RESOURCE AND PATIENT MANAGEMENT SYSTEM

Diabetes Management System
(BDM)

Supplemental Information for
Diabetes Management System Patch 2 and
RPMS Diabetes Audit 2009 Instructions

Version 2.0 Patch 2
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Office of Information Technology (OIT)
Division of Information Resource Management
Albuquerque, New Mexico

Preface

The purpose of this guide is to provide Diabetes Program staff with an overview to changes to the Diabetes Management System introduced in Patch 2. In addition, instructions are provided on how to run the electronic version of the 2009 Diabetes Audit, which is included in this patch.

> **NOTES**: RPMS software, including the Diabetes Management System, is subject to periodic updates based on IHS Diabetes Standards of Care. This manual provides documentation for the 2009 Diabetes Audit using the standards of care in effect as of August 2006.

Table of Contents

1.0 Introduction

Patch 2 to the Diabetes Management System Version 2.0 contains several changes, as well as the 2009 Diabetes Audit. The changes described below may have been included in previous enhancements to the software, but have not been documented in a user document.

- Beginning in 2009, the Diabetes Audit may only be found under the DA Diabetes Audit option in the Diabetes Management System and will not be included under the DM Diabetes QA Audit Menu in PCC Management Reports.

- The Diabetes Audit section dealing with testing for urine protein has been extensively revised.

- Two new taxonomies have been added for the 2009 Diabetes Audit:

  - DM AUDIT AMYLIN ANALOGUES
  - DM AUDIT SEMI QUANT UACR

- The 2009 Diabetes Audit now checks for an Estimated GFR and value of that test.

- The individual audit has been extended to print on two pages instead of one in order to accommodate additional information related to dates of service and data types found for individual audit items.

- A check has been put into the Taxonomy Update option to warn the user if they attempt to add a panel test to a taxonomy containing lab tests that will be evaluated for values. There are no values associated with test panels; values are associated with the individual tests within the panels.

- In order to enter or edit patient data in the Diabetes Management System, a user must have the security key BDMZEDIT.

- The creator of a Diabetes or Pre-Diabetes Register may by displayed and changed using the menu option, ECR Display/Edit Register Creator, in the Case Management System.

- A number of reports formerly listed under the DA – Diabetes QA Audit Menu have been removed and grouped together under the RP – Reports Menu. See below:

```
REPORTS MENU - IHS DIABETES

  FU      Follow-up Needed
  LP      List Patient Appointments
  RR      Register Reports ...
  SMR     Blood Glucose Self Monitoring Report
  DPCS    Display a Patient's DIABETES CARE SUMMARY
  PLDX    Patients w/no Diagnosis of DM on Problem List
  NDOO    DM Register Pts w/no recorded DM Date of Onset
  LPRA    List Patients on a Register w/an Appointment
  DMV     DM Register Patients and Select Values in 4 Months
  HSRG    Print Health Summary for DM Patients W/Appt
```

Figure 1-1: Reports Menu for IHS Diabetes

- The Follow-Up Needed Report has been modified to include only those items included in the 2009 Diabetes Audit. Pap Smears, Microalbumin, and UA/Urine Protein have been removed from the list of follow-up items. Estimated GFR, Depression Screening, and A/C Ratio have been added to the list of items for follow up reports. Td has been reworded as Td/Tdap.

- The option CS Individual Patient Summary has been modified to showcase comments.

2.0 Preparing for the 2009 Audit

There are two important steps when preparing for an electronic audit in RPMS:

1. Ensure that the patients who will be audited are, indeed, patients who are actively receiving care at your health care facility; and

2. Review and update taxonomies of medications, health factors, patient-education topics, and laboratory tests.

2.1   Summary of Steps for Conducting an Electronic Audit

1. Select the appropriate patient records to review (see Sections 2.2 – 2.4).

2. Review and update taxonomies to assure their accuracy (see Section 2.6).

3. Run the 2009 audit and create a data (.rec) file (see Section 3).

4. Upload the .rec file to the WebAudit (see Section 4).

2.2   Guidelines for Selecting Patients

The Diabetes Program has provided the following guidelines for selecting patients who should and who should not be included in the 2009 Diabetes Audit.

Include patients who:

- Attend regular clinics or diabetes clinics.

- Sometimes refuse care or have special motivational problems (e.g., alcoholism).

- Are not attending clinics; but you do not know if they have moved or have found another source of care.

Exclude patients who:

- Have not had at least one primary care visit during the past 12 months.

- Receive primarily referral or contract care paid by IHS.

- Have arranged other MD care paid with non-IHS monies.

- Receive their primary care at another IHS or Tribal health facility.

- Live in a jail, and receive their care there.

- Live in a nursing home, and receive their care there.

- Attend an off-site dialysis unit and receive the majority of their care there.

- Have gestational diabetes.

- Have pre-diabetes (IFG or IGT) only.

- Have moved — permanently or temporarily (should be documented)

- You are unable to contact, defined as at least 3 tries in 12 months (should be documented in the chart).

- Have died.

Patients who should be included in the 2009 Diabetes Audit need to meet two criteria:

- They must be active (have had at least one visit to a primary care clinic within the audit year)

- They must have Type 1 or Type Diabetes

The diabetes register may include people who are not considered active patients of the clinic and thus should not be audited. In addition, the diabetes register may have patients with a Register Diagnosis of GDM or IGT. Those patients should also be excluded from the audit.

2.3 Using the Diabetes Register for the 2009 Diabetes Audit

If you wish to use patients in your Diabetes Register for the audit, there are several reports that can be run to identify patients currently classified as active but who do not meet the audit definition of active. There are several ways to identify patients in the Register who have a Register Diagnosis of IGT or GDM. An option using a Q-man report is shown in section 2.3. Also shown are two options to identify patients in the Register who have a Register Diagnosis of IGT or GDM. Once patients who do not meet this definition of Active with a Diagnosis of Type 1 or Type 2 have been identified, their status may be changed using option 1. Edit Register Data under Patient Management in the Diabetes Management System.

> **Note:** The IHS Division of Diabetes is recommending that the 2009 audit submitted be for the calendar year ending December 31, 2008.
> *However, please use audit dates as directed by your Area Diabetes Consultant.*

2.3.1 Identifying Active Diabetes Register Patients with GDM or IGT

Although the IHS Diabetes Register allows entry of GDM and IGT as Register diagnosis, it has been recommended for a number of years that the IHS Diabetes Register include only patients with a diagnosis of Type 1 or Type 2. Patients with GDM and IGT should be followed via inclusion in another register.

Below is a Q-man search to identify patients with a Register Status of Active and a Register Diagnosis of GDM or IGT.

```
Q-MAN OPTIONS ->  SEARCH PCC Database (dialogue interface)

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

Which CMS REGISTER: IHS DIABETES <Enter>

Register being checked to update status of deceased patients.

Select the Patient Status for this report

        1       Active
        2       Inactive
        3       Transient
        4       Un-reviewed
        5       Deceased
        6       Non-IHS
        7       Lost to Follow-up
        8       All Register Patients

Which Status(es):  (1-8): 1//<Enter>

Select the Diabetes Register Diagnosis for this report

    Select one of the following:

1           Type 1
2           Type 2
3           Type 1 & Type 2
4           Gestational DM
5           Impaired Glucose Tolerance
6           All Diagnoses

      Which Diagnosis: All Diagnoses// 4 <Enter>  Gestational DM

                           *****  Q-MAN OUTPUT OPTIONS  *****
            Select one of the following:

            1       DISPLAY results on the screen
            2       PRINT results on paper
            3       COUNT 'hits'
            4       STORE results of a search in a FM search template
            5       SAVE search logic for future use
            6       R-MAN special report generator
            9       HELP
            0       EXIT
    Your choice: DISPLAY// 1 <Enter> DISPLAY results on the screen
      ...EXCUSE ME, LET ME PUT YOU ON 'HOLD' FOR A SECOND...

Please note:  Patients whose names are marked with an "*" may have aliases.
PATIENTS         CMI*DEV
                 NUMBER
----------------------------------------------------------------------

MOUSE,MINNIE W* 29693
Total: 1
```

Figure 2-1: Example of Q-man search to identify patients

Repeat this Qman query selecting 5 Impaired Glucose Tolerance to identify patients in your Register with a Register Diagnosis of IGT. Their status may be changed using the 1. Edit Register Data under Patient Management in the Diabetes Management System to Unreviewed.

2.3.2   Identifying Patients with no Visit During Audit Year

This is a simple Q-man search that can be run to identify patients who have not had at least one primary care visit during the 12 months of the audit period. There are other reports that can identify patients who may not have had a visit in the last year, but this report is especially useful for Registers with large numbers of patients.

```
Q-MAN OPTIONS ->  SEARCH PCC Database (dialogue interface)

What is the subject of your search?  LIVING PATIENTS // REGISTER <Enter>
Which CMS REGISTER: IHS DIABETES <Enter>

Register being checked to update status of deceased patients.

Select the Patient Status for this report

         1       Active
         2       Inactive
         3       Transient
         4       Un-reviewed
         5       Deceased
         6       Non-IHS
         7       Lost to Follow-up
         8       All Register Patients

Which Status (es):  (1-8): 1// <Enter>

Select the Diabetes Register Diagnosis for this report    Select one of the
following:

         1        Type 1
         2        Type 2
         3        Type 1 & Type 2
         4        Gestational DM
         5        Impaired Glucose Tolerance
         6        All Diagnoses

Which Register Diagnosis: All Diagnoses// <Enter>
```

```
There are 831 register patients for the combination selected.
Attribute of IHS DIABETES REGISTER: VISIT


SUBQUERY: Analysis of multiple VISITS


First condition of "VISIT": CLINIC <Enter>


Enter CLINIC: [BGP   PRIMARY CARE CLINICS <Enter>        BGP PRIMARY CARE CLINICS]


Members of BGP PRIMARY CARE CLINICS Taxonomy =>


     GENERAL
     DIABETIC
     INTERNAL MEDICINE
     PEDIATRIC
     WELL CHILD
     FAMILY PRACTICE


Enter ANOTHER CLINIC:<- You may wish to include EMERGENCY ROOM, WALK IN,
                        or other clinics you consider to be primary care clinics.
                        The taxonomy BGP PRIMARY CARE CLINICS is that used for
                        GPRA reports.
The following have been selected =>

          GENERAL
          DIABETIC
          INTERNAL MEDICINE
          PEDIATRIC
          WELL CHILD
          FAMILY PRACTICE

Want to save this CLINIC group for future use? No// <Enter>
Next condition of "VISIT": DURING THE PERIOD <Enter>
Exact starting date: 1/1/08 <Enter> (JAN 01, 2008)
Exact ending date: 12/31/08 <Enter> (DEC 31, 2008)

          Subject of subquery: VISIT
          CLINIC (GENERAL/DIABETIC...)
          BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59

Next condition of "VISIT": NULL <Enter>

Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      MEMBER OF 'IHS DIABETES REGISTER-3500' COHORT
          Subject of subquery: VISIT
          CLINIC (GENERAL/DIABETIC...)
          BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59
          'NULL' (None meet criteria)

Attribute of IHS DIABETES REGISTER: <Enter>
```

```
                        *****  Q-MAN OUTPUT OPTIONS  *****

     Select one of the following:

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

     Your choice: DISPLAY//<Enter> results on the screen
     ...EXCUSE ME, LET ME PUT YOU ON 'HOLD' FOR A SECOND...


Please note:  Patients whose names are marked with an "*" may have aliases.

   PATIENTS            CIM-IH VISIT
                       NUMBER
--------------------------------------------------------------------------------

LINCOLN,DANA       100005 -
LE BLEU,EDITH*     100011 -
SCHMILLER,MALLO*   100013 -
BURR,NANETTE       100017 -
MWANGI,MAUDE*      100026 -
CONNERS,CHERYL     100028 -
MURRAY,MELANIE     100030 -
RITTER,CECELIA     100032 -
MENDELSON,JAMIE    100034 -
REDGREEN,JACK      100064 -
LE BLEU,DUDLEY     100075 -
CEPEDA,ROSS        100081 -
REEVES,ELLIE*      100091 -Changing Register Status for a Patient in the IHS Diabetes
Register
```

Figure 2-2: A Q-man Search to Identify Patients Who Have Not Had a Primary Care Visit
During the 12 Months of the Audit Period

In the above report, note that DANA LINCOLN, Chart # 100005, has not had a
primary care visit during the audit year. Her Register Status may be updated as
follows using the Patient Management option in the Diabetes Management System.

2.4   Edit Patient Register Status

```
DIABETES MANAGEMENT SYSTEM
PM     Patient Management
1  Edit Register Data
```

Figure 2-3: Updated Register Status Using the Patient Management Option

Choices for Register Status are:

- Active

- Inactive

- Transient

- Unreviewed

- Deceased

- Non-IHS

- Lost to Follow-Up

- Noncompliant

Select the appropriate Status and use the down arrow until the cursor reaches the Command line (see Figure 2-4). Type Save <ENTER> followed by Exit <ENTER> to record the status update and close the update box.
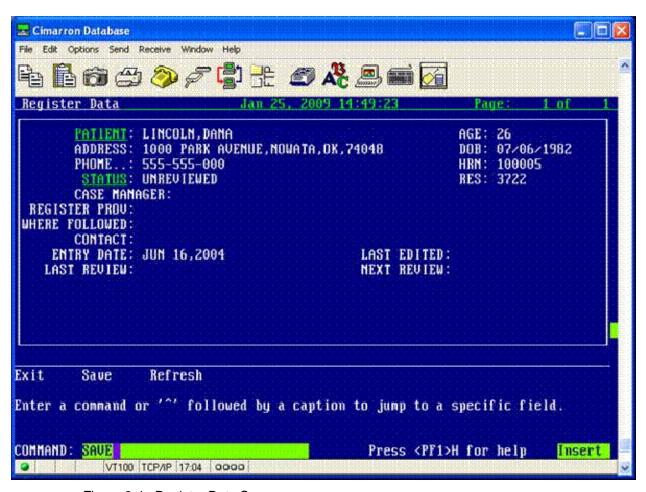

Figure 2-4: Register Data Screen

2.5 Creating a Template of Patients for the 2009 Diabetes Audit

If the IHS Diabetes Register is not current or has not been routinely used for management of patients with diabetes, it may be advantageous to use a Q-man search to identify patients with diabetes who have had a visit to a primary care clinic during the audit year. The template created from this query can be used to run the 2009 Diabetes Audit.

Directions for running this Q-man search are shown below.

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

  Subject of search: PATIENTS
       ALIVE TODAY

Attribute of LIVING PATIENTS: VISIT <Enter>

SUBQUERY: Analysis of multiple VISITS

First condition of "VISIT": CLINIC <Enter>

Enter CLINIC: [BGP   PRIMARY CARE CLINICS      BGP PRIMARY CARE CLINICS]

Members of BGP PRIMARY CARE CLINICS Taxonomy =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
WELL CHILD
FAMILY PRACTICE

Enter ANOTHER CLINIC:

The following have been selected =>

        GENERAL
        DIABETIC
        INTERNAL MEDICINE
        PEDIATRIC
        WELL CHILD
        FAMILY PRACTICE

Want to save this CLINIC group for future use? No// <Enter> (No)
Next condition of "VISIT": DURING THE PERIOD
Exact starting date: 1/1/2008  (JAN 01, 2008)
Exact ending date: 12/31/2008  (DEC 31, 2008)

        Subject of subquery: VISIT
        CLINIC (GENERAL/DIABETIC...)
        BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59
```

```
Next condition of "VISIT": DX <Enter>
     1   DX
     2   DX PROCEDURE
CHOOSE 1-2: 1 <Enter>

Enter DX: 250.00-250.93
   250.00     DIABETES II/UNSPEC NOT UNCONTR
        ...OK? Yes// <Enter> (Yes)

  250.93     DIAB W/COMP I/JUV UNCONT     COMPLICATION/COMORBIDITY
        ...OK? Yes// <Enter> (Yes)

Codes in this range =>

250.00   DIABETES II/UNSPEC NOT UNCONTR
250.01   DIABETES I/JUV NOT UNCONTRL
250.02   DIABETES TYPE II/UNSPEC UNCON
250.03   DIABETES I/JUV UNCONTRL
250.10   DIAB W/KET TYPEII/UNSP CONT
250.11   DIAB W/KET TYPI JUV/NOT UNCONT
250.12   DIAB W/KET TYPII/UNSPC UNCONT
250.13   DIAB W/KET TYPEI JUV UNCONT
250.20   DIAB W/HYPER TYPII/UNSP CONT
250.21   DIAB W/HYPR TYPI/JUV CONT
250.22   DIAB W/HYPR TYPII/UNSP UNCONT
250.23   DIAB W/HYPR TYPI/JUV UNCONT
250.30   DIAB W/OTH COMA II/UNSPE CONT
250.31   DIAB W/OTH COMA TYPI/JUV CONT
250.32   DIAB W/OTH COMA TYII/UNSP UNCT
250.33   DIAB W/OTH COMA TYI/JUV UNCONT
250.40   DIAB W/RENAL TYII/UNSPEC CONT
250.41   DIAB W/RENAL TYI/JUV CONT
250.42   DIAB W/RENAL II/UNSPEC UNCONT
250.43   DIAB W/RENAL I/JUV UNCONT
250.50   DIAB W/OPHTH II/UNSPEC CONT
250.51   DIAB W/OPHTH I/JUV CONT
250.52   DIAB W/OPHTH II/UNSPEC UNCONT
250.53   DIAB W/OPHTH I/JUV UNCONT
250.60   DIAB W/NEUR II/UNSPEC CONT
250.61   DIAB W/NEUR I/JUV CONT
250.62   DIAB W/NEUR II/UNSPEC UNCONT
250.63   DIAB W/NEUR I/JUV UNCONT
250.70   DIAB W/CIRC DISOR II/UNSP CONT
250.71   DIAB W/CIRC DISOR I/JUV CONT
250.72   DIAB W/CIRC DISOR II/UNSP UNCN
250.73   DIAB W/CIRC DISOR I/JUV CONT
250.80   DIAB W/OTHER II/UNSPEC CONT
250.81   DIAB W/OTHER I/JUV CONT
250.82   DIAB W/OTHER II/UNSPEC UNCONT
250.83   DIAB W/OTHER I/JUV UNCONT
250.90   DIAB W/COMP II/UNSPEC CONT
250.91   DIAB W/COMP I/JUV CONT
250.92   DIAB W/COMP II/UNSPEC UNCONT
250.93   DIAB W/COMP I/JUV UNCONT

Code Range(s) Selected So Far =>

1)  250.00 - 250.93
```

```
Enter ANOTHER DX:

Want to save this DX group for future use? No// <Enter> (No)
         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59
         POV (250.01/250.11...)

Next condition of "VISIT": LOCATION OF ENCOUNTER <Enter> <- This condition only
                                                 needs to be used if you are
                                                 part of a multidivisional
                                                 database.

Enter ENCOUNTER LOCATION: CMI*DEV <Enter>        OKLAHOMA        TEST FACILITY
  01                              OK              102345
Enter ANOTHER ENCOUNTER LOCATION:

The following have been selected =>

      CMI*DEV

         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59
         POV (250.01/250.11...)
         LOCATION OF ENCOUNTER (CMI*DEV)

Next condition of "VISIT": <Enter>

Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      ALIVE TODAY
         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2008 and DEC 31,2008@23:59:59
         POV (250.01/250.11...)
         LOCATION OF ENCOUNTER (CMI*DEV)

                    *****  Q-MAN OUTPUT OPTIONS  *****

      Select one of the following:

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

      Your choice: DISPLAY// 4 <Enter> STORE results of a search 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: PTS FOR DM AUDIT 09 <Enter>
  Are you adding 'PTS FOR DM AUDIT 09' as
    a new SORT TEMPLATE? No// Y <Enter> (Yes)
DESCRIPTION:
  No existing text
  Edit? NO//<Enter>


Want to run this task in background? No// <Enter> (No)

PATIENTS         CMI*DEV
(Alive)          NUMBER
-------------------------------------------------------------------------


ABCDEFG,ABCD*      66666  +
ABDCDEL,ACDE*      77777  +
ABCDEM,ABCDM       88888  +
ABCDES,ABDCS 33333  +
```

Figure 2-5: Directions for Running a Q-man Search for Patients to be Audited

2.6 Updating Taxonomies

The following taxonomies are referenced in the 2009 RPMS Diabetes Audit. The DM Audit
Lipid Profile is not used on the 2009 Audit.

```
1)   BGP GPRA ESTIMATED GFR TAX      LABORATORY TEST
2)   BGP QUANT URINE PROTEIN         LABORATORY TEST
3)   DM AUDIT A/C RATIO TAX          LABORATORY TEST
4)   DM AUDIT ACARBOSE DRUGS         DRUG
5)   DM AUDIT ACE INHIBITORS         DRUG
6)   DM AUDIT AMYLIN ANALOGUES       DRUG
7)   DM AUDIT ANTI-PLATELET DRUGS    DRUG
8)   DM AUDIT ASPIRIN DRUGS          DRUG
9)   DM AUDIT CESSATION HLTH FACTOR  HEALTH FACTORS
10)  DM AUDIT CHOLESTEROL TAX        LABORATORY TEST
11)  DM AUDIT CREATININE TAX         LABORATORY TEST
12)  DM AUDIT DIET EDUC TOPICS       EDUCATION TOPICS
13)  DM AUDIT DPP4 INHIBITOR DRUGS   DRUG
14)  DM AUDIT EXERCISE EDUC TOPICS   EDUCATION TOPICS
15)  DM AUDIT GLITAZONE DRUGS        DRUG
16)  DM AUDIT HGB A1C TAX            LABORATORY TEST
17)  DM AUDIT INCRETIN MIMETIC       DRUG
18)  DM AUDIT INSULIN DRUGS          DRUG
19)  DM AUDIT LDL CHOLESTEROL TAX    LABORATORY TEST
20)  DM AUDIT LIPID LOWERING DRUGS   DRUG
21)  DM AUDIT LIPID PROFILE TAX      LABORATORY TEST
22)  DM AUDIT METFORMIN DRUGS        DRUG
23)  DM AUDIT MICROALBUMINURIA TAX   LABORATORY TEST
24)  DM AUDIT OTHER EDUC TOPICS      EDUCATION TOPICS
25)  DM AUDIT P/C RATIO TAX          LABORATORY TEST
26)  DM AUDIT SEMI QUANT UACR        LABORATORY TEST
27)  DM AUDIT SMOKING CESS EDUC      EDUCATION TOPICS
28)  DM AUDIT STATIN DRUGS           DRUG
29)  DM AUDIT SULFONYLUREA DRUGS     DRUG
30)  DM AUDIT TB HEALTH FACTORS      HEALTH FACTORS
31)  DM AUDIT TRIGLYCERIDE TAX       LABORATORY TEST
32)  DM AUDIT URINALYSIS TAX         LABORATORY TEST
33)  DM AUDIT URINE PROTEIN TAX      LABORATORY TEST
```

The taxonomies may be either reviewed and updated using the traditional RPMS Update Taxonomy option or the GUI DMS Update Taxonomy option. Both options for taxonomy population, as well as suggested members for each taxonomy, are described in the Diabetes Management System User Manual.

All taxonomies may not be populated. For example, if quantitative A/C Ratio testing is performed at your facility or by your reference laboratory, it is highly unlikely that you would have any entries in the DM AUDIT SEMI QUANT UACR taxonomy. If *only* semi-quantitative A/C Ratio testing is performed at your facility (results reported as <30, 30-300, or >300), be sure to remove this A/C Ratio test from the DM AUDIT A/C RATIO TAX, as that taxonomy should *only* be used for quantitative A/C Ratio tests (results reported as a numeric value, e.g. 15, 28, 5).

With the advent of reference laboratory interfaces, there is considerable variation in test nomenclature, and Diabetes Program staff are encouraged to solicit assistance from both laboratory and pharmacy staff in updating taxonomies.

When deciding which tests should be included in a taxonomy, it is often useful to review test results on a health summary. Once test names are determined, the appropriate tests may be added or deleted from taxonomies.

Below is a sample Health Summary with recommended taxonomy placement:

```
HGB A1C-GLYCO (R)                    01/16/09  5.7        %          4.3-6.1
     DM AUDIT HGB A1C <Enter>
LIPID PROFILE (R)                    01/16/09
 HDL CHOLESTEROL (R)                 01/16/09  44         MG/DL      40-125
     DM AUDIT HDL CHOLESTEROL <Enter>
 TRIGLYCERIDE (R)                    01/16/09  109        MG/DL      30-150
     DM AUDIT TRIGLYCERIDE <Enter>
 LDL CHOLESTEROL (R)                 01/16/09  97         MG/DL      0-130
     DM AUDIT LDL CHOLESTEROL <Enter>
 CHOLESTEROL (R)                     01/16/09  163        MG/DL      100-200
     DM AUDIT CHOLESTEROL <Enter>
 CHOL/HDL RATIO (R)                  01/16/09  3.70       RATIO      0.00-4.44
CALCULATED GFR (R)                   01/16/09
 _GFR AFRICN AMER                    01/16/09  >60        ML/MIN     >60-
     BGP GPRA ESTIMATED GFR <Enter>
 _GFR NON AFR AMR                    01/16/09  >60        ML/MIN     >60-
     BGP GPRA ESTIMATED GFR <Enter>
COMPREHENSIVE-14 METABOLIC (R)       01/16/09
 AST (SGOT)  (R)                     01/16/09  18         U/L        0-40
 ALT (SGPT)  (R)                     01/16/09  15         U/L        0-40
 BUN (R)                             01/16/09  11         MG/DL      5-19
 ALBUMIN (R)                         01/16/09  4.2        GM/DL      3.9-5.0
 CHLORIDE (R)                        01/16/09  104        MMOL/L     96-108
 BILIRUBIN, TOTAL (R)                01/16/09  0.9        MG/DL      0.1-1.0
 ALKALINE PHOS (R)                   01/16/09  76         U/L        28-110
 SODIUM (R)                          01/16/09  139        MMOL/L     135-145
 CREATININE (R)                      01/16/09  0.86       MG/DL      0.50-1.00
```

```
     DM AUDIT CREATININE <Enter>
 CALCIUM (R)                       01/16/09  8.9       MG/DL    8.5-10.5
 POTASSIUM (R)                     01/16/09  5.6 (H)   MMOL/L   3.5-5.5
 PROTEIN, TOTAL (R)                01/16/09  7.7       GM/DL    6.7-8.3
 GLUCOSE RANDOM (R)                01/16/09  68 (L)    MG/DL    70-100
 CO2 (R)                           01/16/09  23        MMOL/L   18-30
 ANION GAP (R)                     01/16/09  12        MM/L     5-16
URINE DIPSTICK  (R)                03/10/08
     DM AUDIT URINALYSIS <Enter>
 URINE COLOR                       03/10/08  O
 URINE APPEARANCE                  03/10/08  C
 SPECIFIC GRAVITY                  03/10/08  1.001              1.001-1.035
 URINE UROBILINOGEN                03/10/08  NORMAL    EU/dL    .2-1
 URINE BLOOD                       03/10/08  N         mg/dL    NEG-
 URINE BILIRUBIN                   03/10/08  N         mg/dL    NEG-
 URINE KETONES                     03/10/08  L         mg/dL    NEG-
 URINE GLUCOSE                     03/10/08  500       mg/dL    NEG-
 URINE PROTEIN                     03/10/08  L         mg/dL    NEG-
     DM AUDIT URINE PROTEIN <Enter>
 URINE PH                          03/10/08  5                  5-9
 URINE NITRITE                     03/10/08  N                  NEG-
 URINE LEUKOCYTE ESTERASE          03/10/08  N                  NEG-
M-ALB/CREAT RATIO (R)              01/22/09
 _MICROALB, RANDOM                 01/22/09  <5.0      MG/L     0.0-20.0
     DM AUDIT MICROALBUMINURIA <Enter>
 _ALB/CREAT RATIO                  01/22/09  FOOTNOTE  MG/GCR   0.0-16.9
     DM AUDIT A/C RATIO <Enter>
 _CREAT UR, MG/DL                  01/22/09  138       MG/DL
 _CREAT/100 Calc Malb              01/22/09  1.38      G/L
```

Figure 2-6: Sample Health Summary

Listed below are taxonomies that must be reviewed carefully in light of the changes introduced in the 2009 Audit related to testing for urine protein. Possible members of the taxonomies are listed, but are by no means to be considered comprehensive.

Taxonomy	Description
BGP GPRA ESTIMATED GFR TAX	Estimated GFR, Calculated GFR, _GFR, Estimated, _GFR Africn Am, _GFR Non Afr Am
BGP QUANT URINE PROTEIN	_Protein, Urine mg/dL, 24 Hr Urine Protein, Urine Protein/24 Hr, Microalbumin/24 Hr
DM AUDIT A/C RATIO TAX	Microalbumin/Creatinine Ratio measured in actual numeric values (mg/g Creat). Look for tests A/C, A:C, Albumin/Creatinine, _A/C, -A/C, *A/C, Microalbumin/Creatinine, M-Alb/Creatinine.
DM AUDIT P/C RATIO TAX	Protein/Creatinine Ratio, P/C Ratio
DM AUDIT SEMI QUANT UACR	Microalbumin/Creatinine Ratio reported as a semi-quantitative test. The most commonly reported results are <30, 30-300, or >300 mg/d Creat.
DM AUDIT URINE PROTEIN TAX	Urine Protein as reported on Urine Dipsticks. This is a semi-quantitative test and is usually reported as Ur Protein, Urine Protein, Protein, Urine, Urine Protein Screen, _Urine Protein.

Taxonomy	Description
DM AUDIT URINALYSIS TAX	Urine Dipstick, Urinalysis, UA, Dipstick
DM AUDIT MICROALBUMINURIA TAX	Microalbumin, Albumin, Micro, Urine albumin, Micral
DM AUDIT AMYLIN ANALOGUE	Pramlintide, Symlin

3.0   Running the 2009 Audit

It is highly recommended that you run the 2009 electronic audit a minimum of two times. The first time, run a cumulative audit on *all* active members of your register with Type 1 and Type 2 Diabetes *or* on the template you have created of active patients with Type 1 or Type 2 Diabetes to ensure that you are not missing any data due to improperly populated taxonomies.

Review the cumulative audit carefully to be sure there are no audit elements that have no data or that have far larger numbers than would be expected. If needed, review taxonomy set up and run the cumulative audit again to make sure that the problem(s) are corrected *before* creating the .rec file.

The directions for running an electronic Diabetes Audit are explained both in the Audit09 instructions and the Diabetes Management System User Manual Version 2.0.

3.1   Creating a .rec File

A script for running the 2009 Diabetes Audit and creating a file for Epi Info (a .rec file for the WebAudit) is displayed below. The process of running a cumulative audit is exactly the same as illustrated below, except instead of choosing Option 2 to create an Epi Info file, choose Option 3 to run a cumulative audit. When prompted for device, you may type Q and then Queue the report to run later. (See below.)

```
Device: HOME// Q <Enter> QUEUE TO PRINT ON

Device:  P171 <Enter> <- Note that you cannot print to a SLAVE
printer.
Start Date/Time:  T@2000 <Enter>
```

Figure 3-1: Queuing a Cumulative Report to Run Later

```
DIABETES MANAGEMENT
DA      Diabetes QA Audit Menu ...
DM09    2009 Diabetes Program Audit ...
DM09    Run 2009 Diabetes Program Audit

Select 2009 Diabetes Program Audit Option: DM09  Run 2009 Diabetes Program Audit
<Enter>


In order for the 2009 DM AUDIT Report to find all necessary data, several taxonomies
must be established. The following taxonomies are missing or have no entries:
DRUG taxonomy  [DM AUDIT ACARBOSE DRUGS] has no entries
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries <- Note there may be some
                                     drug or lab test taxonomies with no members
                                     because a site's pharmacy does not carry these
                                     drugs or their laboratory does not do a
                                     particular kind of testing.
```

```
                      ASSESSMENT OF DIABETES CARE, 2009
                             PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DIABETES <Enter>

     Select one of the following:

          1         Yes
          2         No
          3         Don't know

Does your community receive SDPI grant funds: 1 <Enter> Yes
Enter the SDPI Grant #: HPDI2345 <Enter>

Enter the date of the audit. This date will be considered the ending date of the
audit period. For most data items all data for the period one year prior to this
date will be reviewed.

Enter the Audit Date:  12/31/08 <Enter> (DEC 31, 2008)

     Select one of the following:

          P         Individual Patients
          S         Search Template of Patients <- Use this option if you have
                                                   created a template of active patients
          C         Members of a CMS Register <- Use this option if all of the
                                                 active patients in your Register have a
                                                 Register Diagnosis and none of the
                                                 active patients has a Register
                                                 Diagnosis of GDM or IGT.

Run the audit for: P// C  Members of a CMS Register <Enter>
Enter the Name of the Register: IHS DIABETES <Enter>
Do you want to select register patients with a particular status? Y//<Enter>
Which status: A// ACTIVE <Enter>

There are 830 patients in the IHS DIABETES register with a status of A.

You have selected a register or template/cohort of patients.
You can run the audit just for the subset of patients in the cohort or register who
live in a particular community or have a particular primary care provider.

Limit the audit to a particular primary care provider ? N// <Enter>

Limit the patients who live in a particular community? N// <Enter>

There are 830 patients selected so far to be used in the audit.

     Select one of the following:

          A         ALL Patients selected so far
          R         RANDOM Sample of the patients selected so far

Do you want to select: A// <Enter> ALL Patients selected so far
                                   Unless there is some compelling reason, all
                                   active patients in the Register should be
                                   audited.
```

```
     Select one of the following:

          1              Print Individual Reports
          2              Create EPI INFO file
          3              Cumulative Audit Only <- Use this option on your first "run" to
                                                 print a cumulative report to be sure
                                                 that taxonomies are correctly populated
                                                 and the data appears to be consistent
                                                 with your program.
          4              Both Individual and Cumulative Audits

Enter Print option: 1// 2  Create EPI INFO file <Enter>
Enter the name of the FILE to be Created (3-8 characters): CIMDEV09 <Enter>

I am going to create a file called cimdev09.rec which will reside in the C:\APPTEMP
directory on your RPMS server. It is the same directory that the data export globals
are placed.
See your site manager for assistance in finding the file after it is created.
PLEASE jot down and remember the following file name:
               **********   cimdev09.rec    **********
It may be several hours (or overnight) before your report and flat file are
finished.

The records that are generated and placed in file cimdev09.rec are in a format
readable by EPI INFO. For a definition of the format please see your user manual.

Is everything ok?  Do you want to continue? Y//<Enter>

    Select one of the following:
          I              Include ALL Patients
          E              Exclude DEMO Patients
          O              Include ONLY DEMO Patients

Demo Patient Inclusion/Exclusion: E// <Enter> Exclude DEMO Patients
Won't you queue this ? Y// <Enter> YES
Requested Start Time: NOW//T@2000 <Enter> (JAN 25, 2009@20:00:00) <- Select a time
                                             when most users are not using the RPMS
                                             system.
```

Figure 3-2: Creating a .rec File

Notify your RPMS site manager that you have run this audit and provide the name of
the file, as well as the directory where it was stored. Your site manager will be able
to place this file in a shared folder on your server where it can be accessed in order to
upload it to the WebAudit.

4.0   Uploading the .rec file to WebAudit

Once you have the data file, you need to bring it into the WebAudit for data cleaning and report generation. The steps for uploading a file to the Web Audit are listed below. For further information and WebAudit FAQs, please visit the DDTP website at:
http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesAuditConducting.

1. Request and activate a WebAudit account if you do not already have one.

2. Log in to the WebAudit using your user name and password.

3. Select "Diabetes WebAudit Facility Administration" from the Applications list.

4. Select "Enter facility information"

5. Enter the number of active patients in your diabetes registry and whether your community receives SDPI funds. If your community does receive funds, provide the SDPI grant number.

6. Press the Save button.

7. Return to the Main Menu and select "Diabetes WebAudit" from the Applications list.

8. Select "Diabetes WebAudit" from the Applications list.

9. Press the Upload Data button.

10. Press the Browse button and navigate to the data file (.rec file), then press Open.

11. When the .rec file has been selected, press the Upload button.

If the upload of the data file is successful, you will receive a message on the screen telling you that the file was successfully uploaded. You will also receive an email confirmation.

If the upload is unsuccessful, you will receive an on-screen message telling you that the file upload attempt was unsuccessful, with a brief description of the problem.

Once the file has been successfully uploaded, you may proceed with checking the data quality and/or producing reports.

5.0   2009 Diabetes Audit Logic

The revised logic for the 2009 Diabetes Audit is provided under the menu option DAL Display Audit Logic in the menu DA Diabetes QA Audit Menu. Directions for using this menu option are provided in the Diabetes Management System User Manual Version 2.0.

6.0   Sources/References

Diabetes Management System Version 2.0 User Manual, revised February 2009 (bdm_0200u.pdf)

Audit09 Instructions and forms: www.dmaudit.com

For information regarding the WebAudit: DDTPWebAuditAdmins@ihs.gov.

IHS Standards of Care for Adults with Type 2 Diabetes:

http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsClinicalGuidelines

7.0 Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

Phone: (505) 248-4371 or (888) 830-7280 (toll free)

Fax: (505) 248-4363

Web: http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm

Email: support@ihs.gov