnoses. When used as a Print item, the system prints all entries from the problem list with the date of onset, unless this item was also used as a Select item. In this case only the problem list entries matching the selected diagnoses will be printed. (CR072)

- Family History-related: Family History Dx, Family Hx and Relation, Family History Relation, Family Hx Narrative and Family Hx Description (diagnosis, narrative, age at onset, relation) were all added as PGEN and VGEN Select and Print items. (CR Child315)

- Present on Admission (POA): Added as a VGEN Select and Print item. (CR062)

- CPT Modifier: Added as a VGEN Select and Print item.

2.5   QMAN (AMQQ)

The following changes apply to the AMQQ application:

- Added DV as a synonym for IPV.

- Changed attribute text from PRIMARY PROVIDER to PRIMARY CARE PROVIDER

- Added upcoming appointments as a Print item when printing a list of patients in QMan.

- Corrected the diagnosis display for the IHS Prediabetes Register.

- Added Family History as a search option.

- Updated Health Factor selection to allow the user to enter a category to retrieve a list of its health factors.

- Added the ability to create a delimited output of the QMan results by having the output print to a screen, and then taking a screen capture of the delimited output.

- Added the ability to go directly to VGEN or PGEN's print output from QMan by creating a search template in QMan. When template creation is complete, the user is transferred to PGEN or VGEN.

2.6   General Database (AUPN)

- V Asthma: Added field .14 – Asthma Control. (CR206)

- V Lab: Added field 1502 – FINDINGS to the V LAB file. This field will be populated by the Procedure Workflow Tracking System (BTPW) when the software is deployed. (CR239)

- V Patient Education: Added Readiness to Learn as field 1102. (CR242)

- V Radiology: Added field 1502 – FINDINGS to the V RADIOLOGY file. This field will be populated by the Procedure Workflow Tracking System (BTPW) when the software is deployed. (CR239)

- Personal History: Added field .06 – MULTIPLE BIRTH? to the Personal History File. Patient Multiple Birth?: Yes/No/Unknown. (CR244)

- Personal History: Added field .07 – MULTIPLE BIRTH TYPE to the Personal History file. Multiple Birth Type values: Twin, Unspecified (TU); Identical Twin (IT); Fraternal Twin (FT); Triplet (TR); Other Multiple (OTH). (CR244)

- Problem: Expanded Note narrative to 160 characters. (CR323)

- Provider Narrative: Expanded narrative to 160 characters. (CR258)

- FAMILY HISTORY FAMILY MEMBERS: Created new file with the following fields: (CR 199/CR 322)

.01	RELATIONSHIP
.02	PATIENT
.03	RELATION DESCRIPTION

.04	STATUS
.05	AGE AT DEATH
.06	CAUSE OF DEATH
.07	MULTIPLE BIRTH
.08	MULTIPLE BIRTH TYPE

- FAMILY HISTORY: Modified the existing file (CR 199/CR 322):
  - Moved the Status field to the new FAMILY HISTORY FAMILY MEMBER file.
  - Added an asterisk (*) in front of the STATUS field to alert users that it will be going away.
  - Added field .09, which is a pointer to the Family History Family Member file.
  - Inactivated field .07 – Relationship.
  - Added new MULTIPLE BIRTH and MULTIPLE BIRTH TYPE fields. (CR199)
  - Added CAUSE OF DEATH field, which is displayed if the STATUS field is DECEASED. (CR199)
  - Added new AGE AT ONSET and AGE AT DEATH fields with the following choices:

In Infancy	At age 40-49
Before age 20	At age 50-59
At age 20-29	60 and older
At age 30-39	Age Unknown

  - Inactivated the numeric Diagnosis Onset Age field.
  - Changed field .01 to allow only ICD Diagnosis codes V16*; V17*; V18*; and V19*. (CR245)
- REPRODUCTIVE FACTORS: Implemented requested changes to Reproductive Factors fields.
  - Added and/or activated the following new fields: Full Term (previous request); Premature Births (previous request for Preterm Births); Ectopic Pregnancies; Multiple Births.
  - Inactivated Parity and Abortions/Miscarriages/Ectopic Pregnancies fields.
- V Telehealth: Created new file with the following fields:

  | .01 | Primary Modality |
  | .02 | Patient Name |

.03	Visit
.04	Originating Date/Time
.05	Service Date/Time
.06	Secondary Modality
.07	Case ID
.08	Originating Provider
.09	Requesting Provider
.11	Service Delivery
.12	Originating Visit
.13	Status Field
.14	Duration
1101	Comments
1102	Link To Case

2.6.1   Table Changes

- PCC RELATIONSHIPS: Created new table for Family History.

- TELEHEALTH: Created new tables for Modality and Service Category.

- EXAM: Inactivated the following exam codes: (CR241)

    2.7 23 - Audiometric Screening
    2.8 08 - Heart Exam
    2.9 05 - Neck Exam

- HEALTH FACTORS: Modified the Health Factors file to display the category when a lookup is performed on the file, and to allow the user to type the category name to retrieve a list of health factors to choose from. (CR255, CR256, CR217)

Changed the name of the following Health Factors: (CR234)

Old Name	New Name
ASTHMA TRIGGER-AIR POLLUTANTS	AIR POLLUTANTS
ASTHMA TRIGGER-ANIMAL	ANIMAL
ASTHMA TRIGGER-COCKROACHES	COCKROACHES
ASTHMA TRIGGER-DUST MITES	DUST MITES
ASTHMA TRIGGER-EXERCISE	EXERCISE
ASTHMA TRIGGER-MOLD	MOLD

Old Name	New Name
ASTHMA TRIGGER-POLLEN	POLLEN
ASTHMA TRIGGER-TOBACCO SMOKE	TOBACCO SMOKE
BARRIERS TO LEARN-BLIND	BLIND
BARRIERS TO LEARN-DEAF	DEAF
BARRIERS TO LEARN-DOESN'T READ ENGLISH	DOESN'T READ ENGLISH
BARRIERS-FINE MOTOR SKILLS DEFICIT	FINE MOTOR SKILLS DEFICIT
BARRIERS TO LEARN-HARD OF HEARING	HARD OF HEARING
BARRIERS TO LEARNING-INTERPRETER NEEDED	INTERPRETER NEEDED
BARRIERS TO LEARNING-NO BARRIERS	NO BARRIERS
BARRIERS TO LEARNING-VALUES/BELIEFS	VALUES/BELIEFS
BARRIERS TO LEARN-VISUALLY IMPAIRED	VISUALLY IMPAIRED
SELF MONITORING BLOOD GLUCOSE-NO	NO
SELF MONITORING BLOOD GLUCOSE-REFUSED	REFUSED
SELF MONITORING BLOOKD GLUCOSE-YES	YES
LEARNING PREFERENCE-DO/PRACTICE	DO/PRACTICE
LEARNING PREFERENCE-READ	READ
LEARNING PREFERENCE-SMALL GROUP	SMALL GROUP
LEARNING PREFERENCE-TALK	TALK
LEARNING PREFRENCE-VIDEO	MEDIA
RUBELLA IMMUNE	IMMUNE
RUBELLA NON-IMMUNE	NON-IMMUNE
RUBELLA STATUS INDETERMINATE	STATUS INDETERMINATE
TB-TX COMPLETE	TX COMPLETE
TB-TX INCOMPLETE	TX INCOMPLETE
TB-TX UNKNOWN	TX UNKNOWN
TB-TX UNTREATED	TX UNTREATED

Added the following Health Factors: (CR234)

Factor	Category
CHANGE IN WEATHER	ASTHMA TRIGGERS
MENSES	ASTHMA TRIGGERS
OTHER TRIGGER	ASTHMA TRIGGERS
STRONG EMOTIONAL EXPRESSION	ASTHMA TRIGGERS
VIRAL INFECTION	ASTHMA TRIGGERS
LESS THAN 6TH GRADE EDUCATION	ASTHMA TRIGGERS
RETIRED	OCCUPATION
TX IN PROGRESS	TB STATUS

Inactivated the following Health Factors: (CR234)

Factor
BARRIERS TO LEARN-COGNITIVE IMPAIRMENT
DOES NOT SPEAK ENGLISH
EMOTIONAL IMPAIRMENT
BARRIERS-SIGN INTERPRETER NEEDED
READINESS TO LEARN-NOT READY
READINESS TO LEARN-PAIN
READINESS TO LEARN-RECEPTIVE
READINESS TO LEARN-SEVERITY OF ILLNESS
READINESS TO LEARN-UNRECEPTIVE
7-FOOD AND EXERCISE (MAINTAIN)

2.10   Other Changes

2.10.1   Asthma Severity Conversion

Used a conversion to move asthma severity from the V POV file to the Problem List. (CR207)

2.10.2   Taxonomies

The following national taxonomies were added for use with the Asthma Supplement, Action Plan, and Best Practice Prompts:

- BAT ASTHMA SHRT ACT RELV NDC (reliever)

- BAT ASTHMA SHRT ACT RELV MEDS (reliever)

- BAT ASTHMA SHRT ACT INHLR NDC (reliever)

- BAT ASTHMA SHRT ACT INHLR MEDS (reliever)

- BAT ASTHMA LEUKOTRIENE NDC (controller)

- BAT ASTHMA LEUKOTRIENE MEDS (controller)

- BAT ASTHMA CONTROLLER NDC (controller)

- BAT ASTHMA INHLD STEROIDS NDC (controller)

2.10.3   New APIs for the VA Reminders

Added APIs for the VA Reminders package to retrieve the last of each item. (CR172)

Each call is in the following format:

    S X=$$linelabel^APCLAPIR(dfn, beginning date, ending date)

where

    dfn = Patient DFN

    beginning date = internal fileman date to begin searching for the item; if blank, DOB will be used.

    ending date = internal fileman date to end searching for the item; if blank, DT (today's date) will be used.

The output of each call is in the following format:

    1 or 0^date^item^value^visit ien^file^file ien

where

    piece 1 = 1 if item found, 0 if no item found in the date range

    piece 2 = date of last item found

    piece 3 = text of item found

    piece 4 = result

    piece 5 = ien of visit on which item was found

piece 6 = file in which item was found (usually a V File)

piece 7 = ien of V File in which entry was found

The following APIs have been added:

Alcohol Screening	$$REMALSC^APCLAPIR
Depression Screening	$$REMDEPS^APCLAPIR
Assessment of Function	$$REMAOF^APCLAPIR
Blood Pressure	$$REMBP^APCLAPIR
Breast Exam	$$REMBRST^APCLAPIR
Cholesterol	$$REMCHOL^APCLAPIR
Dental Exam	$$REMDENT^APCLAPIR
Diabetes Screening	$$REMGLUC^APCLAPIR
Intimate Partner Violence Screening	$$REMIPVS^APCLAPIR
EPSDT Screening	$$REMEPSDT^APCLAPIR
Head Circumference	$$REMHC^APCLAPIR
Hearing Exam	$$REMHEAR^APCLAPIR
Height	$$REMHT^APCLAPIR
Influenza Immunization	$$REMFLU^APCLAPIR
Mammogram	$$REMMAMM^APCLAPIR
Osteoporosis Screening	$$REMOSTEO^APCLAPIR
Pap Smear	$$REMPAP^APCLAPIR
Pelvic Exam	$$REMPEVL^APCLAPIR
Physical Exam	$$REMPHYS^APCLAPIR
Pneumovax	$$REMPNEU^APCLAPIR
Rectal Exam	$$REMRECT^APCLAPIR
Rubella	$$REMRUBEL^APCLAPIR
TD	$$REMTD^APCLAPIR
Tobacco Screening	$$REMTOBS^APCLAPIR
Tonometry	$$REMTON^APCLAPIR
Visual Acuity Exam	$$REMVAE^APCLAPIR
Weight	$$REMWT^APCLAPIR

2.10.4 Family History Data Conversion

Added a post-init routine to perform the following tasks: (CR199 andCR321)

- Convert the relationship and status data from the Family History file and move it to the new Family History Family Member file.

- Stuff a family member of UNKNOWN into the Family member field for all entries that currently have no Relation/Family member entered.

- Convert the existing numeric diagnosis onset age (if any) to the corresponding new Age of Onset codes.

2.10.5   Reproductive History String Conversion

Converted the existing Reproductive History field to new fields. If the existing Reproductive History field is populated with a number, including the "0" option, any existing values in the string are copied to new fields as follows:

- G = Gravida

- P = Full Term

- LC = Living Children

- SA = Spontaneous Abortions

  TA = Therapeutic Abortions

3.0   Subquery Functions

Now, we're going to talk about some of the more advanced QMan subquery functions: ordinal, computed, quantitative, relative, and generic. We've already discussed basic QMan functions that are related to value and time, such as greater than, less than, before, after.

3.1   Ordinal

Ordinal refers to the order or rank of something in a series of numbers, such as last, first, highest, or lowest. For each of these functions, when asking, for example, for the highest (or last, or first, or lowest) four weights, QMan will display up to and including the number of weights requested. QMan will show fewer weights if the patient has fewer than the number of weights requested. If you only want patients included who have four or more weights on record, you must use the function "at least" after the ordinal function. In the example just stated, we would subsequently enter "at least four" to ensure selecting only those patients with four or more weights on record. An example of this can be found in the "Quantitative" section of this chapter when we discuss the "at least" function.

3.1.1   Last

Let's say that you want to see the last three weights of all patients with diabetes.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
DEPENDENT/ADULT-ONSET

 OK? Y <Enter>
ICD Code Range(s) Selected So Far

1)  250.

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple

First condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating
```

```
   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]

Attribute of LIVING PATIENTS: WTLBS <Enter>


SUBQUERY: Analysis of multiple WEIGHTS
First condition/attribute of "WEIGHT": LAST <Enter>
Enter the value which goes with LAST; e.g., LAST 3, LAST 10, etc.
Value: 3 <Enter>
```

Figure 3-1: Searching last 3 weights of all patients with diabetes

By last 3, QMan does not have to come up with three weights for every patient. For example, if a patient only has one weight on record, QMan will show that one weight. By last 3, QMan is limited to showing *no more than three* weights (the last three weights) for any patient; that is, QMan will show up to three weights.

```
Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]
         Subject of subquery: WEIGHT(lbs)
         LAST 3

Attribute of LIVING PATIENTS: <Enter>

You have 2 options for listing WEIGHT(lbs) =>

    1) For ea. patient, list all WEIGHT(lbs) which match your
       criteria
    2) List all PATIENTS with WEIGHT(lbs) meeting your criteria,
       but do not list the individual values of ea. WEIGHT(lbs)

Your choice (1 or 2): 1// 1 <Enter>

PATIENTS           CHART DX/ICD9   WT     DATE OF WT
(Alive)            NUMBER #        lbs
-----------------------------------------------------------------------

GAMMAAAA,RAE*      100003 +        410.0  JUL 8,1991
GAMMAAAA,RAE*      100003 +        300.0  NOV 28,1990
GAMMAAAA,RAE*      100003 +        110.2  OCT 11,1990
GAMMAAAABBB,MAND 100006 +         200.0  JUN 18,1991
GAMMAAAABBB,MAND 100006 +         220.5  JAN 2,1991
GAMMAAAABBB,MAND 100006 +         123.0  OCT 11,1990
THETAA,SALLY*      100010 +        330.3  SEP 8,1989
THETAA,SALLY*      100010 +        346.0  JUN 2,1989
THETAA,SALLY*      100010 +        324.3  APR 7,1989
.  .  .
THETBBB,HORTENC* 100113 +         210.0  DEC 17,1990
```

```
CHICHI,MEGAN*     100117 +              220.5  OCT 11,1990
RHORHORHORHOR,SY 100158 +              209.0  JAN 10,1990
RHORHORHORHOO,SY 100158 +              202.0  DEC 11,1989
RHORHORHORHOO,SY 100158 +              200.4  OCT 23,1989
ALPHABBBBB,ELAIN 100161 +              196.0  JAN 3,1990
ALPHABBBBB,ELAIN 100161 +              199.4  DEC 18,1989
ALPHABBBBB,ELAIN 100161 +              198.0  DEC 8,1989
<>
```

Figure 3-2: Listing of patients who match search criteria

Notice that the third column contains a plus sign (+) to indicate that the patients do have diabetes (though the actual ICD code is not given). The fourth column gives the patients' weights. Most of the patients have three weights listed - their last three. If they do not, they did not have three weights on record, as in the case of "THETBBB,Hortenc*" and "Chichi,Megan*."

Let's do the same thing again, take the last three weights, and then average them.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": LAST 3 <Enter>

Next condition/attribute of "WEIGHT": AVE <Enter>

         Subject of subquery: WEIGHT(lbs)
         LAST 3
         AVERAGE

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
         Subject of subquery: WEIGHT(lbs)
         LAST 3
         AVERAGE

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  AVE. WT
(Alive)           NUMBER lbs
---------------------------------------------------------------------------

ALPHA,AMANDA      101500 83.1
ALPHA,ANDY        101926 17.3
```

```
ALPHA,BARNEY      101988 15.5
ALPHA,BRIAN       101981 219.8
ALPHA,BRUCE       101765 31.9
ALPHA,CALVIN      101945 20.8
.   .   .
ALPHA,DEE         100572 254.2
ALPHA,EVE*        103074 164.0
ALPHA,FELIX       103126 235.8
ALPHA,FRANCIS     101798 37.9
ALPHA,FRANCIS     101913 208.5
ALPHA,GRANT       101857 27.9
<>
```

Figure 3-3: Averaging the last 3 weights of patients

The order in which the query is put together has a definite effect on the results obtained. What would happen if we reversed the order?

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": AVERAGE <Enter>

Next condition/attribute of "WEIGHT": LAST 3  ??
```

Figure 3-4: Reversing the query order

QMan beeps and refuses to continue. Once the patients' weights are averaged they no longer have a time dimension, so QMan cannot continue.

This time we are going to ask QMan to find all the diabetic patients who had their weight taken during their visit. This query is entered differently. In this query we are asking QMan to find all patients who had a visit for diabetes who also had a weight taken that was over 200 lbs.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
```

```
DEPENDENT/ADULT-ONSET

 OK? Y//   <Enter>

ICD Code Range(s) Selected So Far =>

1)  250.
Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": WTLBS <Enter>

Do you want to screen each DIAGNOSIS according to the
WEIGHT(lbs) values obtained on the SAME visit? YES// <Enter>

SUBQUERY: Analysis of multiple WEIGHTS
First condition/attribute of "WEIGHT": OVER <Enter>
Value: 200 <Enter>

Next condition/attribute of "WEIGHT": <Enter>

Next condition/attribute of "DIAGNOSIS":
```

Figure 3-5: Sample query asking for the weight of all diabetic patients over 200 lbs

This query asks QMan to go out and find every patient who had a diagnosis of
diabetes, who was weighed on that visit, and whose weight on the visit was over 200
pounds. Each patient that meets all of the criteria will constitute a "hit."

```
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]
         Subject of subquery: DIAGNOSIS
         WEIGHTS(lbs) ENTERED ON THE SAME VISIT AS EA. DIAGNOSIS
            Subject of subquery: WEIGHT(lbs)
            GREATER THAN 200

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  DX/ICD9    DATE OF POV
(Alive)           NUMBER #
---------------------------------------------------------------------------

GAMMAAAA,RAE*     100003 250.00     NOV 28,1990
THETATHETAA,MAND  100006 250.00     JAN 2,1991
GAMMAA,SALLY*     100010 250.00     SEP 8,1989
GAMMAA,SALLY*     100010 250.00     JUN 2,1989
GAMMAA,SALLY*     100010 250.00     OCT 24,1986
GAMMAA,SALLY*     100010 250.00     JUL 11,1986
```

```
GAMMAA,SALLY*      100010 250.00      MAY 16,1986
RHORHOR,DIANE*     100018 250.00      JUN 15,1991
RHORHOR,DIANE*     100018 250.00      NOV 1,1989
RHORHOR,DIANE*     100018 250.00      MAY 31,1989
RHORHOR,DIANE*     100018 250.00      MAR 23,1987
RHORHOR,DIANE*     100018 250.00      FEB 20,1985
THETATHETAA,WALL 100026 250.00        SEP 17,1986
CHICHI,JULIE*      100061 250.00      FEB 5,1986
CHICHI,JULIE*      100061 250.00      FEB 5,1986
CHICHI,JULIE*      100061 250.00      OCT 16,1985
CHICHI,JULIE*      100061 250.00      JUL 10,1985
CHICHI,JULIE*      100061 250.00      JUN 25,1985
<>
```

Figure 3-6: Results of previous query

In the listing above, note that no weights are given. The patients will not be listed if their weights had not been over 200 pounds on the dates listed. The rule here is there will never be any visual evidence that a sub-subquery has taken place. This is unlike the "rule of last," in which a value is given for the last attribute requested and a plus sign (+) is shown for other attributes requested.

3.1.2   First

Another ordinal function is first. In this query we are going to ask QMan to find the first three weights recorded for each patient. Again, it is not mandatory to find three weights for each patient, only that the system displays no more than three weights (the first) for any patient.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": FIRST 3 <Enter>

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
          Subject of subquery: WEIGHT(lbs)
          FIRST 3

Attribute of LIVING PATIENTS: <Enter>
```

```
PATIENTS           CHART   WT      DATE OF WT
(Alive)            NUMBER  lbs
------------------------------------------------------------------------

ALPHA,AMANDA       101500  67.0    JAN 15,1986
ALPHA,AMANDA       101500  68.0    DEC 20,1985
ALPHA,AMANDA       101500  56.5    FEB 25,1985
ALPHA,ANDY         101926  12.4    MAR 30,1989
ALPHA,ANDY         101926  11.8    MAR 16,1989
ALPHA,ANDY         101926  6.6     JAN 13,1989
ALPHA,BARNEY       101988  12.8    OCT 5,1989
ALPHA,BARNEY       101988  10.3    SEP 8,1989
ALPHA,BARNEY       101988  8.3     AUG 25,1989
ALPHA,BRIAN        101981  193.5   SEP 1,1989
ALPHA,BRIAN        101981  186.1   AUG 11,1989
ALPHA,BRIAN        101981  185.5   AUG 3,1989
ALPHA,BRUCE        101765  8.1     APR 8,1986
ALPHA,BRUCE        101765  7.8     APR 4,1986
ALPHA,BRUCE        101765  7.3     APR 1,1986
ALPHA,CALVIN       101945  13.1    MAY 11,1989
ALPHA,CALVIN       101945  10.5    APR 21,1989
ALPHA,CALVIN       101945  10.0    APR 6,1989
<>
```

Figure 3-7: Sample search for first 3 weights recorded for each patient

3.1.3   Highest

This ordinal query will be based on value rather than time. We are going to ask for patients' highest three weights. Once again, this means that QMan will display no more than three weights. If a patient only has one weight on record, QMan will only display one weight.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": HIGHEST <Enter>
Enter the value which goes with LARGEST; e.g., LARGEST 3, LARGEST 10, etc.
Value: 3 <Enter>
Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
         Subject of subquery: WEIGHT(lbs)
         LARGEST 3
```

```
Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  WT      DATE OF WT
(Alive)           NUMBER lbs
--------------------------------------------------------------------------
ALPHA,AMANDA      101500 100.3  DEC 10,1987
ALPHA,AMANDA      101500 82.0   DEC 30,1986
ALPHA,AMANDA      101500 68.0   DEC 20,1985
ALPHA,ANDY        101926 18.3   NOV 22,1989
ALPHA,ANDY        101926 17.4   AUG 24,1989
ALPHA,ANDY        101926 16.1   AUG 3,1989
ALPHA,BARNEY      101988 18.1   JAN 3,1990
ALPHA,BARNEY      101988 15.8   DEC 8,1989
ALPHA,BARNEY      101988 12.8   OCT 5,1989
ALPHA,BRIAN       101981 246.1  JAN 19,1990
ALPHA,BRIAN       101981 215.3  NOV 3,1989
ALPHA,BRIAN       101981 198.0  SEP 29,1989
ALPHA,BRUCE       101765 34.3   JAN 24,1990
ALPHA,BRUCE       101765 32.4   OCT 30,1989
ALPHA,BRUCE       101765 32.3   AUG 8,1989
ALPHA,CALVIN      101945 20.0   DEC 13,1989
ALPHA,CALVIN      101945 21.5   NOV 6,1989
ALPHA,CALVIN      101945 21.0   SEP 14,1989
<>
```

Figure 3-8: Sample query for patients' highest 3 weights on record

3.1.4   Lowest

In this query we're going to ask for patients' lowest three weights after the beginning of 1989.

```
What is the subject of your search?  LIVING PATIENTS //

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": AFTER <Enter>
Exact date: 1/1/89 <Enter>   (JAN 01, 1989)

Next condition/attribute of "WEIGHT": LOWEST <Enter>
Enter the value which goes with SMALLEST; e.g., SMALLEST 3, SMALLEST 10,
etc.
Value: 3 <Enter>

          Subject of subquery: WEIGHT(lbs)
          AFTER JAN 1,1989
            SMALLEST 3
```

```
Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating....

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
           Subject of subquery: WEIGHT(lbs)
           AFTER JAN 1,1989
           SMALLEST 3

Attribute of LIVING PATIENTS: <Enter>

You have 2 options for listing WEIGHT(lbs) =>

     1) For ea. patient, list all WEIGHT(lbs) which match your
        criteria
     2) List all PATIENTS with WEIGHT(lbs) meeting your criteria,
        but do not list the individual values of ea. WEIGHT(lbs)

Your choice (1 or 2): 1// 1 <Enter>

PATIENTS           CHART  WT      DATE OF WT
(Alive)            NUMBER lbs
---------------------------------------------------------------------------

ALPHA,ANDY         101926 12.4   MAR 30,1989
ALPHA,ANDY         101926 11.8   MAR 16,1989
ALPHA,ANDY         101926 6.6    JAN 13,1989
ALPHA,BARNEY       101988 12.8   OCT 5,1989
ALPHA,BARNEY       101988 10.3   SEP 8,1989
ALPHA,BARNEY       101988 8.3    AUG 25,1989
ALPHA,BRIAN        101981 193.5  SEP 1,1989
ALPHA,BRIAN        101981 186.1  AUG 11,1989
ALPHA,BRIAN        101981 185.5  AUG 3,1989
ALPHA,BRUCE        101765 29.0   NOV 1,1989
ALPHA,BRUCE        101765 31.0   JUN 14,1989
ALPHA,BRUCE        101765 31.0   JUN 8,1989
ALPHA,CALVIN       101945 13.1   MAY 11,1989
ALPHA,CALVIN       101945 10.5   APR 21,1989
ALPHA,CALVIN       101945 10.0   APR 6,1989
ALPHA,CANDY        100420 112.0  OCT 16,1989
ALPHA,CARRIE       101955 12.4   JUN 15,1989
ALPHA,CARRIE       101955 8.0    APR 25,1989
<>
```

Figure 2-9: Sample query for patients' lowest three weights taken after the beginning of 1989

You notice that these weights still have a date given, unlike the average weights, which had no dates attached.

3.2   Computed

Computed functions only apply to number-valued attributes such as weights, glucose readings, etc. In general, computed values are pure values, with no time dimension, as we saw previously with "average." Computed values are obtained by taking multiple entries and performing an arithmetic computation to arrive at the desired figure. The end product of a computed function is a one-dimensional, single-valued, pure number. One way of looking at a computed value is to think of an omelet. After you crack and scramble three eggs to make a three-egg omelet, you know the omelet contains three eggs but the eggs themselves are no longer individually identifiable units. So once you make the computation, you can no longer apply any other functions that have anything to do with time. You can only apply functions that deal with pure quantities, such as "greater than," "less than," etc. Examples of computed values are average, total, change, and span. The following table shows you how computed functions operate:

Function	Results
Average	The sum of all the attribute values divided by the number of values
Total	The number of attribute values selected
Change	Last value - Fist value
Span	Highest value - Lower value

3.2.1   Average

Let's ask for a list of the patients whose average weight during the past year was over 200 pounds. Here is how we'd phrase our query.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>


SUBQUERY: Analysis of multiple WEIGHTS


First condition/attribute of "WEIGHT": AFTER <Enter>
Exact date: T-365 <Enter>

Next condition/attribute of "WEIGHT": AVERAGE <Enter>


         Subject of subquery: WEIGHT(lbs)
         AFTER JUL 17,1990
         AVERAGE

Next condition/attribute of "WEIGHT": OVER <Enter>
Value: 200 <Enter>
```

```
          Subject of subquery: WEIGHT(lbs)
          AFTER JUL 17,1990
          AVERAGE
          GREATER THAN 200

Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
          Subject of subquery: WEIGHT(lbs)
          AFTER JUL 17,1990
          AVERAGE
          GREATER THAN 200

Attribute of LIVING PATIENTS:
```

Figure 3-9: Sample query for patients whose average weight during the past year was over 200 pounds

3.2.2   Total

Let's find all the patients who have had more than 10 weights on record. In this case, we're asking QMan to count the number of weights on record for each patient and give us a list of the patients that have over 10 weights. A synonym for "total" is "count" in this context.

```
What is the subject of your search?  LIVING PATIENTS //   <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": COUNT <Enter>
Next condition/attribute of "WEIGHT": OVER <Enter>
Value: 10 <Enter>

          Subject of subquery: WEIGHT(lbs)
          TOTAL NUMBER
          GREATER THAN 10

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
          Subject of subquery: WEIGHT(lbs)
          TOTAL NUMBER
          GREATER THAN 10
```

```
Attribute of LIVING PATIENTS: <Enter>


PATIENTS           CHART  TOT #
(Alive)            NUMBER WTS
-------------------------------------------------------------------------


ALPHA,ANDY         101926 12
ALPHA,BRUCE        101765 57
ALPHA,CHASE        102121 41
ALPHA,DEE          100572 42
ALPHA,EVE*         103074 34
ALPHA,FELIX        103126 58
ALPHA,FRANCIS      101798 27
ALPHA,GRANT        101857 15
ALPHA,GREG         101738 24
ALPHA,ISAAC        101515 15
ALPHA,JOAN         100790 31
ALPHA,JOAN*        102375 34
ALPHA,LAURA        101882 13
ALPHA,MELISSA*     100788 52
ALPHA,ROSE*        103060 35
ALPHA,VIRGINIA     101143 18
ALPHA,WALLY*       100391 43
BETAA,AMY LYNN*    100257 21
<>
```

Figure 3-10: Sample listing of patients who have over 10 weights on record

The display lists the patients who have over 10 weights recorded and gives the total number of weights on record. Again, because total is a computed value, there are no time dimensions attached.

Another example would be to ask QMan to find all patients who had over 10 prescriptions for hydrochlorothiazide. The structure of the query is similar to that above.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: RX  <Enter>

Enter RX: [HCTZ <Enter>

Members of HCTZ Taxonomy =>

HYDROCHLOROTHIAZIDE 50MG
HYDROCHLOROTHIAZIDE 50MG TAB 30S
HYDROCHLORTHIAZIDE 25MG TAB
HYDROCHLOROTHIAZIDE 50MG TAB 60S
HYDROCHLOROTHIAZIDE 50MG TAB UD
```

```
Enter ANOTHER RX: <Enter>

The following have been selected =>

     HYDROCHLOROTHIAZIDE 50MG
     HYDROCHLOROTHIAZIDE 50MG TAB 30S
     HYDROCHLORTHIAZIDE 25MG TAB
     HYDROCHLOROTHIAZIDE 50MG TAB 60S
     HYDROCHLOROTHIAZIDE 50MG TAB UD

Want to save this RX group for future use? NO// <Enter>

SUBQUERY: Analysis of multiple RXS

First condition/attribute of "RX": COUNT <Enter>

Next condition/attribute of "RX": OVER <Enter>
Value: 10 <Enter>

          Subject of subquery: RX
          TOTAL NUMBER
          GREATER THAN 10

Next condition/attribute of "RX": <Enter>
Computing Search Efficiency Rating.........

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      RX (HYDROCHLOROT/HYDROCHLOROT...)  [SER = 22.96]
          Subject of subquery: RX
          TOTAL NUMBER
          GREATER THAN 10

Attribute of LIVING PATIENTS:
```

Figure 3-11: Sample query for all patients who had over 10 prescriptions for hydrochlorothiazide

Another example of "total" would be a query asking QMan to find all living patients who had over 10 visits for diabetes since the beginning of 1989.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
DEPENDENT/ADULT-ONSET
```

```
 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  250.00

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": AFTER <Enter>
Exact date: 1/1/89 <Enter>  (JAN 01, 1989)

Next condition/attribute of "DIAGNOSIS": COUNT <Enter>

        Subject of subquery: DIAGNOSIS
        AFTER JAN 1,1989
        TOTAL NUMBER

Next condition/attribute of "DIAGNOSIS": OVER <Enter>
Value: 10 <Enter>

        Subject of subquery: DIAGNOSIS
        AFTER JAN 1,1989
        TOTAL NUMBER
        GREATER THAN 10

Next condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]
        Subject of subquery: DIAGNOSIS
        AFTER JAN 1,1989
        TOTAL NUMBER
        GREATER THAN 10

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  TOT #
(Alive)           NUMBER DX/ICD9S
-----------------------------------------------------------------------------

BETAB,LESTER      100177 11
BETA,LRAINE*      100266 12
THETAAAA,CHERYL*  100268 12
CHICHICHI,WENDY*  100279 14
ALPHA,WALLY*      100391 15
CHII,BROOKE*      100424 12
KAPPABB,INGRID    100543 11
THETATHEAT,SAND*  100648 32
GAMMAAA,PEARL     100704 15
```

```
OMEGAOOO,MARY J* 100725 11
OMEGABBBBB,PRISC 100897 12
```

Figure 3-12: Sample query of all living patients who had over 10 visits for diabetes since the beginning of 1989

3.2.3   Change

Change is determined by comparing the last recorded value with the first recorded value within a given time frame (LAST - FIRST = Change). We are going to ask QMan to find those patients whose records indicate a weight gain of more than 5 pounds since the beginning of 1989.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS  <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": AFTER <Enter>
Exact date: 1/1/89 <Enter>  (JAN 01, 1989)

Next condition/attribute of "WEIGHT": CHANGE <Enter> (last-1ST)

          Subject of subquery: WEIGHT(lbs)
          AFTER JAN 1,1989
          CHANGE

Next condition/attribute of "WEIGHT": OVER <Enter>
Value: 5 <Enter>

          Subject of subquery: WEIGHT(lbs)
          AFTER JAN 1,1989
          CHANGE
          GREATER THAN 5

Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating....

          Subject of search: PATIENTS
          ALIVE TODAY   [SER = .01]
          Subject of subquery: WEIGHT(lbs)
          AFTER JAN 1,1989
          CHANGE
          GREATER THAN 5

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  CHANGE WT
```

```
(Alive)          NUMBER lbs
-------------------------------------------------------------------------

ALPHA,ANDY       101926 11.625
ALPHA,BARNEY     101988 9.8
ALPHA,BRIAN      101981 60.6
ALPHA,CALVIN     101945 10.0
ALPHA,CARRIE     101955 11.5
ALPHA,CHRISTOPHE 101670 12.6
ALPHA,DEE        100572 15.0
ALPHA,EVE*       103074 14.8
ALPHA,FELIX      103126 9.0
ALPHA,GRANT      101857 6.5
ALPHA,ISAAC      101515 15.0
ALPHA,JOAN       100790 10.5
ALPHA,JOAN*      102375 10.3
ALPHA,LAURA      101882 8.5
ALPHA,MAUDE      101821 19.1
ALPHA,MELISSA*   100788 12.0
ALPHA,WILMA      101895 7.4
BETAA,ABRAHAM    102008 7.3
<>
```

Figure 3-13: Sample query of patients who have gained more than 5 lbs since the beginning of 1989

We can also use the same method to find patients who have lost weight in a certain time period. In this case, we're asking QMan to find those patients who lost more than 5 pounds since the beginning of 1989.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": AFTER <Enter>
Exact date: 1/1/89 <Enter>

Next condition/attribute of "WEIGHT": CHANGE <Enter> (LAST-1ST)

        Subject of subquery: WEIGHT(lbs)
        AFTER JAN 1,1989
        CHANGE
Next condition/attribute of "WEIGHT": LESS THAN <Enter>
Value: -5 <Enter>
```

Figure 3-14: Sample query of patients who have lost more than 5 lbs since the beginning of 1989

Why are we asking for a weight change that's less than -5 pounds? Keep in mind that we're treating weight change as though it's a continuum. The zero point on the scale indicates no weight change. Positive numbers indicate a weight gain; negative numbers indicate a weight loss.

```
        Subject of subquery: WEIGHT(lbs)
        AFTER JAN 1,1989
        CHANGE
        LESS THAN -5

Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
         Subject of subquery: WEIGHT(lbs)
         AFTER JAN 1,1989
         CHANGE
         LESS THAN -5

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  CHANGE WT
(Alive)           NUMBER lbs
------------------------------------------------------------------------------

ALPHA,ROSE*       103060 -14.4
ALPHA,YOLANDA     100867 -24.9
BETAA,CARY        102968 -7.0
BETAA,LANA        102303 -17.1
BETAA,LENORE      100182 -72.5
BETAA,LEROY       100449 -54.0
BETAA,LESTER      100177 -8.9
BETAA,MOLLY*      102743 -8.6
BETAA,NORMA*      100387 -6.1
BETAB,SHEILA      100741 -12.5
BETA,JOANNE*      100185 -15.0
BETA,LISA         102528 -15.0
CHIA,ANNETTE      100997 -7.0
CHIB,ANTHONY      100440 -11.5
<>
```

Figure 3-15: Results of previous query

3.2.4   Span

Span is determined by comparing the highest recorded value with the lowest recorded value within a given time frame (Highest – LOWEST = Span). This is a means of checking patient attributes that may fluctuate wildly, but be approximately the same at the beginning and end of the time period being checked. An example might be binge eaters whose weight might fluctuate. Again, we are going to use weight as the attribute and are going to check the weight change spans over 30 pounds.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": SPAN <Enter> (HI-LO)

Next condition/attribute of "WEIGHT": OVER <Enter>
Value: 30 <Enter

        Subject of subquery: WEIGHT(lbs)
        SPAN
        GREATER THAN 30

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
        Subject of subquery: WEIGHT(lbs)
        SPAN
        GREATER THAN 30


Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  SPAN WT
(Alive)           NUMBER lbs
-----------------------------------------------------------------------

ALPHA,AMANDA      101500 43.8
ALPHA,BRIAN       101981 60.6
ALPHA,DEE         100572 60.3
ALPHA,EVE*        103074 52.6
ALPHA,FELIX       103126 48.0
ALPHA,FRANCIS     101798 210.6
ALPHA,IRMA*       102600 30.1
ALPHA,ISAAC       101515 86.3
<>
```

Figure 3-16: Sample query of patient weight change spans over 30 years

3.3   Quantitative

Quantitative values are useful as intermediate functions in a long subquery. "At least" and "at most" are examples of quantitative values.

At Least

Let's find all patients who have at least three weights that are over 100 pounds out of their last five weights.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: WTLBS  <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": LAST 5 <Enter>

Next condition/attribute of "WEIGHT": OVER <Enter>
Value: 100 <Enter>

         Subject of subquery: WEIGHT(lbs)
         LAST 5
         GREATER THAN 100

Next condition/attribute of "WEIGHT": AT LEAST <Enter>
Enter the value which goes with AT LEAST _ EXIST; e.g., AT LEAST _ EXIST 3,
AT LEAST _ EXIST 10, etc.
Value: 3 <Enter>

         Subject of subquery: WEIGHT(lbs)
         LAST 5
         GREATER THAN 100
         AT LEAST 3 EXIST

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
         Subject of subquery: WEIGHT(lbs)
         LAST 5
         GREATER THAN 100
         AT LEAST 3 EXIST

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  WT     DATE OF WT
(Alive)           NUMBER lbs
---------------------------------------------------------------------------

ALPHA,BRIAN       101981 246.1  JAN 19,1990
ALPHA,BRIAN       101981 215.3  NOV 3,1989
ALPHA,BRIAN       101981 198.0  SEP 29,1989
ALPHA,BRIAN       101981 193.5  SEP 1,1989
ALPHA,BRIAN       101981 186.1  AUG 11,1989
ALPHA,CANDY       100420 112.0  OCT 16,1989
ALPHA,CANDY       100420 109.0  SEP 2,1988
ALPHA,CANDY       100420 110.4  APR 7,1988
ALPHA,CANDY       100420 111.3  MAR 23,1988
ALPHA,CANDY       100420 106.3  APR 20,1987
ALPHA,DEE         100572 261.0  JUL 14,1989
ALPHA,DEE         100572 237.3  MAR 13,1989
```

```
ALPHA,DEE          100572 264.3  FEB 24,1989
ALPHA,DEE          100572 261.0  FEB 17,1989
ALPHA,DEE          100572 255.0  FEB 7,1989
ALPHA,EVE*         103074 168.0  FEB 1,1990
ALPHA,EVE*         103074 162.0  JAN 4,1990
ALPHA,EVE*         103074 162.0  DEC 27,1989
<>
```

Figure 3-17: Sample query of patients who have at least 3 of their last 5 weights over 100 lbs

So each of the individuals above had at least three weights over l00 pounds, or they would not have been listed. "At least" and "at most" do not change anything; these functions are screening devices: an "all" or "none" approach. In this query, an individual's weights are reviewed to find the last 5 weights over 100 pounds; if at least 3 weights meeting the query are found, the results are kept. If fewer than 3 weights over 100 pounds are found, the results are discarded.

Let's say you are doing a scientific study and you want to find all patients whose average weight is over 200 pounds in the last year. You want it to be an average. You don't want to find a single weight that is over 200 pounds; you want to have at least three weights included in the average.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": AFTER <Enter>
Exact date: T-365 <Enter>  (JUL 17, 1990)

Next condition/attribute of "WEIGHT": AT LEAST <Enter>
Enter the value which goes with AT LEAST _ EXIST; e.g., AT LEAST _ EXIST 3,
AT LEAST _ EXIST 10, etc.
Value: 3 <Enter>

Subject of subquery: WEIGHT(lbs)
        AFTER JUL 17,1990
        AT LEAST 3 EXIST

Next condition/attribute of "WEIGHT": AVE <Enter>

        Subject of subquery: WEIGHT(lbs)
        AFTER JUL 17,1990
        AT LEAST 3 EXIST
        AVERAGE

Next condition/attribute of "WEIGHT": OVER <Enter>
```

```
Value: 200 <Enter>

        Subject of subquery: WEIGHT(lbs)
        AFTER JUL 17,1990
        AT LEAST 3 EXIST
        AVERAGE
        GREATER THAN 200

Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
        Subject of subquery: WEIGHT(lbs)
        AFTER JUL 17,1990
        AT LEAST 3 EXIST
        AVERAGE
        GREATER THAN 200


Attribute of LIVING PATIENTS:
```

Figure 3-18: Sample query of patients whose average weight is over 200 lbs for the last year

So in your query, you ask for all of the patients' weights in the past year. If there aren't at least three weights on record for a patient, that patient is not investigated further. Then, of the patients who have three weights or more on record, we ask QMan to average their weights and list those who have an average weight over 200.

3.4   Relative

Sometimes you want to find attributes that were done during a certain time period, but not an absolute time period, one that is relative to a patient's age or date of birth. For example, you might want to find DPT shots that were given within a few months of patients' first birthdays rather than the DPT shots that were given during 1989.

3.4.1   Relative Age

Let's say we want to find all patients who had a pneumococcal vaccination within 12 months after their 65th birthday.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: PNEUMOCOCCAL VACCINE <Enter>

First condition/attribute of "PNEUMOVAX": REL <Enter>
     1    RELATIVE AGE
```

```
     2    RELATIVE DATE
CHOOSE 1-2: 1 <Enter>


"Relative age" is useful in finding information about adults; "relative
date" is more useful in seeking information about infants.


Condition: BETWEEN,NUMERIC <Enter> (inclusive)
Enter the lower limiting value: 65 <Enter>
Enter the upper limiting value: 66 <Enter>


Next condition/attribute of "PNEUMOVAX": <Enter>
Computing Search Efficiency Rating..........................

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
          Subject of subquery: PNEUMOVAX
          RELATIVE AGE BETWEEN 65 AND 66

Attribute of LIVING PATIENTS:
```

Figure 3-19: Sample query of patients who had pneumococcal vaccination w/in 12 mos after their 65th birthday

Let's say I want to find all children who didn't have their visual acuity checked during their school age. This will tell us how well the system is screening for vision problems in school age children.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: VIS <Enter>
     1    VISION EXAM
     2    VISION(corr.)
     3    VISION(uncorr.)
     4    VISIT
CHOOSE 1-4: 1 <Enter>

SUBQUERY: Analysis of multiple VISION EXAMS

First condition/attribute of "VISION EXAM": REL <Enter>
     1    RELATIVE AGE
     2    RELATIVE DATE
CHOOSE 1-2: 1 <Enter>
Condition: BETWEEN,NUMERIC (inclusive)
Enter the lower limiting value: 5 <Enter>
Enter the upper limiting value: 18 <Enter>


Next condition/attribute of "VISION EXAM": NULL <Enter>

    Subject of search: PATIENTS
```

```
        ALIVE TODAY   [SER = .01]
           Subject of subquery: VISION EXAM
           RELATIVE AGE BETWEEN 5 AND 18
           'NULL' (None meet criteria)
```

Figure 3-20: Sample query of all children who did not have their visual acuity checked during school age

3.4.2   Relative Date

Now we're going to do a search based on relative age. We're going to check for patients who have received their DPT3 shots within two months of their first birthday. We can do this in one of two ways. We can ask QMan to make the search relative to their date of birth or to a particular age.

The following is the query relative to the date of birth.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DPT3 <Enter>
     1    DPT
     2    DPT/DT/TT [ALL PED. TYPES]
     3    DPT/DT/Td/TT [ALL TYPES]
CHOOSE 1-3: 1 <Enter>

First condition/attribute of "DPT": REL  <Enter>
     1    RELATIVE AGE
     2    RELATIVE DATE
CHOOSE 1-2: 2 <Enter>
Relative to what date =>

   1) DATE OF BIRTH
   2) DATE OF DEATH
   3) A PARTICULAR AGE
Your choice (1-3): 1// <Enter>

Time window begins how long after patient's birth: 10M <Enter>
The window ends how long after birth: 14M <Enter>

Next condition/attribute of "DPT": <Enter>
Computing Search Efficiency Rating....................

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
           Subject of subquery: DPT
           DURING THE SPECIFIED AGE WINDOW

Attribute of LIVING PATIENTS: <Enter>
```

```
PATIENTS          CHART  IMMUNIZATION  IMMUN. DATE
(Alive)           NUMBER (SERIES)
----------------------------------------------------------------------
BETAA,PATRICIA    101886 DPT(3)        JUN 8,1989
BETAB,WILMA       101895 DPT(3)        AUG 10,1989
THETATHETAA,JENN  101900 DPT(3)        NOV 9,1989
THETABBB,ROBERT   101928 DPT(3)        DEC 11,1987
Total: 4
```

Figure 3-21: Sample query relative to the patient's date of birth

Now the same query based on the patients' ages, using one as the baseline age.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DPT3 <Enter>
     1
     2   DPT/DT/TT [ALL PED. TYPES]
     3   DPT/DT/Td/TT [ALL TYPES]
CHOOSE 1-3: 1 <Enter>

First condition/attribute of "DPT": REL <Enter>
     1   RELATIVE AGE
     2   RELATIVE DATE
CHOOSE 1-2: 2 <Enter>
Relative to what date =>

   1) DATE OF BIRTH
   2) DATE OF DEATH
   3) A PARTICULAR AGE

Your choice (1-3): 1// 3 <Enter>

Enter the baseline age: 1 <Enter>  (years)
Enter beginning of time window relative to each patients age: -2M <Enter>
Enter the end of the time window relative to the baseline age: +2M <Enter>

Next condition/attribute of "DPT": <Enter>
Computing Search Efficiency Rating...................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
         Subject of subquery: DPT
         DURING THE SPECIFIED AGE WINDOW

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  IMMUNIZATION  IMMUN. DATE
```

```
(Alive)           NUMBER (SERIES)
-----------------------------------------------------------------------

BETAA,PATRICIA   101886 DPT(3)        JUN 8,1989
ALPHA,WILMA      101895 DPT(3)        AUG 10,1989
THETATHETAA,JENN 101900 DPT(3)        NOV 9,1989
THETABBB,ROBERT  101928 DPT(3)        DEC 11,1987
Total: 4
```

Figure 3-22: Sample query relative to a particular age

3.5   Global

This is a quick review of generic or "global" functions. The following table shows
how "all," "any," and "null" operate.

Function	Results
All	All attribute values on record
Any	Patients who do not have an attribute value recorded + patients who do have attribute values recorded
Null	Patient who do not have an attribute value recorded

These functions were covered previously in Volume I. Note that when "all," "any," or
"null" is used as part of a subquery, the subquery ends as soon as they are added to
the query; you are not given another chance to add another function to the subquery.

3.5.1   All

We can use "all" to find all the values for a particular attribute that are on record. You
can also use the term "exists." In this case, we're asking for all the weights on record
for all of the living patients.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>


SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": ALL <Enter>   (or EXISTS)
Computing Search Efficiency Rating....................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      WEIGHT(lbs) ALL VALUES   [SER = .01]
```

```
Attribute of LIVING PATIENTS: <Enter>

PATIENTS           CHART  WT      DATE OF WT
(Alive)            NUMBER lbs
------------------------------------------------------------------------

ALPHA,AMANDA       101500 100.3   DEC 10,1987
ALPHA,AMANDA       101500 82.0    DEC 30,1986
ALPHA,AMANDA       101500 67.0    JAN 15,1986
ALPHA,AMANDA       101500 68.0    DEC 20,1985
ALPHA,AMANDA       101500 56.5    FEB 25,1985
ALPHA,ANDY         101926 18.3    NOV 22,1989
ALPHA,ANDY         101926 17.4    AUG 24,1989
ALPHA,ANDY         101926 16.1    AUG 3,1989
ALPHA,ANDY         101926 13.5    MAY 22,1989
ALPHA,ANDY         101926 14.5    MAY 18,1989
ALPHA,ANDY         101926 13.4    MAY 4,1989
ALPHA,ANDY         101926 13.4    APR 28,1989
ALPHA,ANDY         101926 13.0    APR 25,1989
ALPHA,ANDY         101926 12.8    MAR 31,1989
ALPHA,ANDY         101926 12.4    MAR 30,1989
ALPHA,ANDY         101926 11.8    MAR 16,1989
ALPHA,ANDY         101926 6.6     JAN 13,1989
ALPHA,BARNEY       101988 18.1    JAN 3,1990
<>
```

Figure 3-23: Sample query for all weights on record for all living patients

3.5.2   Any

This will give us every patients' weights, and the display will show a minus sign (-) if there are no weights on record for a particular patient.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS  <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": ANY <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      WEIGHT(lbs) ANY VALUE INCLUDING NULL   [SER = -.1]

Attribute of LIVING PATIENTS: <Enter>

PATIENTS           CHART  WT      DATE OF WT
(Alive)            NUMBER lbs
```

```
    --------------------------------------------------------------------------
ALPHA,AMANDA      101500 100.3  DEC 10,1987
ALPHA,AMANDA      101500 82.0   DEC 30,1986
ALPHA,AMANDA      101500 67.0   JAN 15,1986
ALPHA,AMANDA      101500 68.0   DEC 20,1985
ALPHA,AMANDA      101500 56.5   FEB 25,1985
ALPHA,ANDY        101926 18.3   NOV 22,1989
ALPHA,ANDY        101926 17.4   AUG 24,1989
ALPHA,ANDY        101926 16.1   AUG 3,1989
ALPHA,ANDY        101926 13.5   MAY 22,1989
ALPHA,ANDY        101926 14.5   MAY 18,1989
ALPHA,ANDY        101926 13.4   MAY 4,1989
ALPHA,ANDY        101926 13.4   APR 28,1989
ALPHA,ANDY        101926 13.0   APR 25,1989
ALPHA,ANDY        101926 12.8   MAR 31,1989
ALPHA,ANDY        101926 12.4   MAR 30,1989
ALPHA,ANDY        101926 11.8   MAR 16,1989
ALPHA,ANDY        101926 6.6    JAN 13,1989
ALPHA,BARNEY      101988 18.1   JAN 3,1990
<>
```

Figure 2-25: Sample query for any weights on record for all living patients

3.5.3   Null

Let's find the patients who do not have any weights on record.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS


First condition/attribute of "WEIGHT": NULL <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       WEIGHT(lbs): NONE EXIST    [SER = -.1]

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  WT
(Alive)           NUMBER lbs
-------------------------------------------------------------------------

ALPHA,CELESTE     60165  -
ALPHA,MOLLY*      100110 -
```

```
ALPHA,TIMOTHY      60170  -
BETAA,ARNOLD*      100133 -
BETAA,DAVE         100471 -
BETAA,DOLLY        60051  -
BETAA,FRANCES      102045 -
BETAA,GERTRUDE     60057  -
BETAA,HEIDI        60159  -
BETAA,JAY          100365 -
BETAA,NORMAN       60081  -
BETAA,QUENTIN      60084  -
BETAA,VERNON       60172  -
BETAA,GREG         60080  -
BETAB,MICHAEL      102055 -
BETAB,RUTH         60146  -
BETAB,WILMA        100057 -
BETA,GILBERT       60154  -
<>
```

Figure 3-24: Sample query of patients who do not have any weights on record

The following subquery uses "null" to find all living patients who do not have a
weight greater than 200 on record.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": OVER <Enter>
Value: 200  <Enter>

Next condition/attribute of "WEIGHT": NULL <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
         Subject of subquery: WEIGHT(lbs)
         GREATER THAN 200
         'NULL' (None meet criteria)

Attribute of LIVING PATIENTS: <Enter>

PATIENTS          CHART  WT
(Alive)           NUMBER lbs
-------------------------------------------------------------------------------

ALPHA,AMANDA      101500 -
ALPHA,ANDY        101926 -
ALPHA,BARNEY      101988 -
ALPHA,BRUCE       101765 -
```

```
ALPHA,CALVIN       101945 –
ALPHA,CANDY        100420 –
ALPHA,CARRIE       101955 –
ALPHA,CELESTE       60165 –
ALPHA,CHASE        102121 –
ALPHA,CHRISTOPHE   101670 –
ALPHA,CHRISTOPHE   102342 –
ALPHA,DANIELLE     101702 –
ALPHA,GRANT        101857 –
ALPHA,GREG         101738 –
ALPHA,ISAAC        101515 –
ALPHA,JOAN*        102375 –
ALPHA,KENNETH      102894 –
ALPHA,LAURA        101882 –
<>
```

Figure 3-25: Subquery using "none" to find all living patients who do not have a weight
greater than 200 on record

All of the patients listed above have weights on record, but none has had a weight
recorded that is over 200 pounds.

3.6   Visit-Related

When you do a subquery, you can enter any attribute that applies to a visit. For
example, if you select weight as an attribute, the subquery might contain value, date,
and all the attributes of the visit during which the weight was obtained. After all, the
context here is that a weight is connected to a visit; therefore, all the characteristics
connected to a visit also go with "weight." So if we ask for a weight after 1989, we
are actually talking about a weight recorded on a visit after 1989.

You can pick any of the following visit conditions or attributes that we discussed
before:

- After
- Before
- Between
- Clinic (pediatrics, dental, ER, etc)
- Date
- Date visit created
- Location (Gallup, Tucson, etc.)
- Modified date
- On
- Purpose of visit (diagnosis)
- Patient
- Provider (name or discipline, primary or secondary)
- Relative age

- Service category (ambulatory, hospitalization, etc.)
- Visit type (IHS, VA, 638, etc.)

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: WTLBS <Enter>

SUBQUERY: Analysis of multiple WEIGHTS

First condition/attribute of "WEIGHT": CLIN <Enter>
     1   CLINIC
     2   CLINICAL IMPRESSIONS
CHOOSE 1-2: 1 <Enter>

Enter CLINIC: EMERGENCY MEDICINE <Enter>     30
Enter ANOTHER CLINIC: <Enter>

The following have been selected =>

     EMERGENCY MEDICINE

Next condition/attribute of "WEIGHT": <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
           Subject of subquery: WEIGHT(lbs)
           CLINIC (EMERGENCY ME)

Attribute of LIVING PATIENTS:
```

Figure 3-26: Sample subquery searching by clinic

4.0   Subqueries for Specific Data Categories

There are attribute functions that can apply to many different categories of data that can apply to weights, laboratory tests, and so on. But there are certain attributes that apply only to certain data categories. Each data category such as lab tests, measurements, diagnoses, and prescriptions has specific attributes that only apply to that category. For example, for the data category "prescriptions," there is the "quantity dispensed" attribute.

4.1   Dental Procedures

An attribute specific to dental procedures is "ADA Code" (American Dental Association Code). ADA codes cannot be entered directly by just typing in a code number; you have to first type in "ADA Code." Other attributes specific to dental procedures are "dental operative site" and "units, dental operative."

Below is a query for patients who had a certain tooth extracted because of caries, and the extraction required more than two dental procedure units.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]


Attribute of LIVING PATIENTS: ADA CODE <Enter>

Enter ADA CODE: EXTRACTION <Enter>
     1    EXTRACTION FOR CARIES  7111       EXTRACTION FOR CARIES
     2    EXTRACTION FOR ORTHO   7113       EXTRACTION FOR ORTHO
     3    EXTRACTION FOR PERIO   7112       EXTRACTION FOR PERIO
     4    EXTRACTION SINGLE TOOTH (ANY R  7110        EXTRACTION SINGLE TOOTH
(ANY REASON)
     5    EXTRAORAL EACH ADDITIONAL FILM  0260        EXTRAORAL EACH
ADDITIONAL FILM
TYPE '^' TO STOP, OR
CHOOSE 1-5: 1 <Enter>  7111
Enter ANOTHER ADA CODE:

The following have been selected =>

     7111


SUBQUERY: Analysis of multiple ADA CODES

First condition/attribute of "ADA CODE": DENT <Enter>
     1    DENTAL OPERATIVE SITE
     2    DENTAL PROCEDURE
CHOOSE 1-2: 1 <Enter>
```

```
Enter OP SITE: CAN <Enter>
     1    CANINE,MAND LEFT           22
     2    CANINE,MAND RIGHT          27
     3    CANINE,MAX LEFT            11
     4    CANINE,MAX RIGHT            6
CHOOSE 1-4: 1 <Enter>
Enter ANOTHER OP SITE: <Enter>


The following have been selected =>

     PERMANENT CANINE,MAND LEFT

Next condition/attribute of "ADA CODE": UNITS, <Enter>  DENTAL PROCEDURE
Condition: OVER <Enter>
Value: 2 <Enter>

         Subject of subquery: ADA CODE
         DENTAL OP. SITE (PERMANENT CA)
         UNITS, DENTAL PROCEDURE > 2

Next condition/attribute of "ADA CODE": <Enter>
Computing Search Efficiency Rating...............

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      ADA CODE (7111)  [SER = 12.38]
         Subject of subquery: ADA CODE
         DENTAL OP. SITE (PERMANENT CA)
         UNITS, DENTAL PROCEDURE > 2


Attribute of LIVING PATIENTS: <Enter>

You have 3 options for listing ADA CODES =>

     1) For ea. patient, list all ADA CODES
     2) For ea. patient, list all ADA CODES and SERVICE DESCRIPTIONS
     3) List all PATIENTS with ADA CODES you specified, but DO NOT list
        individual ADA CODES or SERVICE DESCRIPTIONS (FASTEST OPTION!!)

Your choice (1-3): 1//
```

Figure 4-1: Sample subquery for a dental procedure

4.2   Diagnoses

Specific conditions/attributes of diagnoses can be any of the following:

- CAUSE OF INJURY
- DATE OF INJURY
- FIRST VISIT OR REVISIT

- ICD CODE
- ICD NARRATIVE
- PLACE OF ACCIDENT
- PRIMARY OR SECONDARY
- PROVIDER NARRATIVE
- SPECIAL CAUSE OF DX
- STAGE

In the event of an injury caused by an accident, you will also be asked to "Enter place of Accident." Possible choices are:

- HOME-INSIDE
- HOME-OUTSIDE
- FARM
- SCHOOL
- INDUSTRIAL PREMISES
- RECREATIONAL AREA
- STREET/HIGHWAY
- PUBLIC BUILDING
- RESIDENT INSTITUTION
- HUNTING/FISHING
- OTHER
- UNKNOWN

QMan can find diabetic patients whose records include provider narratives containing "F/U."

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
        ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
DEPENDENT/ADULT-ONSET

 OK? Y// <Enter>
ICD Code Range(s) Selected So Far =>

1)  250.00

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": PROVIDER NAR <Enter>
```

```
Condition: ??

Possible choices:
   BETWEEN,ALPHABETIC (inclusive)
   CONTAINS
   ENDS WITH
   FOLLOWS
   IS
   PATTERN MATCH
   STARTS WITH


Condition: CONTAINS <Enter>
What: F/U <Enter>

Next condition/attribute of "DIAGNOSIS":  <Enter>
Computing Search Efficiency Rating.....

Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]
         Subject of subquery: DIAGNOSIS
         CONTAINS F/U

Attribute of LIVING PATIENTS: <Enter>

You have 3 options for listing DIAGNOSES =>

    1) For ea. patient, list all IC9 CODES
    2) For ea. patient, list all IC9 CODES and PROVIDER NARRATIVES
    3) List all PATIENTS with IC9 CODES you specified, but DO NOT list
       individual IC9 CODES or PROVIDER NARRATIVES (FASTEST OPTION!!)

Your choice (1-3): 1// 2 <Enter>

PATIENTS          CHART ICD9     DATE OF POV   PROVIDER NARRATIVE
(Alive)           NUMBER CODE
-------------------------------------------------------------------------

RHORHORHORR,MAND 100006 250.00   SEP 22,1989   F/U DM,ANGINA
RHORHORHORR,MAND 100006 250.00   MAY 5,1989    F/U DM,ASHD
RHORHORHORR,MAND 100006 250.00   NOV 25,1988   F/U DM,ASHD
RHORHORHORR,MAND 100006 250.00   MAY 20,1988   F/U DM.ASHD
RHORHORHORR,MAND 100006 250.00   MAR 18,1988   F/U DM.ASHD
RHORHORHORR,MAND 100006 250.00   FEB 12,1988   F/U DM.ASHD
RHORHORHORR,MAND 100006 250.00   JAN 22,1988   F/U DM
RHORHORHORR,MAND 100006 250.00   JUL 2,1987    F/U ANGINA, HTN, DM
METAAA,SALLY*    100010 250.00   JUN 2,1989    F/U DM
THETAAAA,KATE*   100028 250.00   NOV 12,1986   F/U DM
CHIIII,JULIE*    100061 250.00   JUL 10,1985   F/U DM, II, ORAL AGENT
GAMMABBBBB,MARY* 100101 250.00   MAR 4,1985    F/U DIABETES
KAPPAAA,HORTENC* 100113 250.00   FEB 24,1986   F/U DIABETIC CLINIC APPT, NOT
F
KAPPAAA,HORTENC* 100113 250.00   FEB 10,1986   F/U DIABETES, NOT FOUND
```

```
KAPPAAA,HORTENC* 100113 250.00   JAN 27,1986   F/U DIABETES


BETA,YVETTE*     100164 250.00   JAN 3,1990    F/U DM ELEVATED BS
BETAA,LESTER     100177 250.00   NOV 23,1987   F/U DIABETES TYPE II
```

Figure 4-2: Sample subquery of diabetic patients whose records include provider narratives
containing "F/U"

Note that in doing provider narrative lookups, QMan looks for **exact** matches for and
does not recognize synonyms. In this case, QMan looks for the letter F/U not for the
words "follow-up." This is a weakness of the provider narrative lookup.

QMan can be queried to search for a special cause of diagnosis:

```
First condition/attribute of "DIAGNOSIS": SPECIAL CAUSE OF DIAGNOSIS <Enter>
CHOOSE FROM:
        1         HOSPITAL ACQUIRED
        2         ALCOHOL
        3         BATTERED CHILD
        4         EMPLOYMENT RELATED
Value:
```

Figure 4-3: Searching by special cause of diagnosis

This could be helpful for a hospital quality assurance check, for example, and want to
see if any patient has an infection that was acquired while the patient was
hospitalized.

In the following query, search QMan to find diabetic patients whose disease is
alcohol-related.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>


Enter DX: DM <Enter>


Enter ANOTHER DX: <Enter>
First condition/attribute of "DIAGNOSIS": SPECIAL CAUSE OF DIAGNOSIS <Enter>
CHOOSE FROM:
        1         HOSPITAL ACQUIRED
        2         ALCOHOL RELATED
        3         BATTERED CHILD
        4         EMPLOYMENT RELATED
Value: 2 <Enter>


Next condition/attribute of "DIAGNOSIS": STAGE <Enter>
```

```
Condition: >
Value: 2 <Enter>


        Subject of subquery: DIAGNOSIS
        SPECIAL CAUSE OF DX = ALCOHOL RELATED
        STAGE > 2

Next condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating........

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (250.00)  [SER = 24.37]
         Subject of subquery: DIAGNOSIS
         SPECIAL CAUSE OF DX = ALCOHOL RELATED
         STAGE > 2

Attribute of LIVING PATIENTS: <Enter>
You have 3 options for listing DIAGNOSES =>

    1) For ea. patient, list all IC9 CODES
    2) For ea. patient, list all IC9 CODES and PROVIDER NARRATIVES
    3) List all PATIENTS with IC9 CODES you specified, but DO NOT list
       individual IC9 CODES or PROVIDER NARRATIVES (FASTEST OPTION!!)

Your choice (1-3): 1// 2 <Enter>
```

Figure 4-4: Sample subquery of diabetic patients whose disease is alcohol-related

4.3   Exams

There are only two special conditions/attributes for examinations: positive and negative.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: BREAST EXAM <Enter>

SUBQUERY: Analysis of multiple BREAST EXAMS

First condition/attribute of "BREAST EXAM": ?? <Enter>

Possible choices:

   POSITIVE
   NEGATIVE

   ALL
   ANY
```

```
    EXISTS
    NULL

    IS
    AT LEAST _ EXIST
    AT MOST _ EXIST
    FIRST
    LAST
    RELATIVE AGE
    RELATIVE DATE
    TOTAL NUMBER
    AFTER
    BEFORE
    BETWEEN DATES (inclusive)

First condition/attribute of "BREAST EXAM": POS <Enter>

There are no special output options for exams.
```

Figure 4-5: Sample subquery by exam

4.4   Hospitalizations

Hospitalizations are a special kind of visit or patient encounter.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: HOSPITAL ADMISSION <Enter>

SUBQUERY: Analysis of multiple HOSPITAL ADMISSIONS

First condition/attribute of "HOSPITAL ADMISSION": ?? <Enter>

    ADMISSION TYPE
    ADMITTING DIAGNOSIS
    ADMITTING SERVICE
    DISCHARGE DATE
    DISCHARGE SERVICE
    DISCHARGE TYPE
    NUMBER OF CONSULTS

First condition/attribute of "HOSPITAL ADMISSION": ADMISSION TYPE <Enter>

Enter ADMISSION TYPE: ??? <Enter>

CHOOSE FROM:
    DIRECT
    OTHER
    REFERRED FROM IHS CLINIC
    TRANS-IHS HOSPITAL
```

```
    TRANS-NON IHS HOSPITAL
Enter ADMISSION TYPE: <Enter>




Next condition/attribute of "HOSPITAL ADMISSION": DISCHARGE TYPE <Enter>

Enter DISCHARGE TYPE: ??? <Enter>

CHOOSE FROM:
    DEATH AFTER 48 HRS W AUTOPSY      6
    DEATH AFTER 48 HRS W/O AUTOPSY    7
    DEATH W/I 48 HRS W AUTOPSY        4
    DEATH W/I 48 HRS W/O AUTOPSY      5
    IRREGULAR (AMA)                   3
    IRREGULAR DISCHARGE               3
    REGULAR DISCHARGE                 1
    TRANSFERRED                       2
    TRANSFERRED IHS HOSPITAL          2
    TRANSFERRED NON-IHS HOSPITAL      2

Enter DISCHARGE TYPE: <Enter>
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: HOSPITAL ADMISSION <Enter>

SUBQUERY: Analysis of multiple HOSPITAL ADMISSIONS
First condition/attribute of "HOSPITAL ADMISSION":

      Select one of the following:

PATIENTS who have a HOSPITAL ADMISSION
          1   recorded
          2   CANCEL this attribute

          What do you want to do: FIND// <Enter>
Computing Search Efficiency Rating....

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       HOSPITAL ADMISSION EXISTS   [SER = -.1]

Attribute of LIVING PATIENTS: <Enter>

You have 2 options for listing ADMISSIONS =>
     1) For ea. patient, list all ADMITTING DATES
     2) For ea. patient, list all ADMITTING DATES and DISCHARGE INFO

Your choice (1-2): 1// 2 <Enter>

PATIENTS          CHART   DISCHARGE SUMMARY
(Alive)           NUMBER
```

```
----------------------------------------------------------------------

ALPHA,ANDY        101926 FEB 14,1989=>FEB 20,1989 (6 days)  PEDIATRICS

ALPHA,BRUCE       101765 MAR 9,1987=>MAR 12,1987 (3 days)  PEDIATRICS
ALPHA,BRUCE       101765 JAN 28,1987=>JAN 29,1987 (1 days)  PEDIATRICS
ALPHA,BRUCE       101765 JUN 29,1986=>JUL 14,1986 (15 days)  PEDIATRIC
ALPHA,BRUCE       101765 MAR 19,1986=>MAR 21,1986 (2 days)  NEWBORN
ALPHA,CALVIN      101945 JAN 5,1990=>JAN 9,1990 (4 days)  PEDIATRICS
ALPHA,CALVIN      101945 MAR 11,1989=>MAR 12,1989 (1 days)  NEWBORN
ALPHA,CHRISTOPHE 101670 APR 20,1988=>APR 20,1988 (0 days)  PEDIATRICS
ALPHA,DANIELLE    101702 DEC 31,1984=>JAN 17,1985 (17 days)  PEDIATRIC
ALPHA,DEE         100572 MAR 4,1989=>MAR 8,1989 (4 days)  OBSTETRICS
ALPHA,FELIX       103126 DEC 17,1986=>DEC 22,1986 (5 days)  GENERAL ME
ALPHA,FELIX       103126 NOV 27,1986=>NOV 29,1986 (2 days)  GENERAL ME
ALPHA,FELIX       103126 NOV 5,1986=>NOV 12,1986 (7 days)   SURGERY
ALPHA,FELIX       103126 OCT 7,1986=>OCT 19,1986 (12 days)  GENERAL ME
ALPHA,FRANCIS     101798 JAN 27,1987=>JAN 29,1987 (2 days)  NEWBORN
ALPHA,GREG        101738 MAY 22,1985=>MAY 24,1985 (2 days)  PEDIATRICS
ALPHA,GREG        101738 MAY 16,1985=>MAY 18,1985 (2 days)  NEWBORN
ALPHA,JOAN        100790 MAR 2,1988=>MAR 3,1988 (1 days)  OBSTETRICS
<>
```

Figure 4-6: Sample subquery by hospital

The second option gives the patient's name, date of admission, date of discharge, number of days hospitalized, and the service to which they were admitted.

4.5   Immunizations

Immunizations also have a few conditions/attributes that are specific, as shown below. You can enter the immunization directly, and there are no special output options for this data category. "Immunization lot number" is a free-text entry. If you indicate that the patient has had an immunization reaction, you will be asked to identify the primary reaction.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DPT3
     1    DPT
     2    DPT/DT/TT [ALL PED. TYPES]
     3    DPT/DT/Td/TT [ALL TYPES]
CHOOSE 1-3: 1 <Enter>

First condition/attribute of "DPT": ?? <Enter>

   IMMUNIZATION CONTRAINDICATED
   IMMUNIZATION LOT NUMBER
```

```
    IMMUNIZATION REACTION


First condition/attribute of "DPT": IMM <Enter>
     1    IMMUNIZATION

     2    IMMUNIZATION CONTRAINDICATED
     3    IMMUNIZATION LOT NUMBER
     4    IMMUNIZATION REACTION
CHOOSE 1-4: 2 <Enter>
CHOOSE FROM:
     1        YES (DO NOT REPEAT THIS VACCINE).
     0        NO (OK TO USE IN THE FUTURE)
Value: 0 <Enter>

Next condition/attribute of "DPT": IMMUNIZATION REACTION <Enter>
CHOOSE FROM:
     1        FEVER
     2        IRRITABILITY
     3        LOCAL REACTION OR SWELLING
     4        VOMITING
     5        RASH OR ITCHING
     6        LETHARGY
     7        CONVULSIONS
     8        ARTHRITIS OR ARTHRALGIAS
     9        ANAPHYLAXIS OR COLLAPSE
     10       RESPIRATORY DISTRESS
     11       OTHER
Value:
```

Figure 4-7: Sample subquery by immunization

4.6   Lab Tests

When you type in a lab test, there are several ways these tests can be grouped. Lab tests can be grouped by anatomical site or by laboratory test method.

> **Note:**   You can only use a particular lab test as an attribute when passing data from the VA Lab System to the PCC.

```
Possible choices:

   BLOOD TYPE                      SERUM HCG
   GLUCOSE                         SERUM POTASSIUM
   HCT                             URINE GLUCOSE,DIPSTICK
   PAP SMEAR                       URINE HCG
   PERITONEAL FLUID POTASSIUM   URINE POTASSIUM
   RHEUMATOID FACTOR


What is the subject of your search?  LIVING PATIENTS // <Enter>
```

```
    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]


Attribute of LIVING PATIENTS: GLUC <Enter>
     1    GLUCOSE
     2    GLUCOSE,DIPSTICK URINE

CHOOSE 1-2: 1 <Enter>
The following tests will included in the query =>

  SERUM GLUCOSE   60 - 123 mg/dL  [critical: <40 and >300]
  PLASMA GLUCOSE   60 - 123 mg/dL  [critical: <40 and >300]

SUBQUERY: Analysis of multiple GLUCOSES
```

Figure 4-8: Sample subquery by lab tests

If the methods by which the glucose readings were obtained were different or the clinical settings in which the glucose readings were obtained were different, and those differences were entered into your database, you could obtain them separately by entering "\GLUC" (a back slash followed by GLUC).

```
Attribute of LIVING PATIENTS: \GLUC <Enter>
     1    GLUCOSE
     2    GLUCOSE,DIPSTICK URINE
CHOOSE 1-2: 1 <Enter>

First condition/attribute of "GLUCOSE": ALL <Enter>
Computing Search Efficiency Rating........................

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       GLUCOSE ALL VALUES   [SER = .11]

Attribute of LIVING PATIENTS: <Enter>

You have 3 options for listing GLUCOSE RESULTS =>

     1) For ea. patient, list all RESULTS
     2) For ea. patient, list all RESULTS and EXPANDED LAB REPORT
     3) List all PATIENTS with RESULTS you specified, but DO NOT list
        individual RESULTS or EXPANDED LAB REPORT (FASTEST OPTION!!)

Choosing option 1 will give you the following format:

PATIENTS          CHART   GLUCOSE    GLUCOSE DATE
(Alive)           NUMBER  mg/dL
---------------------------------------------------------------------------

METAAAA,POLLY     101256  86         APR 25,1989
METAAAA,POLLY     101256  87         FEB 17,1989
METAAAA,POLLY     101256  84         JAN 17,1989
METAAAA,POLLY     101256  51 L       DEC 27,1988
```

```
RHORHOO,EVAN      101873  106        FEB 6,1989
RHORHOO,EVAN      101873  93         JUN 13,1988

RHORHOO,EVAN      101873  51 L       JUN 13,1988
RHORHOO,ARTHUR    101923  52 L       SEP 14,1989
RHORHOO,ARTHUR    101923  94         SEP 14,1989
BETAA,CURT        101932  53 L       APR 13,1989

KAPPAAA,AARON*    102884  156 H      DEC 19,1989
KAPPAAA,AARON*    102884  229 H      OCT 28,1989
KAPPAAA,AARON*    102884  340 H*     JUN 20,1989
KAPPAAA,AARON*    102884  170 H      APR 26,1989
KAPPAAA,AARON*    102884  234 H      DEC 25,1988
KAPPAAA,AARON*    102884  164 H      JAN 28,1988
<>
```

Figure 4-9: Results of previous query

In this listing, in addition to the glucose reading, an "L" will appear if the reading is low or an "H" will appear if the reading is high. Asterisks (*) highlight values that are critical.

Choosing option 2 will give you the following format:

```
PATIENTS         CHART   GLUCOSE                             GLUCOSE DATE
(Alive)          NUMBER mg/dL
---------------------------------------------------------------------------

METAAAA,POLLY    101256 87    60-123                         FEB 17,1989
METAAAA,POLLY    101256 84    60-123                         JAN 17,1989
METAAAA,POLLY    101256 51 L  60-123                         DEC 27,1988
RHORHOO,EVAN     101873 106   60-123                         FEB 6,1989
RHORHOO,EVAN     101873 93    60-123                         JUN 13,1988
RHORHOO,EVAN     101873 51 L  60-123                         JUN 13,1988
RHORHOO,ARTHUR   101923 52 L  60-123                         SEP 14,1989
RHORHOO,ARTHUR   101923 94    60-123                         SEP 14,1989
BETAA,CURT       101932 53 L  60-123                         APR 13,1989
KAPPAAA,AARON*   102884 170 H  60-123                        APR 26,1989
KAPPAAA,AARON*   102884 234 H  60-123                        DEC 25,1988
KAPPAAA,AARON*   102884 164 H  60-123                        JAN 28,1988
<>
```

Figure 4-10: Format given by selecting option 2

In addition to the information that is provided by output option 1, option 2 gives you the normal range for glucose readings. Option 2 will also give the specific site and method that was used, if that information is available.

4.7   Measurements

There are no special conditions/attributes for measurements, nor are there any special output options. Measurements are entered directly. The possible measurements are:

- ABDOMINAL GIRTH (cms.)
- BP
- DIASTOLIC BP
- FHT
- FUNDAL HEIGHT (cms.)
- HEAD CIRC.(cms)
- HEAD CIRC.(ins)
- HEIGHT(cms)
- PERCENTILE(HT)
- PULSE
- SYSTOLIC BP
- TEMPERATURE (F.)
- VISION(corr.)
- VISION(uncorr.)
- WEIGHT(kgs)
- WEIGHT(lbs)

4.8   Medications

"Quantity dispensed" is the only special condition/attribute for prescriptions. Because of the sheer numbers of medications, formulations, and names, medications are entered indirectly by first entering "RX." There is a special output option for medications that gives the date of the prescription, the quantity, and label instructions.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>


   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]


Attribute of LIVING PATIENTS: RX <Enter>


Enter RX: TYLENOL <Enter>
     1    TYLENOL   ACETAMINOPHEN 325MG 24S TAB
     2    TYLENOL   ACETAMINOPHEN 160MG/5ML
     3    TYLENOL   ACETAMINOPHEN/CODEINE ELX
     4    TYLENOL   ACETAMINOPHEN 80MG/0.8ML
     5    TYLENOL #3  APAP WITH CODEINE 30 MG        N/F
TYPE '^' TO STOP, OR
CHOOSE 1-5: <Enter>
     6    TYLENOL 325MG 50S  ACETAMINOPHEN 325MG 50S TAB
     7    TYLENOL SUPP 120MG  ACETAMINOPHEN 120MG SUPP.
     8    TYLENOL#3  ACETAMINOPHEN WITH CODEINE 30MG TAB U/D
CHOOSE 1-8: <Enter>
Enter RX: ACETAMINOPHEN <Enter>
     1    ACETAMINOPHEN 120MG SUPP.
     2    ACETAMINOPHEN 160MG/5ML
     3    ACETAMINOPHEN 325MG 24S TAB
     4    ACETAMINOPHEN 325MG 50S TAB
     5    ACETAMINOPHEN 325MG SUPPOS
```

```
TYPE '^' TO STOP, OR
CHOOSE 1-5: <Enter>
     6    ACETAMINOPHEN 325MG TAB U/D
     7    ACETAMINOPHEN 650MG SUPP              N/F
     8    ACETAMINOPHEN 80MG/0.8ML
     9    ACETAMINOPHEN WITH CODEINE 30MG TAB U/D


     10   ACETAMINOPHEN/COD 30MG
TYPE '^' TO STOP, OR
CHOOSE 1-10: <Enter>
     11 ACETAMINOPHEN/CODEINE ELX
CHOOSE 1-11: <Enter>
Enter RX: MOTRIN <Enter>
     1    MOTRIN   IBUPROFEN 400MG TAB
     2    MOTRIN 40S   IBUPRPOFEN 400MG TAB 40S
     3    MOTRIN800   IBUPROFEN 800MG TAB
     4    MOTRINUD   IBUPROFEN 400MG TAB U/D
CHOOSE 1-4: <Enter>
Enter RX: IBUPROFEN <Enter>
     1    IBUPROFEN 400MG TAB
     2    IBUPROFEN 400MG TAB U/D
     3    IBUPROFEN 800MG TAB
CHOOSE 1-3: <Enter>
Enter RX: IBU <Enter>
     1    IBUPROFEN 400MG TAB
     2    IBUPROFEN 400MG TAB U/D
     3    IBUPROFEN 800MG TAB
     4    IBUPRPOFEN 400MG TAB 40S
CHOOSE 1-4: <Enter>

What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: RX <Enter>

Enter RX: [HCTZ <Enter>          TEST]

Members of HCTZ Taxonomy =>

HYDROCHLOROTHIAZIDE 50MG
HYDROCHLOROTHIAZIDE 50MG TAB 30S
HYDROCHLORTHIAZIDE 25MG TAB
HYDROCHLOROTHIAZIDE 50MG TAB 60S
HYDROCHLOROTHIAZIDE 50MG TAB UD

Enter ANOTHER RX: <Enter>

The following have been selected =>

     HYDROCHLOROTHIAZIDE 50MG
     HYDROCHLOROTHIAZIDE 50MG TAB 30S
     HYDROCHLORTHIAZIDE 25MG TAB
```

```
       HYDROCHLOROTHIAZIDE 50MG TAB 60S
       HYDROCHLOROTHIAZIDE 50MG TAB UD
Want to save this RX group for future use? NO// <Enter>


SUBQUERY: Analysis of multiple RXS


First condition/attribute of "RX": QUANTITY DISPENSED <Enter>


Condition: OVER <Enter>
Value: 5 <Enter>


Next condition/attribute of "RX": <Enter>
Computing Search Efficiency Rating.........

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]
        RX (HYDROCHLOROT/HYDROCHLOROT...)  [SER = 22.96]
            Subject of subquery: RX
            QUANTITY DISPENSED > 5

Attribute of LIVING PATIENTS: <Enter>

You have 3 options for listing RxS =>

     1) For ea. patient, list all RxS
     2) For ea. patient, list all RxS and Quant/SIGs
     3) List all PATIENTS with RxS you specified, but DO NOT list
        individual RxS or Quant/SIGs (FASTEST OPTION!!)

Your choice (1-3): 1// <Enter>

What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: RX <Enter>

Enter RX: MOTRIN <Enter>
     1    MOTRIN   IBUPROFEN 400MG TAB
     2    MOTRIN 40S   IBUPRPOFEN 400MG TAB 40S
     3    MOTRIN800   IBUPROFEN 800MG TAB
     4    MOTRINUD   IBUPROFEN 400MG TAB U/D
CHOOSE 1-4: 1 <Enter>   IBUPROFEN 400MG TAB
Enter ANOTHER RX: MOTRIN <Enter>
     1    MOTRIN   IBUPROFEN 400MG TAB
     2    MOTRIN 40S   IBUPRPOFEN 400MG TAB 40S
     3    MOTRIN800   IBUPROFEN 800MG TAB
     4    MOTRINUD   IBUPROFEN 400MG TAB U/D
CHOOSE 1-4: 2 <Enter> IBUPRPOFEN 400MG TAB 40S
Enter ANOTHER RX: MOTRIN <Enter>
     1    MOTRIN   IBUPROFEN 400MG TAB
     2    MOTRIN 40S   IBUPRPOFEN 400MG TAB 40S
     3    MOTRIN800   IBUPROFEN 800MG TAB
```

```
     4    MOTRINUD   IBUPROFEN 400MG TAB U/D
CHOOSE 1-4: 3 <Enter> IBUPROFEN 800MG TAB
Enter ANOTHER RX: MOTRIN <Enter>
     1    MOTRIN   IBUPROFEN 400MG TAB
     2    MOTRIN 40S   IBUPRPOFEN 400MG TAB 40S
     3    MOTRIN800   IBUPROFEN 800MG TAB
     4    MOTRINUD   IBUPROFEN 400MG TAB U/D
CHOOSE 1-4: 4 <Enter>  MOTRINUD   IBUPROFEN 400MG TAB U/D

Enter ANOTHER RX: <Enter>
The following have been selected =>

     IBUPROFEN 400MG TAB
     IBUPROFEN 400MG TAB U/D
     IBUPRPOFEN 400MG TAB 40S
     IBUPROFEN 800MG TAB

Want to save this RX group for future use? NO// Y <Enter>
Group name:  MOTRIN <Enter>
SUBQUERY: Analysis of multiple RXS

First condition/attribute of "RX": <Enter>
Computing Search Efficiency Rating........

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       RX (IBUPROFEN 40/IBUPROFEN 40...)  [SER = 23.29]

Attribute of LIVING PATIENTS: <Enter>
 You have 3 options for listing RxS =>

     1) For ea. patient, list all RxS
     2) For ea. patient, list all RxS and Quant/SIGs
     3) List all PATIENTS with RxS you specified, but DO NOT list
        individual RxS or Quant/SIGs (FASTEST OPTION!!)

Your choice (1-3): 1// 2 <Enter>

PATIENTS          CHART  RX                       DATE OF RX    QUANTITY & SIG
(Alive)           NUMBER
-------------------------------------------------------------------------------

RHORHOO,DIANE*   100018 IBUPROFEN 400MG TAB    MAR 19,1991   #40  T1T QID
Total: 1
Press RETURN to continue or '^' to exit:
```

Figure 4-11: Sample subquery by medication

This expanded listing gives the patient's name, chart number, prescription, date of prescription, quantity dispensed, and label instructions.

4.9   Patient Education

Patient education is another data category that is accessed indirectly. The patient education topics are grouped with a prefix indicating a subject area, such as DM for diabetes, HTN for hypertension, and so on. There are two special conditions/attributes for patient education: "provider of education" and "level of understanding."

```
What is the subject of your search?  LIVING PATIENTS // <Enter>


   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
Attribute of LIVING PATIENTS: PATIENT EDUCATION TOPIC <Enter>

The choice of patient education topics is as follows:

CD-COMPLICATIONS            DM-LIFESTYLE ADAPTATIONS   PL-LIFESTYLE ADAPTION
CD-DIET                     DM-MEDICATIONS             PL-MEDICATIONS
CD-DISEASE PROCESS          P-ANATOMY AND PHYSIOLOGY   PN-FIRST TRIMESTER
CD-EXERCISE                 FP-DIAPHRAGM               PN-POSTPARTUM
CD-FOLLOW-UP                FP-FOAM/CONDOMS            PN-SECOND TRIMESTER
CD-LIFESTYLE ADAPTATION     FP-IUD                     PN-THIRD TRIMESTER
CD-MEDICATIONS              FP-METHODS                 RD-COMPLICATIONS
CHA-SEXUALITY               FP-ORAL CONTRACEPTIVES     RD-DIET
CHA-WELLNESS                FP-STERILIZATION           RD-DISEASE PROCESS
CHI-DIET                    HTN-COMPLICATIONS          RD-EXERCISE
CHI-GROWTH/DEVELOPMENT      HTN-DIET                   RD-FOLLOW-UP
CHI-PARENTING               HTN-DISEASE PROCESS        RD-LIFESTYLE
ADAPTATIONS
CHI-SAFETY                  HTN-EXERCISE               RD-MEDICATION
CHNB-DIET                   HTN-FOLLOW-UP              RD-PAIN MANAGEMENT
CHNB-GROWTH/DEVELOPMENT     HTN-LIFESTYLE ADAPTIONS    TOB-CESSATION
MATERIALS
CHNB-PARENTING             HTN-MEDICATIONS            TOB-CONTRACT SIGNED
CHNB-SAFETY                ND-DIET                    TOB-NICORETTE GUM/RX
CHS-DIET                   ND-DISEASE PROCESS         TOB-QUIT DATE
CHS-GROWTH/DEVELOPMENT     ND-EXERCISE                ESTABLISHED
CHS-PARENTING             ND-FOLLOW-UP               TOB-REFER TO CESSATION
CHS-SAFETY                ND-LIFESTYLE ADAPTATION    PROGRAM
CHT-DIET                  ND-MEDICATIONS             WH-BREAST EXAM
CHS-GROWTH/DEVELOPMENT    OBS-COMPLICATIONS          WH-HYGIENE
CHS-PARENTING            OBS-DIET                   WH-KAEGEL EXERCISE
CHS-SAFETY               OBS-DISEASE PROCESS        WH-MENOPAUSE
CHT-DIET                 OBS-EXERCISE               WH-MENSES
CHT-GROWTH/DEVELOPMENT   OBS-FOLLOW UP              WH-PAP
CHT-PARENTING           OBS-LIFESTYLE ADAPTATIONS  WH-PREMENSTRUAL
SYNDROME
CHT-SAFETY              PL-COMPLICATIONS           WH-STD
DM-COMPLICATIONS        PL-DIET                    WL-DIET
DM-DIET                 PL-DISEASE PROCESS         WL-EXERCISE
DM-DISEASE PROCESS      PL-EXERCISE                WL-LIFESTYLE
ADAPTATION
DM-EXERCISE             PL-FOLLOW-UP               WL-SAFETY
```

```
DM-FOLLOW UP                                          WL-SEXUALITY
DM-FOOT CARE

Enter TOPIC: DM-DIET <Enter>
Enter ANOTHER TOPIC: DM-EXERCISE  <Enter>
Enter ANOTHER TOPIC: <Enter>


The following have been selected =>

     DM-DIET
     DM-EXERCISE



Want to save this TOPIC group for future use? NO// <Enter> (NO)

SUBQUERY: Analysis of multiple PATIENT ED TOPICS

First condition/attribute of "PATIENT ED TOPIC":

The attributes that are specific to "patient education topic" are —

   LEVEL OF UNDERSTANDING
   PROVIDER OF PT ED

First condition/attribute of "PATIENT ED TOPIC": LEVEL OF UNDERSTANDING
<Enter>
CHOOSE FROM:
        1       POOR
        2       FAIR
        3       GOOD
Value: ALL <Enter>

Next condition/attribute of "PATIENT ED TOPIC":
Computing Search Efficiency Rating........................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      PATIENT ED TOPIC (DM-DIET/DM-EXERCISE)  [SER = 26.76]
         Subject of subquery: PATIENT ED TOPIC
          LEVEL OF UNDERSTANDING IS NOT 'NULL'
```

Figure 4-12: Sample subquery by patient education

There are no special output options for patient education.

4.10   Medical Procedures

Medical procedures are entered indirectly using ICD codes or using synonyms.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
```

```
      ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: PROC <Enter>
     1    PROCEDURE (DENTAL)
     2    PROCEDURE (MEDICAL)
CHOOSE 1-2: 2 <Enter>


Enter PROCEDURE: ORIF <Enter>
79.30 (OPN FX RED W INT FIX NOS)
OPEN REDUCTION OF FRACTURE WITH INTERNAL FIXATION, UNSPECIFIED SITE

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  79.30


Enter ANOTHER PROCEDURE: <Enter>

SUBQUERY: Analysis of multiple PROCEDURES

First condition/attribute of "PROCEDURE": ?? <Enter>

The conditions/attributes specific to medical procedures are:
   DATE OF PROCEDURE
   INFECTION
   OPERATING PROVIDER
   PRINCIPAL PROCEDURE
   REASON FOR PROCEDURE (DX)

First condition/attribute of "PROCEDURE": INFECTION <Enter>
CHOOSE FROM:
       Y      YES
       N      NO
Value: Y <Enter>

Next condition/attribute of "PROCEDURE": PRINCIPAL PROCEDURE <Enter>
CHOOSE FROM:
       Y      YES
       N      NO
Value: Y <Enter>

         Subject of subquery: PROCEDURE (MEDICAL)

Enter DIAGNOSIS: FX HIP <Enter>  ( FRACTURE/FRACTURES
HIP/HIPPEL/HIPPOCAMPUS/HIPPUS )
.
820.8 (FX NECK OF FEMUR NOS-CL)
FRACTURE OF UNSPECIFIED PART OF NECK OF FEMUR, CLOSED

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>
```

```
1)  820.8

Enter ANOTHER DIAGNOSIS: <Enter>

         Subject of subquery: PROCEDURE (MEDICAL)

         REASON FOR PROCEDURE (DX) (820.8)

Next condition/attribute of "PROCEDURE": <Enter>
Computing Search Efficiency Rating...........................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

      PROCEDURE (MEDICAL) (79.30)  [SER = 26.76]
         Subject of subquery: PROCEDURE (MEDICAL)

         REASON FOR PROCEDURE (DX) (820.8)

Attribute of LIVING PATIENTS: <Enter>

You have 3 options for listing PROCEDURES =>

    1) For ea. patient, list all ICD CODES
    2) For ea. patient, list all ICD CODES and PROVIDER NARRATIVES
    3) List all PATIENTS with ICD CODES you specified, but DO NOT list
       individual ICD CODES or PROVIDER NARRATIVES (FASTEST OPTION!!)

Your choice (1-3): 1//
```

Figure 4-13: Sample subquery by medical procedure

4.11   Skin Tests

Skin tests are entered directly. The readings are given in millimeters diameter. The two specific conditions/attributes of skin tests are "date read" and "result."

```
Possible skin test choices—
   COCCI READING
   PPD READING

What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
Attribute of LIVING PATIENTS: PPD <Enter>  READING

SUBQUERY: Analysis of multiple PPD READINGS

First condition/attribute of "PPD READING": OVER <Enter>
Value: 9  <Enter>
```

```
Next condition/attribute of "PPD READING": DATE READ <Enter>
Condition: RELATIVE TO VISIT DATE <Enter>

You can specify a time window relative to the visit date.

Enter the start of the time window relative to the visit: +2D <Enter>
Enter the end of the time window relative to the visit: +2W <Enter>

          Subject of subquery: PPD READING
          GREATER THAN 9
          RELATIVE TO VISIT DATE

Next condition/attribute of "PPD READING": RESULT <Enter>   (POS/NEG)
CHOOSE FROM:

        P       POSITIVE
        N       NEGATIVE
        D       DOUBTFUL
        O       NO TAKE
Value: P <Enter>

          Subject of subquery: PPD READING
          GREATER THAN 9
          RELATIVE TO VISIT DATE

Next condition/attribute of "PPD READING": <Enter>
Computing Search Efficiency Rating.................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
          Subject of subquery: PPD READING
          GREATER THAN 9
          RELATIVE TO VISIT DATE

Attribute of LIVING PATIENTS:
```

Figure 4-14: Sample subquery by skin tests

There are no special output options for skin tests.

4.12   Nursing Treatments

Nursing treatments are entered indirectly.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]


Attribute of LIVING PATIENTS: NURSING TREATMENT <Enter>
```

```
Enter TREATMENT: BATH <Enter>            000133      1
Enter ANOTHER TREATMENT: <Enter>

The following have been selected =>

      BATH

SUBQUERY: Analysis of multiple TREATMENTS

First condition/attribute of "TREATMENT": ?? <Enter>

The specific attribute choices for treatment are —
    NUMBER OF TREATMENTS
    TREATMENT PROVIDER

First condition/attribute of "TREATMENT":
Computing Search Efficiency Rating.............................

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       TREATMENT (BATH)  [SER = 26.76]

Attribute of LIVING PATIENTS:
```

Figure 4-15: Sample subquery by nursing treatments

There are no special output options for treatments.

4.13   Providers

"Provider" is an attribute of visit, as you will see in the example below.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: PROVIDER <Enter> ??

Note that if you try to enter "provider" as an attribute of LIVING PATIENT,
QMan will beep you and show you two question marks.  Why?  Because
"provider" is a condition/attribute of a visit, not of a patient.

Attribute of LIVING PATIENTS: VISIT <Enter>

First condition/attribute of "VISIT": PROVIDER <Enter>

            *****  PROVIDER-RELATED CRITERIA  *****

You can either specify one or more providers by NAME, or.....
You can specify one or more PROVIDER ATTRIBUTES (affiliation, specialty etc)
to be used as selection criteria.
```

```
    Select one of the following:

        1          NAME(S) of providers
        2          ATTRIBUTE(S) of providers

    Your choice: NAME(S)//
```

Figure 4-16: Sample subquery by provider

Once you have entered "visit" and given "provider" as the first condition/attribute of visit, you can specify provider(s) by name or by attribute. Possible choices for provider attributes are:

- AFFILIATION
- DEA NUMBER
- DISCIPLINE
- FULL/PART TIME
- HOME PHONE NUMBER
- INITIALS
- LICENSE NUMBER
- MAILING ADDRESS-CITY
- MAILING ADDRESS-STATE
- MAILING ADDRESS-STREET
- MAILING ADDRESS-ZIP
- NAME (PROVIDER)
- OFFICE PHONE NUMBER
- SSN

The following are possible choices of provider discipline:

- ADMINISTRATION
- ANESTHESIOLOGIST
- AUDIOLOGIST
- AUDIOMETRIC TECHNICIAN
- CARDIOLOGIST
- CHN (CONTRACT)
- CHN/AIDES
- CODING/DATA ENTRY
- COMMUNITY HEALTH REP.
- DELETE-ENOS
- DENTIST
- DERMATOLOGIST
- DIETICIAN
- DISEASE CONTROL PROGRAM
- EMT/PARAMEDIC

- ENVIRONMENTAL HEALTH
- EYE CARE SPECIALIST
- FAMILY PLANNING COUNSELOR
- FAMILY PRACTICE
- HEALTH AIDE
- HEALTH EDUCATOR
- HEALTH RECORDS
- INHALATION THERAPIST
- INTERNAL MEDICINE
- LABORATORY TECHNICIAN
- LICENSED PRACTICAL NURSE
- MEDICAL SOCIAL WORKER
- MEDICAL STUDENT
- MENTAL HEALTH
- NEUROLOGIST
- NURSE MIDWIFE
- NURSE PRACTICIONER
- NURSING STUDENT
- NUTRITION PROGRAM (PAPAGO)
- NUTRITIONIST
- NUTRITIONIST (CONTRACT/TRIBAL)
- OB/GYN
- OB/GYN (CONTRACT)
- OPHTHALMOLOGIST
- OPTOMETRIC ASSISTANT
- OPTOMETRIST
- OPTOMETRTIST (CONTRACT)
- ORTHOPEDIST
- OSTEOPATH
- OTHER
- OTOLARYNGOLOGIST
- OUTREACH WORKER
- PATHOLOGIST
- PEDIATRIC NURSE PRACT.
- PEDIATRICIAN
- PHARMACIST
- PHARMACY PRACTICIONER
- PHYSICAL THERAPIST
- PHYSICIAN
- PHYSICIAN (CONTRACT)
- PHYSICIAN (TRIBAL)
- PHYSICIAN ASSISTANT
- PODIATRIST

- PODIATRIST (CONTRACT)
- PSYCHIATRIST
- PSYCHOLOGIST
- RADIOLOGIST
- REGISTERED NURSE
- SCHOOL NURSE
- SPEECH THERAPIST
- SPEECH/LANGUAGE PATHOLOGIST
- SURGEON
- UROLOGIST
- X-RAY TECHNICIAN

5.0   Advanced Query Features

5.1   Saving and Reusing Patient Cohorts (Search Templates)

The output of QMan is typically a list of patients. Like taxonomies, these lists can be saved and reused in both QMan and FileMan applications. FileMan calls these lists search templates. In fact, the list of patients is a cohort, not a template. The use of "template" in this context is a serious misnomer, but because the PCC is based on FileMan, we are stuck with it.

5.1.1   Saving Groups of Patients

Using output option 4 creates (saves) a cohort of patients that you can use again in FileMan or in QMan. A cohort is any group of patients you create that have the specific attributes you define. In this example, we are defining males with diabetes as our cohort.

Once created, you can search a cohort for more specific information. It can be a tremendous timesaving and information-refining tool.

Option 4 is selected in the following example:

```
                    *****   QMAN OUTPUT OPTIONS   *****

      Select one of the following:

            1            DISPLAY results on the screen
            2            PRINT results on paper
            3            COUNT 'hits'
            4            KEEP 'hits' in a FM search template
            5            STORE search logic for future use
            6            R-MAN special report generator
            9            HELP
            0            EXIT

Your choice: DISPLAY// 4 <Enter>  KEEP 'hits' in a FM search template
```

Figure 5-1: Selecting option 4 from the QMan output options menu

After selecting option 4, QMan asks you to note that the template will be attached to the IHS PATIENT file (#9000001). You cannot save a cohort without "attaching" it to a file. Almost always you will want your cohorts to be attached to your "PATIENT" files. You are then prompted to verify that you are creating a new cohort (SORT TEMPLATE) and provided with an opportunity to enter a brief description of it. Follow the steps as indicated.

```
Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)


Enter the name of the SEARCH TEMPLATE: DIABETIC MALES <Enter>
   ARE YOU ADDING 'DIABETIC MALES' AS A NEW SORT TEMPLATE? Y <Enter> (YES)

DESCRIPTION:
  1>LIST OF MALES WITH DX OF DIABETES MELLITUS ICD 250.00
  2>
EDIT Option: <Enter>
Want to run this task in background? NO// Y <Enter>
```

Figure 5-2: Saving and verifying the creation of a new template

If you were to answer "N" to the prompt "Want to run this task in background?" you
would see the following list appear on your screen. Otherwise, your cohort would be
created quietly in QMan's memory until you are ready to retrieve it at another time or
send it to a printer.

Notice the cohort below indicates a "hit" for the designated ICD code, in this case,
diabetes, and displays the sex of the patients, male.

```
PATIENT           CHART   DIAGNOSIS  SEX
                  NUMBER  ICD9 CODE
----------------------------------------------------------------------


JONES,JIM         6764    +          MALE
JOHNSON,BILL      11234   +          MALE
BLACK,SAM         3731    +          MALE
BLACK,BOB         2543    +          MALE


.  .  .


BLACK,BOB         5921    +          MALE
BLACK,JOHN        128     +          MALE
MILLER,LARRY      804     +          MALE
MILLER,BILL       4641    +          MALE

Search template completed...

This query generates 26 "hits"
Time required to create search template: 1 MINUTE, 41 SECONDS
<>
```

Figure 5-3: Creation of search template

Once you have created a cohort, such as the diabetic males list, you can use it to
simplify further searches and thereby fine-tune your reports. In the example below we
will use the diabetic males cohort and discover which patients in that group also have
diagnoses of hypertension.

We select the default for our subject and enter "[DIABETIC MALES" (an open
bracket, no space, then the name we assigned to the cohort in the previous example)
to tell QMan to go and find our cohort by that name.

```
What is the subject of your search?  LIVING PATIENTS //
Attribute of LIVING PATIENTS: [DIABETIC MALES <Enter>  (DEC 20, 1989) USER
#3 FILE #9000001
```

Figure 5-4: Searching for your cohort

If you forgot the exact name you assigned the cohort, or want to simply view which
cohorts are on your system, enter "[?" (open bracket, no space, question mark) to
display a list of cohorts.

Once you designate a cohort as the attribute, the following four options display:

```
Select one of the following =>

    1) LIVING PATIENTS must be a member of the DIABETIC MALES cohort
    2) LIVING PATIENTS must NOT be a member of the DIABETIC MALES cohort
    3) Select a random sample of the DIABETIC MALES cohort
    4) Count the number of entries in the DIABETIC MALES cohort

Select option "1" for this search.

Your choice (1-4): 1//  1 <Enter>
Computing Search Efficiency Rating...........................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'DIABETIC MALES' COHORT   [SER = 99.00]
```

Figure 5-5: Options seen after designating a cohort as the attribute

We now can select the second attribute, keeping in mind our goal is to discover
patients in the diabetic males cohort that also have been diagnosed with hypertension.
Thus:

```
Attribute of LIVING PATIENTS: DX <Enter> DIAGNOSIS

Enter DX: HTN <Enter>
401.9 (HYPERTENSION NOS)
UNSPECIFIED ESSENTIAL HYPERTENSION

 OK? Y// <Enter>

Enter another DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": <Enter>
```

```
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       MEMBER OF 'DIABETIC MALES' COHORT   [SER = 99.00]
       DIAGNOSIS (401.9)  [SER = 24.37]

Attribute of LIVING PATIENTS:
```

Figure 5-6: Searching for males within the cohort who have also been diagnosed with
hypertension

We now have the option to create an all new cohort that will be a combination of our
diabetic males cohort and hypertensive males.

```
*****   QMAN OUTPUT OPTIONS   *****

     Select one of the following:

           1           DISPLAY results on the screen
           2           PRINT results on paper
           3           COUNT 'hits'
           4           KEEP 'hits' in a FM search template
           5           STORE search logic for future use
           6           R-MAN special report generator
           9           HELP
           0           EXIT

     Your choice: DISPLAY// 4 <Enter>

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)

Enter the name of the SEARCH TEMPLATE: HYPERTENSIVE DIABETIC MALES <Enter>
   ARE YOU ADDING 'HTN DIAB MALES' AS A NEW SORT TEMPLATE? Y <Enter> (YES)
DESCRIPTION:
  1> MEMBERS OF THE DIABETIC MALES COHORT WITH HTN DXS
  2>
   DIAGNOSIS AS SPECIFIED   [SER = 24.37]

There, you've done it!  Now the only task is to choose how you want to
receive the report.  Normally you will "Write the report to a printer" and
queue it, but for now, we'll display the report on our screen.

OUTPUT OPTIONS =>

     1) Display the report on the screen
     2) Write the report on a printer
     3) Count the "hits" but DO NOT generate a full report

YOUR CHOICE (1-4): 1//  1 <Enter>

Want to run this report in the background? N <Enter>
```

```
PATIENT           CHART   DIAGNOSIS
                  NUMBER  ICD9 CODE
-----------------------------------------------------------------------

METAA,JIM         2403    +
BETAA,LARRY       18294   +
<>
```

Figure 5-7: Creating a new cohort to combing diabetic and hypertensive males

5.1.2   Cohort Use Examples and Sample Sessions

In the next few examples, we will create three separate cohorts and use them in various ways to demonstrate how QMan can be used to perform complex searches (step searches) easily.

Follow the creation of cohorts carefully, and then study how cohorts are used in various combinations.

First, create a cohort of males with a diagnosis of hypertension.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:
       M        MALE
       F        FEMALE
Value: M <Enter>  MALE
Computing Search Efficiency Rating.............................

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       SEX IS MALE     [SER = .85]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: HTN <Enter>
401.9 (HYPERTENSION NOS)
UNSPECIFIED ESSENTIAL HYPERTENSION

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  401.9

Enter ANOTHER DX:   <Enter>
```

```
SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS":
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       SEX IS MALE    [SER = .85]
       DIAGNOSIS (401.9)  [SER = 24.37]

Attribute of LIVING PATIENTS: <Enter>

                   *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1           DISPLAY results on the screen
          2           PRINT results on paper
          3           COUNT 'hits'
          4           KEEP 'hits' in a FM search template
          5           STORE search logic for future use
          6           R-MAN special report generator
          9           HELP
          0           EXIT

          Your choice: DISPLAY// 4 <Enter>  KEEP 'hits' in a FM search
template

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)


Enter the name of the SEARCH TEMPLATE: LEN'S HTN MALES <Enter>
   ARE YOU ADDING 'LEN'S HTN MALES' AS A NEW SORT TEMPLATE? Y <Enter> (YES)
DESCRIPTION:
  1>LEN'S MALES WITH HTN DX
  2>
EDIT Option:

Want to run this task in background? NO//
```

Figure 5-8: Creating a cohort of males diagnosed with hypertension

Second, create a cohort of males with a diagnosis of diabetes mellitus.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:
```

```
        M        MALE
        F        FEMALE
Value: M <Enter>  MALE
Computing Search Efficiency Rating.....................................

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]
        SEX IS MALE     [SER = .85]
Attribute of LIVING PATIENTS:  DX <Enter>


Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL ADULT/NIDDM)
ADULT-ONSET TYPE DIABETES MELLITUS WITHOUT MENTION OF
COMPLICATION/NONINSULIN DEPENDENT

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  250.00

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS":
Computing Search Efficiency Rating.....

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]
        SEX IS MALE     [SER = .85]
        DIAGNOSIS (250.00)  [SER = 24.37]

Attribute of LIVING PATIENTS: <Enter>

                    *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1         DISPLAY results on the screen
          2         PRINT results on paper
          3         COUNT 'hits'
          4         KEEP 'hits' in a FM search template
          5         STORE search logic for future use
          6         R-MAN special report generator
          9         HELP
          0         EXIT

         Your choice: DISPLAY// 4 <Enter>  KEEP 'hits' in a FM search
template

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)
Enter the name of the SEARCH TEMPLATE: LEN'S DIABETIC MALES <Enter>
```

```
   ARE YOU ADDING 'LEN'S DIABETIC MALES' AS
       A NEW SORT TEMPLATE? Y <Enter>  (YES)
DESCRIPTION:
  1>LEN'S MALES WITH DIABETES
  2>
EDIT Option:

Want to run this task in background? NO//
```

Figure 5-9: Creating a cohort of males with a diagnosis of diabetes mellitus

Below is the list that displays:

```
PATIENT          CHART   DIAGNOSIS  SEX
                 NUMBER  ICD9 CODE
-------------------------------------------------------------------

RHOOOO,THERESA   51      +          MALE
METAAA,JIM       2403    +          MALE
METABB,BILL      5660    +          MALE
GAMMAAA,DAVID    10154   +          MALE
BETAA,LARRY      18294   +          MALE
GAMMA,BILL       21437   +          MALE
KAPPAAA,CHARLES          +          MALE
KAPPA,JOHN       20773   +          MALE
BETBB,DENNIS             +          MALE
GAMAA,DENNIS     20569   +          MALE
KAPPABB,DAVID    18236   +          MALE
```

Figure 5-10: Results from above cohort creation

Third, create a cohort of males with weights over 250 pounds.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:
        M       MALE
        F       FEMALE
Value: M <Enter>  MALE
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      SEX IS MALE     [SER = .85]

Attribute of LIVING PATIENTS:  WTLBS <Enter>  WEIGHT(lbs)
SUBQUERY: Analysis of multiple WEIGHTS
```

```
First condition/attribute of "WEIGHT": OVER <Enter>
Value: 250 <Enter>
Next condition/attribute of "WEIGHT": <Enter>
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       SEX IS MALE    [SER = .85]
          Subject of subquery: WEIGHT(lbs)
          GREATER THAN 250


Attribute of LIVING PATIENTS: <Enter>


                    *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:


          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
          6          R-MAN special report generator
          9          HELP
          0          EXIT


          Your choice: DISPLAY// 4 <Enter>  KEEP 'hits' in a FM search
template

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)

Enter the name of the SEARCH TEMPLATE: LEN'S OBESE MALES <Enter>
   ARE YOU ADDING 'LEN'S OBESE MALES' AS A NEW SORT TEMPLATE? Y <Enter>
(YES)
DESCRIPTION:
  1>LEN'S OBESE MALES FILE
  2>
EDIT Option: <Enter>

Want to run this task in background? NO// <Enter>

PATIENT           CHART   SEX     WT
                  NUMBER          lbs
--------------------------------------------------------------------------

PIPIPI,JOHN        723    MALE    +
METAAA,BILL        5660   MALE    +
GAMMAAA,BOB        8504   MALE    +
GAMMB,LARRY        10010  MALE    +
IOTAA,DON          18734  MALE    +
IOTABBB,LARRY      20862  MALE    +
BETAA,BILL                MALE    +
PIPIPI,SAM                MALE    +
```

```
GAMMA,JOHN          20773   MALE     +
GAMMA,BILL                  MALE     +
GAMMABB,DON                 MALE     +
GAMMABB,BILL        15137   MALE     +
PHIIII,JIM          5449    MALE     +
PHIPH,DENNIS        1540    MALE     +
PHIPH,DENNIS        2588    MALE     +
PHIPH,LARRY         14700   MALE     +
```

Figure 5-11: Creating a cohort of males with weights over 250 lbs

Using a Cohort with another Attribute

In our first example of using cohorts with other attributes, we created a report listing diabetic males that also had a diagnosis of hypertension. A cohort can be used with *any* other attribute in an "and'ed" situation. We will discover which members of our diabetic males cohort live in Achi.

First, select membership in our diabetic males cohort for the first attribute.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>


   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]


Attribute of LIVING PATIENTS: [LEN'S DIABETIC MALES <Enter>  (DEC 21, 1989)
USER #27 FILE #9000001

Select one of the following =>

    1) LIVING PATIENTS must be a member of the LEN'S DIABETIC MALES cohort
    2) LIVING PATIENTS must NOT be a member of the LEN'S DIABETIC MALES
       cohort
    3) Select a random sample of the LEN'S DIABETIC MALES cohort
    4) Count the number of entries in the LEN'S DIABETIC MALES cohort

Your choice (1-4): 1//  1 <Enter>
Computing Search Efficiency Rating....................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'LEN'S DIABETIC MALES' COHORT   [SER = 99.00]
Attribute of LIVING PATIENTS:
```

Figure 5-12: Example of selecting membership in our diabetic males cohort for the first attribute

Second, designate the "current community" as Achi for the second attribute.

```
Attribute of LIVING PATIENTS: COMMUNITY <Enter>


Enter COMMUNITY: ACHI <Enter>
     1   ACHI          PIMA      ARIZONA      005      0410005
     2   ACHILLE          BRYAN    OKLAHOMA     117      4007117
CHOOSE 1-2: 1 <Enter>
Enter ANOTHER COMMUNITY: <Enter>


The following have been selected =>


     ACHI
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'LEN'S DIABETIC MALES' COHORT   [SER = 99.00]
      CURRENT COMMUNITY (ACHI)   [SER = 99]

Attribute of LIVING PATIENTS:
```

Figure 5-13: Example of designating the "current community" as Achi for the second attribute

We want no further attributes so we press Enter.

```
                  *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:


          1           DISPLAY results on the screen
          2           PRINT results on paper
          3           COUNT 'hits'
          4           KEEP 'hits' in a FM search template
          5           STORE search logic for future use
          6           R-MAN special report generator
          9           HELP
          0           EXIT


         Your choice: DISPLAY// <Enter>

...HMMM, I'M WORKING AS FAST AS I CAN...

PATIENT          CHART    COMMUNITY
                 NUMBER
----------------------------------------------------------------------------

PHIPHI,TOM       51     ACHI
METAAA,BILL      5660   ACHI
BETAA,LARRY      18294  ACHI
GAMMAAA,CHARLES         ACHI
GAMMA,SAM        9284   ACHI
Total: 5
<>
```

Figure 5-14: Results of search

Using Multiple Cohorts

In this example, we will run a search to determine which patients in our database are members of all three cohorts we created in this chapter. We will create a list of males with weights over 250 pounds that have diabetes and hypertension.

Follow the example.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: [LEN'S DIABETIC MALES <Enter> (DEC 21, 1989)
USER #27 FILE #9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the LEN'S DIABETIC MALES cohort
     2) LIVING PATIENTS must NOT be a member of the LEN'S DIABETIC MALES
        cohort
     3) Select a random sample of the LEN'S DIABETIC MALES cohort
     4) Count the number of entries in the LEN'S DIABETIC MALES cohort

Your choice (1-4): 1//  1 <Enter>
Computing Search Efficiency Rating.................................

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       MEMBER OF 'LEN'S DIABETIC MALES' COHORT   [SER = 99.00]

Attribute of LIVING PATIENTS: [LEN'S HTN MALES <Enter>  (DEC 21, 1989) USER
#27 FILE #9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the LEN'S HTN MALES cohort
     2) LIVING PATIENTS must NOT be a member of the LEN'S HTN MALES cohort
     3) Select a random sample of the LEN'S HTN MALES cohort
     4) Count the number of entries in the LEN'S HTN MALES cohort

Your choice (1-4): 1// 1 <Enter>
Computing Search Efficiency Rating.....................................

    Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       MEMBER OF 'LEN'S DIABETIC MALES' COHORT   [SER = 99.00]
       MEMBER OF 'LEN'S HTN MALES' COHORT   [SER = 49.00]

Attribute of LIVING PATIENTS: [LEN'S OBESE MALES <Enter> (DEC 21, 1989) USER
#27 FILE #9000001

Select one of the following =>
```

```
      1) LIVING PATIENTS must be a member of the LEN'S OBESE MALES cohort
      2) LIVING PATIENTS must NOT be a member of the LEN'S OBESE MALES cohort
      3) Select a random sample of the LEN'S OBESE MALES cohort
      4) Count the number of entries in the LEN'S OBESE MALES cohort

Your choice (1-4): 1//  1 <Enter>
Computing Search Efficiency Rating....................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'LEN'S DIABETIC MALES' COHORT   [SER = 99.00]
      MEMBER OF 'LEN'S HTN MALES' COHORT   [SER = 49.00]
      MEMBER OF 'LEN'S OBESE MALES' COHORT   [SER = 24.00]

Attribute of LIVING PATIENTS: <Enter>

                    *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
          6          R-MAN special report generator
          9          HELP
          0          EXIT

         Your choice: DISPLAY// <Enter>

...SORRY, I'M WORKING AS FAST AS I CAN...

PATIENT           CHART   COMMUNITY
                  NUMBER
-------------------------------------------------------------------------------

PHIPHI,TOM        89766   TUCSON
METAAA,BILL       5660    SELLS
BETAA,LARRY       18294   ACHI
GAMMAAA,CHARLES           WILLIAMS
GAMMA,SAM         9284    SANTA ROSA
Total: 5
<>
```

Figure 5-15: Creating list of males with weights over 250 pounds that have diabetes and
hypertension

We now have a list of patients that are members of all three cohorts.

So far we've learned about displaying the results on the screen or sending them to a
printer.

A third option is that we can save the results on the disk and reuse the results at a later time. Now, what you are actually saving is a list of patients or of visits; you are *not* saving the attributes of those patients or visits.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:         v
      M        MALE     v
      F        FEMALE   v
Value: F <Enter>   FEMALE
Computing Search Efficiency
Rating.........................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      SEX IS FEMALE      [SER = 1.17]

Attribute of LIVING PATIENTS: AGE <Enter>
Condition: OVER <Enter>
Age: 75 <Enter>
Computing Search Efficiency
Rating.........................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      SEX IS FEMALE      [SER = 1.17]
      AGE GREATER THAN 75     [SER = 99]

Attribute of LIVING PATIENTS:
```

Figure 5-16: Sample search

Now, rather than displaying or printing out our results, we're going to save them in a FileMan search template for future use.

```
*****   QMAN OUTPUT OPTIONS   *****

     Select one of the following:

         1          DISPLAY results on the screen
         2          PRINT results on paper
         3          COUNT 'hits'
         4          KEEP 'hits' in a FM search template
         5          STORE search logic for future use
         6          R-MAN special report generator
         9          HELP
         0          EXIT

         Your choice: DISPLAY// 4 <Enter>  KEEP 'hits' in a FM search
```

```
template

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)

Enter the name of the SEARCH TEMPLATE: OLD GALS <Enter>
   ARE YOU ADDING 'OLD GALS' AS A NEW SORT TEMPLATE? Y <Enter>
DESCRIPTION:
  1>TEST
  2>
EDIT Option:


Want to run this task in background? NO// <Enter>

PATIENTS           CHART  AGE  SEX
(Alive)            NUMBER
--------------------------------------------------------------------------

GAMMA,TESS         103101 90    FEMALE
RHORHOO,FLORENC*   102494 89    FEMALE
LAMBDAA,LORI*      102224 85    FEMALE
RHOOOO,VALERIE*    100240 85    FEMALE
GAMMAAA,MARTHA*    100085 85    FEMALE
THETAAAAAA,SHAWN   102524 85    FEMALE
MUMUMUM,LENORE     100775 85    FEMALE
MUMUMUM,PATRICIA   100988 85    FEMALE
GAMMAGAMMA,ERIC*   100126 82    FEMALE
BETA,ASHLEY*       102147 80    FEMALE
THETAAAA,JUNE      60108  78    FEMALE
. . .
GAMMA,JAMIE*       100501 78    FEMALE
NUNUNUN,FRANCES*   102757 78    FEMALE
THETAAAAAA,LESLI   100621 77    FEMALE
THETAAAAAA,ERMAN   102609 77    FEMALE
ALPHA,JOAN*        102375 76    FEMALE
BETA,LRAINE*       100266 76    FEMALE
THETAAAAAA,CONST   101247 76    FEMALE
BETA,DEE           102576 76    FEMALE
THETAAAAAA,ALEX*   100146 76    FEMALE
Search template completed...

This query generates 24 "hits"
Time required to create search template: 10 SECONDS

You can view a listing of the templates that have been created in the past
by choosing option 4 on the QMan Options menu —

                      *****  QMAN OPTIONS  *****

     Select one of the following:

          1          SEARCH PCC Database (dialogue interface)
          2          FAST Facts (natural language interface)
          3          SCRIPT Utilities (programmers interface)
```

```
        4           VIEW Taxonomies and Search Templates
        9           HELP
        0           EXIT

    Your choice: SEARCH// 4 <Enter>  VIEW Taxonomies and Search Templates
```

and then choosing option 1 on the subsequent menu—

```
     Select one of the following:

        1           LIST Fileman/QMan search templates
        2           VIEW taxonomies
        3           SHOW taxonomy members
        4           ERASE a search template
        5           REMOVE a taxonomy
        9           HELP
        0           EXIT

    Your choice: 1 <Enter>  LIST Fileman/QMan search templates

You can view templates which store either PATIENTS or VISITS =>

     Select one of the following:

        1           PATIENTS
        2           VISITS
        3           BOTH patients and visits

    Your choice: 1 <Enter> PATIENTS

DEVICE: HOME// <Enter>

TEMPLATE                         DATE          CREATOR       FILEMAN FILE
    Narrative description of template
-----------------------------------------------------------------------------
AFTER 11/5 BUBONIC PTS           NOV 6,1989    GRAU          PATIENT
    POV AFTER 11/5/89

 . . . .

OLD GALS                         JUL 22,1991   THURMAN       PATIENT
    TEST

OLD MEN                          FEB 26,1991   SHORR         PATIENT
    MEN OVER 70

POSS SPA                         JAN 18,1990   BOYER         PATIENT
    SEARCH SPECIFICATION NOT ENTERED

PTS OVER 300                     DEC 20,1989   ADAM          PATIENT
    SEARCH SPECIFICATION NOT ENTERED

RA PTS                           JAN 11,1990   BOYER         PATIENT
    PTS WITH DX RA
```

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: [OLD GALS <Enter>  (JUL 22, 1991) USER #27
FILE #9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the OLD GALS cohort
     2) LIVING PATIENTS must NOT be a member of the OLD GALS cohort
     3) Select a random sample of the OLD GALS cohort
     4) Count the number of entries in the OLD GALS cohort

Your choice (1-4): 1// 4 <Enter>

Counting ...

There are 24 entries in this cohort

Select one of the following =>

     1) LIVING PATIENTS must be a member of the  cohort
     2) LIVING PATIENTS must NOT be a member of the  cohort
     3) Select a random sample of the  cohort
     4) Count the number of entries in the  cohort

Your choice (1-4): 1// 1 <Enter>
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       MEMBER OF 'OLD GALS' COHORT   [SER = 99.00]

Attribute of LIVING PATIENTS: CURRENT COMMUNITY <Enter>

Enter COMMUNITY: SELLS  <Enter>  PIMA      ARIZONA      067      0410067
Enter ANOTHER COMMUNITY: SAN XAVIER <Enter>   PIMA     ARIZONA      065
0410065

Enter ANOTHER COMMUNITY: <Enter>

The following have been selected =>

     SAN XAVIER
     SELLS

Want to save this COMMUNITY group for future use? NO// <Enter>
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       MEMBER OF 'OLD GALS' COHORT    [SER = 99.00]
```

```
     CURRENT COMMUNITY (SAN XAVIER/SELLS)   [SER = 3.55]

Attribute of LIVING PATIENTS: <Enter>

     Your choice: DISPLAY// <Enter>  DISPLAY results on the screen

...SORRY, I'M WORKING AS FAST AS I CAN...

Please note:  Patients whose names are marked with an "*" may have aliases.

PATIENTS          CHART  COMMUNITY
(Alive)           NUMBER
---------------------------------------------------------------------------

FLINTSTONE,CONST 101247 SELLS
BURR,ASHLEY*      102147 SELLS
ADAMS,JOAN*       102375 SELLS
Total: 3
Press RETURN to continue or '^' to exit: <Enter>

What is the subject of your search?  LIVING PATIENTS // <Enter>

     Subject of search: PATIENTS
         ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: [OLD GALS <Enter>  (JUL 22, 1991) USER #27
FILE #9000001

Select one of the following =>

    1) LIVING PATIENTS must be a member of the OLD GALS cohort
    2) LIVING PATIENTS must NOT be a member of the OLD GALS cohort
    3) Select a random sample of the OLD GALS cohort
    4) Count the number of entries in the OLD GALS cohort

Your choice (1-4): 1// <Enter>
Computing Search Efficiency Rating....................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'OLD GALS' COHORT   [SER = 99.00]

Attribute of LIVING PATIENTS: CURRENT COMMUNITY <Enter>

Enter COMMUNITY: SELLS <Enter>        PIMA      ARIZONA     067     0410067
Enter ANOTHER COMMUNITY: SAN XAVIER <Enter>        PIMA     ARIZONA     065
0410065
Enter ANOTHER COMMUNITY: <Enter>

The following have been selected =>

    SAN XAVIER
    SELLS
```

```
Want to save this COMMUNITY group for future use? NO// <Enter>
Computing Search Efficiency Rating...............................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       MEMBER OF 'OLD GALS' COHORT   [SER = 99.00]
       CURRENT COMMUNITY (SAN XAVIER/SELLS)   [SER = 3.55]

Attribute of LIVING PATIENTS: <Enter>

*****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
          6          R-MAN special report generator
          9          HELP
          0          EXIT

     Your choice: DISPLAY// 4 <Enter> KEEP 'hits' in a FM search template

Fileman users please note =>
This template will be attached to IHS' PATIENT file (#9000001)

Enter the name of the SEARCH TEMPLATE: OLD GALS <Enter>  (JUL 22, 1991) USER
#27 FILE #9000001

The OLD GALS cohort already exists.  Want to overwrite? NO//
```

Figure 5-17: Saving search results

5.2 "Or'ing" Queries Together with "KonglomeratOR"

5.2.1 Demographic Attributes

Until now, the example queries have been "and'ed" together. *Values* can be "or'ed" together to form a taxonomy. Attributes can be "or'ed" together as well. The need to "or" attributes together is rare, but it does come up once in a while. The classic example is to find patients who need Pneumovax immunization. These are people who are *either* over the age of 65 *or* who have certain chronic diseases (heart failure, diabetes etc).

To "or" attributes together in a search, use a special QMan tool called the KonglomeratOR. This word is derived from three sources:

- KONG as in King Kong because of its crude power

- CONGLOMERATE to signify bringing unrelated attributes together into a single group
- OR which signifies the relationship between the items in the group

To activate the Konglomerator, enter the word KONG at the attribute prompt.

```
                    *****  SEARCH CRITERIA  *****

What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
Attribute of LIVING PATIENTS: PNEUMOVAX <Enter>


First condition/attribute of "PNEUMOVAX": NULL <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      PNEUMOVAX: NONE EXIST   [SER = -.1]


First, you ask for patients who have not received Pneumovax.  Then you call
the Konglomerator  to build the "or" group.

Attribute of LIVING PATIENTS: KONGLOMERATOR <Enter>

OK, I'll collect queries for OR GROUP #1

[OR#1] Attribute of LIVING PATIENTS: AGE <Enter>
Condition: OVER <Enter>
Age: 65 <Enter>
Computing Search Efficiency Rating......

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      PNEUMOVAX: NONE EXIST   [SER = -.1]
      [OR #1] AGE GREATER THAN 65    [SER = .96]

Note that whenever an attribute is a member of the first or group, it is
marked with "[OR#1]".  If you were to create another or group in the search,
it would be marked "[OR#2]" and so on.


[OR#1] Attribute of LIVING PATIENTS: [CHRONIC DISEASES <Enter>

Select one of the following =>

    1) LIVING PATIENTS must be a member of the CHRONIC DISEASES cohort
    2) LIVING PATIENTS must NOT be a member of the CHRONIC DISEASES cohort
    3) Select a random sample of the CHRONIC DISEASES cohort
    4) Count the number of entries in the CHRONIC DISEASES cohort

Your choice (1-4): 1// 1 <Enter>
Computing Search Efficiency Rating.......................................
```

```
   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      PNEUMOVAX: NONE EXIST   [SER = -.1]
      [OR #1] AGE GREATER THAN 65    [SER = .96]
      [OR #1] MEMBER OF 'CHRONIC DISEASES' COHORT   [SER = 0.99]
```

Figure 5-18: Sample of "or'ing" queries together

You conclude the "or" group by pressing Enter.

```
[OR#1] Attribute of LIVING PATIENTS: <Enter>

OK, I'll collect queries for OR GROUP #1
You conclude the query, by entering RETURN.

Attribute of LIVING PATIENTS: <Enter>

                  *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
          6          R-MAN special report generator
          9          HELP
          0          EXIT

     Your choice: DISPLAY// 1 <Enter>

                  *****  QMAN OUTPUT OPTIONS  ****

PATIENTS          CHART  OR   IMMUNIZATION
(Alive)           NUMBER #1   (SERIES)
-----------------------------------------------------------------------------

KAPPAAA,ANITA   100078 +    -
GAMMAAA,MARTHA* 100085 +    -
ALPHA,MOLLY*    100110 +    -
RHORHOOOOO,ERIC* 100126 +   -
RHORHOOOOO,ALEX* 100146 +   -
RHORHOOOOA,HANNAH 100150 +   -
```

Figure 5-19: Concluding the query

Each time you add an attribute while using the KonglomeratOR, it is added to an "or" group. When you have finished selecting all entries into the group, press Enter, and the KonglomeratOR will be turned off. All subsequent attributes will be "and'ed" together. Within the search, the "or" group behaves as if it is a single query. If any of the individual attributes of the "or" group is a "hit" then the entire query is a hit. Note

that QMan does not tell you exactly which criteria of the "or" group were met, but you can see that the "or" group, taken as a whole, was a "hit."

5.2.2   Joining Search Templates

The KonglomeratOR has another useful function. Suppose you have two or more search templates, and you want to find if someone is a member of any of them. As long as the templates share the same subject (e.g., patients, visits, etc.), the KonglomeratOR will do this for you. Thus, the KonglomeratOR shares (and expands upon) the functionality of the search template comparison utility.

The KonglomeratOR has one significant limitation. Only demographic attributes can be entered into an "or" group! QMan does not allow clinical attributes in KonglomeratOR or groups because potentially ambiguous or conflicting criteria may result. If you attempt to enter a clinical attribute while the KonglomeratOR is turned on, you will get warned. All is not lost however. If you must include a clinical attribute in an "or" group, there is a way: make a search template! You have already seen a perfect example of this in the Pneumovax session shown above. The "chronic disease" cohort was, in fact, derived from a search that included the clinical attribute DIAGNOSIS.

5.3   Linking QMan to Non-PCC Files

One of the most useful features of the FileMan environment is that you have the ability to make your own files and link them to the PCC. For example, users commonly create patient registers that "point" to the PCC patient file. In this way, information can be shared between the PCC and the register, and a great deal of redundant data entry is avoided.

Can QMan access the information in these non-PCC files? The answer is "sort of." If one of the fields in the non-PCC file points to either the VA PATIENT FILE or the PATIENT FILE and that field is indexed, QMan can find it. However, QMan cannot find any of the other fields in the non-PCC file because they have not been entered into the Metadictionary. If the conditions listed above are in effect, QMan can view a non-PCC file the same way he views a search template. In other words, the QMan treats "entry into a non-PCC file" as an attribute.

To use entry into a non-PCC file as an attribute, use the word FILE when prompted for an attribute.

```
                 *****   SEARCH CRITERIA   *****

What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
```

```
Attribute of LIVING PATIENTS: FILE ENTRY <Enter>
Which Fileman file: ER VISIT <Enter>

OK, I'll check the PATIENT field of this file.

      Select one of the following:


         1          Look for patients entered in the file
         2          Look for patients not entered in the file
         3          Take a random sample of patients entered in the file
         4          Count the number of patients in the file

Your choice: 1// 1 <Enter>  Look for patients entered in the file

Computing Search Efficiency
Rating.........................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      ENTERED IN THE 'ER VISIT' FILE   [SER = 4.56]

Attribute of LIVING PATIENTS: <Enter>

                    *****  QMAN OUTPUT OPTIONS  *****

      Select one of the following:


         1          DISPLAY results on the screen
         2          PRINT results on paper
         3          COUNT 'hits'
         4          KEEP 'hits' in a FM search template
         5          STORE search logic for future use
         6          R-MAN special report generator
         9          HELP
         0          EXIT

      Your choice: DISPLAY// <Enter>

PATIENTS          CHART
(Alive)           NUMBER
----------------------------------------------------------------------------

ZENITHHH,RAE*     100003
METAAA,SALLY*     100010
KAPPAAA,LOIS      100022
GAMMAGAMMAA,WALL  100026
CHICHI,MALCOLM    100075
GAMMABB,MARTHA*   100085
GAMMAGAMMAA,BARN  100092
ALPHA,MOLLY*      100110
```

Figure 5-20: Using entry into a non-PCC file as an attribute

Of course, any other QMan attributes could be included in this search; for example, "Find all ER VISIT FILE patients who live in Tucson and who did not receive a Tetanus shot."

5.4   Random Samples

In most instances, QMan eliminates the need to perform random samples of the PCC database. There will still be times when it is useful to take a random sample, and QMan fully supports this functionality. Typically, random samples are needed for quality assurance and research queries; for example, the Joint Commission visits your facility and wants 10 charts selected at random from ER visits during the past 6 months, the Morbidity and Mortality committee may want to review a random sample of infant deaths, etc.

Obtaining a random sample is a two-step process.

- First, conduct a search and save the results in a search template.

- Second, recall the search template using the "left bracket syntax" and take a random sample. You have the option of either selecting an absolute number of cases or a certain percentage of the cases in the template.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

    Subject of search: PATIENTS
        ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: [DIABETIC MALES <Enter> (DEC 08, 1989) USER
#20 FILE #9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the DIABETIC MALES cohort
     2) LIVING PATIENTS must NOT be a member of the DIABETIC MALES cohort
     3) Select a random sample of the DIABETIC MALES cohort
     4) Count the number of entries in the DIABETIC MALES cohort

Your choice (1-4): 1// 3 <Enter>

Counting cohort before sampling...

There are 3640 entries in this cohort
Maximum sample size allowed is 50% of this total (15)

There are 2 ways to determine sample size =>

     1) Sample a certain NUMBER of cohort members
     2) Sample a certain PERCENT of cohort members

YOUR CHOICE (1-2): 1//1 <Enter>
How many LIVING PATIENTS do you want in the sample: 10 <Enter>
```

```
Collecting a random sample
10
Computing Search Efficiency Rating.......................................

    Subject of search: PATIENTS
        ALIVE TODAY    [SER = .01]
        RANDOM SAMPLE OF 'DIABETIC MALES' COHORT    [SER = 0.99]

Attribute of LIVING PATIENTS:
```

Figure 5-21: Taking a random sample of 10 members of the diabetic males cohort

The QMan search will produce a list of 10 patients and their chart numbers.

Rarely, you may want to begin your search with a random sample of *all* patients or visits. This is done to produce a set of quick estimates or to predict the size and duration of a full-blown search. Suppose you want to estimate the percent of patients in your database who made ER visits in the last 12 months.

```
What is the subject of your search?  LIVING PATIENTS // RAND <Enter>
     1    RANDOM SAMPLE OF PATIENTS   RANDOM SAMPLE OF PATIENTS
     2    RANDOM SAMPLE OF VISITS   RANDOM SAMPLE OF VISITS
CHOOSE 1-2: 1 <Enter> RANDOM SAMPLE OF PATIENTS


There are 13380  PATIENTS in the database

     1) Select a certain number of RANDOM SAMPLE OF PATIENTS for the sample
     2) Select a certain percentage of RANDOM SAMPLE OF PATIENTS for the
sample

YOUR CHOICE (1-2): 1// 1 <Enter>

How many RANDOM SAMPLE OF PATIENTS do you want in the sample: 100 <Enter>

    Subject of search: PATIENTS
        A RANDOM SAMPLE OF RANDOM SAMPLE OF PATIENTS WILL BE USED

Attribute of RANDOM SAMPLE OF PATIENTS: VISIT <Enter>


SUBQUERY: Analysis of multiple VISITS

First condition/attribute of "VISIT": AFTER <Enter>
Exact date: T-365 <Enter> (JUL 05, 1990)

Next condition/attribute of "VISIT": CLINIC <Enter>
Enter CLINIC: EMERGENCY MEDICINE <Enter>          30
Enter ANOTHER CLINIC: <Enter>

The following have been selected =>

      EMERGENCY MEDICINE
```

```
          Subject of subquery: VISIT
          AFTER JUL 5,1990
          CLINIC (EMERGENCY ME)

Next condition/attribute of "VISIT": <Enter>
Computing Search Efficiency Rating....

    Subject of search: PATIENTS
       A RANDOM SAMPLE OF RANDOM SAMPLE OF PATIENTS WILL BE USED
          Subject of subquery: VISIT
          AFTER JUL 5,1990
          CLINIC (EMERGENCY ME)
Attribute of RANDOM SAMPLE OF PATIENTS: <Enter>


                    *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
          6          R-MAN special report generator
          9          HELP
          0          EXIT

     Your choice: DISPLAY// 3 <Enter>  COUNT 'hits'

You have 2 options for counting VISITS =>

     1) For ea. patient, count all VISITS which match your
        criteria
     2) Count all PATIENTS with VISITS meeting your criteria,
        but do not count the individual values of ea. VISIT

Your choice (1 or 2): 1// 2 <Enter>
DEVICE:     RIGHT MARGIN: 80//

COUNTING....
Total: 39
Search time: 16 SECONDS

Press RETURN to continue or '^' to exit:
```

Figure 5-22: Taking a random sample of 100 patients visits at the ER

Remember, this method samples *all* patients including those who died on or after their visit. The data provide a quick estimate of the percent of ER users and the results suggest that a complete count would take about 1/2 hour to complete [(13380/100)*16 seconds].

5.5   Saving and Reusing Search Criteria

There are times when you may want to repeat the same search at regular intervals. To save time and avoid criteria entry errors, we suggest that you use QMan's "script utilities." One of the output options is "STORE search logic for future use." If you select this option, QMan will write a script before displaying the results. Like the script of a play, all the instructions covering exactly what is supposed to happen are stored for future use. Whenever you reenter QMan, you have the option to replay the script. In the example below, we create a search, save the search criteria in a script, and then replay the script in another session.

```
                   *****   SEARCH CRITERIA   *****

What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: AGE <Enter>
Condition: OVER <Enter>
Age: 75 <Enter>
Computing Search Efficiency Rating...................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       AGE GREATER THAN 75      [SER = 99]

Attribute of LIVING PATIENTS: SEX  <Enter>
CHOOSE FROM:
       M        MALE
       F        FEMALE
Value: F <Enter> FEMALE
Computing Search Efficiency Rating.............

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       AGE GREATER THAN 75      [SER = 99]
       SEX IS FEMALE      [SER = 1.17]

Attribute of LIVING PATIENTS: <Enter>

     Select one of the following:

           1          DISPLAY results on the screen
           2          PRINT results on paper
           3          COUNT 'hits'
           4          KEEP 'hits' in a FM search template
           5          STORE search logic for future use
           6          R-MAN special report generator
           9          HELP
           0          EXIT

     Your choice: DISPLAY// 5 <Enter> STORE search logic for future use
```

```
Store logic under what name: OLD WOMEN <Enter>
```

Figure 5-23: Storing search logic for future use

What we are saving here is not a list of patients, as we did under search templates; we are actually saving the logic of the search. You are now free to select any of QMan's display options. Later, you reenter QMan and replay the script.

```
*****  QMAN OPTIONS  *****

     Select one of the following:

          1          SEARCH PCC Database (dialogue interface)
          2          FAST Facts (natural language interface)
          3          SCRIPT Utilities (programmers interface)
          4          VIEW Taxonomies and Search Templates
          9          HELP
          0          EXIT

     Your choice: SEARCH// 3 <Enter>  SCRIPT Utilities (programmers
interface)

                    *****  QMAN SCRIPT UTILITIES  *****

     Select one of the following:

          1          COPY a Script
          2          EDIT a Script
          3          IMPORT a Script
          4          PURGE a Script
          5          RUN a Script
          6          VIEW a Script
          7          WRITE a Script
          9          HELP
          0          EXIT

     Your choice: EXIT// 5 <Enter> RUN a Script

You will only be able to select option 5 from this menu.  Other options are
for programmers and developers only.

Run what script: OLD WOMEN <Enter>

                    *****  QMAN OUTPUT OPTIONS  *****

     Select one of the following:

          1          DISPLAY results on the screen
          2          PRINT results on paper
          3          COUNT 'hits'
          4          KEEP 'hits' in a FM search template
          5          STORE search logic for future use
```

```
          6           R-MAN special report generator
          9           HELP
          0           EXIT

     Your choice: DISPLAY// 1 <Enter>

PATIENTS             CHART  AGE  SEX
(Alive)              NUMBER
-------------------------------------------------------------------------

GAMMA,TESS           103101 90    FEMALE
RHORHOO,FLORENC*     102494 89    FEMALE
LAMBDAA,LORI*        102224 85    FEMALE
RHORHO,VALERIE*      100240 85    FEMALE
GAMMAAA,MARTHA*      100085 85    FEMALE
PIPIPIPIPI,SHAWN     102524 85    FEMALE
METAAAA,LENORE       100775 85    FEMALE
METAAAA,PATRICIA     100988 85    FEMALE
PIPIPIPIPI,ERIC*     100126 82    FEMALE
BETA,ASHLEY*         102147 80    FEMALE
 .   .   .   .
```

Figure 5-24: Running your stored script

6.0   Special Reports

So far we've talked about the standard generic report, which is columnar, but QMan has a companion program called R-Man, which is a report generator. Pieces of R-Man are available to the users of QMan.

6.1   Age Buckets

Age buckets gives us a series of age groups or "buckets." In the following examples, we will be using a cohort consisting of the patients seen during the first week in January of 1987 ("JAN87"). We will ask that the listing be grouped by current community.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: [JAN87 <Enter>  (JUL 03, 1991) USER #20 FILE
#9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the JAN87 cohort
     2) LIVING PATIENTS must NOT be a member of the JAN87 cohort
     3) Select a random sample of the JAN87 cohort
     4) Count the number of entries in the JAN87 cohort

Your choice (1-4): 1// <Enter>
Computing Search Efficiency Rating.....................................

      Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'JAN87' COHORT   [SER = 6.14]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:
       M       MALE
       F       FEMALE
Value: ALL <Enter>
Computing Search Efficiency Rating.....................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      MEMBER OF 'JAN87' COHORT   [SER = 6.14]
      SEX EXISTS   [SER = 0]
Attribute of LIVING PATIENTS:  CURRENT COMMUNITY <Enter>

Enter COMMUNITY: ALL <Enter>
```

```
Computing Search Efficiency Rating.......................................

   Subject of search: PATIENTS
       ALIVE TODAY   [SER = .01]
       MEMBER OF 'JAN87' COHORT   [SER = 6.14]
       SEX EXISTS   [SER = 0]
       CURRENT COMMUNITY EXISTS   [SER = 0]

Attribute of LIVING PATIENTS:
```

Figure 6-1: Grouping patients by current community

Choose options, in the following order:

- 6 (R-Man special report generator) from the QMan Output Options menu, then

- 5 (SPECIAL reports) from the R-Man Custom Report Generator menu, and then

- 1 (AGE buckets) from the R-Man Special Reports menu.

```
CURRENT SET UP

AGE GROUPS =>
0 - 4
5 - 9
10 - 19
20 - 39
40 - 59
60 - 79
80+

Want to define a new set of age buckets? NO// N <Enter>
Do you want to have ages calculated as of a date other than today's date?
NO//? <Enter>

QMAN will determine the ages of patients based on the date you enter
subsequent to answering yes to this question.

NOTE: Only answer yes to the question about having ages calculated as of a
date other than today's date if you entered a clinical attribute within the
search AND you selected that you want to search for all visits that meet
your search criteria

Do you want to have ages calculated as of a date other than today's date?
NO//<Enter>  (NO)

     Select one of the following:
          1          CURRENT COMMUNITY
          2          SEX
          8          NONE
          9          HELP
          0          EXIT

     Your choice: NONE// 1  <Enter>  CURRENT COMMUNITY
```

```
CURRENT COMM  0-4    5-9   10-19  20-39  40-59  60-79  80+     TOT
-----------------------------------------------------------------------
AJO            .      1      1      3      1      .      .       6
AKCHIN         .      .      .      .      .      1      .       1
ANEGAM         .      .      1      1      1      .      .       3
ARIZONA COMM   .      .      1      .      .      .      .       1
BIG FIELDS     .      1      .      4      2      2      .       9
CHARCO 27      .      .      .      1      .      .      .       1
CHOULIC        .      .      .      .      1      1      .       2
CHUICHU        1      .      1      1      .      .      .       3
COCKLEBURR     1      .      .      1      .      .      .       2
COLD FIELDS    .      .      .      .      1      .      .       1
COWLIC         .      .      .      2      2      .      1       5
CROWHANG       .      1      1      .      2      .      .       4
ELOY           .      .      1      .      .      .      .       1
FRESNAL CANY   .      .      .      .      .      1      .       1
FRESNAL VILL   .      .      .      2      .      .      .       2
GILA BEND      .      .      1      .      .      .      .       1
GU VO          .      2      .      1      2      .      .       5
GUNSIGHT       .      .      1      .      .      .      .       1
HICKIWAN       .      .      .      1      .      .      .       1
KOHATK         .      .      .      2      1      .      .       3
LITTLE TUCSO   .      .      .      2      2      .      .       4
MENEGERS DAM   .      1      .      2      .      .      .       3
NORTH KOMELI   .      .      1      .      .      .      .       1
PISINIMO       1      1      .      4      3      6      1      16
QUEEN'S WELL   .      .      .      .      1      .      .       1
QUIJOTOA       .      3      .      1      1      1      .       6
RIPLEY         .      .      .     13      3      1      1      18
SACATON        .      .      .      1      .      .      .       1
SAN MIGUEL     .      1      .      .      1      .      1       3
SAN PEDRO      .      .      .      .      .      .      1       1
SAN SIMON      .      .      .      3      1      1      .       5
SAN XAVIER     .      .      .      1      .      1      .       2
SANTA ROSA     .      .      1      2      3      .      1       7
SANTA ROSA R   .      2      1      .      .      .      .       3
SELLS          2      5      9     10     14      6      .      46
SIL NAKYA      .      .      .      1      .      2      .       3
SOUTH KOMELI   .      .      .      1      1      2      .       4
TOPAWA         .      3      .      4      .      3      .      10
TUCSON         1      .      .      4      2      .      .       7
VAMORI         .      .      .      .      1      .      .       1

TOTAL          6     21     20     68     46     28      6     195
```

Figure 6-2: Sample output of age bucket search

We can run the same age bucket search, but this time we will ask for the display showing us the number of males and females in each age bucket.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: [JAN87 <Enter>   (JUL 03, 1991) USER #20 FILE
#9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the JAN87 cohort
     2) LIVING PATIENTS must NOT be a member of the JAN87 cohort
     3) Select a random sample of the JAN87 cohort
     4) Count the number of entries in the JAN87 cohort

Your choice (1-4): 1// <Enter>
Computing Search Efficiency Rating.......................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       MEMBER OF 'JAN87' COHORT   [SER = 6.14]

Attribute of LIVING PATIENTS: SEX <Enter>
CHOOSE FROM:
       M       MALE
       F       FEMALE
Value: ALL <Enter>
Computing Search Efficiency Rating.......................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       MEMBER OF 'JAN87' COHORT   [SER = 6.14]
       SEX EXISTS    [SER = 0]

Attribute of LIVING PATIENTS:
```

Figure 6-3: Grouping patients by current community

Choose options, in the following order:

- 6 (R-Man special report generator) from the QMan Output Options menu, then

- 5 (SPECIAL reports) from the R-Man Custom Report Generator menu, and then

- 1 (AGE buckets) from the R-Man Special Reports menu.

```
CURRENT SET UP

AGE GROUPS =>
0 - 4
5 - 9
10 - 19
20 - 39
40 - 59
60 - 79
```

```
80+

Want to define a new set of age buckets? NO// <Enter>    (NO)

     Select one of the following:
          1         SEX
          8         NONE
          9         HELP
          0         EXIT

     Your choice: NONE// 1 <Enter>   SEX

DEVICE: <Enter>

                                   AGE GROUPS
SEX            0-4    5-9    10-19  20-39  40-59  60-79  80+     TOT
-----------------------------------------------------------------------
FEMALE          3     10     11     55     32     23     3      137
MALE            3     11      9     13     14      5     3       58

TOTAL           6     21     20     68     46     28     6      195
```

Figure 6-4: Sample output displaying the number of males and females in each age bucket

As you can see, the total number of patients is still the same. We are just asking that the data be displayed differently.

```
What is the subject of your search?  LIVING PATIENTS //

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: CURRENT COMMUNITY <Enter> v

Enter COMMUNITY: SELLS  <Enter>    PIMA      ARIZONA      067     0410067
Enter ANOTHER COMMUNITY: AJO  <Enter>    PIMA      ARIZONA      006
0410006
Enter ANOTHER COMMUNITY: HICK <Enter>
     1   HICKIWAN         PIMA      ARIZONA      038     0410038
     2   HICKORY          NEWTON    MISSISSIPPI     225     2851225
     3   HICKORY          MURRAY    OKLAHOMA      667     4050667
CHOOSE 1-3: 1 <Enter>
Enter ANOTHER COMMUNITY: <Enter>
The following have been selected =>

     AJO
     HICKIWAN
     SELLS

Want to save this COMMUNITY group for future use? NO// <Enter>    (NO)
Computing Search Efficiency Rating.......................................

   Subject of search: PATIENTS
```

```
      ALIVE TODAY   [SER = .01]
      CURRENT COMMUNITY (AJO/HICKIWAN...)   [SER = 3.17]

Attribute of LIVING PATIENTS:
```

Figure 6-5: Sample search by community

Choose options, in the following order:

- 6 (R-Man special report generator) from the QMan Output Options menu, then

- 5 (SPECIAL reports) from the R-Man Custom Report Generator menu, and then

- 1 (AGE buckets) from the R-Man Special Reports menu.

```
CURRENT SET UP

AGE GROUPS =>
0 - 1
2 - 4
5 - 10
11 - 19
20 - 39
40 - 59
60 - 79
80+

Want to define a new set of age buckets? NO// Y <Enter>  (YES)
Max. of 8 buckets allowed...

Enter the starting age of the first age group: 0 <Enter>
Enter the starting age of the next age group: 9 <Enter>
Enter the starting age of the next age group: 19 <Enter>
Enter the starting age of the next age group: 29 <Enter>
Enter the starting age of the next age group: 39 <Enter>
Enter the starting age of the next age group: 49 <Enter>
Enter the starting age of the next age group: 59 <Enter>
Enter the starting age of the next age group: 69 <Enter>
Enter the highest age for the last group: 79 <Enter>


AGE GROUPS =>
0 - 8
9 - 18
19 - 28
29 - 38
39 - 48
49 - 58
59 - 68
69 - 79

      Select one of the following:

          1            CURRENT COMMUNITY
          8            NONE
```

```
              9           HELP
              0           EXIT

      Your choice: NONE// 8 <Enter>  NONE

DEVICE:  <Enter>


                                    AGE GROUPS
ATTRIBUTE          0-1     2-4    5-10   11-19    20-39  40-59  60-79  80+
TOT
-------------------------------------------------------------------------------
TOTAL              22      92      62             67     69     64     26     1
403

      Select one of the following:

              1           CURRENT COMMUNITY
              8           NONE
              9           HELP
              0           EXIT

      Your choice: NONE// 1 <Enter>  CURRENT COMMUNITY

DEVICE: <Enter>


                                    AGE GROUPS
CURRENT COMM  0-8     9-18    19-28  29-38  39-48  49-58  59-68  69-79   TOT
-------------------------------------------------------------------------------
AJO               9       8      10      6      3      3      2      1      42
HICKIWAN         12       6       2      1      3      1      .      .      25
SELLS           137      67      32     19     35     20     15     10     335

TOTAL           158      81      44     26     41     24     17     11     402

 *****   SEARCH CRITERIA   *****

What is the subject of your search?  LIVING PATIENTS // PATIENT <Enter>
Attribute of PATIENT: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
DEPENDENT/ADULT-ONSET

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  250.00

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES
```

```
First condition/attribute of "DIAGNOSIS": DURING THE TIME PERIOD <Enter>
Exact starting date: 1/1/88 <Enter>  (JAN 01, 1988)
Exact ending date: 1/31/88 <Enter>  (JAN 31, 1988)

Next condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      DIAGNOSIS (250.00)  [SER = 24.37]
         Subject of subquery: DIAGNOSIS
         BETWEEN JAN 1,1988 and JAN 31,1988@23:59

Attribute of PATIENT:
```

Figure 6-6: Defining a new set of age buckets

Choose options, in the following order:

- 6 (R-Man special report generator) from the QMan Output Options menu, then

- 5 (SPECIAL reports) from the R-Man Custom Report Generator menu, and then

- 1 (AGE buckets) from the R-Man Special Reports menu.

```
CURRENT SET UP

AGE GROUPS =>
0 - 9
10 - 24
25 - 39
40 - 49
50 - 59
60 - 74
75 - 90

Do you want to define a new set of age buckets? NO// <Enter>  (NO)
Do you want to have ages calculated as of a date other than today's date?
NO// Y <Enter> (YES)
Enter date relative to which age will be calculated: JAN 1 1988 <Enter> (JAN
01, 1988)

You have 3 options for listing DIAGNOSES =>

     1) For ea. patient, list all ICD9 CODES
     2) For ea. patient, list all ICD9 CODES and PROVIDER NARRATIVES
     3) List all PATIENTS with ICD9 CODES you specified, but DO NOT list
        individual ICD9 CODES or PROVIDER NARRATIVES (FASTEST OPTION!!)

Your choice (1-3): 1// <Enter> (1)

     Select one of the following:

          1          DIAGNOSIS
          8          NONE
```

```
         9          HELP
         0          EXIT

     Your choice: NONE// 1 <Enter> DIAGNOSIS

DEVICE: <Enter>


                                 AGE GROUPS

DIAGNOSIS     0-9    10-24  25-39  40-49  50-59  60-74  75-90    TOT
-----------------------------------------------------------------------

TOTAL          1      0      24     25     41     34      2      127
```

Figure 6-7: Sample output of results

The following interaction is based on the previous search with the only difference being the answer to the question 'Do you want to have ages calculated as of a date other than today's date?' Notice the change in results. Now the age bucket 75–90 has more visits incurred by patients in that age group because we did not have ages calculated as of a date prior to today's date. This means that the ages of the patients are older than in the previous example since we are using today's date for age rather than a date of 1/1/88.

```
Do you want to have ages calculated as of a date other than today's date?
NO// <Enter>  (NO)

You have 3 options for listing DIAGNOSES =>

     1) For ea. patient, list all ICD9 CODES
     2) For ea. patient, list all ICD9 CODES and PROVIDER NARRATIVES
     3) List all PATIENTS with ICD9 CODES you specified, but DO NOT list
        individual ICD9 CODES or PROVIDER NARRATIVES (FASTEST OPTION!!)

Your choice (1-3): 1// <Enter> (1)
```

Figure 6-8: Answering no to selecting a date other than today's date

> **Note:** By selecting number options 1 or 2, you will have a count of visits within each age bucket, not number of patients that had a visit within each age group, i.e., if you selected option 3. If you picked option 3, then you would have a count of patients that had a visit that met the search criteria. Each patient when option 3 is selected is counted only once regardless of the number of visits they may have had that met the search criteria.

```
     Select one of the following:
```

```
            1          DIAGNOSIS       (If more than one DX was entered,
            8          NONE             # of visits per DX will be displayed
            9          HELP            DIAGNOSIS is if selected.)
            0          EXIT

       Your choice: NONE// 8 <Enter>  NONE

DEVICE: <Enter>


                                  AGE GROUPS
DIAGNOSIS       0-9    10-24  25-39  40-49  50-59  60-74  75-90    TOT
-----------------------------------------------------------------------
TOTAL            1      0      16     19     43     34     14      127
<>
```

Figure 6-9: Sample count of visits within each age bucket

6.2   Health Summaries

Let's say you want to generate a list of health summaries on a certain group of
patients, which is useful if you want to do a clinical review of cases. We're going to
take a random sample of three health summaries from the January 1987 cohort.

```
What is the subject of your search?  LIVING PATIENTS //

    Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: [JAN87 <Enter>  (JUL 03, 1991) USER #20 FILE
#9000001

Select one of the following =>

     1) LIVING PATIENTS must be a member of the JAN87 cohort
     2) LIVING PATIENTS must NOT be a member of the JAN87 cohort
     3) Select a random sample of the JAN87 cohort
     4) Count the number of entries in the JAN87 cohort

Your choice (1-4): 1// 3 <Enter>

Counting cohort before sampling...

There are 195 entries in this cohort
Maximum sample size allowed is 50% of this total (97)

There are 2 ways to determine sample size =>

     1) Sample a certain NUMBER of cohort members
     2) Sample a certain PERCENT of cohort members

YOUR CHOICE (1-2): 1// <Enter>
```

```
How many PATIENTS do you want in the sample: 3 <Enter>

Collecting a random sample
3
Computing Search Efficiency Rating.....................................

   Subject of search: PATIENTS
       ALIVE TODAY    [SER = .01]
       RANDOM SAMPLE OF 'JAN87' COHORT    [SER = 0.99]

Attribute of LIVING PATIENTS:
```

Figure 6-10: Taking a random sample of three health summaries from the January 1987 cohort

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
          *****  R-MAN   SPECIAL REPORTS  *****

   Select one of the following:

        1           AGE buckets
        2           HEALTH summaries
        3           MAILING labels
        4           MONTH buckets
        5           TIME series
        6           WORKLOAD distribution
        9           HELP
        0           EXIT

   Your choice: 2 <Enter>  HEALTH summaries
```

Figure 6-11 Selecting option 2 on R-Man special reports menu

You will then see displayed on your screen the health summaries of three patients selected at random from the cohort you had named. The summaries will be similar to the following in format. (Usually, such health summaries are directed to the printer.)

```
************* CONFIDENTIAL PATIENT INFORMATION -- JAN 27,1990 10:29 AM
*************
***************** THETA,BETTY ANN (ADULT REGULAR SUMMARY) PG 1
*******************
---------------------- DEMOGRAPHIC DATA --------------------------------
THETA,BETTY ANN     DOB:JUN 21,1959        FEMALE          A+
NAVAJO
TUCSON(7777E. 77TH ST.,TUCSON,ARIZONA,87666)  SSN: 181-00-9999
ELIGIBILITY:DIRECT
HEALTH RECORD NUMBERS:    088888    SELLS HOSPITAL/CLINIC
                          054666     SAN XAVIER HEALTH CLINIC
```

```
PRIMARY PROVIDER: (NONE IDENTIFIED)
--------------------------------- ALLERGIES -----------------------------
--------
***** PENICILLIN ALLERGY, ANAPHYLAXIS *****
----------------------------- INSURANCE INFORMATION ---------------------
--------
INSURANCE               NUMBER      SUFF   COV    EL DATE    SIG DATE
END DATE
MEDICAID                123456789    0     II     10/14/89
BLUE CROSS/BLUE SHIELD  444-55-5555               01/18/87
------------------- MEASUREMENT PANELS (MAX 5 VISITS OR 2 YEARS) ---------
--------
Date         HT    WT    BP         VU     VC
12/10/89     66    200   160/92
10/27/89           186   140/90     40/50  20/20
----------------------------- REPRODUCTIVE HISTORY ----------------------
--------
G3P3LC3SA0TA0 (OBTAINED 12/10/89) LMP 11/23/89 (OBTAINED 12/10/89)
CONTRACEPTIVE METHOD: NATURAL TECHNIQUES (OBTAINED 12/10/89)
------------------------------ ACTIVE PROBLEMS --------------------------
--------
SX1   07/06/89    DIABETES MELLITIS
SX1SX1            DIABINASE 250 MG
SX1.1 08/30/89    NEUROPATHY
SX1.2 08/30/89    PERIODONTAL DISEASE
------------------------------ INACTIVE PROBLEMS -----------------------
--------
SX6   12/10/89    PYELONEPHRITIS
SX7   12/10/89    HX LEFT HIP FRACTURE
------------------------------ HISTORY OF SURGERY ----------------------
--------
10/27/89  (01/02/87)   OPEN REDUCTION/FIXATION L HIP AT AHSC
--------------------------------- MEDICATIONS -------------------------
--------
12/10/89    DIABINESE 250 MG  DAILY   EXP 3/90 100
12/10/89    ERYTHROMYCIN 250 MG   QID EXP 1/90 40
-------------------- INPATIENT STAYS (MAX 5 VISITS OR 5 YEARS) -----------
--------
09-08-89--09-15-89    SELLS HOSPITAL     ACUTE PYELONEPHRITIS
                                         PNEUMONIA
----------------- OUTPATIENT/FIELD VISITS (MAX 10 VISITS OR 2 YEARS) -----
--------
01/23/90    SAN XAVIER   DIABETES
12/10/89    SELLS HOSP   ELEVATED BLOOD PRESSURE
                         LEFT OTITIS MEDIA
10/27/89    SAN XAVIER   DYSFUNCTIONAL UTERINE BLEEDING
09/17/89    SAN XAVIER   PENICILLIN ALLERGY, ANAPHYLAXIS
                         VIRAL INFECTION
08/30/89    SAN XAVIER   MULTIPLE EXTRACTIONS/ALVEOPLASTY
                         PERIODONTAL DISEASE
--------------- MOST RECENT PATIENT EDUCATION (MAX 5 VISITS OR 2 YEARS) ----
--------
12/10/89    SELLS HOSP   DM-DISEASE PROCESS-FAIR UNDERSTANDING
-------------------- MOST RECENT LABORATORY DATA (MAX 2 YEARS) -----------
```

```
--------
BLOOD SUGAR    (12/10/89)   450
STREP CUL      (09/17/89)   N
HEMATOCRIT     (10/27/89)   45
------------------------------- IMMUNIZATIONS ---------------------------
--------
TD-ADULT       12/10/89     SAN XAVIER
PNEUMOVAX      09/17/89     SAN XAVIER
-------------------------------- SKIN TESTS ----------------------------
--------
PPD            08/01/89 UNREP   SAN XAVIER
------------------------ HEALTH CARE MAINTENANCE REMINDERS --------------
--------
************ END*CONFIDENTIAL PATIENT INFORMATION -- JAN 27,1990 10:29 AM
**********
```

Figure 6-12: Sample display of the health summaries of three patients selected at random from the cohort named

6.3   Mailing Labels

Suppose you identify a group of older, diabetic patients to be contacted to come in to receive a flu shot. You can generate mailing labels to be used to send out notices to the patients.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]

Attribute of LIVING PATIENTS: AGE <Enter>
Condition: OVER 70 <Enter>
Computing Search Efficiency Rating.....................................

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      AGE GREATER THAN 70     [SER = 99]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: DM <Enter>
250.00 (DIABETES UNCOMPL TYPE II/NIDDM)
DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION/TYPE II/NONINSULIN
DEPENDENT/ADULT-ONSET

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  250.00

Enter ANOTHER DX: <Enter>
```

```
SUBQUERY: Analysis of multiple DIAGNOSES
First condition/attribute of "DIAGNOSIS":  <Enter>
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      AGE GREATER THAN 70    [SER = 99]
      DIAGNOSIS (250.00)  [SER = 24.37]

Attribute of LIVING PATIENTS:
```

Figure 6-13: Sample search for diabetic patients over 70

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
            *****  R-MAN    SPECIAL REPORTS  *****

     Select one of the following:

          1          AGE buckets
          2          HEALTH summaries
          3          MAILING labels
          4          MONTH buckets
          5          TIME series
          6          WORKLOAD distribution
          9          HELP
          0          EXIT


     Your choice: 3 <Enter>   MAILING labels

            *****   ADDRESS LABEL UTILITY  *****

Select LABEL PRINTING DEVICE: P-WYSE-SLAVE// <Enter>
  HORIZONTAL OFFSET: 6// <Enter>
  COLUMN WIDTH: 50// 38 <Enter>
  ROW HEIGHT: 9// 7 <Enter>
  NUMBER OF LABELS PER ROW: 2// <Enter>
```

Figure 6-14: Selecting option 3 on R-Man special reports menu

At this point, QMan is prompting you for information on setting up the printing parameters for your test print of mailing labels. You might have to experiment to find the optimal settings to align the addresses on the labels you will be using.

```
Want to do a test print? YES// <Enter>  (YES)

     JOHN SMITH                         JOHN SMITH
     1234 S. MAIN ST.                   1234 S. MAIN ST.
     TUCSON,AZ                              TUCSON,AZ
```

```
      85745                                     85745

      JOHN SMITH                            JOHN SMITH
      1234 S. MAIN ST.                      1234 S. MAIN ST.
      TUCSON,AZ                                TUCSON,AZ
      85745                                     85745

      JOHN SMITH                            JOHN SMITH
      1234 S. MAIN ST.                      1234 S. MAIN ST.
      TUCSON,AZ                                TUCSON,AZ
      85745                                     85745

Want to do another test print? YES// Y <Enter>  (YES)

              *****  ADDRESS LABEL UTILITY  *****

Select LABEL PRINTING DEVICE: P-WYSE-SLAVE// <Enter>
   HORIZONTAL OFFSET: 6// 12 <Enter>
   COLUMN WIDTH: 38// 35 <Enter>
   ROW HEIGHT: 7// 10 <Enter>
   NUMBER OF LABELS PER ROW: 2// 1 <Enter>

Want to do a test print? YES// <Enter>    (YES)

            JOHN SMITH
            1234 S. MAIN ST.
            TUCSON,AZ
            85745

            JOHN SMITH
            1234 S. MAIN ST.
            TUCSON,AZ
            85745

            JOHN SMITH
            1234 S. MAIN ST.
            TUCSON,AZ
            85745

Want to do another test print? YES// N <Enter>   (NO)

Want to run this print job in the background? YES//
```

Figure 6-15: Printing mailing labels

6.4   Month Buckets

"Month buckets" is a way of determining seasonal illnesses without breaking down
the data by year.

```
What is the subject of your search?  LIVING PATIENTS // VISITS <Enter>
Attribute of VISIT: DURING THE PERIOD <Enter>
```

```
Exact starting date: 1/1/87 <Enter>   (JAN 01, 1987)
Exact ending date: 12/31/90 <Enter>  (DEC 31, 1990)
Computing Search Efficiency Rating......................................

   Subject of search: VISIT
       BETWEEN,DATES (inclusive) JAN 1,1987 and DEC 31,1990    [SER = .47]

Attribute of VISIT:  DX <Enter>
Enter DX: CHICKENPOX <Enter>
052.9 (VARICELLA UNCOMPLICATED)
VARICELLA WITHOUT MENTION OF COMPLICATION

 OK? Y// <Enter>

Enter ANOTHER DX: <Enter>
Computing Search Efficiency
Rating.........................................

   Subject of search: VISIT
       BETWEEN,DATES (inclusive) JAN 1,1987 and DEC 31,1990    [SER = .47]
       POV (052.9)   [SER = 1.35]

Attribute of VISIT:
```

Figure 5-16: Sample search of patients who had chicken pox between 1987 and 1990

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
              *****  R-MAN    SPECIAL REPORTS  *****

     Select one of the following:

          1            AGE buckets
          2            HEALTH summaries
          3            MAILING labels
          4            MONTH buckets
          5            TIME series
          6            WORKLOAD distribution
          9            HELP
          0            EXIT


     Your choice: 4 <Enter>   MONTH buckets
DEVICE: HOME// <Enter>


MONTH BUCKET REPORT: JAN 1987 to JAN 1990


MONTH  TOTAL    MONTH  AVG
                COUNT  PER MO.
--------------------------------
JAN    6        4      1.50
```

```
FEB    9          3      3.00
MAR    22         3      7.33
APR    17         3      5.67
MAY    9          3      3.00
JUN    0          3      0.00
JUL    2          3      0.67
AUG    1          3      0.33
SEP    1          3      0.33
OCT    4          3      1.33
NOV    1          3      0.33
DEC    2          3      0.67
```

Figure 6-16: Sample month buckets display

Although the data for several years is lumped together here, the seasonal findings are clearly demonstrated - chickenpox is shown to be most prevalent in February, March, April, and May.

6.5   Time Series Reports

Let's look at all patients in the database who have a diagnosis of chickenpox. I want to do a special report on the epidemiological breakdown on the occurrence of chickenpox with respect to month and year.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>
Enter DX: CHICKENPOX <Enter>
052.9 (VARICELLA UNCOMPLICATED)
VARICELLA WITHOUT MENTION OF COMPLICATION

 OK? Y// Y <Enter>

ICD Code Range(s) Selected So Far =>

1)  052.9

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating.....

Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (052.9)  [SER = 24.37]
```

```
Attribute of LIVING PATIENTS:
```

Figure 6-17 Example of Time Series reporting

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
            *****  R-MAN    SPECIAL REPORTS  *****

    Select one of the following:
         1          AGE buckets
         2          HEALTH summaries
         3          MAILING labels
         4          MONTH buckets
         5          TIME series
         6          WORKLOAD distribution
         9          HELP
         0          EXIT

    Your choice:  5 <Enter>  TIME series

DEVICE: HOME// <Enter>

TIME SERIES REPORT: 1985 to 1990

          1990     1989     1988     1987     1986     1985      TOTAL
---------------------------------------------------------------------------
JANUARY   2        3        0        1        1        0         7
FEBRUARY  0        4        5        0        2        0         11
MARCH     0        4        18       0        3        0         25
APRIL     0        1        16       0        5        0         22
MAY       0        3        6        0        4        1         14
JUNE      0        0        0        0        2        0         2
JULY      0        2        0        0        0        0         2
AUGUST    0        0        0        1        0        0         1
SEPTEMBER 0        0        0        1        0        0         1
OCTOBER   0        1        2        1        0        0         4
NOVEMBER  0        0        1        0        0        0         1
DECEMBER  0        0        2        0        0        0         2

TOTAL     2        18       50       4        17       1         100
CUMUL.    2        20       70       74       91       92        92
AVG/MONTH 0        1        4        0        1        0         1
```

Figure 6-18: Selecting option 5 from R-Man special reports menu

This times series is based on visits. This is the epidemiological breakdown of visits for chickenpox from 1985 to 1990. You can see in this case that there was an epidemic of chickenpox centered around 1988, and the majority of the cases that year were seen in February, March, April, and May.

The figures in the epidemiological breakdown we just did may be clouded by patients who were seen more than once during the time they had the chickenpox. This time we will do the same search, but we will differentiate between patients being seen for the first time for their chickenpox, and patients who are making return visits for the same diagnosis.

```
What is the subject of your search?  LIVING PATIENTS // <Enter>

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>


Enter DX: CHICKENPOX <Enter>
052.9 (VARICELLA UNCOMPLICATED)
VARICELLA WITHOUT MENTION OF COMPLICATION

 OK? Y// <Enter>

ICD Code Range(s) Selected So Far =>

1)  052.9

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES

First condition/attribute of "DIAGNOSIS": FIRST  <Enter>
     1   FIRST
     2   FIRST VISIT OR REVISIT
CHOOSE 1-2: 2  <Enter>
CHOOSE FROM:
      1        FIRST VISIT
      2        REVISIT
Value: 1 <Enter>

Next condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (052.9)  [SER = 24.37]
         Subject of subquery: DIAGNOSIS
         FIRST VISIT OR REVISIT = 1st VISIT

Attribute of LIVING PATIENTS:
```

Figure 6-19: Sample search differentiating between patients' first visits and patients making return visits

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
              *****  R-MAN    SPECIAL REPORTS  *****

     Select one of the following:

          1           AGE buckets
          2           HEALTH summaries
          3           MAILING labels
          4           MONTH buckets
          5           TIME series
          6           WORKLOAD distribution
          9           HELP
          0           EXIT

     Your choice: 5 <Enter>   TIME series

TIME SERIES REPORT: 1985 to 1989

          1989      1988      1987      1986      1985      1984        TOTAL
-------------------------------------------------------------------------------
JANUARY   0         0         1         1         0                     2
FEBRUARY  1         3         0         2         0                     6
MARCH     1         5         0         3         0                     9
APRIL     0         1         0         5         0                     6
MAY       0         1         0         4         1                     6
JUNE      0         0         0         1         0                     1
JULY      0         0         0         0         0                     0
AUGUST    0         0         0         0         0                     0
SEPTEMBER 0         0         1         0         0                     1
OCTOBER   0         0         1         0         0                     1
NOVEMBER  0         0         0         0         0                     0
DECEMBER  0         0         0         0         0                     0

TOTAL     2         10        3         16        1                     38
CUMUL.    2         12        15        31        32                    32
AVG/MONTH 0         0         0         1         0                     0
```

Figure 6-20: Selecting option 5 from the R-Man special reports menu

In comparing the first display with the second, you can see that the total number of visits has decreased in the second display, which would lead us to believe that many of the visits listed in the first display were actually revisits for the same diagnosis. Also, when only first visits are considered, there were more visits for chickenpox in 1986 than in 1988. However, the months in which the majority of chickenpox patients are seen are still February, March, April, and May.

6.6   Workload Distribution Reports

Workload distribution reports are especially useful in anticipating staffing requirements in terms of the day of the week or the time of day that patient use of facilities is highest.

In this example, we're going to use "visit" as the subject of our search, and we're going to use the "JAN89" cohort.

```
What is the subject of your search?  LIVING PATIENTS // VISIT <Enter>
Attribute of VISIT: [JAN89 <Enter>  (JUL 03, 1991)     USER #20 FILE
#9000010

Select one of the following =>

     1) LIVING PATIENTS must be a member of the JAN87 cohort
     2) LIVING PATIENTS must NOT be a member of the JAN87 cohort
     3) Select a random sample of the JAN87 cohort
     4) Count the number of entries in the JAN87 cohort

Your choice (1-4): 1// <Enter>
Computing Search Efficiency Rating......................................

   Subject of search: PATIENTS
      ALIVE TODAY    [SER = .01]
      MEMBER OF 'JAN87' COHORT   [SER = 6.14]

Attribute of LIVING PATIENTS:
```

Figure 6-21: Sample search by visit and using the JAN89 cohort

At this point, we will choose options, in the following order:

6 (R-Man special report generator) from the QMan Output Options menu, then

5 (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
             *****  R-MAN    SPECIAL REPORTS  *****

       Select one of the following:

           1         AGE buckets
           2         HEALTH summaries
           3         MAILING labels
           4         MONTH buckets
           5         TIME series
           6         WORKLOAD distribution
           9         HELP
           0         EXIT

       Your choice:  6 <Enter>   WORKLOAD distribution

WORKLOAD DISTRIBUTION REPORT: JAN 1,1989 to JAN 6,1989
VISIT TIME     SUN     MON     TUE     WED     THU     FRI     SAT     TOT
-------------------------------------------------------------------------
0000-0059       .       .       .       .       .       .       .       0
0100-0159       .       .       .       .       .       .       .       0
0200-0259       .       .       .       .       .       .       .       0
0300-0359       .       .       .       .       .       .       .       0
0400-0459       .       .       .       .       .       1       .       1
```

```
0500-0559       .        .        .        .        .        .        .        0
0600-0659       .        1        .        .        .        .        .        1
0700-0759       .        .        1        1        .        .        .        2
0800-0859       .        .        5        6        6        5        .       22
0900-0959       .        .        5        9        7        7        .       28
1000-1059       .        .        2        6        6        6        .       20
1100-1159       2        2        3        3        1        .        .       11
1200-1259       .       10       19       25       19       16        .       89
1300-1359       1        .        5        3        6        1        .       16
1400-1459       .        1        8        4        6        5        .       24
1500-1559       .        2        4        3        5        6        .       20
1600-1659       .        .        2        1        1        .        .        4
1700-1759       1        .        1        .        .        1        .        3
1800-1859       1        .        .        .        1        .        .        2
1900-1959       .        .        .        1        1        .        .        2
2000-2059       .        .        1        .        .        .        .        1
2100-2159       .        .        .        .        .        .        .        0
2200-2259       .        .        1        .        .        .        .        1
2300-2359       .        .        .        .        .        .        .        0

TOTAL           5       16       57       62       59       48        0      247
```

Figure 6-22: Selecting option 6 from the R-Man special reports menu

The display shows the time of day and the days of the week. You can easily see how the patient visits cluster, and in this example, the peak time occurs at noon.

We're going to do another workload distribution report, this time starting with 'living patients' rather than 'visit'. We're going to find the time of day our chickenpox patients tended to arrive.

```
What is the subject of your search?   LIVING PATIENTS //

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]

Attribute of LIVING PATIENTS: DX <Enter>

Enter DX: CHICKENPOX   <Enter>
052.9 (VARICELLA UNCOMPLICATED)
VARICELLA WITHOUT MENTION OF COMPLICATION

 OK? Y// <Enter>

 ICD Code Range(s) Selected So Far =>

1)  052.9

Enter ANOTHER DX: <Enter>

SUBQUERY: Analysis of multiple DIAGNOSES
```

```
First condition/attribute of "DIAGNOSIS": <Enter>
Computing Search Efficiency Rating.....

   Subject of search: PATIENTS
      ALIVE TODAY   [SER = .01]
      DIAGNOSIS (052.9)  [SER = 24.37]

Attribute of LIVING PATIENTS:
```

Figure 6-23: Sample workload distribution report by living patient instead of visit

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
                *****  R-MAN    SPECIAL REPORTS  *****

     Select one of the following:

          1           AGE buckets
          2           HEALTH summaries
          3           MAILING labels
          4           MONTH buckets
          5           TIME series
          6           WORKLOAD distribution
          9           HELP
          0           EXIT

     Your choice:  6 <Enter>   WORKLOAD distribution


WORKLOAD DISTRIBUTION REPORT: MAY 28,1985 to JAN 18,1990
VISIT TIME     SUN     MON     TUE     WED     THU     FRI     SAT     TOT
----------------------------------------------------------------------------
0000-0059       .       .       .       .       .       .       .       0
0100-0159       .       .       .       .       .       .       .       0
0200-0259       .       .       .       .       .       .       .       0
0300-0359       .       .       .       .       .       .       .       0
0400-0459       .       .       .       .       .       .       .       0
0500-0559       .       .       .       .       .       .       .       0
0600-0659       .       .       .       .       .       .       .       0
0700-0759       .       .       .       .       .       .       .       0
0800-0859       .       .       .       .       2       1       .       3
0900-0959       2       1       .       2       .       .       1       6
1000-1059       .       2       1       .       1       2       .       6
1100-1159       .       1       1       2       1       2       .       7
1200-1259       1       4       3       5       3       5       .       21
1300-1359       2       1       1       .       6       1       .       11
1400-1459       1       2       5       4       5       3       .       20
1500-1559       .       4       3       1       3       .       .       11
1600-1659       .       1       1       .       .       .       .       2
1700-1759       .       .       1       .       .       .       .       1
```

```
1800-1859        .       1       .       1       .       .       1       3
1900-1959        .       .       1       .       .       .       .       1
2000-2059        .       .       .       .       .       .       .       0
2100-2159        .       .       .       .       .       .       .       0
2200-2259        .       .       .       .       .       .       .       0
2300-2359        .       .       .       .       .       .       .       0

TOTAL            6      17      17      15      21      14       2      92
DAYS           242     242     243     243     243     242     242    1697
AVERAGE        0.0     0.1     0.1     0.1     0.1     0.1     0.0     0.1
```

Figure 6-24: Selecting option 6 from the R-Man special reports menu

In this display, the peak time that most of the chickenpox patients appeared for treatment was between noon and 6:00 PM during the week.

```
What is the subject of your search?  LIVING PATIENTS // VISIT <Enter>
Attribute of VISIT: DURING THE PERIOD <Enter>
Exact starting date: 1/1/88 <Enter>   (JAN 01, 1988)
Exact ending date: 1/31/88 <Enter>   (JAN 31,1988)
Computing Search Efficiency Rating...................................

   Subject of search: VISIT
      BETWEEN,DATES (inclusive) JAN 1,1988 and JAN 31,1988     [SER = 99]

Attribute of VISIT: CLINIC <Enter>

Enter CLINIC: EMERGENCY MEDICINE <Enter>        30
Enter ANOTHER CLINIC: <Enter>

The following have been selected =>

     EMERGENCY MEDICINE
Computing Search Efficiency Rating...................................

   Subject of search: VISIT
      BETWEEN,DATES (inclusive) JAN 1,1988 and JAN 31,1988     [SER = 99]
      CLINIC (EMERGENCY ME)   [SER = .92]

Attribute of VISIT:
```

Figure 6-25: Sample search for visits to the ER during January 1988

At this point, we will choose options, in the following order:

6. (R-Man special report generator) from the QMan Output Options menu, then

5. (SPECIAL reports) from the R-Man Custom Report Generator menu.

```
          *****  R-MAN    SPECIAL REPORTS  *****

    Select one of the following:
```

```
           1          AGE buckets
           2          HEALTH summaries
           3          MAILING labels
           4          MONTH buckets
           5          TIME series
           6          WORKLOAD distribution
           9          HELP
           0          EXIT


     Your choice:  6 <Enter>  WORKLOAD distribution


WORKLOAD DISTRIBUTION REPORT: JAN 1,1988 to JAN 30,1988
VISIT TIME    SUN      MON      TUE      WED      THU      FRI      SAT      TOT
-------------------------------------------------------------------------------
0000-0059      .        .        .        .        .        .        .        0
0100-0159      .        .        2        .        1        1        1        5
0200-0259      .        .        .        .        .        .        .        0
0300-0359      .        .        .        .        .        .        .        0
0400-0459      .        .        .        .        .        .        .        0
0500-0559      .        .        .        .        .        .        .        0
0600-0659      .        .        .        .        .        .        .        0
0700-0759      1        .        .        1        1        .        .        3
0800-0859      1        .        .        .        2        1        1        5
0900-0959      1        .        .        .        .        .        1        2
1000-1059      .        1        .        1        .        1        2        5
1100-1159      .        .        .        1        .        2        3        6
1200-1259      .        .        1        .        2        .        4        7
1300-1359      .        .        .        1        1        .        .        2
1400-1459      .        .        .        .        .        3        3        6
1500-1559      1        2        1        .        .        3        3       10
1600-1659      1        .        .        2        1        .        .        4
1700-1759      .        .        1        .        2        4        .        7
1800-1859      .        1        .        3        2        1        2        9
1900-1959      .        .        1        .        1        .        .        2
2000-2059      .        1        1        1        .        1        2        6
2100-2159      .        4        .        .        .        .        1        5
2200-2259      .        .        .        .        .        .        2        2
2300-2359      .        .        .        1        .        .        .        1

TOTAL          5        9        7       11       13       17       25       87
DAYS           4        4        4        4        4        5        5       30
AVERAGE       1.3      2.3      1.8      2.8      3.3      3.4      5.0      2.9
```

Figure 6-26: Selecting option 6 from the R-Man special reports menu

7.0   Appendix A: RPMS Rules of Behavior

The information in this required section was written by the IHS Office of Information Technology. It does not contain any information about the functionality of the software.

7.1   All RPMS Users

In addition to these rules, each application can include additional RoBs, which can be defined within the individual application's documentation (e.g., PCC, Dental, Pharmacy).

7.1.1   Access

RPMS Users shall:

- Only use data for which you have been granted authorization.

- Only give information to personnel who have access authority and have a need to know.

- Always verify a caller's identification and job purpose with your supervisor or the entity provided as employer *before* providing any type of information system access, sensitive information, or non-public agency information.

- Be aware that personal use of information resources is authorized on a limited basis within the provisions Indian Health Manual Chapter 6 OMS Limited Personal Use of Information Technology Resources TN 03-05," August 6, 2003.

- Users Shall Not:

- Retrieve information for someone who does not have authority to access the information.

- Access, research, or change any user account, file, directory, table, or record not required to perform your OFFICIAL duties.

- Store sensitive files on a PC hard drive, or portable devices or media, if access to the PC or files cannot be physically or technically limited.

- Exceed their authorized access limits in RPMS by changing information or searching databases beyond the responsibilities of their job or by divulging information to anyone not authorized to know that information

7.1.2   Logging On To The System

RPMS Users shall:

- Have a unique User Identification/Account name and password.

- Be granted access based on authenticating the account name and password entered.

- Be locked out of an account after 5 successive failed login attempts within a specified time period (e.g., one hour).

7.1.3   Information Accessibility

RPMS shall restrict access to information based on the type and identity of the user. However, regardless of the type of user, access shall be restricted to the minimum level necessary to perform the job.

Users Shall

- Access only those documents they created and those other documents to which they have a valid need-to-know and to which they have specifically granted access through an RPMS application based on their menus (job roles), keys, and FileMan access codes. Some users might be afforded additional privileges based on the function they perform such as system administrator or application administrator.

- Acquire a written preauthorization in accordance with IHS polices and procedures prior to interconnection to or transferring data from RPMS.

- Behave in an ethical, technically proficient, informed, and trustworthy manner.

- Logout of the system whenever they leave the vicinity of their PC.

- Be alert to threats and vulnerabilities in the security of the system.

- Report all security incidents to their local Information System Security Officer (ISSO)

- Differentiate tasks and functions to ensure that no one person has sole access to or control over important resources.

- Protect all sensitive data entrusted to them as part of their government employment.

- Shall abide by all Department and Agency policies and procedures and guidelines related to ethics, conduct, behavior and IT information processes

7.1.4   Accountability

Users Shall:

- Behave in an ethical, technically proficient, informed, and trustworthy manner.

- Logout of the system whenever they leave the vicinity of their PC.

- Be alert to threats and vulnerabilities in the security of the system.

- Report all security incidents to their local Information System Security Officer (ISSO)

- Differentiate tasks and functions to ensure that no one person has sole access to or control over important resources.

- Protect all sensitive data entrusted to them as part of their government employment.

- Shall abide by all Department and Agency policies and procedures and guidelines related to ethics, conduct, behavior and IT information processes.

7.1.5   Confidentiality

Users Shall:

- Be aware of the sensitivity of electronic and hardcopy information, and protect it accordingly.

- Store hardcopy reports/storage media containing confidential information in a locked room or cabinet.

- Erase sensitive data on storage media, prior to reusing or disposing of the media.

- Protect all RPMS terminals from public viewing at all times.

- Abide by all HIPAA regulations to ensure patient confidentiality

Users Shall Not:

- Allow confidential information to remain on the PC screen when someone who is not authorized to that data is in the vicinity.

- Store sensitive files on a portable device or media without encrypting

7.1.6   Integrity

Users Shall:

- Protect your system against viruses and similar malicious programs.

- Observe all software license agreements.

- Follow industry standard procedures for maintaining and managing RPMS hardware, operating system software, application software, and/or database software and database tables.

- Comply with all copyright regulations and license agreements associated with RPMS software.

Users Shall Not:

- Violate Federal copyright laws.

- Install or use unauthorized software within the system libraries or folders.

- Use freeware, shareware or public domain software on/with the system without your manager's written permission and without scanning it for viruses first

7.1.7   Passwords

Users Shall:

- Change passwords a minimum of every 90 days.

- Create passwords with a minimum of eight characters.

- If the system allows, use a combination of alpha, numeric characters for passwords, with at least one uppercase letter, one lower case letter, and one number. It is recommended, if possible, that a special character also be used in the password.

- Change vendor-supplied passwords immediately.

- Protect passwords by committing them to memory or store them in a safe place (do not store passwords in login scripts, or batch files.

- Change password immediately if password has been seen, guessed or otherwise compromised; and report the compromise or suspected compromise to your ISSO.

- Keep user identifications (ID) and passwords confidential

Users Shall Not:

- Use common words found in any dictionary as a password.

- Use obvious readable passwords or passwords that incorporate personal data elements (e.g., user's name, date of birth, address, telephone number, or social security number; names of children or spouses; favorite band, sports team, or automobile; or other personal attributes).

- Share passwords/IDs with anyone or accept the use of another's password/ID, even if offered.

- Reuse passwords. A new password must contain no more than five characters per 8 characters from the previous password.

- Post passwords.

- Keep a password list in an obvious place, such as under keyboards, in desk drawers, or in any other location where it might be disclosed.

- Give a password out over the phone.

7.1.8   Backups

Users Shall:

- Plan for contingencies such as physical disasters, loss of processing, and disclosure of information by preparing alternate work strategies and system recovery mechanisms.

- Make backups of systems and files on a regular, defined basis.

- If possible, store backups away from the system in a secure environment

Users Shall Not:

- Violate Federal copyright laws.

- Install or use unauthorized software within the system libraries or folders.

- Use freeware, shareware or public domain software on/with the system without your manager's written permission and without scanning it for viruses first.

7.1.9   Reporting

Users Shall:

- Contact and inform your ISSO that you have identified an IT security incident and you will begin the reporting process by providing an IT Incident Reporting Form regarding this incident.

- Report security incidents as detailed in IHS SOP 05-03, Incident Handling Guide

Users Shall Not:

- Assume that someone else has already reported an incident. The risk of an incident going unreported far outweighs the possibility that an incident gets reported more than once.

7.1.10   Session Time Outs

RPMS system implements system-based timeouts that back users out of a prompt after no more than 5 minutes of inactivity.

Users Shall:

- Utilize a screen saver with password protection set to suspend operations at no greater than 10-minutes of inactivity. This will prevent inappropriate access and viewing of any material displayed on your screen after some period of inactivity.

7.1.11   Hardware

Users Shall:

- Avoid placing system equipment near obvious environmental hazards (e.g., water pipes).

- Keep an inventory of all system equipment.

- Keep records of maintenance/repairs performed on system equipment

Users Shall Not:

- Do not eat or drink near system equipment

7.1.12   Awareness

Users Shall:

- Participate in organization-wide security training as required.

- Read and adhere to security information pertaining to system hardware and software.

- Take the annual information security awareness.

- Read all applicable RPMS Manuals for the applications used in their jobs.

7.1.13   Remote Access

Each subscriber organization establishes its own policies for determining which employees can work at home or in other remote workplace locations. Any remote work arrangement should include policies that

- Are in writing.

- Provide authentication of the remote user through the use of ID and password or other acceptable technical means.

- Outline the work requirements and the security safeguards and procedures the employee is expected to follow.

- Ensure adequate storage of files, removal and non-recovery of temporary files created in processing sensitive data, virus protection, intrusion detection, and provides physical security for government equipment and sensitive data.

- Establish mechanisms to back up data created and/or stored at alternate work locations.

Remote Users Shall:

- Remotely access RPMS through a virtual private network (VPN) when ever possible. Use of direct dial in access must be justified and approved in writing and its use secured in accordance with industry best practices or government procedures

Remote Users Shall Not:

- Disable any encryption established for network, internet and web browser communications

7.2   RPMS Developers

Developers Shall:

- Always be mindful of protecting the confidentiality, availability, and integrity of RPMS when writing or revising code.

- Always follow the IHS RPMS Programming Standards and Conventions (SAC) when developing for RPMS.

- Only access information or code within the namespaces for which they have been assigned as part of their duties.

- Remember that all RPMS code is the property of the U.S. Government, not the developer.

- Shall not access live production systems without obtaining appropriate written access, shall only retain that access for the shortest period possible to accomplish the task that requires the access.

- Shall observe separation of duties policies and procedures to the fullest extent possible.

- Shall document or comment all changes to any RPMS software at the time the change or update is made. Documentation shall include the programmer's initials, date of change and reason for the change.

- Shall use checksums or other integrity mechanism when releasing their certified applications to assure the integrity of the routines within their RPMS applications.

- Shall follow industry best standards for systems they are assigned to develop or maintain; abide by all Department and Agency policies and procedures.

- Shall document and implement security processes whenever available

Developers Shall Not:

- Write any code that adversely impacts RPMS, such as backdoor access, "Easter eggs," time bombs, or any other malicious code or make inappropriate comments within the code, manuals, or help frames.

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Not release any sensitive agency or patient information.

7.3   Privileged Users

Personnel who have significant access to processes and data in RPMS, such as, system security administrators, systems administrators, and database administrators have added responsibilities to ensure the secure operation of RPMS.

Privileged Users Shall:

- Verify that any user requesting access to any RPMS system has completed the appropriate access request forms.

- Ensure that government personnel and contractor personnel understand and comply with license requirements. End users, supervisors, and functional managers are ultimately responsible for this compliance.

- Advise the system owner on matters concerning information technology security.

- Assist the system owner in developing security plans, risk assessments, and supporting documentation for the certification and accreditation process.

- Ensure that any changes to RPMS that affect contingency and disaster recovery plans are conveyed to the person responsible for maintaining continuity of operations plans.

- Ensure that adequate physical and administrative safeguards are operational within their areas of responsibility and that access to information and data is restricted to authorized personnel on a need to know basis.

- Verify that users have received appropriate security training before allowing access to RPMS.

- Implement applicable security access procedures and mechanisms, incorporate appropriate levels of system auditing, and review audit logs.

- Document and investigate known or suspected security incidents or violations and report them to the ISSO, CISO, and systems owner.

- Protect the supervisor, superuser or system administrator passwords.

- Avoid instances where the same individual has responsibility for several functions (i.e., transaction entry and transaction approval).

- Watch for unscheduled, unusual, and unauthorized programs.

- Help train system users on the appropriate use and security of the system.

- Establish protective controls to ensure the accountability, integrity, confidentiality, and availability of the system.

- Replace passwords when a compromise is suspected. Delete user accounts as quickly as possible from the time that the user is no longer authorized system. Passwords forgotten by their owner should be replaced, not reissued.

- Terminate user accounts when a user transfers or has been terminated. If the user has authority to grant authorizations to others, review these other authorizations. Retrieve any devices used to gain access to the system or equipment. Cancel logon IDs and passwords, and delete or reassign related active and back up files.

- Use a suspend program to prevent an unauthorized user from logging on with the current user's ID if the system is left on and unattended.

- Verify the identity of the user when resetting passwords. This can be done either in person or having the user answer a question that can be compared to one in the administrator's database.

- Shall follow industry best standards for systems they are assigned to; abide by all Department and Agency policies and procedures

Privileged Users Shall Not:

- Access any files, records, systems, etc., that are not explicitly needed to perform their duties.

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Not release any sensitive agency or patient information.

8.0   Glossary

@ symbol

> This symbol (key combination of Shift+2) has two functions: (1) to delete an entry and (2) to separate a date and time.

Acute

> Used to describe a condition that lasts for a short time. Used in contrast to *chronic*.

Append

> To add additional data items to an existing visit, usually at the end of entering the data.

Billable Visit

> A visit from a patient that has third party insurance coverage that a hospital/clinic can bill services.

Best Practice Prompts

> Best Practice Prompts are a set of clinical messages related to procedures such as lab tests, immunizations, procedures etc. that are generally recommended for a subset of the population who share a common diagnosis (e.g. Asthma, CVD). They are displayed in a variety of places including the Health Summary, Supplements, and the Patient Record in both EHR and iCare.

> Users can turn on (activate) and display BP Prompts on Health Summaries, similar to the Health Maintenance Reminder function.

Billable Visit

> A visit from a patient that has third party insurance coverage that a hospital/clinic can then bill for services.

Caret ("Up Hat")

> The symbol "^" obtained by using the Shift+6 key combination. Commonly used in RPMS character-based interfaces to exit out of a routine or to back up from the previous field.

Chart Number

> A unique numerical identifier assigned to each patient. This is also referred to as Health Record Number.

Chronic

Used to describe a condition that has an indefinite duration or with a frequent occurrence. Used in contrast to *acute*.

Clinical

To do with treatment in or as a clinic: involving or concerned with direct observation and treatment of patients.

Command

The instructions you give the computer to record a certain transaction. For example, selecting "Payment" or "P" at the command prompt tells the computer you are applying a payment to a chosen bill.

Community of Service

The community where the encounter took place.

Community of Residence

The community where the patient resides.

CPT Code

Current Procedural Terminology code. Used to identify procedures provided during an encounter and for billing outpatient services provided.

Database

A database is a collection of files containing information that may be used for many purposes. Storing information in the computer helps in reducing the user's paperwork load and enables quick access to a wealth of information. Databases are comprised of fields, records, and files.

Default Response

Many of the prompts in the RPMS applications contain responses that can be activated simply by pressing the Enter key . For example: "Do you really want to quit? No//." Pressing the Enter key tells the system you do not want to quit. "No//" is considered the default response. The default is generally set to the most frequently used response for the prompt.

Designated Primary Care Provider (DPCP)

The primary care provider designated for the patient. This is distinguished from a primary or secondary visit provider for a specific visit.

Device

The name of the printer you want the system to use when printing information. *Home* means the computer screen.

DOB

Date of Birth

DOD

Date of Death

DOS

Date of Service

DX

Common abbreviation for Diagnosis

EDC

Expected/estimated date of confinement, that is the expected/estimated due or delivery date for a pregnancy.

EDD

Expected/estimated date of delivery.

Export

To format data so it can be used by another application.

Fields

Fields are a collection of related information that comprises a record. Fields on a display screen function like blanks on a form. For each field, you will find a prompt requesting specific types of data. There are nine basic field types in RPMS programs, and each collects a specific type of information.

Free Text Field

This field type will accept numbers, letter, and most of the symbols on the keyboard. There may be restrictions on the number of characters you are allowed to enter.

Health Factors

Health Factors are data elements utilized by RPMS to record health status information about the patient. Current Smoker use is an example of a health factor in the Tobacco category. Health Factor data are recorded in the PCC V Health Factor file. For a current list of Health Factors, see the Health Summary User Manual.

Health Management Reminders (HMRs)

Health Maintenance Reminders are a set of clinical reminders related to procedures such as lab tests, immunizations, procedures, etc. that are generally recommended for a subset of the population. They are displayed in a variety of places including the Health Summary, Supplements, and the Patient Record in both EHR and iCare.

Health Record Number (HRN)

A unique numerical identifier assigned to each patient. This is also referred to as a Chart Number.

Health Summary

The Health Summary is a patient report displaying related data built from the PCC V files such as laboratory and pharmacy. There are many different types of Health Summaries available to users at each site. Users are also able to design a health summary on-the-fly from the available components.

HRN#

Health Record Number, also referred to as a Chart Number

HS

Health Summary, a summary of a patient's medical care. The RPMS PCC is distributed with several standard health summaries, but can be customized. Examples of standard health summaries are: Adult Regular, Behavioral Health, CHR, Dental.

HX

Abbreviation for History. History is an event taking place in the past, such as surgery, immunizations, etc.

ICD

International Classifications of Diseases. This is a national coding system primarily used for: (1) classifying morbidity and mortality information for statistical purposes, (2) indexing of hospital records by disease and operations, and (2) data storage and retrieval. In addition, this is the coding system physicians must use for billing purposes of Medicare, Medicaid, and private insurance for services rendered.

Interfaces

A boundary where two systems can communicate. RPMS applications contain both character-based ("roll-and-scroll") and graphical user (GUI) interfaces. PCC Data Entry is an example of a character-based interface; RPMS EHR is an example of a GUI.

Menu

The menu is a list of different options you may select at a given time. To choose a specific task, select one of the items from the list by entering the established abbreviation or synonym at the appropriate prompt. A menu option followed by the ellipsis (…) indicates there are submenus.

Mnemonic

An abbreviation used to name a menu option or report used in the RPMS character-based packages. RPMS PCC data entry mnemonics to enter a data type can be two, three, or four characters; for example, BP (blood pressure).

Narrative Description

A detailed description given using words rather than codes.

Patient Care Component (PCC)

PCC is the core of the RPMS applications and functions as a clinical data repository. Most RPMS applications "pass" key data elements to PCC, stored in V (visit) files, e.g., V Lab. Other data is entered directly into V file; for example, V Patient Education, BP (blood pressure), WT (weight), HT (height), HC (head circumference) etc.

Patient Wellness Handout

The Patient Wellness Handout is a type of Health Summary that is directed to the patient. It displays personal medical information in easy to interpret language.

Narrative Description

A detailed description given using words rather than codes.

PGEN

Abbreviation for Patient General Retrieval Report. PGEN is the Patient General Retrieval report located in PCC Management Reports. The General Retrieval reports allow users to create on-the-fly reports by choosing specific data elements to select, sort by, and print.

Problem List

A list of important/chronic medical, social, or psychiatric problems, related notes, and treatment plans for a patient that are recorded and updated as part of the patient's health record. The Health Summary has two categories: Active and Inactive.

POV

Purpose of Visit - one or more diagnoses (ICD codes) that are identified as the reason for the patient's visit, recorded in the PCC V POV file.

Prompt

Text displayed onscreen indicating that the system is waiting for input to a field. Once the computer displays a prompt, it waits for you to enter some specific information.

Provider

One who provides direct medical care to a patient; that is, physician, nurse, mid-level provider).

Provider Narrative

A detailed description of the patient's conditions, using words rather than codes.

QMan

Short for Query Manager, QMan is a VA-based search utility that allows users to construct detailed searches of the RPMS database. QMan is part of the integrated PCC suite.

Retrieval

To obtain data from another location.

Roll-and-Scroll

The roll-and-scroll (character-based) data entry format captures the same information as the screen format but uses a series of prompts for recording data. This is typically the most efficient method for data entry.

RPMS

Resource and Patient Management System; a suite of integrated software packages used by IHS

Secondary Providers

A provider for a patient's visit other than the patient's primary visit provider. A patient visit might have multiple secondary providers, depending on the services provided.

Security Key

A means of securing menus to limit accessibility. To use certain functions, such as those on a Manager's menu, you must be assigned the appropriate key by the Site Manager.

Select

To choose one option from a list of options.

Site Manager

The person in charge of setting up and maintaining the technical aspects of the RPMS System at the facility or area level.

Specialty Providers

Defined through the Designated Specialty Provider Management (BDP) application.

Submenu

A menu that is accessed through another menu. A menu option followed by the ellipsis (…) indicates there are submenus.

Supplement

A Supplement is a type of modified Health Summary that is related to a specific condition such as Diabetes or HIV/AIDS. It displays personal medical information related to that condition.

Tally

To make a count, total, or subtotal a number of items.

VGEN

Short for Visit General Retrieval Report. VGEN is one of the search utilities that enable users to construct searches of the RPMS database. The General Retrieval reports allow users to create on-the-fly reports by choosing specific data elements to select, print and sort by.

9.0   Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

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Fax: (505) 248-4363

Web: http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm

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