



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Diabetes Management System

(BDM)

2022 Diabetes Audit User Addendum

Version 2.0 Patch 15
January 2022

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 the Diabetes Management System (DMS) functionality that pertains specifically to performing a Diabetes Audit.

Note: Resource and Patient Management System (RPMS) software, including the DMS, is subject to regular updates. DMS updates are determined by the Indian Health Service (IHS) Diabetes Audit Team and are based in part on changes to the IHS Diabetes Standards of Care and Resources for Clinicians and Educators:
<https://www.ihs.gov/diabetes/clinician-resources/soc/>.

1.0 Introduction

The Diabetes Management System (DMS) can be used to conduct a Diabetes Audit, including creation of an Audit data file and reports. This manual focuses on the DMS menu options used to prepare for and conduct an Audit. Other DMS functionality is documented in the Diabetes Management System (BDM) General User Manual.

The general steps for conducting an Audit are:

1. Audit Setup (preparing for the Audit).
2. Create an Audit data file and/or reports.
3. Upload the Audit data file to the WebAudit (required for Annual Audits, optional otherwise).

The DMS menu system is structured to follow these steps:

1. The Audit Setup menu includes tools for Audit preparation.
2. The Audit Reporting menu includes tools for creating Audit data files and reports.

Additional information about the IHS Diabetes Care and Outcomes Audit can be found on the Audit website: <https://www.ihs.gov/diabetes/audit/>.

DMS Main Menu

The DMS main menu provides four options (Figure 1-1).

```

THIS SYSTEM CONTAINS CONFIDENTIAL PATIENT INFORMATION COVERED
BY THE PRIVACY ACT. UNAUTHORIZED USE OF THIS DATA IS ILLEGAL
*****
**                DIABETES MANAGEMENT SYSTEM                **
*****
                        VERSION 2.0 (Patch 15)
                        DEMO HOSPITAL
                        MAIN MENU

RM   Register Maintenance ...
AS   Audit Setup ...
AR   Audit Reporting ...
PDM  Prediabetes Audit ..

```

Figure 1-1: RPMS DMS Main Menu

Visual DMS includes the same options to prepare for and conduct an Audit (Figure 1-2).

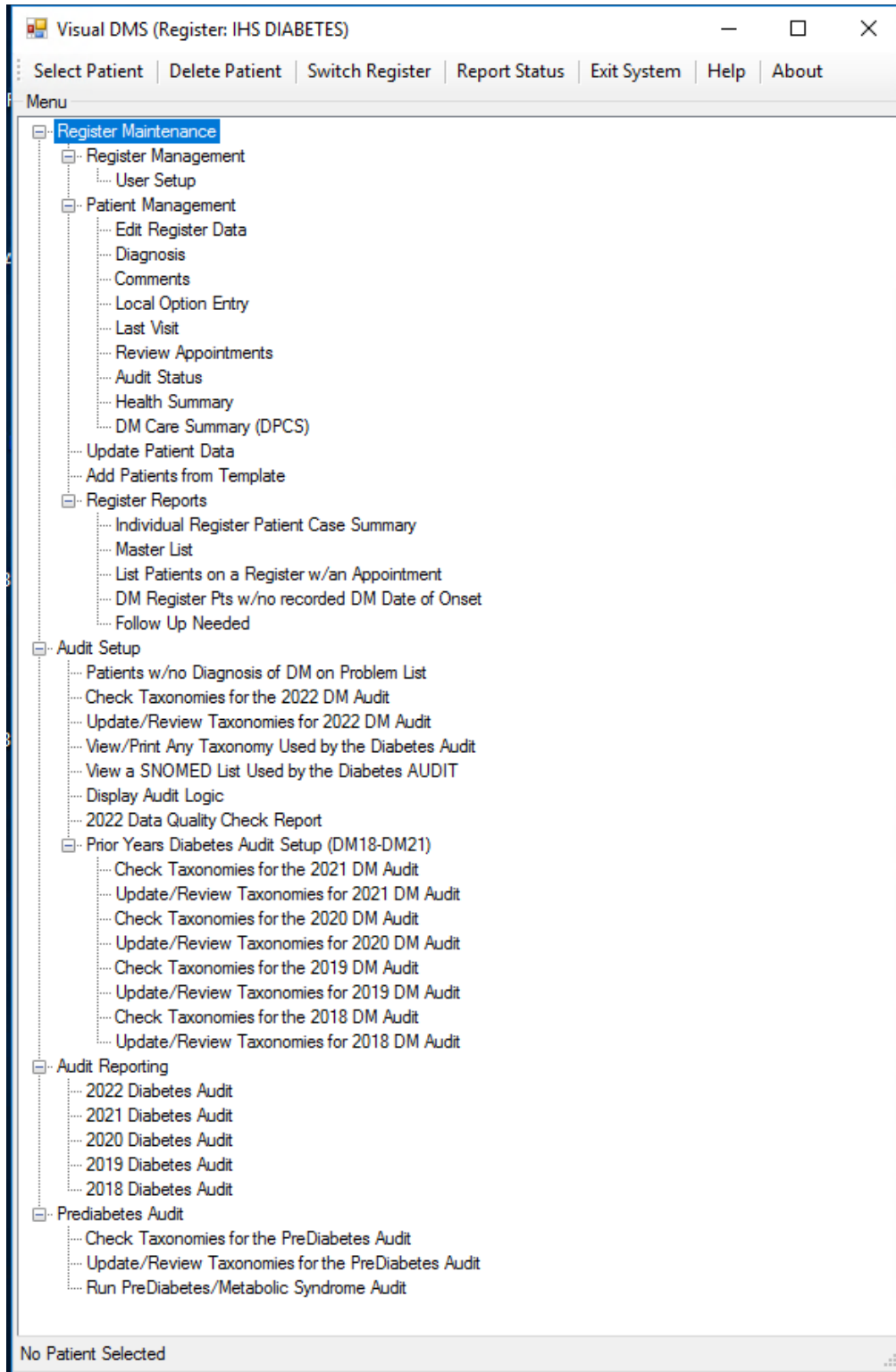


Figure 1-2: Visual DMS Menu

2.0 Audit Setup – Prepare for an Audit

There are three main steps to follow when preparing to conduct a Diabetes Audit using DMS:

1. Identify the cohort of patients to be included in the Audit. Two ways of doing this are described below. See Section 2.2 for additional information.
 - Use the patients who are members of a diabetes register and have a status of active. First ensure that the register is current by:
 - Adding patients who are receiving care at your facility but are not currently on the register.
 - Inactivating patients who are on the register with an active status but are no longer receiving care at your facility. Removing patients from the register is not recommended.
 - Updating patients who are on the register with an active status but do not have diabetes on their problem list.
 - If the facility does not maintain a diabetes register, use QMAN to create a search template of patients with diabetes who are receiving care.
2. Review and update taxonomies for medications and laboratory tests as needed (see Section 2.3).
3. Run and review a Data Quality Check report. Make corrections as appropriate. See Section 2.4 for additional information.

2.1 Audit Setup Menu

The **Audit Setup (AS)** menu provides reports and utilities used to prepare for conducting an Audit. Details of **AS** menu options are provided in Figure 2-1 and Figure 2-2.

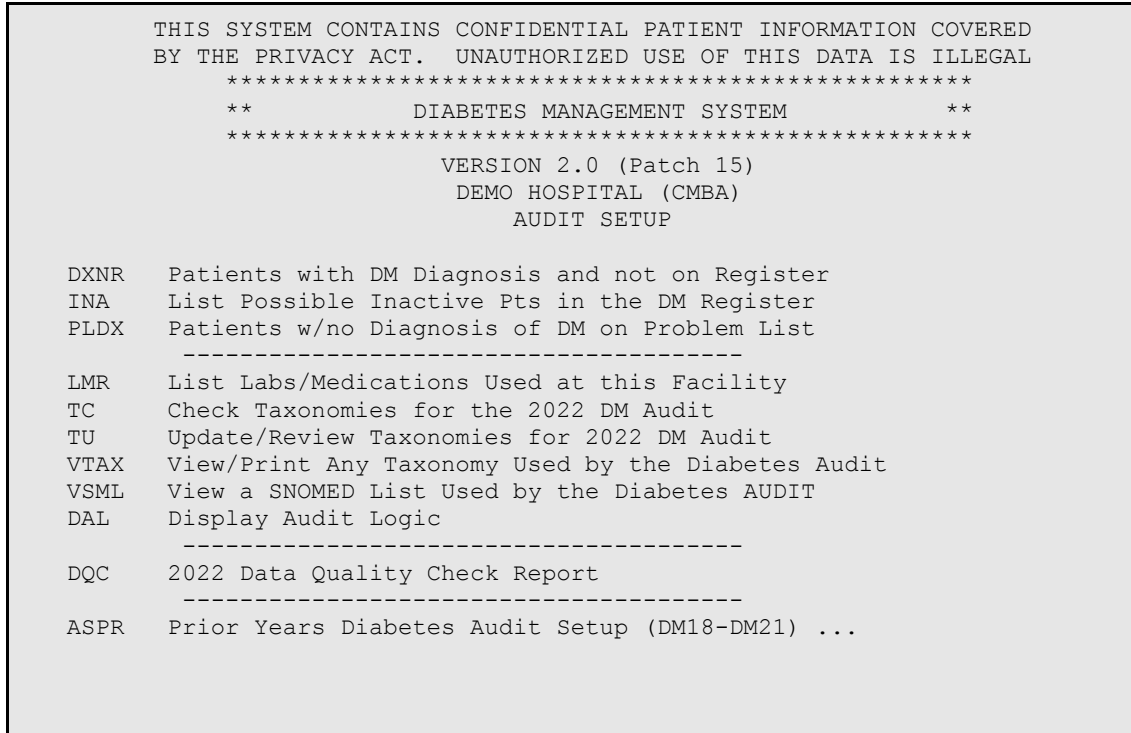


Figure 2-1: Audit Setup Menu

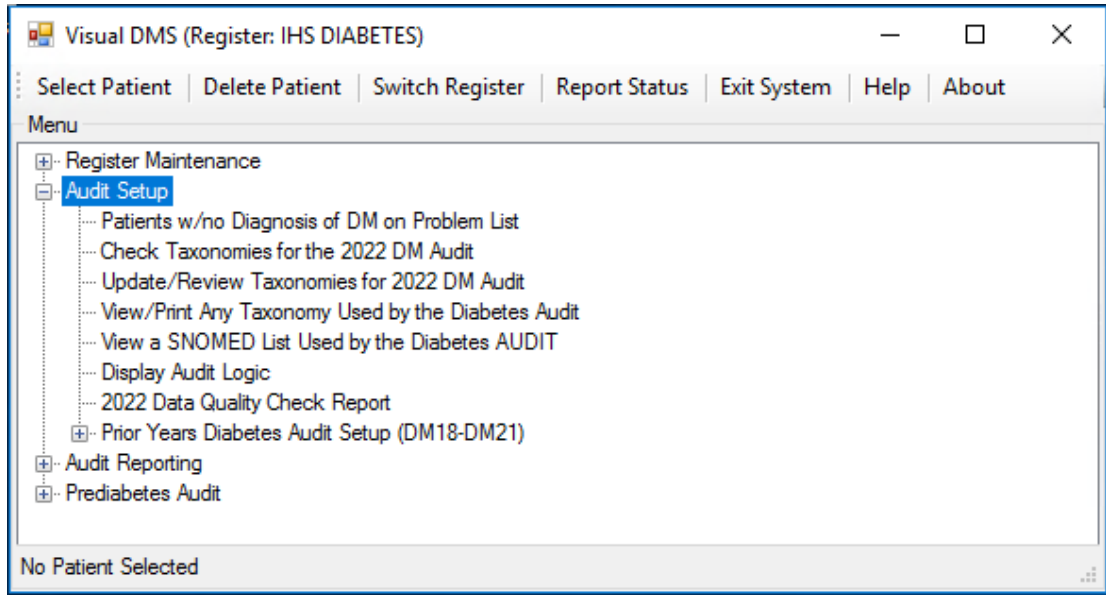


Figure 2-2: Visual DMS Audit Setup Menu

2.2 Identify Patients to Be Included in an Audit

Guidelines for Selecting Patients

Per guidance from the IHS Division of Diabetes Treatment and Prevention (Division of Diabetes), for the 2022 Annual Diabetes Audit:

First, identify patients who meet all of the following criteria:

1. Have a diagnosis of diabetes mellitus.
2. Are American Indian or Alaska Native.
3. Have at least one visit (in person or Telehealth) to any of the following clinics during the one-year Audit period (numbers in parentheses are IHS-specific clinic codes):
 - a. General (01)
 - b. Diabetic (06)
 - c. Internal Medicine (13)
 - d. Pediatric (20)
 - e. Family Practice (28)
 - f. Chronic Disease (50)
 - g. Endocrinology (69)

Then, exclude patients who:

1. Received the majority of their primary care during the Audit period outside of your facility.
2. Are currently on dialysis **and** received the majority of their primary care during the Audit period at the dialysis unit.
3. Have died before the end of the Audit period.
4. Were pregnant during any part of the Audit period.
5. Have prediabetes (as determined by documented diagnosis or impaired fasting glucose [IFG], impaired glucose tolerance [IGT], or elevated A1C level).
6. Have moved – permanently or temporarily.

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. In addition, some patients who do qualify for inclusion may not be on the register in an active status. See Section 2.2.1 for guidance in reviewing and updating the Diabetes Register.

2.2.1 Using the Diabetes Register for the 2022 Diabetes Audit

The Diabetes Register may be used for the 2022 Annual Audit by updating patients who are on the register in an active status, as needed. This may require changing the status of some patients from active to inactive and adding new patients to the register with a status of active.

The QMAN (AMQQMENU) tools and DMS reports below can help identify patients in the Diabetes Register who should and should not be included the Audit. Contact your site manager if you do not know how to access QMAN.

- Section 2.2.1.1 describes how to find patients in the Register who have a Register Diagnosis of IGT or Gestational Diabetes Mellitus (GDM) and should not be included in the Audit.
- Section 2.2.1.2 describes how to use the **DXNR Patients with DM Diagnosis and not on Register** report to generate a list of patients who have a diabetes diagnosis and received care during the Audit period but are not currently on the diabetes register. Note that this report is only available in traditional DMS, not Visual DMS.
- Section 2.2.1.3 describes how to use the **INA List Possible Inactive Pts in the DM Register** report to list patients on the register with a status of Active who have not had a primary care visit during the Audit period and therefore do not meet the inclusion criteria. Note that this report is only available in traditional DMS, not Visual DMS.
- Section 2.2.1.4 describes how to change the status of a patient on the Register, as needed, after reviewing the above-mentioned reports. When ineligible patients have been identified, their status can be changed by using the Register Status option under Patient Management in the DMS. The **Patient Management** option can also be used to add a new patient to the register.

Note: For the 2022 Annual Audit, the IHS Division of Diabetes requires review of the care provided during the calendar year ending December 31, 2021. Reports identifying patients with an active status should be run for the time period between 1/1/2021 and 12/31/2021.

2.2.1.1 Identify IHS Diabetes Register Patients with GDM or IGT Using QMAN

The IHS Diabetes Register allows entry of GDM and IGT as Register diagnoses. It is generally recommended 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 2-3 will retrieve a list of patients in the register who have been given a particular 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. If any patients are found, their information should be reviewed, and the patient status should be updated appropriately, or the patient should be deleted from the register.

Note: QMAN searches are not available in Visual DMS and must be performed in traditional RPMS.

```

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 2-3: QMAN search to identify patients with Register Diagnosis of GDM

Figure 2-4 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 2-4: QMAN Search results

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

2.2.1.2 DXNR – Patients with DM Diagnosis and not on Register

The **Patients with DM Diagnosis and not on Register** report is used to find patients with a diabetes diagnosis who are being seen at your facility but are not currently on your diabetes register. This report can be especially useful at sites that have not kept their register up to date throughout the calendar year.

Notes: This report does not exclude non-Indian patients. Directions for running this report are shown in the following sequence followed by a sample of the report output.

This report is not available in Visual DMS and must be run in traditional RPMS.

1. At the **Diabetes Management System** main menu, type **AS** and press Enter.
2. Select **DXNR Patients with DM Diagnosis and not on Register**.
3. At the “Enter the Name of the Register” prompt, type some portion of the register name and press Enter.

```

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: IHS DIABETES
Enter the time frame to look for visits with a diabetes diagnosis.

Enter Beginning Visit Date: 1/1/21 (JAN 01, 2021)
Enter Ending Visit Date: 12/31/21 (DEC 31, 2021)

```

Figure 2-5: Enter the register name and time frame to look for visits with a diabetes diagnosis

4. At the “Enter Beginning Visit Date” prompt, type the beginning date and press Enter.
5. At the “Enter Ending Visit Date” prompt, type the ending date and press Enter.

```
How many diagnoses must the patient have had in that time period: (1-99):
2//
```

Figure 2-6: Type number of diagnoses the patient must have in the selected time period

6. At the “How many diagnoses must the patient have had in that time period” prompt, type the answer as a number and press Enter.

```
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 2-7: Enter the output type

7. At the “Output Type” prompt, do one of the following:
 - 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:

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

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

Figure 2-8: Prompt to include or exclude demo patients

8. At the “Demo Patient Inclusion/Exclusion” prompt, do one of the following:
 - Type **I** and press Enter to include all patients.
 - Type **E** and press Enter to exclude demo patients.
 - Type **O** and press Enter to include only demo patients.

The report is printed or displayed as in Figure 2-9:

```

OUTPUT BROWSER                      Nov 17, 2021 12:00:26          Page:    1 of   26
                                     ***** CONFIDENTIAL PATIENT INFORMATION *****
DR                                     Page 1
                                     DEMO HOSPITAL
                                     Patients NOT on the DEMO HOSPITAL DIABETES Register
                                     with at least 3 visits with a DX of Diabetes between
                                     Jan 01, 2021 and Dec 31, 2021

PATIENT NAME          HRN      DOB          COMMUNITY      LAST VISIT # DM  LAST DM
                                     DXS      DX
-----
DEMO,RACHEL PATIENT  100019  03/28/1941  LAKE HAVSU     03/20/21      3  03/20/21
DEMOPATIENT,NEOMI   888885  03/15/1955  KINGMAN        03/22/21      3  03/22/21
PATIENTDEMO,CARLEE  122222  11/12/1993  PARKER         04/03/21      3  02/27/21
DEMO-CARTER,PATIENT A 144444  05/25/1977  PARKER         03/27/21      4  03/19/21
+      Enter ?? for more actions                                     >>>
+      NEXT SCREEN          -      PREVIOUS SCREEN      Q      QUIT
Select Action: +//
    
```

Figure 2-9: Report of patients not on the Diabetes register that have a diabetes diagnosis

2.2.1.3 INA – List Possible Inactive Pts in the DM Register

The **INA List Possible Inactive Pts in the DM Register** option (Figure 2-10) can be used to identify patients who are no longer being seen at your facility but are still marked as active in the diabetes register. Patients on this list can be changed to inactive in the register so they will not be included in the Audit. This report can be especially useful at sites that have large numbers of patients whose Register status might not be accurate.

```

The report is in the AS - Audit Setup menu of the Diabetes Management System.

Begin by selecting AS Audit Setup . . .

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 2022 Annual Audit is for the time frame
between January 1, 2021 and December 31, 2021. To be considered as 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 2-10: Report option details

1. The report may be printed by typing **PL** at the “Select Action” prompt.
2. At the “Device” prompt, enter the printer name or number where the report should be printed.

The sequence to generate this report is shown in Figure 2-11:

```

AS AUDIT SETUP . . .

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: 1/1/21 (JAN 01, 2021)
Enter Ending Visit Date: 12/31/21 (DEC 31, 2021)

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// [ENT] xclude DEMO Patients

OUTPUT BROWSER Dec 31, 2021 12:25:21 Page: 1 of 48

***** CONFIDENTIAL PATIENT INFORMATION *****
DR Page 1
DEMO HOSPITAL
Patients on the IHS DIABETES Register
without a visit between Jan 01, 2021 and Dec 31, 2021

PATIENT NAME HRN STATUS CASE LAST VISIT # DM LAST DM DX
MANAGER DXS
-----
DEMO, MARIE 999490 ACTIVE 03/22/2019 158 02/22/2019
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 04/10/2019 124 04/10/2019
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: +//
    
```

Figure 2-11: INA List Possible Inactive Pts in the DM Register report

2.2.1.4 Update Patient Register Status

If there are patients currently in an active status in the register, their register status may be updated using the Patient Management tool in the **DMS Register Maintenance** menu.

2.2.1.4.1 How to Edit Register Status in DMS

1. Open the **RM – Register Maintenance** menu of DMS.
2. Open the **Patient Management** option (Figure 2-12).

```

Register Data          Nov 01, 2021 13:14:24          Page: 1 of 1
  PATIENT: DEMO, MARY JANE          AGE: 55
  ADDRESS: P.O. BOX 234, ALB, NM, 87119          DOB: 05/13/1963
  PHONE: 555-555-4811          HRN: 105176
PRIM CARE PROV: DOCTOR, MICHAEL J          RES: TUCSON
  STATUS: ACTIVE
WHERE FOLLOWED:
  CASE MGR: DEMO, LORI ANN
  CONTACT:
  ENTRY DATE: DEC 6, 2016          LAST EDITED: OCT 4, 2021
  DIAGNOSIS: TYPE 2          ONSET DATE: FEB 1, 1978
COMMENTS:
LOCAL OPTION:
LOCAL OPTION TEXT:

- Previous Screen  Q Quit  ?? for More Actions
1 Register Status  6 Comments  11 Health Summary
2 Where Followed  7 Local Option Entry  12 DM Care Summary (DPCS)
3 Case Manager    8 Last Visit  13 Print Letter
4 Client Contact  9 Review Appointments  Q Quit
5 DX/Date of Onset  10 Audit Status
Select Action: Quit//
    
```

Figure 2-12: Select Register Status (1)

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

```

STATUS: ACTIVE//
    
```

Figure 2-13: Updating the Status

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 diabetes 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. However, 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 above can be used as a guideline in the absence of Area-defined criteria.

2.2.1.4.2 How to Edit Register Status in Visual DMS

1. Select the desired Patient using the **Select Patient** tab at the top of the screen.
2. Open the **Patient Management** menu (Figure 2-14).

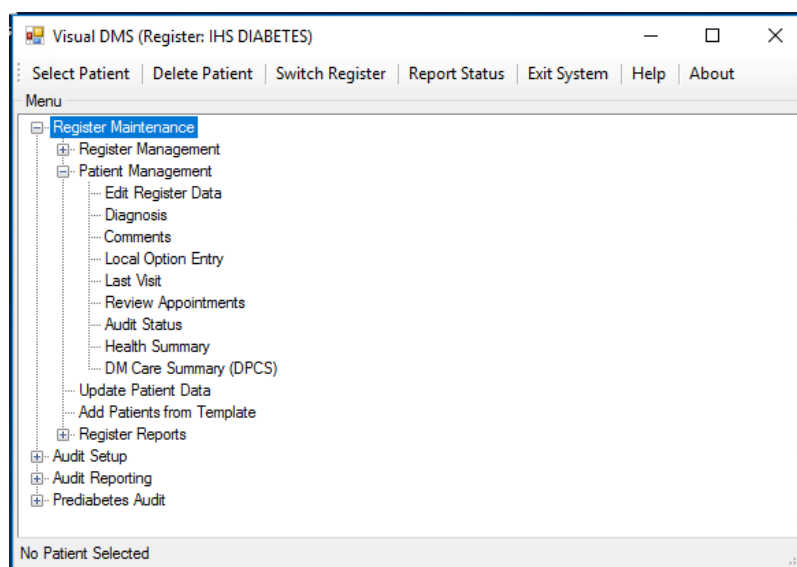


Figure 2-14: Selecting Edit Register Data from the Patient Management menu

3. Click Edit Register Data. The Patient Profile (Figure 2-15) displays.

Figure 2-15: Patient Profile screen display

4. To change the Register Status, select the new status from the Status list. Click the arrow to view the list of available status choices.
5. Click **Save**.
6. Close the dialog.

2.2.1.5 PLDX – Patients w/No Diagnosis of DM on Problem List

This report identifies patients who do not have a problem list diagnosis of diabetes. In addition, these patients will not have the date of onset documented on the problem list. You will be first prompted to choose between patients on the Register or those with a specified number of diagnoses of diabetes but not an active problem of diabetes. If you select the Register, you will be prompted to identify the name of the Register and the status of the patients you would like reviewed.

```

This report will list patients who do not have Diabetes on their Problem
List but who are on a Diabetes Register or who have had at least N
diagnoses of diabetes.

Select one of the following:

R           Those who are members of a Register
D           Those with at least N Diabetes Diagnoses

List which subset of patients: R// [ENT]

Enter the Name of the Register: IHS DIABETES
Do you want to select register patients with a particular status? Y// [ENT]
Which status: A//[ENT] ACTIVE
    
```

Figure 2-16: Patients with No Diagnosis of DM on Problem List

The resulting report will display alphabetically all active patients on the Register who do not have an active problem of diabetes along with the date of the last diabetes diagnosis and the total number of diabetes diagnoses.

```

***** CONFIDENTIAL PATIENT INFORMATION *****
DKR                                     Page 1
                                DEMO HOSP
PATIENTS WITH NO DIAGNOSIS OF DIABETES ON PROBLEM LIST
Patients on the IHS DIABETES Register
    
```

PATIENT NAME	HRN	DOB		LAST DM DX	# OF DM DXS
PATIENT, AMANDA	101500	Sep 19, 1985	F	Jan 01, 2021	1
PATIENT, BARNEY	101988	Aug 08, 1996	M	Jun 18, 2021	1
PATIENT, BRANDON	101867	May 06, 1996	M	Jun 18, 2021	1
PATIENT, GRANT	101857	Jan 30, 1995	M	Jun 18, 2021	1
PATIENT, GREG	101738	May 16, 1992	M	Jun 18, 2021	1
PATIENT, JENNIFER	100044	Jul 19, 1938	F	Jan 13, 2020	1

Figure 2-17: Patients with No Diagnosis of DM on Problem List, report sample

2.2.2 Create a Template of Patients for the 2022 Diabetes Audit

If the IHS Diabetes Register is not current or has not been routinely used for management of patients with diabetes, you can 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 2022 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 2.2.1). In either case, if patients with diabetes who are not American Indian or Alaska Native are seen at the clinic or included in the Register, another attribute called Classification can be used to exclude these patients. The Classification for American Indian/Alaska Native patients is 01.

2.2.2.1 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 2-18 through Figure 2-20).

```

***** SEARCH CRITERIA *****

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

Include list of upcoming appts for the patient? NO// <ENTER>

  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//<ENTER> (No)

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

Exact starting date: 1/1/21 (JAN 01, 2021)
Exact ending date: 12/31/21 (DEC 31, 2021)

  Subject of subquery: VISIT
  CLINIC (GENERAL/DIABETIC...)
  BETWEEN BETWEEN JAN 1,2021 and DEC 31,2021@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 1,2021 and DEC 31,2021@23:59:59

Attribute of LIVING PATIENTS: DX          DIAGNOSES

Enter DX: [SURVEILLANCE DIABETES
    
```

Figure 2-18: Search Criteria

Note: Use the taxonomy **SURVEILLANCE DIABETES**, as it includes 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
<>
    
```

Figure 2-19: Code Listing

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

```

(THIS FULL LIST OF CODES WILL DISPLAY)

Enter ANOTHER DX: No or <ENTER>

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

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD
Exact starting date: 1/1/21 (JAN 01, 2021)
Exact ending date: 12/31/21 (DEC 31, 2021)

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

  Subject of search: PATIENTS
    ALIVE TODAY
    Subject of subquery: VISIT
    CLINIC (GENERAL/DIABETIC...)
    
```

```

        BETWEEN BETWEEN JAN 1,2021 and DEC 31,2021@23:59:59
        DIAGNOSIS (250.01/250.11...)
        Subject of subquery: DIAGNOSIS
        BETWEEN JAN 1,2021 and DEC 31,2021@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 2022
        Are you adding 'DM AUDIT 2022' as a new SORT TEMPLATE? No// Y  (Yes)
        DESCRIPTION:
        No existing text
        Edit? NO// <ENTER>

        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// <ENTER>  (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 2-20: Audit Template

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

2.2.2.2 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 (subset) of patients on the register who have had at least one visit to a primary clinic during the Audit year and have a diagnosis of diabetes. The QMAN search demonstrating how to create that template is shown in the following sequences (Figure 2-21 through Figure 2-23).

```

What is the subject of your search?  LIVING PATIENTS // 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// 3 Type 1 &
Type 2.....

There are 74 register patients for the combination selected.
    
```

```

Attribute of IHS DIABETES REGISTER: ALIVE
Alive at least until exactly what date: TODAY//12/31/21 (DEC 31, 2021)
Computing Search Efficiency Rating.....

  Subject of search: PATIENTS
    MEMBER OF 'IHS DIABETES REGISTER-4104' COHORT      ALIVE AS OF DEC
31,2021

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 BGP PRIMARY CARE CLINICS Taxonomy =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
WELL CHILD
FAMILY PRACTICE

Enter ANOTHER CLINIC:

The following have been selected =>

  GENERAL
  DIABETIC
  INTERNAL MEDICINE
  PEDIATRIC
  WELL CHILD
  FAMILY PRACTICE

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

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

Exact starting date: 1/1/2021 (JAN 01, 2021)
Exact ending date: 12/31/2021 (DEC 31, 2021)

  Subject of subquery: VISIT
  CLINIC (GENERAL/DIABETIC...)
  BETWEEN BETWEEN JAN 1,2021 and DEC 31,2021@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

```

Figure 2-21: Creating a Template of Register Patients

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

Figure 2-22: Sample ICD-10 code

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

```

Enter ANOTHER DX: No or <ENTER>

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

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD

Exact starting date: 1/1/21   (JAN 01, 2021)
Exact ending date: 12/31/21  (DEC 31, 2021)

Next condition of "DIAGNOSIS":

Computing Search Efficiency Rating

  Subject of search: PATIENTS
    ALIVE TODAY
    Subject of subquery: VISIT
      CLINIC (GENERAL/DIABETIC...)
        BETWEEN BETWEEN JAN 1,2021 and DEC 31,2021@23:59:59
    DIAGNOSIS (250.01/250.11...)
      Subject of subquery: DIAGNOSIS
        BETWEEN JAN 1,2021 and DEC 31,2021@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 2022
  Are you adding 'DM AUDIT 2022' 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// <ENTER>  (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 2-23: QMAN search demonstrating how to create a template of patients for the Audit

2.3 Taxonomy Review and Setup

An important step in preparing for a diabetes Audit is to make sure that all relevant medication and lab test taxonomies are up to date and include all appropriate drugs and lab tests that are currently being used at your facility.

The taxonomies listed in Figure 2-24 are referenced in the 2022 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 2021 Annual Audit, they must be reviewed and updated again before running the 2022 Annual Audit as new medications may have been added to the pharmacy formulary or new lab tests offered.

DM AUDIT TAXONOMY UPDATE		Sep 03, 2021 10:37:50	Page: 1 of 3
TAXONOMIES TO SUPPORT 2022 DIABETES AUDIT REPORTING			
* Update Taxonomies			
1)	BGP CMS SMOKING CESSATION MEDS	DRUG	
2)	BGP CREATINE KINASE TAX	LABORATORY TEST	
3)	BGP GPRA ESTIMATED GFR TAX	LABORATORY TEST	
4)	BGP HEP C TESTS TAX	LABORATORY TEST	
5)	BGP PQA STATIN MEDS	DRUG	
6)	DM AUDIT ACARBOSE DRUGS	DRUG	
7)	DM AUDIT ACE INHIBITORS	DRUG	
8)	DM AUDIT ALT TAX	LABORATORY TEST	
9)	DM AUDIT AMYLIN ANALOGUES	DRUG	
10)	DM AUDIT ANTIPLT/ANTICOAG RX	DRUG	
11)	DM AUDIT ASPIRIN DRUGS	DRUG	
12)	DM AUDIT AST TAX	LABORATORY TEST	
13)	DM AUDIT BROMOCRIPTINE DRUGS	DRUG	
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 LIPID LOWERING DRUGS	DRUG	
28)	DM AUDIT METFORMIN DRUGS	DRUG	
29)	DM AUDIT MICROALBUMINURIA TAX	LABORATORY TEST	
30)	DM AUDIT OTHER EDUC TOPICS	EDUCATION TOPICS	
31)	DM AUDIT QUANT UACR	LABORATORY TEST	
32)	DM AUDIT SGLT-2 INHIBITOR DRUG	DRUG	
33)	DM AUDIT STATIN DRUGS	DRUG	
34)	DM AUDIT SULFONYLUREA DRUGS	DRUG	
35)	DM AUDIT SULFONYLUREA-LIKE	DRUG	
36)	DM AUDIT TB LAB TESTS	LABORATORY TEST	
37)	DM AUDIT TB MEDS	DRUG	
38)	DM AUDIT TRIGLYCERIDE TAX	LABORATORY TEST	

Figure 2-24: Audit user-populated taxonomies

2.3.1 LMR–List Labs or Medications Used at this Facility

Note: This report is not available in Visual DMS and must be run in traditional RPMS.

This report 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. This report can be very helpful for reviewing and updating taxonomies. To run the laboratory tests version of this report:

1. At the **Diabetes Management Systems** menu, type **AS** and press Enter.
2. 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 (**1/1/21** and **12/31/21** for the 2022 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 2-25.

LAB TESTS Used at DEMO HOSPITAL		Date Range: Jan 01, 2021 - Dec 31, 2021		Page 1
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 2-25: Sample Report of Lab Tests Documented 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 **AS** and press Enter.
2. 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 (**7/1/21** and **12/31/21** for the 2022 Annual Diabetes Audit), pressing Enter after each. This is July 1 rather than January 1, as with labs. 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 2-26.

Oct 31, 2021		Page 1	
MEDICATIONS (DRUGS) Used at DEMO HOSPITAL			
Date Range: Jul 01, 2021 - Dec 31, 2021			
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 2-26: Sample Report of Drugs Prescribed during the last six months of the Audit period

2.3.2 Update Taxonomies

The taxonomies can be reviewed and updated with the TU option under the **AS – Audit Setup** menu in DMS 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 cannot correctly determine hemoglobin A1C, lipid breakdown, or estimated GFR 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. Possible members of the taxonomies are listed but are by no means to be considered comprehensive.

2.3.2.1 Drug Taxonomies

Table 2-1 provides a list of DM Audit Drug Taxonomies. Review this list with the pharmacist to be sure it includes all that are available at your facility or may be ordered/prescribed 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 for the Audit.

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

Note: The BGP PQA STATIN MEDS taxonomy is not included in the list that follows as it is pre-populated using the NDC numbers of Statin Drugs and does not need to be reviewed or populated on a local basis.

Table 2-1: DM Audit Drug Taxonomies

Taxonomy	Drugs
<p>DM AUDIT ACE INHIBITORS</p> <p>Note: This taxonomy includes both ACE inhibitors and angiotensin II receptor blockers (ARBs).</p>	<p>ACE INHIBITORS</p> <p>Amlodipine and benazepril (Lotrel)</p> <p>Benazepril (Lotensin)</p> <p>Benazepril and hydrochlorothiazide (Lotensin HCT)</p> <p>Captopril (Capoten)</p> <p>Captopril and hydrochlorothiazide (Capozide)</p> <p>Enalapril (Vasotec, Epaned)</p> <p>Enalapril and diltiazem (Teczem)</p> <p>Enalapril and felodipine (Lexxel)</p> <p>Enalapril and hydrochlorothiazide (Vaseretic)</p> <p>Fosinopril (Monopril)</p> <p>Lisinopril (Prinivil, Zestril, Qbrelis)</p> <p>Lisinopril and hydrochlorothiazide (Prinzide, Zestoretic)</p> <p>Moexipril (Univasc)</p> <p>Moexipril and hydrochlorothiazide (Uniretic)</p> <p>Perindopril (Aceon)</p> <p>Quinapril (Accupril)</p> <p>Quinapril and hydrochlorothiazide (Accuretic)</p> <p>Ramipril (Altace)</p> <p>Trandolapril (Mavik)</p> <p>Trandolapril and verapamil (Tarka)</p> <p>ANGIOTENSIN II RECEPTOR BLOCKERS (ARBs)</p> <p>Amlodipine and valsartan (Exforge)</p> <p>Amlodipine, valsartan and hydrochlorothiazide (Exforge HCT)</p> <p>Azilsartan (Edarbi)</p> <p>Azilsartan and chlorthalidone (Edarbyclor)</p> <p>Candesartan (Atacand)</p> <p>Candesartan and hydrochlorothiazide (Atacand HCT)</p> <p>Eprosartan (Teveten)</p> <p>Eprosartan and hydrochlorothiazide (Teveten HCT)</p> <p>Irbesartan(Avapro)</p> <p>Irbesartan and hydrochlorothiazide (Avalide)</p> <p>Losartan (Cozaar)</p> <p>Losartan and hydrochlorothiazide (Hyzaar)</p> <p>Nebivolol and valsartan (Byvalson)</p> <p>Olmesartan (Benicar)</p> <p>Olmesartan and hydrochlorothiazide (Benicar HCT)</p> <p>Sacubitril and valsartan (Entresto)</p> <p>Telmisartan (Micardis)</p> <p>Telmisartan and amlodipine (Twynsta)</p> <p>Telmisartan and hydrochlorothiazide (Micardis HCT)</p> <p>Valsartan (Diovan, Prexxartan)</p> <p>Valsartan and hydrochlorothiazide (Diovan HCT)</p>

Taxonomy	Drugs
DM AUDIT ACARBOSE DRUGS	Acarbose (Precose) Miglitol (Glyset)
DM AUDIT AMYLIN ANALOGUES	Pramlinitide (Symlin)
DM AUDIT ANTIPLT/ANTICOAG THERAPY	Any non-aspirin anti-platelet product including Apixaban (Eliquis) Cilostazol (Pletal) Clopidogrel (Plavix) Dabigatran etexilate (Pradaxa) Dipyridamole (Persantine) Edoxaban (Savaysa) Enoxaparin (Lovenox) Prasugrel (Effient) Rivaroxaban (Xarelto) Ticagrelor (Brilinta) Ticlopidine (Ticlid) Vorapaxar (Zontivity)
DM AUDIT ASPIRIN DRUGS	Any Aspirin (ASA) or Aspirin containing product Aspirin and dipyridamole (Aggrenox)
DM AUDIT BROMOCRIPTINE DRUGS	Bromocriptine 0.8 mg (Cycloset)
DM AUDIT COLESEVELAM DRUGS	Colesevelam (Welchol)
DM AUDIT DPP-4 INHIBITOR DRUGS	Alogliptin (Nesina) Alogliptin and metformin (Kazano) Alogliptin and pioglitazone (Oseni) Linagliptin (Tradjenta) Empagliflozin and linagliptin (Glyxambi) Empagliflozin, linagliptin and metformin (Trijardy XR) Linagliptin and metformin(Jentaduetto, Jentaduetto XR) Sitagliptin (Januvia) Ertugliflozin and sitagliptin (Steglujan) Sitagliptin and metformin (Janumet, Janumet XR) Sitagliptin and simvastatin (Juvisync) Saxagliptin (Onglyza) Dapagliflozin and saxagliptin (Qtern) Dapagliflozin, saxagliptin and metformin (Qternmet XR) Saxagliptin and metformin (Kombiglyze XR)

Taxonomy	Drugs
DM AUDIT GLITAZONE DRUGS (a.k.a.: Thiazolidinediones)	<p>Alogliptin and pioglitazone (Oseni) Pioglitazone (Actos)</p> <p>Pioglitazone and metformin (ActoPlus Met, ActoPlus Met XR) Pioglitazone and glimepiride (Duetact) Rosiglitazone (Avandia) Rosiglitazone and metformin (Avandamet)</p>
DM AUDIT GLP-1 ANALOG DRUGS	<p>Dulaglutide (Trulicity) Insulin degludec and liraglutide (Xultrophy) Liraglutide (Victoza, Saxenda) Semaglutide (Ozempic, Rybelsus, Wegovy)</p>
DM AUDIT INCRETIN MIMETICS	<p>Exenatide (Byetta, Bydureon, Bydureon BCise) Insulin glargine and lixisenatide (Soliqua) Lixisenatide (Adlyxin)</p>
DM AUDIT INSULIN DRUGS	<p>Any Insulin product in Drug File – Insulin, REG, NPH, Insulin lispro (Humalog, Admelog, Lyumjev), Insulin glargine (Lantus, Basaglar, Toujeo), Insulin detemir (Levemir), Insulin degludec (Tresiba), Insulin aspart (Novolog, Fiasp), Insulin glulisine (Apidra), Inhalable Insulin (Affreza), Pre-Mixed Insulins (70/30-REG/NPH, ASPART/NPA, ASPART/DEGLUDEC; 75/25, LISPRO/NPL; 50/50 LISPRO/NPL), Insulin Combinations: Insulin degludec and liraglutide (Xultrophy), Insulin glargine and lixisenatide (Soliqua)</p>
DM AUDIT METFORMIN DRUGS	<p>Alogliptin and metformin (Kazano) Canagliflozin and metformin (Invokamet, Invokamet XR) Dapagliflozin and metformin (Xigduo XR) Dapagliflozin, saxagliptin and metformin (Qternmet XR) Empagliflozin, linagliptin and metformin (Trijardy XR) Empagliflozin and metformin (Synjardy, Synjardy XR) Ertugliflozin and metformin (Segluromet) Glipizide and metformin (Metaglip) Glyburide and metformin (Glucovance) Linagliptin and metformin (Jentadueto, Jentadueto XR) Metformin (Glucophage, Fortamet, Glumetza, Riomet) Metformin extended release (Glucophage XR, Glumetza) Pioglitazone and metformin (ActoPlus Met, ActoPlus Met XR) Repaglinide and metformin (PrandiMet) Rosiglitazone and metformin (Avandamet) Saxagliptin and metformin (Kombiglyze XR) Sitagliptin and metformin (Janumet, Janumet XR)</p>

Taxonomy	Drugs
DM AUDIT SGLT-2 INHIBITOR DRUG	Canagliflozin (Invokana) Canagliflozin and metformin (Invokamet, Invokamet XR) Dapagliflozin (Farxiga) Dapagliflozin and metformin (Xigduo XR) Dapagliflozin and saxagliptin (Qtern) Dapagliflozin , saxagliptin and metformin (Qternmet XR) Empagliflozin (Jardiance) Empagliflozin and metformin (Synjardy, Synjardy XR) Empagliflozin and linagliptin (Glyxambi) Empagliflozin , linagliptin and metformin (Trijardy XR) Ertugliflozin (Steglatro) Ertugliflozin and metformin (Segluromet) Ertugliflozin and sitagliptin (Steglujan)
DM AUDIT STATIN DRUGS	Amlodipine and atorvastatin (Caduet) Atorvastatin (Lipitor) Ezetimibe and atorvastatin (Liptruzet) Ezetimibe and simvastatin (Vytorin) Fluvastatin (Lescol, Lescol XL) Lovastatin (Mevacor, Altocor, Altoprev) Niacin XR and lovastatin (Advicor) Niacin XR and simvastatin (Simcor) Pravastatin (Pravachol) Pitavastatin (Livalo, Zypitamag) Rosuvastatin (Crestor, Ezallor) Simvastatin (Zocor) Sitagliptin and simvastatin (Juvisync)
DM AUDIT SULFONYLUREA DRUGS	Acetohexamide (Dymelor) Chlorpropamide (Diabinese) Glimepiride (Amaryl) Glipizide (Glucotrol) Glipizide and metformin (Metaglip) Glyburide (Diabeta, Micronase, Glynase, Glynase PresTab Glycron) Glyburide and metformin (GlucoVance) Pioglitazone and glimepiride (Duetact) Tolazamide (Tolinase) Tolbutamide (Orinase)
DM AUDIT SULFONYLUREA-LIKE DRUGS	Nateglinide (Starlix) Repaglinide (Prandin) Repaglinide and metformin (PrandiMet)

Taxonomy	Drugs
DM AUDIT TB MEDS	Ethambutol (Myambutol) Isoniazid (INH) Pyrazinamide Rifabutin (Myobutin) Rifampin (Rifadin) Rifampin and isoniazid (Rifamate) Rifampin, isoniazid and pyrazinamide (Rifater) Rifapentine (Priftin)

2.3.2.2 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 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
BGP HEP C TESTS TAX	Hepatitis C tests

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 2-27 shows a Health Summary sample with the name of the taxonomy that the test is included in noted underneath the lab test.

HGB A1C-GLYCO (R)	01/16/20	5.7	%	4.3-6.1
DM AUDIT HGB A1C				
LIPID PROFILE (R)	01/16/20			
HDL CHOLESTEROL (R)	01/16/20	44	MG/DL	40-125
DM AUDIT HDL CHOLESTEROL				
TRIGLYCERIDE (R)	01/16/20	109	MG/DL	30-150
DM AUDIT TRIGLYCERIDE				
LDL CHOLESTEROL (R)	01/16/20	97	MG/DL	0-130
DM AUDIT LDL CHOLESTEROL				
CHOLESTEROL (R)	01/16/20	163	MG/DL	100-200
DM AUDIT CHOLESTEROL				
CHOL/HDL RATIO (R)	01/16/20	3.70	RATIO	0.00-4.44
CALCULATED GFR (R)	01/16/20			
GFR AFRICN AMER	01/16/20	>60	ML/MIN	>60-
BGP GPRA ESTIMATED GFR				
GFR NON AFR AMR	01/16/20	>60	ML/MIN	>60-
BGP GPRA ESTIMATED GFR				
COMPREHENSIVE-14 METABOLIC (R)	01/16/20			
AST (SGOT) (R)	01/16/20	18	U/L	0-40
ALT (SGPT) (R)	01/16/20	15	U/L	0-40
BUN (R)	01/16/20	11	MG/DL	5-19
ALBUMIN (R)	01/16/20	4.2	GM/DL	3.9-5.0
CHLORIDE (R)	01/16/20	104	MMOL/L	96-108
BILIRUBIN, TOTAL (R)	01/16/20	0.9	MG/DL	0.1-1.0
ALKALINE PHOS (R)	01/16/20	76	U/L	28-110
SODIUM (R)	01/16/20	139	MMOL/L	135-145
CREATININE (R)	01/16/20	0.86	MG/DL	0.50-1.00
DM AUDIT CREATININE				
CALCIUM (R)	01/16/20	8.9	MG/DL	8.5-10.5
POTASSIUM (R)	01/16/20	5.6 (H)	MMOL/L	3.5-5.5
PROTEIN, TOTAL (R)	01/16/20	7.7	GM/DL	6.7-8.3
GLUCOSE RANDOM (R)	01/16/20	68 (L)	MG/DL	70-100
CO2 (R)	01/16/20	23	MMOL/L	18-30
ANION GAP (R)	01/16/20	12	MM/L	5-16
URINE DIPSTICK (R)	03/10/19			
URINE COLOR	03/10/19	0		
URINE APPEARANCE	03/10/19	C		
SPECIFIC GRAVITY	03/10/19	1.001		1.001-1.035
URINE UROBILINOGEN	03/10/19	NORMAL	EU/dL	.2-1
URINE BLOOD	03/10/19	N	mg/dL	NEG-
URINE BILIRUBIN	03/10/19	N	mg/dL	NEG-
URINE KETONES	03/10/19	L	mg/dL	NEG-
URINE GLUCOSE	03/10/19	500	mg/dL	NEG-
URINE PROTEIN	03/10/19	L	mg/dL	NEG-
URINE PH	03/10/19	5		5-9

URINE NITRITE	03/10/19	N	NEG-	
URINE LEUKOCYTE ESTERASE	03/10/19	N	NEG-	
M-ALB/CREAT RATIO (R)	01/22/20			
_MICROALB, RANDOM	01/22/20	<5.0	MG/L	0.0-20.0
_DM AUDIT MICROALBUMINURIA				
_ALB/CREAT RATIO	01/22/20	FOOTNOTE	MG/GCR	0.0-16.9
_DM AUDIT QUANT UACR				
_CREAT UR, MG/DL	01/22/20	138	MG/DL	
_CREAT/100 Calc Malb	01/22/20	1.38	G/LFigure	

Figure 2-27: Health Summary with recommended taxonomy placement

2.3.3 View/Print Any DM Audit Taxonomy

The **View/Print Any DM Taxonomy** option may be used to review any of the Diabetes Audit taxonomies, including CPT Codes, Diagnoses Codes, LOINC Codes, Medications, Laboratory Tests, or Education Topics. To review a taxonomy:

1. Select **AS** (Audit Setup) from the DMS main menu.
2. Select **VTAX View/Print Any DM Audit Taxonomy**.
3. When prompted, type **2022** as the Audit year. A list of the taxonomies used in the 2022 Diabetes Audit display (Figure 2-28). Note that there are multiple pages of taxonomies. Use the up arrow or down arrow to browse the list.
4. Type **S** to indicate a selection will be made. Then type the number preceding the taxonomy of interest.

The taxonomy contents may be browsed on the screen or printed to a RPMS printer. Figure 2-29 shows a sample of the taxonomy contents for the creatinine kinase test.


```

DM AUDIT TAXONOMY VIEW          Sep 28, 2021 10:31:22          Page:    1 of    7
TAXONOMIES TO SUPPORT 2022 DIABETES/PRE-DIABETES AUDIT REPORTING
* View Taxonomies

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

Figure 2-28: Taxonomy list for Diabetes Audit

```

DKR                               DEMO HOSPITAL                Page 1
                                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 2-29: Sample of a Taxonomy for Creatine Kinase LOINC Codes

2.3.4 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 Diabetes Audit.

1. Select **AS** (Audit Setup) from the DMS main menu.
2. Select **VSML** View a SNOMED List Used by the DM AUDIT.
3. When prompted for the year, type **2022**.
4. The SNOMED Lists used in the 2022 Diabetes Audit will display (Figure 2-30).
5. Type **S** to indicate a selection will be made.
6. Enter the number preceding the SNOMED List of interest. The contents of the SNOMED List may be browsed on the screen or printed to a RPMS printer.

```

DM AUDIT SNOMED LIST VIEW      Nov 02, 2021 11:30:36      Page: 1 of 1
SNOMED LISTS TO SUPPORT 2022 DIABETES AUDIT REPORTING
* View SNOMED Lists

1) BREASTFEEDING PATIENT ED
2) DEPRESSION DIAGNOSES
3) PXRМ BGP CURRENT TOBACCO
4) PXRМ BGP DM ATK AMP
5) PXRМ BGP DM BTK AMP
6) PXRМ BGP DM RETINOPATHY
7) PXRМ BGP QUIT TOBACCO
8) PXRМ BGP TOBACCO SCREENED
9) PXRМ BGP TOBACCO SMOKELESS
10) PXRМ BGP TOBACCO SMOKER
11) PXRМ BGP TOBACCO TOPICS
12) PXRМ BQI TUBERCULOSIS
13) PXRМ DIABETES
14) PXRМ ESSENTIAL HYPERTENSION
15) PXRМ HEPATITIS C
    Enter ?? for more actions
S   Select SNOMED List to View      Q   Quit
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 2-30: Selecting a SNOMED List used in the Diabetes Audit

```

OUTPUT BROWSER      Dec 11, 2021 10:51:50      Page: 1 of 5
BHS                                                         Page 1
                    DEMO HOSPITAL
                    Listing of the PXRМ BGP DM RETINOPATHY SNOMED List
-----
4855003             Diabetic retinopathy
25412000            Diabetic retinal microaneurysm
59276001            Proliferative diabetic retinopathy
193349004           Preproliferative diabetic retinopathy
193350004           Advanced diabetic maculopathy
232020009           Diabetic maculopathy
232021008           Proliferative diabetic retinopathy with new vessels on
232022001           Proliferative diabetic retinopathy with new vessels els
232023006           Diabetic traction retinal detachment
311782002           Advanced diabetic retinal disease
312903003           Mild non-proliferative diabetic retinopathy
+   Enter ?? for more actions                                     >>>
+   NEXT SCREEN          -   PREVIOUS SCREEN          Q   QUIT
Select Action: +//
    
```

Figure 2-31: Browsing a selected SNOMED List used in the Diabetes Audit

2.4 Run a Data Quality Check Report

This report identifies potential errors in the data extracted for your Audit data file and/or report – 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.

The Data Check Report has two sections, one listing the details of each potential error and one listing the number of potential errors for each Audit item. An Audit item with a large number of errors may indicate a taxonomy or some other systematic issue. It is recommended that these issues be resolved as the first step in data cleaning.

Note: When running this report, use the exact same parameters that you will be using when creating the Audit data file.

The Data Quality Check Report (DQC) is on the AS (Audit Setup) menu.

```

DXNR  Patients with DM Diagnosis and not on Register
INA   List Possible Inactive Pts in the DM Register
PLDX  Patients w/no Diagnosis of DM on Problem List
-----
LMR   List Labs/Medications Used at this Facility
TC    Check Taxonomies for the 2022 DM Audit
TU    Update/Review Taxonomies for 2022 DM Audit
VTAX  View/Print Any Taxonomy Used by the Diabetes Audit
VSML  View a SNOMED List Used by the Diabetes AUDIT
DAL   Display Audit Logic
-----
DQC   2022 Data Quality Check Report
-----
ASPR  Prior Years Diabetes Audit Setup (DM18-DM21) ...

```

Figure 2-32: Audit Setup Menu

Figure 2-33 shows a script on how to run the Data Quality Check Report.

```

Diabetes Management System ...

AS - Audit Setup

    DQC - Data Quality Check

In order for the 2022 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: <Enter>

```

ASSESSMENT OF DIABETES CARE, 2022

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: 12/31/21 (DEC 31, 2021)

Select one of the following:

P	Individual Patients
S	Search Template of Patients
C	Members of a CMS Register
E	E-Audit (predefined set of patients)

Run the audit for: P// C Members of a CMS Register

Do you want to select register patients with a particular status? Y// ES
Which status: A// <Enter> 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// <Enter> 0

Limit the patients who live in a particular community ? N// <Enter> 0

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// <Enter>
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//
<Enter> 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 860 patients selected so far to be used in the audit.

  Select one of the following:

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

Do you want to select: A// <Enter> LL Patients selected so far

  Select one of the following:

      P          PATIENT NAME
      E          ERROR FIELD NAME

How should the report be sorted: P// <Enter>

  Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// <Enter> 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 2-33: 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 2-34.

```

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

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

Figure 2-34: Device prompt

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

A sample 2022 Data Quality Check Report is displayed in Figure 2-35.

LAB	Nov 03, 2021	Page 1
DIABETES AUDIT EXPORT DATA QUALITY CHECK REPORT Audit Date 12/31/2021 (01/01/2021 to 12/31/2021) Facility: 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, Alc, LDL, uACR.						
DEMOB,MARIE	222222	09/15/1970	F	42	145	POTENTIAL
ERROR: HDL VALUE <12 OR >140-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, 2021				Page 36
DIABETES AUDIT EXPORT DATA QUALITY CHECK REPORT Audit Date 12/31/2021 (01/01/2021 to 12/31/2021) Facility: 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 >140		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 2-35: Sample Data Quality Check Report

3.0 2022 Audit Tools

Instructions for creating and submitting a Diabetes Audit data file are provided in the Audit 2022 Instructions which can be found on the Audit website:

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

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

Output options include an individual Audit, the Audit Report, the SDPI RKM Report, and an Audit Data (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 Individual Audits

Individual Audits list all of the Audit data items for a particular patient. These can be run either via the Audit Reporting menu or the Patient Management option. To run using the Audit Reporting menu, please refer to the DMS General User Manual. To run an individual Audit using the Patient Management option do the following:

1. At the **Diabetes Management Systems** menu, type **RM** for Register Maintenance and press Enter, then type **PM** for Patient Management and press Enter.
2. At the **Patient Management** menu, select your diabetes register. Then in Register Data, type **10** (Audit Status) and press Enter.
3. At the “Enter the Audit Date” prompt, type the ending date of the 12-month Audit period desired and press Enter.
4. At the “Do you wish to print the Patient’s Name...?” prompt, do one of the following:
 - To not print the patient’s name on the Audit sheet, accept the default (**N**) by pressing Enter.
 - To print the patient’s name, type **Y** and press Enter.
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 individual Audit is shown in Figure 3-1.

 Diabetes Therapy All prescribed (as of the end of the Audit period):

- 1 None of the following
- 2 Insulin
- X 3 Metformin [Glucophage, others]
- 4 Sulfonylurea [glipizide, glyburide, glimepiride]
- 5 DPP-4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)]
- 6 GLP-1 receptor agonist [dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza, Saxenda), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus, Wegovy)]
- 7 SGLT-2 inhibitor [canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)]
- 8 Pioglitazone [Actos] or rosiglitazone [Avandia]
- 9 Acarbose [Precose] or miglitol [Glyset]
- 10 Repaglinide [Prandin] or nateglinide [Starlix]
- 11 Pramlintide [Symlin]
- 12 Bromocriptine [Cycloset]
- 13 Colesevelam [Welchol]

ACE Inhibitor or ARB

Prescribed (as of the end of the Audit period): 2 No

Aspirin or Other Antiplatelet/Anticoagulant Therapy

Prescribed (as of the end of the Audit period):

2 No

Statin Therapy

Prescribed (as of the end of the Audit period): 2 No

Cardiovascular Disease (CVD)

Diagnosed (ever): 2 No

Tuberculosis (TB)

TB diagnosis (latent or active) documented (ever):

1 Yes 04/03/2021 HF: TX UNKNOWN

TB test done (most recent): 2 - Blood Test 04/03/2021

TB test result: 1 - Positive 4/3/21 lab result: POSITIVE

If TB diagnosis documented or TB result 'Positive', treatment initiated

(isoniazid, rifampin, rifapentine, others): 3 - Unknown 04/03/2021 TX

UNKNOWN

If TB result 'Negative', test date:

Hepatitis C (HCV)

HCV diagnosed (ever): 2 No

If not diagnosed with HCV, screened at least once (ever):

1 Yes 11/02/2018 HEPATITIS C Antibody (R) (N)

Retinopathy

Diagnosed (ever): 1 Yes - Problem List

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Audit Period Ending Date: 12/31/2021

CHART #: 105176 DOB: May 13, 1963 SEX: FEMALE

 Amputation

Lower extremity (ever), any type (e.g., toe, partial foot, above or

```

below knee): 2 No

Immunizations
Influenza vaccine (during Audit period): 1 Yes 08/28/2021
Pneumovax/PPSV23 (ever): 1 Yes 05/10/2017
Td, Tdap, DTaP, or DT (in past 10 years): 1 Yes 08/28/2021
Tdap (ever): 1 Yes 08/28/2021
Hepatitis B complete series (ever): 2 No
Shingrix/RZV complete series (ever): 2 No

Laboratory Data (most recent result during Audit period)
A1c: 9.2 04/03/2021 HGB A1c (R)
Total Cholesterol: 200 04/03/2021 CHOLESTEROL (POCT)
HDL Cholesterol: 52 04/03/2021 HDL CHOLESTEROL (PO
LDL Cholesterol: 150 04/03/2021 LDL CHOLESTEROL (PO
Triglycerides:
Serum Creatinine:
eGFR: 55 04/03/2021 ESTIMATED GFR
UACR: 30 04/03/2021 zzMICROALBUMIN/CREA

COMBINED: Meets ALL: A1c <8.0, statin prescribed, mean BP <140/<90
2 No A1c: 9.2; statin prescribed: No; Mean BP: 142/90

Local Questions

Select one:
Text:

```

Figure 3-1: Individual Audit sample

3.2 Audit Report

The Audit Report summarizes all of the Audit data items for a selected group of patients. Figure 3-2 shows a script for running an Audit Report. The Audit Report can be either queued using the DM22 option in Visual DMS or run from the traditional RPMS menu. It is highly recommended that the 2022 Audit Report be run and reviewed twice before creating a data file to submit via the WebAudit for the Annual Audit.

The first time run the Audit Report 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 Audit Report carefully and look for Audit items that have no data or that have far larger or smaller numbers than would be expected. If any are found, this may be due to improperly populated taxonomies. If necessary, review taxonomy set up and edit taxonomies as needed. Then run and review the Audit Report again to make sure that problems are corrected before creating the Audit Data (Export) file.

Note: It is possible to have taxonomies with no members, if the drugs or laboratory tests referenced are not used at a facility. See Section 2.3 for more information.

Figure 3-2 shows the steps for generating an Audit Report.

```

Diabetes Management System ...
AR  Audit Reporting ...
DM22 2022 Diabetes Audit

Select 2022 Diabetes Program Audit Option: DM22  Run 2022 Diabetes Program
Audit

In order for the 2022 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: <Enter>

Select DIABETES Register

```

No.	Register Name	# Active members	# members	Last patient update
1	2017 DIABETES REGISTER	37	40	02/07/2020
2	IHS DIABETES	552	555	11/14/2021
3	CLINIC DIABETES REGISTER	29	29	10/05/2019
4	DEMO DIABETES REGISTER	1,002	1,012	10/03/2019

```

Which REGISTER: (1-5):

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: 12/31/21 (DEC 31, 2021)

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

Do you want to select register patients with a particular status? Y//
<Enter> ES
Which status: A// <Enter> 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// <Enter> 0

Limit the patients who live in a particular community ? N// <Enter> 0

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// <Enter>
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//
<Enter> 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 543 patients selected so far to be used in the audit.

    Select one of the following:

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

Do you want to select: A// <Enter> LL Patients selected so far

    Select one of the following:

        1      Print Individual Reports
        2      Create AUDIT EXPORT file
        3      Audit Report (Cumulative Audit)
        4      Both Individual and Cumulative Audits
        5      SDPI RKM Report

Enter Print option: 1// 3  Audit Report (Cumulative Audit)

    Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// <Enter> 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 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 3-3.

```
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 2022 Audit Report is displayed in Appendix D.

3.3 Audit Export (Data) File

IHS recommends that the Annual Audit include all eligible diabetes patients. There may be patients on your 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 2022 Instructions and in Section 2.1. If that is the case, you may need to edit your register or create a separate template of patients for the Audit.

The option to create an Audit Export (Data) File is on the **AR Audit Reporting** menu. To generate this report:

1. At the **Diabetes Management System** main menu, type **AR** and press Enter.
2. Select **DM22** (2022 Diabetes Audit) and follow the prompts as shown in the script in Figure 3-4.

```
DM22  2022 Diabetes Audit

In order for the 2022 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: <Enter>

Select DIABETES Register
No. Register Name                # Active # members Last patient update
                                members
-----
1  2017 DIABETES REGISTER         37      40      02/07/2020
2  IHS DIABETES                   552     555     11/14/2019
3  CLINIC DIABETES REGISTER       29      29      10/05/2019
4  DEMO DIABETES REGISTER        1,002   1,012   10/03/2019
5  ANOTHER DIABETES REGISTER      158     158     10/04/2019
```

Which REGISTER: (1-5):

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: 12/31/21 (DEC 31, 2021)

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

Do you want to select register patients with a particular status? Y// <Enter> ES
Which status: A// <Enter> ACTIVE

There are 543 patients in the IHS DIABETES register with a status of A.

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

Limit the audit to a particular primary care provider ? N// <Enter> 0

Limit the patients who live in a particular community ? N// <Enter> 0

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// <Enter> 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// <Enter>
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// <Enter> LL Patients selected so far

    Select one of the following:

        1          Print Individual Reports
        2          Create AUDIT EXPORT file

        3          Audit Report (Cumulative Audit)
        4          Both Individual and Cumulative Audits
        5          SDPI RKM Report

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 2022 AUDIT

I am going to create a file called DKR 2022 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 2022 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 2022 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// <Enter> ES

    Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// <Enter> xclude DEMO Patients

Won't you queue this ? Y// <Enter> ES

Requested Start Time: NOW//T@2000

```

Figure 3-4: Creating an Audit Export file

Make a note of the file name you provided and notify the RPMS site manager that a Diabetes Audit Export file has been created. Provide the file name 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.

3.4 SDPI Report

The option to create an SDPI RKM Report is on the **AR Audit Reporting** menu. To generate this report, do the following:

1. At the **Diabetes Management System** main menu, type **AR** and press Enter.

2. Select **DM22** (2022 Diabetes Audit) and follow the prompts as shown in the script in Figure 3-5.

```

Select Audit Reporting Option: DM22  Run 2022 Diabetes Program Audit

In order for the 2022 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: <Enter>

Select DIABETES Register
No. Register Name                # Active # members Last patient update
                                members
-----
1  2017 DIABETES REGISTER        37      40      02/07/2020
2  IHS DIABETES                  552     555     11/14/2019
3  CLINIC DIABETES REGISTER      29      29      10/05/2019
4  DEMO DIABETES REGISTER        1,002   1,012   10/03/2019
5  ANOTHER DIABETES REGISTER     158     158     10/04/2019

Which REGISTER: (1-5):

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: 12/31/21 (DEC 31, 2021)

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

Do you want to select register patients with a particular status? Y// <Enter> ES
Which status: A// <Enter> 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// <Enter> 0

Limit the patients who live in a particular community ? N// <Enter> 0

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// <Enter>   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// <Enter>
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// <Enter> 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 RKM Report

Enter Print option: 1//5

Select one of the following:

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

Demo Patient Inclusion/Exclusion: E// <Enter> 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 3-5: Running an SDPI RKM Report

The SDPI RKM Report is displayed in Figure 3-6.

LAB	Sep 28, 2021	Page 1
-----	--------------	--------

IHS Diabetes Care and Outcomes Audit - RPMS
 SDPI Required Key Measures Report for 2022 (01/01/2021 to 12/31/2021)
 Facility: DEMO HOSPITAL (INST)
 Annual Audit

959 patients were audited

	# of Patients (Numerator)	# Considered (Denominator)	Percent
***NOTE: 13 Patients were not included in this report because their date of onset was after the Audit end period date.			
Aspirin or Other Antiplatelet Therapy in Cardiovascular Disease In patients with diagnosed CVD, aspirin or other antiplatelet/anticoagulant therapy currently prescribed	219	396	55%
Blood Pressure (BP) Control BP <140/<90 mmHg (one value or mean of 2 or 3 values)	424	959	44%
Chronic Kidney Disease Screening and Monitoring In age >=18 years, both UACR and eGFR done	231	927	25%
Dental Exam Dental exam received	239	959	25%
Depression Screening In patients without active depression, screened for depression	415	860	48%
Diabetes-Related Education Any diabetes topic (nutrition, physical activity, or other)	467	959	49%
Eye Exam - Retinopathy Screening Eye exam - dilated exam or retinal imaging	303	959	32%
Foot Exam Foot exam - comprehensive	218	959	23%
Glycemic Control A1C <8.0%	212	959	22%
Hepatitis C (HCV) Screening In age => 18 years, screened for HCV ever or HCV diagnosed ever	208	927	22%
LAB	Sep 28, 2021		Page 2

IHS Diabetes Care and Outcomes Audit - RPMS
 SDPI Required Key Measures Report for 2022 (01/01/2021 to 12/31/2021)
 Facility: DEMO HOSPITAL (INST)
 Annual Audit

959 patients were audited			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Immunizations: Hepatitis B Hepatitis B complete series - ever or immune to hepatitis B	529	959	55%
Immunizations: Influenza Influenza vaccine during report period	362	959	38%
Immunizations: Pneumovax/PPSV23 Pneumovax/PPSV23 vaccine - ever	623	959	65%
Immunizations: Tetanus/Diphtheria Td/Tdap/DTap/DT - past 10 years	639	959	67%
Lipid Management in Cardiovascular Disease In patients age 40-75 years and/or with diagnosed CVD, statin currently prescribed	207	768	27%
Nutrition Education Nutrition education - by any provider (registered dietitian and/or other)	284	959	30%
Physical Activity Education Physical activity education	200	959	21%
Tobacco Use Screening Screened for tobacco use during report period	509	959	53%
Tuberculosis (TB) Screening TB test done ever or TB diagnosed ever	553	959	58%

Figure 3-6: Sample SDPI RKM Report

4.0 Upload the Export (Data) File to WebAudit

Audit Export (Data) files can be uploaded 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/>. To upload a file:

1. Request a WebAudit account if you do not already have one.
2. Log in to WebAudit.
3. From the main or left menu, select **Facility Administration**, then **Enter Facility Information**.
4. Select an Audit Type. For the Annual Audit submitted to the Division of Diabetes, select **Annual Audit**. For all other Audits, select **Interim Audit**. Click the **Go** button.
5. Enter the number of patients who meet the inclusion and exclusion criteria found in the 2022 Audit Instructions and Section 2.1 of this manual.
6. Click the **Submit** button.
7. Select **Upload file for this facility** from the onscreen menu or click on **Data Processing** in the left-hand menu, then select **Upload Data**.
8. Individuals with access to multiple facilities will need to select a Facility.
9. Select the electronic health record system that was used to create the file (RPMS if you used RPMS/DMS).
10. Click on the **Choose File** button and navigate to your data file, then click on the **Open** button.
11. Click on the **Upload File** button.
 - If the data file upload is successful, you will receive a message on the screen to that effect.
 - If the upload is unsuccessful, you will receive an error message telling you that the file upload attempt was unsuccessful and details about the problems found.
12. Once the file is successfully uploaded, proceed with checking the data quality, if you have not already done so in DMS, as described in the Audit 2022 Instructions, which can be found on the Audit website: <https://www.ihs.gov/diabetes/audit/audit-resources/>.
13. Generate and review the Audit Report, as described in the Audit 2022 Instructions.

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 view, sort, and/or filter the data. The 2022 Diabetes Audit Export file is a delimited text file with all of the Audit data items for each patient in a single row separated by caret symbols (^). Not only can the file be uploaded to the WebAudit, but it can also be opened with Notepad or imported into Excel for local use. The data items are identified by headers in the first row of the file.

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

Section 3.3 provides details about the Audit Export file format and field definitions.

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

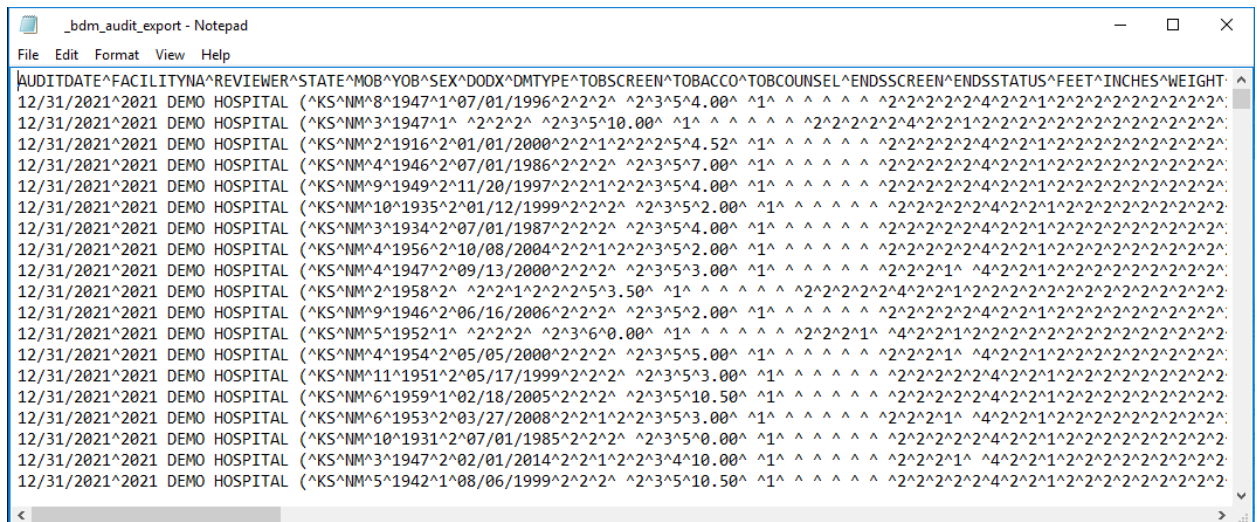


Figure 5-1: Sample Audit Export file displayed in Notepad

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.

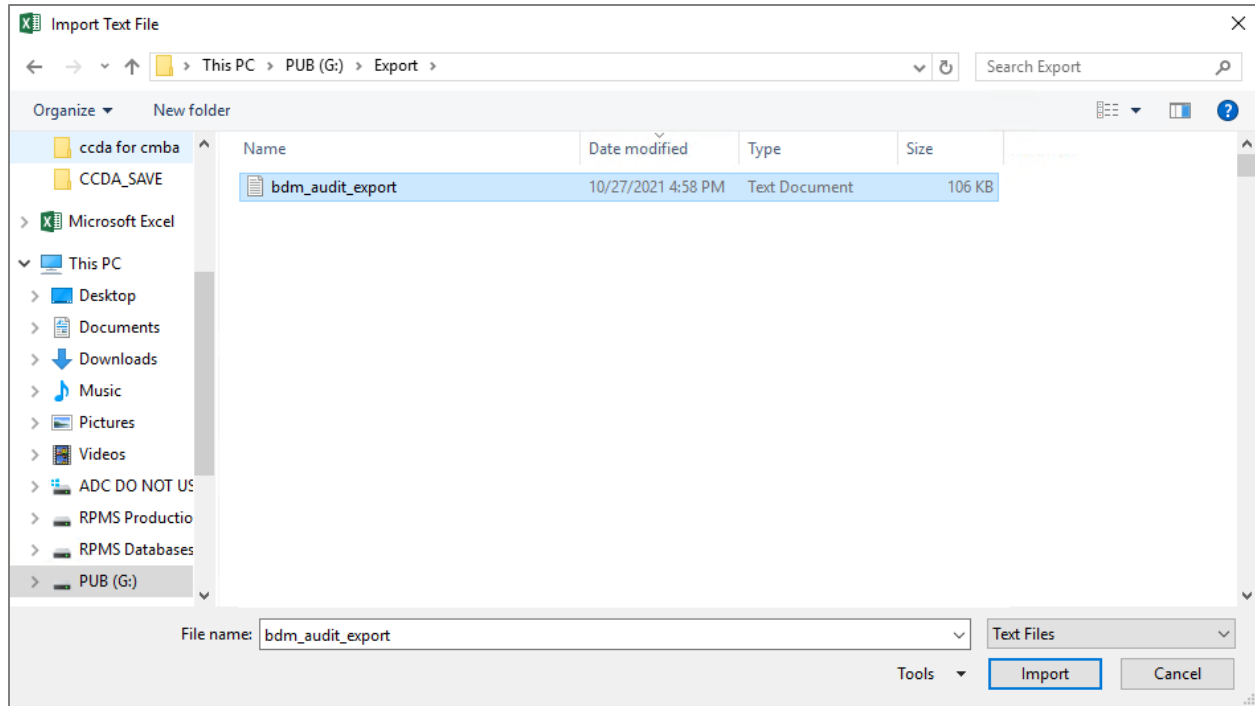


Figure 5-2: Excel – Open dialog

3. Change the file type from **All Excel Files** to **All Files** (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.

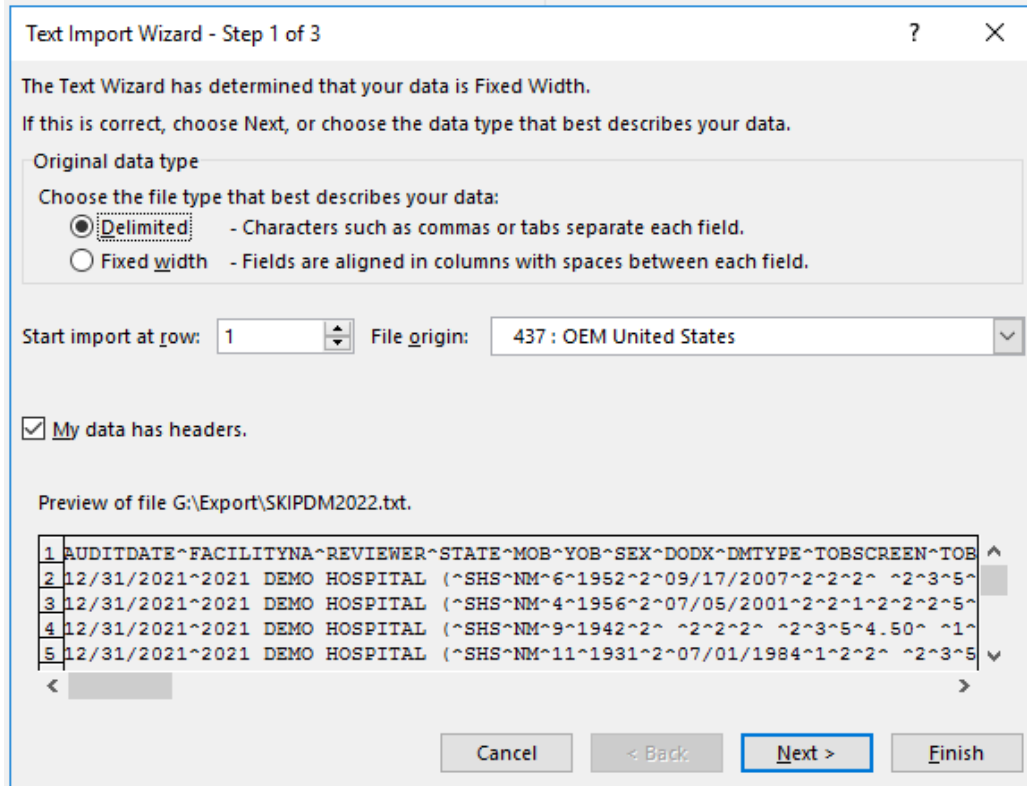


Figure 5-3: Text Import Wizard – Step 1 of 3 dialog

6. If the **Text Import Wizard** does not correctly identify that this is a delimited file, select the **Delimited** option button. Also, select the **My data has headers** check box.
7. Click **Next**. The **Text Import Wizard – Step 2 of 3** dialog (Figure 5-4) displays.

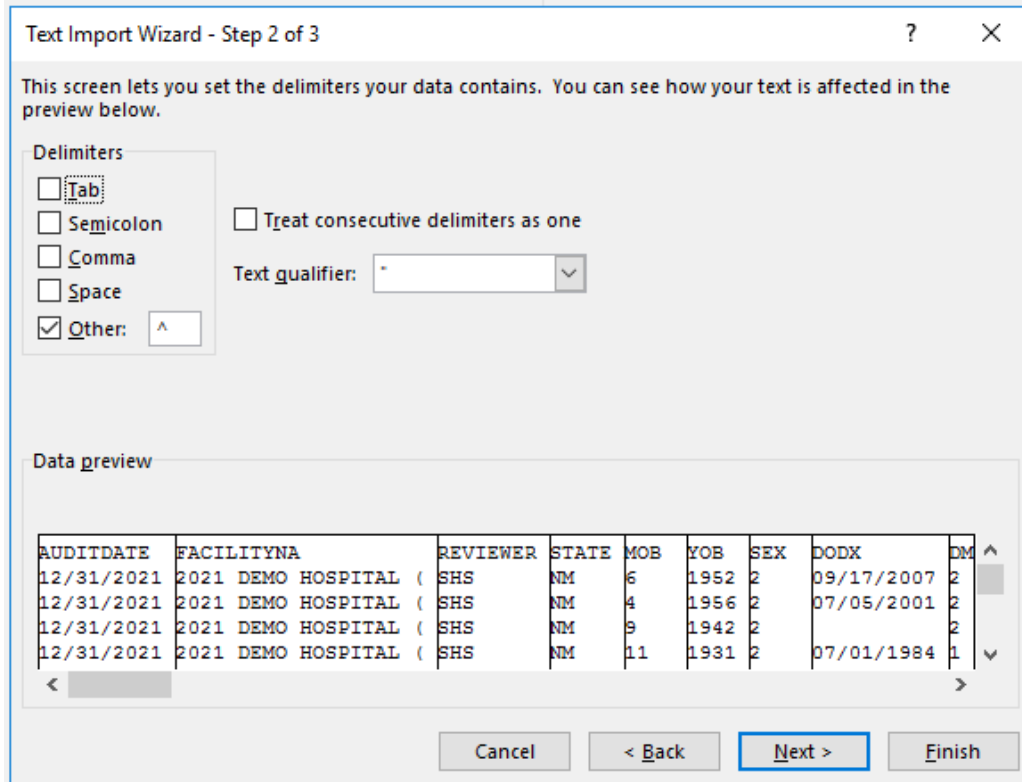


Figure 5-4: Text Import Wizard – Step 2 of 3 dialog

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 DMS Data Quality Check report can identify potential data errors prior to uploading data to the WebAudit (see Section 3.2). The DMS version of this 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 that follow:

1. In the WebAudit, use the Data Quality Check tool to run the Annual Audit Potential Data Entry Errors Details report.
2. Scan through the errors. Edit the data and/or add comments for each item in the list, as needed. Clicking on the icon in the **Edit** column will open a full screen with all of the data for the selected patient, for review and/or editing.
 - The Year and Month of Birth, Sex, and Date of Diagnosis may all be used to identify the patient via iCare. The RPMS Data Quality Check report may also be used to identify the patients with errors. Running this report is described in Section 2.4. The RPMS Data Quality Check report includes the patient's name and chart number.
 - 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.

There are two ways to use the GEN Report to identify patients. (Please review the *BDM Version 2.0 Patch 15 User Manual* for additional detail on this functionality):

- By Date of Diagnosis
- By Register Status, Sex, and Year and Month of Birth

7.0 Display 2022 Diabetes Audit Logic

The logic for the 2022 Diabetes Audit is provided under the **DAL** menu option in the **AS – Audit Setup** menu, as shown in Figure 7-1.

1. At the **Diabetes Management Systems** menu, type **AS** and press Enter.
2. At the “Select DMS Audit Item Descriptions Audit Year” prompt, type **2022** for the Audit year and press Enter to display the item list.

```

DM AUDIT ITEM DESCRIPTION      Oct 26, 2021 14:44:44      Page: 1 of 2
1)  AUDIT DATE (AKA AUDI      21)  FOOT EXAM - COMPLETE      41)  RETINOPATHY (DIAGNOS
2)  FACILITY NAME              22)  EYE EXAM (dilated ex    42)  LOWER LEG AMPUTATION
3)  REVIEWER INITIALS          23)  DENTAL EXAM            43)  INFLUENZA VACCINE DU
4)  STATE OF RESIDENCE         24)  DEPRESSION AN ACTIVE   44)  PNEUMOVAX/PPSV23 VAC
5)  CHART NUMBER               25)  DEPRESSION SCREENING  45)  Td, Tdap, DTap, or D
6)  DATE OF BIRTH              26)  NUTRITION INSTRUCTIO  46)  Tdap EVER
7)  SEX                         27)  PHYSICAL ACTIVITY IN   47)  HEPATITIS B COMPLETE
8)  PRIMARY CARE PROVIDE       28)  DM EDUCATION (OTHER)   48)  SHRINGRIX COMPLETE S
9)  DATE OF DIABETES DIA       29)  DIABETES THERAPY      49)  A1C
10) DM TYPE                     30)  ACE INHIBITOR OR ARB   50)  TOTAL CHOLESTEROL
11) TOBACCO - SCREENED D       31)  ASPIRIN/ OTHER ANTIP   51)  HDL CHOLESTEROL
12) TOBACCO USE STATUS         32)  STATIN THERAPY         52)  LDL CHOLESTEROL
13) TOBACCO CESSATION CO      33)  CVD                     53)  TRIGLYCERIDES
14) ELECTRONIC NICOTINE        34)  TUBERCULOSIS (TB) DI   54)  SERUM CREATININE
15) ENDS USE STATUS           35)  TB TEST DONE           55)  eGFR (ESTIMATED GFR)
16) HEIGHT                     36)  TB TEST RESULT         56)  QUANTITATIVE URINE A
17) WEIGHT                      37)  TB RESULT POSITIVE,    57)  COMBINED OUTCOMES ME
18) BMI                         38)  TB RESULT NEGATIVE,    58)  e-GFR and UACR
19) HYPERTENSION DOCUMEN      39)  HEPATITIS C - HCV Di   59)  COMORBIDITY
20) BLOOD PRESSURES (LAS      40)  HEPATITIS C - SCREEN
+      Enter ?? for more actions
S      Select Item              A      Display All Items      Q      Quit
Select Action: +//

```

Figure 7-1: Diabetes Audit Logic (DAL) items

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

Appendix A provides a complete listing of the logic for all Audit items.

8.0 Audit Resources

- The complete DMS v2.0 Patch 15 User Manual (bdm_0200.15u.pdf) can be found on the RPMS website <https://www.ihs.gov/rpms/applications/clinical/> under the Diabetes Management System (BDM) group.
- Diabetes Audit 2022 information can be found on the IHS Division of Diabetes website: <https://www.ihs.gov/diabetes/audit/>.
- IHS Diabetes Standards of Care and Resources for Clinicians and Educators can be found on the IHS Division of Diabetes website: <https://www.ihs.gov/diabetes/clinician-resources/soc/>.

Appendix A 2022 Diabetes Audit Logic

Notes: Audit Logic uses several taxonomies that are used by other national RPMS programs, including diagnosis codes, CPT codes, LOINC codes, SNOMED codes, and medications. 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 **TU** (Update/Review Taxonomies for 2022 DM Audit) menu option under the **AS** menu option of the **Diabetes Management System** menu.

View contents of SNOMED lists by using the **VSML** (View a SNOMED List Used by the DM AUDIT) menu option.

A.1 Report Date

- **Description:** Date report was generated
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Date report was generated
- **Audit Logic:** N/A
- **Audit Report:** The date the report was generated is included in the header of the report
- **Audit Export Field Name and Details:** N/A

A.2 Audit Date

- **Description:** Last day of 12-month Audit period for which data are reviewed
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** This date, supplied by the user, determines the time period for which data are reviewed for the Audit. For most items, 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, 2021, data are reviewed for the year prior to this date (January 1-December 31, 2021).
- **Audit Report:** AUDIT DATE (AKA AUDIT PERIOD ENDING DATE) is used to determine the Audit period and is displayed in the header of the report. (Audit Period 01/01/2021 to 12/31/2021.)

- **Audit Export Field Name and Details:** AUDITDATE MM/DD/YYYY

A.3 Facility Name

- **Description:** Facility Name
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** 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.)
- **Audit Report:** FACILITY NAME Facility name is displayed in the report header.
- **Audit Export Field Name and Details:** FACILITYNA (max length 20)

A.4 Age

- **Description:** Patient age
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Age of patient in years on the date the report or file was generated.
- **Audit Logic:** Age of the patient as of the Audit date.
- **Audit Report:** Age in years is grouped into the following:
 - < 20 years
 - 20–44 years
 - 45–64 years
 - ≥ 65 years**Age is also used in various sections that have age specific items.**
- **Audit Export Field Name and Details:** AGE
Age in years as of the Audit date # with maximum of 3 digits and no decimal places Calculate as: integer part of difference in days between AUDITDATE and date of birth, divided by 365.25.

A.5 Reviewer Initials

- **Description:** Reviewer initials
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** 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.

- **Audit Report:** REVIEWER INITIALS Displayed in the Audit Report header.
- **Audit Export Field Name and Details:** REVIEWER

A.6 State of Residence

- **Description:** Postal abbreviation for patient's last known state of residence.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** This is the state in which the patient resides at the time the Audit is conducted. This is captured from the mailing address.
- **Audit Report:** N/A
- **Audit Export Field Name and Details:** STATE 2-character state abbreviation.

A.7 Chart Number

- **Description:** The Patient's Health Record Number.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The Health Record Number at the facility at which the summary was generated.
- **Audit Logic:** Health record number of the patient at the facility where the Audit is run.
- **Audit Report:** N/A
- **Audit Export Field Name and Details:** Not included in the Audit export (Data) File and not uploaded to the WebAudit.

A.8 DOB

- **Description:** Patient's date of birth.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Patient's DOB from Patient Registration.
- **Audit Logic:** The patient's Date of Birth. Obtained from data entered through patient registration.
- **Audit Report:** Date of Birth is used to calculate age – see item 4.
- **Audit Export Field Name and Details:** MOB YOB Only the month and year of birth are in the Audit Export (Data) File and can be uploaded to the WebAudit.

A.9 Sex

- **Description:** Gender of patient.

- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Male, Female or Unknown, from patient registration.
- **Audit Logic:** The gender of the patient. Obtained from data entered through patient registration. Male, Female or Unknown.
- **Audit Report:** Gender – Male, Female
- **Audit Export Field Name and Details:** SEX 1=Male, 2=Female, 3=Unknown

A.10 Primary Care Provider

- **Description:** Primary Care Provider name
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The name of the Primary Care Provider from RPMS.
- **Audit Logic:** The name of the primary care (designated) provider documented in RPMS. Taken from field Primary Care Provider (#14) of the patient file.
- **Audit Report:** N/A
- **Audit Export Field Name and Details:** Not included in the Audit export (Data) File and not uploaded into the WebAudit.

A.11 Date of DM Onset

- **Description:** Date of diabetes onset
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** First, the system looks for a Register in the Case Management system that contains the term “DIAB.” If one exists, it will look for this patient and get the date of onset from the date of onset field of the register. If none exists, the PCC Problem list is scanned for all problems in the ICD diagnosis code ranges defined in the SURVEILLANCE DIABETES taxonomy or SNOMED code defined in PXR DIABETES SNOMED subset. For each problem on the problem list in these code ranges the date of onset is picked up. The earliest of all the dates of onset found is used. Where the date of onset was found is also displayed.

For the selected date: if year only documented, 0701 is used for month/day; if month/year are documented 15 is used for the day.
- **Audit Logic:** The diabetes onset date. This date is used in the calculation of the duration of diabetes. The system obtains the date from three different dates in the following order:
 - 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 PXRDIABETES SNOMED subset.
- The first recorded diagnosis (POV) of diabetes in PCC. ICD codes: SURVEILLANCE DIABETES taxonomy.
- **Audit Report:** Duration of Diabetes: 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. Please note: The first diagnosis date from POV is not used. Audit Report categories: Duration of Diabetes:
 - < 1 year
 - <10 years
 - ≥ 10 years
 - Diagnosis date not recorded
- **Audit Export Field Name and Details:** DODX Audit Export (Data) File: The earliest date found from the Diabetes register or the problem list is exported. Format: MM/DD/YYYY.

A.12 Diabetes Type

- **Description:** Type of Diabetes (Type 1 or Type 2)
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** The following logic is used to determine diabetes type. Once a 'hit' is made, no further processing is done:
 - If the diagnosis documented in the Diabetes Register is NIDDM the type is assumed to be Type 2.
 - If the diagnosis documented in the Diabetes Register is "TYPE II" the type is assumed to be Type 2.
 - If the diagnosis documented in the Diabetes Register contains a '2' the type is assumed to be Type 2.
 - If the diagnosis documented in the Diabetes Register contains IDDM the type is assumed to be Type 1.
 - If the diagnosis documented in the Diabetes Register is "Type I" the type is assumed to be Type 1.
 - If the diagnosis documented in the Diabetes Register contains a '1' type is assumed to be Type 1.

- 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.
- 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.
- 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 1.
- If type is not determined by any of the above, type is assumed to be Type 2 for the Audit (Data) Export File and Audit Report. For RPMS individual audit sheet, "Not Documented" is displayed.
- **Audit Report: Diabetes Type:**
 - Type 1
 - Type 2

See AUDIT LOGIC for how this is determined.

If the system cannot determine the diabetes type, Type 2 is assumed.

- **Audit Export Field Name and Details: DMATYPE:**
 - 1=Type 1
 - 2=Type 2 (or uncertain)

If the system cannot determine the diabetes type, Type 2 is assumed.

A.13 Screened for Tobacco Use

- **Description:** Was the patient screened for tobacco use during the audit period?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic. For the summary the last screening done ever is displayed, it does not have to fall into a certain period of time.
- **Audit Logic:** 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 or the SNOMED subsets PXRMBGP TOBACCO SCREENED and PXRMBGP CURRENT TOBACCO.

- Any visit with Dental ADA code 1320 documented.
- Any visit with the following CPT codes documented: BGP TOBACCO SCREEN CPTS taxonomy.
- **Audit Report:** Value is used in the Tobacco and Nicotine Use section of the Audit Report.
- **Audit Export Field Name and Details:** TOBSCREEN
 - 1=Yes
 - 2=No

A.14 Tobacco Use Status

- **Description:** Tobacco Use Status (most recent documented), does not have to be documented during the report period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last documented of the following items is found and displayed:
 - 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 2022 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/DIP)
 - **PREVIOUS (FORMER) SMOKELESS TOBACCO (SMOKELESS - CHEWING/DIP)
 - **CESSATION-SMOKELESS TOBACCO (SMOKELESS - CHEWING/DIP)
 - SMOKELESS TOBACCO, STATUS UNKNOWN TOBACCO (SMOKELESS - CHEWING/DIP)
 - **NEVER USED SMOKELESS TOBACCO TOBACCO (SMOKELESS - CHEWING/DIP)
 - **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 active use 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.

- Diagnoses contained in the BGP TOBACCO DXS taxonomy or SNOMED subsets PXRMBGP TOBACCO SCREENED and PXRMBGP CURRENT TOBACCO. 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 and diagnoses codes in the BGP GPRA SMOKELESS DXS taxonomy, all others are considered non-tobacco user. If a SNOMED is found and it is contained in the PXRMBGP CURRENT TOBACCO subset it is used.
- Dental ADA code 1320 - TOBACCO USE INTERVENTION TO PREVENT DISEASE. If this code is documented the patient is considered a tobacco user.
- A CPT code documented that is in the BGP TOBACCO SCREEN CPTS taxonomy. If the code found is in the DM AUDIT 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.
- **Audit Logic:** The last documented of the following items is found:
 - 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 2022 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/DIP)
 - **PREVIOUS (FORMER) SMOKELESS TOBACCO (SMOKELESS - CHEWING/DIP)
 - **CESSATION-SMOKELESS TOBACCO (SMOKELESS - CHEWING/DIP)

- SMOKELESS TOBACCO, STATUS UNKNOWN TOBACCO (SMOKELESS - CHEWING/DIP)
- **NEVER USED SMOKELESS TOBACCO TOBACCO (SMOKELESS - CHEWING/DIP)
- **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)
- Dental ADA code 1320 - TOBACCO USE INTERVENTION TO PREVENT DISEASE. If this code is documented the patient is considered a tobacco user.
- A CPT code documented that is in the BGP TOBACCO SCREEN CPTS taxonomy. If the code found is in the DM AUDIT 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.
- **Audit Report:** Value is used in the Tobacco and Nicotine Use section of the Audit Report. It is also used when determining whether tobacco use is a diabetes related condition.
- **Audit Export Field Name and Details:** TOBACCO
 - 1=Current user
 - 2=Not a current user
 - 3=Not documented

A.15 Tobacco Cessation Counseling

- **Description:** If the patient is a tobacco user, were they provided cessation counseling during the audit period.

- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Any cessation counseling found in the past 365 from the date the summary is run I found. If counseling is found, a yes is displayed along with a description of what was found. See logic for cessation counseling under Audit Logic.
- **Audit Logic:** 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:
 - A visit to clinic 94 - TOBACCO CESSATION CLINIC
 - A patient education topic that meets any of the following criteria:
 - Begins with TO- (e.g., TO-Q)
 - Ends in -TO (e.g., CAD-TO)
 - Begins with any Tobacco User diagnosis (taxonomy is BGP TOBACCO USER DXS) (e.g., 305.1-L)
 - Begins with any Tobacco User CPT code (e.g., 99407-L) Taxonomy is DM AUDIT TOBACCO USER CPTS
 - Begins with a SNOMED code from any of the following SNOMED subsets:
 - PXRMBGP TOBACCO TOPICS
 - PXRMBGP TOBACCO SMOKER
 - PXRMBGP TOBACCO SMOKELESS
 - PXRMBGP QUIT TOBACCO
 - PXRMBGP TOBACCO SCREENED
 - PXRMBGP CURRENT TOBACCO

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 Audit Setup menu.

- Any of the following CPT codes documented. These indicate tobacco use counseling:
 - D1320
 - 99406
 - 99407
 - G0375 (old code)
 - G0376 (old code)
 - 4000F
 - 4001F
 - G8402

- G8453
- G9016

– Dental ADA code 1320.

The latest documented of the above four 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.

- **Audit Report:** Value is used in the Tobacco and Nicotine Use section of the Audit Report.
- **Audit Export Field Name and Details:** TOBCOUNSEL
 - 1=Yes
 - 2=No
 - Blank if value for TOBACCO is not 1=Current user

A.16 Electronic Nicotine Delivery Systems Screening

- **Description:** Was the patient screened for Electronic Nicotine Delivery Systems (ENDS) use? ENDS include vapes, vaporizers, vape pens, hookah pens, electronic cigarettes (e-cigarettes or e-cigs), and e-pipes.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last documented health factor in the category E-CIGARETTES is found and the date documented is displayed. If none are found “Never” is displayed.
- **Audit Logic:** The last documented health factor in the category E-CIGARETTES 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.
- **Audit Report:** Value is used in the Tobacco and Nicotine Use section of the Audit report.

- **Audit Export Field Name and Details:** ENDSSCREEN
 - 1=Yes
 - 2=No

A.17 ENDS Use status

- **Description:** Most recent ENDS use status documented.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):**
- The last documented health factor in the category E-CIGARETTES is found and displayed. If none are found “Never” is displayed.
- **Audit Logic:** The last documented of the following health factors in the category E-CIGARETTES is found.

Note: The health factor CURRENT E-CIG USER W/OTHER SUBSTANCE(S) is not taken into consideration.

Use status is assigned as follows:

- CURRENT E-CIGARETTE USER W/NICOTINE: 1 Current User
- CESSATION ENDS USER: 2 Not a current user
- FORMER E-CIGARETTE USER: 2 Not a current user
- E- NEVER USED ANY E-CIGARETTE: 2 Not a current user
- No health factor recorded: 3 - Not documented
- **Audit Report:** Value is used in the Tobacco and Nicotine Use section of the Audit report.
- **Audit Export Field Name and Details:** ENDSSTATUS
 - 1=Current user
 - 2=Not a current user
 - 3= Not documented

A.18 Height

- **Description:** Height (most recent)
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last measurement HT is found. The date obtained and the value is displayed in inches.
- **Audit Logic:** The last recorded height value (measurement HT) taken on or before the Audit date. Total height in inches is displayed for the Individual Audit.

- **Audit Report:** Height is used to calculate BMI, which is categorized as Body Mass Index (BMI) Category:
 - Normal (BMI < 25.0)
 - Overweight (BMI 25.0–29.9)
 - Obese (BMI ≥ 30.0)
 - Height or weight missing
 - Severely obese (BMI ≥ 40.0)
- **Audit Export Field Name and Details:**
 - FEET (combine with INCHES)
 - INCHES (total or in combination with FEET)
 - Last recorded height prior to the Audit date either in feet and inches or just inches. Inches are rounded to two decimal digits. For example, 1.25 inches.

A.19 Weight

- **Description:** Weight in lbs
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last recorded measurement WT is found, the date and value in lbs. is displayed.
- **Audit Logic:** The last weight value during the Audit period is found and displayed.
- **Audit Report:** Weight is used to calculate BMI, which is categorized as:
 - Body Mass Index (BMI) Category
 - Normal (BMI <25.0)
 - Overweight (BMI 25.0–29.9)
 - Obese (BMI ≥ 30.0)
 - Height or weight missing
 - Severely obese (BMI ≥ 40.0)
- **Audit Export Field Name and Details:** WEIGHT. Last recorded weight during the Audit period, truncated to the nearest whole pound.

A.20 Body Mass Index

- **Description:** Calculated BMI
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** BMI is calculated as:
 - BMI = (weight/[height*height]) x 703 where:
 - weight = the last weight (in lbs).

- height = the last height (in inches) recorded any time.

If the patient has a pregnancy diagnosis on the date of the weight, the BMI is not calculated or displayed.

If the patient is < 19 years of age the height and weight must be on the same day or the BMI is not calculated.

- **Audit Logic:** 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.
- **Audit Report:** Body Mass Index (BMI) Category:
 - Normal (BMI < 25.0)
 - Overweight (BMI 25.0–29.9)
 - Obese (BMI ≥ 30.0)
 - Height or weight missing
 - Severely obese (BMI ≥ 40.0)
- **Audit Export Field Name and Details:** Not included in the Audit export (Data) File and not uploaded into the WebAudit.

A.21 Hypertension Diagnosed

- **Description:** Has this patient had a diagnosis of Hypertension
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** If hypertension is on the problem list or the patient has had at least three visits with a diagnosis of hypertension ever, then it is assumed that they have hypertension and a value of Yes displays. Otherwise, a No is displayed. Taxonomy used: SURVEILLANCE HYPERTENSION. SNOMED List: PXRMESSENTIAL HYPERTENSION.
- **Audit Logic:** If hypertension is on the problem list or the patient has had at least three 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: PXRMESSENTIAL HYPERTENSION.
- **Audit Report:** Hypertension Diagnosed ever: Diagnosed hypertension and mean BP <140/<90 Diagnosed hypertension and ACE inhibitor, or ARB prescribed Also used when determining diabetes related conditions.
- **Audit Export Field Name and Details:** HTNDX 1=Yes 2=No

A.22 Blood Pressure

- **Description:** Last three Blood Pressure values recorded during the Audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last three non-ER Blood Pressures values and the date they were obtained are displayed.
- **Audit Logic:** The most recently recorded systolic and diastolic 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 anyone day, the latest one is used.
- **Audit Report:** Blood Pressure (BP) - Based on one value or mean of two or three values:
 - <140/<90
 - 140/90 - <160/<100
 - 160/100 or higher
 - BP category undetermined
 - If age ≥ 60 years, <150/<90
- **Audit Export Field Name and Details:**
 - SYST1
 - DIAST1
 - SYST2
 - DIAST2
 - SYST3
 - DIAST3

The blood pressure values are exported but mean blood pressure is not.

A.23 Foot Exam

- **Description:** Foot exam (comprehensive or “complete”) during the Audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The last foot exam done in the past year (from the date the summary is run) is obtained and displayed. The logic used in determining if a comprehensive or complete foot exam has been done is as follows:
 - A documented DIABETIC FOOT EXAM, COMPLETE (CODE 28) is searched for in the past year. This is recorded in V Exam. If found, no other processing is done, an exam is assumed to have been done.
 - CPT codes 2028F and G9226 in V CPT [Taxonomy: BGP CPT FOOT EXAM]

- 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 not assumed the exam was done so the term “maybe” is displayed with the date of the visit.
- 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, it is not assumed the exam was done so the term “maybe” is displayed with the date of the visit.
- **Audit Logic:** The logic used in determining if a comprehensive or complete foot exam has been done is as follows:
 - 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.
 - CPT codes 2028F and G9226 in V CPT [Taxonomy: BGP CPT FOOT EXAM]
 - 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.
 - 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.
- **Audit Report:** In the Exam section of the Audit report. Foot exam – comprehensive
- **Audit Export Field Name and Details:** FOOTEXAM:
 - 1=Yes
 - 2=No

A.24 Eye Exam

- **Description:** Eye Exam (dilated or retinal imaging) performed during the Audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The logic used in determining if a diabetic eye exam has been done is as follows:
 - The system looks for the last documented Diabetic Eye Exam in the year prior to the date the summary was generated. Diabetic Eye Exam is defined as:

- EXAM 03 - Diabetic Eye Exam
- CPT in either the BGP DM RETINAL EXAM CPTS or the BGP DM EYE EXAM CPTS taxonomy.
- If one of the above is found, Yes, along with the date the exam was found, is displayed.
 - 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-Refractive visit to an Optometrist or Ophthalmologist (24, 79, 08) or an Optometry or Ophthalmology Clinic (17, 18, or A2).
 - If found, the term “Maybe,” along with the date the visit 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.
- If none of the above are found, a “No” is displayed.
- **Audit Logic:** The logic used in determining if a diabetic eye exam has been done is as follows:
 - The system looks for the last documented Diabetic Eye Exam in the year prior to the Audit date. Diabetic Eye Exam is defined as:
 - EXAM 03 - Diabetic Eye Exam
 - CPT in either the BGP DM RETINAL EXAM CPTS or the BGP DM EYE EXAM CPTS taxonomy.
 - If one of the above is found, the value 1 - Yes is assigned and no further processing is done.
 - 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-Refractive 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.
 - If none of the above are found, the value 2 - No is assigned.
- **Audit Report:** In the Exam section of the Audit report. Eye exam – dilated or retinal imaging.
- **Audit Export Field Name and Details:** EYEEXAM
 - 1=Yes
 - 2=No

A.25 Dental Exam

- **Description:** Dental exam performed during the Audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic. For the DPSC if the only item found is a visit to a dentist or to dental clinic then “Maybe” is displayed rather than a “Yes”.
- **Audit Logic:** The logic used in determining if a dental exam has been done is as follows:
 - 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.
 - 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.
 - 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.
 - 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.
- **Audit Report:** In the Exam section of the Audit report. Dental exam.
- **Audit Export Field Name and Details:** DENTALEXAM:
 - 1=Yes
 - 2=No

A.26 Depression an Active Problem?

- **Description:** Is Depression an active problem for this patient?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic
- **Audit Logic:** The patient's problem lists in both PCC and the Behavioral Health module are reviewed for any active 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 two diagnoses (POV) of the codes listed above in the year prior to the Audit date.

- If either a problem is found on the problem list or two POVs are found then the value assigned is 1 - Yes.
- If not, then a value of 2 - No is assigned.
- **Audit Report:** Depression an Active Problem:
 - Yes
 - No
 Also used to determine if depression is a diabetes related condition.
- **Audit Export Field Name and Details:** DEPDX
 - 1=Yes
 - 2=No

A.27 Depression Screening

- **Description:** For patients without a diagnosis of depression, were they screened for depression in the audit period?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic.
- **Audit Logic:** 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 ; Z13.3* Taxonomy: BGP DEPRESSION SCREEN CPTS 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 Health system.
- CPT codes 1220F, 3725F or G0444 (taxonomy BGP DEPRESSION SCREEN CPTS) 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.
- **Audit Report:** Depression an Active Problem:

In patients without active depression, screened for depression during Audit period:

- Screened
- Not screened
- **Audit Export Field Name and Details:** DEPSCREEN
 - 1=Yes
 - 2=No
 - Leave blank if value for DEPDX is not 2=No

A.28 Nutrition Education

- **Description:** Was nutrition education provided during the audit period?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** All DM education provided in the year prior to the date the summary is generated is displayed on the DPSC. For DM education definition see Audit Logic for nutrition education, physical activity education and other DM education.
- **Audit Logic:** The values for the Audit are:
 - 1 RD (Registered Dietitian)
 - 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, 97804, G0270, G0271 then RD is assigned.
- If the visit contains any of the following education topics:
 - Topic in the DM AUDIT DIET EDUC TOPICS taxonomy
 - Topic ending in -N
 - Topic ending in -DT
 - Topic ending in -MNT
 - Topic beginning with MNT-
 - Topic beginning with DNCN-

The V Patient Education entry is examined:

- 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.

- **Audit Report:** Diabetes-Related Education. Nutrition - by any provider (RD and/or other) Nutrition - by RD
- **Audit Export Field Name and Details:** DIETINSTR
 - 1=Yes by RD
 - 2=Yes by non-RD
 - 3=Yes by RD & non-RD
 - 4=None

A.29 Physical Activity Education

- **Description:** Physical activity education provided during the audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** All DM education provided in the year prior to the date the summary is generated is displayed on the DPSC. For DM education definition see Audit Logic for nutrition education, physical activity education and other DM education.
- **Audit Logic:**
 - All visits in the year prior to the Audit date are examined. If either of the following is true:
 - There is a visit on which a patient education topic in the DM AUDIT EXERCISE EDUC TOPICS taxonomy.
 - Any topic ending in "-EX" is documented.

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 Z71.82 taxonomy BGP EXERCISE COUNSELING DXS
 - If one is found A 1 - Yes is assigned.
 - If none of the above is documented, the value 2 – No is assigned.
- **Audit Report:** Diabetes-Related Education. Physical Activity
- **Audit Export Field Name and Details:** EXERCISE:
 - 1=Yes
 - 2=No

A.30 Other Diabetes Education

- **Description:** Diabetes education, other than nutrition or physical activity, provided during the audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** All DM education provided in the year prior to the date the summary is generated is displayed on the DPSC. For DM education definition see Audit Logic for nutrition education, physical activity education and other DM education.
- **Audit Logic:** 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 OTHER 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 assigned is 2 – No.
- **Audit Report:** Diabetes-Related Education Other diabetes education
- Audit Export Field Name and Details:** DMEDUC:
 - 1=Yes
 - 2=No

A.31 Diabetes Therapy

- **Description:** Diabetes Therapy – all medications that the patient has been prescribed in the six months prior to the audit date.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A

Note: Medications can be found in other sections of the health summary.

- **Audit Logic:** The following logic is used to determine if the patient is currently taking any medication in each of the categories below:
 - 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 six months prior to the Audit date. (Looking to see if the patient had at least one fill in the past six months.)
 - 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 calculation is done:
 - Days' supply times (# of refills +1) (this is the total number of days the prescription covers)
 - Number of days calculated above + issue date (this is the last date the prescription 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 six months prior to the end of the Audit date.
 - If no medications are found in the searches shown 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 medications.

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 DM therapy items.

Therapy	Taxonomy Name(s)
Insulin	DM AUDIT INSULIN DRUGS
Metformin	DM AUDIT METFORMIN DRUGS
Sulfonylurea	DM AUDIT SULFONYLUREA DRUGS
DPP-4 inhibitor	DM AUDIT DPP-4 INHIBITOR DRUGS
GLP-1 receptor agonist	DM AUDIT INCRETIN MIMETIC DM AUDIT GLP-1 ANALOG DRUGS
SGLT-2 inhibitor	DM AUDIT SGLT-2 INHIBITOR DRUG

Therapy	Taxonomy Name(s)
Pioglitazone, rosiglitazone	DM AUDIT GLITAZONE DRUGS
Acarbose, miglitol	DM AUDIT ACARBOSE DRUGS
Repaglinide, Nateglinide	DM AUDIT SULFONYLUREA-LIKE
Pramlintide	DM AUDIT AMYLIN ANALOGUES
Bromocriptine	DM AUDIT BROMOCRIPTINE DRUGS
Colesevelam	DM AUDIT COLESEVELAM DRUGS

- **Audit Report:** Diabetes Treatment section
 - Number of diabetes medications currently prescribed.
 - Diabetes meds currently prescribed, alone or in combination:
 - Insulin
 - Metformin
 - Sulfonylurea
 - DPP-4 inhibitor
 - GLP-1 receptor agonist
 - SGLT-2 inhibitor
 - Pioglitazone or rosiglitazone
 - Acarbose or miglitol
 - Repaglinide or Nateglinide
 - Pramlintide
 - Bromocriptine
 - Colesevelam
- **Audit Report:** Cardiovascular Disease (CVD) section
 - CVD and GLP-1 receptor agonist currently prescribed
 - CVD and SGLT-2 inhibitor currently prescribed
- **Audit Report:** Chronic Kidney Disease (CKD) section
 - CKD and GLP-1 receptor agonist currently prescribed
 - CKD and SGLT-2 inhibitor currently prescribed
- **Audit Export Field Name and Details:** See Audit logic.
 - If any med is found in a category, value=1 for the corresponding field, otherwise value=2.
 - If no meds are found value=1 for TXNONE.
 - TXNONE

- TXINSUL
- TXMETFORM
- TXSUREA
- TXDPP4
- TXGLP1MED
- TXSGLT2
- TXGLIT
- TXACARB
- TXSUREALK
- TXAMYLIN
- TXBROMO
- TXCOLESEV

A.32 ACE Inhibitor or ARB

- **Description:** Was an ACE Inhibitor or ARB prescribed to the patient as of the end of the Audit Period?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A

Note: Medications can be found in other sections of the health summary.

- **Audit Logic:** The taxonomy used to find ACE Inhibitors and angiotensin receptor blockers (ARBs) is DM AUDIT ACE INHIBITORS. If any drug in this taxonomy is found using the logic that follows a value of 1 - Yes is assigned, no further processing is done.
 - 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 six months prior to the Audit date. (DM Audit is looking to see if the patient had at least one fill in the past six months.)
 - 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 calculation is done:
 - Days' supply times (# of refills +1) (this is the total number of days the prescription covers)
 - # of days calculated above + issue date (this is the last date the prescription covers)

If the date calculated is greater than the Audit date minus 180 days, it is assumed the patient was taking that medication in the six months prior to the end of the Audit date

- If no medications are found in the previous two searches, the system will look for any EHR Outside Medication that fits into one of these 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 medications. It is assumed that a medication entered as an EHR Outside Medication is active until it is discontinued.

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

- **Audit Report:**
 - Hypertension section:
Diagnosed hypertension and ACE inhibitor or ARB currently prescribed
 - Chronic Kidney Disease (CKD) section:
CKD and ACE inhibitor or ARB currently prescribed
- **Audit Export Field Name and Details: ACE:**
 - 1=Yes
 - 2=No

A.33 Aspirin or Other Antiplatelet/Anticoagulant Therapy

- **Description:** Was the patient prescribed Aspirin or Other Antiplatelet or Anticoagulant Therapy as of the end of the Audit period?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A

Note: Medications can be found in other sections of the health summary.

- **Audit Logic:** Two taxonomies are used to find Aspirin and Other Antiplatelet/Anticoagulant therapy:
 - DM AUDIT ASPIRIN DRUGS
 - DM AUDIT ANTIPLT/ANTICOAG RX

If any drug in these taxonomies is found using the logic that follows, a value of 1 - Yes is assigned, no further processing is done.

- 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 six months prior to the Audit date. (DM Audit is looking to see if the patient had at least one fill in the past six months.)
- 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 calculation is done:
Days' supply times (# of refills +1) (this is the total number of days the prescription covers).

Number of days calculated above + issue date (this is the last date the prescription covers).

If the date calculated is greater than the Audit date minus 180 days, it is assumed the patient was taking that medication in the six months prior to the end of the Audit date.

- If no medications are found in the searches, 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 medications. It is assumed that a medication entered as an EHR Outside Medication is active until it is discontinued.
- 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 seven characters is "ASPIRIN" and whose eighth character is not a "/".
If no relevant drugs are found, then a 2 - No is assigned.

- **Audit Report:**
- **Audit Export Field Name and Details: ASPIRIN**
 - 1=Yes
 - 2=No

A.34 Statin Therapy

- **Description:** Statin Therapy prescribed as of the end of the Audit period.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A

Note: Medications can be found in other sections of the health summary.

- **Audit Logic:** One taxonomy is used to find Statin therapy medications: BGP PQA STATIN MEDS. If any drug in this taxonomy is found using the logic that follows, a value of 1 - Yes is assigned, no further processing is done.
 - 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 six months prior to the Audit date. (DM Audit is looking to see if the patient had at least one fill in the past six months.)
 - 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 calculation is done:
 - Days' supply times (# of refills +1 (this is the total number of days the prescription covers)
 - Number of days calculated + issue date (this is the last date the prescription covers)

If the calculated date is greater than the Audit date minus 180 days, it is assumed the patient was taking that medication in the six months prior to the end of the Audit date.
 - If no medications are found in the searches described, 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 medications. It is assumed that a medication entered as an EHR Outside Medication is active until it is discontinued.

Statin Allergy defined as: Adverse drug reaction/documentated statin allergy defined as any of the following:

 - ALT and/or AST > 3x the Upper Limit of Normal (ULN) (i.e., Reference High) on two or more consecutive visits during the Audit Period.
 - Creatine Kinase (CK) levels > 10x ULN or CK > 10,000 IU/L during the Report Period.
 - Myopathy/Myalgia, defined as any of the following during the Report Period: Dx in the BGP MYOPATHY/MYALGIA DXS taxonomy.
 - 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)
 - "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

- Pregnancy (see definition below)
- 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.
- Acute Alcoholic Hepatitis, defined as POV ICD-9: 571.1; ICD-10: K70.10, K70.11 during the Report Period.
- 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 Documented codes in the following taxonomies:

BGP PREGNANCY DIAGNOSES 2; BGP PREGNANCY ICD PROCEDURES; BGP PREGNANCY CPT CODES where the 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: Codes documented that are contained in the following taxonomies: BGP MISCARRIAGE/ABORTION DXS; BGP ABORTION PROCEDURES; BGP CPT ABORTION; BGP CPT MISCARRIAGE.

- **Audit Report:** Statin Prescribed section
 - Yes*
 - Allergy, intolerance, or contraindication

These three items also reported:

- In patients with diagnosed CVD
- In patients age 40–75 years
- In patients with diagnosed CVD and/or age 40–75 years

*Excludes patients with an allergy, intolerance, or contraindication

- **Audit Export Field Name and Details:** LLSTATIN2
 - 1=Yes
 - 2=No
 - 3=Allergy/intolerance/Contraindication
 - Look for yes, then allergy or intolerance or contraindication, then no.

A.35 Cardiovascular Disease

- **Description:** CVD Diagnosed Ever?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic.
- **Audit Logic:** 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.
 - One diagnosis ever of any code in the BGP PCI DXS taxonomy.
 - 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.
- **Audit Report:** Cardiovascular Disease (CVD) section:
 - CVD diagnosed ever
 - CVD and mean BP <140/<90
 - CVD and not current tobacco user
 - CVD and aspirin or other antiplatelet/anticoagulant therapy currently prescribed
 - CVD and GLP-1 receptor agonist currently prescribed
 - CVD and SGLT-2 inhibitor currently prescribed

- CVD and statin currently prescribed*
- *Excludes patients with allergy, intolerance, or contraindication

- **Audit Export Field Name and Details:** CVDDX

- 1=Yes
- 2=No

A.36 Tuberculosis (TB) (latent or active) diagnosis (ever)

- **Description:** Was Tuberculosis (TB) (latent or active) diagnosed ever?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** Any health factor in the TB STATUS category is found, if one is found that health factor is display. If no health factor found, then the problem list and purpose of visits are examined for any that are contained in the DM AUDIT TUBERCULOSIS DXS diagnosis taxonomy or the PXRMR BQI TUBERCULOSIS SNOMED subset. If one is found, it is displayed.
- **Audit Logic:** If the patient has a TB health factor recorded, TB on the problem list, or any diagnosis of TB documented in the PCC, a 1 – Yes is assigned. If none of these are found, a value of 2 - No is assigned. Definition of diagnosis:
 - TB Health Factor – any health factor in the TB STATUS category.
 - Problem list diagnosis and Purpose of visit in the DM AUDIT TUBERCULOSIS DXS taxonomy or the PXRMR BQI TUBERCULOSIS SNOMED subset.
- **Audit Report:** Tuberculosis (TB) Status section:
 - TB diagnosis documented and/or positive test result
 - If not diagnosed, TB test done (skin test or blood test)
 - If TB diagnosis documented and/or positive test result, treatment initiated
 - If TB negative test result, was test done after diabetes diagnosis
- **Audit Export Field Name and Details:** TBDX
 - 1=Yes
 - 2=No

A.37 TB test done (most recent)

- **Description:** In patients with no diagnosis of Tuberculosis (TB) Was a TB test done ever? Skin Test; Blood test; No test documented.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** TB - Last Documented Test. The date of the last documented TB test is displayed along with what type of test was done. See Audit Logic for TB Test definition.

- **Audit Logic:** If there is not a TB diagnosis documented, a TB test is searched for in the following way:
 - 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.
 - If no TB test is found, then the value is 3 - No test documented.
- **Audit Report:** Tuberculosis (TB) Status section:
 - TB diagnosis documented and/or positive test result
 - If not diagnosed, TB test done (skin test or blood test)
 - If TB diagnosis documented and/or positive test result, treatment initiated
 - If TB negative test result, was test done after diabetes diagnosis
- **Audit Export Field Name and Details:** TBTESTDONE3
 - 1=Skin test (PPD)
 - 2=Blood test (QFT-GIT, T-SPOT)
 - 3=No test documented
 - Blank if TBDX is not 2=No.

A.38 TB Test Result

- **Description:** Result of the most recent TB Test.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** TB Test Result: The last documented TB Test result is displayed. See Audit Logic for TB Test definition.
- **Audit Logic:** If there is not a TB diagnosis documented and a TB test was done, the test result is determined in the following way:
 - 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 -, No result documented is assigned.
 - If no result is found, then the value assigned is 3 - No result documented.

- **Audit Report:** Tuberculosis (TB) Status section:
 - TB diagnosis documented and/or positive test result
 - If not diagnosed, TB test done (skin test or blood test)
 - If TB diagnosis documented and/or positive test result, treatment initiated
 - If TB negative test result, was test done after diabetes diagnosis
- **Audit Export Field Name and Details:** TBTESTRSLT2
 - 1=Positive
 - 2=Negative
 - 3=No result documented
 Leave blank if value for TBTESTDONE3 is not 1 or 2

A.39 TB Treatment

- **Description:** If TB diagnosed ever and/or result positive, was treatment initiated?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for definition of treatment initiated. The value of the last TB Health factor or medication displayed.
- **Audit Logic:** If TB diagnosis documented ever is YES or the value of the TB Test result is POSITIVE, then the last TB health factor and TB medication taxonomy are 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 or prescription of any medication from the TB medication taxonomy (DM AUDIT TB MEDS/DM AUDIT TB DRUG NDC) ever:
 - TX COMPLETE: 1 – Yes
 - TX INCOMPLETE: 1 – Yes
 - TX UNTREATED: 2 – No
 - TX IN PROGRESS: 1 – Yes
 - TX UNKNOWN: 3 – Unknown
 - TB medication prescribed 1-Yes
- **Audit Report:** Tuberculosis (TB) Status section:
 - TB diagnosis documented and/or positive test result
 - If not diagnosed, TB test done (skin test or blood test)

- If TB diagnosis documented and/or positive test result, treatment initiated
- If TB negative test result, was test done after diabetes diagnosis
- **Audit Export Field Name and Details:** TBINHTX2
 - 1=Yes
 - 2=No
 - 3=Unknown
 - Leave blank if value for TBDX is not 1=Yes or TBTESTRSLT2 is not 1=Positive

A.40 TB Test Date

- **Description:** Date of last TB test.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** TB - Last Documented Test. The date of the last documented TB test is displayed along with what type of test was done. See Audit Logic for TB Test Done for definition of a TB test.
For the selected date: if year only documented, 0701 is used for month/day; if month/year are documented 15 is used for the day
- **Audit Logic:** If the value of TB test result is NEGATIVE, then the date of the last TB test is displayed.
- **Audit Report:** Tuberculosis (TB) Status If negative TB test, test done after diabetes diagnosis.
- **Audit Export Field Name and Details:** TBTESTDATE MM/DD/YYYY
Leave blank if value for TBTESTRSLT2 is not 2=Negative

A.41 Hepatitis C (HCV)

- **Description:** Hepatitis C (HCV) diagnosis ever
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic
- **Audit Logic:** 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 PXR M 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.
- **Audit Report:** Hepatitis C (HCV) section:
 - Diagnosed HCV ever
 - In patients not diagnosed with HCV and age \geq 18 years, screened ever

- **Audit Export Field Name and Details:** HCVDX
 - 1=Yes
 - 2=No

A.42 Hepatitis C Screen

- **Description:** Screened for HCV at least once (ever) if no diagnosis of Hepatitis C
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic. The date, test name and the test result are displayed.
- **Audit Logic:** If the patient has a diagnosis of Hepatitis C, this item is skipped.
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
- **Audit Report:** Hepatitis C (HCV) section:
 - Diagnosed HCV ever
 - In patients not diagnosed with HCV and age \geq 18 years, screened ever
- **Audit Export Field Name and Details:** HCVSCREEN2
 - 1=Yes
 - 2=No
 - Blank if value for HCV is not 2=No

A.43 Retinopathy Diagnosis

- **Description:** Retinopathy diagnosed ever?
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic. The date of the diagnosis is displayed.
- **Audit Logic:** If retinopathy is on the problem, list or the patient has had at least one visit 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: BGP DM RETINOPATHY DX

SNOMED List: PXRDM BGP DM RETINOPATHY

- **Audit Report:** Retinopathy Diagnosed ever. Also used in calculation of diabetes-related conditions.
- **Audit Export Field Name and Details:** RETINOPDX
 - 1=Yes
 - 2=No

A.44 Lower Extremity Amputation

- **Description:** Lower Extremity Amputation (ever), any type (e.g., toe, partial foot, above or below knee).
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic.
- **Audit Logic:** The patient's electronic record is scanned for documentation of any of the following items:
 - The purpose of visits is scanned for any diagnosis in the BGP DM BTK AMP DXS or the BGP DM ATK AMP DXS taxonomies. If a diagnosis is found a value of 1 - Yes is assigned.
 - The problem list is scanned for a diagnosis in the BGP DM BTK AMP DXS or BGP DM ATK AMP DXS taxonomies or a SNOMED in the PXRDM BGP DM BTK AMP or PXRDM BGP DM ATK AMP SNOMED subsets.
 - The procedures are scanned for a procedure in the BGP DM BTK AMP PROCS or BGP DM ATK AMP PROCS taxonomies.
 - The CPT codes are scanned for a CPT in the BGP DM BTK AMP CPTS or BGP DM ATK AMP CPTS taxonomies.

If any of the above are found, a value of 1 - Yes is assigned, otherwise a value of 2 - No is assigned.
- **Audit Report:** Lower Extremity Amputation, any type ever (e.g., toe, partial foot, above or below knee).
Also used in calculation of diabetes-related conditions
- **Audit Export Field Name and Details:** LEA
 - 1=Yes
 - 2=No

A.45 Influenza Vaccine

- **Description:** Influenza vaccine received during the Audit Period

- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for definition of Influenza vaccine. The date of the vaccine since August 1st is displayed. If no documented Influenza vaccine is found, a search is done for a documented refusal or contraindication, if found, it is displayed.
- **Audit Logic:** The patient's data is scanned for an influenza vaccine in the 12 months prior to the Audit date. Influenza vaccine is determined by:
 - Immunization CVX codes: See DM AUDIT FLU IZ CVX CODES taxonomy
 - 15 INFLUENZA, SPLIT [TIVhx] (INCL
 - 16 INFLUENZA, WHOLE
 - 88 INFLUENZA, NOS
 - 111 INFLUENZA, Intranasal, Trivale
 - 135 INFLUENZA, HIGH DOSE SEASONAL
 - 140 INFLUENZA, seasonal, injectable
 - 141 INFLUENZA [TIV], SEASONAL, INJ
 - 144 INFLUENZA, INTRADERMAL
 - 149 INFLUENZA, Live, Intranasal, Q
 - 150 INFLUENZA, INJECTABLE, QUAD, P
 - 151 INFLUENZA NASAL, UNSPECIFIED
 - 153 INFLUENZA, INJECTABLE, MDCK, P
 - 155 INFLUENZA, INJECTABLE, RECOMB,
 - 158 INFLUENZA, Injectable, Quadrav
 - 161 INFLUENZA, injectable, quadri
 - 166 INFLUENZA, intradermal, quadri
 - 168 INFLUENZA, Trivalent, adjuvant
 - 171 Influenza, injectable, MDCK, p
 - 185 influenza, recombinant, quadri
 - 186 Influenza, injectable, MDCK, q
 - 197 FLU-HIGH4
 - 205 FLU-V4ajv
 - CPT codes: BGP CPT FLU
 - If any of the above is found, a value of 1 - Yes is assigned.
 - If none of the above are found, a value of 2 - No is assigned.
- **Audit Report:** Immunization section: Influenza vaccine during Audit period.
- **Audit Export Field Name and Details:** FLUVAX2:
 - 1=Yes
 - 2=No

A.46 Pneumovax/PPSV23 Vaccine

- **Description:** Pneumovax/PPSV23 vaccine (ever)
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for the definition of a pneumococcal vaccine. The date of the last pneumococcal vaccine is displayed. If no documented vaccine is found a search is done for a documented refusal or contraindication, if found, it is displayed.
- **Audit Logic:** Data is scanned for pneumococcal vaccine any time prior to the Audit date. A pneumococcal vaccine is determined by:
 - Immunization CVX codes: Taxonomy BGP PPSV23 CVX CODES
 - 33 PNEUMOCOCCAL
 - 109 PNEUMOCOCCAL, NOS
 - - Diagnoses: V03.82 (there are no ICD10 codes)
 - CPT codes: Taxonomy BGP PPSV23 CPT CODES
 - If any of the above is found, a value of 1 - Yes is assigned.
 - If none of the above are found, a value of 2 - No is assigned.
- **Audit Report:** Immunization section:
Pneumovax/PPSV23 – ever
- **Audit Export Field Name and Details:** PNEUMOVAX2
 - 1=Yes
 - 2=No

A.47 Td, Tdap, DTaP, or DT in Past 10 Years

- **Description:** Td, Tdap, DTaP, or DT in past 10 years.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for the definition of the vaccines. The date of the last vaccine is displayed. If no documented vaccine is found a search is done for a documented refusal or contraindication, if found, it is displayed.
- **Audit Logic:** 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: DM AUDIT TD CVX CODES.
 - 115 Tdap
 - 9 TD (ADULT)
 - 113 TD (ADULT) PRESERVATIVE FREE
 - 115 Tdap
 - 138 Td-NA

- 139 Td,NOS
- 1 DTP
- 20 DTAP
- 28 DT (PEDIATRIC)
- 35 TETANUS TOXOID
- 106 DTAP, 5 PERTUSSIS ANTIGENS
- 107 DTAP, NOS
- 112 TETANUS TOXOID, NOS
- 22 DTP-HIB
- 50 DTAP-HIB
- 110 PEDIARIX
- 120 PENTACEL
- 130 KINRIX
- 132 DTaPIPVHHb
- 196 Td-LF, NOS
- 198 DTP-HbH5

CPT codes: 90714, 90715, 90718 Taxonomy DM AUDIT TD CPTS

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

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

- **Audit Report:** Immunization section:
 - Td/Tdap/DTaP/DT - past 10 years
- **Audit Export Field Name and Details:** TD2
 - 1=Yes
 - 2=No

A.48 Tdap (ever)

- **Description:** Tdap given ever
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for the definition of Tdap. The date of the last Tdap is displayed. . If no documented vaccine is found a search is done for a documented refusal or contraindication, if found, it is displayed. **Audit Logic:** Immunizations are scanned for a Tdap vaccine ever. A Tdap vaccine is determined by:
 - CVX code 115 Tdap
 - CPT code 90715

If either of the above is found, a value of 1 - Yes is assigned. If neither is found, a value of 2 - No is assigned.

- **Audit Report:** Immunization section:
 - Tdap – ever
- **Audit Export Field Name and Details:** TDAP2
 - 1=Yes
 - 2=No

A.49 Hepatitis B Complete Series (ever)

- **Description:** Hepatitis B complete series received ever.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic for definition of Hepatitis B vaccines. If no documented vaccine is found, a search is done for an immune contraindication which, if found, is displayed.
- **Audit Logic:** Data is scanned for Hepatitis B vaccine any time prior to the Audit date. HEP B (3 DOSE SERIES) is determined by:
 - CVX codes:
 - 8 HEP B, ADOLESCENT OR PEDIATRIC
 - 42 HEP B, ADOLESCENT/HIGH RISK IN
 - 43 HEP B,ADULT
 - 44 HEP B, DIALYSIS
 - 45 HEP B, NOS
 - 51 HIB-HEP B
 - 102 DTP-HIB-HEP B
 - 104 HEP A-HEP B
 - 110 DTaP-Hep B-IPV
 - 132 DTaP-IPV-HIB-HEP B, historical
 - 146 DTaP,IPV,Hib,HepB
 - 193 Hep A-Hep B, pediatric/adolescent
 - CPT codes contained in the BGP HEPATITIS CPTS taxonomy: 90636, 90723, 90731, 90739, 90740, 90743, 90744, 90745, 90746, 90747, 90748, G0010, Q3021, Q3023
 - HEP B (2 DOSE SERIES) is determined by: CVX code 189 Hep B, adjuvanted

- Vaccinations must be given at least 20 days apart. If the appropriate number is found (two for the two dose series or three for the three dose series) a value of 1 - Yes is assigned.
- If less than the required number of vaccines are found, the system will look for an Immune Contraindication in the Immunization contraindications file. If it is found, a value of 3 - 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 3 - Immune is assigned.
- If none of the above are found, a value of 2 - No is assigned.
- **Audit Report:** Immunization section:
 - If not immune, hepatitis B complete series – ever
 - Immune - Hepatitis B
- **Audit Export Field Name and Details:** HEPBVAX2:
 - 1=Yes
 - 2=No
 - 3=Immune

A.50 Shingrix (recombinant zoster vaccine, RZV) Complete Series (ever)

- **Description:** Shingrix complete series received ever.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** See Audit Logic below. If no documented vaccine is found, a search is done for a documented refusal or contraindication, if found, it is displayed.
- **Audit Logic:** Data is scanned for Shingrix vaccine any time prior to the Audit date. Shingrix vaccine is determined by documentation of 2 doses:
 - CPT Code 90750
 - CVX Code 187, zoster recombinant
- **Audit Report:** Immunization section:
 - In patients age ≥ 50 years Shingrix complete series - ever
- **Audit Export Field Name and Details:** SHINGLESVAX:
 - 1=Yes
 - 2=No

A.51 A1C

- **Description:** Hemoglobin A1C test performed during the Audit period.

- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last A1C test is displayed. See Audit Logic for the definition of an A1C test.
For the selected date: if year only documented, 0701 is used for month/day; if month/year are documented 15 is used for the day
- **Audit Logic:** 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.
- **Audit Report:** Blood Sugar Control section:
 - If result contains ">" counted in ≥ 11.0 category.
 - If result contains "<" counted in < 7.0 category.
 - Otherwise, everything is stripped from the value except numbers and ".". If remaining value is something other than a number, counted in the "Not tested or no valid result" category.
 - If remaining value is numerical, it is counted in the appropriate category(ies):
 - A1C < 7.0
 - A1C 7.0-7.9
 - A1C 8.0-8.9
 - A1C 9.0-9.9
 - A1C 10.0-10.9
 - A1C ≥ 11.0
 - Not tested or no valid result
 - A1C < 8.0
 - A1C > 9.0
- **Audit Export Field Name and Details:**
 - HBA1C
 - HBA1CDATE
 - When exported, all characters that are not a number or a "." are stripped from the value. For example, if the value is < 7.0 , 7.0 is exported. A maximum of 4 digits is exported.
 - Date is in MM/DD/YYYY format

A.52 Total Cholesterol

- **Description:** Most recent Total Cholesterol value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last Total Cholesterol test is displayed. See Audit Logic for the definition of a Total Cholesterol test.
- **Audit Logic:** 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.
- **Audit Report:** Not reported.
- **Audit Export Field Name and Details:** CHOLVALUE All characters other than numbers and "." are stripped from the value which is then rounded to the closest whole number and truncated to a total of three characters with zero decimal digits. Rounding is done by adding .5 to the result and sending the non-decimal portion.
 - E.g., Value in RPMS is 100.1 .5 is added to get 100.6 100 is sent to the audit
 - E.g., Value in RPMS is 100.5 .5 is added to get 101.0 101 is sent to the audit

A.53 HDL Cholesterol

- **Description:** Most recent HDL Cholesterol value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last HDL Cholesterol test is displayed. See Audit Logic for the definition of a HDL Cholesterol test.
- **Audit Logic:** 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.
- **Audit Report:** HDL cholesterol section: If result is blank OR first digit is not a number, then counted in the "Not tested or no valid result" category. For example, if the value is "cancelled".
 - 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 Field Name and Details:** HDLVALUE All characters that are not numbers or "." are stripped from the value which is then rounded to the closest whole number and truncated to a total of three characters with zero decimal digits. Rounding is done by adding .5 to the result and sending the non-decimal portion.
 - E.g., Value in RPMS is 45.1 .5 is added to get 45.6 45 is sent to the audit
 - E.g., Value in RPMS is 60.5 .5 is added to get 61.0 61 is sent to the audit

A.54 LDL Cholesterol

- **Description:** Most recent LDL Cholesterol value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last LDL Cholesterol test is displayed. See Audit Logic for the definition of a LDL Cholesterol test.
- **Audit Logic:** 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.
- **Audit Report:** LDL cholesterol section:

If the first digit of the result is not a number, then counted in the "Not tested or no valid result" category. For example, if the value is "UNK".

 - LDL <100 mg/dL
 - LDL 100-189 mg/dL
 - LDL >=190 mg/dL
 - Not tested or no valid result
- **Audit Export Field Name and Details:** LDLVALUE
- All characters that are not numbers or "." are stripped from the result value which is then rounded to the closest whole number and truncated to a total of three characters with zero decimal digits. Rounding is done by adding .5 to the result and sending the non-decimal portion.
 - E.g., Value in RPMS is 100.1 .5 is added to get 100.6 100 is sent to the audit
 - E.g., Value in RPMS is 100.5 .5 is added to get 101.0 101 is sent to the audit

A.55 Triglyceride Value (mg/dL)

- **Description:** Most recent Triglyceride value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last Triglyceride test is displayed. See Audit Logic for the definition of a Triglyceride test.

- **Audit Logic:** 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.
- **Audit Report:** Triglycerides section: If the result is blank OR first digit is not a number then counted in the "Not tested or no valid result" category. For example, if the value is "cancelled".
 - 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 Field Name and Details:** TRIGVALUE
- All characters other than numbers and "." are stripped from the value and which is then rounded to the closest whole number and truncated to a total of 4 characters with 0 decimal digits. Rounding is done by adding .5 to the result and sending the non-decimal portion.
 - E.g., Value in RPMS is 100.1 .5 is added to get 100.6 100 is sent to the audit
 - E.g., Value in RPMS is 100.5 .5 is added to get 101.0 101 is sent to the audit

A.56 Serum Creatinine

- **Description:** Most recent Serum Creatinine value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last Serum Creatinine test is displayed. See Audit Logic for the definition of a Serum Creatinine test.
- **Audit Logic:** 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.
- **Audit Report:** Not reported
- **Audit Export Field Name and Details:** CREATVALUE

All characters other than numbers and "." are stripped from the value which is truncated to a total of four characters with two decimal digits.

- E.g. Value in RPMS is 6.25 6.25 is sent to the audit

A.57 eGFR

- **Description:** Most recent Estimated GFR value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name and result of the last eGFR test is displayed. See Audit Logic for the definition of an eGFR test.
- **Audit Logic:** 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.

- **Audit Report:** Kidney Evaluation section: If the first character of the value is ">," it goes into ≥ 60 ml/min. Otherwise, all characters other than numbers and "." are stripped and the resulting value is placed in the following categories:
 - eGFR ≥ 60 ml/min
 - eGFR 30-59 ml/min
 - eGFR 15-29 ml/min
 - eGFR < 15 ml/min
 - Not tested or no valid result

Also used in the CKD Stage section.

- **Audit Export Field Name and Details:** EGFRVALUE

All characters other than numbers or "." are stripped from the value which is truncated to a total of 5 characters with 1 decimal digit.

A.58 Quantitative Urine Albumin Creatinine Ratio Value

- **Description:** Most recent Quantitative Urine Albumin Creatinine Ratio (UACR) value.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** The date, test name, and result of the last UACR test is displayed. See Audit Logic for the definition of a UACR test.

- **Audit Logic:** 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 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.

Result reporting: For the individual Audit, the resulting value is displayed.

- **Audit Report:** Kidney Evaluation section:
 - Urine albumin excretion - normal: <30 mg/g
 - Urine albumin excretion increased: 30-300 mg/g
 - Urine albumin excretion increased: >300 mg/g
 - Not tested or no valid result
 Also used in the CKD Stage section.
- **Audit Export Field Name and Details:** UPACRVAL
All non-numeric characters are stripped from the value.

A.59 Local Questions

- **Description:** Single digit 1-9 Locally defined data element.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** Data is obtained from the LOCAL OPTION field of the Diabetes Register.
- **Audit Report:** Not reported
- **Audit Export Field Name and Details:** LOCAL #, single digit, 1-9. This field may be left blank for all patients if the facility does not choose to populate it.

A.60 Extended Local Question

- **Description:** Extended Local Question Locally defined data element.
- **How Data Is Obtained from PCC (For Diabetes Patient Care Summary/Supplement):** N/A
- **Audit Logic:** Data is obtained from the LOCAL OPTION TEXT field of the Diabetes Register.
- **Audit Report:** Not reported.

- **Audit Export Field Name and Details:** LOCALEXT character (max length=50). This field may be left blank for all patients if the facility does not choose to populate it.

Appendix B Audit Export (Data) File Specifications for 2022

B.1 General Information

1. **Data File Format:** Delimited text, with the following general requirements.
 - a. Delimiter **must** be the caret (^) symbol, not a tab, space, or any other character.
 - b. Line 1 contains the Audit field names in the order they appear below.
 - c. Lines 2 and beyond contain the data, with each line representing a single record/patient.
 - d. All records must contain a value or a placeholder for all fields. If there is no value for a field (because data are missing or due to skip pattern), the place holder is one blank space between the delimiters (i.e., ^ ^).
2. **Data Fields:** A list of the fields for Audit 2022 and basic details/requirements for each can be found on subsequent pages of this document. Extracting accurate data for many fields requires additional information, some of which is available in the Audit documentation. Other information is specific to the health record system being used and must be determined locally, including documentation of medications and education.
3. Additional Information and Resources
 - a. Audit website: <https://www.ihs.gov/diabetes/audit/>
 - b. Contact the Audit team via email: diabetesaudit@ihs.gov

B.2 List of Fields

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
1	AUDITDATE	Ending date of the Audit period - 12/31/2021 for Annual Audit 2022	N/A	mm/dd/yyyy	
2	FACILITYNA	Name or abbreviation for the facility	N/A	Character (max length=20)	
3	REVIEWER	Reviewer's initials	N/A	Character (max length=3)	
4	STATE	Postal abbreviation for last known state of residence	N/A	Character (max length=2)	Do not populate if patient's address is outside of the US (e.g., in Canada).
5	MOB	Month of birth	N/A	# with value 1-12	
6	YOB	Year of birth	N/A	yyyy	
7	SEX	Gender	N/A	# field with: 1=Male 2=Female 3=Unknown	
8	DODX	Date of diabetes diagnosis	N/A	mm/dd/yyyy	If only year is known, use value 07/01/yyyy. If only month and year are known, use 15 for the day. Leave blank if year or entire date is unknown.
9	DMTYPE	Diabetes type	N/A	# field with: 1=Type 1 2=Type 2 (or uncertain)	
10	TOBSCREEN	Screened for tobacco use	Audit period	# field with: 1=Yes 2=No	
11	TOBACCO	Tobacco use status	Most recent	# field with: 1=Current user 2=Not a current user 3=Not documented	
12	TOBCOUNSEL	Tobacco cessation counseling/education received	Audit period	# field with: 1=Yes 2=No	Populate only if TOBACCO value is 1=Current user.

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
13	ENDSSCREEN	Screened for electronic nicotine delivery system (ENDS) use during Audit period	Audit period	# field with: 1=Yes 2=No	ENDS include: vapes, vaporizers, vape pens, hookah pens, electronic cigarettes (e-cigarettes or e-cigs), and e-pipes.
14	ENDSSTATUS	ENDS use status	Most recent	# field with: 1=Current user 2=Not a current user 3=Not documented	
15	FEET	Last recorded height - feet part	Last ever	# with up to 2 decimal places	If height is provided as feet and inches, be sure to provide a value for both fields: FEET and INCHES.
16	INCHES	Last recorded height - inches part	Last ever	# with up to 2 decimal places	If height is provided as total in inches only, FEET field should not be populated (i.e., do not submit 0 or any other value).
17	WEIGHT	Weight in lbs	Last in Audit period	# with 0 decimal places	Truncate to nearest whole pound
18	HTNDX	Hypertension diagnosed	Ever	# field with: 1=Yes 2=No	
19	SYST1	Most recent systolic blood pressure (mmHg)	Audit period	# with 0 decimal places	
20	DIAST1	Most recent diastolic blood pressure (mmHg)	Audit period	# with 0 decimal places	
21	SYST2	Next most recent systolic blood pressure BP (mmHg)	Audit period	# with 0 decimal places	
22	DIAST2	Next most recent diastolic blood pressure (mmHg)	Audit period	# with 0 decimal places	
23	SYST3	Third most recent systolic blood pressure (mmHg)	Audit period	# with 0 decimal places	
24	DIAST3	Third most recent diastolic blood pressure (mmHg)	Audit period	# with 0 decimal places	
25	FOOTEXAM	Complete diabetic foot exam including evaluation of sensation and vascular status	Audit period	# field with: 1=Yes 2=No	
26	EYEEEXAM	Dilated retinal exam or retinal imaging exam	Audit period	# field with: 1=Yes 2=No	

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
27	DENTALEXAM	Dental exam including examination of teeth and gingiva	Audit period	# field with: 1=Yes 2=No	
28	DEPDX	Active problem/diagnosis of depression	Active problem	# field with: 1=Yes 2=No	
29	DEPSCREEN	Screened for depression	Audit period	# field with: 1=Yes 2=No	Populate only if DEPDX value is 2=No.
30	DIETINSTR	Nutrition education	Audit period	# field with: 1=Yes by RD 2=Yes by non-RD 3=Yes by RD & non-RD 4=None	
31	EXERCISE	Physical activity education	Audit period	# field with: 1=Yes 2=No	
32	DMEDUC	Diabetes education other than nutrition and physical activity	Audit period	# field with: 1=Yes 2=No	
33	TXNONE	None of the listed diabetes medications prescribed	As of the end of the Audit period	# field with: 1=Yes 2=No	-If value for this field=1:Yes, then all other TX fields should=2:No. -If all other TX fields=2:No, then value for this field should=1:Yes.
34	TXINSUL	Prescribed any insulin	As of the end of the Audit period	# field with: 1=Yes 2=No	
35	TXMETFORM	Prescribed metformin	As of the end of the Audit period	# field with: 1=Yes 2=No	Includes Glucophage, others
36	TXSUREA	Prescribed a sulfonylurea	As of the end of the Audit period	# field with: 1=Yes 2=No	Includes glipizide, glyburide, glimepiride

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
37	TXDPP4	Prescribed a DPP-4 inhibitor	As of the end of the Audit period	# field with: 1=Yes 2=No	Includes alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)
38	TXGLP1MED	Prescribed a GLP-1 receptor agonist	As of the end of the Audit period	# field with: 1=Yes 2=No	Includes dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza, Saxenda), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus, Wegovy)
39	TXSGLT2	Prescribed an SGLT-2 inhibitor	As of the end of the Audit period	# field with: 1=Yes 2=No	Includes canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)
40	TXGLIT	Prescribed pioglitazone [Actos] or rosiglitazone [Avandia]	As of the end of the Audit period	# field with: 1=Yes 2=No	
41	TXACARB	Prescribed acarbose [Precose] or miglitol [Glyset]	As of the end of the Audit period	# field with: 1=Yes 2=No	
42	TXSUREALK	Prescribed repaglinide [Prandin] or nateglinide [Starlix]	As of the end of the Audit period	# field with: 1=Yes 2=No	
43	TXAMYLIN	Prescribed injectable pramlintide [Symlin]	As of the end of the Audit period	# field with: 1=Yes 2=No	
44	TXBROMO	Prescribed bromocriptine [Cycloset]	As of the end of the Audit period	# field with: 1=Yes 2=No	
45	TXCOLESEV	Prescribed colesevelam [Welchol]	As of the end of the Audit period	# field with: 1=Yes 2=No	

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
46	ACE	Prescribed an ACE inhibitor or ARB	As of the end of the Audit period	# field with: 1=Yes 2=No	Commonly prescribed medications include: ACE Inhibitors: benazepril (Lotensin), captopril (Capoten), enalapril (Vasotec, Epaned), fosinopril (Monopril), lisinopril (Prinivil, Zestril), ramipril (Altace), ARBs: candesartan (Atacand), irbesartan (Avapro), losartan (Cozaar), telmisartan (Micardis), olmesartan (Benicar), valsartan (Diovan, Prexxartan)
47	ASPIRIN	Prescribed aspirin or other antiplatelet/ anticoagulant therapy	As of the end of the Audit period	# field with: 1=Yes 2=No	Commonly prescribed medications include: Anticoagulants: apixaban (Eliquis), dabigatran (Pradaxa), edoxaban (Savaysa), enoxaparin (Lovenox), rivaroxaban (Xarelto), warfarin (Coumadin) Antiplatelets: aspirin, aspirin/dipyridamole (Aggrenox), cilostazol (Pletal), clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta)
48	LLSTATIN2	Prescribed a statin therapy	As of the end of the Audit period	# field with: 1=Yes 2=No 3= Allergy/intolerance/ contraindication	-Look for yes, then allergy or intolerance or contraindication, then no. -Commonly prescribed medications include: atorvastatin, fluvastatin, lovastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin
49	CVDDX	Diagnosed cardiovascular disease (CVD)	Ever	# field with: 1=Yes 2=No	
50	TBDX	Tuberculosis (TB) diagnosis (latent or active) documented (ever)	Ever	# field with: 1=Yes 2=No	
51	TBTESTDONE3	Most recent skin (PPD) or blood test for tuberculosis (TB) with valid result	Most recent ever	# field with: 1=Skin test (PPD) 2=Blood test (QFT-GIT, T-SPOT) 3= No test documented	-Populate only if TBDX value is 2=No. -If more than one test is documented, use the most recent.

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
52	TBTESTRSLT2	TB test result	Most recent	# field with: 1=Positive 2=Negative 3=No result documented	Populate only if TBTESTDONE3 value is 1=Skin test or 2=Blood test.
53	TBINHTX2	TB treatment initiated (isoniazid, rifampin, rifapentine, others)	Ever	# field with: 1=Yes 2=No 3=Unknown	Populate only if TBDX is 1=Yes or TBTESTRSLT2 is 1=Positive.
54	TBTESTDATE	Date of last TB test	Ever	mm/dd/yyyy	Populate only if TBTESTRSLT2 is 2=Negative. If only year is known, use value 07/01/yyyy. If only month and year are known, use 15 for the day. Leave blank if year or entire date is unknown.
55	HCVDX	Diagnosed hepatitis C (HCV)	Ever	# field with: 1=Yes 2=No	
56	HCVSCREEN2	If not diagnosed with HCV, screened for HCV at least once	Ever	# field with: 1=Yes 2=No	Populate only if HCVDX is 2=no.
57	RETINOPDX	Diagnosed retinopathy	Ever	# field with: 1=Yes 2=No	
58	LEA	Lower extremity amputation, any type (e.g., toe, partial foot, above or below knee)	Ever	# field with: 1=Yes 2=No	
59	FLUVAX2	Influenza vaccine	Audit period	# field with: 1=Yes 2=No	
60	PNEUMOVAX2	Pneumovax/PPSV23 vaccine	Ever	# field with: 1=Yes 2=No	
61	TD2	Tetanus (Td, Tdap, DTaP, or DT) vaccine	Past 10 years	# field with: 1=Yes 2=No	

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
62	TDAP2	Tdap vaccine	Ever	# field with: 1=Yes 2=No	
63	HEPBVAX2	Hepatitis B complete series	Ever	# field with: 1=Yes 2=No 3=Immune	Either complete 2-dose series or complete 3-dose series counts.
64	SHINGLESVAX	Shingrix/recombinant zoster vaccine (RZV) complete series	Ever	# field with: 1=Yes 2=No	-Complete series for Shingrix is 2 doses. -Note: Zostavax vaccine does not count for this item.
65	HBA1C	HbA1c test result (%)	Most recent in Audit period	# with 1 decimal place	
66	HBA1CDATE	Date of most recent HbA1c	Most recent in Audit period	mm/dd/yyyy	If only year is known, use value 07/01/yyyy. If only month and year are known, use 15 for the day. Leave blank if year or entire date is unknown.
67	CHOLVALUE	Total cholesterol value (mg/dl)	Most recent in Audit period	# with 0 decimal places	
68	HDLVALUE	HDL cholesterol value (mg/dl)	Most recent in Audit period	# with 0 decimal places	
69	LDLVALUE	LDL cholesterol value (mg/dl)	Most recent in Audit period	# with 0 decimal places	
70	TRIGVALUE	Triglyceride value (mg/dl)	Most recent in Audit period	# with 0 decimal places	
71	CREATVALUE	Serum creatinine value (mg/dl)	Most recent in Audit period	# with up to 2 decimal places	
72	EGFRVALUE	Estimated GFR (eGFR) value	Most recent in Audit period	# with 1 decimal place	-Use documented value, if available. -If no eGFR value is available, but serum creatinine (Scr) value is, calculate as: eGFR (mL/min/1.73 m ²) = $175 \times (\text{Scr})^{-1.154} \times (\text{Age})^{-0.203} \times (0.742 \text{ if female})$
73	UPACRVAL	Quantitative urine albumin:creatinine ratio (UACR) value (mg/g)	Most recent in Audit period	# with up to 2 decimal places	
74	LOCAL	Local question	N/A	#, single digit, 1-9	This field may be left blank for all patients if the facility does not choose to populate it.

Order	Field Name	Description	Timeframe	Format/Values/Units	Comments
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	# with maximum of 3 digits and no decimal places	Calculate as: integer part of difference in days between AUDITDATE and date of birth, divided by 365.25

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.
AGE LESS THAN 1	Age is less than 1, check DOB and audit date.
AGE OVER 100	Age of the patient is greater than 100. Check to be sure this patient should be included in the audit.
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	Tobacco 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 SCREEN INVALID	ENDS Screen value is invalid, must be a 1 or 2.
ENDS USE STATUS MISSING	ENDS Use Status is missing.
ENDS USE STATUS INVALID	ENDS Use value is invalid, must be a 1, 2, or 3.
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.

ERROR	DEFINITION
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.
HT INCHES >12, FEET ENTERED	Height in feet is entered, inches cannot be greater than 12.
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.
WEIGHT IS NOT A WHOLE NUMBER	Weight in lbs must be a whole number. No decimals.
WEIGHT LESS THAN 80, AGE >17	Weight is less than 80 lbs and patient is over 17 years old. Check the patient's last weight value. If accurate, no action necessary.
WEIGHT LESS THAN 50, AGE <18	Weight is less than 50 lbs and patient is under 18 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.

ERROR	DEFINITION
DEP SCREEN BLANK/DEP DX = NO	Depression Screen must not be blank if Depression Diagnosis field is 2–No.
DEPRESSION SCREEN NOT VALID	Depression Screen value not valid. Must be blank, 1, or 2.
DIET INSTRUCTION NOT VALID	Diet Instruction 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 SULFONYLUREA INVALID	TX Sulfonylurea value must be 1 or 2.
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 therapy 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 DPP-4 INVALID	TX DPP4 must be 1 or 2.
TX DPP-4/DM TYPE 1	TX DPP4 inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX AMYLIN INVALID	TX Amylin must be 1 or 2.
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 must be 1 or 2.
TX COLESEV/DM TYPE 1	TX Colesevelam therapy inconsistent with DM Type 1. Check the patient's medications and DM Type.
TX SLGT2 INVALID	TX SGLT2 must be 1 or 2.
TX SLGT2/DM TYPE 1	TX SLGT2 inhibitor therapy inconsistent with DM Type 1. Check the patient's medication and DM Type.

ERROR	DEFINITION
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 DIAGNOSIS INVALID	TB Diagnosis must be 1 or 2.
TB TEST DONE INVALID	TB Test Done must be 1, 2, or 3.
TB DIAGNOSIS/TB TEST DONE INCONSISTENT	TB Test Done must be blank if the TB Diagnosis value is 1-Yes.
TB TEST RESULT INVALID	TB Test Result must be 1, 2, or 3.
TB RESULT/TB TEST INCONSISTENT	TB Test Result must be blank if the TB Test Done value is 3-No test documented.
TB TX/TB TEST RESULT	If TB Diagnosis is 1-Yes or TB Test result is 1-Positive, TB Treatment must not be blank.
TB TX/TB TEST NEGATIVE	If TB Diagnosis is not 1-Yes or TB Test Result is not 1-Positive, TB Treatment must be blank.
TB TX INVALID	TB 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 not 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.
HEPATITIS C SCREEN INVALID	Hepatitis C Screen must be 1 or 2.
RETINOPATHY INVALID	Retinopathy Diagnosis must be 1 or 2.
LEA INVALID	Lower extremity amputation (LEA) must be 1 or 2.
FLU VACCINE INVALID	Flu vaccine value must be 1 or 2.
PNEUMOVAX INVALID	Pneumovax Value must be 1 or 2.
TD INVALID	TD value must be 1 or 2.
TDAP INVALID	TDAP value must be 1 or 2.
SHINGLES VACCINE INVALID	Shingles vaccine value must be 1 or 2.
HEP B VACCINE INVALID	Hepatitis B Vaccine value must be 1, 2, or 3.
HBA1C 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.

ERROR	DEFINITION
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 >140	HDL Value is less than 12 or greater than 140. 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.
UACR VALUE > 20,000	Quantitative 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.

Appendix D Sample Audit Report

Figure D-1 displays a sample Cumulative Audit Report over several pages.

LAB	Sep 22, 2021	Page 1	
IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
*** NOTE: 13 Patients were not included in this report because their date of onset was after the Audit period end date.			
Gender			
Male	390	959	41%
Female	569	959	59%
Age			
<20 years	37	959	4%
20-44 years	144	959	15%
45-64 years	401	959	42%
>=65 years	377	959	39%
Diabetes Type			
Type 1	34	959	4%
Type 2	925	959	96%
Duration of Diabetes			
<1 year	5	959	1%
<10 years	79	959	8%
>=10 years	506	959	53%
Diagnosis date not recorded	374	959	39%
Body Mass Index (BMI) Category			
Normal (BMI<25.0)	52	959	5%
Overweight (BMI 25.0-29.9)	125	959	13%
Obese (BMI >=30.0)	393	959	41%
Height or weight missing	389	959	41%
Severely obese (BMI >=40.0)	121	959	13%
Blood Sugar Control			
A1C <7.0	126	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	100	959	10%

Not tested or no valid result	484	959	50%

A1C <8.0	212	959	22%
A1C >9.0	189	959	20%
LAB	Sep 22, 2021	Page 2	
<p style="text-align: center;">IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited</p>			
Unless otherwise specified, time period for each item is the 12-month Audit Period			

	# 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/<100	114	959	12%
160/100 or higher	32	959	3%
BP category undetermined	389	959	41%

If age >=60 years, <150/<90	226	490	46%
Hypertension			
Diagnosed ever	712	959	74%
Diagnosed hypertension and mean BP <140/<90	377	712	53%
Diagnosed hypertension and ACE inhibitor or ARB currently prescribed.	393	712	55%
Tobacco and Nicotine Use			
Tobacco use screening during Audit period:			
Screened	509	959	53%
Not screened	450	959	47%
Tobacco use status (most recent)			
Current tobacco user	160	959	17%
In current users, cessation counseling/education received			
Yes	60	160	38%
No	100	160	63%
Not a current tobacco user	543	959	57%
Tobacco use not documented	256	959	27%
Electronic nicotine delivery system (ENDS)			
use screening during Audit period			
Screened	0	959	0%
Not screened	959	959	100%
ENDS use status (most recent)			
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%
Current user of tobacco and/or ENDS	160	959	17%

LAB	Sep 22, 2021	Page 3	
IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Diabetes Treatment			
Number of diabetes meds currently prescribed			
None	524	959	55%
One medication	152	959	16%
Two medications	110	959	11%
Three medications	104	959	11%
Four or more medications	69	959	7%
Diabetes meds currently prescribed, alone or in combination			
Insulin	330	959	34%
Metformin [Glucophage, others]	261	959	27%
Sulfonylurea [glipizide, glyburide, others]	232	959	24%
DPP-4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)]	134	959	14%
GLP-1 receptor agonist [dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza, Saxenda), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus, Wegovy)]	3	959	0%
SGLT-2 inhibitor [canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)]	0	959	0%
Pioglitazone [Actos] or rosiglitazone [Avandia]	0	959	0%
Acarbose [Precose] or miglitol [Glyset]	2	959	0%
Repaglinide [Prandin] or nateglinide [Starlix]	0	959	0%
Pramlintide [Symlin]	0	959	0%
Bromocriptine [Cycloset]	0	959	0%

Colesevelam [Welchol]	0	959	0%
LAB	Sep 22, 2021		Page 4
IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent

Statin Prescribed (Currently)			
Yes*	217	921	24%
Allergy, intolerance, or contraindication	38	959	4%
In patients with diagnosed CVD			
Yes*	129	371	35%
Allergy, intolerance, or contraindication	24	395	6%
In patients age 40-75 years			
Yes*	177	651	27%
Allergy, intolerance, or contraindication	26	677	4%
In patients with diagnosed CVD and/or age 40-75 years			
Yes*	207	767	27%
Allergy, intolerance, or contraindication	32	799	4%
*Denominator excludes patients with an allergy, intolerance, or contraindication.			
Cardiovascular Disease (CVD)			
CVD diagnosed ever	395	959	41%
CVD and mean BP <140/<90	204	395	52%
CVD and not current tobacco user	276	395	70%
CVD and aspirin or other antiplatelet/anticoagulant therapy currently prescribed	219	395	55%
CVD and GLP-1 receptor agonist currently prescribed	1	395	0%
CVD and SGLT-2 inhibitor currently prescribed	0	395	0%
CVD and statin currently prescribed*	129	371	35%
*Denominator excludes patients with an allergy, intolerance, or contraindication.			
Retinopathy			
Diagnosed ever	0	959	0%
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IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST)			

Annual Audit			
959 patients were audited			
Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent

Lower Extremity Amputation			
Any type ever (e.g., toe, partial foot, above or below knee)	58	959	6%
Exams			
Foot exam - comprehensive	218	959	23%
Eye exam - dilated exam or retinal imaging	303	959	32%
Dental exam	239	959	25%
Diabetes-Related Education			
Nutrition - by any provider (RD and/or other)	284	959	30%
Nutrition - by RD	153	959	16%
Physical activity	200	959	21%
Other diabetes education	434	959	45%

Any of above	467	959	49%
Immunizations			
Influenza vaccine during Audit period	362	959	38%
Pneumovax/PPSV23 vaccine - ever	623	959	65%
Td/Tdap/DTap/DT - past 10 years	639	959	67%
Tdap - ever	531	959	55%
If not immune, hepatitis B complete series - ever	525	955	55%
Immune - Hepatitis B	4	959	0%
In patients age >=50 years	0	700	0%
Shingrix/recombinant zoster vaccine (RZV) series - ever			
Depression			
Active problem/diagnosis			
Yes	100	959	10%
No	859	959	90%
LAB			
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<p>IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited Unless otherwise specified, time period for each item is the 12-month Audit Period</p>			

	# of Patients (Numerator)	# Considered (Denominator)	Percent
<p>In patients without active depression, screened for depression</p>			

during Audit period:			
Screened	415	859	48%
Not screened	444	859	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	374	959	39%
LDL <100 mg/dl	276	959	29%
LDL 100-189 mg/dl	97	959	10%
LDL >=190 mg/dl	1	959	0%
Not tested or no valid result	585	959	61%
HDL cholesterol	377	959	39%
In females			
HDL <50 mg/dl	118	569	21%
HDL >=50 mg/dl	108	569	19%
Not tested or no valid result	343	569	60%
In males			
HDL <40 mg/dl	67	390	17%
HDL >=40 mg/dl	84	390	22%
Not tested or no valid result	239	390	61%
Triglycerides [1]	377	959	39%
Trig <150 mg/dl	199	959	21%
Trig 150-499 mg/dl	166	959	17%
Trig 500-999 mg/dl	12	959	1%
Trig >=1000 mg/dl	0	959	0%
Not tested or no valid result	582	959	61%
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IHS Diabetes Care and Outcomes Audit - RPMS Audit Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021) Facility: 2021 DEMO HOSPITAL (INST) Annual Audit 959 patients were audited			
Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Kidney Evaluation			
eGFR to assess kidney function (In age >=18 years)	498	927	54%
eGFR >=60 ml/min	333	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	429	927	46%
Urine Albumin:Creatinine Ratio (UACR) to assess kidney damage	238	959	25%
Urine albumin excretion - normal: <30 mg/g	124	238	52%
Urine albumin excretion increased:			

30-300 mg/g	88	238	37%
>300 mg/g	26	238	11%
Not tested or no valid result	721	959	75%
In patients age >=18 years, eGFR and UACR	231	927	25%
Chronic Kidney Disease (CKD) (In age >=18 years)			
CKD [2]	242	927	26%
CKD [2] and mean BP <140/<90	168	242	69%
CKD [2] and ACE Inhibitor or ARB currently prescribed	174	242	72%
CKD [2] and GLP-1 receptor agonist currently prescribed	1	242	0%
CKD [2] and SGLT-2 inhibitor currently prescribed	0	242	0%
CKD Stage			
Normal: eGFR >=60 ml/min and UACR <30 mg/g	94	927	10%
Stages 1 and 2: eGFR >=60 ml/min and 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%
Undetermined	591	927	64%
LAB	Sep 22, 2021	Page 8	
IHS Diabetes Care and Outcomes Audit - RPMS Audit			
Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021)			
Facility: 2021 DEMO HOSPITAL (INST)			
Annual Audit			
959 patients were audited			
Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent

Tuberculosis (TB) Status			
TB diagnosis documented ever and/or positive test result ever	58	959	6%
If not diagnosed, TB test done ever (skin test or blood test)	521	927	56%
If TB diagnosis documented and/or positive test result, treatment initiated ever	8	58	14%
If most recent TB test result was negative, was test done after diabetes diagnosis	245	356	69%
Hepatitis C (HCV)			
Diagnosed HCV ever	27	959	3%
In patients not diagnosed with HCV and age >= 18 years, screened ever	181	900	20%
Combined Outcome Measure			

Patients age >= 40 years meeting ALL of the following criteria: A1C <8.0, Statin currently prescribed* and mean BP <140/<90	61	802	8%
*Denominator excludes patients with a statin allergy, intolerance, or contraindication			
Diabetes Related Conditions (In age >=18 years)			
Severely obese (BMI >=40)	119	927	13%
Hypertension diagnosed ever	700	927	76%
Current tobacco user	159	927	17%
CVD diagnosed ever	383	927	41%
Retinopathy diagnosed ever	0	927	0%
Lower extremity amputation ever (any type (e.g., toe, partial foot, above or below knee)	57	927	6%
Active Depression	97	927	10%
CKD stage 3-5	165	927	18%
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IHS Diabetes Care and Outcomes Audit - RPMS Audit			
Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021)			
Facility: 2021 DEMO HOSPITAL (INST)			
Annual Audit			
959 patients were audited			
Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients (Numerator)	# Considered (Denominator)	Percent

Number of diabetes related conditions			
Diabetes only	162	927	17%
Diabetes plus:			
One	230	927	25%
Two	272	927	29%
Three	170	927	18%
Four	72	927	8%
Five or more	21	927	2%
Footnotes			
[1] For triglycerides: >150 is a marker of CVD risk, not a treatment target; >1000 is a risk marker for pancreatitis.			
[2] Chronic Kidney Disease (CKD): eGFR <60 or UACR >=30			
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IHS Diabetes Care and Outcomes Audit - RPMS Audit			
Audit Report for 2022 (Audit Period 01/01/2021 to 12/31/2021)			
Facility: 2021 DEMO HOSPITAL (INST)			
Annual Audit			
959 patients were audited			
Unless otherwise specified, time period for each item is the 12-month Audit Period			
	# of Patients	# Considered	Percent

	(Numerator)	(Denominator)
Abbreviations		
A1C	=	hemoglobin A1c (HbA1c)
ACE inhibitor	=	angiotensin converting enzyme inhibitor
ARB	=	angiotensin receptor blocker
BMI	=	body mass index
BP	=	blood pressure
DT	=	diphtheria and tetanus
DTaP	=	diphtheria, tetanus, and pertussis
CKD	=	chronic kidney disease
CVD	=	cardiovascular disease
eGFR	=	estimated glomerular filtration rate
ENDS	=	electronic nicotine delivery systems
HCV	=	hepatitis C virus
HDL	=	high-density lipoprotein
LDL	=	low-density lipoprotein
RD	=	registered dietitian
TB	=	tuberculosis
Td	=	tetanus and diphtheria
Tdap	=	tetanus, diphtheria, and pertussis
Trig	=	triglycerides
UACR	=	urine albumin-to-creatinine ratio

Figure D-1: Sample Cumulative Audit Report

Acronym List

Acronym	Meaning
A1C	Hemoglobin A1c (HbA1c)
ACE Inhibitor	Angiotensin Converting Enzyme Inhibitor
ARB	Angiotensin Receptor Blocker
ASUFAC	Area, Service Unit, and Facility
BDM	Namespace for the Diabetes Management System
BGP	Namespace for the Clinical Reporting System
BMI	Body Mass Index
BP	Blood Pressure
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
HCV	Hepatitis C Virus
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

Acronym	Meaning
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
RD	Registered Dietitian
RML	Master List Report
RPMS	Resource and Patient Management System
SDPI	Special Diabetes Program for Indians
SNOMED	Systematized Nomenclature of Medicine
TB	Tuberculosis
TD	Tetanus and Diphtheria
TDAP	Tetanus, Diphtheria, and Pertussis
TRIG	Triglycerides
UACR	Urine Albumin/Creatinine Ratio

Contact Information

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