RESOURCE AND PATIENT MANAGEMENT SYSTEM

Diabetes Management System

(BDM)

Addendum to User Manual

Version 2.0 Patch 11
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Office of Information Technology
Division of Information Technology

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Preface

The purpose of this document is to provide users with an overview of changes to the Diabetes Management System (DMS) introduced in Patch 11. In addition, instructions are provided for using DMS to conduct a 2018 Diabetes Audit, which is included in this patch.

Note:	Resource and Patient Management System (RPMS) software, including the DMS, is subject to periodic updates based on the Indian Health Service (IHS) Standards of Care and Clinical Practice Recommendations for Type 2 Diabetes Mellitus (DM): https://www.ihs.gov/diabetes/clinician-resources/soc/.

1.0 Introduction

1.1 DMS Changes

DMS v2.0 p11 includes several changes and additions, including tools for conducting the 2018 Diabetes Audit. A summary of the changes follows:

- New menu options have been added for the 2018 Diabetes Audit (Figure 1-1)**.**

```
                  ***************************************
                   **     DIABETES MANAGEMENT SYSTEM     **
                   **   2018 Diabetes Audit Report Menu  **
                   ***************************************
                            Version 2.0 (Patch 11)

                                DEMO HOSPITAL


   DM18   Run 2018 Diabetes Program Audit
   TC18   Check Taxonomies for the 2018 DM Audit
   TU18   Update/Review Taxonomies for 2018 DM Audit
   VTAX   View/Print Any DM Audit Taxonomy
   EAUD   Run the 2018 Audit w/predefined set of Pts
   VSML   View a SNOMED List Used by the DM AUDIT
          ---------------------------------------
   PR18   Run 2018 PreDiabetes/Metabolic Syndrome Audit
   PRTC   Check Taxonomies for the 2018 Pre-Diabetes Audit
   PRTU   Update/Review Taxonomies for 2018 PreDiab Audit
```

Figure 1-1: 2018 Diabetes Audit

- New data elements have been added for capturing:
  - Hepatitis C diagnosis ever
  - Screening ever for Hepatitis C if the patient is born between 1945 and 1965
  - Retinopathy diagnosis ever

  The logic used in determining these new items can be found in the complete Audit Logic listing in Appendix A.

- Individual Audit Form/Audit Logic
  - Items on the individual audit form have been reordered to accommodate the new data elements and some labels changed for clarity.
  - Under Diabetes Therapy, “Diet & Exercise Alone” has been replaced with “None of the following.”
  - CPT codes 2019F and 2020F have been removed from the Eye Exam definition.
  - CPT codes S3000 and 67038 have been added to the Eye Exam definition.

  - ICD procedure codes 08J0XZZ and 08J1XZZ have been removed from the Eye Exam definition.
  - Education code DEP-SCR has been removed from the Depression Screening definition (this was an inactive education topic code).
  - The Clinical Reporting System (CRS) Taxonomy BGP MOOD DISORDERS is now used to determine if the patient has a diagnosis of depression. The replaces the DM AUDIT DEPRESSION DIAGNOSIS taxonomy and aligns the DM Audit with CRS.
  - CPTcodes 1220F, 3725F and G0444 have been added to the Depression Screening logic.
  - The dental exam logic has been updated to use the CRS taxonomy BGP DENTAL VISIT CPT CODES.
  - The SNOMED list PXRM DIABETES is now used when checking for diabetes on the problem list.
  - The SNOMED list PXRM ESSENTIAL HYPERTENSION is now used when checking for hypertension on the problem list.
  - When looking for medications (Diabetes Therapy, ACE Inhibitor, Statin and Aspirin), logic has been added to look for EHR outside medications. These are medications the patient is taking that are prescribed outside your facility. These medications are considered active until a date discontinued is added through the EHR **Outside Medications** component.
  - When searching for a prescription for aspirin/anti-platelet the system will only look back six months to be in line with all other medication searches.
- Cumulative Audit Report
  - A new section on Hepatitis C diagnosis and screening has been added.
  - A new section on Retinopathy has been added.
  - Tallies have been added to the Blood Sugar Control section for A1c<8.0 and A1c >9.0.
  - The tally for six co-morbid conditions has been removed.
  - The LDL categories have been changed to <100, 100-189, and >=190.
  - The Triglyceride categories have been changed to <150, 150-499, 500-999, and >=1000.
- Audit Export file
  - Hepatitis C diagnosis, Hepatitis C screening, and Retinopathy diagnosis have been added to the export file.
  - Items have been reordered to accommodate the above new items.
- Diabetes Patient Care Supplement (DPCS)
  - Hepatitis C Diagnosis, Hepatitis C screening, and Retinopathy diagnosis have been added to the DPCS.

- Other DMS Application Changes
  - Hepatitis C screening has been added to the Follow Up report for patients born between 1945–1965.
- New DATA QUALITY CHECK Report
  - This new report can be run from the **DM18 - Run 2018 Diabetes Audit** menu option in DMS or from the Visual DMS system. This report will list potential errors in the data extracted for your audit and should be run prior to uploading your 2018 Audit file into the WebAudit. Using this report, you can review the potential errors and correct the data as needed for any true errors. The list of errors that are checked for can be found in Appendix C.

1.2 Visual DMS Changes

- 2018 Diabetes Audit options have been added.
- The page-length issue in report outputs has been fixed.
- The Data Quality Check Report has been added.
- The Hepatitis C Screening has been added to the Follow Up report.

2.0 Prepare for the Audit

There are two important prerequisites when preparing for an electronic Diabetes Audit in RPMS:

- Ensure that patients to be audited are actively receiving care at the healthcare facility.
- Review and update taxonomies of medications and laboratory tests as needed.

2.1 Guidelines for Selecting Patients

The IHS Division of Diabetes Treatment and Prevention (Division of Diabetes) has provided the following guidelines for selecting patients for the 2018 Annual Diabetes Audit.

Include Patients who:

- Have a diagnosis of Type 1 or Type 2 diabetes.
- Are American Indian or Alaska Native.
- Have at least one visit to a primary care clinic during the audit period. Primary care clinics include:
  - General (01)
  - Diabetic (06)
  - Internal Medicine (13)
  - Pediatric (20)
  - Family Practice (28)
  - Chronic Disease (50)
  - Endocrinology (69)
- Exclude Patients who:
  - Received most of their primary care outside your facility during the audit period.
  - Are currently on dialysis *and* received most of their primary care at the dialysis unit during the audit period.
  - Have died before the end of the audit period.
  - Are women who were pregnant during any part of the audit period.
  - Have pre-diabetes (impaired fasting glucose [IFG] or impaired glucose tolerance [IGT] only).
  - Have moved – permanently or temporarily (should be documented).

Unless the diabetes register is updated frequently, some of the patients identified as being in an Active status might not qualify to be included in the Annual Audit. Identify those patients and exclude them from the Annual Audit. The "INA List Possible Inactive Pts in the DM Register" report is available to assist with this process. Directions on how to run this report are in Section 2.2.2.

2.2 Use the Diabetes Register for the 2018 Diabetes Audit

The Diabetes Register may be used for the 2018 Audit by excluding patients who do not meet the audit criteria. Alternatively, a subset of the Diabetes register may be used, including only those patients who meet the audit criteria.

To help identify patients in the Diabetes Register who should not be included in for the audit, there are several reports available:

- Section 2.2.1 shows how to find patients in the Register who have a Register Diagnosis of IGT or Gestational Diabetes Mellitus (GDM).
- Section 2.2.2 shows how to use the report, "INA List Possible Inactive Pts in the DM Register," to show patients with a status of Active who have not had a primary care visit during the audit period and therefore do not meet the audit criteria.
- Section 2.2.3 shows how to change the status of a patient on the Register. When patients who do not meet the definition of active with a diagnosis of Type 1 or Type 2 diabetes have been identified, their status can be changed by using the **Edit Register Data** option under **Patient Management** in the DMS. Either the traditional RPMS Patient Management option or the Patient Management in Visual DMS can be used.

Note:	For the 2018 Annual Audit, the IHS Division of Diabetes requires review of the care provided during the calendar year ending December 31, 2017. Reports identifying patients with an active status should be run for the time period between 1/1/2017 and 12/31/2017.

2.2.1 Identify 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 diabetes. Separate registries should be set up for patients with GDM and IGT.

The QMan search shown in Figure 2-1 will retrieve a list of patients in the register who have been given a Register Diagnosis. In this dialogue, a search is made for patients on the register with a Register Diagnosis of GDM. The same process can be used to find patients on the Register who have a Register Diagnosis of 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>

Select the Diabetes Register Diagnosis for this report

  Select one of the following:
1      Type 1
2      Type 2
3      Type 1 & Type2
4      Gestational DM
5      Impaired Glucose Tolerance
6      All Diagnoses

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

Figure 2-1: QMan search to identify patients with Register Diagnosis of GDM

Figure 2-2 shows the QMan output options and list of patients.

```
                 ***** 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
------------------------------------------------------------------------

PATIENT,DEMO I* 29693
Total: 1
```

Figure 2-2: QMan search results

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

2.2.2 Identify Possible Inactive Patients in the IHS Diabetes Register

The report, "INA List Possible Inactive Pts in the DM Register," **(**Figure 2-4**)** can be especially useful at sites that have large numbers of patients whose Register status might not be accurate.

```
The report is contained in the RP Reports menu of the Diabetes Management System.

Begin by selecting RP  Reports . . .

Type INA to initiate the report for Possible Inactive Patients

Enter the name of the Register that is to be reviewed for inactive patients.

Select A for patients on the Register with a Register status of ACTIVE.

At the Clinic prompt, type [BGP PRIMARY CARE CLINICS]
This taxonomy contains the primary care clinics used by official GPRA reports. You
may use just these six primary care clinics, or you may add additional clinics such
as ENDOCRINOLOGY.

Enter the beginning and ending dates for searching for a visit to one or more of
these primary care clinics. Note that the 2018 Annual Audit is for the time frame
between January 1, 2018 and December 31, 2018. To be considered to be an active
patient, there should be at least one documented visit to a primary care clinic
during that time frame.

Choose the option to Browse the list. Note the number of pages in the report in the
upper right hand corner of the screen.
```

Figure 2-3: Report option details

- The report may be printed by typing **PL** at the "Select Action" prompt.
- When prompted for DEVICE: enter the printer name or number where the report should be printed.

The sequence to generate this report follows:

```
RP Reports . . .

Select Reports Option: INA  List Possible Inactive Pts in the DM Register

                                  DEMO HOSPITAL
                                DEMO,DOROTHY

This report will list patients who are on the diabetes register who have not
had a visit to a set of primary care clinics in a date range defined by the
user.
The report provides a way to identify patients who could possibly be inactivated
in the register.

Enter the Name of the Register:    IHS DIABETES REGISTER
```

```
Select the Patient Status for this report

     Select one of the following:

          A         ACTIVE
          I         INACTIVE
          T         TRANSIENT
          U         UNREVIEWED
          D         DECEASED
          N         NON-IHS
          L         LOST TO FOLLOW-UP
          NON       NONCOMPLIANT

          0         All Register Patients

Which Status: A// CTIVE

Enter the list of clinics that you have determined to be primary care clinics.
You can enter them 1 at a time or enter a taxonomy using the '[' notation.

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: ENDOCRINOLOGY       69
Enter ANOTHER CLINIC:

The following have been selected =>

     GENERAL
     DIABETIC
     INTERNAL MEDICINE
     PEDIATRIC
     WELL CHILD
     FAMILY PRACTICE
     ENDOCRINOLOGY

Want to save this CLINIC group for future use? No//   (No)

Enter the time frame to look for visits.

Enter Beginning Visit Date:  1/1/17  (JAN 01, 2017)
Enter Ending Visit Date:  T  (OCT 13, 2017)

     Select one of the following:

          P         PRINT the List
          B         BROWSE the List on the Screen

Output Type: P// BROWSE the List on the Screen

     Select one of the following:

          I         Include ALL Patients
```

```
          E         Exclude DEMO Patients
          O         Include ONLY DEMO Patients

Demo Patient Inclusion/Exclusion: E// xclude DEMO Patients

OUTPUT BROWSER              Oct 13, 2017   12:25:21        Page:    1 of   48

             ********** CONFIDENTIAL PATIENT INFORMATION **********
DR                                                                    Page 1
                                DEMO HOSPITAL
              Patients on the IHS DIABETES REGISTER Register
             without a visit between Jan 01, 2017 and Oct 13, 2017

PATIENT NAME          HRN    STATUS   CASE       LAST VISIT  # DM   LAST DM DX
                                      MANAGER                DXS
------------------------------------------------------------------------------
DEMO,MARIE            999490 ACTIVE              03/22/2013    158  02/22/2013
DEMOA,CHANTEL         999991 ACTIVE              05/17/2005     18  02/08/2005
DEMOB,LAYLA GABRIELL  999992 ACTIVE              08/09/2010      4  08/09/2010
DEMOC,PHYLLIS N       999993 ACTIVE              04/10/2013    124  04/10/2013
DEMOD,CARLA           999994 ACTIVE              11/05/2004      0
DEMOF,ILLYANA         999995 ACTIVE              10/29/1993      1  10/27/1993
+         Enter ?? for more actions                          >>>
+    NEXT SCREEN          -    PREVIOUS SCREEN      Q    QUIT
Select Action: +//PL

DEVICE
```

Figure 2-4: INA List Possible Inactive Pts in the DM Register report

2.2.3 Update Patient Register Status

Patient Register Status may be updated using menu selection 1 under **Patient Management**, to **Edit Register Data**, or in Visual DMS, using the **Patient Profile** option under **Patient Management**.

2.2.3.1 Edit Register Data in DMS:

Use the following steps to edit Register Data in DMS:

1. Open the **Patient Management** menu of DMS (Figure 2-6).

```
Register Data                Nov 18, 2017 09:06:49        Page:   of 1
       PATIENT: DEMO,PATIENT Q                              AGE: 73
       ADDRESS: 50 OAK STREET,ADAIR,OK,74330                DOB: 02/03/1940
         PHONE: 555-555-5555                                HRN: 100000
PRIM CARE PROV: STUDENT,FOURTEEN                            RES: ADAIR
        STATUS: ACTIVE
WHERE FOLLOWED:
 REGISTER PROV:                        CASE MGR:
       CONTACT: Woman's shelter 567-5555
    ENTRY DATE: JUL 12,2011                        LAST EDITED: FEB 18,2017
     DIAGNOSIS: 2                               ONSET DATE: MAR 1,1999
COMPLICATIONS: CARDIOVASCULAR DISEASE              ONSET DATE: DEC 14,2002

          - 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          19 Local Option Entry
4  Health Summary         11 Flow Sheet            20 Diagnosis
5  Last Visit             12 Case Summary          21 Print Letter
6  Other PCC Visit        13 Edit Problem List
7  Medications            14 Lab Profile
Select Action: Quit// 1
```

Figure 2-5: Select Edit Register Data (1)

2. At the “Select Action” prompt, type **1** and press Enter.

```
Register Data               Feb 18, 2017   09:06:49        Page:    1 of    1

       PATIENT: DEMO,DAISY                                  AGE: 55
       ADDRESS: 50 OAK STREET,ADAIR,OK,74330                DOB: 11/11/1957
         PHONE: 555-555-5555                                HRN: 100002
        STATUS: UNREVIEWED                                  RES: 3681
       CASE MANAGER:
 REGISTER PROV:
WHERE FOLLOWED:
       CONTACT: Woman's shelter 567-5555
    ENTRY DATE: JUL 12,2011                  LAST EDITED: FEB 18,2014
   LAST REVIEW: JUL 12,2011                  NEXT REVIEW: OCT 12,2011

DM AUDIT LOCAL OPTION CODE:
DM AUDIT LOCAL OPTION TEXT:

_____________________________________________________________________________
Exit     Save     Refresh

Enter a command or '^' followed by a caption to jump to a specific field.

COMMAND: S to save followed by E to exit     Press <PF1>H for help   Insert
```

Figure 2-6: Register Data

3. Move the cursor to the **Status** field and type the new status value over the old one.
4. Press the down arrow key to move the cursor to the “Command” prompt.
5. Type **Save** and press Enter.
6. To record the status update, type **Exit** at the “Command” prompt and press Enter. The window will close.

2.2.3.2 Edit Register Status in Visual DMS

Use the following steps to edit the Register Status in Visual DMS:

1. Select the desired Patient.
2. Open the **Patient Management** menu. (Figure 2-7)

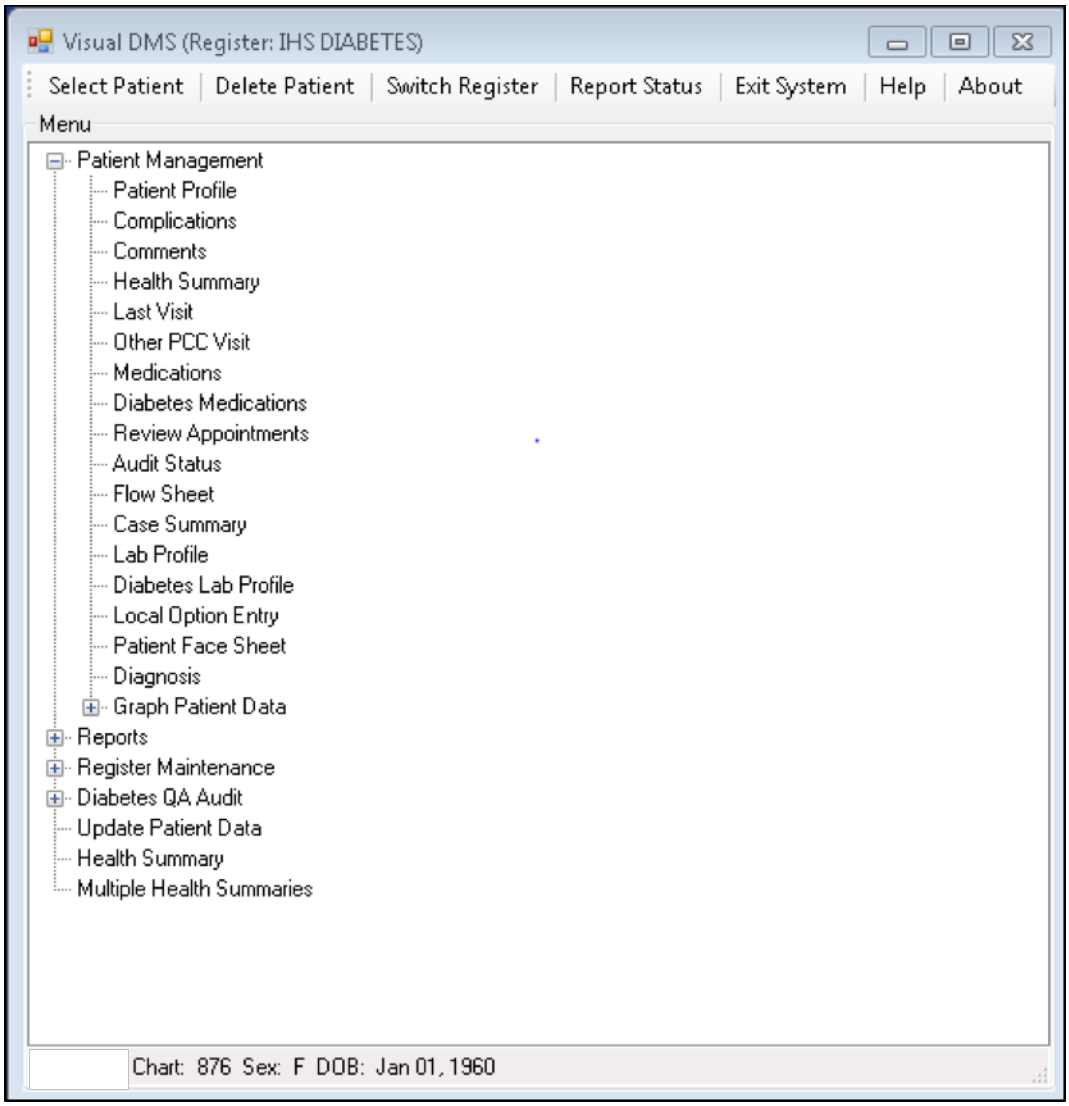

Figure 2-7: Selecting patient profile from the **Patient Management** menu

3. Click **Patient Profile**. The **Patient Profile** dialog (Figure 2-8) displays.

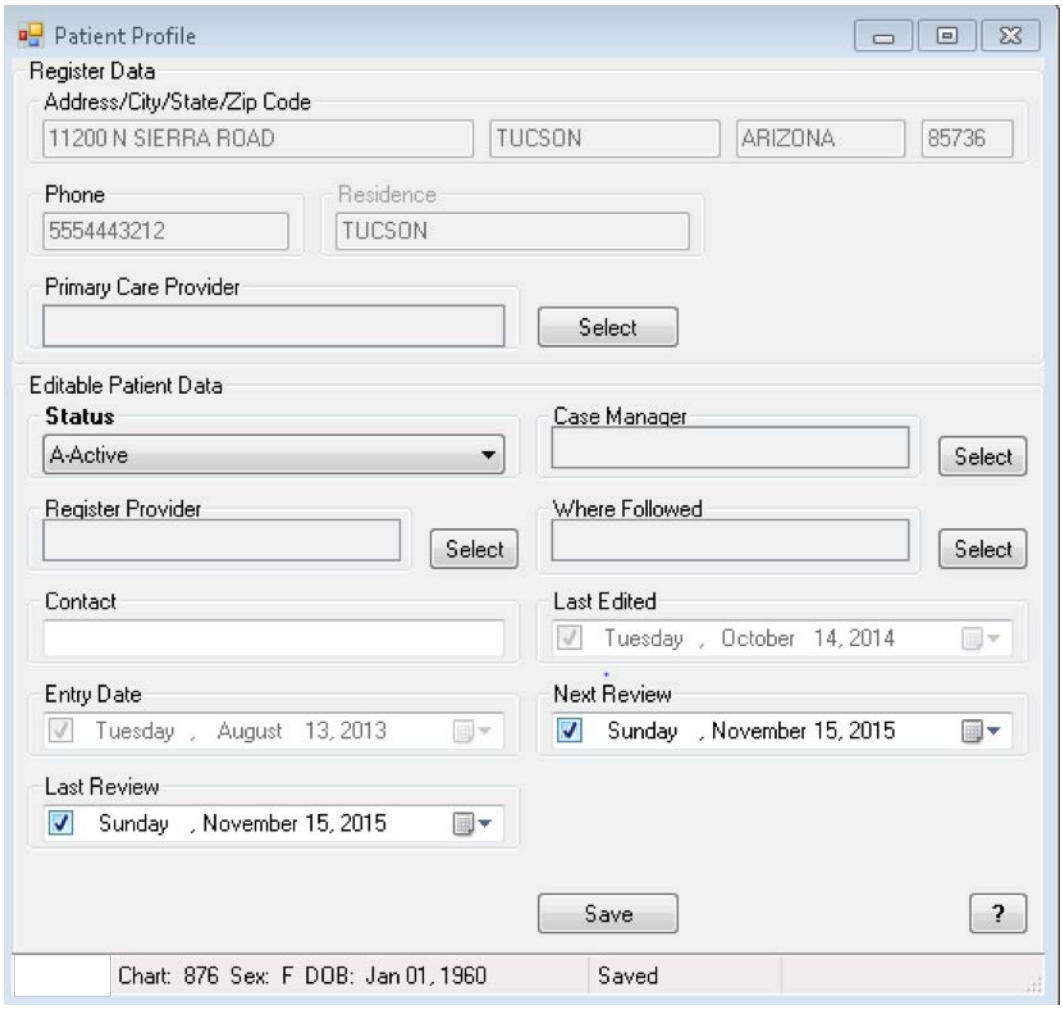

Figure 2-8: **Patient Profile** dialog

4. To change the Register Status, select the new status from the **Status** list.

   - **A-Active** patients who receive their primary healthcare at a facility and who have had care at that 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 and 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 documented if a date of death is recorded in the patient registration file. 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 diabetes 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.
- **NON-Noncompliant** patients with repeated documented refusals of recommended services.

> **Note**: There are no official definitions of Register Status, although recommendations for classifying Register patients can be provided by Area Diabetes Consultants or their staff. The definitions that are listed can be used as a guideline in the absence of Area-defined criteria.

5. Click **Save**.
6. Close the dialog**.**

2.3 Create a Template of Patients for the 2018 Diabetes Audit

If the IHS Diabetes Register is not current or has not been routinely used for management of patients with diabetes, it might be advantageous to use a QMan search to identify patients with diabetes who have had a visit to a primary care clinic during the audit period. The template created from this query can be used for the 2018 Annual Diabetes Audit.

Users can run the QMan search using either the general patient population (see Section 2.3.1) or the Diabetes Register (see Section 2.2.2). In either case, if clients with diabetes who are not American Indian or Alaska Native are seen at the clinic or included in the Register, another Attribute called Classification should be used. The Classification for Indian/Alaska Native patients is 01.

2.3.1 Create a Template using the General Population

The QMan search in the sequence that follows shows the creation of a template looking for patients with at least one diagnosis of diabetes during the audit period and who have had at least one visit to a primary care clinic during the audit period (Figure 2-9).

```
                    *****  SEARCH CRITERIA  *****

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

```
Include list of upcoming appts for the patient? NO//

   Subject of search: PATIENTS
      ALIVE TODAY

Attribute of LIVING PATIENTS: VISIT

SUBQUERY: Analysis of multiple VISITS

First condition of "VISIT": CLINIC              VISIT ATTRIBUTES

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: ENDOCRINOLOGY

The following have been selected =>

     GENERAL
     DIABETIC
     INTERNAL MEDICINE
     PEDIATRIC
     WELL CHILD
     FAMILY PRACTICE
     ENDOCRINOLOGY

Want to save this CLINIC group for future use? No//   (No)

Next condition of "VISIT": DURING THE PERIOD              VISIT ATTRIBUTES

Exact starting date: 1/1/17  (JAN 01, 2017)
Exact ending date: 12/31/17  (DEC 31, 2017)

         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59

Next condition of "VISIT":

Computing Search Efficiency Rating....

   Subject of search: PATIENTS
      ALIVE TODAY
         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2017 and DEC 31,2018@23:59:59

Attribute of LIVING PATIENTS: DX              DIAGNOSES

Enter DX: [SURVEILLANCE DIABETES
```

Note: Use the taxonomy SURVEILLANCE DIABETES, as it will have all diabetes diagnosis codes, including ICD-9 and ICD-10.

```
250.00 - 250.93
E10.10
E10.11
E10.21
E10.22
E10.29
E10.311
E10.319
E10.321
E10.329
E10.331
E10.339
E10.341
E10.349
E10.351
E10.359
E10.36
E10.39
E10.40
E10.41
<>E10.42
```

Note: The symbols <> denote a page break. Press Enter to continue listing codes each time <> is displayed.

```
E10.43
E10.44
E10.49
E10.51
E10.52
E10.59
E10.610
E10.618
E10.620
E10.621
E10.622
E10.628
E10.630
E10.638
E10.641
E10.649
E10.65
E10.69
E10.8
(THIS FULL LIST OF CODES WILL DISPLAY)

Enter ANOTHER DX: No or <ENTER>

Want to save this DX group for future use? No//   (No)

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD
Exact starting date: 1/1/17  (JAN 01, 2017)
```

```
Exact ending date: 12/31/17  (DEC 31, 2017)

Next condition of "DIAGNOSIS":
Computing Search Efficiency Rating.....................................

   Subject of search: PATIENTS
      ALIVE TODAY
         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59
      DIAGNOSIS (250.01/250.11...)
         Subject of subquery: DIAGNOSIS
          BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59

Attribute of LIVING PATIENTS:

                     *****  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// 4  STORE results of a search in a FM search template

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

Enter the name of the SEARCH TEMPLATE: DM AUDIT 2018
  Are you adding 'DM AUDIT 2018' as a new SORT TEMPLATE? No// Y  (Yes)
DESCRIPTION:
  No existing text
  Edit? NO//

Next, you will be asked about creating your template in background...

Answer 'YES' to run in background.

To run in background means to pass the template creation job off to Taskman. Your
terminal will be released so additional RPMS work may be performed while the
template is being created. When finished, Taskman will send you a Mailman message
indicating that the job is ready. Then, you may use the template in future Qman
searches, PGEN, VGEN and other reports that can utilize templates.

Answer 'NO', to create the search template in foreground.

While the template is being created, data will be displayed to your screen.
When the job has finished, you will have the opportunity to go to PGEN or VGEN.
Remember ... some templates may take a very long time to finish.

Press ENTER to continue or '^' to quit:

Want to run this task in background? No//   (No)
```

```
...HMMM, JUST A MOMENT PLEASE...

PATIENTS         DEMO H   ICD CODE  VISIT
(Alive)          NUMBER #
------------------------------------------------------------------------

DEMOG,ABE        999996 +         +
DEMOH,MICKEY*    999997 +         +
DEMOJ,JANE*      999998 +         +
DEMOK,AMY  *     999999 +         +
DEMOM,SHANE      999910 +         +
DEMO,JESSICA*    999911 +         +
DEMOO,ALEXANDRI  999912 +         +
DEMOPAT,RHIANNON 999913 +         +
TEST,AMY         999914 +         +
```

Figure 2-9: Audit Template

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

2.3.2 Create a Template of Register Patients for the Audit

If a Diabetes Register exists but Register diagnoses and patient status have not been maintained, it might be easier to create a template of patients on the register who have had at least one visit to a primary clinic during the audit year with a diagnosis of diabetes. The QMan search demonstrating how to create that template is shown in the following sequences (Figure 2-10).

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

Which CMS REGISTER:    IHS DIABETES

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// 8

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// 6  All Diagnoses.....................

There are 74 register patients for the combination selected.

Attribute of IHS DIABETES REGISTER: ALIVE
Alive at least until exactly what date: TODAY//12/31/17  (DEC 31, 2017)
Computing Search Efficiency Rating.....................................

   Subject of search: PATIENTS
      MEMBER OF 'IHS DIABETES REGISTER-4104' COHORT
      ALIVE AS OF DEC 31,2017

Attribute of IHS DIABETES REGISTER: VISIT

SUBQUERY: Analysis of multiple VISITS

First condition of "VISIT": CLINIC              VISIT ATTRIBUTES

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

Members of   Taxonomy =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
CHRONIC DISEASE
FAMILY PRACTICE
ENDOCRINOLOGY

Enter ANOTHER CLINIC:

The following have been selected =>

     GENERAL
     DIABETIC
     INTERNAL MEDICINE
     PEDIATRIC
     CHRONIC DISEASE
     FAMILY PRACTICE
     ENDOCRINOLOGY

Want to save this CLINIC group for future use? No//   (No)

Next condition of "VISIT": DURING THE PERIOD              VISIT ATTRIBUTES

Exact starting date: 1/1/2017  (JAN 01, 2017
Exact ending date: 12/31/2017  (DEC 31, 2017)

         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59

Next condition of "VISIT":

Attribute of LIVING PATIENTS: DX              DIAGNOSES
```

```
Enter DX: [SURVEILLANCE DIABETES
250.00 - 250.93
E10.10
E10.11
E10.21
```

Note: The SURVEILLANCE DIABETES taxonomy contains all of the ICD-9 and ICD-10 codes pertaining to Diabetes. Not all of the ICD-10 codes are listed in this illustration, as there are numerous pages of them.

```
<>E10.42
```

Note: The symbols <> denote a page break. Press Enter to continue listing codes each time <> is displayed.

```
Enter ANOTHER DX: No or <ENTER>

Want to save this DX group for future use? No//   (No)

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD

Exact starting date: 1/1/17  (JAN 01, 2017)
Exact ending date: 12/31/17  (DEC 31, 2017)

Next condition of "DIAGNOSIS":

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

   Subject of search: PATIENTS
      ALIVE TODAY
         Subject of subquery: VISIT
         CLINIC (GENERAL/DIABETIC...)
         BETWEEN BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59
      DIAGNOSIS (250.01/250.11...)
         Subject of subquery: DIAGNOSIS
          BETWEEN JAN 1,2017 and DEC 31,2017@23:59:59

Attribute of LIVING PATIENTS:

                    *****  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// 4  STORE results of a search in a FM search template

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

Enter the name of the SEARCH TEMPLATE: DM AUDIT 2018
  Are you adding 'DM AUDIT 2018' as a new SORT TEMPLATE? No// Y  (Yes)
DESCRIPTION:
  No existing text
  Edit? NO//

Next, you will be asked about creating your template in background...

Answer 'YES' to run in background.

To run in background means to pass the template creation job off to Taskman. Your
terminal will be released so additional RPMS work may be performed while the
template is being created. When finished, Taskman will send you a Mailman message
indicating that the job is ready. Then, you may use the template in future Qman
searches, PGEN, VGEN and other reports that can utilize templates.

Answer 'NO', to create the search template in foreground.

While the template is being created, data will be displayed to your screen.
When the job has finished, you will have the opportunity to go to PGEN or VGEN.
Remember ... some templates may take a very long time to finish.

Press ENTER to continue or '^' to quit:

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

...HMMM, JUST A MOMENT PLEASE...

PATIENTS         2103 D ICD CODE  VISIT
(Alive)          NUMBER #
---------------------------------------------------------------------------

DEMOQ,NKITA     100006 +         +
DEMOR,ARON*     100007 +         +
DEMOS,MARIE*    100008 +         +
DEMOT,ADRIANN*  100009 +         +
DEMOU,SHANTELI  100010 +         +
DEMOV,JESSICA*  100011 +         +
DEMOW,ALEXANDRI 100012 +         +
DEMOX,RHIANNON  100014 +         +
```

Figure 2-10: QMan search demonstrating how to create a template of patients for the audit

2.3.3 Report for Patients with Diabetes who are not on the Register

The Diabetes Management System provides a report for idenfying patients who have one or more diagnoses of diabetes but are not currently on the Register. It may be useful to run this report before conducting an audit to see if patients should be added to the Register.

Note that this report does not exclude non-Indian patients. Directions for running this report are shown in the following sequence. A sample report is shown in Figure 2-16.

1. At the **Diabetes Management System** menu, type **RP** and press Enter.
2. Select DXNR Patients with DM Diagnosis and not on Register (Figure 2-11).
3. At the "Enter the Name of the Register" prompt, type some portion of the register name and press Enter (Figure 2-11).
4. At the "Choose" prompt, type the number corresponding to the register name and press Enter (Figure 2-11).

```
DXNR Patients with DM Diagnosis and not on Register.

This report will list patients who are not on the diabetes register
but who have had a visit with a diagnosis of diabetes in a date range
specified by the user.

Enter the Name of the Register: PARKER
     1   PARKER DIABETES REGISTER
     2   PARKER DIALYSIS PATIENTS
CHOOSE 1-2: 1  PARKER DIABETES REGISTER
```

Figure 2-11: DXNR Patients with DM Diagnosis and not on Register

5. At the "Enter Beginning Visit Date" prompt, type the beginning date and press Enter (Figure 2-12).
6. At the "Enter Ending Visit Date" prompt, type the ending date and press Enter (Figure 2-12).

```
Enter the time frame to look for visits with a diabetes diagnosis.

Enter Beginning Visit Date:  1/1/17  (JAN 01, 2017)
Enter Ending Visit Date:  12/31/17  (DEC 31, 2017)
```

Figure 2-12: Enter the time frame to look for visits with a diabetes diagnosis

7. At the "How many diagnoses must the patient have had in that time period" prompt, type the answer as a number and press Enter (Figure 2-13).

```
How many diagnoses must the patient have had in that time period:  (1-99): 3//
```

Figure 2-13: Type number of diagnoses the patient must have in the selected time period

8. At the "Output Type" prompt, do one of the following (Figure 2-14):
   - Type **P** and press Enter to print the list.
   - Type **B** and press Enter to browse the list on the screen.

```
     Select one of the following:
```

```
          P         PRINT the List
          B         BROWSE the List on the Screen

Output Type: P// BROWSE the List on the Screen
```

Figure 2-14: Enter the output type

9. At the "Demo Patient Inclusion/Exclusion" prompt, do one of the following (Figure 2-15):

   a. Type **I** and press Enter to include all patients.

   b. Type **E** and press Enter to exclude demo patients.

   c. Type **O** and press Enter to include only demo patients.

```
     Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// xclude DEMO Patients
```

Figure 2-15: Prompt to include or exclude demo patients

The report (Figure 2-16) is printed or displayed:

```
OUTPUT BROWSER                Nov 17, 2017 12:00:26          Page:    1 of   26

             ********** CONFIDENTIAL PATIENT INFORMATION **********
DR                                                                    Page 1
                                  DEMO HOSPITAL
             Patients NOT on the PARKER DIABETES REGISTER Register
             with at least 3 visits with a DX of Diabetes between
                         Jan 01, 2017 and Dec 31, 2017

PATIENT NAME          HRN    DOB        COMMUNITY    LAST VISIT # DM  LAST DM
                                                                DXS   DX
------------------------------------------------------------------------------
DEMO,RACHEL PATIENT   100018 03/28/1941 LAKE HAVSU   03/20/17      3  03/20/17
DEMOPATIENT,NEOMI     888885 03/15/1955 KINGMAN      03/22/17      3  03/22/17
PATIENTDEMO,CARLEE    122222 11/12/1993 PARKER       04/03/17      3  02/27/17
DEMO-CARTER,PATIENT A 144444 05/25/1977 PARKER       03/27/17      4  03/19/17
+         Enter ?? for more actions                                        >>>
+    NEXT SCREEN          -    PREVIOUS SCREEN      Q    QUIT
Select Action: +//
```

Figure 2-16: Report of patients not on the Diabetes register that have a diabetes diagnosis

2.4 Update Taxonomies

The taxonomies listed in Figure 2-17 are referenced in the 2018 RPMS Diabetes Audit. You will notice in the list below that several of the taxonomies begin with BGP rather than DM AUDIT. These taxonomies, as well as several of the DM AUDIT taxonomies, are shared between the Government Performance and Results Act (GPRA) program and the DMS. It is imperative that staff work together to review and update these taxonomies.

Even though taxonomies might have been updated for the 2017 Annual Audit, they must be reviewed and updated again before running the 2018 Annual Audit. This is due to potentially new medications being added to the pharmacy formulary or new lab tests offered. You may note that although taxonomies exist for DM AUDIT DIET EDUC TOPICS, DM AUDIT EXERCISE EDUC TOPICS, and DM AUDIT OTHER EDUC TOPICS, review of these is not required unless your facility uses locally defined topics. DMS logic for determining whether education has been administered includes review of SNOMED terminology, diagnosis codes, and education topics with prefixes of MNT or DNCN or suffixes of -MNT, -DT, or -N.

```
TAXONOMIES TO SUPPORT 2018 DIABETES AUDIT REPORTING
+---------------------------------------------------------------------------
1)  BGP CMS SMOKING CESSATION MEDS   DRUG
2)  BGP CREATINE KINASE TAX          LABORATORY TEST
3)  BGP GPRA ESTIMATED GFR TAX       LABORATORY TEST
4)  BGP PQA STATIN MEDS              DRUG
5)  DM AUDIT ACARBOSE DRUGS          DRUG
6)  DM AUDIT ACE INHIBITORS          DRUG
7)  DM AUDIT ALT TAX                 LABORATORY TEST
8)  DM AUDIT AMYLIN ANALOGUES        DRUG
9)  DM AUDIT ANTIPLT/ANTICOAG RX     DRUG
10)  DM AUDIT ASPIRIN DRUGS          DRUG
11)  DM AUDIT AST TAX                LABORATORY TEST
12)  DM AUDIT BROMOCRIPTINE DRUGS    DRUG
13)  DM AUDIT CESSATION HLTH FACTOR  HEALTH FACTORS
14)  DM AUDIT CHOLESTEROL TAX        LABORATORY TEST
15)  DM AUDIT COLESEVELAM DRUGS      DRUG
16)  DM AUDIT CREATININE TAX         LABORATORY TEST
17)  DM AUDIT DIET EDUC TOPICS       EDUCATION TOPICS
18)  DM AUDIT DPP4 INHIBITOR DRUGS   DRUG
19)  DM AUDIT EXERCISE EDUC TOPICS   EDUCATION TOPICS
20)  DM AUDIT GLITAZONE DRUGS        DRUG
21)  DM AUDIT GLP-1 ANALOG DRUGS     DRUG
22)  DM AUDIT HDL TAX                LABORATORY TEST
23)  DM AUDIT HGB A1C TAX            LABORATORY TEST
24)  DM AUDIT INCRETIN MIMETIC       DRUG
25)  DM AUDIT INSULIN DRUGS          DRUG
26)  DM AUDIT LDL CHOLESTEROL TAX    LABORATORY TEST
27)  DM AUDIT METFORMIN DRUGS        DRUG
28)  DM AUDIT MICROALBUMINURIA TAX   LABORATORY TEST
29)  DM AUDIT OTHER EDUC TOPICS      EDUCATION TOPICS
30)  DM AUDIT QUANT UACR             LABORATORY TEST
31)  DM AUDIT SGLT-2 INHIBITOR DRUG  DRUG
32)  DM AUDIT STATIN DRUGS           DRUG
33)  DM AUDIT SULFONYLUREA DRUGS     DRUG
34)  DM AUDIT SULFONYLUREA-LIKE      DRUG
```

```
35)  DM AUDIT TB LAB TESTS           LABORATORY TEST
36)  DM AUDIT TRIGLYCERIDE TAX       LABORATORY TEST
```

Figure 2-17: Audit 2018 user-populated taxonomies

The taxonomies can be reviewed and updated with the TU18 option under the **DM18** menu of the Diabetes Audit or the corresponding Visual DMS **Update Taxonomy** option.

When updating lab test taxonomies, attempting to add a test panel to a laboratory test taxonomy that should only include individual tests results in the display of a warning. This warning is displayed because the audit logic cannot correctly display hemoglobin A1C, lipid breakdown, or estimated GFR according to value categories if panels are included in the taxonomy. Panel tests have no values associated with them; only the tests within the panels have values.

Some taxonomies might not have any members. For example, if providers at a facility never prescribe INVOKANA, the DM AUDIT SGLP-2 DRUG taxonomy will not have any members.

Taxonomies in the following sections must be reviewed carefully in light of software changes or changes introduced in the 2018 Diabetes Audit. Possible members of the taxonomies are listed but are by no means to be considered comprehensive.

2.4.1 Drug Taxonomies

The listing of DM Audit Drug Taxonomies in Table 2-1 is provided for populating drug taxonomies. Review the lists of drugs with the pharmacist to be sure of those that are available at your facility or may be ordered as outside medications.

While there are two separate taxonomies for GLP-1 medications, DM AUDIT GLP-1 ANALOG DRUGS and DM AUDIT INCRETIN MIMETICS, the components of those taxonomies are displayed together as GLP-1 Meds on the audit.

Combination drugs should be added to the taxonomy for each of the components of that drug.

Medications entered as outside medications via the RPMS EHR can be orderable items, but they might not be in your facility's drug file. If the medication is not in your facility's drug file, the outside medication will not be stored in the V Medication file in Patient Care Component (PCC). If that is the case, those medications might not be found as drugs available to add to medication taxonomies, nor will they be included in the Diabetes Audit or Diabetes Patient Care Summary.

Note that the BGP PQA STATIN MEDS taxonomy is pre-populated using the NDC numbers of Statin Drugs and does not need to be reviewed or populated on a local basis. It is not listed in the Table of drug taxonomies needing review.

Table 2-1: DM Audit Drug Taxonomies

Taxonomy	Drugs
DM AUDIT ACE INHIBITORS	Benazepril (Lotensin) Benazepril and hydrochlorothiazide (Lotensin HCT) Benazepril and amlodipine (Lotrel) Captopril (Capoten) Captopril and hydrochlorothiazide (Capozide) Enalapril (Vasotec) Enalapril and hydrochlorothiazide (Vaseretic) Enalapril and diltiazem (Teczem) Enalapril and felodipine (Lexxel) Fosinopril (Monopril) Lisinopril (Prinivil, Zestril) Lisinopril and hydrochlorothiazide (Prinzide, Zestoretic) Moexipril (Univasc) Perindopril (Aceon) Quinapril (Accupril) Ramipril (Altace) Trandolapril (Mavik) Trandolapril and verapamil (Tarka) Also, include Angiotensin II Receptor Blockers (ARB) in this Taxonomy Azilsartan (Edarbi) Candesartan (Atacand) Eprosartan (Teveten) Irbsesartan (Avapro) Irbesartan and hydrochlorothizide (Avalide) Losartan (Cozaar) Losartan and hydrochlorothiazide (Cozaar) Olmesartan (Benicar) Telmisartan (Micardis) Valsartan (Diovan) Valsartan and hydrochlorothizide (Diovan/HCT)
DM AUDIT ACARBOSE DRUGS	Acarbose (Precose) Miglitol (Glyset)
DM AUDIT AMYLIN ANALOGUES	Pramlinitide (Symlin)

Taxonomy	Drugs
DM AUDIT ANTIPLATELET THERAPY	Any non-aspirin anti-platelet product including Heparin and Warfarin (Coumadin) Apixaban (Eliquis) Aspirin and Dipyridamole (Aggrenox) Cilistazol (Pletal) Clopidogrel (Plavix) Dabigatran Etexilate (Pradaxa) Dipyridamole (Persantine) Edoxaban (Sarvaysa) Ticagrelor (Brilinta) Ticlopidine (Ticlid) Prasugrel (Effient) Rivaroxaban (Xarelto) Vorapaxar (Zontivity)
DM AUDIT ASPIRIN DRUGS	Any Aspirin (ASA) or Aspirin containing product (Verasa, Rubrasa)
DM AUDIT BROMOCRIPTINE DRUGS	Bromocriptine 0.8 mg (Cycloset)
DM AUDIT COLESEVELAM DRUGS	Colesevelam (Welchol)
DM AUDIT DPP4 INHIBITOR DRUGS	Alogliptin (Nesina) Alogliptin and Metformin (Kazano) Alogliptin and Pioglitazone (Oseni) Linagliptin (Trajenta) Linagliptin and Metformin (Jentadueto) Sitagliptin (Januvia,) Sitagliptin and metformin (Janumet) Sitagliptin and Simvastatin (Juvisync) Saxagliptin (Onglyza) Saxagliptin and Metformin (Kombiglyze XR)
DM AUDIT GLITAZONE DRUGS (a.k.a.: Thiazolidinediones)	Pioglitazone (Actos) Pioglitazone and Alogliptin (Oseni) Pioglitazone and Metformin (Actoplus met) Pioglitazone and Glimeperide (Duetact) Rosiglitazone and Glimeperide (Avandaryl) Rosiglitazone (Avandia) Rosiglitazone and Metformin (Avandamet) Troglitazone (Rezulin) – RECALLED in 2000
DM AUDIT GLP-1 ANALOG DRUGS	Albiglutide (Tanzeum) Dulaglutide (Trulicity) Liraglutide (Victoza)
DM AUDIT INCRETIN MIMETICS	Exenatide (Byetta, Bydureon)

Taxonomy	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 (Affreza, Exubera – discontinued 2007), Pre-Mixed Insulins (70/30, 75/25)
DM AUDIT METFORMIN DRUGS	Metformin (Glucophage, Fortamet, Glumetza, Riomet) Metformin extended release (Glucophage XR, Glumetza) Metformin and Alogliptin (Kazano) Metformin and Canagliflozin (Invokamet) Metformin and Dapagliflozin (Xigduo) Metformin and Glipizide (Metaglip) Metformin and Glyburide (Glucovance) Metformin and Linagliptin (Jentadueto) Metformin and Rosiglitazone(Avandamet) Metformin and Pioglitazone (Actoplus met) Metformin and Sitagliptin (Janumet) Metformin and Repaglinide (PrandiMet) Metformin and Saxagliptin (Kombiglyze XR)
DM AUDIT SGLT-2 DRUGS	Canagliflozin (Invokana) Dapagliflozin (Farxiga) Empagliflozen (Jardiance)
DM AUDIT STATIN DRUGS	Atorvastatin (Lipitor) Atorvastatin and Amlodipine (Caduet) Atorvastatin and Ezetimibe (Liptruzet) Fluvastatin (Lescol) Lovastatin (Mevacor, Altocor, Altoprev) Lovastatin and Niacin (Advicor) Pravastatin (Pravachol) Pitivistatin (Livalo) Rosuvastatin (Crestor) Simvastatin (Zocor) Simvastatin and Ezetimibe (Vytorin) Simvastatin and Niacin (Simcor) Simvastatin and Sitagliptin (Juvisync)

Taxonomy	Drugs
DM AUDIT SULFONYLUREA DRUGS	Acetohexamide (Dymelor) Chlorpropamide (Diabinese) Glimepiride (Amaryl) Glimepiride and pioglitazone (Duetact) Glimepiride and rosiglitazone (Avandaryl) Glipizide (Glucotrol) Glipizide and metformin (Metaglip) Glyburide (Diabeta, Micronase,Glynase, Glycron) Glyburide and metformin (GlucoVance) Tolazamide (Tolinase) Tolbutamide (Orinase)
DM AUDIT SULFONYLUREA-LIKE DRUGS	Nateglinide (Starlix) Repaglinide (Prandin) Repaglinide and Metformin (PrandiMet)

2.4.2 Laboratory Test Taxonomies

Table 2-2 lists the taxonomies that must be reviewed for potential changes in laboratory testing at a facility each year. Note that the DM AUDIT ALT, DM AUDIT AST, and DM AUDIT CREATINE KINASE taxonomies are used to check for test values that would be indicative of an adverse reaction to statin therapy.

Table 2-2: DM Audit Laboratory Test Taxonomies

Taxonomy	Topics
BGP GPRA ESTIMATED GFR TAX	Estimated GFR, Calculated GFR, _GFR, Estimated, _GFR Non-African American, EST GFR, eGFR
BGP CREATINE KINASE TAX	CK, CPK, Creatine Kinase, Total CK
DM AUDIT ALT TAX	ALT, SGPT
DM AUDIT AST TAX	AST, SGOT
DM AUDIT CHOLESTEROL TAX	Cholesterol, Total Cholesterol, _Cholesterol, POC Cholesterol
DM AUDIT CREATININE TAX (Be careful not to include any tests for Urine Creatinine.)	Creatinine, POC Creatinine, Serum Creatinine, _Creatinine
DM AUDIT HDL TAX	HDL, HDL Cholesterol, POC HDL Cholesterol, _HDL Cholesterol
DM AUDIT HGB A1C TAX	Hemoglobin A1C, A1C, HGB A1C, HBA1C, HA1C, POC HEMOGLOBIN A1C, _A1C
DM AUDIT LDL CHOLESTEROL TAX	LDL, Direct LDL, LDL Cholesterol, LDL Cholesterol (calc), POC LDL Cholesterol, _LDL Cholesterol
DM AUDIT MICROALBUMINURIA TAX	Microalbumin, _Microalbumin, Albumin, Urine, POC Microalbumin

Taxonomy	Topics
DM AUDIT QUANT UACR TAX	Microalbumin/Creatinine Ratio measured in actual numeric values (mg/g Creatinine). Look for tests A/C, A:C, Albumin/Creatinine, _A/C, -A/C, asterisk (*)A/C, Microalbumin/Creatinine, M-Alb/Creatinine.
DM AUDIT TB LAB TESTS	QFT-G, T SPOT-TB, Quantiferon GOLD
DM AUDIT TRIGLYCERIDE TAX	Triglyceride, POC Triglyceride, _Triglyceride

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 may be useful to review test results on a health summary for a known patient with diabetes whose Standards of Care are current. Once test names are determined, the appropriate tests can be added or deleted from taxonomies.

Figure Figure 2-18 shows a Health Summary sample with recommended taxonomy placement noted after the lab test on the health summary.

```
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
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-
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/LFigure
```

Figure 2-18: Health Summary with recommended taxonomy placement

2.4.3 LMR–List Labs or Medications Used at this Facility

A report provided in DMS displays the laboratory tests reported or the drugs prescribed at a facility during the audit period. In addition to displaying the laboratory tests or drugs, it identifies those that are already included in a taxonomy used by the audit. To run the laboratory tests version of this report:

1. At the **Diabetes Management Systems** menu, type **RP** and press Enter.
2. At the **Reports** menu, type **LMR** (List Labs/Medications Used at this Facility) and press Enter.
3. At the "Do you wish to list" prompt, type **L** (LAB TESTS) and press Enter.
4. Type the beginning and ending dates for the report (1/1/17 and 12/31/17 for the 2018 Annual Diabetes Audit), pressing Enter after each.
5. At the "Do you wish to" prompt, do one of the following:
   - To print the output, accept the default (P) by pressing Enter. A prompt asking for the device name displays; type the device's name and press Enter.
   - To browse the output on the screen, type **B** and press Enter.

   A sample report is shown in Figure 2-19.

```
Oct 31, 2017                                                  Page 1
                     LAB TESTS Used at DEMO HOSPITAL
                   Date Range:  Jan 01, 2017 - Dec 31, 2017
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 2-19: Sample Report of Labs Reported during the Audit Period

To run the version of this report for the medications that have been prescribed:

1. At the **Diabetes Management Systems** menu, type **RP** and press Enter.
2. At the **Reports** menu, type **LMR** (List Labs/Medications Used at this Facility) and press Enter.
3. At the "Do you wish to list" prompt, type **M** (MEDICATIONS) and press Enter.
4. Type the beginning and ending dates for the report (7/1/17 and 12/31/17 for the 2018 Annual Diabetes Audit), pressing Enter after each. The audit only reviews medications prescribed during the last six months of the audit period.
5. At the "Do you wish to" prompt, do one of the following:

   - To print the output, accept the default (P) by pressing Enter. A prompt asking for the device name displays; type the device's name and press Enter.
   - To browse the output on the screen, type **B** and press Enter.

     A sample report is shown in Figure 2-20.

```
Oct 31, 2017                                                    Page 1
                MEDICATIONS (DRUGS) Used at DEMO HOSPITAL
                   Date Range:  Jul01, 2017 – Dec 31, 2017
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 2-20: Sample Report of Drugs Prescribed during the audit period

2.4.4 View/Print Any DM Audit Taxonomy

The **View/Print Any DM Taxonomy** option may be used to review any taxonomy of CPT Codes, Diagnoses Codes, LOINC Codes, Medications, Laboratory Tests, or Education Topics that are used by the 2018 Diabetes Audit.

- Select **DA**, the Diabetes QA Audit Menu.
- Select **DM18**, the 2018 Diabetes Program Audit.
- Select **VTAX** View/Print Any DM Audit Taxonomy.

A list of the taxonomies used in the 2018 Diabetes Audit display (Figure 2-21) Note that there are six pages of taxonomies that may display. The up arrow or down arrow may be used to browse the list of taxonomies.

Type **S** to indicate a selection will be made. Then type the number preceding the taxonomy.

The taxonomy contents may be browsed on the screen or printed to a RPMS printer. Figure 2-22 shows a sample of the taxonomy contents for the creatinine kinase test.

```
2018 DM AUDIT TAXONOMY VIEW   Dec 07, 2016 15:45:23        Page:   1 of   6
TAXONOMIES TO SUPPORT 2018 DIABETES/PRE-DIABETES AUDIT REPORTING
* View Taxonomies

1)  APCH TD CPTS                     CPT
2)  BGP ADV EFF CARDIOVASC NEC       ICD DIAGNOSIS
3)  BGP ALCOHOL HEPATITIS DXS        ICD DIAGNOSIS
4)  BGP ALT LOINC                    LAB LOINC
5)  BGP ASA ALLERGY 995.0-995.3      ICD DIAGNOSIS
6)  BGP AST LOINC                    LAB LOINC
7)  BGP BREASTFEEDING DXS            ICD DIAGNOSIS
8)  BGP CABG CPTS                    CPT
9)  BGP CABG DXS                     ICD DIAGNOSIS
10)  BGP CABG PROCS                  ICD OPERATION/PROCEDURE
11)  BGP CMS SMOKING CESSATION MEDS  DRUG
12)  BGP CMS SMOKING CESSATION NDC   NDC/UPN
13)  BGP CPT FLU                     CPT
14)  BGP CREATINE KINASE LOINC       LAB LOINC
15)  BGP CREATINE KINASE TAX         LABORATORY TEST
16)  BGP CREATININE LOINC CODES      LAB LOINC
+         Enter ?? for more actions
S    Select Taxonomy to View           Q    Quit
Select Action:+//S

Which Taxonomy:  (1-95): 14

     Select one of the following:

          P         PRINT Taxonomy Output
          B         BROWSE Taxonomy Output on Screen

Do you wish to: B//
```

Figure 2-21: Taxonomy list for 2018 Diabetes Audit

```
DKR                                                                  Page 1
                            DEMO HOSPITAL
               Listing of the BGP CREATINE KINASE LOINC taxonomy
     ------------------------------------------------------------------
2157-6         CREATINE KINASE:CCNC:PT:SER/PLAS:QN
24335-2        CREATINE KINASE PANEL: - :PT:SER/PLAS:QN
50756-6
```

Figure 2-22: Sample of a Taxonomy for Creatine Kinase LOINC Codes

2.4.5 View a SNOMED List Used by the DM Audit

The **View a SNOMED List Used by the DM Audit** option may be used to review any SNOMED list that is used by the 2018 Diabetes Audit.

1. Select **DA**, the Diabetes QA Audit Menu.
2. Select **DM18**, the 2018 Diabetes Program Audit.
3. Select **VSML** View a SNOMED List Used by the DM AUDIT. A list of the SNOMED Lists used in the 2018 Diabetes Audit is displayed in Figure 2-23. Note that there are only five SNOMED Lists.
4. Type **S** to indicate a selection will be made.
5. Enter the number preceding the SNOMED List. The contents of the SNOMED List may be browsed on the screen or printed to a RPMS printer.

```
2018 DM AUDIT SNOMED LIST VIEWDec 07, 2016 16:01:42      Page:    1 of    1
SNOMED LISTS TO SUPPORT 2018 DIABETES AUDIT REPORTING
* View SNOMED Lists

1)  BREASTFEEDING PATIENT ED
2)  DEPRESSION DIAGNOSES
3)  DIABETIC RETINOPATHY
4)  PXRM BGP QUIT TOBACCO
5)  PXRM BGP TOBACCO SMOKELESS
6)  PXRM BGP TOBACCO SMOKER
7)  PXRM BGP TOBACCO TOPICS
8)  PXRM DIABETES
9)  PXRM ESSENTIAL HYPERTENSION
10)  PXRM HEPATITIS C

          Enter ?? for more actions
Select Action:+// S   Select SNOMED List to View

Which SNOMED List:  (1-5): 5

     Select one of the following:

          P         PRINT Taxonomy Output
          B         BROWSE Taxonomy Output on Screen

Do you wish to: B//
```

Figure 2-23: Selecting a SNOMED List used in the 2018 Diabetes Audit

3.0 Run the 2018 Audit

The directions for creating and submitting an electronic Diabetes Audit data file are outlined in the Audit 2018 Instructions at:

https://www.ihs.gov/diabetes/audit/audit-resources/.

In RPMS, Diabetes Audits can be run for individual patients, a template of patients, patients in a Register, or a random sample of patients in a Register. Additional options exist for running the Audit by Primary Care Provider, by Community, for only Indian/Alaska Native Patients, non-Indian/Alaska Native Patients, or both.

Output options include an individual audit, a cumulative audit, individual and cumulative audits, an SDPI Key Measures Report, or an Audit Export file. Even those doing manual audits may find it useful to print individual audits which most likely have some information on them, such as measurements.

3.1 Run an Individual Audit

Individual audits can be run at any time either via the **Diabetes QA Audit Menu** or via the **Patient Management** option to display the audit status. To run an individual audit using the **Patient Management** option:

1. At the **Diabetes Management Systems** menu, type **PM** and press Enter.
2. At the **Patient Management** menu, type **10** (Audit Status) and press Enter.
3. At the "Enter the Audit Date" prompt, type the ending date of the audit period desired and press Enter.
4. At the "Do you wish to print the Patient's Name…?" prompt, do one of the following:
   a. To not print the patient's name on the audit sheet, accept the default (N) by pressing Enter.
   b. To print the patient's name, type **Y** and press Enter.
5. At the "Do you wish to" prompt, do one of the following:
   a. To print the output, accept the default (P) by pressing Enter. A prompt asking for the device name displays; type the device's name and press Enter.
   b. To browse the output on the screen, type **B** and press Enter.

   A sample individual audit is shown in Figure 3-1.

```
 ASSESSMENT OF DIABETES CARE, 2018       DATE AUDIT RUN: Nov 08, 2017  Page: 1

Audit Period Ending Date: Dec 31, 2017  Facility Name: DEMO HOSPITAL
```

```
REVIEWER initials: LAM                  Community: SAN DIEGO
STATE of Residence: CA
CHART #: 100180    DOB: Jun 10, 1952    SEX: FEMALE
PRIMARY CARE PROVIDER:  DEMO,JOHN MD

DATE of Diabetes Diagnosis:
  DM Reg: <not documented>  Problem List: 09/17/2007  1st PCC DX: 07/14/2004
DM TYPE: 2  Type 2
  DM Register: Type 2  Problem List: 250.00  PCC POV's: Type 2

Tobacco/Nicotine Use
Screened for tobacco use during Audit period: 2  No
Tobacco Use Status: 2  Not a Current User NEVER SMOKED  04/01/2015
  Tobacco cessation counseling received?
Screened for electronic nicotine delivery system (ENDS) use during
  audit period: 2  No
ENDS use status:  3  Not Documented

Visit Statistics

HEIGHT (last ever): 66.00 inches 12/20/2010
Last WEIGHT in audit period: 146 lbs 03/04/2017     BMI:  23.6

HTN (documented diagnosis ever): 1  Yes - DX on 10/03/2011  10/03/2012  03/04/2017
Last 3 BLOOD PRESSURES during audit period:  130/66 mm Hg 05/01/2017
                                             120/77 mm Hg 03/04/2017


Examinations during audit period
  FOOT EXAM - complete:           2  No
  EYE EXAM (dilated or retinal imaging):
                                  1  Yes  03/04/2017 CPT: S3000
  DENTAL EXAM:                    2  No

Mental Health
  Depression an active problem?  2  No
  If 'No', Screened for depression during audit period:
       1  Yes - Exam: DEPRESSION SCR 03/04/2017

Education during audit period
  NUTRITION INSTRUCTION:            1  Yes (RD)  RD: DIETITIAN Visit: 03/04/2017
  PHYSICAL ACTIVITY INSTRUCTION:    2  No
  DM Education (Other):             2  No

Diabetes Therapy    Select all prescribed, as of the end of the audit period:
      1 None of the following
      2 Insulin
      3 Sulfonylurea (glyburide, glipizide, others)
      4 Repaglinide (Prandin) or Nateglinide (Starlix)
      5 Metformin (Glucophage, others)
   X  6 Acarbose (Precose) or miglitol (Glyset)
      7 Pioglitazone (Actos) or rosiglitazone (Avandia)
      8 GLP-1 med (Byetta, Bydureon, Victoza, Tanzeum, Trulicity)
      9 DPP4 inhibitors (Januvia, Onglyza, Tradjenta, Nesina)
      10 Amylin Analog (Symlin)
      11 Bromocriptine (Cycloset)
      12 Colesevelam (Welchol)
      13 SGLT-2 inhibitor (Invokana, Farxiga, Jardiance)

ACE Inhibitor/ARB Prescribed, as of the end of the audit period:
          2  No
```

```
Aspirin/Antiplatelet/Anticoagulant Therapy Prescribed, as of the end of the
  audit period: 1  Yes  07/04/2017 ASPIRIN 81MG TAB CHEWABLE

Statin Therapy Prescribed, as of the end of the Audit period:
          1  Yes  07/04/2017 SIMVASTATIN 40MG TABLET
CVD: Cardiovascular disease diagnosed ever: 1  Yes - DX 01/29/2011 | 01/28/2011

TB Testing
TB test done ever: 3  Unknown
TB test result:
    If test positive, isoniazid treatment complete:
    If test negative, test date:

Hepatitis C
Diagnosed with HCV ever: 2  No
If born 1945-1965, screened at least once ever? 1  Yes 02/22/2012 _SQL Hep C Ab
Result (0.02)

Retinopathy
Retinopathy diagnosed ever: 1  Yes - DX 03/04/2017

Immunizations
  Influenza vaccine during audit period: 1  Yes  03/04/2017
  Pneumococcal vaccine - ever:     1  Yes  09/12/2007
  Td or Tdap in past 10 yrs:       1  Yes  04/25/2012
  Tdap ever:                       1  Yes  04/25/2012
  HEP B 3 dose series complete - ever: 1  Yes

LABORATORY DATA - most recent result during audit period
  A1C:                      >9             03/04/2017       HGB A1c (R)
  Total Cholesterol:        300 mg/dl      03/04/2017       CHOLESTEROL (POCT)
  HDL Cholesterol:          50 mg/dl       03/04/2017       _HDL CHOLESTEROL
  LDL Cholesterol:          102 mg/dl      03/04/2017       _LDL-CHOLESTEROL
  Triglycerides:            20000 mg/dl    03/04/2017       TRIGLYCERIDE (POCT)
  Serum Creatinine:
  eGFR:
  Quantitative Urine Albumin: Creatinine Ratio UACR value:

COMBINED: Meets ALL: A1C <8.0, statin prescribed, mean BP <140/<90
     2  No  A1C: >9; statin prescribed: Yes; Mean BP: 125/71

Has e-GFR and UACR: No

Local Questions: 0

Extended Local Option question: 0
```

Figure 3-1: Individual audit sample

3.2 Run a Data Quality Check Report

This report is new in DMS for Audit 2018 and can be run to identify potential errors in the data extracted for your audit export file – the same errors that would be identified by WebAudit Data Quality Check. The DMS version of the report includes patient identifiers, which the WebAudit version does not, making it easier to locate and correct the relevant data. It is highly recommended that you run this report using DMS and fix all possible errors prior to uploading any data file to the WebAudit.

When running this report, use the exact same parameters that you will be using when creating the audit export file.

Figure 3-2 shows a script on how to run the Data Quality Check Report, followed by a sample report.

```
Diabetes Management System ...
DA   Diabetes QA Audit Menu ...
DM18  2018 Diabetes Program Audit ...
DM17  Run 2017 Diabetes Program Audit

           Select 2018 Diabetes Program Audit Option: DM18  Run 2018 Diabetes
Program Audit

In order for the 2018 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy  [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy  [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy  [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy  [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

                        ASSESSMENT OF DIABETES CARE, 2018

                                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:  12/31/17  (DEC 31, 2017)

     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// ES
Which status: A// ACTIVE

There are 873 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// O

Limit the patients who live in a particular community ? N// O
```

```
     Select one of the following:

          1         Indian/Alaskan Native (Classification 01)
          2         Not Indian Alaskan/Native (Not Classification 01)
          3         All (both Indian/Alaskan Natives and Non 01)

Select Beneficiary Population to include in the audit: 1//   Indian/Alaskan Nati
ve (Classification 01)

     Select one of the following:

          I         Include Pregnant Patients
          E         Exclude Pregnant Patients

Select whether to include or exclude pregnant patients in the audit: E// xclude
Pregnant Patients
okay, hold on...this may take a few minutes..

   Note:  When not running an official Audit, you may choose to include pregnant
   patients. Pregnant patients are identified as those who have had two or more
   pregnancy-related visits during the Audit period to a non-pharmacy clinic, or
   where the provider is not a CHR. The list of pregnancy-related diagnoses may be
   reviewed under the View/Print Taxonomy Lists.

There are 1227 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// LL 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
          5         SDPI Key Measures Report (2015 Version)
          6         SDPI Key Measures Report (2016 Version)
          7         Data Quality Check Report

Enter Print option: 1// 7   Data Quality Check Report

     Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// xclude DEMO Patients

     Select one of the following:

          P         PRINT Output
          B         BROWSE Output on Screen

Do you wish to: P// BROWSE Output on Screen
```

Figure 3-2: Running a Data Quality Check Report

If the PRINT Output option is selected, at the "Device" prompt, type the printer name. This report can be queued to run later as shown in Figure 3-3.

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

Device: P171 <Enter>
Start Date/Time: T@2000 <Enter>
Device: P180
```

Figure 3-3: Device prompt

> **Note**: A queued report cannot be printed to a locally connected printer, usually referred to as a Slave printer.

A sample 2018 Data Quality Check Report is displayed in Figure 3-4.

```
   LAB                              Nov 03, 2017                         Page 1

                DIABETES AUDIT EXPORT DATA QUALITY CHECK REPORT
                Audit Date 12/31/2017 (01/01/2017 to 12/31/2017)
                      Facility: 2013 DEMO HOSPITAL (CMBA)

PATIENT NAME          HRN         DOB         SEX AGE      VALUE       ERR TYPE
-------------------------------------------------------------------------------
DEMOA,CHARLENE        111111      12/06/1985  F   27                    POTENTIAL
     ERROR: ALL KEY DATA MISSING-Data is missing for all key fields: weight,
     blood pressure, A1c, LDL, uACR.
DEMOB,MARIE            222222      09/15/1970  F   42       131         POTENTIAL
     ERROR: HDL VALUE <12 OR >120-HDL Value is less than 12 or greater than
     120.  Check the value, if accurate no action necessary.
DEMOC,LORI             333333      04/28/1992  F   20       2           POTENTIAL
     ERROR: TX INSULIN / DM TYPE 1-Value for this medication is inconsistent
     with DM Type 1.  Check the value for insulin therapy and DM Type.
DEMOD,MARY ANN         444444      10/14/1940  M   72       28          POTENTIAL
     ERROR: DIASTOLIC 1 <30 OR >140-Diastolic 1 is less than 30 or greater
     than 140. Check value.
DEMOF,MINNIE          555555      01/10/1969  F   43        15.6       POTENTIAL
     ERROR: BMI <16 OR >80-BMI is less than 16 or greater than 80.  Check
     values and if necessary correct HT/WT.  If value is correct, no action
     is necessary.
DEMOG,ANGELA       666666      08/17/1920  F   92       7           POTENTIAL
     ERROR: HEIGHT IN FEET HIGH FOR AGE >9-Height is high (>6) for patient
     age >9.  Check the patient's last height value.
DEMOH,JOHN MITCHELL  777777      09/07/2014  F   -1       03/07/1997  DEFINITE
     ERROR: DATE OF DX BEFORE YOB-Date of Diabetes Diagnosis is before year
     of birth.
```

```
   LAB                            Nov 03, 2017                        Page 36

                DIABETES AUDIT EXPORT DATA QUALITY CHECK REPORT
                Audit Date 12/31/2012 (01/01/2012 to 12/31/2012)
                      Facility: 2013 DEMO HOSPITAL (CMBA)

PATIENT NAME          HRN         DOB         SEX AGE      VALUE       ERR TYPE
--------------------------------------------------------------------------------



                          SUMMARY OF POTENTIAL ERRORS

ERROR MESSAGE                             # OF POTENTIAL ERRORS

AGE OVER 100                              1
ALL KEY DATA MISSING                      25
BMI <16 OR >80                            2
CREATININE VALUE <0.3 OR >15              1
DATE OF DX BEFORE YOB                     1
DIASTOLIC 1 <30 OR >140                   1
DURATION OF DM                            1
EGFR VALUE <5 OR >250                     2
HBA1C DATE <20 DAYS BEFORE DOO            1
HDL VALUE <12 OR >120                     4
HEIGHT IN FEET HIGH FOR AGE >9            1
HEIGHT IN FEET LOW FOR AGE <19            1
HEIGHT IN FEET LOW FOR AGE >18            2
HEIGHT IN FEET MISSING                    1
HEIGHT TOTAL <24 AGE<18                   1
HEIGHT TOTAL <48 AGE>17                   2
HEIGHT TOTAL >60 AGE <10                  4
HEIGHT TOTAL >84 AGE >9                   1
TB TEST DATE < YOB                        2
WEIGHT LESS THAN 80, AGE >17              1
```

Figure 3-4: Sample Data Quality Check Report

3.3 Run a Cumulative Audit/Audit Report

Figure 3-5 shows a script for running a Cumulative Audit, also known as an Audit Report. The Audit Report can be either queued using the DM18 option in Visual DMS or run from the traditional RPMS menu. It is highly recommended that the 2018 Cumulative Audit be run and reviewed twice before creating a data file to submit for the Annual Diabetes Audit.

The first time, run a Cumulative Audit on all active members of the register with Type 1 or Type 2 Diabetes or on the created template of eligible patients with Type 1 or Type 2 Diabetes.

Review the initial Cumulative Audit carefully to be sure there are no Audit elements that have no data or that have far larger or smaller numbers than would be expected. This will ensure that there is no missing data due to improperly populated taxonomies. If required, review taxonomy set up, edit taxonomies as needed, and run and review the Cumulative Audit again to make sure that problems are corrected before creating the Audit Export file.

> **Note**: A list of taxonomies that have no members can display. It is possible to have taxonomies with no members, if the drugs or laboratory tests referenced are not used at a facility.

```
Diabetes Management System ...
DA   Diabetes QA Audit Menu ...
DM18  2018 Diabetes Program Audit ...
DM16  Run 2017 Diabetes Program Audit

           Select 2018 Diabetes Program Audit Option: DM18  Run 2018 Diabetes
Program Audit

In order for the 2018 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy  [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy  [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy  [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy  [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

                        ASSESSMENT OF DIABETES CARE, 2018

                                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:  12/31/17  (DEC 31, 2017)

     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// ES
Which status: A// ACTIVE

There are 873 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// O

Limit the patients who live in a particular community ? N// O

     Select one of the following:

          1         Indian/Alaskan Native (Classification 01)
          2         Not Indian Alaskan/Native (Not Classification 01)
          3         All (both Indian/Alaskan Natives and Non 01)

Select Beneficiary Population to include in the audit: 1//   Indian/Alaskan Nati
ve (Classification 01)

     Select one of the following:

          I         Include Pregnant Patients
          E         Exclude Pregnant Patients

Select whether to include or exclude pregnant patients in the audit: E// xclude
Pregnant Patients
okay, hold on...this may take a few minutes..

   Note:  When not running an official Audit, you may choose to include pregnant
   patients. Pregnant patients are identified as those who have had two or more
   pregnancy-related visits during the Audit period to a non-pharmacy clinic, or
   where the provider is not a CHR. The list of pregnancy-related diagnoses may be
   reviewed under the View/Print Taxonomy Lists.

There are 1227 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// LL 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
          5         SDPI Key Measures Report (2015 Version)
          6         SDPI Key Measures Report (2016 Version)
          7         Data Quality Check Report

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// xclude DEMO Patients

     Select one of the following:
```

```
          P         PRINT Output
          B         BROWSE Output on Screen

Do you wish to: P// BROWSE Output on Screen
```

Figure 3-5: Running a Cumulative Audit (Audit Report)

If the PRINT Output option is selected, at the "Device" prompt, Type the printer name. This report can be queued to run later as shown in Figure 3-6.

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

Device: P171 <Enter>
Start Date/Time: T@2000 <Enter>
Device: P180
```

Figure 3-6: Device prompt

> **Note**: A queued report cannot be printed to a locally connected printer, usually referred to as a Slave printer.

A sample 2018 Cumulative Audit is displayed in Figure 3-7.

```
   LAB                              Nov 08, 2017                         Page 1

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
          AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                             for DEMO HOSPITAL
                           959 patients were audited
-------------------------------------------------------------------------------
                                             # of        #            Percent
                                             Patients    Considered
                                             (Numerator) (Denominator)


*** Please NOTE:  9 Patients were not included in this cumulative audit
because their date of onset was after the audit date.

Gender
   Male                                        388         959         40%
   Female                                      571         959         60%

Age
   <20 years                                    37         959          4%
   20-44 years                                 142         959         15%
   45-64 years                                 403         959         42%
   65 years and older                          377         959         39%

Diabetes Type
   Type 1                                       35         959          4%
   Type 2                                      924         959         96%

Duration of Diabetes
   Less than 1 year                             5         959          1%
   Less than 10 years                          79         959          8%
   10 years or more                            503         959         52%
   Diagnosis date not recorded                 377         959         39%

BMI Category
   Normal (BMI<25.0)                            52         959          5%
   Overweight (BMI 25.0-29.9)                  125         959         13%
   Obese (BMI 30.0 or above)                   392         959         41%
   Height or Weight missing                    390         959         41%
   ---------------------------------
   Severely Obese (BMI 40.0 or above)          120         959         13%

Blood Sugar Control
   A1C <7.0                                    125         959         13%
   A1C 7.0-7.9                                  86         959          9%
   A1C 8.0-8.9                                  68         959          7%
   A1C 9.0-9.9                                  55         959          6%
   A1C 10.0-10.9                                40         959          4%
   A1C 11.0 or higher                          100         959         10%
   Not tested or no valid result               485         959         51%
   A1C <8.0                                    211         959         22%
   A1C >9.0                                    189         959         20%
```

LAB Nov 08, 2017 Page 2

IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
for DEMO HOSPITAL
959 patients were audited

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Blood Pressure (BP) - Based on one value or mean of two or three values			
<140/<90	424	959	44%
140/90 - <160/<95	110	959	11%
160/95 or higher	35	959	4%
BP category Undetermined	390	959	41%
Comorbidities			
Active Depression	99	959	10%
Current tobacco user	171	959	18%
Severely obese (BMI 40.0 or above)	120	959	13%
Diagnosed hypertension ever	711	959	74%
Diagnosed hypertension & mean BP <140/<90	377	711	53%
Diagnosed CVD ever	389	959	41%
Diagnosed CVD & mean BP <140/<90	203	389	52%
Diagnosed CVD & not current tobacco user	268	389	69%
Diagnosed CVD & statin prescribed*	129	365	35%
*Excludes patients with an allergy, intolerance, or contraindication			
Diagnosed CVD & aspirin or other antiplatelet/anticoagulant therapy prescribed	218	389	56%
In age 18+ chronic kidney disease (CKD) [1]	242	927	26%
CKD [1] & mean BP <140/<90	168	242	69%
CKD [1] & ACE Inhibitor or ARB prescribed	174	242	72%
In age 18+	927	959	97%
Chronic Kidney Disease Stage			
Normal: eGFR =>60 ml/min & UACR <30 mg/g	93	927	10%
Stages 1 & 2: eGFR =>60 ml/min & UACR =>30 mg/g	77	927	8%
Stage 3: eGFR 30-59 ml/min	108	927	12%
Stage 4: eGFR 15-29 ml/min	23	927	2%
Stage 5: eGFR <15 ml/min	34	927	4%
Chronic Kidney Disease Stage undetermined	592	927	64%
Diagnosed hepatitis C (HCV) ever	27	959	3%
If born 1945-1965 and no HCV dx, screened ever	97	449	22%
Diagnosed retinopathy ever	350	959	36%

```
   LAB                              Nov 08, 2017                        Page 3

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
         AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                            for  DEMO HOSPITAL
                          959 patients were audited
-------------------------------------------------------------------------------
                                                # of        #            Percent
                                                Patients    Considered
                                                (Numerator) (Denominator)


   Number of comorbid conditions [2]
      Diabetes only                                  159         959        17%
      One                                            164         959        17%
      Two                                            234         959        24%
      Three                                          210         959        22%
      Four                                           126         959        13%
      Five or more                                    66         959         7%

Tobacco & Nicotine Use
   Tobacco use screening during Audit period:
      Screened                                       505         959        53%
      Not screened                                   454         959        47%

   Tobacco use status:
      Current tobacco user                           171         959        18%
         In current users, counseled?
            Yes                                       73         171        43%
            No                                        98         171        57%
      Not a current tobacco user                     528         959        55%
      Tobacco use not documented                     260         959        27%
Electronic nicotine delivery system (ENDS)
use screening during the Audit period:
      Screened                                         0         959         0%
      Not screened                                   959         959       100%
ENDS use status:
      Current ENDS user                                0         959         0%
      Not a current ENDS user                          0         959         0%
      ENDS use not documented                        959         959       100%
Current user of both tobacco and ENDS                  0         959         0%
```

```
   LAB                              Nov 08, 2017                        Page 4

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
          AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                              for  DEMO HOSPITAL
                           959 patients were audited
--------------------------------------------------------------------------------
                                              # of        #            Percent
                                              Patients    Considered
                                              (Numerator) (Denominator)


Diabetes Treatment
   None of the following meds                      550         959        57%

  Diabetes meds currently prescribed, alone or in combination

   Insulin                                         330         959        34%

   Sulfonylurea (glyburide, glipizide,             232         959        24%
          others)

   Repaglinide (Prandin) or Nateglinide              0         959         0%
          (Starlix)

   Metformin (Glucophage, others)                   55         959         6%

   Acarbose (Precose)/Miglitol (Glyset)              2         959         0%

   Pioglitizone (Actos) or rosiglitazone             0         959         0%
          (Avandia)

   GLP-1 med (Byetta, Bydureon, Victoza,             3         959         0%
          Tanzeum, Trulicity)

   DPP4 inhibitor (Januvia, Onglyza,               134         959        14%
          Tradjenta, Nesina)

   Amylin analog (Symlin)                            0         959         0%

   Bromocriptine (Cycloset)                          0         959         0%

   Colesevelam (Welchol)                             0         959         0%

   SGLT-2 Inhibitor (Invokana, Farxiga,              0         959         0%
          Jardiance)
```

```
   LAB                              Nov 08, 2017                        Page 5

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
         AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                              for  DEMO HOSPITAL
                           959 patients were audited
-------------------------------------------------------------------------------
                                              # of        #            Percent
                                              Patients    Considered
                                              (Numerator) (Denominator)


  Number of diabetes meds currently prescribed
   One med                                          170         959        18%
   Two meds                                         142         959        15%
   Three meds                                        87         959         9%
   Four or more meds                                 10         959         1%

ACE Inhibitor or ARB Prescribed
   In patients with known hypertension [3]          392         711        55%
   In patients age 18+ with CKD [1]                 174         242        72%

Aspirin or Other Antiplatelet/Anticoagulant Therapy Prescribed
   In patients with diagnosed CVD                   218         389        56%

Statin Prescribed
   Yes*                                             217         921        24%
   Allergy, intolerance, or contraindication         38         959         4%

   In patients with diagnosed CVD:
      Yes*                                          129         365        35%
      Allergy, intolerance, or contraindication      24         389         6%

   In patients aged 40-75:
      Yes*                                          177         653        27%
      Allergy, intolerance, or contraindication      26         679         4%

   In patients with diagnosed CVD and/or aged 40-75:
      Yes*                                          207         765        27%
      Allergy, intolerance, or contraindication      32         797         4%

  *Excludes patients with an allergy, intolerance, or contraindication.

Exams
   Foot exam - comprehensive                        218         959        23%
   Eye exam - dilated or retinal imaging            303         959        32%
   Dental exam                                      239         959        25%

Diabetes-Related Education
   Nutrition - by any provider (RD and/or other)    283         959        30%
   Nutrition - by RD                                153         959        16%
   Physical activity                                199         959        21%
   Other                                            433         959        45%
   Any of above topics                              466         959        49%
```

```
   LAB                              Nov 08, 2017                        Page 6

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
          AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                             for  DEMO HOSPITAL
                           959 patients were audited
-------------------------------------------------------------------------------
                                              # of        #            Percent
                                              Patients    Considered
                                              (Numerator) (Denominator)


Immunizations
   Influenza vaccine during Audit period           362         959        38%
           Refused - Influenza vaccine              97         959        10%
   Pneumococcal vaccine - ever                     638         959        67%
           Refused - Pneumococcal                   15         959         2%
   Td/Tdap/DT - past 10 years                      639         959        67%
           Refused - Td/Tdap/DT                      9         959         1%
   Tdap - ever                                     528         959        55%
           Refused - Tdap                            0         959         0%
   Hepatitis B 3-dose series complete - ever       493         955        52%
           Refused - Hepatitis B                    12         955         1%
           Immune - Hepatitis B                      4         959         0%

Depression An Active Problem
   Yes                                              99         959        10%
   No                                              860         959        90%

   In patients without active depression, screened
   for depression during the audit period:
             Screened                              415         860        48%
             Not screened                          445         860        52%

Lipid Evaluation - Note these results are presented as population level CVD
risk markers and should not be considered treatment targets for individual
patients.

   LDL cholesterol                                 373         959        39%
       LDL <100 mg/dl                              275         959        29%
       LDL 100-189 mg/dl                            97         959        10%
       LDL >=190                                     1         959         0%
       Not tested or no valid result               586         959        61%

   HDL cholesterol                                 376         959        39%
       In females
       HDL <50 mg/dl                               118         571        21%
       HDL >=50 mg/dl                              108         571        19%
       Not tested or no valid result               345         571        60%

       In males
       HDL <40 mg/dl                                66         388        17%
       HDL >=40 mg/dl                               84         388        22%
       Not tested or no valid result               238         388        61%
```

LAB Nov 08, 2017 Page 7

IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
for DEMO HOSPITAL
959 patients were audited

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Triglycerides [4]	376	959	39%
TG <150 mg/dl	198	959	21%
TG 150-499 mg/dl	166	959	17%
TG 500-999 mg/dl	12	959	1%
TG >=1000 mg/dl	0	959	0%
Not tested or no valid result	583	959	61%
Kidney Evaluation			
eGFR to assess kidney function	497	927	54%
(In age 18 and above)			
eGFR >= 60 ml/min	332	927	36%
eGFR 30-59 ml/min	108	927	12%
eGFR 15-29 ml/min	23	927	2%
eGFR < 15 ml/min	34	927	4%
eGFR Not tested or no valid result	430	927	46%
Urine Albumin:Creatinine Ratio (UACR) to assess kidney damage			
Yes	237	959	25%
No	722	959	75%
In patients with UACR:			
Urine albumin excretion - Normal <30 mg/g	124	237	52%
Urine albumin excretion - Increased			
30-300 mg/g	88	237	37%
>300 mg/g	25	237	11%
In patients age 18 and above, eGFR and UACR done	230	927	25%
Tuberculosis Status			
TB Test done ever (skin or blood)	496	959	52%
If test done, skin test	492	496	99%
If test done, blood test	4	496	1%
If TB test done, positive result	59	496	12%
If positive TB test, treatment completed	5	59	8%
If negative TB test, test done after DM diagnosis	306	436	70%

```
   LAB                              Nov 08, 2017                        Page 8

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
          AUDIT REPORT FOR 2018 (Audit Period 01/01/2017 to 12/31/2017)
                               for DEMO HOSPITAL
                            959 patients were audited
--------------------------------------------------------------------------------
                                              # of        #            Percent
                                              Patients    Considered
                                              (Numerator) (Denominator)


Combined Outcome Measure
   Patients age >= 40 meeting ALL of the            61         804         8%
   following criteria:  A1C <8.0, Statin prescribed*,
   and mean BP <140/<90
   *Excludes patients with a statin allergy, intolerance, or contraindication

[1] CKD: eGFR <60 or UACR =>30
[2] Comorbid conditions counted are: active depression, current tobacco use,
severely obese (BMI 40 or higher), diagnosed hypertension, diagnosed CVD,
CKD (eGFR<60 or uACR>=30), hepatitis C, and retinopathy.
[3] Known hypertension: Has hypertension listed as an active problem, or
three visits with a diagnosis of hypertension ever (prior to the end
of the Audit period).
[4] For triglycerides: >150 is a marker of CVD risk, not a treatment
target; >1000 is a risk marker for pancreatitis.
```

Figure 3-7: Sample 2018 Cumulative Audit Report

3.4 Create an Audit Export (Data) File

A script for running the 2018 Diabetes Audit and creating an Audit Export (Data) file for submission via the WebAudit is shown in Figure 3-8.

IHS recommends that the Annual Audit include all eligible Register patients; however, there may be patients on the register who do not have Type 1 or Type 2 diabetes or otherwise do not meet the inclusion and exclusion criteria outlined in the Audit 2018 Instructions and in Section 2.1.

1. At the **Diabetes Management Systems** menu, Type **DA** and press Enter.
2. At the **Diabetes QA Audit** menu, Type **DM18** (2018 Diabetes Program Audit) and press Enter.
3. Select DM18, the option to Run 2018 Diabetes Program Audit.

   The following sequence displays:

```
  DM18  Run 2018 Diabetes Program Audit
```

```
           Select 2018 Diabetes Program Audit Option: DM18  Run 2018 Diabetes
Program Audit

In order for the 2018 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy  [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy  [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy  [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy  [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

                       ASSESSMENT OF DIABETES CARE, 2018

                               PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DEMO HOSPITAL

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:  12/31/17  (DEC 31, 2017)

     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 DEMO HOSPITAL
Do you want to select register patients with a particular status? Y// ES
Which status: A// ACTIVE

There are 873 patients in the IHS DEMO HOSPITAL REGISTER 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// O

Limit the patients who live in a particular community ? N// O

     Select one of the following:

          1         Indian/Alaskan Native (Classification 01)
          2         Not Indian Alaskan/Native (Not Classification 01)
          3         All (both Indian/Alaskan Natives and Non 01)

Select Beneficiary Population to include in the audit: 1//   Indian/Alaskan Nati
ve (Classification 01)

     Select one of the following:

          I         Include Pregnant Patients
          E         Exclude Pregnant Patients
```

```
Select whether to include or exclude pregnant patients in the audit: E// xclude
Pregnant Patients
okay, hold on...this may take a few minutes..

   Note:  When not running an official Audit, you may choose to include pregnant
   patients. Pregnant patients are identified as those who have had two or more
   pregnancy-related visits during the Audit period to a non-pharmacy clinic, or
   where the provider is not a CHR. The list of pregnancy-related diagnoses may be
   reviewed under the View/Print Taxonomy Lists.

There are 861 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// LL 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
          5         SDPI Key Measures Report (2016 Version)
          6         SDPI Key Measures Report (2018 Version)

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 2018 AUDIT

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 2018 AUDIT

I am going to create a file called dkr 2018 audit.txt which will reside in
the X:\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. PLEASE jot down and remember the following file name:
               **********    dkr 2018 audit.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 2018 audit.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//ES

     Select one of the following:

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

```
Demo Patient Inclusion/Exclusion: E// xclude DEMO Patients

Won't you queue this ? Y// ES

Requested Start Time: NOW//T@2000
```

Figure 3-8: Creating an Audit Export file

Make a note of the file name and notify the RPMS site manager that a Diabetes Audit has been run. Provide the name of the file and 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.

3.5 Run an SDPI Report

The option to create an SDPI Key Measures Report using either the 2015 or 2016 elements resides under the Diabetes Audit Menu.

1. At the **Diabetes Management Systems** menu, type **DA** and press Enter.
2. Type **DM18** (2018 Diabetes Program Audit) and press Enter.
3. Select **DM18** (Run 2018 Diabetes Program Audit) and follow the prompts as shown in the script in Figure 3-9 to generate an SDPI Key Measures Report.

```
Select 2018 Diabetes Program Audit Option: DM18  Run 2018 Diabetes Program Audit

In order for the 2018 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  [BGP CREATINE KINASE TAX] contains a panel test: SQL C
KMB 5030 and should not.
DRUG taxonomy  [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy  [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy  [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy  [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy  [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

                        ASSESSMENT OF DIABETES CARE, 2018

                                PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DEMO HOSPITAL

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:  12/31/16  (DEC 31, 2016)

     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 DEMO HOSPITAL
Do you want to select register patients with a particular status? Y// ES
Which status: A// ACTIVE

There are 873 patients in the IHS DEMO HOSPITAL REGISTER 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// O

Limit the patients who live in a particular community ? N// O

     Select one of the following:

          1         Indian/Alaskan Native (Classification 01)
          2         Not Indian Alaskan/Native (Not Classification 01)
          3         All (both Indian/Alaskan Natives and Non 01)

Select Beneficiary Population to include in the audit: 1//   Indian/Alaskan Native
(Classification 01)

     Select one of the following:

          I         Include Pregnant Patients
          E         Exclude Pregnant Patients

Select whether to include or exclude pregnant patients in the audit: E// xclude
Pregnant Patients
okay, hold on...this may take a few minutes..

   Note:  When not running an official Audit, you may choose to include pregnant
   patients. Pregnant patients are identified as those who have had two or more
   pregnancy-related visits during the Audit period to a non-pharmacy clinic, or
   where the provider is not a CHR. The list of pregnancy-related diagnoses may be
   reviewed under the View/Print Taxonomy Lists.

There are 861 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// LL 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
          5         SDPI Key Measures Report (2015 Version)
          6         SDPI Key Measures Report (2016 Version)
```

```
 Enter Print option: 1// 6  SDPI Key Measures Report (2016 Version)

     Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// xclude DEMO Patients

     Select one of the following:

          P         PRINT Output
          B         BROWSE Output on Screen

Do you wish to: P//                      <BROWSE or PRINT as desired>
```

Figure 3-9: Running an SDPI Key Measures Report

The SDPI Key Measures Report (2016 Version) is displayed in Figure 3-10. Note that this report was not changed for 2017 or 2018.

```
   LAB                             Jan 03, 2018                        Page 1

           IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
  SDPI Required Key Measures Report [2016 Version] (01/01/2016 to 12/31/2016)
                      Facility:        DEMO HOSPITAL

         Data for 1227 patients/participants were used for this report*
--------------------------------------------------------------------------------
                                           # of        #            Percent
                                           Patients    Considered
                                           (Numerator) (Denominator)


Aspirin or Other Antiplatelet Therapy in Cardiovascular Disease
     In patients with diagnosed CVD, aspirin         8         449         2%
     or other antiplatelet/anticoagulant
     therapy prescribed

Blood Pressure Control
     Mean blood prssure <140/<90 mmHg               15       1,227         1%
     (Mean of last 2, or 3 if available)

Chronic Kidney Disease Screening and Monitoring
     In age 18+, both UACR & eGFR done              10       1,189         1%

Dental Exam
     Dental exam received                           11       1,227         1%

Depression Screening
     In patients without active depression,         24       1,104         2%
     screened for depression

Diabetes-related Education
     Any diabetes topic (nutrition,                 21       1,227         2%
     physical activity, or other)
```

```
Eye Exam - Retinopathy Screening
     Eye exam - dilated or retinal imaging          12       1,227         1%

Foot Exam
     Foot exam - comprehensive                      12       1,227         1%

Glycemic Control
     A1C <8.0%                                       3       1,227         0%

Immunizations: Hepatitis B
     Hepatitis B 3-dose series complete - ever     750       1,227        61%

Immunizations: Influenza
     Influenza vaccine during report period         11       1,227         1%

Immunizations: Pneumococcal
     Pneumococcal vaccine - ever                   825       1,227        67%

   LAB                            Jan 03, 2018                      Page 2

            IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT
  SDPI Required Key Measures Report [2016 Version] (01/01/2016 to 12/31/2016)
                      Facility:        DEMO HOSPITAL

         Data for 1227 patients/participants were used for this report*
--------------------------------------------------------------------------------
                                          # of        #            Percent
                                          Patients    Considered
                                          (Numerator) (Denominator)


Immunizations: Tetanus/Diphtheria
     Tetanus/diphtheria - past 10 years         1,078       1,227        88%

Lipid Management in Cardiovascular Disease
     In patients aged 40-75 and/or with           587       1,010        58%
     diagnosed CVD, statin prescribed

Nutrition Education
     Nutrition education - by any provider         18       1,227         1%

Physical activity education
     Physical activity education                    9       1,227         1%

Tobacco Use Screening
     Screened for tobacco use during               34       1,227         3%
     report period

Tuberculosis Screening
     TB test done (skin or blood)                 727       1,227        59%
```

Figure 3-10: Sample SDPI Key Measures Report

4.0 Upload the Export (Data) File to WebAudit

Upload the audit data file to the WebAudit for data cleaning, report generation, and submission of data to the IHS Division of Diabetes. For further information and resources, visit the IHS Division of Diabetes Audit website at https://www.ihs.gov/diabetes/audit/.

Use the following steps to upload the file:

1. Request and activate a WebAudit account if you do not already have one.
2. Log in to WebAudit.
3. Select **Enter Facility Info** from the menu on the left or, from the main menu, select **Facility Administration**, then **Enter Facility Information**.
4. Enter the number of patients in the diabetes registry that meet the inclusion and exclusion criteria found in the 2018 Audit Instructions and Section 2.1.
5. Click **Save**.
6. Select **Upload Data** from the menu on the left or, from the main menu, select **Data Processing**, then **Upload Data**.
7. Select an Audit Type. For the Annual Audit submitted to the IHS Division of Diabetes, select **Annual Audit**. For all other audits, select **Interim Audit**.
8. Individuals with access to multiple facilities will need to select a Facility.
9. Click **Browse** and navigate to the data file, then click **Open**.
10. When the data file is selected, click **Upload File**.
    a. If the upload of the data file is successful, you will receive a message on the screen telling you that the file was successfully uploaded.
    b. If the upload is unsuccessful, you will receive an on-screen message telling you that the file upload attempt was unsuccessful, with a brief description of the problem.
11. Once the file has been successfully uploaded, proceed with checking the data quality and generating reports, as described in the Audit 2018 Instructions, which can be found on the Audit website: https://www.ihs.gov/diabetes/audit/audit-resources/.

5.0 Import the Audit Export (Data) File to Excel

When researching patients or data values, it may be helpful to import the Audit Export file into Excel to sort or filter data. The 2018 Diabetes Audit Export file is a delimited text file. This means that the file has all of the audit data elements for each patient in a single row with 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 data fields are identified by headers in the first row of the file.

Appendix B provides details about the Audit Export file format and field definitions.

Figure 5-1 shows an Audit Export file opened in Notepad.

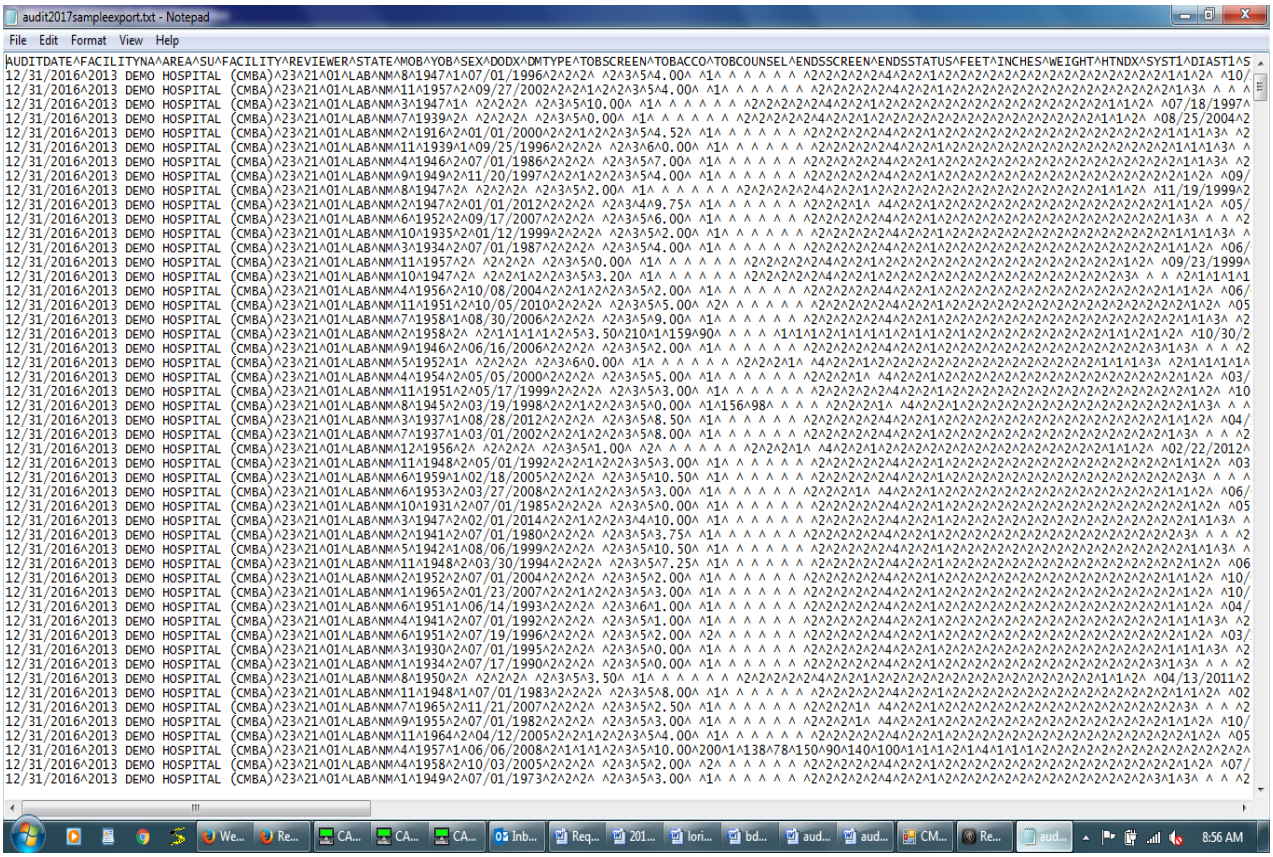

Figure 5-1: Sample Audit Export file displayed in Notepad

To import a file into Excel:

1. Open Excel and select a blank workbook.
2. Click **File**, then **Open**; browse to the folder containing the Audit Export file.

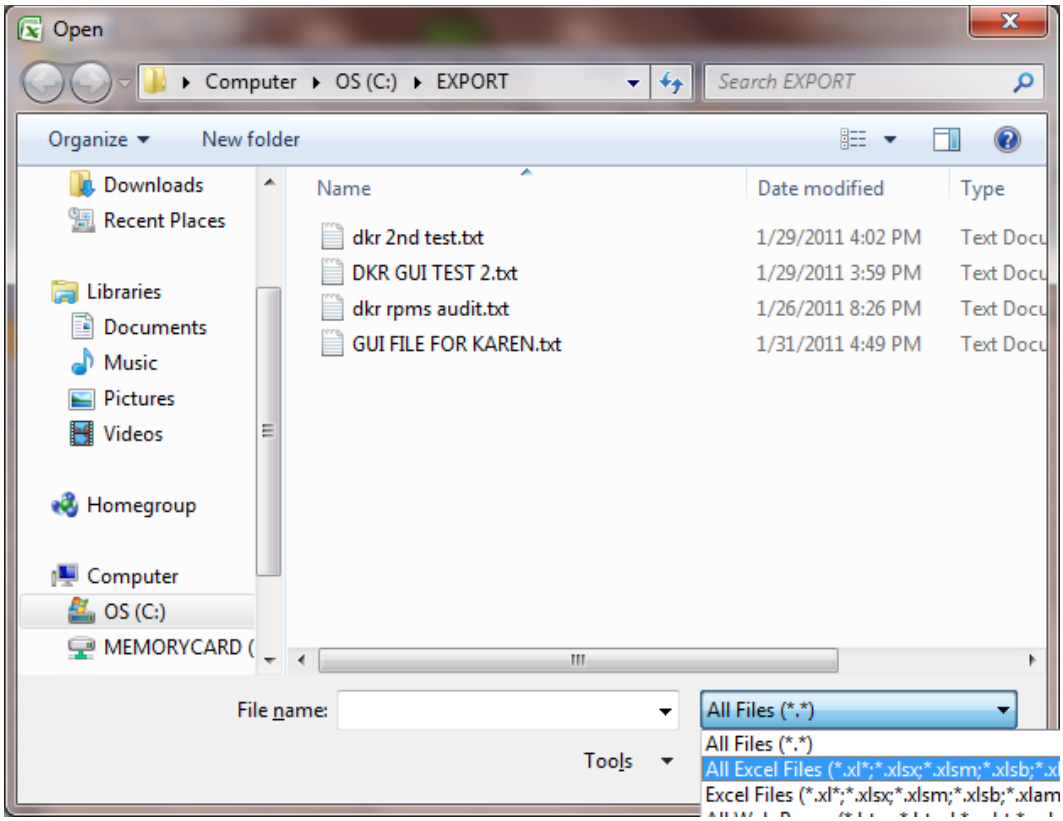

Figure 5-2: Excel – **Open** dialog

3. Change the file type from **All Excel Files** to **All Files** in the list (Figure 5-2). This is necessary to see and select the Audit Export file, which is not in Excel format.

4. Select the Audit Export file to import.

5. Click **Open**. The **Text Import Wizard – Step 1 of 3** dialog (Figure 5-3) displays.

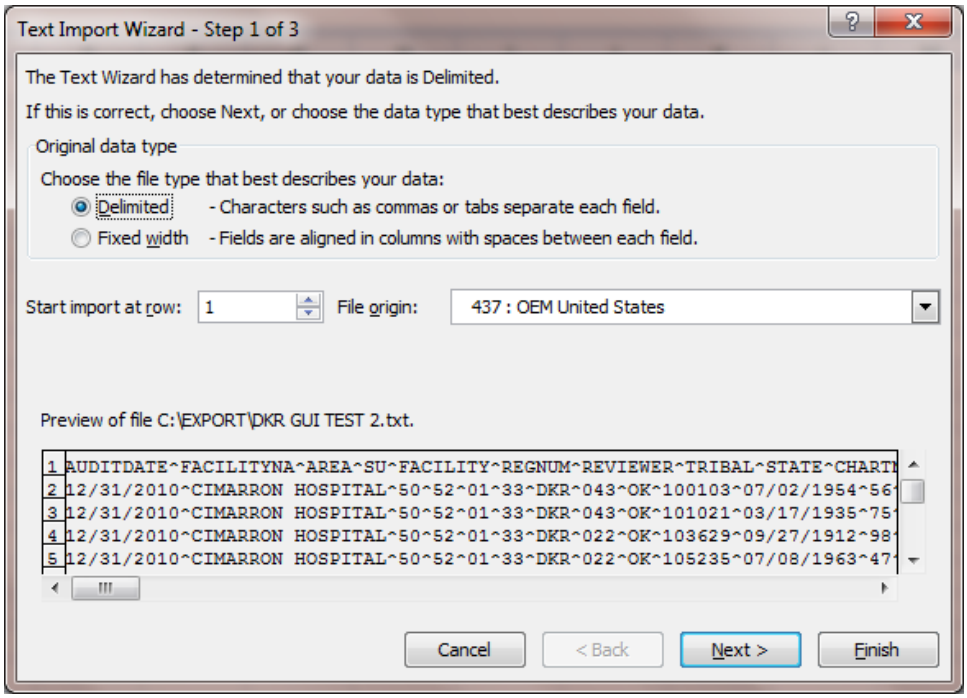

Figure 5-3: **Text Import Wizard – Step 1 of 3** dialog

6. If the Text Import Wizard does not correctly identify that this is a delimited file, select the **Delimited** option button.

7. Click **Next**. The **Text Import Wizard – Step 2 of 3** dialog (Figure 5-4) displays.

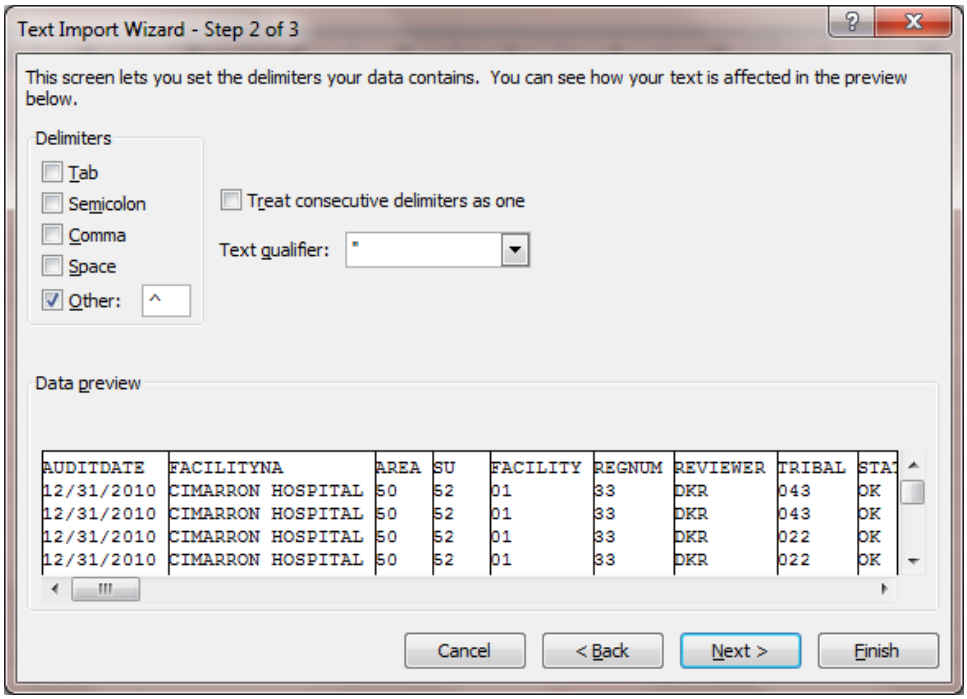

Figure 5-4: **Text Import Wizard – Step 2 of 3** dialog

8. Under Delimiters, select the **Other** check box and type a caret (^) in the field to the right of the check box.
9. Deselect the **Tab** check box.
10. Click **Next**. Vertical lines will display between the columns of data.
11. Click **Finish** to complete the import to Excel. Expand columns and sort data as desired.
12. To save the file in Excel format, select **Save As**.
13. Save as an Excel file. Save the Excel file in a secure folder as identified by the Information Technology (IT) staff at your facility.

> **Note**: The Excel file cannot be uploaded to the WebAudit; the original delimited text file must be uploaded.

6.0 Identify Patients with Potential Errors in the Audit Export File

The new DMS Data Quality Check report can be run to identify potential data errors prior to uploading data to the WebAudit (see Section 3.2). This DMS report includes patient identifiers, which the WebAudit version does not. If you do need to identify patients from the WebAudit version of the Data Quality Check, you can use the instructions below.

1. In the WebAudit, use the Data Quality Check tool to run the Annual Audit Potential Data Entry Errors Details report, as shown in Figure 6-1.

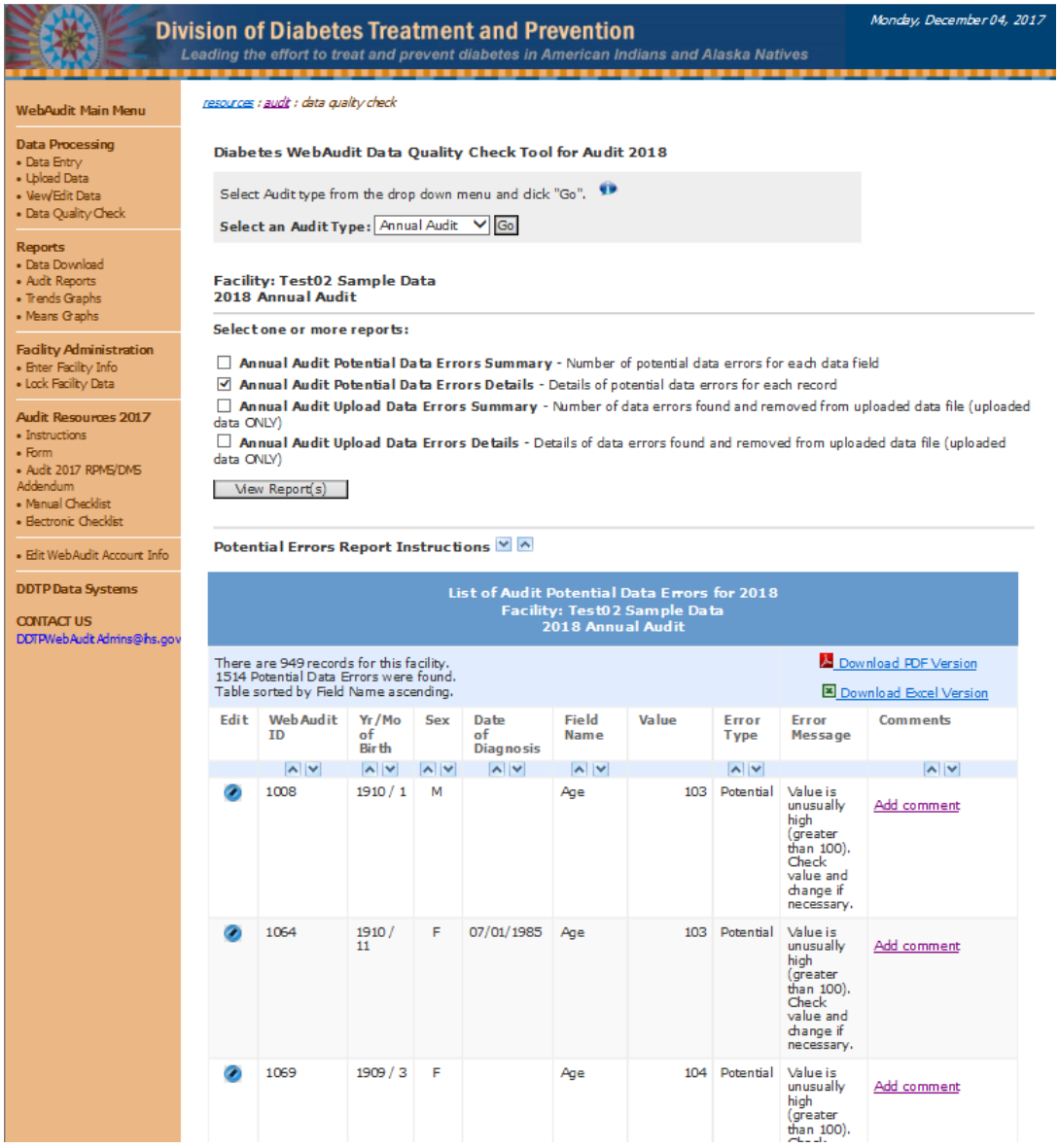

Figure 6-1: Sample of WebAudit Annual Audit Potential Data Entry Error Details Report

2. Scan through the errors. Use the link to add comments as needed or click the button to edit the record in order to gather additional data required to identify the patient.

   a. The Yr/Mo of Birth, Sex, and Date of Diagnosis may all be used to identify the patient either via iCare or using the GEN Report option in the Diabetes Management System.

   b. Once the patient is identified, either edit the record directly in the WebAudit using the View/Edit Data tool or correct the data in RPMS, then generate and upload a new Audit Export file.

   In Figure 6-2, the first patient with a WebAudit ID of 1008 has an unlikely value recorded for year of birth, which should be investigated and corrected if necessary.

List of Audit Potential Data Errors for 2018
Facility: Test02 Sample Data
2018 Annual Audit

There are 949 records for this facility.
1514 Potential Data Errors were found.
Table sorted by Field Name ascending.

Download PDF Version
Download Excel Version

Edit	Web Audit ID	Yr/Mo of Birth	Sex	Date of Diagnosis	Field Name	Value	Error Type	Error Message	Comments
	1008	1910 / 1	M		Age	103	Potential	Value is unusually high (greater than 100). Check value and change if necessary.	Add comment
	1064	1910 / 11	F	07/01/1985	Age	103	Potential	Value is unusually high (greater than 100). Check value and change if necessary.	Add comment
	1069	1909 / 3	F		Age	104	Potential	Value is unusually high (greater than 100). Check value and change if necessary.	Add comment
	1119	2014 / 9	F	03/07/1997	Age	None	Definite	Value cannot be less than or equal to 0. You must check values for Year of Birth and Audit Period Ending Date and change one or both dates.	Add comment

Figure 6-2: Sample of WebAudit Annual Audit Potential Data Entry Error Details Listing

Two ways for using the GEN Report to identify patients are described below:

- Option 1: Identifying the patient by Date of Diagnosis
- Option 2: Identifying the patient by Register Status, Sex, and Year and Month of Birth

6.1 Identify patients by Date of Diagnosis

1. Type **RP** at the Diabetes Management System main menu and press Enter.
2. Type **RR** and press Enter.
3. Type **GEN** and press Enter.
4. At the "Do you want to use a PREVIOUSLY DEFINED REPORT?" prompt (Figure 6-3), press Enter to accept the default (bypass the option to use a previously defined report).

```
This report will produce a listing of Patients on a Register selected by the user.
You will be asked (in three separate steps) to identify your selection criteria;
what you wish displayed for each patient; and the sorting order for your list. You
may save the logic used to produce the report for future use. If you design a report
that is 80 characters or less in width, it can be displayed on your screen or
printed. If your report is 81-132 characters wide, it must be printed - and only on
a printer capable of producing 132 character lines.

Do you want to use a PREVIOUSLY DEFINED REPORT? N// <Enter>
```

Figure 6-3: Previously Defined Report prompt

5. At the "Select Patients based on which of the above" prompt, type 33 (Date of Onset) and press Enter (Figure 6-4).

```
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY

The Patients displayed can be SEARCHED based on any of the following criteria:

1)  Patient Name          13)  Eligibility Status    25)  PHN
2)  Patient Sex           14)  Class/Beneficiary     26)  Last Review Date
3)  Patient DOB           15)  Cause of Death        27)  Next Review Date
4)  Birth Month           16)  Medicare Eligibility  28)  Where PT Followed
5)  Patient Age           17)  Medicaid Eligibility  29)  Date Last Edited
6)  Patient DOD           18)  Priv Ins Elibibility  30)  Case Comments
7)  Mlg Address-State     19)  Primary Care Provide  31)  Register Provider
8)  Mlg Address-Zip Code  20)  Register Status       32)  Case History
9)  Living Patients       21)  Initial Entry Date    33)  Date of Onset
10)  Chart Facility       22)  Inactivation Date     34)  Recall Date
11)  Patient Community    23)  Case Priority
12)  Patient Tribe        24)  Case Manager

      Select Patients based on which of the above:  (1-34): 33 <Enter>
```

Figure 6-4: Select Patients based on which of the above" prompt

6. At the "Enter beginning Date of Onset for Search" prompt, type the date of diagnosis of the patient and press Enter (Figure 6-5).

```
  Date of Onset Selection.
Enter beginning Date of Onset for Search:  02/26/2004 <Enter>
```

Figure 6-5: Enter beginning date of onset

7. At the "Enter ending Date of Onset for Search" prompt, type the date of patient's diagnosis (the original date entered will display as a default date) and press Enter (Figure 6-6).

```
Enter ending Date of Onset for Search:  Feb 26, 2004// <Enter>
```

Figure 6-6: Enter ending date of onset

8. At the "Would you like to select additional PATIENT criteria?" prompt, press Enter to select the default (No – Figure 6-7).

```
      CMS REGISTER PATIENT Selection Criteria:
            Date of Onset:  FEB 26, 2004-FEB 26, 2004

      Would you like to select additional PATIENT criteria? NO// <Enter>
```

Figure 6-7: Prompt for additional patient criteria

9. At the "Select print item(s)" prompt, type **1,2,3,5,39** and press Enter to print the corresponding items (Patient Name, Patient Chart, Patient Sex, Patient Date of Birth, and Patient Date of Onset – Figure 6-8).

```
Select one of the following:

          T         Total Count Only
          S         Sub-counts and Total Count
          D         Detailed Patient Listing
          F         Delimited Export File

     Choose Type of Report: D//D   Detailed Patient Listing
At the "Choose Type of Report" prompt, press Enter to select the default (D Detailed
Patient Listing).
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY
                             PRINT Data Items Menu

1)  Patient Name          15)  Patient Community     29)  Case Manager
2)  Patient Chart #       16)  Patient Tribe         30)  PHN
3)  Patient Sex           17)  Eligibility Status    31)  Last Review Date
4)  Patient SSN           18)  Class/Beneficiary     32)  Next Review Date
5)  Patient DOB           19)  Cause of Death        33)  Where PT Followed
6)  Birth Month           20)  Medicare Eligibility  34)  Date Last Edited
7)  Patient Age           21)  Medicaid Eligibility  35)  Case Comments
8)  Patient DOD           22)  Priv Ins Elibibility  36)  Client Contact
9)  Mlg Address-Street    23)  Patient's Last Visit  37)  Register Provider
10)  Mlg Address-State    24)  Primary Care Provide  38)  Case History
11)  Mlg Address-City     25)  Register Status       39)  Date of Onset
12)  Mlg Address-Zip Code 26)  Initial Entry Date    40)  Recall Date
```

```
13)  Home Phone           27)  Inactivation Date
14)  Mother's Name        28)  Case Priority

Select print item(s):  (1-40): 1,2,3,5,39
```

Figure 6-8: Prompt to select print items

10. Press Enter to accept the default column width for each data item to be printed (Figure 6-9

```
Enter Column width for Patient Name (suggested: 20):  (2-80): 20//
Enter Column width for Patient Chart # (suggested: 12):  (2-80): 12//
Enter Column width for Patient Sex (suggested: 6):  (2-80): 6//
Enter Column width for Patient DOB (suggested: 12):  (2-80): 12//
```

Figure 6-9: Prompt for default data column width

11. At the "Would you like to select additional PRINT criteria?" prompt, press Enter to accept the default (No additional Print criteria – Figure 6-10).

```
      PRINT Items Selected:
            Patient Name - column width 20
            Patient Chart # - column width 12
            Patient Sex - column width 6
            Patient DOB - column width 12
            Date of Onset - column width 12
            Total Report width (including column margins - 2 spaces):   72

      Would you like to select additional PRINT criteria? NO// <ENTER>
```

Figure 6-10: Prompt for additional print criteria

12. At the "Sort Patients by which of the above" prompt, press Enter to accept the default (Patient Name – Figure 6-11).

```
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY

The Patients displayed can be SORTED by any one of the following:

     1)  Patient Name                   15)  Next Review Date
     2)  Patient Age                    16)  Date Last Edited
     3)  Patient Community              17)  Case Priority
     4)  Patient Sex                    18)  Case Manager
     5)  Patient Tribe                  19)  PHN
     6)  Patient Chart #                20)  Where PT Followed
     7)  Primary Care Provider (PCC)    21)  Register Provider
     8)  Classification/Beneficiary     22)  Inactivation Date
     9)  Eligibility Status             23)  Initial Entry Date
     10)  Cause of Death                24)  Mlg Address-Zip Code
     11)  Patient DOB                   25)  Mlg Address-State
     12)  Patient DOD                   26)  Birth Month
     13)  Register Status
     14)  Last Review Date

Sort Patients by which of the above:  (1-26): <ENTER>
```

Figure 6-11: Sort options for patient display

13. At the "Would you like a custom title for this report?" prompt, press Enter to accept the default (no custom title – Figure 6-12).

```
Would you like a custom title for this report? N// <ENTER>
```

Figure 6-12: Report custom title prompt

14. At the "Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use?" prompt, press Enter to accept the default (No – Figure 6-13).

```
Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use? N// <ENTER>
```

Figure 6-13: Prompt to save search/print/sort logic

15. The patient(s) found by Date of Diagnosis should display on the report (Figure 6-14).

```
                              REPORT SUMMARY

      CMS REGISTER PATIENT Selection Criteria:
            Date of Onset:  FEB 26, 2004-FEB 26, 2004

      PRINT Items Selected:
            Patient Name - column width 20
            Patient Chart # - column width 12
            Patient Sex - column width 6
            Patient DOB - column width 12
            Date of Onset - column width 12

            Total Report width (including column margins - 2 spaces):   72

      CMS REGISTER PATIENT SORTING Criteria:
            CMS REGISTER PATIENTS will be sorted by:  Patient Name

DEVICE: HOME//
                    CASE MANAGEMENT PATIENT REGISTER LISTING

REPORT REQUESTED BY: DEMO,DOROTHY

REGISTER:  IHS DIABETES

The following report contains a CONFIDENTIAL Patient report based on the following
criteria:

PATIENT Selection Criteria
      Date of Onset:  FEB 26, 2004-FEB 26, 2004

PRINT Field Selection
      Patient Name  (20)
      Patient Chart #  (12)
      Patient Sex  (6)
      Patient DOB  (12)
      Date of Onset  (12)
               TOTAL column width: 72
```

```
Patients will be SORTED by:  Patient Name

Hit return to continue....:
                    CASE MANAGEMENT PATIENT LISTING             Page 1
                         IHS DIABETES REGISTER
PATIENT NAME          HRN           SEX     DOB           DATE ONSET
------------------------------------------------------------------------
DEMOG,LISA MILLER    WW-999996     FEMALE  05/08/1958    FEB 26, 2004
DEMOH,GLENDOLYN      WW-999997     FEMALE  02/24/1943    FEB 26, 2004

Total Patients 2
End of report.
```

Figure 6-14: Sample Diabetes Management System Report Summary

> **Note**: More than one patient may have the same date of diagnosis and the additional print criteria of date of birth and sex should help identify the correct patient.

6.2 Identify Patients by Age and Sex

This report may be run to identify patients who do not have a date of diagnosis uploaded to the WebAudit. It is run much the same as the report searching for Date of Onset, except on the Patient Selection Screen, Selection items will include Date of Birth, Sex, and Register Status.

1. Type **RP** at the **Diabetes Management System** menu and press Enter.
2. Type **RR** and press Enter.
3. Type **GEN** and press Enter.
4. At the "Do you want to use a PREVIOUSLY DEFINED REPORT?" prompt, press Enter to accept the default (bypass the option to use a previously defined report – Figure 6-15).

```
This report will produce a listing of Patients on a Register selected by the user.
You will be asked (in three separate steps) to identify your selection criteria;
what you wish displayed for each patient; and the sorting order for your list. You
may save the logic used to produce the report for future use. If you design a report
that is 80 characters or less in width, it can be displayed on your screen or
printed. If your report is 81-132 characters wide, it must be printed - and only on
a printer capable of producing 132 character lines.

Do you want to use a PREVIOUSLY DEFINED REPORT? N// <ENTER>
```

Figure 6-15: Prompt to use a previously defined report

5. At the "Select Patients based on which of the above" prompt, type **2,5,20** (Patient Sex, Patient Age, Register Status) and press Enter (Figure 6-16).

```
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY
```

```
The Patients displayed can be SEARCHED based on any of the following criteria:

1)  Patient Name          13)  Eligibility Status    25)  PHN
2)  Patient Sex           14)  Class/Beneficiary     26)  Last Review Date
3)  Patient DOB           15)  Cause of Death        27)  Next Review Date
4)  Birth Month           16)  Medicare Eligibility  28)  Where PT Followed
5)  Patient Age           17)  Medicaid Eligibility  29)  Date Last Edited
6)  Patient DOD           18)  Priv Ins Elibibility  30)  Case Comments
7)  Mlg Address-State     19)  Primary Care Provide  31)  Register Provider
8)  Mlg Address-Zip Code  20)  Register Status       32)  Case History
9)  Living Patients       21)  Initial Entry Date    33)  Date of Onset
10)  Chart Facility       22)  Inactivation Date     34)  Recall Date
11)  Patient Community    23)  Case Priority
12)  Patient Tribe        24)  Case Manager

      Select Patients based on which of the above:  (1-34): 2,5,20 <Enter>
```

Figure 6-16: Patient selection criteria prompt

6. At the "ENTER Patient Sex" prompt, type the patient's gender and press Enter (Figure 6-17).

```
2)  Patient Sex Selection.
ENTER Patient Sex: FEMALE
ENTER Patient Sex:
```

Figure 6-17: Prompt to select patient sex

7. At the "Enter a Range of numbers" prompt, type the patient's current age for both the beginning and ending age (e.g., 72-72) and press Enter (Figure 6-18).

```
5)  Patient Age Selection.
Enter a Range of numbers (e.g. 5-12,1-1): 72-72
```

Figure 6-18: Prompt to select patient age

8. At the "ENTER Register Status" prompt, type **ACTIVE** and press Enter (Figure 6-19).

```
20)  Register Status Selection.
ENTER Register Status: ACTIVE
```

Figure 6-19: Register status prompt

9. At the "Would you like to select additional PATIENT criteria?" prompt, press Enter to select the default (No – Figure 6-20).

```
      Would you like to select additional PATIENT criteria? NO// <ENTER>
```

Figure 6-20: Additional patient criteria prompt

10. At the "Choose Type of Report" prompt, press Enter to select the default (D Detailed Patient Listing – Figure 6-21).

```
Select one of the following:

          T         Total Count Only
          S         Sub-counts and Total Count
          D         Detailed Patient Listing
          F         Delimited Export File

     Choose Type of Report: D//D   Detailed Patient Listing
```

Figure 6-21: Prompt for type of report

11. At the "Select print item(s)" prompt, type **1,2,3,5,39** and press Enter to print the corresponding items (Patient Name, Patient Chart, Patient Sex, Patient Date of Birth, and Patient Date of Onset – Figure 6-22).

```
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY
                             PRINT Data Items Menu

1)  Patient Name          15)  Patient Community     29)  Case Manager
2)  Patient Chart #       16)  Patient Tribe         30)  PHN
3)  Patient Sex           17)  Eligibility Status    31)  Last Review Date
4)  Patient SSN           18)  Class/Beneficiary     32)  Next Review Date
5)  Patient DOB           19)  Cause of Death        33)  Where PT Followed
6)  Birth Month           20)  Medicare Eligibility  34)  Date Last Edited
7)  Patient Age           21)  Medicaid Eligibility  35)  Case Comments
8)  Patient DOD           22)  Priv Ins Elibibility  36)  Client Contact
9)  Mlg Address-Street    23)  Patient's Last Visit  37)  Register Provider
10)  Mlg Address-State    24)  Primary Care Provide  38)  Case History
11)  Mlg Address-City     25)  Register Status       39)  Date of Onset
12)  Mlg Address-Zip Code 26)  Initial Entry Date    40)  Recall Date
13)  Home Phone           27)  Inactivation Date
14)  Mother's Name        28)  Case Priority

Select print item(s):  (1-40): 1,2,3,5,39
```

Figure 6-22: Prompt to select print items

12. Press Enter to accept the default column width for each data item to be printed (Figure 6-23).

```
Enter Column width for Patient Name (suggested: 20):  (2-80): 20//
Enter Column width for Patient Chart # (suggested: 12):  (2-80): 12//
Enter Column width for Patient Sex (suggested: 6):  (2-80): 6//
Enter Column width for Patient DOB (suggested: 12):  (2-80): 12//
```

Figure 6-23: Prompt for data column width

13. At the "Would you like to select additional PRINT criteria?" prompt, press Enter to accept the default (No additional Print criteria – Figure 6-24).

```
      PRINT Items Selected:
            Patient Name - column width 20
            Patient Chart # - column width 12
            Patient Sex - column width 6
            Patient DOB - column width 12
            Date of Onset - column width 12
```

```
            Total Report width (including column margins - 2 spaces):   72

      Would you like to select additional PRINT criteria? NO// <ENTER>
```

Figure 6-24: Additional print criteria prompt

14. At the "Sort Patients by which of the above" prompt, press Enter to accept the default (Patient Name – Figure 6-25).

```
REGISTER:  IHS DIABETES     USER:  DEMO,DOROTHY

The Patients displayed can be SORTED by any one of the following:

     1)  Patient Name                    15)  Next Review Date
     2)  Patient Age                     16)  Date Last Edited
     3)  Patient Community               17)  Case Priority
     4)  Patient Sex                     18)  Case Manager
     5)  Patient Tribe                   19)  PHN
     6)  Patient Chart #                 20)  Where PT Followed
     7)  Primary Care Provider (PCC)     21)  Register Provider
     8)  Classification/Beneficiary      22)  Inactivation Date
     9)  Eligibility Status              23)  Initial Entry Date
     10)  Cause of Death                 24)  Mlg Address-Zip Code
     11)  Patient DOB                    25)  Mlg Address-State
     12)  Patient DOD                    26)  Birth Month
     13)  Register Status
     14)  Last Review Date

Sort Patients by which of the above:  (1-26): <ENTER>
```

Figure 6-25: Prompt to sort patient display

15. At the "Would you like a custom title for this report?" prompt, press Enter to accept the default (no custom title, see Figure 6-26).

```
Would you like a custom title for this report? N// <ENTER>
```

Figure 6-26: Prompt for report custom title

16. At the "Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use?" prompt, press Enter to accept the default (No, see Figure 6-27).

```
Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use? N// <ENTER>
```

Figure 6-27: Prompt to save search/print/sort logic

17. The patient(s) found by Date of Diagnosis should display on the report (Figure 6-28).

```
                            REPORT SUMMARY

      CMS REGISTER PATIENT Selection Criteria:
            Date of Onset:  FEB 26, 2004-FEB 26, 2004

      PRINT Items Selected:
```

```
            Patient Name - column width 20
            Patient Chart # - column width 12
            Patient Sex - column width 6
            Patient DOB - column width 12
            Date of Onset - column width 12

            Total Report width (including column margins - 2 spaces):   72

      CMS REGISTER PATIENT SORTING Criteria:
            CMS REGISTER PATIENTS will be sorted by:  Patient Name

DEVICE: HOME//
                     CASE MANAGEMENT PATIENT REGISTER LISTING

REPORT REQUESTED BY: DEMO,DOROTHY

REGISTER:  IHS DIABETES

The following report contains a CONFIDENTIAL Patient report based on the following
criteria:
      CMS REGISTER PATIENT Selection Criteria:
            Patient Age:  72-72
            Patient Sex:  FEMALE
            Register Status:  ACTIVE

PRINT Field Selection
      Patient Name  (20)
      Patient Chart #  (12)
      Patient Sex  (6)
      Patient DOB  (12)
      Date of Onset  (12)
               TOTAL column width: 72

Patients will be SORTED by:  Patient Name

Hit return to continue....:
                     CASE MANAGEMENT PATIENT LISTING             Page 1
                          IHS DIABETES REGISTER
PATIENT NAME          HRN           SEX     DOB           DATE ONSET
------------------------------------------------------------------------DEMO,LENNY
DEE        WW-201886     FEMALE  05/08/1943    OCT 01, 2010

Total Patients 1

End of report.
```

Figure 6-28: Sample Report Summary of Patients displaying Age, Sex, Date of Onset

> **Note**: More than one patient may have the same date of diagnosis; the additional print criteria of date of birth and sex should help identify the desired patient.

7.0 Display 2018 Diabetes Audit Logic

The revised logic for the 2018 Diabetes Audit is provided under the **DAL** menu option in the **DA Diabetes QA Audit** menu, as shown in Figure 7-1.

1. At the **Diabetes Management Systems** menu, type **DA** and press Enter.
2. At the **Diabetes QA Audit** menu, type **DAL** (Display Audit Logic) and press Enter.
3. At the "Select DMS AUDIT ITEM DESCRIPTIONS AUDIT YEAR" prompt, type **2018** for the audit year and press Enter to display the item list.

```
DM AUDIT ITEM DESCRIPTION     Jan 03, 2018 10:08:46          Page:    1 of    1
DM Logic Display
1)  AUDIT DATE              20)  BLOOD PRESSURES (LAS  39)  HEPATITIS C - BORN 1
2)  FACILITY NAME           21)  FOOT EXAM - COMPLETE  40)  RETINOPATHY (DIAGNOS
3)  REVIEWER INITIALS       22)  EYE EXAM (dilated or  41)  INFLUENZA VACCINE DU
4)  STATE OF RESIDENCE      23)  DENTAL EXAM           42)  PNEUMOCOCCAL VACCINE
5)  CHART NUMBER            24)  DEPRESSION AN ACTIVE  43)  Td or Tdap IN PAST 1
6)  DATE OF BIRTH           25)  DEPRESSION SCREENING  44)  Tdap EVER
7)  SEX                     26)  NUTRITION INSTRUCTIO  45)  HEPATITIS B 3-DOSE S
8)  PRIMARY CARE PROVIDE    27)  PHYSICAL ACTIVITY IN  46)  A1C
9)  DATE OF DIABETES DIA    28)  DM EDUCATION (OTHER)  47)  TOTAL CHOLESTEROL
10)  DM TYPE                29)  DIABETES THERAPY      48)  HDL CHOLESTEROL
11)  TOBACCO - SCREENED D   30)  ACE INHIBITOR OR ARB  49)  LDL CHOLESTEROL
12)  TOBACCO USE STATUS     31)  ASPIRIN/ OTHER ANTIP  50)  TRIGLYCERIDES
13)  TOBACCO CESSATION CO   32)  STATIN THERAPY        51)  SERUM CREATININE
14)  ELECTRONIC NICOTINE    33)  CVD                   52)  eGFR (ESTIMATED GFR)
15)  ENDS USE STATUS        34)  TB TEST DONE          53)  QUANTITATIVE URINE A
16)  HEIGHT                 35)  TB TEST RESULT        54)  COMBINED OUTCOMES ME
17)  WEIGHT                 36)  TB RESULT POSITIVE,   55)  e-GFR and UACR
18)  BMI                    37)  TB RESULT NEGATIVE,   56)  COMORBIDITY
19)  HYPERTENSION DOCUMEN   38)  HEPATITIS C - HCV Di
          Enter ?? for more actions
S    Select Item          A    Display All Items    Q    Quit
Select Action: +// Select Action: +//S

Which item(s):  (1-50): 17
```

Figure 7-1: 2018 Audit Logic display

4. At the "Select Action" prompt, type **S** and press Enter to enable selection of an audit logic item for review.
5. At the next "Select Action" prompt, type the number of the logic item to be displayed and press Enter.
6. Once the audit logic for a selected item displays, print it by typing **PL** at the "Select Action" prompt of the logic item display.
7. Enter the desired printer for the output at the DEVICE prompt.

Appendix A of this document provides a complete listing of the logic for all audit items.

8.0 Audit Resources

- The complete DMS v2.0 User Manual (bdm_020u.pdf) can be found on the RPMS website: https://www.ihs.gov/RPMS/PackageDocs/BDM/bdm_020u.pdf.
- Complete Diabetes Audit 2018 information can be found on the IHS Division of Diabetes website: https://www.ihs.gov/diabetes/audit/.
- IHS Standards of Care and Clinical Practice Recommendations: Type 2 Diabetes can be found on the IHS Division of Diabetes website: https://www.ihs.gov/diabetes/clinician-resources/soc/.

9.0 Diabetes Patient Care Summary

The Diabetes Patient Care Summary or Supplement displays as the last page of a Health Summary or can be displayed or printed as a stand-alone document either from RPMS or EHR. The Diabetes Patient Care Summary uses the same taxonomies and most of the same logic used for the Diabetes Audit. The displayed results are based on the most recent data available rather than a specified audit period.

Except for ACE Inhibitor/ARB drugs, statin drugs, and aspirin/anti-platelet/anti-coagulant drugs, no other drugs are displayed on the Diabetes Patient Care Summary. Medication information may be readily accessed via other EHR and RPMS options. The word “Maybe” as seen in the sample Diabetes Patient Care Summary is a sign that a visit to a Dental Clinic or a provider type of Dentist was documented. No specific Dental Code, CPT code, or exam code was documented. The word “Maybe” may also display for Eye Exams and Foot Exams when a visit to a specific clinic or provider type was found, but not the specific code for the diabetic exam. Missing or inaccurate data might be a warning that taxonomies should be reviewed and updated.

Use the following steps to display the Diabetes Care Summary:

1. At the **Diabetes Management Systems** menu, type **DA** and press Enter.
2. At the **Diabetes QA Audit** menu, type **DPCS** (Display a Patient’s DIABETES CARE SUMMARY) and press Enter. The Diabetes Care Summary displays (Figure 9-1).

```
********** CONFIDENTIAL PATIENT INFORMATION [LAB]  Jan 03, 2018 **********
DIABETES PATIENT CARE SUMMARY          Report Date:  01/03/2018

Patient: DEMOLITTLE,PATIENT             HRN: 100000
Age:  58 (DOB 02/24/1958)              Sex: FEMALE
CLASS/BEN: INDIAN/ALASKA NATIVE        Designated PCP: DEMO,DOCTOR GEORGE

Date of DM Onset: 06/07/2001 (IHS DIABETES)              DM Problem #: TST12

BMI: 36.6  Last Height:  63.50 inches  10/06/2011
           Last Weight:  210 lbs       10/10/2016

Tobacco Use:  Current User CURRENT SMOKER, STATUS UNKNOWN  10/10/2016
              Counseled in the past year?  Yes 10/10/2016 TO-QT
Last Screened for Electronic Nicotine Delivery System (ENDS) use:
              NEVER USED ENDS USER  10/10/2016

HTN Diagnosed:  Yes
CVD Diagnosed:  No
Last 3 BP:      159/90   07/10/2016
(non ER)        152/96   04/04/2015
                154/76   11/09/2012

ACE Inhibitor/ARB prescribed (in past 6 months): No
Aspirin/Anti-platelet/Anticoagulant prescribed (in past yr):
   Yes  10/10/2016 ASPIRIN 81MG TAB
```

```
Statin prescribed (in past 6 months):
   Yes  10/10/2016 ROSUVASTATIN CA 5MG TAB

Exams (in past 12 months):
   Foot:    Yes  10/10/2016 Diabetic Foot Exam
   Eye:     Yes  10/10/2016 Diabetic Eye Exam
   Dental:  Yes  12/01/2016 Dental Exam

Depression: Active Problem: No
            If no, screened in past year:  Yes - Exam: DEPRESSION SCR 10/10/2016

Immunizations:
   Influenza vaccine (since August 1st):Yes  10/10/2016
   Pneumococcal vaccine (ever):         Yes  02/19/2002
   Td/Tdap (in past 10 yrs):            Yes  03/21/2012
   Tdap (ever):                         Yes  03/21/2012
   Hepatitis B series complete (ever):  Yes

TB - Last Documented Test:   10/06/2011   PPD
     TB Test Result:
     TB Treatment Completed:

Hepatitis C
Diagnosed with HCV ever: No
DOB 1945-1965 screened ever: No

Retinopathy Diagnosed: No

Laboratory Results (most recent):                    RPMS LAB TEST NAME
 A1C:                     10.5             11/10/2016 _HGB A1C
 Next most recent A1C:                     08/05/2015 _HGB A1C

 Creatinine:               1.2 mg/dL       10/10/2016 _CREATININE (R)

 Estimated GFR:                            07/31/2015 _ESTIMATED GFR (R)
 UACR (Quant A/C Ratio):    45 mg/g        10/10/2016 _MICROALB/CREAT.Rand ur

 Total Cholesterol:        260 mg/dL       10/10/2016 SQL CHOLESTEROL 1017
  LDL Cholesterol:         140 mg/dL       10/10/2016 _LDL-CHOLESTEROL
  HDL Cholesterol:          40 mg/dL       10/10/2016 _HDL CHOLESTEROL
  Triglycerides:           250 mg/dL       10/10/2016 _TRIGLYCERIDE

DM Education Provided (in past yr):
  Last Dietitian Visit (ever):  11/29/2012  TELEPHONE CALL
DM-EXERCISE                     10/10/2016  DEMO,DOROTHY        DIETITIAN
DM-LIFESTYLE ADAPTATIONS        10/10/2016  DEMO,DOROTHY        DIETITIAN
DM-MEDICAL NUTRITION THERAPY    10/10/2016  DEMO,DOROTHY        DIETITIAN

DEMOLITTLE,PATIENT                   DOB: 2/24/1958      Chart #TST 100000
```

Figure 9-1: Sample Diabetes Patient Care Summary

Appendix A: 2018 Diabetes Audit Logic

Notes: Audit Logic uses several taxonomies for diagnosis codes, CPT codes, LOINC codes, SNOMED codes, and medications that are used by other national RPMS programs. The contents of those taxonomies may be reviewed by using the **VTAX** (View/Print Any DM Audit Taxonomy) report option, found in the Diabetes Management System **Reports** menu.
View or print the contents of site-populated taxonomies by using the **TU18** (Update/Review Taxonomies for 2018 DM Audit) menu option under the **DM18** menu option of the **Diabetes Audit** menu.
View contents of SNOMED lists by using the **VSML** (View a SNOMED List Used by the DM AUDIT) menu option.

```
DM AUDIT LOGIC DESCRIPTIONS
------------------------------------------------------------------------------
                                  AUDIT DATE
This date, supplied by the user, determines the time period for which
data are reviewed for the Audit. For most Audit elements, data are
reviewed for the 12 months prior to the Audit date, known as the Audit
period.

For example, if the Audit date is December 31, 2017, data are reviewed
for the year prior to this date (January 1-December 31, 2017).


                                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. This information is taken from the New Person (file 200) entry for
the user.


                              STATE OF RESIDENCE
This is the state in which the patient resides at the time the Audit is
conducted.  This is captured from the mailing address.


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

Note:  This item is not included in the Audit Export (Data) File and
cannot be uploaded to the WebAudit.
```

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

Only the month and year of birth are included in the Audit Export (Data)
File and can be uploaded to the WebAudit, along with the age of the
patient as of the Audit date.


                                     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 Primary Care Provider (#.14) of the patient file.

Note: This item is not included in the Audit Export (Data) File and
cannot be uploaded into the WebAudit.


                         DATE OF DIABETES DIAGNOSIS
The diabetes onset date. This date is used in the calculation of the
duration of diabetes. Users can chose from three different dates:

   -  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 ICD diagnosis code ranges defined in the SURVEILLANCE
      DIABETES taxonomy or SNOMED code defined in PXRM DIABETES SNOMED
      subset
   -  The first recorded diagnosis (POV) of diabetes in PCC. ICD codes:
      SURVEILLANCE DIABETES taxonomy.

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 Audit date. 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 (Data) File: The earliest date found from the Diabetes
register or the problem list is exported. Format: MM/DD/YYYY


                                   DM TYPE
The following logic is used to determine diabetes type. Once a 'hit' is
made, no further processing is 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 is "Type I" the
type is assumed to be Type 1.
6. If the diagnosis documented in the Diabetes Register contains a '1'
```

```
the type is assumed to be Type 1.
7. 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 [SURVEILLANCE DIABETES taxonomy]
is also in the DM AUDIT TYPE II DXS taxonomy then the type is assumed to
be Type 2.
8. If any diabetes diagnosis on the problem list is also in the DM AUDIT
TYPE I DXS taxonomy then the type is assumed to be Type 1.
9. 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 the diagnosis is contained in the DM AUDIT TYPE II DXS
taxonomy the type is assumed to be Type II, if it is contained in the DM
AUDIT TYPE I DXS taxonomy it is assumed to be Type I.
10. If type is not determined by any of the above, type is assumed to be
Type 2 for the Audit (Data) Export File and Cumulative Audit. For the
Individual Audit and Diabetes Health Summary, "Not Documented" is
displayed.


                    TOBACCO - SCREENED DURING AUDIT PERIOD
If any of the following items is documented during the Audit period then
a value of 1 - Yes is assigned. Otherwise, a value of 2 - No is assigned.

- Health Factor in the TOBACCO (SMOKING) Category.
- Health Factor in the TOBACCO (SMOKELESS - CHEWING/DIP) Category.
- The PCC Problem list and purpose of visits are scanned for any diagnosis
  contained in the BGP TOBACCO DXS taxonomy.
- Any visit with Dental ADA code 1320 documented.
- Any visit with the following CPT codes documented:
  BGP TOBACCO SCREEN CPTS taxonomy.


                               TOBACCO USE STATUS
The last documented of the following items is found:

1. Health Factors in the categories TOBACCO (SMOKING) and TOBACCO
(SMOKELESS - CHEWING/DIP) that relate to the patient's tobacco use
status. As of the DM Audit 2018 these are the health factors available:
(the ones with one asterisk (*) indicate a current user, those with two
asterisks (**) are non-tobacco users, the others are put in the "Not
Documented" category).
*CURRENT SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
**PREVIOUS (FORMER) SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
*CESSATION-SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
SMOKELESS TOBACCO, STATUS UNKNOWN TOBACCO (SMOKELESS - CHEWING/D
**NEVER USED SMOKELESS TOBACCO TOBACCO (SMOKELESS - CHEWING/D
**NON-TOBACCO USER TOBACCO (SMOKING)
*CURRENT SMOKER, STATUS UNKNOWN TOBACCO (SMOKING)
**PREVIOUS (FORMER) SMOKER TOBACCO (SMOKING)
*CESSATION-SMOKER TOBACCO (SMOKING)
*CURRENT SMOKER, EVERY DAY TOBACCO (SMOKING)
*CURRENT SMOKER, SOME DAY TOBACCO (SMOKING)
**NEVER SMOKED TOBACCO (SMOKING)
SMOKING STATUS UNKNOWN TOBACCO (SMOKING)
*HEAVY TOBACCO SMOKER TOBACCO (SMOKING)
*LIGHT TOBACCO SMOKER TOBACCO (SMOKING)

If a factor is found in each of these categories, the one that indicates
a tobacco user is used. If one is found in just one category it is used.
For example, patient has LIGHT TOBACCO SMOKER and NEVER USED SMOKELESS
TOBACCO documented - the LIGHT TOBACCO USER is used. If the patient has
```

```
NEVER SMOKED and CURRENT SMOKELESS documented, CURRENT SMOKELESS is used.
2. Diagnoses contained in the BGP TOBACCO DXS taxonomy. Both the V POVs
and Problem List are checked. The latest documented diagnosis that is
contained in the taxonomy is used. Diagnoses that indicate a tobacco
user: diagnoses codes in the BGP TOBACCO USER DXS taxonomy, all others
are considered non-tobacco user.
3. Dental ADA code 1320 - TOBACCO USE INTERVENTION TO PREVENT DISEASE. If
this code is documented the patient is considered a tobacco user.
4. A CPT code documented that is in the BGP TOBACCO SCREEN CPTS taxonomy.
If the code found is in the BGP TOBACCO USER CPTS taxonomy the patient is
considered a tobacco user, all others are considered a non-tobacco user.

If the patient is a user then "1 - Current user" is assigned.
If the patient is not a tobacco user then "2 - Not a current user" is
assigned.
Otherwise "3 - Not documented" is assigned.


                         TOBACCO CESSATION COUNSELING
If the tobacco use status is "1 - Current user" then counseling
documented in the past year is searched for.
Counseling is defined as any of the following:
1. A health factor containing the word CESSATION documented in the past
year. (CESSATION-SMOKELESS, CESSATION-SMOKER) Taxonomy used:  DM AUDIT
CESSATION HLTH FACTOR.
2. A visit to clinic 94 - TOBACCO CESSATION CLINIC
3. A patient education topic that meets the following criteria:
   a. Begins with TO- (e.g. TO-Q)
   b. Ends in -TO (e.g. CAD-TO)
   c. Begins with any Tobacco User diagnosis (taxonomy is BGP TOBACCO
      USER DXS) (e.g. 305.1-L)
   d. Begins with any Tobacco User CPT code (e.g. 99407-L)
   e. Begins with a SNOMED code from the PXRM BGP TOBACCO TOPICS, PXRM BGP
      TOBACCO SMOKER, PXRM BGP TOBACCO SMOKELESS or PXRM BGP QUIT TOBACCO
      SNOMED code lists.  To see a list of these codes use option VSML
      View a SNOMED List Used by the DM AUDIT which can be found on the
      DM18 menu.
4. Any of the following CPT codes documented. These indicate tobacco use
counseling: CPT code D1320, 99406, 99407, G0375 (old code), G0376 (old
5. Dental ADA code 1320.

The latest documented of the above 5 data elements is displayed along
with the date.

If no counseling is found then the system will look for a smoking aid
prescribed:
Any prescription for a medication in the site-populated BGP CMS SMOKING
CESSATION MEDS taxonomy that does not have a comment of RETURNED TO
STOCK. A prescription for any medication with name containing "NICOTINE
PATCH", "NICOTINE POLACRILEX", "NICOTINE INHALER", or "NICOTINE
NASAL SPRAY" that does not have a comment of RETURNED TO STOCK.

If any the above is found, then a value of 1 - Yes is assigned.
Otherwise, a value of 2 - No is assigned.


           ELECTRONIC NICOTINE (ENDS)-SCREENED DURING AUDIT PERIOD
The last documented health factor in the category ELECTRONIC NICOTINE
DELIV SYSTEM (ENDS) during the Audit period is found.

Screened for electronic nicotine delivery system (ENDS) use during Audit
```

period:
If a health factor is found a value of 1 - Yes is assigned.
If no health factors have been recorded during the Audit period a value of
2 - No is assigned.

ENDS USE STATUS

The last documented health factor in the category ELECTRONIC NICOTINE DELIV SYSTEM (ENDS) is found.
Use status is assigned as follows:

CURRENT ENDS USER: 1 - Current User
CESSATION ENDS USER: 1 - Current User
PREVIOUS ENDS USER: 2 - Not a current user
NEVER USED ENDS USER: 2 - Not a current user
No health factor recorded: 3 - Not documented

HEIGHT

The last recorded height value taken on or before the Audit date.

Total height in inches is displayed for the Individual Audit and Diabetes Health Summary.

AUDIT Export (Data) File: The last recorded height prior to the Audit date is exported - either in feet and inches or just inches. The inches are rounded to 2 decimal digits. For example, 1.25 inches.

WEIGHT

The last recorded Weight value documented during the Audit period.

AUDIT Export (Data) File: The last recorded weight during the Audit period is exported, truncated to the nearest whole pound.

BMI

BMI is calculated as:

BMI = (weight/height*height) x 703.
weight=the last weight (in lbs) documented during the Audit period.
height=the last height (in inches) recorded any time before the Audit date.

Cumulative Audit: The number and percent of patients in each BMI category are calculated. If the patient did not have a height or weight recorded as described above, they are put into the "Height or weight missing" category.

Note: This item is not included in the Audit Export (Data) File.

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 and a value of 1 - Yes is assigned. Otherwise, a value of 2 - No is assigned.

Taxonomy used: SURVEILLANCE HYPERTENSION.
SNOMED List: PXRM ESSENTIAL HYPERTENSION. To see a list of these codes

use option "VSML- View a SNOMED List Used by the DM AUDIT" which can be found on the Diabetes Audit menu.

BLOOD PRESSURES (LAST 1, 2 or 3)

The most recent recorded blood pressure values (up to three on different days) on non-ER clinic visits during the Audit period are obtained. If more than one blood pressure is recorded on any one day, the latest one is used.

Cumulative Audit: If two or three blood pressures are available, then the mean is calculated and used to determine the blood pressure category. If only one blood pressure is available, it used to determine the category.

AUDIT Export (Data) File: The blood pressure values obtained above are exported, but mean blood pressure is not.

FOOT EXAM - COMPLETE

The logic used in determining if a comprehensive or 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. CPT codes 2028F and G9226 in V CPT [Taxonomy: BGP CPT FOOT EXAM]
3. 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.
4. 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.

If any of the above is found, a value of 1 - Yes is assigned. If none of the above are found the value is 2 - No.

EYE EXAM (dilated or retinal imaging)

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 year prior to the Audit date. Diabetic Eye Exam is defined as:
a. EXAM 03 - Diabetic Eye Exam
b. CPT in the DM AUDIT EYE EXAM CPTS taxonomy.

2. If one of the above is found, the value 1 - Yes is assigned and no further processing is done.

3. If none of the above is found, then all PCC Visits in the year prior to the Audit date 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, or A2). If found, then the value 1 - Yes is assigned and an indication of what was found is displayed. Refraction is defined as a POV on the visit of: [DM AUDIT REFRACTION DXS]. 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.

4. If none of the above are found, the value 2 - No is assigned.

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, the value 1 - Yes is assigned and 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, and there is any ADA code other than 9991, then it is assumed the exam was done, the value 1 - Yes is assigned and 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, the value 1 - Yes is assigned and no further processing is done.
4. A Visit on which a CPT code from the BGP DENTAL VISIT CPT CODES taxonomy was recorded. If found, then it is assumed the exam was done, and the value 1 - Yes is assigned.

If none of the above are found, the value 2 - No is assigned.

DEPRESSION AN ACTIVE PROBLEM

The patient's problem lists in both PCC and the Behavioral Health module are reviewed for any problem with a code that is contained in the BGP MOOD DISORDERS taxonomy; or for the following Behavioral Health problem codes: 14, 15.

If no problem is 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 assigned is 1 - Yes. If not, then a value of 2 - No is assigned.

DEPRESSION SCREENING

This item is only reviewed if depression was not found on the problem list and the patient is not currently being seen for depression. (See item DEPRESSION AS AN ACTIVE PROBLEM)

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

Exam 36 or Behavioral Health Module Depression Screening.

Diagnosis - V POV V79.0 (NOTE: there are no ICD10 codes used).

Measurements PHQ2, PHQ9, PHQT.

Behavioral Health Module Diagnosis (POV) of 14.1.

Diagnosis in the BGP MOOD DISORDERS taxonomy used as a Purpose of Visit.

Diagnosis in the BGP MOOD DISORDERS taxonomy used as a Purpose of visit in the Behavioral Health system.

Problem Code of 14 or 15 used as a Purpose of Visit in the Behavioral

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Health system.

CPT codes 1220F, 3725F or G0444 in PCC or Behavioral Health.

If any of the above is found then a value of 1 - Yes is assigned. If not,
then a value of 2 - No is assigned.


                            NUTRITION INSTRUCTION
The values for the Audit are:
1 RD
2 Other
3 Both RD & Other
4 None

All visits in the year prior to the Audit date are examined. Chart review
visits are skipped (service category of C or clinic code of 52).

- If the primary provider on any visit is a DIETITIAN 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 [BGP DIETARY SURVEILLANCE DXS] 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 or any
  Topic ending in -N
  Topic ending in -DT
  Topic ending in -MNT
  Topic beginning with MNT-
  Topic beginning with DNCN-
The V PAT ED entry is examined and if the provider documented in that
entry is a Dietitian or Nutritionist the RD is assigned if the provider
is blank or not a dietitian/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 - Both 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 none of the above is documented, the value 4 - None is assigned.


                         PHYSICAL ACTIVITY 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 value is assigned. No further processing is done.

All visits in the year prior to the Audit date are examined for a POV of
V65.41 (there are no ICD10 codes) and if one is found a 1 - Yes is
assigned.

If none of the above is documented, the value is 2 - No


                             DM EDUCATION (OTHER)
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All education topics documented in the year prior to the Audit date are examined. If any 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 a member of the DM AUDIT EDUC TOPICS taxonomy OR the topic begins with one of the following:
  - DM- (e.g. DM-L)
  - DMC- (e.g. DMC-L)
  - an ICD Diagnosis code that is a member of the SURVEILLANCE DIABETES taxonomy (e.g. 250.00-L, E10.51-L)
  - a Diabetes SNOMED code (e.g. 46635009-L)

If none of the above is documented, the value is 2 - No

DIABETES THERAPY

For each of the categories of medications listed below, the following logic is used to determine if the patient is currently taking the medication:

1. Looks for any PCC V Medication entry for any drug in the taxonomy of drugs being searched for where the visit date of the V Medication is in the 6 months prior to the Audit date. (Looking to see if the patient had at least 1 fill in the past 6 months.)

2. If no V Medication is found the Prescription file (file 52) is searched for any drug in the taxonomy of drugs being searched for. The prescription number must begin with an X (an X indicates that the prescription was e-prescribed). If the prescription begins with an X the following calulation is done:
   - days supply times (# of refills +1) (this is the total number of days the presciption covers)
   - # of days calculated above + issue date (this is the last date the presciption covers)
   - If the date calculated above is greater than the Audit date minus 180 days it is assumed the patient was taking that medication in the 6 months prior to the end of the Audit date

3. If no medications are found in searches 1 and 2 above the system will look for any EHR Outside Medication that fits into one of medication categories. EHR Outside Medications are found in the V Medication file and have a value in the EHR Outside Medication field and no discontinued date. The system will go back 10 years to find one of these medicatons. It is assumed that a medication entered as an EHR Outside Medication is active until it is discontinued.

If any medication in the taxonomy specified is found, then an 'X' is placed by the therapy name and a value of 1 - Yes is entered in the Audit Export file. If no medications are found then the None of the following item is marked with an 'X' and a value of 1 - Yes is entered in the Audit Export file for this item while a value of 2 - No is entered for all other therapy items.

Therapy	Taxonomy Name
Insulin	DM AUDIT INSULIN DRUGS
Sulfonylurea	DM AUDIT SULFONYLUREA DRUGS
Rapaglinide	DM AUDIT SULFONYLUREA-LIKE
Metformin	DM AUDIT METFORMIN DRUGS
Acarbose, miglitol	DM AUDIT ACARBOSE DRUGS
Pioglitazone, rosiglitazone	DM AUDIT GLITAZONE DRUGS

GLP-1 meds	DM AUDIT INCRETIN MIMETIC
	DM AUDIT GLP-1 ANALOG DRUGS
DPP4 inhibitors	DM AUDIT DPP4 INHIBITOR DRUGS
Amylin analogues	DM AUDIT AMYLIN ANALOGUES
Bromocriptine	DM AUDIT BROMOCRIPTINE DRUGS
Colesevelam	DM AUDIT COLESEVELAM DRUGS
SGLT-2 inhibitors	DM AUDIT SGLT-2 INHIBITOR DRUG

ACE INHIBITOR OR ARB

The taxonomy used to find ACE Inhibitors is DM AUDIT ACE INHIBITOR.

If any drug in the above listed taxonomy is found using the logic detailed below a value of 1 - Yes is assigned, no further processing is done.

1. Searches for any PCC V Medication entry for any drug in the taxonomy of drugs being searched for where the visit date of the V Medication is in the 6 months prior to the Audit date. (DM Audit is looking to see if the patient had at least 1 fill in the past 6 months.)

2. If no V Medication is found the Prescription file (file 52) is searched for any drug in the taxonomy of drugs being searched for. The prescription number must begin with an X (an X indicates that the prescription was e-prescribed). If the prescription begins with an X the following calulation is done:
   - days supply times (# of refills +1) (this is the total number of days the presciption covers)
   - # of days calculated above + issue date (this is the last date the presciption covers)
   - If the date calculated above is greater than the Audit date minus 180 days it is assumed the patient was taking that medication in the 6 months prior to the end of the Audit date

3. If no medications are found in searches 1 and 2 above the system will look for any EHR Outside Medication that fits into one of medication groups. EHR Outside Medications are found in the V Medication file and have a value in the EHR Outside Medication field and no discontinued date. The system will go back 10 years to find one of these medicatons. It is assumed that a medication entered as an EHR Outside Medication is active until it is discontinued.

4. 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 no relevant drugs are found then a 2 - No is assigned.

ASPIRIN/ OTHER ANTIPLATELET/ANTICOAGULANT THERAPY

Two taxonomies are used to find Aspirin and Other Anitplatelet/Anticoagulant therapy: DM AUDIT ASPIRIN DRUGS or DM AUDIT ANTIPLT/ANTICOAG

If any drug in the above listed taxonomies is found using the logic detailed below a value of 1 - Yes is assigned, no further processing is done.

1. Searches for any PCC V Medication entry for any drug in the taxonomy of drugs being searched for where the visit date of the V Medication is in the 6 months prior to the Audit date. (DM Audit is looking to see if the

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patient had at least 1 fill in the past 6 months.)

2.  If no V Medication is found the Prescription file (file 52) is
searched for any drug in the taxonomy of drugs being searched for.  The
prescription number must begin with an X (an X indicates that the
prescription was e-prescribed). If the prescription begins with an X the
following calulation is done:
   - days supply times (# of refills +1)  (this is the total number of
     days the presciption covers)
   - # of days calculated above + issue date (this is the last date
     the presciption covers)
   - If the date calculated above is greater than the Audit date
     minus 180 days it is assumed the patient was taking that medication
     in the 6 months prior to the end of the Audit date

3.  If no medications are found in searches 1 and 2 above the system will
look for any EHR Outside Medication that fits into one of medication
groups.  EHR Outside Medications are found in the V Medication file and
have a value in the EHR Outside Medication field and no discontinued
date. The system will go back 10 years to find one of these medicatons.
It is assumed that a medication entered as an EHR Outside Medication is
active until it is discontinued.

4.  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 no relevant drugs are found then a 2 - No is assigned.


                                STATIN THERAPY
One taxonomy is used to find Statin therapy:  BGP PQA STATIN MEDS

If any drug in the above listed taxonomy is found using the logic
detailed below a value of 1 - Yes is assigned, no further processing is
done.

1.  Searches for any PCC V Medication entry for any drug in the taxonomy
of drugs being searched for where the visit date of the V Medication is in
the 6 months prior to the Audit date.  (DM Audit is looking to see if the
patient had at least 1 fill in the past 6 months.)

2.  If no V Medication is found the Prescription file (file 52) is
searched for any drug in the taxonomy of drugs being searched for.  The
prescription number must begin with an X (an X indicates that the
prescription was e-prescribed). If the prescription begins with an X the
following calulation is done:
   - days supply times (# of refills +1)  (this is the total number of
     days the presciption covers)
   - # of days calculated above + issue date (this is the last date
     the presciption covers)
   - If the date calculated above is greater than the Audit date
     minus 180 days it is assumed the patient was taking that medication
     in the 6 months prior to the end of the Audit date

3.  If no medications are found in searches 1 and 2 above the system will
look for any EHR Outside Medication that fits into one of medication
groups.  EHR Outside Medications are found in the V Medication file and
have a value in the EHR Outside Medication field and no discontinued
date. The system will go back 10 years to find one of these medicatons.
It is assumed that a medication entered as an EHR Outside Medication is
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active until it is discontinued.

Statin Allergy defined as:
Adverse drug reaction/documented statin allergy defined as any of the following: 1) ALT and/or AST > 3x the Upper Limit of Normal (ULN) (i.e. Reference High) on 2 or more consecutive visits during the Audit Period; 2) Creatine Kinase (CK) levels > 10x ULN or CK > 10,000 IU/L during the Report Period; 3) Myopathy/Myalgia, defined as any of the following during the Report Period: POV ICD-9: 359.0-359.9, 729.1, 710.5, 074.1; ICD-10: G71.14, G71.19, G72.0, G72.2, G72.89, G72.9, M35.8, M60.80-M60.9, M79.1; 4) any of the following occurring anytime through the end of the Report Period: A) POV ICD-9: 995.0-995.3 AND E942.9; B) "Statin" or "Statins" entry in ART (Patient Allergies File); or C) "Statin" or "Statins" contained within Problem List or in Provider Narrative field for any POV ICD-9: 995.0-995.3, V14.8; ICD-10: Z88.8.

Test Definitions:

ALT: Site-populated taxonomy DM AUDIT ALT TAX or the BGP ALT LOINC taxonomy.

AST: Site-populated taxonomy DM AUDIT AST TAX or the BGP AST LOINC taxonomy.

Creatine Kinase: Site-populated taxonomy BGP CREATINE KINASE TAX or the BGP CREATINE KINASE LOINC taxonomy.

Statin Intolerance/Contraindication defined as:
Contraindications to Statins defined as any of the following: 1) Pregnancy (see definition below); 2) Breastfeeding, defined as POV ICD-9: V24.1; ICD-10: Z39.1 or breastfeeding patient education codes BF-BC, BF-BP, BF-CS, BF-EQ, BF-FU, BF-HC, BF-ON, BF-M, BF-MK, or BF-N during the Report Period; 3) Acute Alcoholic Hepatitis, defined as POV ICD-9: 571.1; ICD-10: K70.10, K70.11 during the Report Period; or 4) NMI (not medically indicated) refusal for any statin at least once during the Report Period.

Pregnancy definition: At least two visits during the Audit Period with POV or Problem diagnosis ICD-9: 640.*3, 641.*3, 642.*3, 643.*3, 644.*3, 645.*3, 646.*3, 647.*3, 648.*3, 649.*3, 651.*3, 652.*3, 653.*3, 654.*3, 655.*3, 656.*3, 657.*3, 658.*3, 659.*3, 660.*3, 661.*3, 662.*3, 663.*3, 665.*3, 668.*3, 669.*3, 671.*3, 673.*3, 674.*3, 675.*3, 676.*3, 678.*3, 679.*3, V22.0-V23.9, V28.81, V28.82, V28.89, V72.42, V89.01-V89.09; ICD-10: (see logic manual for codes), where the primary provider is not a CHR (Provider code 53). Pharmacy-only visits (clinic code 39) will not count toward these two visits. If the patient has more than two pregnancy-related visits during the Report Period, the Audit will use the first two visits in the Report Period. The patient must not have a documented miscarriage or abortion occurring after the second pregnancy-related visit. Miscarriage definition: 1) POV ICD-9: 630, 631, 632, 633*, 634*; ICD-10: O03.9; 2) CPT 59812, 59820, 59821, 59830.
Abortion definition: 1) POV ICD-9: 635*, 636* 637*; ICD-10: O00.*-O03.89, O04.*, Z33.2; 2) CPT 59100, 59120, 59130, 59136, 59150, 59151, 59840, 59841, 59850, 59851, 59852, 59855, 59856, 59857, S2260-S2267; 3) Procedure ICD-9: 69.01, 69.51, 74.91, 96.49; ICD-10: 0WHR73Z, 0WHR7YZ, 10A0***, 3E1K78Z, 3E1K88Z.

CVD

CVD diagnosis (using DM AUDIT CVD DIAGNOSES taxonomy) is searched for on the patient's problem list. If a diagnosis is found, a 1 - Yes is assigned.

If no problem is found on the problem list, then the V POV file is searched for the following, if found, a 1 - Yes is assigned along with the visit date on which the item was found:

- One diagnosis ever of any code in the BGP CABG DXS taxonomy. The codes are:
Z95.1 (ICD-10) Presence of aortocoronary bypass graft
V45.81 (ICD-9) AORTOCORONARY BYPASS

- One diagnosis ever of any code in the BGP PCI DXS taxonomy. Codes are:
V45.82 (ICD-9) STATUS-POST PTCA
Z95.5 (ICD-10) Presence of coronary angioplasty implant and graft
Z98.61 (ICD-10) Coronary angioplasty status

- Two diagnoses ever of any code in the DM AUDIT CVD DIAGNOSES taxonomy.

- One procedure ever documented of any code in the BGP PCI CM PROCS taxonomy.

- One procedure ever documented of any code in the BGP CABG PROCS taxonomy.

- One CPT procedure ever documented of any code in the BGP PCI CM CPTS taxonomy.

- One CPT procedure ever documented of any code in the BGP CABG CPTS taxonomy.

If none of the above are found, a value of 2 - No is assigned.

TB TEST DONE

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 diagnosis of TB documented in the PCC then the test type is assigned as 1 - Skin Test (PPD), no further processing is done.
2. All recorded PPD entries and TB lab tests using the DM AUDIT TB LAB 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 assigned, if it is a lab test then 2 - Blood Test is assigned.
3. If no TB test is found then the value is 3 - UNKNOWN/NOT OFFERED.

TB TEST RESULT

If a TB test was done, the 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 assigned as 1 - Positive, no further processing is done. Taxonomy Used is DM AUDIT TUBERCULOSIS DXS.
2. All recorded PPD entries and TB lab tests using the DM AUDIT TB LAB 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 assigned 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 assigned. If the results are null the value 3 - Unknown/Not offered is assigned.
3. If no result is found then the value assigned is 3 - Unknown/not

offered.

TB RESULT POSITIVE, ISONIAZID 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 - IN PROGRESS.

The value assigned is based on the last recorded health factor:

TX COMPLETE	1 - Yes
TX INCOMPLETE	2 - No
TX UNTREATED	2 - No
TX IN PROGRESS	2 - No
TX UNKNOWN	3 - Unknown

TB RESULT NEGATIVE, TEST DATE

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

HEPATITIS C - HCV Diagnosis Ever

The Purpose of Visits are scanned for any diagnosis ever contained in the BGP HEPATITIS C DXS taxonomy. If one is found the value of 1 - Yes is assigned, if no diagnosis is found the Problem List is scanned for a diagnosis contained in the BGP HEPATITIS C DXS taxonomy or a SNOMED contained in the PXRM HEPATITIS C snomed list. If that is found on the problem list a value of 1 - Yes is assigned, if not found a value of 2 - No is assigned.

HEPATITIS C - BORN 1945-1965 SCREENED EVER

If the patient has a diagnosis of Hepatitis C this item is skipped.
If the patient is not born between 1945 and 1965, a value of 3 - Not born 1945-1965 is assigned.

Hepatitis C Screening (Ab Test) is determined by the following: CPT 86803; BGP HEP C TEST LOINC CODES taxonomy; site-populated lab test taxonomy BGP HEP C TEST TAX.

The V LAB file is scanned for any test contained in the lab test and LOINC taxonomies. The V CPT file is scanned for CPT 86803.

If a lab test or CPT code is found a value of 1 - Yes is assigned.
If a lab test or CPT code is not found a value of 2 - No is assigned.

RETINOPATHY (DIAGNOSED EVER)

If retinopathy is on the problem list or the patient has had at least 1 visits with a diagnosis of retinopathy ever, then it is assumed that they have been diagnosed with retinopathy and a value of 1 - Yes is assigned. Otherwise, a value of 2 - No is assigned.

Taxonomy used: DM AUDIT RETINOPATHY DIAGNOSES
SNOMED List: DIABETIC RETINOPATHY

INFLUENZA VACCINE DURING AUDIT PERIOD

The patient's data is scanned for an influenza vaccine in the 12 months

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prior to the Audit date. Influenza vaccine is determined by:
- Immunization CVX codes: See BGP FLU IZ CVX CODES taxonomy
- CPT codes: BGP CPT FLU
- Diagnosis codes: BGP FLU IZ DXS (there are no ICD10 codes)

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

If no documented immunization is found, a search is doen for a
documented refusal in the Audit period. If one is found, then a value of 3
- Refused is assigned.

If neither of the above are found, a value of 2 - No is assigned.


                          PNEUMOCOCCAL VACCINE EVER
Data is scanned for pneumococcal vaccine any time prior to the Audit
date. A pneumococcal vaccine is determined by:
- Immunization CVX codes: 33, 100, 109, 133, 152
- Diagnoses: V03.82 (there are no ICD10 codes)
- CPT codes: BGP PNEUMO IZ CPTS taxonomy (90669, 90670, 90732, G0009,
G8115, G9279)

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

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 one is found, then a value of 3 -
Refused is assigned.

If neither of the above is found, a value of 2 - No is assigned.


                         Td or Tdap IN PAST 10 YEARS
Immunizations are scanned for any tetanus vaccine in the 10 years prior
to the Audit date. Logic used to find a TD vaccine:
Immunization CVX codes : 1, 9, 20, 22, 28, 35, 50, 106, 107, 110, 112,
113, 115, 120, 130, 132, 138, 139
CPT Codes: APCH TD CPT
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

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

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 one is found, then a value of 3 -
Refused is assigned.

If neither of the above is found, a value of 2 - No is assigned


                                   Tdap EVER
Immunizations are scanned for a Tdap vaccine ever. A Tdap vaccine is
determined by:
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CVX code 115
CPT code 90715

If either of the above is found, a value of 1 - Yes is assigned.

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 one is found, then a value of 3 - Refused is assigned.

If neither of the above is found, a value of 2 - No is assigned.

HEPATITIS B 3-DOSE SERIES EVER

Data is scanned for hepatitis B vaccine any time prior to the Audit date.
HEP B vaccination is determined by:
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 three are found, a value of 1 - Yes is assigned.

If less than three vaccines found, the system will look for an Immune Contraindication in the Immunization contraindications file. If it is found, a value of 4 - Immune is assigned.
The system then looks for evidence of disease: Problem List or V POV of [BGP HEP EVIDENCE] Taxonomy. If it is found, a value of 4 - Immune is assigned.

If three vaccinations are not found and immunity or evidence of disease is not found, the system searches for a refusal documented in the past year. If one is found, then a value of 3 - Refused is assigned.
Refusal definitions: Immunization Package refusal or PCC refusal of the above listed CVX or CPT codes.

If none of the above are found, a value of 2 - No is assigned.

A1C

All lab tests in the V LAB file in the year prior to the Audit date are found using the DM AUDIT HGB A1C TAX taxonomy and the BGP HGBA1C LOINC CODES taxonomies. Only tests that have a result are used, if the result of the V LAB is blank, contains "CANC" or contains "COMMENT" the V Lab is skipped.

Individual Audit: The date and result of test are displayed.

Cumulative Audit:
If the result contains a ">" it goes into the 11.0 or higher category.
If the result contains a "<" it goes into the <7.0 category.
At this point everything is stripped from the result value except for numbers and ".". If after stripping, what is left is something other than a number then it is put in the "Not tested or no valid result" category.
If what is left is a numerical value, it is put in the appropriate category(ies) below:
HbA1c <7.0
HbA1c 7.0-7.9
HbA1c 8.0-8.9
HbA1c 9.0-9.9
HbA1c 10.0-10.9

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HbA1c 11.0 or higher
Not tested or no valid result
HbA1c <8.0
HbA1c >9.0

Audit Export (Data) File: When exported, all characters that are not a
number or a "." are stripped from the result value, so if the value is
<7.0 what is exported is 7.0.


                              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 CHOLESTEROL TAX taxonomy or the BGP
TOTAL CHOLESTEROL LOINC taxonomy is found in V LAB.

Cumulative Audit: This result is not used.

Audit Export (Data) File: All characters other than numbers and "." are
stripped from the result value and that value is then rounded to the
closest whole number and truncated to a total of 3 characters with 0
decimal digits.


                               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 TAX taxonomy or the BGP HDL
LOINC CODES taxonomy is found in V LAB.

Cumulative Audit:
The result of the test is examined and is put into the following
categories by gender. If the result is blank OR the first digit of the
result is not a number, then it is put in the "Not tested or no valid
result" category. For example, if the value is "cancelled", it will fall
into "Not tested or no valid result".

In females
HDL <50 mg/dl
HDL >=50 mg/dl
Not tested or no valid result
In males
HDL <40 mg/dl
HDL >=40 mg/dl
Not tested or no valid result

Audit Export (Data) File:
All characters that are not numbers or "." are stripped from the result
value and that value is then rounded to the closest whole number and
truncated to a total of 3 characters with 0 decimal digits.


                               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. Tests with a result containing
"CANC" are ignored.

Cumulative Audit:
The result of the test is examined and is put into the following
categories. If the first digit of the result is not a number, then it is
put in the "Not tested or no valid result" category. For example, if the
value is "UNK",
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it will fall into "Not tested or no valid result".

LDL <100 mg/dl
LDL 100-189 mg/dl
LDL >=190
Not tested or no valid result

Audit Export (Data) File: All characters that are not numbers or "." are
stripped from the result value and that value is then rounded to the
closest whole number and truncated to a total of 3 characters with 0
decimal digits.


                                TRIGLYCERIDES
The last lab test with a result in the year prior to the Audit date that
is a member of the DM AUDIT TRIGLYCERIDE TAX taxonomy or the BGP
TRIGLYCERIDE LOINC CODES taxonomy is found in V LAB. Only tests with a
result are used, tests with a result containing "CANC" or "COMMENT" are
also skipped.

Cumulative Audit:
The result of the test is examined and is put into the following
categories. If the result is blank OR the first digit of the result is
not a number then it is put in the "Not tested or no valid result"
category. For example, if the value is "cancelled", it will fall into
"Not tested or no valid result".

TG <150 mg/dl
TG 150-499 mg/dl
TG 500-999 mg/dl
TG >=1000 mg/dl
Not tested or no valid result

Audit Export: All characters other than numbers and "." are stripped from
the result value and that value is then rounded to the closest whole
number and truncated to a total of 3 characters with 0 decimal digits


                              SERUM 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. All tests with a result
containing "CANC" are skipped.
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.

Result reporting:
For the individual Audit, the actual value that is in V LAB is displayed.
For the cumulative Audit: This item is not reported.
For the Audit Export (Data) File: All characters other than numbers and
"." s are stripped from the result value and that value is truncated to a
total of 4 characters with two decimal digits.


                            eGFR (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.

For the individual Audit, the actual value that is in V LAB is displayed.
```

If there is no estimated GFR found in V LAB but there is a creatinine value found the Estimated GFR is calculated using the Modified Diet in Renal Disease (MDRD) formula for eGFR

For the cumulative Audit:
If the first character of the value is ">" it goes into >=60 ml/min. Otherwise, all characters other than numbers and "." are stripped from the result value. The resulting value is placed in the following categories:
>=60
30-59
15-29
<15
Not tested or no valid result

Audit Export (Data) File: All characters other than numbers or "." are stripped from the result value and that value is truncated to a total of 4 characters with 1 decimal digit.

QUANTITATIVE URINE ALBUMIN CREATININE RATIO (UACR)

The system looks for a test contained in the DM AUDIT QUANT UACR lab taxonomy or DM AUDIT A/C RATIO LOINC taxonomy, if found and the test has a valid numeric result then the patient is assigned a value of 1 - Yes for UACR Done. The result of the test is assigned to UACR value.

If the test found does not have a valid numeric result then the system will look for a urine microalbumin test on the same visit date. If found, the result of that test is evaluated. If the result contains a < symbol or the words "less than," a value of 5 is assigned to UACR value. If the result contains a '>' symbol or contains the words "greater than" a value of 999 is assigned to UACR value.

COMBINED OUTCOMES MEASURE

Assessed only for patients 40 years of age and older. The combined outcome measure displays a 1 - Yes on the Audit if the patient had all of the following during the Audit period: A1c < 8.0, statin prescribed, and mean BP <140/<90. Otherwise a value of 2 - No is assigned.

Note: This item is not included in the Audit Export (Data) File.

e-GFR and UACR

Assessed only for patients 18 years of age and older. For those who had both an e-GFR and a UACR test during the Audit period, a value of 1 - Yes is assigned. Otherwise a value of 2 - No is assigned.

Note: This item is not included in the Audit Export (Data) File.

COMORBIDITY

Comorbidity count is determined by how many of the following problems or conditions each of the patients has:

- Active depression
- Current tobacco use
- Severely obese (BMI 40 or higher)
- Diagnosed hypertension
- Diagnosed CVD
- CKD: eGFR<60 or UACR=>30 mg/g

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-    Hepatitis C
-    Retinopathy
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Figure A-1: DM Audit logic descriptions

Appendix B: Audit Export (Data) File Definition

IHS Diabetes Care and Outcomes Audit for 2018
Audit Data Export File Format

General Description:

Delimited text file, using a caret (^) as the delimiter. If a data value is missing, a space should appear between the delimiters (e.g., ^ ^).

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

Lines 2–x will contain the data, with each line representing a single record.

Table B-1: Variable List

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
1	AUDITDATE	Ending date of the Audit period – 12/31/2017	N/A	MM/DD/YYYY	
2	FACILITYNA	Name or abbreviation for the facility	N/A	Character (max length = 20)	
3	AREA	Two-digit IHS code for Area	N/A	• Character (max length = 2) • First two digits of ASUFAC code	ASUFAC codes can be found in the IHS Standard Code Book at https://www.ihs.gov/scb/index.cfm?module=W_FACILITY&option=list&num=38&newquery=1
4	SU	Two-digit IHS code for Service Unit	N/A	• Character (max length = 2) • Middle two digits of ASUFAC code	
5	FACILITY	Two-digit IHS code for Facility	N/A	–Character (max length = 2) –Last two digits of ASUFAC code	
6	REVIEWER	Reviewer's initials	N/A	Character (max length = 3)	
7	STATE	Postal abbreviation for last known state of residence	N/A	Character (max length = 2)	If the patient lives outside of the United States (e.g., in Canada), leave blank.

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
8	MOB	Month of birth	N/A	Number with value 1–12	
9	YOB	Year of Birth	N/A	YYYY	
10	SEX	Gender	N/A	Number field with: 1 = Male 2 = Female 3 = Unknown	
11	DODX	Date of diabetes diagnosis	N/A	MM/DD/YYYY	
12	DMTYPE	Diabetes type	N/A	Number field with: 1 = Type 1 2 = Type 2 (or uncertain)	
13	TOBSCREEN	Screened for tobacco use	Audit Period	Number field with: 1 = Yes 2 = No	
14	TOBACCO	Tobacco use status	Most recent	Number field with: 1 = Current user 2 = Not a current user 3 = Not documented	
15	TOBCOUNSEL	(Only if TOBACCO=1) Tobacco cessation counseling received	Audit Period	Number field with: 1 = Yes 2 = No	
16	ENDSSCREEN	Screened for electronic nicotine delivery system (ENDS) use during audit period	Audit Period	Number field with: 1 = Yes 2 = No	
17	ENDSSTATUS	ENDS use status	Most recent	Number field with: 1 = Current user 2 = Not a current user 3 = Not documented	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
18	FEET	Last recorded height - feet portion	Last ever	Number with up to two decimal places	Combine with INCHES.
19	INCHES	Last recorded height - inches portion	Last ever	Number with up to two decimal places	Total or in combination with FEET.
20	WEIGHT	Weight in pounds	Audit period, most recent	Number with zero decimal places	Truncate to nearest pound.
21	HTNDX	Hypertension diagnosed	Ever	Number field with: 1 = Yes 2 = No	
22	SYST1	Most recent systolic BP (mmHg)	Audit period	Number	
23	DIAST1	Most recent diastolic BP (mmHg)	Audit period	Number	
24	SYST2	Next most recent systolic BP (mmHg)	Audit period	Number	
25	DIAST2	Next most recent diastolic BP (mmHg)	Audit period	Number	
26	SYST3	Third most recent systolic BP (mmHg)	Audit period	Number	
27	DIAST3	Third most recent diastolic BP (mmHg)	Audit period	Number	
28	FOOTEXAM	Complete diabetic foot exam	Audit period	Number field with: 1 = Yes 2 = No	
29	EYEEXAM	Dilated retinal exam or retinal imaging exam	Audit period	Number field with: 1 = Yes 2 = No	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
30	DENTALEXAM	Dental exam including examination of teeth and gingiva	Audit period	Number field with: 1 = Yes 2 = No	
31	DEPDX	Active diagnosis of depression	Audit period	Number field with: 1 = Yes 2 = No	
32	DEPSCREEN	[Only if DEPDX=2] Screened for depression	Audit period	Number field with: 1 = Yes 2 = No	
33	DIETINSTR	Nutrition instruction	Audit period	Number field with: 1 = Yes by RD 2 = Yes by non-RD 3 = Yes by RD & non-RD 4 = None	
34	EXERCISE	Physical activity instruction	Audit period	Number field with: 1 = Yes 2 = No	
35	DMEDUC	Diabetes education other than nutrition and physical activity	Audit period	Number field with: 1 = Yes 2 = No	
36	TXNONE	None of the listed diabetes medications prescribed	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	Replaces TXDIET and uses the same logic. • If this item = 1: Yes, then all other TX fields should = 2: No. • If all other TX fields = 2: No, then this item should = 1: Yes.
37	TXINSUL	Prescribed any insulin	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
38	TXSUREA	Prescribed a sulfonylurea (such as glyburide or glipizide)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
39	TXSUREALK	Prescribed Repaglinide (Prandin) or Nateglinide (Starlix)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
40	TXMETFORM	Prescribed metformin (Glucophage or other)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
41	TXACARB	Prescribed acarbose (Precose) or miglitol (Glyset)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
42	TXGLIT	Pioglitazone (Actos) or rosiglitazone (Avandia)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
43	TXGLP1MED	Prescribed injectable GLP-1 med (Byetta, Bydureon, Victoza, Tanzeum, Trulicity)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
44	TXDPP4	Prescribed DPP4 inhibitor (Januvia, Onglyza, Tradjenta, Nesina)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
45	TXAMYLIN	Prescribed injectable amylin analog (Symlin)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
46	TXBROMO	Prescribed bromocriptine (Cycloset)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
47	TXCOLESEV	Prescribed colesevelam (Welchol)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
48	TXSGLT2	Prescribed SGLT2 inhibitor (Invokana, Farxiga, Jardiance)	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
49	ACE	Prescribed an ACE inhibitor or ARB	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
50	ASPIRIN	Prescribed aspirin or other antiplatelet/ anticoagulant therapy	As of the end of the audit period*	Number field with: 1 = Yes 2 = No	
51	LLSTATIN2	Prescribed a statin drug	As of the end of the audit period*	Number field with: 1 = Yes 2 = No 3 = Allergy/intolerance/ contraindication	• Look for yes, then allergy or intolerance or contraindication, then no. • See RPMS/DMS documentation for more information.
52	CVDDX	Diagnosed cardiovascular disease (CVD)	Ever	Number field with: 1 = Yes 2 = No	See Audit Instructions and DMS Audit Logic for more information.

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
53	TBTESTDONE2	Skin (PPD) or blood test for TB done with valid result	Ever	Number field with: 1 = Skin test (PPD) 2 = Blood test (QFT-GIT, T-SPOT) 3 = Unknown/not offered	
54	TBTESTRSLT2	(Only if TBTESTDONE2=1 or 2) TB test result	Ever	Number field with: 1 = Positive 2 = Negative 3 = Unknown	
55	TBINHTX2	(Only if TBTESTRSLT2=1) INH treatment complete	Ever	Number field with: 1 = Yes 2 = No 3 = Unknown	See Audit Instructions and DMS Audit Logic for more information.
56	TBTESTDATE	(Only if TBTESTRSLT2=2) Date of last TB test	Ever	MM/DD/YYYY	
57	HCVDX	Diagnosed hepatitis C (HCV)	Ever	Number field with: 1 = Yes 2 = No	New for 2018 See Audit Instructions and DMS Audit Logic for more information.
58	HCVSCREEN	If patient was born 1945–1965 and does not have diagnosed HCV, were they screened at least once ever?	Ever	Number field with: 1 = Yes 2 = No 3 = Not born 1945–1965	New for 2018 See Audit Instructions and DMS Audit Logic for more information.
59	RETINOPDX	Diagnosed retinopathy	Ever	Number field with: 1 = Yes 2 = No	New for 2018 See Audit Instructions and DMS Audit Logic for more information.
60	FLUVAX	Influenza vaccine	Audit period	Number field with: 1 = Yes 2 = No 3 = Refused	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
61	PNEUMOVAX	Pneumococcal vaccine	Ever	Number field with: 1 = Yes 2 = No 3 = Refused	
62	TD	Tetanus (Td, Tdap, or DT) vaccine	Past 10 years	Number field with: 1 = Yes 2 = No 3 = Refused	
63	TDAP	Tdap vaccine	Ever	Number field with: 1 = Yes 2 = No 3 = Refused	
64	HEPBVAX	Hepatitis B 3-dose vaccine series	Ever	Number field with: 1 = Yes 2 = No 3 = Refused 4 = Immune	
65	HBA1C	HbA1c test result (%)	Most recent in audit period	Number, one decimal	
66	HBA1CDATE	Date of most recent HbA1c	Most recent in audit period	MM/DD/YYYY	
67	CHOLVALUE	Total cholesterol value	Most recent in audit period	Number, no decimals	

Order	Variable Name	Description	Time Frame	Format/Values/Units	Comments
68	HDLVALUE	HDL cholesterol value (mg/dl)	Most recent in audit period	Number, no decimals	
69	LDLVALUE	LDL cholesterol value (mg/dl)	Most recent in audit period	Number, no decimals	
70	TRIGVALUE	Triglyceride value (mg/dl)	Most recent in audit period	Number, no decimals	
71	CREATVALUE	Serum creatinine value (mg/dl)	Most recent in audit period	Number, two decimals	
72	EGFRVALUE	Estimated GFR value	Most recent in audit period	Number, one decimal	Use existing value if present. Calculate if no existing value but serum creatinine value is present in audit period.
73	UPACRVAL	Quantitative urine albumin:creatinine ratio (UACR) value (mg/g)	Most recent in audit period	Number	
74	LOCAL	Local question	N/A	Number, single digit, 1–9	This field may be left blank for all patients if the facility does not choose to populate it.
75	LOCALEXT	Extended local question	N/A	Character (max length = 50)	This field may be left blank for all patients if the facility does not choose to populate it.
76	AGE	Patient age in years at time of AUDITDATE	N/A	Number with maximum of three digits and no decimal places	Calculate as: integer part of difference in days between AUDITDATE and date of birth, divided by 365.25

*Review of data for medications depends on many factors, including how medication refills are documented at a facility. Consultation with your pharmacist and documentation staff is highly recommended to determine the best way to extract accurate medication information.

Appendix C: Data Quality Error Report Error Definitions

ERROR	DEFINITION
REVIEWER INITIALS MISSING	Review initials are missing. IT staff should update the NEW PERSON entry and add initials for the reviewer.
MONTH OF BIRTH NOT VALID	Month of birth is invalid. Check this patient's DOB in patient registration.
YEAR OF BIRTH MISSING	Year of Birth is missing. Check this patient's DOB in patient registration.
GENDER NOT VALID	Gender of patient is missing or is invalid. Check this patient's gender in patient registration.
DATE OF DX BEFORE YOB	Date of Diabetes Diagnosis is before year of birth.
DATE OF DX > AUDIT DATE	Date of Diabetes diagnosis is after the audit date.
DATE OF DX = AUDIT DATE	Date of Diabetes Diagnosis is equal to the audit date.
DIABETES TYPE MISSING	Diabetes Type is missing. Update the patient's DM register status.
DIABETES TYPE INVALID	Diabetes Type is invalid. Value must be 1 or 2. Update the patient's diabetes type in the diabetes register.
TOBACCO SCREEN IS MISSING	Tobacco Screen in past year is missing.
TOBACCO SCREEN IS INVALID	Tobacclo Screen is invalid, must be 1 for Yes, 2 for No.
TOBACCO USE IS INVALID	Tobacco Use value is invalid, must be a 1, 2 or 3.
TOBACCO USE IS MISSING	Tobacco Use is missing.
TOBACCO COUNSEL INVALID	Tobacco Use is 1-Yes. Tobacco Counsel Must be 1 or 2; it cannot be blank.
TOBACCO COUNSEL INVALID	Tobacco Use Status is 2-No or 3-Undocumented. Tobacco Counsel should be blank.
ENDS SCREEN MISSING	ENDS Use Screen is missing.
ENDS USE STATUS MISSING	ENDS Use Status is missing.
HEIGHT IN FEET LOW FOR AGE >18	Height in feet value is unusually low (less than 4). Check patient's last Height value.
HEIGHT IN FEET LOW FOR AGE <19	Height in feet is unusually low for patient under 19 years old. Value is less than 2, check patient's last height value.
HEIGHT IN FEET HIGH AGE <10	Height Value is high (greater than 5) for patient age under 10. Check the patient's last height value.
HEIGHT IN FEET HIGH FOR AGE >9	Height is high (over 6) for patient under the age of 9. Check the patient's last height value.
HEIGHT INCHES IS <0	Height in inches is blank or less than zero. Check patient's last height value.

ERROR	DEFINITION
HT INCHES >12, FEET ENTERED	Height in feet is entered, inches cannot be greater than 12.
WEIGHT IS NOT A WHOLE NUMBER	Weight must be a whole number. No decimals.
WEIGHT LESS THAN 80, AGE >17	Weight is less than 80 and patient is over 17 years old. Check the patient's last weight value. If accurate, no action necessary.
HYPERTENSION DX NOT VALID	Hypertension diagnosed value is not a 1–Yes or a 2–No.
SYSTOLIC 1 VALUE <50 OR >250	Systolic 1 value is less than 50 or greater than 250. Check value and change if necessary.
SYSTOLIC 2 VALUE <50 OR >250	Systolic 2 value is less than 50 or greater than 250. Check value and change if necessary.
SYSTOLIC 3 VALUE <50 OR >250	Systolic 3 value is less than 50 or greater than 250. Check value and change if necessary.
DIASTOLIC 1 <30 OR >140	Diastolic 1 is less than 30 or greater than 140. Check value.
DIASTOLIC 2 <30 OR >140	Diastolic 2 is less than 30 or greater than 140. Check value.
DIASTOLIC 3 <30 OR >140	Diastolic 3 is less than 30 or greater than 140. Check value.
FOOT EXAM NOT VALID	Foot Exam value must be 1 or 2.
EYE EXAM NOT VALID	Eye Exam value must be 1 or 2.
DENTAL EXAM NOT VALID	Dental Exam value must be 1 or 2.
DEPRESSION ACTIVE DIAGNOSIS	Depression Active on the Problem List must be 1 or 2.
DEP SCREEN MUST BE BLANK	Depression Screen value must be blank if Depression on the Problem List is a 1–Yes.
DEP SCREEN BLANK/DEP DX = NO	Depression Screen must not be blank if Depression Diansis field is 2–No.
DEPRESSION SCREEN NOT VALID	Depression Screen value not valid. Must be blank, 1, or 2.
DIET INSTRUCTION NOT VALID	Diet Intruction does not equal 1, 2, 3, or 4.
EXERCISE EDUCATION NOT VALID	Exercise Education value must be 1 or 2.
OTHER EDUCATION NOT VALID	Other Education value must be 1 or 2.
TX NONE IS INVALID	TX None must be 1 or 2.
TX INSULIN NOT VALID	TX insulin must be 1 or 2.
TX INSULIN / DM TYPE 1	Value for this medication is inconsistent with DM Type 1. Check the value for insulin therapy and DM Type.
TX SULFONYLUREA INVALID	TX Sulfonylurea value must be 1 or 2.

ERROR	DEFINITION
TX SULFONYLUREA/DM TYPE 1	Value for this treatment inconsistent with DM Type 1; check medications and DM Type.
TX SUFONYLUREA LIKE INVALID	TX Sulfonylurea like therapy must be 1 or 2.
TX SULFONYLURA LIKE/DM TYPE 1	Value for this treatment inconsistent with DM Type 1, check medications and DM Type.
TX METFORMIN INVALID	TX Metformin value must be 1 or 2.
TX METFORMIN/DM TYPE 1	TX Metformin inconsistent with DM Type 1. Check medications and DM Type.
TX ACARBOSE INVALID	TX Acarbose must be 1 or 2.
TX ACARBOSE/DM TYPE 1	TX Acarbose inconsistent with DM Type 1. Check medications and DM Type.
TX GLITAZONE INVALID	TX Glitazone must be 1 or 2.
TX GLITAZONE/DM TYPE 1	TX Glitazone thearapy value inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX GLP-1 INVALID	TX GLP-1 value must be 1 or 2.
TX GLP-1/DM TYPE 1	TX GLP-1 inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX DPP4 INVALID	TX DPP4 must be 1 or 2.
TX DPP4/DM TYPE 1	TX DPP4 inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX AMYLIN INVALID	TX Amylin therapy inconsistent with DM Type 1.
TX BROMO INVALID	TX Bromocriptine must be 1 or 2.
TX BROMO/DM TYPE 1	Tx Bromocriptine therapy inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX COLESEV INVALID	TX Colesevelam therapy inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX SLGT2 INVALID	TX SLGT2 inhibitor therapy inconsistent with DM Type 1. Check the patient's medicaion and DM Type.
ACE INHIBITOR INVALID	ACE Inhibitor value must be 1 or 2.
ASPIRIN INVALID	Aspirin value must be 1 or 2.
CVD DX INVALID	CVD Dx value must be 1 or 2.
TB TEST DONE INVALID	TB Test Done must be 1, 2, or 3.
TB TEST RESULT INVALID	TB Test Result must be a 1–Positive, 2–Negative or 3–Unknown.
TB RESULT/TB TEST INCONSISTENT	TB Test Result must be blank if the TB Test Done value is 3-Unknown.
TB INH TX/TB TEST RESULT	If TB Test result is 1–Positive, TB INH Treatment must not be blank.
TB INH TX/TB TEST NEGATIVE	If TB Test Result is not 1–Positive, TB INH bust be blank.

ERROR	DEFINITION
TB INH TX INVALID	TB INH Treatment must be a value of 1, 2, 3, or blank.
TB TEST DATE < YOB	Date of TB Test is earlier than year of birth.
TB TEST DATE > AUDIT DATE	Date of TB Test is after audit date.
TB TEST DATE/TB TEST RESULT	TB Test date should be blank if TB Test Result is 2–Negative.
TB TEST RESULT/TB TEST DATE	TB Test date should not be blank if TB Test Result is 2.
HEPATITIS C DX INVALID	Hepatitis C Diagnosis must be 1 or 2.
RETINOPATHY INVALID	Retinopathy Diagnosis must be 1 or 2.
FLU VACCINE INVALID	Flu vaccine value must be 1, 2, or 3.
PNEUMOVAX INVALID	Pneumovax Value must be 1, 2, or 3.
TD INVALID	TD value must be 1, 2, or 3.
TDAP INVALID	TDAP value must be 1, 2, or 3.
HEP B VACCINE INVALID	Hepatitis B Vaccine value must be 1, 2, 3 or 4.
HBAIC TEST RESULT <4 OR >18	HbA1c value is less than 4 or greater than 18; check value and if accurate no action necessary.
HBA1C DATE > AUDIT DATE	Date of HbA1c is after the audit date.
HBA1C BEFORE AUDIT BEGIN DATE	HbA1c date is before audit begin date.
HBA1C DATE > YOB	HbA1c date is before year of birth.
HBA1C DATE <20 DAYS BEFORE DOO	HbA1c date is more than 20 days prior to the date of onset. Check both values; if they are accurate no action is necessary.
TOTAL CHOLESTEROL <70 OR >500	Total Cholesterol Value is less than 70 or greater than 500. Check the value; if accurate no action necessary.
HDL VALUE <12 OR >120	HDL Value is less than 12 or greater than 120. Check the value; if accurate no action necessary.
HDL > TOTAL CHOLESTEROL	HDL value is greater than the Total Cholesterol value. Check both values; if accurate, no action necessary.
LDL VALUE <10 OR >300	LDL value is less than 10 or greater than 300. Check the value; if accurate, no action necessary.
LDL > TOTAL CHOLESTEROL	LDL value is greater than the Total Cholesterol. Check both values; if accurate, no action necessary.
TRIGLYCERIDE <25 OR >4000	Triglyceride value is less than 25 or greater than 4000. Check the value; if accurate, no action necessary.
CREATININE VALUE <0.3 OR >15	Serum Creatinine value is less than .3 or greater than 15. Check the value; if accurate, no action necessary.
EGFR VALUE <5 OR >250	eGFR value is less than 5 or greater than 250. Check the value; if accurate, no action necessary.

ERROR	DEFINITION
UACR VALUE > 20,000	Quantitive urine albumin:creatinine value is greater than 20,000. Check the value; if accurate, no action necessary.
BMI <16 OR >80	BMI is less than 16 or greater than 80. Check values and if necessary correct HT/WT. If value is correct, no action is necessary.
DURATION OF DM	Duration of Diabetes is less than zero or greater than the patient's age.
ALL KEY DATA MISSING	Data is missing for all key fields: weight, blood pressure, A1c, LDL, uACR.
AGE OVER 100	Age of the patient is greater than 100. Check to be sure this patient should be included in the audit.
HEIGHT TOTAL <48 AGE>17	Age of patient is greater than 17 and total height is less than 48 inches. Check the DOB and height value.
HEIGHT TOTAL <24 AGE<18	Age of patient is less than 17 and total height in inches is less than 24 inches. Check the DOB and height value.
HEIGHT TOTAL >60 AGE <10	Age of patient is less than 10 and height in total inches is greater than 60. Check the DOB and height value.
HEIGHT TOTAL >84 AGE >9	Age of patient is greater than 9 and total height is greater than 84. Check the DOB and height value.
HEIGHT IN FEET MISSING	Height in feet is missing, inches is present. Check patient's last height value.
AGE LESS THAN 1	Age is less than 1, check DOB and audit date.

Acronym List

Acronym	Term Meaning
ASUFAC	Area, Service Unit, and Facility
BDM	Namespace for the Diabetes Management System
BGP	Namespace for the Clinical Reporting System
CKD	Chronic Kidney Disease
CRS	Clinical Reporting System
CPT	Current Procedural Terminology
CVD	Cardiovascular Disease
DAL	Display Audit Logic
DM	Diabetes Mellitus
DMS	Diabetes Management System
DMU	Update Diabetes Patient Data
DOB	Date of Birth
DPCS	Diabetes Patient Care Summary
eGFR	Estimated Glomerular Filtration Rate
EHR	Electronic Health Record
ENDS	Electronic Nicotine Delivery System
GDM	Gestational Diabetes Mellitus
GEN	General Retrieval Report
GPRA	Government Performance and Results Act
HDL	High-Density Lipoproteins
HTN	Hypertension
ICD	International Classification of Disease
IFG	Impaired Fasting Glucose
IGT	Impaired Glucose Tolerance
IHS	Indian Health Service
IT	Information Technology
LDL	Low-Density Lipoproteins
LMR	Lists, Labs, or Medications used at this Facility
LOINC	Logical Observation Identifiers Names and Codes
NDC	National Drug Code
PCC	Patient Care Component
POC	Point of Care
RML	Master List Report

Acronym	Term Meaning
RPMS	Resource and Patient Management System
SDPI	Special Diabetes Program for Indians
SNOMED	Systematized Nomenclature of Medicine
UACR	Urine Albumin/Creatinine Ratio

Contact Information

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

Phone: (888) 830-7280 (toll free)

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