RESOURCE AND PATIENT MANAGEMENT SYSTEM

Diabetes Management System

(BDM)

Diabetes Management System Supplement

Version 2.0 Patch 5
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Office of Information Technology (OIT)
Division of Information Resource Management
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Preface

The purpose of this guide is to provide Diabetes Program staff with an overview of changes to the Diabetes Management System introduced in Patch 5. In addition, instructions are provided to run the electronic version of the 2012 Diabetes Audit, which is included in this patch.

Note:	Resource and Patient Management System software, including the Diabetes Management System, is subject to periodic updates based on Indian Health Service Diabetes Standards of Care. This manual provides documentation for the 2012 Diabetes Audit using the standards of care in effect as of December 2011.

1.0 Introduction

Patch 5 to the Diabetes Management System v2.0 contains several changes, as well as the 2012 Diabetes Audit. The changes are summarized below.

On the Individual Audit Form:

- Hepatitis B series was added as a selection item for the follow up report.
- Colesevelam (Welchol) was added as a DM Therapy choice.
- All places where the problem list was scanned for a particular diagnosis were modified to exclude deleted problems as follows:
  - DM Date of Onset, Hypertension, Depression
- The logic for Eye, Foot, and Dental Exams was modified to look for the exam code first and if found, do not look further for a clinic visit that meets the definition.
- The Aspirin check was modified to include VA Outside Meds that are entered through EHR.
- The Tobacco User logic was modified to take in to consideration that a patient may have more than 1 health factor recorded on the same day.

The cumulative audit was modified as follows:

- Hepatitis B vaccine series was added to the Immunizations
- Colesevelam was added as a new drug category.
- Percentages were added to the Urine Testing Section.

Hepatitis B vaccine series and Colesevelam were added to the Audit Export file.

The display of the Triglyceride result on the Pre-Diabetes audit was corrected.

The selection and display of age ranges was corrected in the General Retrieval age item.

Hepatitis B series was added as an education letter insert.

Hepatitis B series was added as a display item on the Diabetes Patient Care Supplement. The logic for the Eye, Foot, and Dental Exams was modified to look for the exam code first and if found to not look further for a clinic visit.

Hepatitis B series added a selection item for the follow up report.

2.0 Preparing for the Audit

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

- Ensure that patients who will be audited are actively receiving care at the healthcare facility.
- Review and update taxonomies of medications, health factors, patient-education topics, and laboratory tests.

2.1 Guidelines for Selecting Patients

The Diabetes Program has provided the following guidelines for selecting patients in the 2012 Diabetes Audit.

Include patients who:

- Attend regular clinics or diabetes clinics
- Refuse care or have special motivational problems (e.g., alcoholism)
- Are not attending clinics, but it is not known 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 Indian Health Service (IHS)
- Have arranged other medical 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 in a facility
- Live in a nursing home, and receive their care in a facility
- Attend an off-site dialysis unit and receive the majority of their care in a facility
- Have gestational diabetes
- Have pre diabetes (IFG or IGT) only
- Have moved - permanently or temporarily (should be documented)
- Unable to contact patient, defined as at least 3 tries in 12 months (documented in the chart)
- Have died

Patients who should be included in the 2012 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 2 Diabetes

The diabetes register may include people who are not considered active patients of the clinic and 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.

2.2 Using the Diabetes Register for the 2012 Diabetes Audit

To use patients in the 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.

- Section 2.2.1 shows an option to identify patients in the Register who have a Register Diagnosis of Impaired Glucose Tolerance (IGT) or Gestational Diabetes Mellitus (GDM).
- Section 2.2.2 shows a Q-Man search that can identify patients who have not had a visit during the audit year and therefore do not meet audit criteria of being an active patient.
- When patients do not meet this definition of active with a diagnosis of Type 1 or Type 2 Diabetes, have been identified, their status may be changed by typing **1**. Edit Register Data under Patient Management in the Diabetes Management System. See Section 2.2.3 for changing the status of a Registered Patient.

> **Note:** The IHS Division of Diabetes is recommending that the 2012 audit submitted be for the calendar year ending December 31, 2011. Confirm with the Area Diabetes Consultant on the dates that will be used for the 2012 Audit in the area.

2.2.1 Identifying IHS Diabetes Register Patients with GDM or IGT

The IHS Diabetes Register allows entry of GDM and IGT as Register diagnoses. 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.

Figure 2-3 shows a Q-Man search to identify patients with a Register Status of Active and 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   Unreviewed
     5   Deceased
     6   Non-IHS
     7   Lost to Follow-up
     8   All Register Patients

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

Figure 2-1: Example of Q-Man search to identify patients with a Registered Status of Active

- At the "Which Status(es)" prompt, type **5** to identify patients with a Register Diagnosis of IGT.

Figure 2-2shows a Q-Man search to identify patients with a Register Diagnosis of GDM or IGT.

```
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
```

Figure 2-2: Q-Man search to identify patients with Register Diagnosis of GDM or IGT

Figure 2-3 shows the Q-Man output options.

- At the "Which Diagnosis: All Diagnosis" prompt, type **1** to change the status.

```
                ***** 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...
```

```
PATIENTS     CMI*DEV
         NUMBER
-------------------------------------------------------------------

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

Figure 2-3: Report results

> **Note**: A patient whose name is marked with an asterisk (*) may have an alias.

- Update Register Data under Patient Management in the Diabetes Management System to Unreviewed (see Section 2.2.3).

2.2.2 Identifying Patients in the IHS Diabetes Register Who May Not be Active

A simple Q-Man search (Figure 2-4) can be run to identify patients who have not had at least 1 primary care visit during the 12 months of the audit period.

```
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   Unreviewed
     5   Deceased
     6   Non-IHS
     7   Lost to Follow-up
     8   All Register Patients

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

Figure 2-4: Inactive Patients

Figure 2-5 shows the reports that can identify patients who may not have had a visit in the last year. The report is especially useful for Registers with large numbers of patients.

```
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:
```

Figure 2-5: Q-Man search to identify patients who have not had a primary care visit in a 12 month audit period

> **Note**: 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 are 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: 1/1/11 <Enter> (JAN 01, 2011)
Exact ending date: 12/31/11 <Enter> (DEC 31, 2011)

    Subject of subquery: VISIT
    CLINIC (GENERAL/DIABETIC...)
    BETWEEN JAN 1,2011 and DEC 31,2011@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 JAN 1,2011 and DEC 31,2011@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...

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 -
```

Figure 2-6: Q-Man search and results (continued)

> **Note**: A patient whose name is marked with an asterisk (*) may have an alias.

2.2.3 Updating Register Status

Update the patient's Register Status in the Patient Management field (Figure 2-7) in the Diabetes Management System.

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

Figure 2-7: Updating register status using the Patient Management option

Note: There are no official definitions of Register Status although recommendations for classifying Register patients may be provided by the area diabetes program staff. The definitions below may be used a guideline:

- **A** - Active patients who receive their primary health care at a facility and who have had care at a facility within the last year.
- **I** - Inactive patients who have not been seen within the last two years.
- **T** - Transient patients seen at the clinic within the past year but who do not receive their primary diabetic care at a facility, but only visit the clinic periodically for medications, or other services.
- **U** - Unreviewed patients on the Register who have not had a chart audit and medical review.
- **D** - Deceased patients

Note This status will be automatically updated if a date of death is recorded in Registration. If a patient's status is changed to deceased in the Register, the patient registration file is not automatically updated.

- **N** - Non-IHS patients who receive their diabetic care at a facility.
- **L** - Lost to follow-up patients seen at a facility within the past two years but who have not had a visit in the last year.
- **N** - Noncompliant patients with repeated documented refusals of recommended services.

1. Select **Status** and press the down arrow until the cursor displays in the Command line as shown in Figure 2-8:

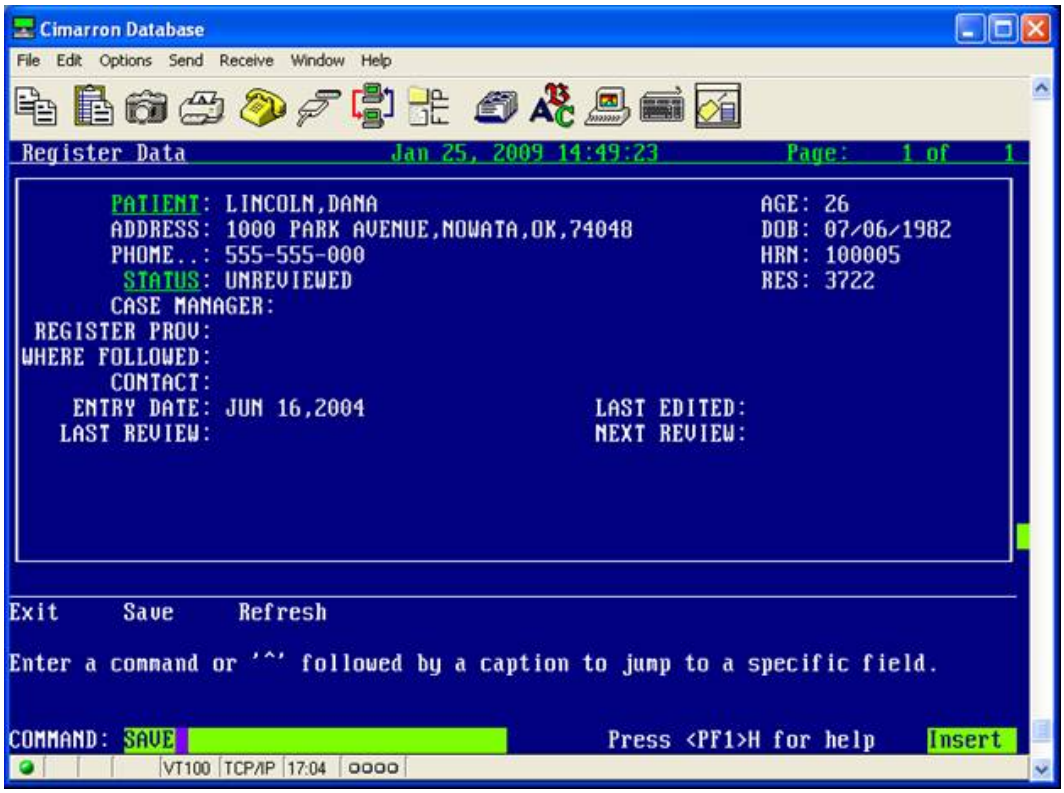

Figure 2-8: **Register Data** window

2. Type **Save** in the **Command** field and press Enter.
3. Type **Exit** in the **Command** field and press Enter to record the status update. The window will close.

2.3 Creating a Template of Patients for the 2012 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. This will identify patients with diabetes who have had a visit to a primary care clinic during the audit year. The template (Figure 2-9) created from this query can be used to run the 2012 Diabetes Audit.

```
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: 1/1/2011 (JAN 01, 2011)
Exact ending date: 12/31/2011 (DEC 31, 2011)

     Subject of subquery: VISIT
     CLINIC (GENERAL/DIABETIC...)
     BETWEEN JAN 1,2011 and DEC 31,2011@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 JAN 1,2011 and DEC 31,2011@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 JAN 1,2011 and DEC 31,2011@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 JAN 1,2011 and DEC 31,2011@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

Enter the name of the SEARCH TEMPLATE: PTS FOR DM AUDIT 12 <Enter>
Are you adding 'PTS FOR DM AUDIT 10' 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 2-9: Example of Q-Man search

> **Note**: FileMan users: This template will be attached to IHS's Patient file.

2.4 Updating Taxonomies

The following taxonomies (Figure 2-10) are referenced in the 2012 RPMS Diabetes Audit. The Colesevelam taxonomy is the only new one for 2012. Although, the taxonomies have been updated for the 2011 audit, they must be reviewed and updated before running the 2012 audit. This is due to new medications being added to the pharmacy formulary, new lab tests offered, and new education topics provided.

```
1)  BGP CMS SMOKING CESSATION MEDS   DRUG
2)  BGP GPRA ESTIMATED GFR TAX       LABORATORY TEST
3)  DM AUDIT 24HR URINE PROTEIN      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 BILE ACID DRUGS         DRUG
10)  DM AUDIT BROMOCRIPTINE DRUGS    DRUG
11)  DM AUDIT CESSATION HLTH FACTOR  HEALTH FACTORS
12)  DM AUDIT CHOLESTEROL TAX        LABORATORY TEST
13)  DM AUDIT COLESEVELAM DRUGS      DRUG
14)  DM AUDIT CREATININE TAX         LABORATORY TEST
15)  DM AUDIT DENTAL EXAM ADA CODES  ADA CODES
16)  DM AUDIT DIET EDUC TOPICS       EDUCATION TOPICS
17)  DM AUDIT DPP4 INHIBITOR DRUGS   DRUG
18)  DM AUDIT EXERCISE EDUC TOPICS   EDUCATION TOPICS
19)  DM AUDIT EZETIMIBE DRUGS        DRUG
20)  DM AUDIT FIBRATE DRUGS          DRUG
21)  DM AUDIT FISH OIL DRUGS         DRUG
22)  DM AUDIT GLITAZONE DRUGS        DRUG
23)  DM AUDIT GLP-1 ANALOG DRUGS     DRUG
24)  DM AUDIT HDL TAX                LABORATORY TEST
25)  DM AUDIT HGB A1C TAX            LABORATORY TEST
26)  DM AUDIT INCRETIN MIMETIC       DRUG
27)  DM AUDIT INSULIN DRUGS          DRUG
28)  DM AUDIT LDL CHOLESTEROL TAX    LABORATORY TEST
29)  DM AUDIT LOVAZA DRUGS           DRUG
30)  DM AUDIT METFORMIN DRUGS        DRUG
31)  DM AUDIT MICROALBUMINURIA TAX   LABORATORY TEST
32)  DM AUDIT NIACIN DRUGS           DRUG
33)  DM AUDIT OTHER EDUC TOPICS      EDUCATION TOPICS
34)  DM AUDIT P/C RATIO TAX          LABORATORY TEST
35)  DM AUDIT QUANT UACR             LABORATORY TEST
36)  DM AUDIT SEMI QUANT UACR        LABORATORY TEST
37)  DM AUDIT SMOKING CESS EDUC      EDUCATION TOPICS
38)  DM AUDIT STATIN DRUGS           DRUG
39)  DM AUDIT SULFONYLUREA DRUGS     DRUG
40)  DM AUDIT SULFONYLUREA-LIKE      DRUG
41)  DM AUDIT TB LAB TESTS           LABORATORY TEST
42)  DM AUDIT TRIGLYCERIDE TAX       LABORATORY TEST
43)  DM AUDIT URINALYSIS TAX         LABORATORY TEST
44)  DM AUDIT URINE PROTEIN TAX      LABORATORY TEST
```

Figure 2-10: 2012 User-Populated taxonomies

The taxonomies may be reviewed and updated with the TU12 option under the DM12 menu of the Diabetes Audit or the corresponding Visual DMS Update Taxonomy option.

> **Note**: When updating taxonomies, you will be provided with a warning when trying to add a test panel to a laboratory test taxonomy that should only include individual tests.

Not all taxonomies may have members. For example, if quantitative A/C Ratio testing is performed at a facility or by the reference laboratory, it is 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 a facility (results reported as less than (<) 30, 30-300, or greater than (>) 300), be sure to remove this A/C Ratio test from the DM AUDIT QUANT UACR taxonomy, as that taxonomy should only be used for quantitative A/C Ratio tests (results reported as a numeric value, e.g. 15, 28, 5).

Listed below are taxonomies that must be reviewed carefully in light of software changes or changes introduced in the 2012 Diabetes Audit. Possible members of the taxonomies are listed, but are by no means to be considered comprehensive.

2.4.1 Drug Taxonomies:

The following guidelines (Table 2-1) are provided for populating drug taxonomies. Many new drugs are available so an updated list is provided for each of the drug taxonomies below. You may wish to review the lists of drugs with the pharmacist to be sure of those that are available at a facility.

Table 2-1: Drug Taxonomies

DM Audit	Drugs
DM AUDIT SULFONYLUREA-LIKE DRUGS	Nateglinide (Starlix) Repaglinide (Prandin) Repaglinide and Metformin (PrandiMet)
DM AUDIT FIBRATE DRUGS	Clofibrate (Atromid-S) Gemfibrozil (Lopid) Fenofibrate (Tricor, Lipofen, Antara, Lofibra, Triglide, Trilipix)
DM AUDIT NIACIN DRUGS	Niacin (Niacor, Niaspan, Advicor) Niacin + Simvastatin (Simcor)
DM AUDIT BILE ACID DRUGS	Colestipol (Colestid) Colesevelam (Welchol)
DM AUDIT EZETIMIBE	Ezetimibe (Zetia) Ezetimibe and Simvastatin (Vytorin)
DM AUDIT FISH OIL DRUGS	Rx or OTC Fish Oil, excluding Lovaza
DM AUDIT COLESEVELAM DRUGS	Welchol
DM AUDIT LOVAZA DRUGS	Lovaza

DM Audit	Drugs
DM AUDIT ACE INHIBITORS	Benazepril (Lotensin) Benazepril plus (+) hydrochlorothiazide (Lotensin HCT) Benazepril plus (+) amlodipine (Lotrel) Captopril (Capoten) Captopril plus (+) hydrochlorothiazide (Capozide) Enalapril (Vasotec) Enalapril plus (+) hydrochlorothiazide (Vaseretic) Enalapril plus (+) diltiazem (Teczem) Enalapril plus (+) felodipine (Lexxel) Fosinopril (Monopril) Lisinopril (Prinivil, Zestril) Lisinopril plus (+) hydrochlorothiazide (Prinzide, Zestoretic) Moexipril (Univasc) Perindopril (Aceon) Quinapril (Accupril) Ramipril (Altace) Trandolapril (Mavik) Trandolapril plus (+) verapamil (Tarka) Also include Angiotensin II Receptor Blockers (ARB) in this Taxonomy Candesartan (Atacand) Eprosartan (Teveten) Irbsesartan (Avapro) Irbesartan plus (+) hydrochlorothizide (Avalide) Losartan (Cozaar) Losartan plus (+) hydrochlorothiazide (Cozaar) Olmesartan (Benicar) Telmisartan (Micardis) Valsartan (Diovan) Valsartan plus (+) hydrochlorothizide (Diovan/HCT)
DM AUDIT ACARBOSE DRUGS	Acarbose (Precose) Miglitol (Glyset)
DM AUDIT ASPIRIN DRUGS	Any Aspirin (ASA) or Aspirin containing product. (Verasa, Rubrasa)
DM AUDIT ANTIPLATELET THERAPY	Any non-aspirin anti-platelet product including Heparin and Warfarin (Coumadin) Cilistazol (Pletal) Clopidogrel (Plavix) Dipyridamole (Persantine) Ticlopidine (Ticlid) Aspirin plus (+) Dipyridamole (Aggrenox)

DM Audit	Drugs
DM AUDIT INSULIN DRUGS	Any Insulin product in Drug File – Insulin, REG, NPH, Lente, Ultralente, Insulin Lispro (Humalog), Insulin Glargine (Lantus), Insulin Detemir (Levimir) Insulin Aspart (Novolog), Insulin Glulisine (Apidra), Inhalable Insulin (Exubera),Pre-Mixed Insulins (70/30, 75/25)
DM AUDIT METFORMIN DRUGS	Metformin (Glucophage, Fortamet, Glumetza, Riomet) Metformin extended release (Glucophage XR, Glumetza) Metformin and Glipizide (Metaglip) Metformin and Glyburide (Glucovance) Metformin and Rosiglitazone(Avandamet) Metformin and Pioglitazone (Actoplus met) Metformin and Sitagliptin (Janumet) Metformin and Repaglinide (PrandiMet) Metformin and Saxagliptin (Kombiglyze XR)
DM AUDIT SULFONYLUREA DRUGS	Acetohexamide (Dymelor) Chlorpropamide (Diabinese) Glimepiride (Amaryl) Glimepiride plus (+) rosiglitazone (Avandaryl) Glimepiride plus (+) pioglitazone (Duetact) Glipizide (Glucotrol) Glipizide plus (+) metformin (Metaglip) Glyburide(Diabeta,Micronase,Glynase, Glycron) Glyburide plus (+) metformin (GlucoVance) Tolazamide (Tolinase) Tolbutamide (Orinase)
DM AUDIT GLITAZONE DRUGS (aka:Thiazolidinediones)	Troglitazone (Rezulin) - RECALLED Pioglitazone (Actos) Pioglitazone and Metformin (Actoplus met) Pioglitazone and Glimeperide (Duetact) Rosiglitazone and Glimeperide (Avandaryl) Rosiglitazone (Avandia) Rosiglitazone and Metformin (Avandamet)
DM AUDIT DPP4 INHIBITOR DRUGS	Sitagliptin (Januvia,) Sitagliptin plus (+) metformin (Janumet) Saxagliptin (Onglyza) Saxagliptin plus (+) Metformin (Kombiglyze XR)
DM AMYLIN ANALOGUES	Pramlinitide (Symlin)
DM AUDIT INCRETIN MIMETICS	Exenatide (Byetta)
DM AUDIT GLP-1 ANALOG DRUGS	Liraglutide (Victoza)
DM AUDIT BROMOCRIPTINE DRUGS	Bromocriptine 0.8 mg (Cycloset)

DM Audit	Drugs
DM AUDIT STATIN DRUGS	Atorvastatin (Lipitor) Fluvastatin (Lescol) Lovastatin (Mevacor, Altocor, Advicor) Pravastatin (Pravachol) Rosuvastatin (Crestor) Simvastatin (Zocor) Simvastatin and Niacin (Simcor) Simvastatin and Ezetimibe (Vytorin) Atorvastatin and Amlodipine (Caduet) Pitivistatin (Livalo)

2.4.2 Education Topic Taxonomies

All three DM Audit Education topic taxonomies; DM AUDIT DIET EDUC TOPICS, DM AUDIT OTHER EDUC TOPICS, and DM AUDIT EXERCISE EDUC TOPICS, need to be reviewed and updated to ensure that all new education topics are included.

Table 2-2 provides examples of education topics that may have been used during the audit year and that should be included in the three DM Education Topic taxonomies.

Note If custom pick lists have been created for providers in EHR, you must ensure that these are standard education topics and that the DM AUDIT taxonomy files are updated accordingly.

Table 2-2: Education Topic Taxonomies

Taxonomy	Topics
DM AUDIT DIET EDUC TOPICS	DM-DIET 2005 DM-MEDICAL NUTRITION THERAPY DM-MEDICAL NUTRITION THERAPY 2006 DM-NUTRITION DM-NUTRITION 2006 DMC-HEALTHY EATING DMC-NUTRITION 2006 DMCN-CARBOHYDRATE COUNTING DMCN-EATING AWAY FROM HOME DMCN-EVALUATING DIETS DMCN-EXCHANGE LISTS DMCN-FOOD SHOPPING DMCN-HEALTHY COOKING DMCN-INTRODUCTION TO FOOD LABELS DMC-N-AL NUTRITION (SESSION 7: GUIDELINES FOR THE USE OF ALCOHOL) 2006 DMC-N-CC NUTRITION (SESSION 2: INTRODUCTION TO CARBOHYDRATE COUNTING) 2006 DMC-N-D NUTRITION (SESSION 8: GUIDELINES FOR CHOOSING A HEALTHY DIET) 2006 DMC-N-EA NUTRITION (SESSION 6: GUIDELINES FOR EATING AWAY FROM HOME) 2006 DMC-N-EL NUTRITION (SESSION 3: INTRODUCTION TO EXCHANGE LISTS) 2006 DMC-N-FL NUTRITION (SESSION 1: INTRODUCTION TO FOOD LABELS) 2006 DMC-N-FS NUTRITION (SESSION 4: INTRODUCTION TO FOOD SHOPPING) 2006 DMC-N-HC NUTRITION (SESSION 5: INTRODUCTION TO HEALTHY COOKING) 2006 DMC-PG-N SESSION 2: HEALTHY EATING DURING PREGNANCY 2006 May also consider including: OBS-NUTRITION OBS-NUTRITION 2006 HTN-DIET 2006 HTN-MEDICAL NUTRITION THERAPY HTN-MEDICAL NUTRITION THERAPY 2006 HTN-NUTRITION HTN-NUTRITION 2006

Taxonomy	Topics
DM AUDIT EXERCISE EDUC TOPICS	DM-EXERCISE DM-EXERCISE 2006 DMC-EXERCISE DMC-EXERCISE 2006 DMCPG-MOVING TO STAY HEALTHY DMC-PG-PA SESSION 3: MOVING TO STAY HEALTHY DURING PREGNANCY 2006 May also consider including: OBS-EXERCISE OBS-EXERCISE 2006 HTN-EXERCISE HTN-EXERCISE 2006

Taxonomy	Topics
DM AUDIT OTHER EDUC TOPICS	DM-ACANTHOSIS NIGRICANS 2005 DM-ANATOMY AND PHYSIOLOGY DM-CASE MANAGEMENT DM-COMPLICATIONS DM-COMPLICATIONS 2006 DM-CULTURAL/SPIRITUAL ASPECTS OF HEALTH DM-CULTURAL/SPIRITUAL ASPECTS OF HEALTH 2006 DM-DISEASE PROCESS DM-DISEASE PROCESS 2006 DM-EQUIPMENT DM-EQUIPMENT 2006 DM-FOLLOW UP 2006 DM-FOLLOWUP DM-FOOT CARE 2006 DM-FOOT CARE AND EXAMINATIONS DM-FOOT CARE AND EXAMINATIONS 2006 DM-HOME MANAGEMENT DM-HOME MANAGEMENT 2006 DM-INFORMATION 2006 DM-KIDNEY DISEASE DM-KIDNEY DISEASE 2006 DM-LIFESTYLE ADAPTATIONS DM-LIFESTYLE ADAPTATIONS 2006 DM-LITERATURE DM-MEDICATIONS DM-MEDICATIONS DM-MEDICATIONS 2006 DM-PAIN MANAGEMENT DM-PAIN MANAGEMENT 2006 DM-PATIENT LITERATURE 2006 DM-PERIODONTAL DISEASE DM-PREVENTION DM-PREVENTION 2006 DM-SAFETY DM-SCREENING DM-SCREENING 2006 DM-STRESS MANAGEMENT DM-STRESS MANAGEMENT 2006 DM-TESTS DM-TREATMENT DM-WOUND CARE DM-WOUND CARE 2006 DMC-ACUTE COMPLICATIONS

Taxonomy	Topics
DM AUDIT OTHER EDUC TOPICS	DMC-ACUTE COMPLICATIONS 2006 DMC-BEHAVIORAL GOALS DMC-BEHAVIORAL GOALS (MAKING HEALTHY CHANGES) 2006 DMC-BLOOD SUGAR MONITORING, HOME 2006 DMC-CHRONIC COMPLICATIONS DMC-CHRONIC COMPLICATIONS (PREVENTION & TREATMENT) DMC-CHRONIC COMPLICATIONS (PREVENTION & TREATMENT) 2006 DMC-DIABETES MEDICINE DMC-DIABETES MEDICINE - INSULIN 2006 DMC-DISEASE PROCESS DMC-DISEASE PROCESS 2006 DMC-FOOT CARE DMC-FOOT CARE 2006 DMC-HOME BLOOD SUGAR MONITORING DMC-KNOW YOUR NUMBERS DMC-KNOWING YOUR NUMBERS (ABC) 2006 DMC-MEDICATIONS 2006 DMC-MIND, SPIRIT AND EMOTION DMC-MIND, SPIRIT AND EMOTION 2006 DMC-PRE-PREGNANCY COUNSELING 2006 DMC-PREPREGNANCY COUNSELING DMCN-USE OF ALCOHOL DMCPG-BLOOD SUGAR MONITORING DMCPG-MEDICATIONS DMCPG-PREGNANCY, DIABETES AND YOU DMCPG-STAYING HEALTHY AFTER DELIVERY DMCPG-STAYING HEALTHY DURING PREGNANCY DM-SM STRESS MANAGEMENT 2005 DMC-PG-BGM SESSION 5: HOME BLOOD SUGAR MONITORING DURING PREGNANCY 2006 DMC-PG-C SESSION 6: STAYING HEALTHY DURING PREGNANCY 2006 DMC-PG-DM SESSION 1: PREGNANCY, DIABETES AND YOU: FIRST STEPS TO A HEALTHY 2006 DMC-PG-M SESSION 4: MEDICINE DURING PREGNANCY 2006 DMC-PG-PP SESSION 7: STAYING HEALTHY AFTER DELIVERY 2006

2.4.3 Laboratory Test Taxonomies:

Urine protein testing guidelines for the 2012 Audit have not been altered from the 2011 Audit. Table 2-3 lists the taxonomies that must be reviewed due to changes in urine protein testing at a facility to comply with the new standards of diabetes care.

Table 2-3: Laboratory Test Taxonomies

Taxonomy	Topics
BGP GPRA ESTIMATED GFR TAX	Estimated GFR, Calculated GFR, _GFR, Estimated, _GFR Non-African American
DM AUDIT QUANT UACR 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, asterisk (*)A/C, Microalbumin/Creatinine, M-Alb/Creatinine.
DM AUDIT 24 HR URINE PROTEIN	24 Hour Urine Protein in mg/24 hour
DM AUDIT P/C RATIO TAX	Protein/Creatinine Ratio, P/C Ratio in g/g
DM AUDIT SEMI QUANT UACR	Microalbumin/Creatinine Ratio reported as a semi-quantitative test. The most commonly reported results are <30, 30-300, or greater than (>) 300 mg/g Creat as measured by strip tests.
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.
DM AUDIT MICROALBUMINURIA TAX	Microalbumin, Albumin, Micro, Urine albumin in mg/L.
DM AUDIT TB LAB TESTS	QFT-G, T SPOT-TB, Quantiferon GOLD

With the advent of reference laboratory interfaces and Point of Care result entry, there is considerable variation in test nomenclature. 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.

Figure 2-11 is a Health Summary sample with recommended taxonomy placement.

```
HGB A1C-GLYCO (R)         01/16/09 5.7    %    4.3-6.1
   DM AUDIT HGB A1C
LIPID PROFILE (R)         01/16/09
HDL CHOLESTEROL (R)       01/16/09 44    MG/DL  40-125
   DM AUDIT HDL CHOLESTEROL
TRIGLYCERIDE (R)         01/16/09 109    MG/DL  30-150
   DM AUDIT TRIGLYCERIDE
LDL CHOLESTEROL (R)       01/16/09 97    MG/DL  0-130
   DM AUDIT LDL CHOLESTEROL
CHOLESTEROL (R)         01/16/09 163    MG/DL  100-200
  DM AUDIT CHOLESTEROL
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
_GFR NON AFR AMR         01/16/09 >60    ML/MIN  >60-
  BGP GPRA ESTIMATED GFR
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
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
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
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
_ALB/CREAT RATIO         01/22/09 FOOTNOTE MG/GCR  0.0-16.9
  DM AUDIT QUANT UACR
_CREAT UR, MG/DL         01/22/09 138    MG/DL
_CREAT/100 Calc Malb       01/22/09 1.38   G/L
```

Figure 2-11: Sample Health Summary

2.4.4 LMR–List Labs or Medications Used at this Facility

A new tool provided in Diabetes Management System patch 4 is a report that can be run to display the laboratory tests that have been reported or the drugs that have been prescribed in the past year. In addition to displaying the laboratory tests or drugs, it identifies those that are already included in a taxonomy used by the audit.

Type **RP** in the Diabetes Management System menu and type **LMR** to continue, as shown in Figure 2-12:

```
**************************************************
**           DIABETES MANAGEMENT SYSTEM           **
**************************************************
VERSION 2.0 (Patch 4)
CIMARRON HOSPITAL
CURRENT USER: DOROTHY RUSSELL

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
   LMR    List Labs/Medications Used at this Facility

This report will list all lab tests or medications that are used at
CIMARRON HOSPITAL.  It will list the name, internal entry number,
number of occurrences, units and result example (lab only) and the taxonomies that
the item is a member of.

     Select one of the following:

          L         LAB TESTS
          M         MEDICATIONS (DRUGS)

Do you wish to list: LAB TESTS

Enter beginning Date for Search:  Feb 27, 2012// 1/1/2012  (JAN 01, 2012)

Enter ending date for Search:  12/31/2012  (DEC 31, 2012)

     Select one of the following:

          P         PRINT Output
          B         BROWSE Output on Screen

Do you wish to: P// PRINT Output
DEVICE: HOME//
Feb 27, 2012                                                  Page 1
                      LAB TESTS Used at CIMARRON HOSPITAL
                     Date Range:  Jan 01, 2012 - Dec 31, 2012
LAB TEST NAME                    IEN      # DONE    UNITS     RESULT
     TAXONOMIES
-------------------------------------------------------------------------
 HDL                             244             1              40
     DM AUDIT HDL TAX
 LDL                             901             1              120
     DM AUDIT LDL CHOLESTEROL TAX
ALBUMIN/CREATININE RATIO         9034            1              3
     DM AUDIT QUANT UACR
ANION GAP                        1160            2
BASIC METABOLIC PANEL            9999068         2
C DIFF A+B E/A (R)               9999195         3
CALCIUM                          180             2
CHLORIDE                         178             2
CHOLESTEROL                      183             1              240
     DM AUDIT CHOLESTEROL TAX
CO2                              179             2
CREATININE                       173             3              0.6
     DM AUDIT CREATININE TAX
CRYSTALS, FLUID                  9999199         1
CULTURE, HSV RAPID (R)           9999198         1
CYCLIC CITRULLINATED PEPTIDE A   9999172         1
```

```
DIAGNOSIS:                      9999089         3      WITHIN NORMAL LIMITS
DILANTIN                        210             1
ESTIMATED GFR                   9999103         3              >60
     BGP GPRA ESTIMATED GFR TAX
FERRITIN (SQ)                   9999175         2
FREE T3                         9999176         1
GLUCOSE                         175             5  mg/dL       145
H PYLORI AG EIA                 9999183         2
H. PYLORI AG EIA                9999177         1
HEMOGLOBIN                      3               1  g/dL        5.0
LEAD                            262             1  mcg/dL      6.7
LIPASE (R)                      200             1  U/L         456
```

Figure 2-12: Report for Labs Reported during Audit Year

At the "DEVICE" prompt, type the printer name.

The same report may be initiated again to display the medications that have been prescribed as shown in Figure 2-13:

```
This report will list all lab tests or medications that are used at
CIMARRON HOSPITAL. It will list the name, internal entry number,
number of occurrences, units and result example (lab only) and the
taxonomies that the item is a member of.

     Select one of the following:

          L         LAB TESTS
          M         MEDICATIONS (DRUGS)

Do you wish to list: MEDICATIONS (DRUGS)

Enter beginning Date for Search:  Feb 27, 2012// 1/1/2012  (JAN 01, 2012)

Enter ending date for Search:  12/31/2012  (DEC 31, 2012)

     Select one of the following:

          P         PRINT Output
          B         BROWSE Output on Screen

Do you wish to: P// PRINT Output
DEVICE: HOME//
Feb 27, 2012                                                    Page 1
                 MEDICATIONS (DRUGS) Used at CIMARRON HOSPITAL
                    Date Range:  Jan 01, 2012 – Dec 31, 2012
MEDICATION/DRUG NAME            IEN      # DONE
     TAXONOMIES
-------------------------------------------------------------------------
ACARBOSE 25MG TAB               84472          4
     DM AUDIT ACARBOSE DRUGS
ACETAMINOPHEN 325MG TAB         263            3
ACETAMINOPHEN WITH CODEINE 30M  342          301
ACETAMINOPHEN/CODEINE  12MG/5M  3958           5
ACETAZOLAMIDE 250MG TABS        638            2
ACETIC ACID 2% HC 1% OTIC       2810          13
ACETIC ACID 2% OTIC SOL         3868           1
ACYCLOVIR 200MG CAP             83978          7
ACYCLOVIR 800MG TAB             84481          2
```

```
ALBUTEROL 2MG TAB               84348          2
ALBUTEROL 4MG TAB               84333          5
ALBUTEROL INHALER 17GM          3769         247
ALBUTEROL REFILL                84459          1
ALBUTEROL SOL 0.5%              84042         66
ALBUTEROL SULFATE SYRUP 2MG/5M  84061         20
ALENDRONATE SODIUM 10MG TAB     84444          1
ALLEGRA                         84422          8
ALLOPURINOL 100MG TABS          1391          10
ALLOPURINOL 300MG TAB           3740          27
ALUMINUM ACETATE SOLN TAB       83607          1
AMANTADINE 100MG CAP            1606           3
AMIODARONE 200MG TAB            84092         17
AMITRIPTYLINE 25MG TAB          1639         100
AMLODIPINE BESYLATE 10MG TAB    84337         34
AMLODIPINE BESYLATE 2.5MG TAB   84335          2
AMLODIPINE BESYLATE 5MG TAB     84336         22
AMOXICILLIN 250MG CAP           4601           7
AMOXICILLIN 250MG/5ML           83611         78
AMOXICILLIN 500MG CAP           84024        135
AMOXICILLIN/CLAVULENATE 400MG/  84434         20
ANTIPYRINE/BENZOCAINE OTIC SOL  83614         19
ASCORBIC ACID 500MG TAB         1642         421
ASPIRIN 325MG E.C. TAB UD       84291          1
     DM AUDIT ASPIRIN DRUGS
ASPIRIN 325MG TAB               276          310
     DM AUDIT ASPIRIN DRUGS
ASPIRIN 650MG E.C. TAB          83618        113
     DM AUDIT ASPIRIN DRUGS
ASPIRIN 81MG TAB                83620          8
     DM AUDIT ASPIRIN DRUGS
ATENOLOL 25MG TAB               84328         42
ATENOLOL 50MG TAB               84329        301
ATORVASTATIN 40MG TABLETS       84416          7
     DM AUDIT STATIN DRUGS
ATORVASTATIN 80MG TABLETS       84503          8
     DM AUDIT STATIN DRUGS
ATROPINE SULFATE 0.4MG/1ML      2545           1
```

Figure 2-13: Report of Drugs Prescribed during Audit year

At the “DEVICE” prompt, type the printer name.

3.0 Running the 2012 Audit

It is highly recommended that the 2012 electronic audit be run twice. The first time, run a cumulative audit on all active members of the 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. This will ensure that there is no missing 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 required, review taxonomy set up and run the cumulative audit again to make sure that the problem(s) are corrected before creating the Audit Export file.

The directions for running an electronic Diabetes Audit are explained both in the Audit 12 instructions and the Diabetes Management System User Manual v2.0.

3.1 Running a Cumulative Audit

Figure 3-1 shows a script to run a Cumulative Audit. The audit may be either queued using the DM12 option in Visual DMS or run from the traditional RPMS menu.

```
Diabetes Management System ...
DA   Diabetes QA Audit Menu ...
DM12  2012 Diabetes Program Audit ...
DM12  Run 2012 Diabetes Program Audit

                        ASSESSMENT OF DIABETES CARE, 2012

                        PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DIABETES

Select 2012 Diabetes Program Audit Option: DM12  Run 2012 Diabetes Program
Audit

In order for the 2012 DM AUDIT Report to find all necessary data, several
taxonomies must be established.  The following taxonomies are missing or
have no entries:
LABORATORY TEST taxonomy  [DM AUDIT 24HR URINE PROTEIN] has no entries
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy  [DM AUDIT BROMOCRIPTINE DRUGS] has no entries
DRUG taxonomy  [DM AUDIT EZETIMIBE DRUGS] has no entries
DRUG taxonomy  [DM AUDIT FISH OIL DRUGS] has no entries
DRUG taxonomy  [DM AUDIT GLP-1 ANALOG DRUGS] has no entries
DRUG taxonomy  [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy  [DM AUDIT LOVAZA DRUGS] has no entries
LABORATORY TEST taxonomy  [DM AUDIT MICROALBUMINURIA TAX] has no entries
DRUG taxonomy  [DM AUDIT SULFONYLUREA-LIKE] has no entries
LABORATORY TEST taxonomy  [DM AUDIT TB LAB TESTS] has no entries

                        ASSESSMENT OF DIABETES CARE, 2012

                                PCC DIABETES AUDIT
```

```
Enter the Official Diabetes Register: IHS DIABETES

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:  12/31/11  (DEC 31, 2011)

     Select one of the following:

          P         Individual Patients
          S         Search Template of Patients
          C         Members of a CMS Register

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

There are 33 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> NO

Limit the patients who live in a particular community ? N//<ENTER> NO

There are 33 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// ALL Patients selected so far

     Select one of the following:

          1         Print Individual Reports
          2         Create Audit Export file
          3         Cumulative Audit Only
          4         Both Individual and Cumulative Audits

Enter Print option: 1// 3  Cumulative Audit Only

     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

     Select one of the following:

          P         PRINT Output
          B         BROWSE Output on Screen
```

```
Do you wish to: P// <ENTER>
```

Figure 3-1: Running a cumulative audit

> **Note**: It is acceptable to ignore these notices if you do not prescribe drugs in any of these taxonomies or if you do not perform on site or receive results from a reference lab for any of these tests.

At the "DEVICE" prompt, type the printer name (Figure 3-2). You can queue this report to run later on a slave printer.

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

Device: P171 <Enter>
Start Date/Time: T@2000 <Enter>
```

Figure 3-2: Queuing the report to run later

> **Note**: You cannot print a queued report to a slave printer.

3.2 Creating an Audit Export File

A script for running the 2012 Diabetes Audit and creating an Audit Export file for the WebAudit shown in Figure 3-3:

```
Select 2012 Diabetes Program Audit Option: DM12  Run 2012 Diabetes Program
Audit

In order for the 2012 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or
have no entries:

                       ASSESSMENT OF DIABETES CARE, 2012

                                PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DIABETES

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:  12/31/11  (DEC 31, 2011)

     Select one of the following:

          P         Individual Patients
          S         Search Template of Patients
          C         Members of a CMS Register

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

There are 33 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> NO

Limit the patients who live in a particular community ? N//<ENTER> NO

There are 33 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// ALL Patients selected so far

     Select one of the following:

          1         Print Individual Reports
          2         Create Audit Export file
```

```
          3         Cumulative Audit Only
          4         Both Individual and Cumulative Audits

Enter Print option: 1// 2 Create Audit Export file

The file generated will be in a "^" delimited format.  You can use this
file to review your data in EXCEL if you so choose.

Enter the name of the FILE to be Created (3-20 characters): DKR AUDIT 12

I am going to create a file called dkr audit 12.txt which will reside in
the C:\EXPORT\ 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. Jot down and remember the following file name:
               **********    dkr audit 12.txt    **********
It may be several hours (or overnight) before your report and flat file are
finished.

The records that are generated and placed in file dkr audit 12.txt are in a
format readable by Excel. For a definition of the format please see your
user manual.

Is everything ok? Do you want to continue? Y// YES

     Select one of the following:

          I         Include ALL Patients
          E         Exclude DEMO Patients
          O         Include ONLY DEMO Patients

Demo Patient Inclusion/Exclusion: E// Exclude DEMO Patients
Won't you queue this ? Y// YES
Requested Start Time: NOW// T@2000
```

Figure 3-3: Creating an Audit Export file

Notify the RPMS site manager that you have run an audit, and provide the name of the file as well as the directory where the file is stored. The site manager will place the file in a shared folder on the server where it can be accessed and uploaded to the WebAudit.

4.0 Uploading the .txt file to WebAudit

Once you have the data file, upload the file into WebAudit for data cleaning and report generation. For further information and WebAudit frequently asked questions (FAQs), visit the Division of Diabetes Treatment and Prevention (DDTP) Web site at:

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

Do the following:

1. Request and activate a WebAudit account if you do not already have one.
2. Type the user name and password to log into WebAudit.
3. Select **Diabetes WebAudit Facility Administration** from the **Applications** list box.
4. Select **Enter Facility Information**
5. Click **Save**.
6. Return to the main menu and select **Diabetes WebAudit** from the **Applications** list box.
7. Click **Upload Data**.
8. Click **Browse** and navigate to the data file (.txt file), click **Open**.
9. When the .txt file has been selected, click **Upload**.

If the upload of the data file is successful, you will receive a message on the screen and an e-mail confirmation indicating that the file was successfully uploaded.

If the upload is unsuccessful, you will receive an onscreen message indicating that the file upload attempt was unsuccessful, with a brief description of the problem.

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

5.0 Uploading Audit Export .txt file to Excel

The 2012 Diabetes Audit is created as a text-delimited file instead of a .rec file. This means that the file has all of the audit data elements in fields separated by a caret (^). Not only can the file be uploaded to the WebAudit, but it can also be imported into Excel for local use. The fields separated by a caret (^) delimiter are identified by headers in the file. See 0for the **Audit Export** file field definitions.

Figure 5-1 shows the Audit Export file opened in Notepad:

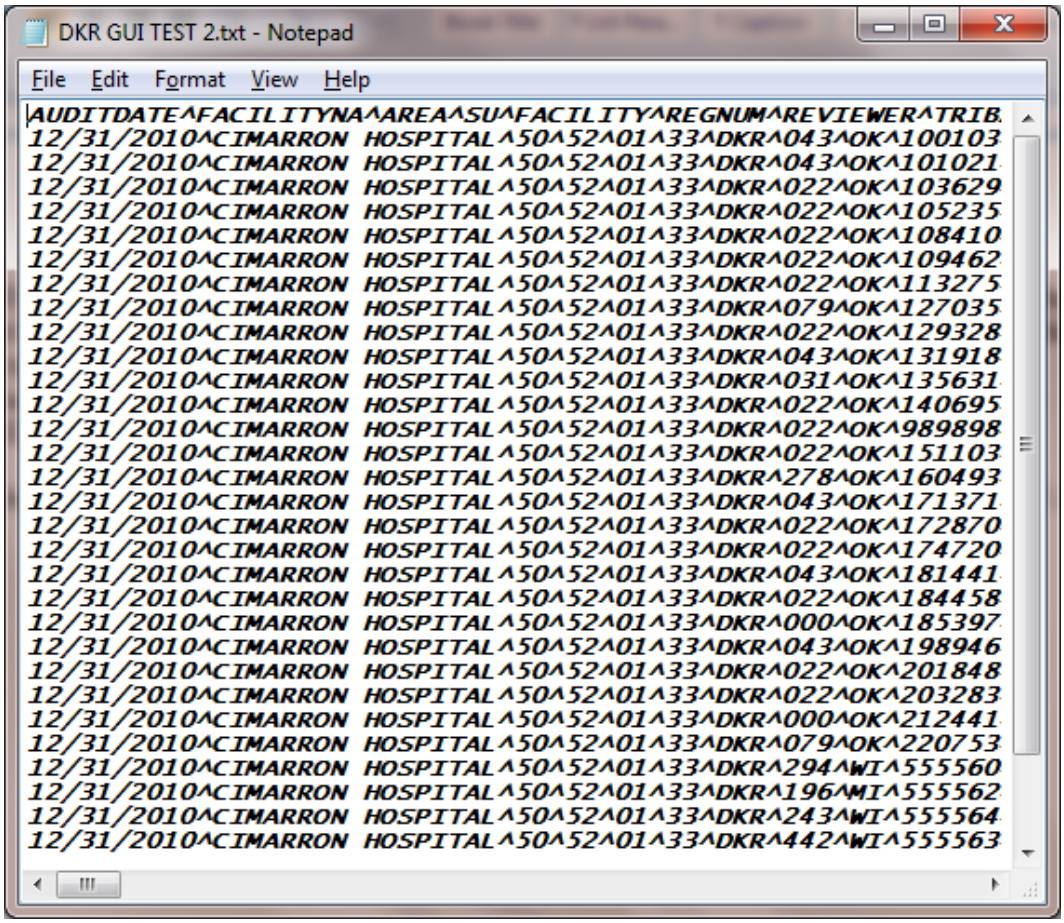

Figure 5-1: Text-delimited Audit Export file

To import a file, do the following:

1. Open a blank Excel worksheet.
2. Click on **Open** and navigate to the folder where the Audit Export file resides.
3. Change the file type from Excel to **All Files** in the list box (Figure 5-2). This is necessary in order to see the WebAudit file, which is not in an Excel format at this time.

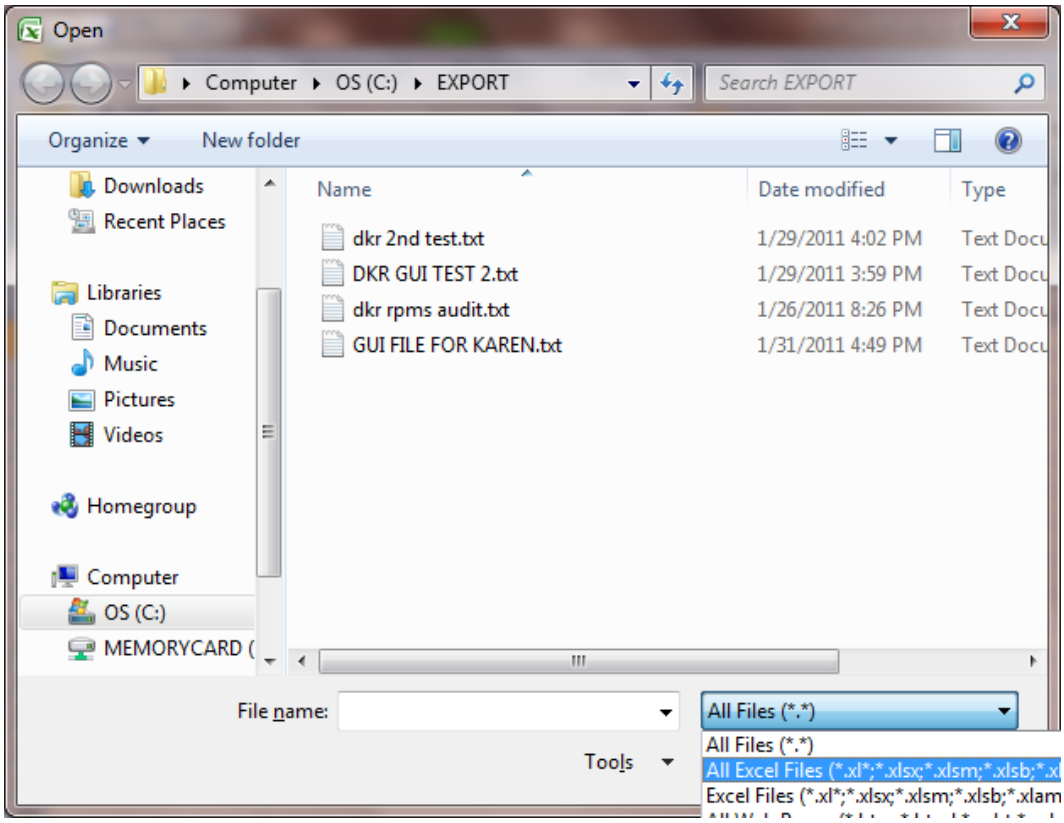

Figure 5-2: **Open** dialog

4. Select the file to be imported.

5. Click **Open**. The **Text Import Wizard** will open.

6. The **Text Import Wizard** will correctly identify that this is a delimited file. Click **Next**. (See Figure 5-3)

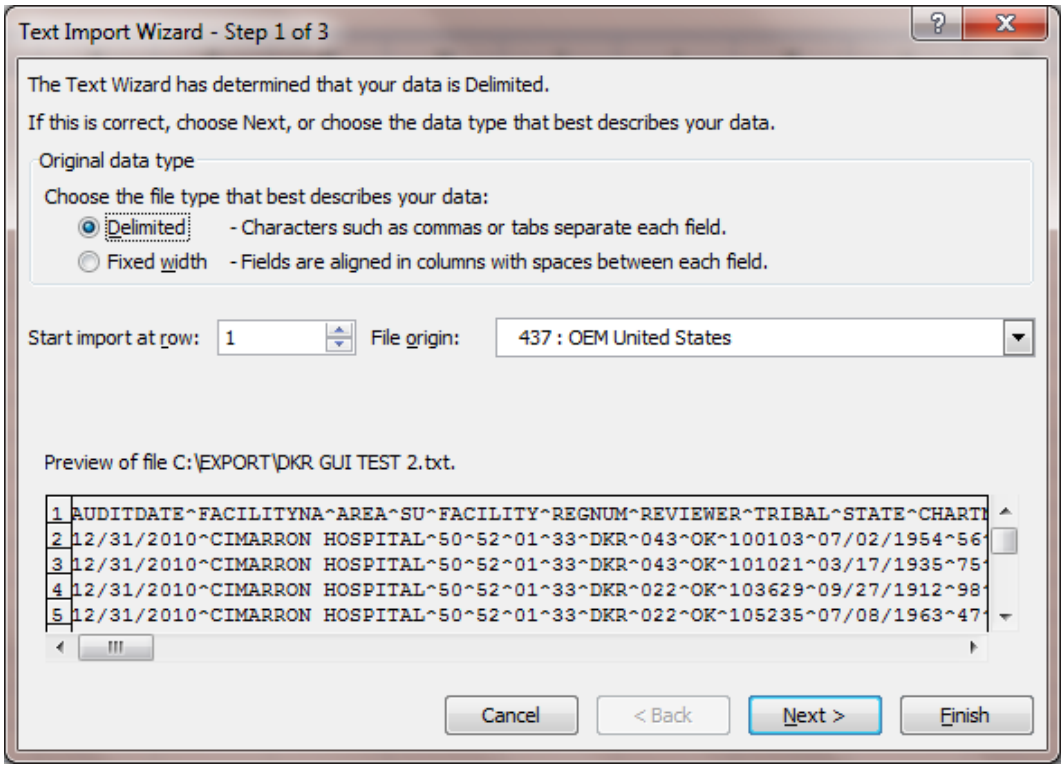

Figure 5-3: **Text Import Wizard Step 1 of 3** dialog

7. In Step 2 of the **Import Wizard**, identify the type of text delimiter.
8. Select the **Other** box and type a caret (^) (Figure 5-4) to identify the type of delimiter.
9. Uncheck the **Tab** check box as the Carat is the text delimiter, not a TAB.

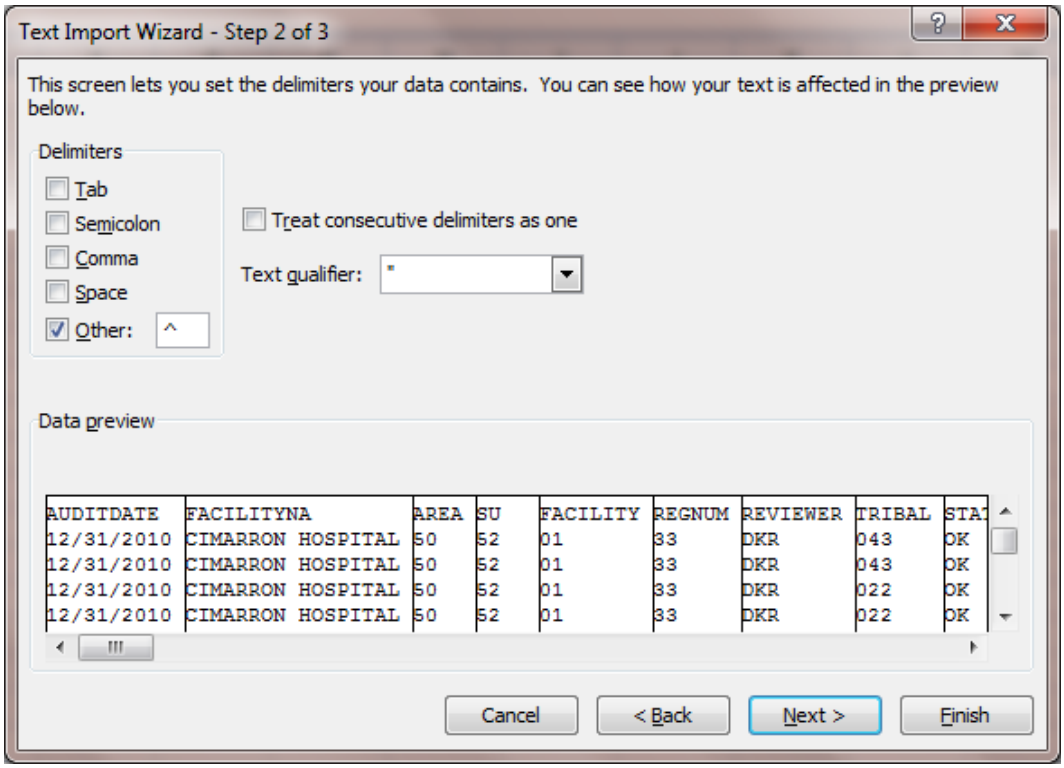

Figure 5-4: **Text Import Wizard Step 2 of 3** dialog

10. Click **Next**, when the delimiter has been defined. Vertical lines will display between the columns of data.

11. Click **Finish** to complete the import to Excel.

12. Columns may be expanded and data sorted as desired.

Note:	This not an Excel file until it is saved as an Excel file in a secure folder as identified by the information technology (IT) staff.

6.0 Displaying 2012 Diabetes Audit Logic

The revised logic for the 2012 Diabetes Audit is provided under the menu option DAL Display Audit Logic in the DA Diabetes QA Audit menu as shown in Figure 6-1:

```
Diabetes Management System ...
DA   Diabetes QA Audit Menu ...
DAL  Display Audit Logic
Select the Audit Year
Select DMS AUDIT ITEM DESCRIPTIONS AUDIT YEAR: 2012 <ENTER>
```

Figure 6-1: Example of menu to display Diabetes Audit Logic

1. At the "Select DMS AUDIT ITEM DESCRIPTIONS AUDIT YEAR" prompt, type the audit year and press Enter.
2. At the "Select Action" prompt, type **S** and press Enter to review the logic for any audit item (see Figure 6-2).
3. At the "Select Action" prompt, type the number of the logic item to be displayed.

```
DM AUDIT ITEM DESCRIPTION     Mar 17, 2012 16:08:11          Page: 1 of 1
DM Logic Display

1)  AUDIT DATE              17)  HYPERTENSION DOCUMEN  33)  TB RESULT POSITIVE,
2)  FACILITY NAME           18)  BLOOD PRESSURES (LAS  34)  TB RESULT NEGATIVE,
3)  REVIEWER INITIALS       19)  FOOT EXAM (COMPLETE)  35)  ECG
4)  TRIBAL ENROLLMENT CO    20)  EYE EXAM (dilated or  36)  SEASONAL FLU VACCINE
5)  STATE OF RESIDENCE      21)  DENTAL EXAM           37)  PNEUMOVAX EVER
6)  CHART NUMBER            22)  DIET INSTRUCTION      38)  HEPATITIS B
7)  DATE OF BIRTH           23)  EXERCISE INSTRUCTION  39)  TD OR TDAP IN PAST 1
8)  SEX                     24)  DM EDUCATION (OTHER)  40)  HBA1C (most recent)
9)  PRIMARY CARE PROVIDE    25)  DEPRESSION AN ACTIVE  41)  CREATININE
10)  DATE OF DIABETES DIA   26)  DEPRESSION SCREENING  42)  ESTIMATED GFR
11)  DM TYPE                27)  DM THERAPY            43)  TOTAL CHOLESTEROL
12)  TOBACCO USE            28)  ACE INHIBITOR/ARB     44)  HDL CHOLESTEROL
13)  TOBACCO REFERRED FOR   29)  ASPIRIN/ANTIPLATELET  45)  LDL CHOLESTEROL
14)  HEIGHT                 30)  LIPID LOWERING AGENT  46)  TRIGLYCERIDES
15)  WEIGHT                 31)  TB TESTING            47)  URINE TESTED FOR PRO
16)  BMI                    32)  TB Test result

          Enter ?? for more actions
S  Select Item     A  Display All Items  Q  Quit

Select Action: +// S <ENTER>
```

Figure 6-2: Displaying 2012 Audit Logic

See Appendix A: for a complete listing of Audit Logic.

7.0 Audit Resources

Diabetes Management System v2.0 User Manual, (bdm_020u.pdf)

All information related to the 2012 Diabetes Audit may be viewed at (Figure 7-1): http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesAudit2011Resources

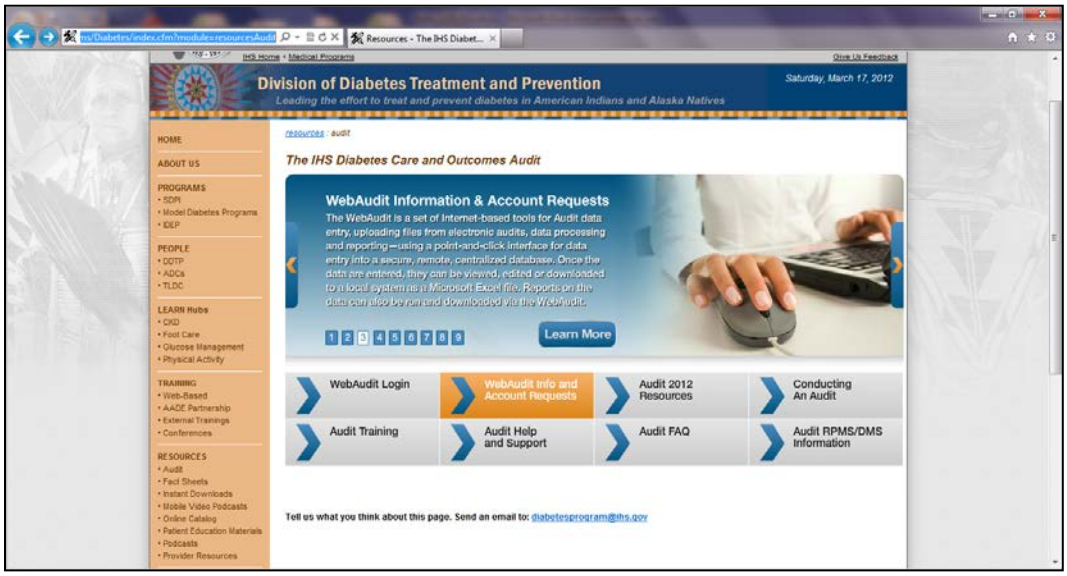

Figure 7-1: **IHS Diabetes Care and Outcome Audit** window

IHS Standards of Care for Adults with Type 2 Diabetes:

http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=toolsClinicalGuidelines#SOC12

8.0 Diabetes Care Summary

The Diabetes Care Summary or Supplement displays as the last page of a Health Summary or can be displayed or printed as a standalone document using the menu as shown in Figure 8-1:

```
Diabetes Management System ...
DA   Diabetes QA Audit Menu ...
DPCS  Display a Patient's DIABETES CARE SUMMARY
```

Figure 8-1: Diabetes Care summary menu

The Diabetes Patient Care Summary (DPCS) (Figure 8-2) uses the same taxonomies and logic that supports the Diabetes Audit. Results display based on the last data available rather than the audit year. Missing or inaccurate data displayed on the document may be a warning that taxonomies need to be reviewed and updated.

Changes to the DPCS include the addition of Hepatitis B Vaccine status (on the 29th line in Figure 8-2).

```
********** CONFIDENTIAL PATIENT INFORMATION [DKR]  Mar 17, 2012 **********
DIABETES PATIENT CARE SUMMARY                 Report Date:  03/17/2012
Patient Name:  GUMP,FOREST    HRN: 989898  INDIAN/ALASKA NATIVE
Age:  42      Sex:  F         Date of DM Onset: 00/00/1980 (Diabetes Register)
DOB:  03/16/1970              DM Problem #: CIMH16
                              Designated PCP: CURTIS,A CLAYTON
Last Height:  63 inches       10/29/2010
Last Weight:  157 lbs         05/18/2011    BMI: 27.8
Last Waist Circumference: 40  05/20/2005
Tobacco Use:  YES, USES TOBACCO - SMOKER  POV: 305.1  06/25/2003
HTN Diagnosed:  Yes
ON ACE Inhibitor/ARB in past 6 months: Yes - 02/16/2012
Aspirin Use/Anti-platelet (in past year):  Yes - 05/01/2011 ASPIRIN 81MG TA
Last 3 BP:  150/79   05/18/2011        Is Depression on the Problem List?
(non ER)    145/90   10/29/2010          No
            140/80   11/13/2006        If no, Depression Screening in past year?
                                         Yes - Exam: DEPRESSION SCR 09/12/2011
In past 12 months:
Diabetic Foot Exam:   Yes - Diabetic Foot Exam - 09/12/2011
Diabetic Eye Exam:    Yes - Diabetic Eye Exam - 05/18/2011
Dental Exam:          Yes - Dental Exam - 05/18/2011
Last Mammogram:       11/03/2010  RADIOLOGY: SCREENING MAMMOGRAM - G0202
Last Pap Smear:       07/06/2011  WH: PAP SMEAR
         Note: Patient Refused a Pap Smear on 05/01/2011

Immunizations:
Seasonal Flu vaccine since August 1st: No
Pneumovax ever:               Yes  05/18/2006
Hepatitis B Series complete (ever): No
Td in past 10 years:            Yes  05/18/2006
Last Documented TB Test:   PPD  2    05/18/2011
Last TB Status Health Factor:                    Last CHEST X-RAY: 07/11/2007
EKG:                          02/16/2012           NORMAL

Laboratory Results (most recent):                    RPMS LAB TEST NAME
HbA1c:                   5.6            05/18/2011 HEMOGLOBIN A1C
```

```
 Next most recent HbA1c:   8.5             12/12/2009 HEMOGLOBIN A1C
 Creatinine:               2.3 mg/dL       02/28/2011 CREATININE
 Estimated GFR:             56             05/01/2011 NEW TEST 3
 Total Cholesterol:        240             10/29/2010 CHOLESTEROL
  LDL Cholesterol:         120             10/29/2010  LDL
  HDL Cholesterol:          40             10/29/2010  HDL
  Triglycerides:           189             10/29/2010 TRIGLYCERIDE
Urine Protein Assessment:
 UACR (Quant A/C Ratio):    45             02/16/2012 A/C QUANT

DM Education Provided (in past yr):
  Last Dietitian Visit:     12/29/2004  DM
  DM-EXERCISE                07/08/2011  DM-NUTRITION               07/15/2011
  DM-PERIODONTAL DISEASE     05/18/2011  DMC-EXERCISE               05/18/2011

GUMP,FOREST                       DOB: 3/16/1970      Chart #CIMH 989898
```

Figure 8-2: Diabetes Patient Care Summary sample

9.0 Adding Local Option Information

If a site needs to add or update Local option information before running the audit or for internal use, it may do so in RPMS or Visual DMS using the Patient Management option.

Local options have two components:

- A code between 0 and 9 (site decides what codes represent)
- text (determined by site)

> **Note**: Local options that have been entered may only be seen or displayed on the Diabetes Audit.

Figure 9-1 shows a Local Option for a Self-Management Goal of Exercise 3 times per week has been added.

```
PM     Patient Management

Register Data                Feb 27, 2012 10:25:28       Page: 1 of 1
       PATIENT: GUMP,FOREST                                AGE: 40
       ADDRESS: 102 FRONT STREET,HUGO,OK,74366             DOB: 03/16/1970
         PHONE: 715-456-8970                               HRN: 989898
PRIM CARE PROV: SHORR,GREGORY                              RES: CLAREMORE
        STATUS: ACTIVE
WHERE FOLLOWED: SELLS HOSP
 REGISTER PROV: CURTIS,A CLAYTON       CASE MGR:
       CONTACT: Mother
    ENTRY DATE: MAY 17,2006                          LAST EDITED: JAN 29,2012
     DIAGNOSIS: IMPAIRED GLUCOSE TOLERANCE            ONSET DATE: SEP 2,2004
     DIAGNOSIS: TYPE 2                                ONSET DATE: JUN 12,2006
 COMPLICATIONS: RETINOPATHY                           ONSET DATE: MAY 17,2006
                PERIODONTITIS                                    FEB 8,2010
                CVA (STROKE)                                     JAN 12,2012
          - Previous Screen   Q Quit   ?? for More Actions
1  Edit Register Data     8  DIABETES Medications   15 DIABETES Lab Profile
2  Complications          9  Review Appointments    17 Pat. Face Sheet
3  Comments               10 Audit Status           18 Send Mail Message
4  Health Summary         11 Flow Sheet             19 Local Option Entry
5  Last Visit             12 Case Summary           20 Diagnosis
6  Other PCC Visit        13 Edit Problem List      21 Print Letter
7  Medications            14 Lab Profile
Select Action: Quit// 19 <ENTER>

DM AUDIT LOCAL OPTION CODE: 3
DM AUDIT LOCAL OPTION TEXT: EXERCISE 3X/WK
```

Figure 9-1: Add a Local option code and text

In Visual DMS, the Local Option may be displayed, added, or edited. See Figure 9-2 and Figure 9-3:

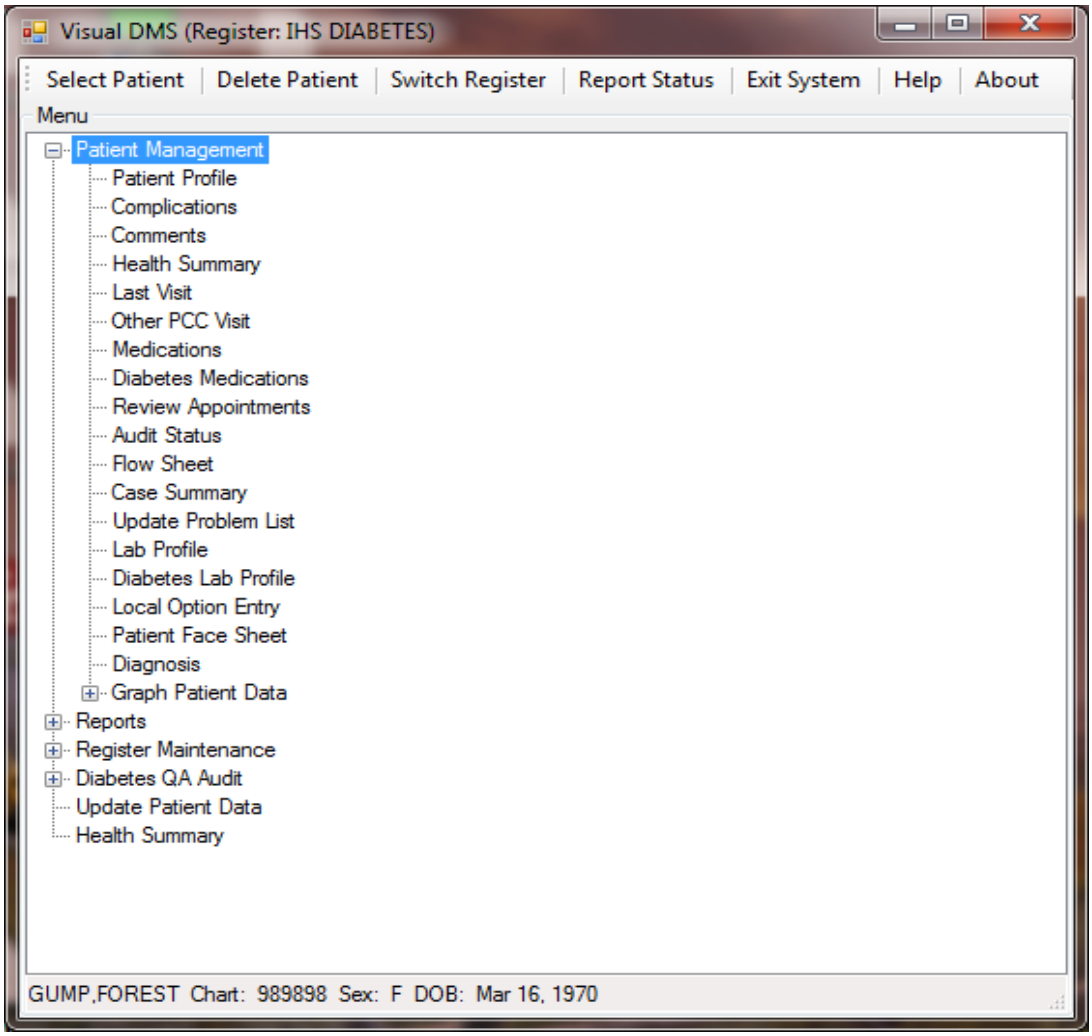

Figure 9-2: Local Option Entry on **Patient Management** menu

Type the local code in the DM Audit Local Option Code field as shown in Figure 9-3:

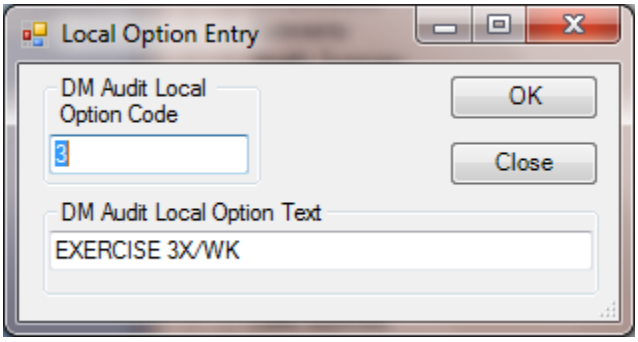

Figure 9-3: Review or update **Local Option Entry** dialog

Appendix A: 2012 Diabetes Audit Logic

```
DM AUDIT LOGIC DESCRIPTIONS

                                    AUDIT DATE
This is the ending date of the audit period.  The user supplies this
date.  It is used as the ending date to calculate the time range when
looking for values. For example, if the audit date is December 31, 2010
then data is examined during the year prior to this audit date (January
1,2010 through December 31, 2010).

                                  FACILITY NAME
This is the name of the facility at which the audit is being run.  It is
the division or facility to which the user logged in.  (The DUZ(2)
variable is used).

                                REVIEWER INITIALS
Initials of the person running the audit.  A maximum of 3 initials may be
used.

                              TRIBAL ENROLLMENT CODE
The patient's tribe code as entered in Patient Registration.

                                STATE OF RESIDENCE
This is the state in which the patient resides at the time the audit was
done.  This is captured from the mailing address.

                                   CHART NUMBER
Health record number of the patient at the facility at which the audit is
run.

                                   DATE OF BIRTH
The patient's Date of Birth.  Obtained from data entered through patient
registration.

                                        SEX
The gender of the patient. Obtained from data entered through patient
registration.

                              PRIMARY CARE PROVIDER
The name of the primary care (designated) provider documented in RPMS.
Taken from field .14 of the patient file.

                            DATE OF DIABETES DIAGNOSIS
The diabetes onset date.  This date is used in the calculation of the
duration of diabetes. 3 different dates are displayed to the user:
       The date of onset from the Diabetes Register.
       The earliest date of onset from all diabetes related problems on
the problem list. The problem list is scanned for all problems in the
ICD9 code range 250.00-250.93.
       The 1st recorded diagnosis (POV) of diabetes in PCC.  ICD9 codes:
250.00-250.93.
```

Cumulative Audit: When calculating the duration of diabetes, the earliest of the date of onset from the diabetes register or the problem list date of onset is used. Duration of diabetes is calculated from that date to the date of the audit. If neither the date of onset in the register nor the date of onset in the problem list is recorded, the duration of diabetes is not calculated. The first diagnosis date from POV is not used.

AUDIT Export file: The earliest date found from the Diabetes register or the problem is exported. Format: MM/DD/YYYY

DM TYPE

The computer audit uses the following logic in determining the type of diabetes: (once a 'hit' is made, no further processing done)

1. If the diagnosis documented in the Diabetes Register is NIDDM the type is assumed to be Type 2.
2. If the diagnosis documented in the Diabetes Register is "TYPE II" the type is assumed to be Type 2.
3. If the diagnosis documented in the Diabetes Register contains a '2' the type is assumed to be Type 2.
4. If the diagnosis documented in the Diabetes Register contains IDDM the type is assumed to be type 1.
5. If the diagnosis documented in the Diabetes Register contains a '1' the type is assumed to be Type 1.
6. If no diagnosis is documented in the Diabetes Register, or it does not contain any of the above strings the problem list is then scanned. If any diabetes diagnosis on the problem list has a 5th digit of 0 or 2 then the type is assumed to be 2. Example: diagnosis on the problem list is 250.00, the 5th digit is 0 and type 2 is assumed.
7. If any diabetes diagnosis on the problem list has a 5th digit of 1 or 3 then the type is assumed to be type 1.
8. If no diagnosis exists on the problem list or in the diabetes register, then the last PCC purpose of visit related to diabetes is reviewed. If it contains a 5th digit of 0 or 2 then the type is assumed to be Type 2, if the 5th digit is a 1 or 3 then the type is assumed to be type 1.

TOBACCO USE

Tobacco use status of the patient. The tobacco use is determined in the following way: The last documented of the following items is found:

- Health Factor in the TOBACCO (SMOKING) Category.
- Health Factor in the TOBACCO (SMOKELESS - CHEWING/DIP) Category.
  Note: if those categories do not exist, then the last health factor in the TOBACCO category is found. If any of the health factors found indicates that the person is a Tobacco User they are categorized as a tobacco user.

Health factors in the TOBACCO (SMOKING) Category:

NON-TOBACCO USER - Not a Current User
CURRENT SMOKER, STATUS UNKNOWN - Current User
PREVIOUS (FORMER) SMOKER - Not a Current User

```
       CESSATION-SMOKER  - Current User
       CEREMONIAL USE ONLY - Not a Current User
       CURRENT SMOKER, EVERY DAY - Current User
       CURRENT SMOKER, SOME DAY - Current User
       NEVER SMOKED  - Not a Current User
       SMOKING STATUS UNKNOWN - Not Documented

Health factors in the TOBACCO (SMOKELESS - CHEWING/DIP) Category:
       CURRENT SMOKELESS  - Current User
       PREVIOUS (FORMER) SMOKELESS - Not a Current User
       CESSATION-SMOKELESS - Current User
       SMOKELESS TOBACCO, STATUS UNKNOWN -  Not Documented
       NEVER USED SMOKELESS TOBACCO - Not a Current User

Health factors in the TOBACCO Category:
        NON-TOBACCO USER  - Not a Current User
        CURRENT SMOKER  - Current User
        CURRENT SMOKELESS  - Current User
        PREVIOUS SMOKER  - Not a Current User
        PREVIOUS SMOKELESS - Not a Current User
        CURRENT SMOKER & SMOKELESS - Current User
        CESSATION-SMOKELESS - Current User
        CESSATION-SMOKER - Current User

-       The PCC Problem list and purpose of visits are scanned for any of
the following diagnoses:
-       Diagnoses contained in the BGP GPRA SMOKING DXS taxonomy.
        305.1-305.13
        649.00-649.04
        V15.82
-       Any Education Topic recorded during that meets The following
criteria:
        Topic subject is "TO" e.g. TO-DISEASE PROCESS (TO-DP)
        Topic category is "TO"  e.g. ASM-TOBACCO (ASM-TO)
        Topic subject is any of the following diagnosis codes:
         305.1-305.13
         649.00-649.04
         V15.82
-       Any visit with Dental ADA code 1320 documented.
-       Any visit with the following CPT codes documented:
         BGP SMOKING CPTS taxonomy:  99406-99407,1034F-1036F, G0375-G3076

The last documented of the above items is used to determine if the patient
is a current tobacco user or not. If none of the above are found then the
value is 3  Not Documented.

If the value found is one of the following then the value is 2  Not a
Current User:
  See list above for Non User Health factors
    V15.82
    305.13
    1036F
```

For all others the value is 1 Current User.

TOBACCO REFERRED FOR CESSATION COUNSELING

If the patient is a current tobacco user cessation counseling is determined in the following manner:

1. The patient's health factors recorded in the past year are reviewed for a recorded health factor that is contained in the DM AUDIT CESSATION HLTH FACTOR taxonomy or any tobacco health factor that contains the word "CESSATION"
   If one is found then a value of 1 - Yes is displayed.

2. Patient education codes containing "TO-", "-TO", "-SHS", 305.1, 305.1* (old codes), 649.00-649.04, D1320, 99406, 99407, G0375 (old code), G0376 (old code), 4000F, G8402 or G8453;

3. A visit to Clinic code 94 (tobacco cessation clinic);

4. Dental code 1320 recorded during the past year;

5. CPT code D1320, 99406, 99407 , G0375 (old code), G0376 (old code), 4000F, G8402 or G8453 during the report period.

6. Prescription for Tobacco Cessation Aid: Any of the following documented anytime during the Report Period:
   1. Prescription for medication in the site-populated BGP CMS SMOKING CESSATION MEDS taxonomy that does not have a comment of RETURNED TO STOCK.
   2. Prescription for any medication with name containing "NICOTINE PATCH", "NICOTINE POLACRILEX", "NICOTINE INHALER", or "NICOTINE NASAL SPRAY", or "NICOTINE TRANS" that does not have a comment of RETURNED TO STOCK.

7. A refusal of any of the education topics or CPT codes listed above.

8. If none of the above are found, a 2 - No is displayed.

HEIGHT

The last recorded Height value taken on or before the ending date of the audit.
AUDIT Export file: The last recorded height prior to the audit date is passed to the EPI record. The height is rounded to 2 decimal digits. For example, 60.25 inches. The height in feet and inches is also passed on the epi record.

WEIGHT

The last recorded Weight value taken during the audit period.

AUDIT Export: The last recorded weight during the audit period is passed to the web audit. The weight is rounded to the nearest whole pound.

BMI

BMI is calculated in the following way: The last weight in the 2 years prior to the audit date and the last height recorded anytime before the

audit date are used to calculate the BMI. Where W is weight in lbs and H is height in inches: W=W*.45359,H=(H*.0254),H=(H*H),%=(W/H),%=$J(%,4,1)

Cumulative Audit: BMI is used and percentages of overweight and obese patients are calculated. If the patient did not have a height or weight recorded as described above they fall into the "BMI could not be calculated" category.

HYPERTENSION DOCUMENTED

If Hypertension is on the problem list or the patient has had at least 3 visits with a diagnosis of hypertension ever then it is assumed that they have hypertension.

BLOOD PRESSURES (LAST 2/3)

The last 3 recorded Blood Pressure values on non-ER clinic visits in the year prior to the audit date are obtained. If 3 blood pressures are not available then the last 2 are obtained.

AUDIT Export file: The last 3 (if available) or else last 2 systolic and diastolic values as well as the mean of the systolic values and diastolic values are passed on to the EPI record. If there are not at least 2 values the mean is not calculated.

FOOT EXAM (COMPLETE)

The logic used in determining if a complete foot exam has been done is as follows:

1. A documented DIABETIC FOOT EXAM, COMPLETE (CODE 28) is searched for in the year prior to the audit date. This is recorded in V Exam. If found, no other processing is done, an exam is assumed to have been done.
2. A visit on which a podiatrist (provider class codes 33 - PODIATRIST, 84 - (PEDORTHIST) or 25 - CONTRACT PODIATRIST) that is not a DNKA visit is searched for in the year prior to the audit date. If found, it is assumed the exam was done and no further processing is done.
3. A visit to clinic 65 - PODIATRY or B7 -Diabetic Foot clinic that is not a DNKA is searched for in the year prior to the audit date. If found, no other processing is done.
4. If none of the above are found, a documented refusal (REF) or No Response to Follow-up (NRF) of a diabetic foot exam is searched for. If found, value is "Refused". If none of the above is found, or "Not Medically Indicated" has been documented the value is "No".

EYE EXAM (dilated or retinal camera)

The logic used in determining if a diabetic eye exam has been done is as follows:

1. The system looks for the last documented Diabetic Eye Exam in the computer record in the year prior to the audit date.

Diabetic Eye Exam is defined as:

a. EXAM 03 - Diabetic Eye Exam
b. CPT in the APCH DIABETIC EYE EXAM CPTS (2019F, 2020F, 2021F,2022F, 2024F, 2026F, 92002-92012, 92214, 92015, 92250, S3000)

2. If one is found, no further processing is done.
3. If no exam is found then all visits in the time period are scanned for documentation of CPT code 92002-92015.

4. If none of these CPT codes are found, then all PCC Visits in the year prior to the end of the audit are scanned for a non-DNKA, non-Refraction visit to an Optometrist or Ophthalmologist (24, 79, 08) or an Optometry or Ophthalmology Clinic (17, 18, 64 or A2). If found, then a yes and an indication of what was found is displayed. Refraction is defined as a POV on the visit of: 367.89, 367.9, 372.0, 372.1. DNKA is defined as any visit with a primary purpose of visit with a provider narrative containing the following phrases: DNKA, DID NOT KEEP APPOINTMENT, DID NOT KEEP APPT.
5. If none of the above is found, then the refusals file is checked for documentation of a patient refusal or no response to follow-up of a diabetic eye exam. If found, a note indicating the refusal is displayed. If Not Medically indicated is documented then the value displayed is No-Not Medically indicated.

DENTAL EXAM

The logic used in determining if a dental exam has been done is as follows:
1. A documented DENTAL EXAM (CODE 30) is searched for in the year prior to the audit date. If found, no other processing is done.
2. A visit to clinic 56 - DENTAL clinic that is not a DNKA is searched for in the year prior to the audit date. If found, no other processing is done.
3. A visit on which a dentist (provider class code 52 -DENTIST) that is not a DNKA visit is searched for in the year prior to the audit date. If found, and there is any ADA code other than 9991, then it is assumed the exam was done and no further processing is done.
4. If none of the above is found, a documented refusal of a DENTAL exam is searched for. If found, value is "Refused". If a visit to dental clinic with only an ADA code of 9991 is found, it is documented as a "Refused".
5. If none of the above found, the value is "No". This includes Not Medically Indicated

DIET INSTRUCTION

The values in the audit are:

1	RD
2	Other
3	Both RD & Other
4	None
5	Refused

All visits in the year prior to the audit date are examined. Chart review visits are skipped (Chart review is defined as service category of C or clinic code of 52).
- If the primary provider on any visit is a DIETICIAN or NUTRITIONIST (codes 29, 07 or 34) then RD is assigned.
- If the visit does not have one of the above providers but has a Diagnosis of V65.3 then Other is assigned.
- If the visit has a CPT documented of 97802, 97803, or 97804 then RD is assigned.
- If the visit contains any of the following education topics
  Topic in the DM AUDIT DIET EDUC TOPICS taxonomy
  Topic ending in -N

```
   Topic ending in -DT
   Topic ending in -MNT
   Topic beginning with MNT-
   The V PAT ED entry is examined and if the provider documented in
   that entry is a Dietician or Nutritionist the RD is assigned if
   the provider is blank or not an dietician/nutritionist then Other
   is assigned.

At this point:
- if RD is assigned and Other is not then the value assigned is 1 - RD.
- if RD and Other is assigned then the value assigned is 3 - RD & Other.
- if Other is assigned and RD is not then the value assigned is 2 - Other.

Processing stops if a value is assigned.

If a refusal of one of these education topics is documented the value is 5
- Refused.

If none of the above is documented, the value is 4 - None

                              EXERCISE INSTRUCTION
All visits in the year prior to the audit date are examined.
If there is a visit on which a patient education topic in the DM AUDIT
EXERCISE EDUC TOPICS taxonomy, or any topic ending in "-EX" is documented
then a 1 - Yes.  No further processing is done.

All visits in the year prior to the audit date are examined for a POV of
V65.41 and if one is found a 1 - Yes is displayed.

If a refusal of one of these education topics is documented the value is 3
- Refused.

If neither of the above is documented, the value is 2 - None

                              DM EDUCATION (OTHER)
All education topics documented in the year prior to the audit date
are examined.  If the topic meets the following criteria then the
value assigned is 1 - Yes:
  -    topic does not end in -EX, -N, -DT or -MNT
  -    topic does not begin with MNT-
  -    topic is in the DM AUDIT OTHER EDUC topics taxonomy or the name
       of the topic begins with 250, DM or DMC

If a refusal of one of these education topics is documented the value is 3
- Refused.

If neither of the above is documented, the value is 2 - None

If any of the self management topics as described above is documented, a
YES is recorded on the cumulative audit and passed to the Audit Export
file.

                          DEPRESSION AN ACTIVE PROBLEM?
```

The patient's problem lists in both PCC and the Behavioral Health module are reviewed for any problem with the following ICD codes:

LOW VALUE: 290.21	HIGH VALUE: 290.21
LOW VALUE: 296.00	HIGH VALUE: 296.89
LOW VALUE: 298.0	HIGH VALUE: 298.0
LOW VALUE: 300.4	HIGH VALUE: 300.4
LOW VALUE: 301.12	HIGH VALUE: 301.12
LOW VALUE: 308.3	HIGH VALUE: 308.3
LOW VALUE: 309.0	HIGH VALUE: 309.1
LOW VALUE: 309.28	HIGH VALUE: 309.28
LOW VALUE: 311.	HIGH VALUE: 311.

or for the following Behavioral Health problem codes: 14, 15, 18, 24. If no problem found on the problem list then the PCC and BH systems are reviewed for at least 2 diagnoses (POV's) of the codes listed above in the year prior to the audit date. If either a problem is found on the problem list or 2 POV's are found then the value on the audit is 1 - Yes. If not, then value of 2 - No is assigned.

DEPRESSION SCREENING

The PCC and Behavioral health databases are reviewed for any of the Following documented in the past year:

" V Exam 36 or Behavioral Health Module Depression Screening
" Diagnosis - V POV V79.0
" Education Topics - V EDUCATION or Behavioral Health Module DEP-SCR
" V Measurement PHQ2, PHQ9
" Behavioral Health Module Diagnosis (POV) of 14.1
" Diagnosis in BGP MOOD DISORDERS taxonomy in V POV
" Diagnosis in BGP MOOD DISORDERS taxonomy in BH
" Problem Code of 14 or 15 in BH

If any of the above is found then a value of 1 - Yes is assigned.

Refusal of Depression Screening is checked in the Refusals file. Exam code 36 must be used to document the refusal.

(No) if no documentation of depression screening found.

DM THERAPY

All Visits in the 6 months prior to the audit date are reviewed. If any medication in the taxonomy specified is found, then an 'X' is placed by the therapy name. If no medications are found then all documented medication refusals in the past year are reviewed to see if any med within any of the below listed taxonomies was refused. If it was, an X is placed beside item 9 - Unknown/Refused. If no medications or refusals are found then the Diet & Exercise Alone item is marked with an 'X'.

We are unable to calculate the Unknown/Refused group.

Therapy	Taxonomy Name
Insulin	DM AUDIT INSULIN DRUGS
Sulfonylurea	DM AUDIT SULFONYLUREA DRUGS
Sulfonylurea-like	DM AUDIT SULFONYLUREA LIKE

Metformin	DM AUDIT METFORMIN DRUGS
Acarbose	DM AUDIT ACARBOSE DRUGS
Glitazones	DM AUDIT GLITAZONE DRUGS
Incretin mimetics	DM AUDIT INCRETIN MIMETIC
DPP4 inhibitors	DM AUDIT DPP4 INHIBITOR DRUGS
Amylin analogues	DM AUDIT AMYLIN ANALOGUES
GLP-1 analog	DM AUDIT GLP-1 ANALOG DRUGS
Bromocriptine	DM AUDIT BROMOCRIPTINE DRUGS

ACE INHIBITOR/ARB

1. If any drug in the DM AUDIT ACE INHIBITORS taxonomy or any drug with a VA Drug Class of CV800 or CV805 has been prescribed in the 6 months prior to the audit date a Yes is displayed.
2. If any of the drugs in the DM AUDIT ACE INHIBITORS taxonomy is documented as refused then it is counted as "Refused". A not medically indicated documentation is considered a No.
3. If none of the above criteria is met, a No is displayed.

ASPIRIN/ANTIPLATELET THERAPY

All medications in the past year are reviewed for males over 50 and females over 60. If any of them are in the DM AUDIT ASPIRIN DRUGS or DM AUDIT ANTI-PLATELET DRUGS taxonomies then a value of 1 - Yes is assigned, no further processing is done.

The Non-VA meds component in the pharmacy patient file is reviewed for any drug in the above mentioned taxonomies or an orderable item whose first 7 characters is "ASPIRIN" and whose 8th character is not a "/". If one is found then a value of 1 - Yes is assigned and no further processing is done.

If there is a documented refusal (non-NMI refusal) of any drug in the DM AUDIT ASPIRIN DRUGS or DM AUDIT ANTI-PLATELET DRUGS taxonomies then a value of 3 - Refused is assigned.

If there is a documented NMI refusal of any drug in the DM AUDIT ASPIRIN DRUGS or DM AUDIT ANTI-PLATELET DRUGS taxonomies then a value of 2 - None is assigned.

If no prescriptions or refusals are found then the following is done to determine if there is an Adverse Reaction documented:
All POVs are searched for diagnoses 995.0-995.3 with an E-code, if found then a value of 3 - Refused/Adverse Reaction is assigned.
All POV's are searched for V14.8 with a provider narrative containing ASPIRIN or ASA, if found a value of 3 - Refused/Adverse Reaction is assigned.

The problem list is searched for V14.8, or 995.0-995.3 with a provider narrative containing ASPIRIN or ASA, if found a value of 3 - Refused/Adverse Reaction is assigned.

The allergy tracking package is searched for any allergy containing the term "ASPIRIN", if found a value of 3 - Refused/Adverse Reaction is assigned.

The allergy tracking package is searched for any drug allergy where the drug has a VA CLASS CODE of CN103, BL100, BL110 or BL117, if found a value of 3 - refused/Adverse Reaction is assigned.

LIPID LOWERING AGENT

All medications prescribed in the 6 months prior to the audit date are examined. Each is checked against the following taxonomies. If one is found an X is placed beside that drug type on the audit sheet.

- DM AUDIT STATIN DRUGS
- DM AUDIT FIBRATE DRUGS
- DM AUDIT NIACIN DRUGS
- DM AUDIT BILE ACID DRUGS
- DM AUDIT GLITAZONE DRUGS
- DM AUDIT EZETIMIBE DRUGS
- DM AUDIT FISH OIL DRUGS
- DM AUDIT LOVAZA DRUGS

If no drugs are found then if a refusal of any drug within the above mentioned taxonomies is documented the value 5- Refused is displayed. The adverse reaction tracking package is checked for any drug with a VA Drug Class code of CV350. If one is found a 5-Refused or Adverse Reaction is displayed.

TB TESTING

The type of TB Test done is determined in the following way:

1. If the patient has a TB health factor recorded, TB on the problem list or any diagnoses of TB documented in the PCC then the test type is documented as 1 - Skin Test (PPD), no further processing is done.
2. All recorded PPD entries and TB lab tests using the DM AUDIT TB TESTS TAX prior to the audit date are gathered. If at least one is found the latest one is used, if it is a Skin test then 1 - Skin test (PPD) is documented, if it is a lab test then 2 - Blood Test is documented.
3. If there are none found then the refusal file is checked. If a refusal is on file then the value is 3- REFUSED. If no refusal is found then the value is 4 - UNKNOWN/NOT OFFERED. No further processing is done.

TB Test result

The TB test result is determined in the following way:

1. If the patient has a TB health factor recorded, TB on the problem list or any diagnoses of TB documented in the PCC then the test result is documented as 1 - Positive, no further processing is done.
2. All recorded PPD entries and TB lab tests using the DM AUDIT TB TESTS TAX prior to the audit date are gathered. If at least one is found the latest one is used, if it is a Skin test and the reading or result is Positive (reading >9) then it is documented as 1 - Positive, if reading or result of last PPD is negative, then the values is 2 - Negative, if the test type is a blood test then the value of the test is examined, if it is Positive then 1 - Positive is recorded, if it is negative then 2 - Negative is documented. If the results are null the a value of 4 - Unknown is documented.
3. If there are none found then the refusal file is checked. If a refusal is on file then the value is 3- REFUSED. If no

refusal is found then the value is 4 - UNKNOWN/NOT OFFERED. No further processing is done.

TB RESULT POSITIVE, IHN TX COMPLETE

If the value of the TB Test result is POSITIVE then the last TB health factor is looked at for determining TB Treatment status. The last recorded TB Health factor is displayed. The TB Health factors are: TB - TX COMPLETE TB - TX INCOMPLETE TB - TX UNKNOWN TB - TX UNTREATED

TB RESULT NEGATIVE, TEST DATE

If the value of TB test result is NEGATIVE then the date of the last TB test is displayed.

ECG

The date of the last ECG on patients over the age of 30 before the audit date is searched for the following ways:

ECG Summary in the V DIAGNOSTIC PROCEDURE file. (This is populated by the EKG mnemonic in data entry).

ICD OPERATION/PROCEDURE codes 89.50, 89.51, 89.52 or 89.53

ICD DIAGNOSIS: 794.31

CPT Codes:

LOW VALUE: 0178T	HIGH VALUE: 0178T
LOW VALUE: 0179T	HIGH VALUE: 0179T
LOW VALUE: 0180T	HIGH VALUE: 0180T
LOW VALUE: 3120F	HIGH VALUE: 3120F
LOW VALUE: 93000	HIGH VALUE: 93024
LOW VALUE: 93025	HIGH VALUE: 93042
LOW VALUE: 93224	HIGH VALUE: 93237
LOW VALUE: 93268	HIGH VALUE: 93268
LOW VALUE: 93270	HIGH VALUE: 93272
LOW VALUE: 93278	HIGH VALUE: 93278
LOW VALUE: G0403	HIGH VALUE: G0405

SEASONAL FLU VACCINE

The patient's data is scanned for an Influenza vaccine in the 12 months prior to the audit date. Influenza vaccine defined as:

- Immunization CVX codes: 15, 16, 88, 111, 135, 140, 141
- CPT codes: DM AUDIT SEASONAL FLU CPTS:

LOW VALUE: 90655	HIGH VALUE: 90658
LOW VALUE: 90660	HIGH VALUE: 90662
LOW VALUE: G0008	HIGH VALUE: G0008
LOW VALUE: G8108	HIGH VALUE: G8108

If no documented immunization is found, a documented refusal in the past 12 months is searched for. If neither are found a No is assumed. Values: Yes, No, Refused.

PNEUMOVAX EVER

Data is scanned for Pneumococcal vaccine any time prior to the audit

date. A Pneumovax is defined as:
- Immunization CVX codes: 33, 100, 109
- Diagnoses: V06.6, V03.82
- CPT codes: BGP PNEUMO IZ CPTS taxonomy (90669, 90732, G0009, G8115)
- Procedure: 99.55

If none is found, the refusal file is checked for a documented refusal of this vaccination. Refusals documented in both the PCC and the Immunization register are reviewed. If neither are found a No is assumed.
Values: Yes, No, Refused.

HEPATITIS B

The audit looks to see if the patient has a series of 3 Hepatitis B vaccinations.
HEP B definition:
CVX codes 8, 42, 43, 44, 45, 51, 102, 104, 110, 132, 146
CPT codes contained in the BGP HEPATITIS CPTS taxonomy: 90636, 90723, 90731, 90740, 90743, G0010, Q3021, Q3023

Vaccinations must be given at least 20 days apart. If 3 are found the audit displays 1 - Yes.

If less than 3 vaccines found the system will look for evidence of disease: Problem List or V POV of 070.2-070.23, 070.3-070.33, V02.61. If found the audit displays 2 - No.

If 3 vaccines are not found and evidence of disease is not found the system searches for a refusal documented in the past year.
Refusal definitions: Immunization Package refusal or PCC refusal of the above listed CVX or CPT codes.

TD OR TDAP IN PAST 10 YEARS

Immunizations are scanned for any tetanus vaccine in the 10 years prior to the audit date. If none is found, a documented refusal is searched for.
If neither are found a No is assumed.
Values: Yes, No, Refused.
Logic used to find a TD vaccine:
Immunization CVX codes: 1, 9, 20, 22, 28, 35, 50, 106, 107, 110, 112, 113, 115, 120
CPT Codes:

LOW VALUE: 90698	HIGH VALUE: 90698
LOW VALUE: 90700	HIGH VALUE: 90701
LOW VALUE: 90702	HIGH VALUE: 90702
LOW VALUE: 90703	HIGH VALUE: 90703
LOW VALUE: 90714	HIGH VALUE: 90714
LOW VALUE: 90715	HIGH VALUE: 90715
LOW VALUE: 90718	HIGH VALUE: 90718
LOW VALUE: 90720	HIGH VALUE: 90723

HBA1C (most recent)

All lab tests in the V LAB file in the year prior to the audit date are

found using the DM AUDIT HGBA1C TAX taxonomy and the BGP HGBA1C LOINC CODES taxonomies. The last 1 with a result is used. If there is not 1 with a result then one without a result is used.

Individual Audit:
The date and result of test is displayed. If there is no result, the result will be blank but the date will display.

Cumulative Audit:
The result of the last HbA1c test is examined and is put into the following categories. If the result contains a ">" it goes into the 11.0 or higher category. If the result is blank OR the 1st digit of the result is not a number (and is not a >) then it is put in the Undocumented category since we cannot interpret the result. For example, if the value is "cancelled" will fall into undocumented.

HbA1c <7.0
HbA1c 7.0-7.9
HbA1c 8.0-8.9
HbA1c 9.0-9.9
HbA1c 10.0-10.9
HbA1c 11.0 or higher
Undocumented

CREATININE

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT CREATININE TAX taxonomy or the BGP CREATININE LOINC CODES taxonomy is found in V LAB. If none with results are found then the last one without a result is used.

Specimen types are not examined so if the same creatinine test is used for serum creatinine as for urine creatinine, the audit is unable to distinguish between these values.

ESTIMATED GFR

For patients that are 18 or older, the last lab test in the year prior to the audit date that is a member of the BGP GPRA ESTIMATED GFR TAX or the BGP ESTIMATED GFR LOINC taxonomy is found.

TOTAL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT TOTAL CHOLESTEROL TAX taxonomy or the BGP TOTAL CHOLESTEROL LOINC taxonomy is found in V LAB. If none with results are found then the last one without a result is used.

Cumulative Audit:
The result of the test is examined and is put into the following categories. If the result is blank OR the 1st digit of the result is not a number then it is put in the Unable to determine result category since we cannot interpret the result. For example, if the value is "cancelled", it will fall into unable to determine.

Desirable (<200 mg/dl)
Borderline (200-239 mg/dl)
High (240 mg/dl or more)
Not tested/No valid result

HDL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT HDL CHOLESTEROL TAX taxonomy or the BGP HDL LOINC CODES taxonomy is found in V LAB. If no test with a result is found the last one without a result is used.

Cumulative Audit:
The result of the test is examined and is put into the following categories. If the result is blank OR the 1st digit of the result is not a number then it is put in the Unable to determine result category since we cannot interpret the result. For example, if the value is "cancelled", it will fall into unable to determine.

- HDL <35 mg/dl
- HDL 35-45 mg/dl
- HDL 46-55 mg/dl
- HDL >55
- Not tested/No valid result

LDL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT LDL CHOLESTEROL TAX taxonomy or the BGP LDL LOINC CODES taxonomy is found in V LAB. If none with a result if found, then the last one without a result is used.

Cumulative Audit:
The result of the test is examined and is put into the following categories. If the result is blank OR the 1st digit of the result is not a number then it is put in the Unable to determine result category since we cannot interpret the result. For example, if the value is "cancelled", it will fall into unable to determine.

- LDL <100 mg/dl
- LDL 100-129 mg/dl
- LDL 130-160 mg/dl
- LDL >160
- Not tested

TRIGLYCERIDES

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT TRIGLYCERIDES TAX taxonomy or the BGP TRIGLYCERIDE LOINC CODES taxonomy is found in V LAB. If no test with a result is found, the last one without a result is used.

Cumulative Audit:
The result of the test is examined and is put into the following categories. If the result is blank OR the 1st digit of the result is not a number then it is put in the Unable to determine result category since we cannot interpret the result. For example, if the value is "cancelled", it will fall into unable to determine.

- TG <150 mg/dl
- TG 150-199 mg/dl
- TG 200-400 mg/dl
- TG >400 mg/dl

```
       Not tested

                            URINE TESTED FOR PROTEIN
For all urine protein tests, the last test with a result during the audit
year is used for the audit beginning with Quantitative UACR.  If a
Quantitative UACR test is not found, the last UPCR test with a result
during the audit year is searched for.  If no UPCR is found during the
audit year, the last 24 HR URINE PROTEIN test with a result during the
audit year is searched for. The logic continues through each type of
protein test if no test is found in the preceding category. If no Urine
protein test with a result is found during the audit year, a No is
recorded for Urine Protein testing.
1.  A test contained in the DM AUDIT QUANT UACR lab taxonomy or DM AUDIT
A/C RATIO LOINC taxonomy, if found then the patient is assigned a value
of 1 - Yes and an X is placed by the 1 - Quantitative Albumin:Creatinine
Ratio (UACR).  If the test found does not have a valid numeric result
then the system will look for a microalbumin test on the same visit date.
If found then the patient is assigned a value of 1 - Yes and an X is
placed by the 1 - Quantitative Albumin:Creatinine Ratio (UACR). If this
scenario occurs, a value of 5 is passed to the Audit Export.
2.  A test contained in the DM AUDIT P/C RATIO taxonomy or the DM AUDIT
P/C RATIO LOINC, if found, the patient is assigned a value of 1 - Yes and
an X is placed by the 2 - Urine Protein:Creatinine Ratio.
3.  A test contained in the DM AUDIT 24HR URINE PROTEIN taxonomy, if
found, the patient is assigned a value of 1 - Yes and an X is placed by
the 3 - 24 hr. urine collection for protein.
4.  A test contained in the DM AUDIT SEMI QUANT UACR taxonomy, if found,
the patient is assigned a value of 1 - Yes and an X is placed by the 4 -
Microalbumin:creatinine strips.  The value is examined and coded as one
of the following:
       1  <30 mg/g
       2  30-300 mg/g
       3  >300 mg/g
5.  A test contained in the DM AUDIT MICROALBUMINURIA TAX taxonomy, if
found, the patient is assigned a value of 1 - Yes and an X is placed by 5
-Microalbumin only.  The result is examined and coded as follows:
       1       <20 mg/L
       2       >=20 mg/L
6.      A test contained in the DM AUDIT URINE PROTEIN TAX taxonomy, if
found, the patient is assigned a value of 1 - Yes and an X is place by 6
- UA Dipstick.  The value is examined and coded as follows:
       1       Normal or trace
       2       Abnormal (>= 1+)

7.  A refusal of any test in the above 6 taxonomies is searched for, if
    found, the patient is assigned a value of 3 - Refused.
8.  If none of the above is found, the patient is assigned a value of
    2 - No.
```

Appendix B: Audit Export file definition

The 2012 Audit Export file is a text file, using (^) as the delimiter. If a data point is missing, a space should appear between the delimiters (e.g., ^ ^).

Line 1 is the variable name line, and will contain the audit variables in the order that they appear below.

Lines 2-x will contain the data, with each line representing a single record (see Sample2012DataFile.txt).

Table 9-1 displays the variable names and a brief description.

Table 9-1: Audit Export File Definition

Column Number	Excel Column	Variable Name	Description
1	A	AUDITDATE	Ending date of the audit in xx/xx/xxxx format; typically 12/31/2010
2	B	FACILITYNA	Name or abbreviation for facility
3	C	AREA	2 digit IHS code for Area (1st 2 digits of ASUFAC code)
4	D	SU	2 digit IHS code for Service Unit (middle 2 digits of ASUFAC code)
5	E	FACILITY	2 digit IHS code for Facility (last 2 digits of ASUFAC code)
6	F	REGNUM	Number of active diabetes pts. (points) being cared for at a facility
7	G	REVIEWER	Reviewer's initials, up to 3 characters
8	H	TRIBAL	3 digit IHS Tribal Affiliation code
9	I	STATE	2 character postal abbreviation for state of residence
10	J	CHARTNUM	Patient's chart number
11	K	DOB	Date of Birth
12	L	AGE	Age in full years
13	M	SEX	1=Male, 2=Female
14	N	DODX	Date of diabetes diagnosis

Column Number	Excel Column	Variable Name	Description
15	O	DURDM	Calculated duration of diabetes in full years
16	P	DMTYPE	1=Type 1, 2=Type 2
17	Q	TOBACCO	1=Current tobacco user, 2=Not a current user, 3=Not documented
18	R	TOBCOUNSEL	Tobacco cessation counseling received: 1=Yes, 2=No, 3=Refused
19	S	FEET	Last recorded height in feet (combine with the next variable, Inches)
20	T	INCHES	Last recorded height in inches (or in combination with previous variable, Feet)
21	U	HEIGHT	Last recorded height in inches
22	V	WEIGHT	Last recorded non pregnant weight in lbs. (pounds)
23	W	BMI	calculated body mass index based on Height and Weight
24	X	HTNDXTX	Is there a hx of hypertension, based on Dx or Tx: 1=Yes, 2=No
25	Y	SYST1	Most recent systolic BP
26	Z	DIAST1	Most recent diastolic BP
27	AA	SYST2	Next most recent systolic BP
28	AB	DIAST2	Next most recent diastolic BP
29	AC	SYST3	Third most recent systolic BP
30	AD	DIAST3	Third most recent diastolic BP
31	AE	SYSMEAN	Calculated mean systolic BP based on last 3 if available, otherwise last 2
32	AF	DIAMEAN	Calculated mean diastolic BP based on last 3 if available, otherwise last 2
33	AG	FOOTEXAM	Complete diabetic foot exam: 1=Yes, 2=No, 3=Refused
34	AH	EYEEXAM	Dilated retinal exam or retinal camera exam: 1=Yes, 2=No, 3=Refused
35	AI	DENTALEXAM	Examination of teeth and gingiva: 1=Yes, 2=No, 3=Refused

Column Number	Excel Column	Variable Name	Description
36	AJ	DIETINSTR	Dietary instruction: 1=Yes by RD 2=Yes by non RD, 3=Yes by RD and non RD, 4=None, 5=Refused
37	AK	EXERCISE	Exercise education: 1=Yes, 2=No, 3=Refused
38	AL	DMEDUC	Diabetes education other than diet and exercise: 1=Yes, 2=No, 3=Refused
39	AM	DEPDX	Active diagnosis of depression: 1=Yes, 2=No
40	AN	DEPSCREEN	Screened for depression (if DEPDX is No): 1=Yes, 2=No, 3=Refused
41	AO	TXDIET	Only therapy for diabetes is diet and exercise (no meds): 1=Yes, 2=No
42	AP	TXINSUL	Taking any insulin: 1=Yes, 2=No
43	AQ	TXSUREA	Taking a sulfonylurea (such as glyburide or glipizide): 1=Yes, 2=No
44	AR	TXSUREALK	Taking a sulfonylurea-like med (such as Prandin or Starlix): 1=Yes, 2=No
45	AS	TXMETFORM	Taking metformin: 1=Yes, 2=No
46	AT	TXACAR	Taking acarbose (Precose) or miglitol (Glyset): 1=Yes, 2=No
47	AU	TXGLIT	Taking a "glitazone" drug (TZD): 1=Yes, 2=No
48	AV	TXBYETTA	Taking injectable incretin mimetic (Byetta): 1=Yes, 2=No
49	AW	TXDPP4	Taking DPP4 inhibitor (Januvia, Onglyza): 1=Yes, 2=No
50	AX	TXAMYLIN	Taking injectable amylin analog (Symlin): 1=Yes, 2=No
51	AY	TXGLP1	Taking GLP 1 analog (Victoza): 1=Yes, 2=No
52	AZ	TXBROMO	Taking bromocriptine (Cycloset): 1=Yes, 2=No
53	BA	TXCOLESEV	Taking colesevelam (Welchol): 1=Yes, 2=No

Column Number	Excel Column	Variable Name	Description
54	BB	TXREFUNK	Diabetes therapy is unknown: 1=Yes, 2=No
55	BC	ACE	Taking an ACE inhibitor or ARB: 1=Yes, 2=No, 3=Refused or adverse reaction
56	BD	ASPIRIN	Taking daily aspirin or anticoagulant: 1=Yes, 2=No, 3=Refused or adverse reaction
57	BE	LLSTATIN	Taking a statin drug (simvastatin, lovastatin, others): 1=Yes, 2=No
58	BF	LLFIBRATE	Taking a fibrate (gemfibrozil/Lopid): 1=Yes, 2=No
59	BG	LLNIACIN	Taking niacin (Niaspan, OTC niacin): 1=Yes, 2=No
60	BH	LLBAS	Taking a bile acid seqestrant (cholestyramine/Questran, others): 1=Yes, 2=No
61	BI	LLEZETIM	Taking ezetimibe (Zetia): 1=Yes, 2=No
62	BJ	LLFISHOIL	Taking fish oil: 1=Yes, 2=No
63	BK	LLLOVAZA	Taking Lovasa: 1=Yes, 2=No
64	BL	LLNONEREF	Taking no lipid lowering drugs: 1=Yes, 2=No
65	BM	TBTESTDONE	Skin (PPD) or blood test for TB done ever: 1=Yes, 2=No, 3=Refused, 4=Unknown or not offered
66	BN	TBTESTRSLT	TB test result: 1=Positive, 2=Negative, 3=Refused, 4=Unknown
67	BO	TBINHTX	[only if TBTESTRESLT=1] INH treatment complete: 1=Yes, 2=No, 3=Refused, 4=Unknown
68	BP	TBTESTDATE	[only if TBTESTRESLT=2] Date of last TB test in xx/xx/xxxx format

Column Number	Excel Column	Variable Name	Description
69	BQ	TBSTATUS	Single digit code: 1=TB pos, INH tx complete; 2=TB pos, INH tx incomplete/unknown; 3=TB neg, tested after DODX; 4=TB neg, tested before DODX; 5=TB status unknown; 6=TB neg, DODX or TBTESTDATE unknown
70	BR	EKGDONE	Has ECG been done (ever): 1=Yes, 2=No
71	BS	EKGDATE	Date of last ECG in xx/xx/xxxx format
72	BT	FLUVAX	Seasonal flu vaccine during audit period: 1=Yes, 2=No, 3=Refused
73	BU	PNEUMOVAX	Pneumococcal vaccine ever: 1=Yes, 2=No, 3=Refused
74	BV	TD	Tetanus (Td or Tdap) in past 10 years: 1=Yes, 2=No, 3=Refused
75	BW	HEPBVAX	Hepatitis B vaccine series (ever): 1=Yes, 2=No, 3=Refused
76	BX	HBA1C	Most recent HbA1c during audit period (to single decimal)
77	BY	HBA1CDATE	Date of most recent HbA1c during audit period in xx/xx/xxxx format
78	BZ	CREATDONE	Serum creatinine tested during audit period: 1=Yes, 2=No
79	CA	CREATVALUE	Serum creatine value in mg/dl (to single decimal)
80	CB	EGFR	Estimated GFR documented in medical record: 1=Yes, 2=No
81	CC	EGFRVALUE	Estimated GFR value, (to single decimal)
82	CD	CHOLDONE	Total cholesterol tested during audit period: 1=Yes, 2=No
83	CE	CHOLVALUE	Total cholesterol value
84	CF	HDLDONE	HDL cholesterol tested during audit period: 1=Yes, 2=No
85	CG	HDLVALUE	HDL cholesterol value

Column Number	Excel Column	Variable Name	Description
86	CH	LDLDONE	LDL cholesterol tested during audit period: 1=Yes, 2=No
87	CI	LDLVALUE	LDL cholesterol value
88	CJ	TRIGDONE	Triglycerides tested during audit period: 1=Yes, 2=No
89	CK	TRIGVALUE	Triglyceride value
90	CL	UPTESTDONE	Urine tested for protein during audit period: 1=Yes, 2=No, 3=Refused
91	CM	UPTESTTYP2	Urine test type: 1=UACR, 2=UPCR, 3=24 hour protein, 4=Microalb:creat strips, 5=Microalbumin only, 6=UA dipstick
92	CN	UPACRVAL	Urine albumin:creatinine ratio value in milligrams per gram (mg/g)
93	CO	UPPCRVAL	Urine protein:creatinine ratio value in grams per gram (g/g)
94	CP	UP24HRVAL	Urine 24 hour collection for protein in milligrams per 24 hours (mg/day)
95	CQ	UPMACCAT	Urine albumin:creatinine strips (e.g., Clinitek): 1= <30 mg/g, 2=30 300 mg/g, 3= greater than (>) 300 mg/g
96	CR	UPMACAT	Urine microalbumin only (e.g., Micral): 1= <20 mg/L, 2= >=20 mg/L
97	CS	UPUADIPCAT	Standard urine dipstick for protein: 1=Normal or Trace, 2=Abnormal (1 or more)
98	CT	LOCAL	Local option question result (single digit, 0-9)
99	CU	LOCALEXT	Extended local option question, 30 char free text
100	CV	SOURCESYS	Data source: "RPMS", "NEXTGEN", "EPI INFO", etc.

Contact Information

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

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