



RESOURCE AND PATIENT MANAGEMENT SYSTEM

# Diabetes Management System

(BDM)

## Addendum to User Manual

Version 2.0 Patch 10  
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Office of Information Technology  
Division of Information Technology

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## Preface

The purpose of this document is to provide users with an overview of changes to the Diabetes Management System (DMS) introduced in Patch 10. In addition, instructions are provided for using DMS to conduct a 2017 Diabetes Audit, which is included in this patch.

**Note:** Resource and Patient Management System (RPMS) software, including the DMS, is subject to periodic updates based on the Indian Health Service (IHS) [Standards of Care and Clinical Practice Recommendations for Type 2 Diabetes Mellitus \(DM\)](#).

## 1.0 Introduction

### 1.1 DMS Changes

DMS v2.0 p10 includes several changes and additions, including tools for conducting the 2017 Diabetes Audit. A summary of the changes follows:

#### 1.1.1 Audit Changes

- New menu options have been added for the 2017 Diabetes Audit (Figure 1-1).

```

*****
**      DIABETES MANAGEMENT SYSTEM      **
**      2017 Diabetes Audit Report Menu  **
*****
Version 2.0 (Patch 10)

DEMO HOSPITAL

DM17  Run 2017 Diabetes Program Audit
TC17  Check Taxonomies for the 2017 DM Audit
TU17  Update/Review Taxonomies for 2017 DM Audit
VTAX  View/Print Any DM Audit Taxonomy
EAUD  Run the 2017 Audit w/predefined set of Pts
VSML  View a SNOMED List Used by the DM AUDIT
-----
PR17  Run 2017 PreDiabetes/Metabolic Syndrome Audit
PRTC  Check Taxonomies for the 2017 Pre-Diabetes Audit
PRTU  Update/Review Taxonomies for 2017 PreDiab Audit

```

Figure 1-1: 2017 Diabetes Audit

**Note:** Audit Logic is included in Appendix A:

- New data elements have been added for capturing electronic nicotine delivery system (ENDS) screening and use during the audit period. The logic used in determining this is shown in Figure 1-2.

```

ELECTRONIC NICOTINE (ENDS)-SCREENED/USE
The last recorded health factor in the category ELECTRONIC NICOTINE DELIV
SYSTEM (ENDS) during the audit period is found.

Screened for electronic nicotine delivery system (ENDS) use during Audit
period:
If a health factor is found a value of 1 Yes is assigned.
If no health factors have been recorded during the audit period a value of
2 No is assigned.

ENDS use status:
Health factor and value assigned:
CURRENT ENDS USER: 1 Current User
CESSATION ENDS USER: 1 Current User
PREVIOUS ENDS USER: 2 Not a current user

```

NEVER USED ENDS USER: 2 Not a current user  
 No health factor recorded: 3 Not documented

Figure 1-2: Logic used for electronic nicotine system (ENDS) screening and use

- Items on the individual audit form have been reordered and some labels changed for clarity.
- Units have been added to the UACR value that is displayed on the RPMS audit form.
- CPT codes 92134 and 92250 have been removed from the eye exam definition.
- Clinic code 64 (Retinopathy) has been removed from the eye exam definition.
- When looking for medications (Diabetes Therapy, ACE Inhibitor, Statin and Aspirin) logic has been added to look for e-Prescribed medications that are filled by an outside pharmacy. The prescription file is examined to find any prescription that has a prescription number beginning with X (indicating external prescription) whose days’ supply times the number of refills takes the prescription coverage into the last 6 months of the report period.
- The taxonomy of dental CPT codes used to determine if a dental exam was done has been reviewed and updated.
- A check of the Clinical Reporting System (CRS) Statin medication and NDC taxonomies has been added.
- The Blood Pressure (BP) section of the cumulative audit has been changed to use one BP if the patient has one BP documented during the report period. The logic has been changed to use three BPs if available, two BPs if available, or one BP if one is available.
- The item “Diagnosed CVD & statin prescribed”, “Statin Prescribed” and “Combined Outcomes Measure” items have been modified to exclude those with allergy/intolerance/contraindication from the denominator.
- A new section on electronic nicotine delivery system (ENDS) use screening and use has been added to the cumulative audit (Figure 1-3).

Electronic nicotine delivery system (ENDS)			
use screening during the Audit period:			
Screened	50	121	41%
Not screened	71	121	59%
ENDS use status:			
Current ENDS user	15	121	12%
Not a current ENDS user	35	121	29%
ENDS use not documented	71	121	59%
Current user of both tobacco and ENDS	10	121	8%

Figure 1-3: Electronic nicotine delivery system (ENDS) screening and use during Audit Period

- Audit Export file ENDS screening and use have been added to the export file, items have been reordered.

### 1.1.2 Diabetes Patient Care Summary (Supplement Changes)

- ENDS screening and use have been added to the Diabetes Supplement.
- The patient education section of the Diabetes supplement has been re-formatted and the provider and provider discipline who gave the education has been added to the display (Figure 1-4).

DM Education Provided (in past yr):			
Last Dietitian Visit (ever):			
250.00-LITERATURE	12/13/2016	MILLER-BUTCHER, LOR	MD
DM-BEHAVIORAL AND EMOTIONAL HE	03/01/2016	JONES, ANGELINE	PHYSICIAN
DM-EXERCISE	12/13/2016		
DM-NUTRITION	12/13/2016	BLOSSOM, DONNA M	DIETITIAN

Figure 1-4: Education display on Diabetes Supplement

### 1.1.3 Other DMS Application changes

- The term exercise has been replaced by Physical Activity throughout the application.
- The term Pneumovax has been replaced by Pneumococcal throughout the application.
- The DMU - Update Diabetes Patient Data option has been modified to allow the capture of the electronic nicotine delivery system (ENDS) health factor.
- Report DNXR - Patients with DM Diagnosis and not on Register has been modified to prompt for more than one register. A field has been added to the display which lists all facilities at which the patient has had a visit. The ability to save the list to a template has been added, and the ability to save the output as a delimited output for use in MS Excel has been added
- The RML – Master List report has been modified to display both Last Review Date and Next Review Date from the register.
- The Community of Residence display on the Edit Register Data screen has been fixed to display the community name.
- The DOB screen item has been fixed in the GEN General Retrieval report.
- The pregnancy definition has been updated to look at the “currently pregnant” field in the Reproductive Factors file.

## 1.2 Visual DMS Changes

Added options for the 2017 Diabetes Audit:

- Report outputs have been moved to Crystal Reports to negate the need to have Microsoft Office installed.
- SAVE and CLOSE buttons have been added to all windows so the user no longer needs to X out of a window.
- The Diabetes QA Audit has been renamed as Diabetes Audit.
- The term exercise has been replaced by Physical Activity throughout the application.
- The term Pneumovax has been replaced by Pneumococcal throughout the application.
- The Update Patient Data option has been modified to allow the capture of the electronic nicotine delivery system (ENDS) health factor.
- Units have been added to the entry of lab tests in Update Patient Data.
- A fix has been added so you can go from one patient to another without exiting the system



## 2.0 Prepare for the Audit

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

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

### 2.1 Guidelines for Selecting Patients

The IHS Division of Diabetes Treatment and Prevention (Division of Diabetes) has provided the following guidelines for selecting patients for the 2017 Annual Diabetes Audit.

Include Patients who:

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

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

## 2.2 Use the Diabetes Register for the 2017 Diabetes Audit

The Diabetes Register may be used for the 2017 audit by excluding patients who do not meet the audit criteria. Alternatively, a subset of the Diabetes register may be used including only those patients who meet the audit criteria.

To use patients in the Diabetes Register for the audit, there are several reports available to identify patients currently classified as active but who do not meet the audit criteria:

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

**Note:** For the 2017 Annual Audit, the IHS Division of Diabetes requires review of the care provided during the calendar year ending December 31, 2016. Reports identifying patients with an active status should be run for the time period between 1/1/2016 and 12/31/2016.

### 2.2.1 Identify IHS Diabetes Register Patients with GDM or IGT

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

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

```

Q-MAN OPTIONS -> SEARCH PCC Database (dialogue interface)
What is the subject of your search? LIVING PATIENTS // REGISTER <Enter> REGISTER

Which CMS REGISTER: IHS DIABETES <Enter>

Register being checked to update status of deceased patients

Select the Patient Status for this report
  1  Active
  2  Inactive
  3  Transient
  4  Unreviewed
  5  Deceased
  6  Non-IHS
  7  Lost to Follow-up
  8  All Register Patients

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

Select the Diabetes Register Diagnosis for this report

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

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

```

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

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

```

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

PATIENTS      CMI*DEV
              NUMBER
-----
PATIENT,DEMO I* 29693

```

Total: 1

Figure 2-2: QMan search results

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

## 2.2.2 Identify Possible Inactive Patients in the IHS Diabetes Register

A report, **INA List Possible Inactive Pts in the DM Register** (Figure 2-3) can be especially useful at sites that have large numbers of patients whose Register status might not be accurate.

The report is contained in the RP Reports menu of the Diabetes Management System. Begin by selecting **RP** Reports . . .

Type **INA** to initiate the report for Possible Inactive Patients

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

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

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

Enter the beginning and ending dates for searching for a visit to one or more of these primary care clinics. Note that the 2017 Annual Audit is for the time frame between January 1, 2016 and December 31, 2016. To be considered to be an active patient, there should be at least one documented visit to a primary care clinic during that time frame.

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

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

The sequence to generate this report follows:

RP Reports . . .

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

2013 DEMO HOSPITAL (CMBA)  
RUSSELL, 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: 1/1/16 (JAN 01, 2016)  
Enter Ending Visit Date: T (OCT 13, 2016)

Select one of the following:

P	PRINT the List
B	BROWSE the List on the Screen

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

```

Select one of the following:

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

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

OUTPUT BROWSER                Oct 13, 2016 12:25:21                Page:    1 of    48

      ***** CONFIDENTIAL PATIENT INFORMATION *****
DR                               Page 1
      2013 DEMO HOSPITAL (CMBA)
      Patients on the IHS DIABETES REGISTER Register
      without a visit between Jan 01, 2016 and Oct 13, 2016

PATIENT NAME                HRN      STATUS   CASE      LAST VISIT  # DM   LAST DM DX
                           MANAGER
-----
ADAY, MARIE                 101465  ACTIVE   03/22/2013  158  02/22/2013
ADKINS, CHANTEL            105424  ACTIVE   05/17/2005  18   02/08/2005
ALLEN, LAYLA GABRIELL      113104  ACTIVE   08/09/2010  4    08/09/2010
ALVARADO, PHYLLIS N        106581  ACTIVE   04/10/2013  124  04/10/2013
ALVAREZ, CARLA             111773  ACTIVE   11/05/2004  0    10/27/1993
ALVAREZ, ILLYANA           118595  ACTIVE   10/29/1993  1    10/27/1993
+       Enter ?? for more actions                >>>
+  NEXT SCREEN      -  PREVIOUS SCREEN      Q  QUIT
Select Action: +//PL

DEVICE
    
```

Figure 2-3: INA List Possible Inactive Pts in the DM Register Report

### 2.2.3 Update Patient Register Status

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

#### 2.2.3.1 To Edit Register Data in DMS:

1. Open the Patient Management menu of DMS (Figure 2-4).

```

Register Data                Feb 18, 2016 09:06:49                Page:    of 1
      PATIENT: DEMO, PATIENT Q                    AGE: 73
      ADDRESS: 50 OAK STREET, ADAIR, OK, 74330    DOB: 02/03/1940
      PHONE: 555-555-0093                        HRN: 100052
PRIM CARE PROV: STUDENT, FOURTEEN                RES: ADAIR
      STATUS: ACTIVE
WHERE FOLLOWED:
      REGISTER PROV:                             CASE MGR:
      CONTACT: Woman's shelter 567-5309
      ENTRY DATE: JUL 12, 2011                    LAST EDITED: FEB 18, 2016
      DIAGNOSIS: 2                                ONSET DATE: MAR 1, 1999
      COMPLICATIONS: CARDIOVASCULAR DISEASE       ONSET DATE: DEC 14, 2002

      - Previous Screen      Q Quit      ?? for More Actions
    
```

1	Edit Register Data	8	DIABETES Medications	15	DIABETES Lab Profile
2	Complications	9	Review Appointments	17	Pat. Face Sheet
3	Comments	10	Audit Status	19	Local Option Entry
4	Health Summary	11	Flow Sheet	20	Diagnosis
5	Last Visit	12	Case Summary	21	Print Letter
6	Other PCC Visit	13	Edit Problem List		
7	Medications	14	Lab Profile		
Select Action: Quit// 1					

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

```

Register Data                Feb 18, 2016 09:06:49                Page:    1 of    1

    PATIENT: THOMS,DAISY                                AGE: 55
    ADDRESS: 50 OAK STREET,ADAIR,OK,74330              DOB: 11/11/1957
    PHOME..: 555-555-009                                HRN: 100052
    STATUS: UNREVIEWED                                  RES: 3681
    CASE MANAGER:
REGISTER PROV:
WHERE FOLLOWED:
    CONTACT: Woman's shelter 567-5309
    ENTRY DATE: JUL 12,2011                            LAST EDITED: FEB 18,2014
    LAST REVIEW: JUL 12,2011                          NEXT REVIEW: OCT 12,2011

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

-----
Exit      Save      Refresh

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

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

```

Figure 2-4: Register Data

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

### 2.2.3.2 To Edit Register Status in Visual DMS

1. Select the desired Patient.
2. Open the Patient Management menu. (Figure 2-5)

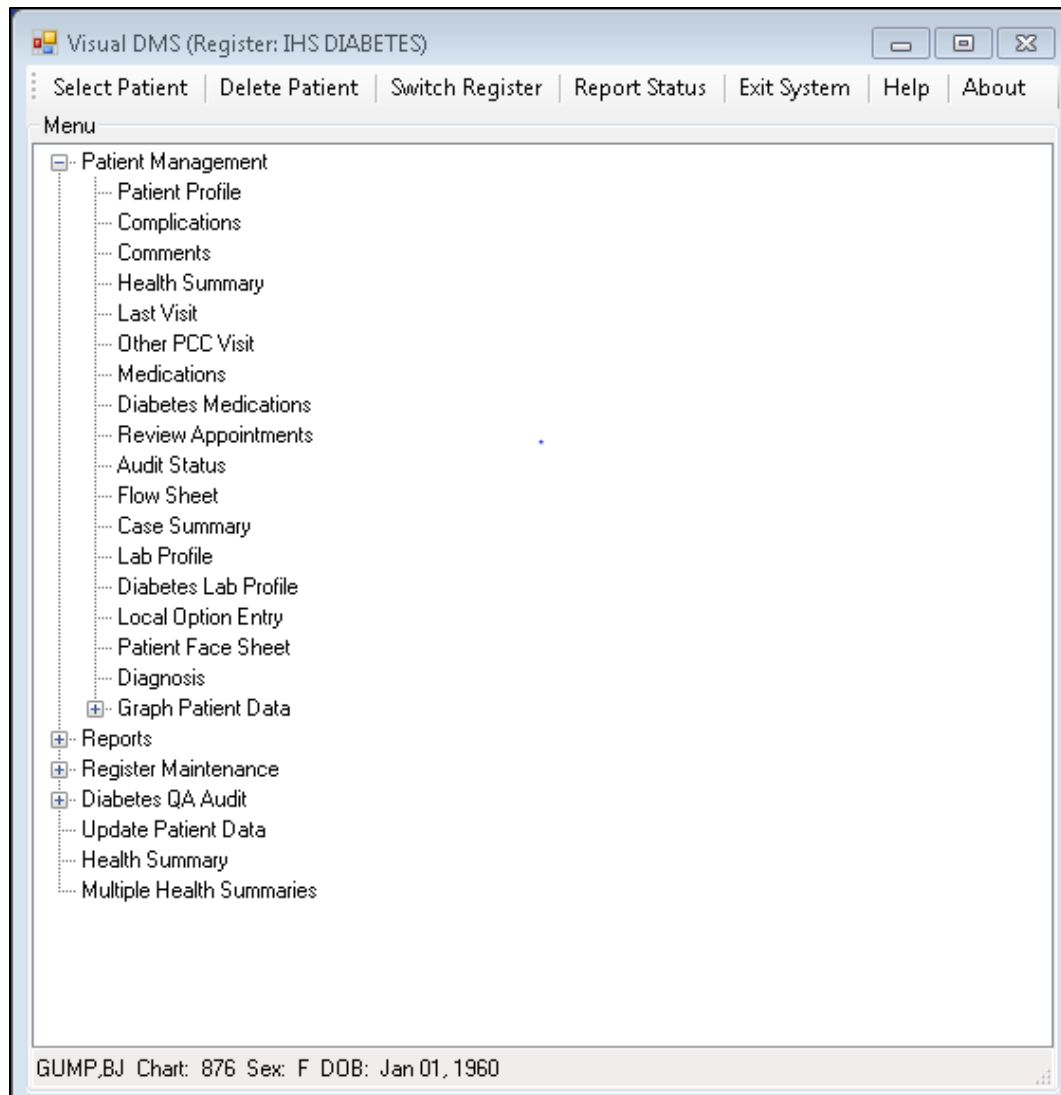


Figure 2-5: Selecting Patient Profile from the Patient Management Menu

3. Click **Patient Profile**. The **Patient Profile** dialog (Figure 2-6) is displayed.



Figure 2-6: Patient Profile dialog

### Changing the Register Status

4. From the **Status** list, select the new status.

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

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

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

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

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

## 2.3 Create a Template of Patients for the 2017 Diabetes Audit

If the IHS Diabetes Register is not current or has not been routinely used for management of patients with diabetes, it might be advantageous to use a QMan search to identify patients with diabetes who have had a visit to a primary care clinic during the audit period. The template created from this query can be used to run the 2017 Annual Diabetes Audit. One can run the QMan search using either the general patient population Section 2.3.1 or the Diabetes Register Section 2.2.2 In either case, if non-IHS clients with Diabetes are seen at the clinic or included in the Register, another Attribute called Classification should be used. The Classification for Indian/Alaska Native patients is 01.

### 2.3.1 Create a Template using the General Population

The QMan search in the sequence that follows shows the creation of a template looking for patients with at least one diagnosis of diabetes during the audit period and who have had at least one visit to a primary care clinic during the audit period (Figure 2-7).

```

***** SEARCH CRITERIA *****
What is the subject of your search? LIVING PATIENTS // LIVING PATIENTS
Include list of upcoming appts for the patient? NO//
Subject of search: PATIENTS

```

```

ALIVE TODAY

Attribute of LIVING PATIENTS: VISIT

SUBQUERY: Analysis of multiple VISITS

First condition of "VISIT": CLINIC                VISIT ATTRIBUTES

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

Members of BGP PRIMARY CARE CLINICS Taxonomy =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
WELL CHILD
FAMILY PRACTICE

Enter ANOTHER CLINIC: ENDOCRINOLOGY

The following have been selected =>

    GENERAL
    DIABETIC
    INTERNAL MEDICINE
    PEDIATRIC
    WELL CHILD
    FAMILY PRACTICE
    ENDOCRINOLOGY

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

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

Exact starting date: 1/1/16 (JAN 01, 2016)
Exact ending date: 12/31/16 (DEC 31, 2016)

    Subject of subquery: VISIT
    CLINIC (GENERAL/DIABETIC...)
    BETWEEN BETWEEN JAN 1,2016 and DEC 31,2016@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 1,2016 and DEC 31,2016@23:59:59

Attribute of LIVING PATIENTS: DX                DIAGNOSES

Enter DX: [SURVEILLANCE DIABETES

```

**Note:** Use the taxonomy SURVEILLANCE DIABETES as it will have all Diagnosis codes for Diabetes, including both ICD-9 and ICD-10.

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

This is a page break –press Enter to continue listing codes each time <> is displayed.

```
E10.43  
E10.44  
E10.49  
E10.51  
E10.52  
E10.59  
E10.610  
E10.618  
E10.620  
E10.621  
E10.622  
E10.628  
E10.630  
E10.638  
E10.641  
E10.649  
E10.65  
E10.69  
E10.8  
<>E10.9  
E11.00  
E11.01  
E11.21  
E11.22  
E11.29  
E11.311  
E11.319  
E11.321  
E11.329  
E11.331  
E11.339  
E11.341  
E11.349  
E11.351  
E11.359
```

E11.36  
E11.39  
E11.40  
E11.41  
<>E11.42  
E11.43  
E11.44  
E11.49  
E11.51  
E11.52  
E11.59  
E11.610  
E11.618  
E11.620  
E11.621  
E11.622  
E11.628  
E11.630  
E11.638  
E11.641  
E11.649  
E11.65  
E11.69  
E11.8  
<>E11.9  
E13.00  
E13.01  
E13.10  
E13.11  
E13.21  
E13.22  
E13.29  
E13.311  
E13.319  
E13.321  
E13.329  
E13.331  
E13.339  
E13.341  
E13.349  
E13.351  
E13.359  
E13.36  
E13.39  
<>E13.40  
E13.41  
E13.42  
E13.43  
E13.44  
E13.49  
E13.51  
E13.52  
E13.59  
E13.610  
E13.618  
E13.620  
E13.621  
E13.622  
E13.628  
E13.630  
E13.638

```

E13.641
E13.649
E13.65
<>E13.69
E13.8
E13.9

Enter ANOTHER DX: No or <ENTER>

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

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD
Exact starting date: 1/1/16 (JAN 01, 2016)
Exact ending date: 12/31/16 (DEC 31, 2016)

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

Subject of search: PATIENTS
ALIVE TODAY
Subject of subquery: VISIT
CLINIC (GENERAL/DIABETIC...)
BETWEEN BETWEEN JAN 1,2016 and DEC 31,2016@23:59:59
DIAGNOSIS (250.01/250.11...)
Subject of subquery: DIAGNOSIS
BETWEEN JAN 1,2016 and DEC 31,2016@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 2017
Are you adding 'DM AUDIT 2017' as a new SORT TEMPLATE? No// Y (Yes)
DESCRIPTION:
No existing text
Edit? NO//

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

Answer 'YES' to run in background.

```

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

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

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

Press ENTER to continue or '^' to quit:

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

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

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

LINCOLN,NKITA	103886	+	+
WOLFE,JACK*	103952	+	+
ADMS,MARIE*	101465	+	+
SMITH,ADRIANN*	100088	+	+
JONES,SHANTELI	100763	+	+
MARTIN,JESSICA*	101578	+	+
MILLER,ALEXANDRI	102511	+	+
WASHING,RHIANNON	144277	+	+
TEST,AMY	679458	+	+

Figure 2-7: Audit Template

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

### 2.3.2 Create a Template of Register Patients for the Audit

If a Diabetes Register exists but Register diagnoses and patient status have not been maintained, it might be easier to create a template of active patients on the register who have had at least one visit to a primary clinic during the audit year with a diagnosis of diabetes. The QMan search demonstrating how to create that template is shown in the following sequences (Figure 2-8):

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

Which CMS REGISTER: IHS DIABETES

Register being checked to update status of deceased patients.

Select the Patient Status for this report

1	Active
2	Inactive

```

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

Which Status(es):  (1-8): 1// 8

Select the Diabetes Register Diagnosis for this report

    Select one of the following:

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

Which Register Diagnosis: All Diagnoses// 6  All Diagnoses.....

There are 74 register patients for the combination selected.

Attribute of IHS DIABETES REGISTER: ALIVE
Alive at least until exactly what date: TODAY//12/31/16  (DEC 31, 2016)
Computing Search Efficiency Rating.....

    Subject of search: PATIENTS
    MEMBER OF 'IHS DIABETES REGISTER-4104' COHORT
    ALIVE AS OF DEC 31,2016

Attribute of IHS DIABETES REGISTER: VISIT

SUBQUERY: Analysis of multiple VISITS

First condition of "VISIT": CLINIC          VISIT ATTRIBUTES

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

Members of   Taxonomy =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
CHRONIC DISEASE
FAMILY PRACTICE
ENDOCRINOLOGY

Enter ANOTHER CLINIC:

The following have been selected =>

GENERAL
DIABETIC
INTERNAL MEDICINE
PEDIATRIC
CHRONIC DISEASE
FAMILY PRACTICE
ENDOCRINOLOGY
    
```



```

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

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

Exact starting date: 1/1/2016 (JAN 01, 2016)
Exact ending date: 12/31/2016 (DEC 31, 2016)

      Subject of subquery: VISIT
      CLINIC (GENERAL/DIABETIC...)
      BETWEEN BETWEEN JAN 1,2016 and DEC 31,2016@23:59:59

Next condition of "VISIT":

Attribute of LIVING PATIENTS: DX                      DIAGNOSES

Enter DX: [SURVEILLANCE DIABETES
50.00 - 250.93
E10.10
E10.11
E10.21
    
```

**Note:** The Taxonomy, Surveillance Diabetes contains all of the ICD-9 and ICD-10 codes pertaining to Diabetes. Not all of the ICD-10 codes will be listed in this illustration as there are numerous pages of them.

<>E10.42

This is a page break –press ENTER to continue listing codes each time you see <> on the screen.

```

Enter ANOTHER DX: No or <ENTER>

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

SUBQUERY: Analysis of multiple DIAGNOSES

First condition of "DIAGNOSIS": DURING THE TIME PERIOD

Exact starting date: 1/1/16 (JAN 01, 2016)
Exact ending date: 12/31/16 (DEC 31, 2016)

Next condition of "DIAGNOSIS":

Computing Search Efficiency
Rating.....

      Subject of search: PATIENTS
      ALIVE TODAY
      Subject of subquery: VISIT
      CLINIC (GENERAL/DIABETIC...)
      BETWEEN BETWEEN JAN 1,2016 and DEC 31,2016@23:59:59
      DIAGNOSIS (250.01/250.11...)
      Subject of subquery: DIAGNOSIS
      BETWEEN JAN 1,2016 and DEC 31,2016@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 2017

Are you adding 'DM AUDIT 2017' as a new SORT TEMPLATE? No// Y (Yes)

DESCRIPTION:

No existing text

Edit? NO//

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

Answer 'YES' to run in background.

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

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

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

Press ENTER to continue or '^' to quit:

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

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

PATIENTS (Alive)	2103 D NUMBER #	ICD CODE	VISIT
-----			
BUCHSHORN,NKITA	103886	+	+
WOLFE,ARON*	103952	+	+
ADAY,MARIE*	101465	+	+
FRAZIER,ADRIANN*	100088	+	+
NARANJO,SHANTELI	100763	+	+
MARTIN,JESSICA*	101578	+	+
MILLER,ALEXANDRI	102511	+	+

```
SEVADA,RHIANNON 144277 +      +
```

Figure 2-8: QMan search demonstrating how to create that template

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

A new report has been added to the Diabetes Management System that will allow identification of patients who have one or more diagnoses of Diabetes but are not currently on the Register. It may be useful to run this report before conducting an audit to see if patients should be added to the Register. Note that this report does not exclude non-Indian patients. Directions for running this report are shown in the following sequence. A sample report is shown in (Figure 2-9)

1. At the Diabetes Management System menu, type **RP** 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: PARKER
  1  PARKER DIABETES REGISTER
  2  PARKER DIALYSIS PATIENTS
CHOOSE 1-2: 1  PARKER DIABETES REGISTER
```

4. At the “Choose” prompt, type the number corresponding to the register name and press Enter.

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

```
Enter Beginning Visit Date: 1/1/16 (JAN 01, 2016)
Enter Ending Visit Date: 12/31/16 (DEC 31, 2016)
```

5. At the “Enter Beginning Visit Date” prompt, type the beginning date and press Enter.
6. 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): 3//
```

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

```
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
    
```

8. 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
    
```

9. At the “Demo Patient Inclusion/Exclusion” prompt, do one of the following:

- a. Type **I** and press Enter to include all patients.
- b. Type **E** and press Enter to exclude demo patients.
- c. Type **O** and press Enter to include only demo patients.

The report (Figure 2-9) is printed or displayed:

```

OUTPUT BROWSER                      Nov 16, 2016 12:00:26                      Page: 1 of 26

***** CONFIDENTIAL PATIENT INFORMATION *****
DR                                     Page 1
                                     2013 DEMO HOSPITAL (CMBA)
Patients NOT on the PARKER DIABETES REGISTER Register
with at least 3 visits with a DX of Diabetes between
Jan 01, 2016 and Dec 31, 2016

PATIENT NAME          HRN      DOB          COMMUNITY      LAST VISIT # DM  LAST DM
                                DXS          DX
-----
ADAY,RACHEL KATHLEEN  141013  03/28/1941  LAKE HAVSU     03/20/16        3  03/20/16
AKEEN,NEOMI           894515  03/15/1955  KINGMAN        03/22/16        3  03/22/16
ALEXANDER,CARLEE      127017  11/12/1993  PARKER         04/03/16        3  02/27/16
ALLEN-CARTER,LAURA A  140615  05/25/1977  PARKER         03/27/16        4  03/19/16
+      Enter ?? for more actions                                     >>>
+  NEXT SCREEN          -  PREVIOUS SCREEN      Q  QUIT
Select Action: +//
    
```

Figure 2-9: Confidential Patient Report

## 2.4 Update Taxonomies

The taxonomies (Figure 2-10) are referenced in the 2017 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 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 2016 Annual Audit, they must be reviewed and updated again before running the 2017 Annual Audit. This is due to potentially new medications being added to the pharmacy formulary or new lab tests offered. You may note that although taxonomies exist for DM AUDIT DIET EDUC TOPICS, DM AUDIT EXERCISE EDUC TOPICS, and DM AUDIT OTHER EDUC TOPICS, review is not required unless your facility uses locally defined topics. DMS logic for determining whether education has been administered has been extensively revised to use SNOMED terminology, Diagnosis codes, as well as Education topics with prefixes of MNT or DNCN or suffixes of –MNT, -DT, or –N.

TAXONOMIES TO SUPPORT 2017 DIABETES AUDIT REPORTING		
+-----		
1)	BGP CMS SMOKING CESSATION MEDS	DRUG
2)	BGP CREATINE KINASE TAX	LABORATORY TEST
3)	BGP GPRA ESTIMATED GFR TAX	LABORATORY TEST
4)	BGP PQA STATIN MEDS	DRUG
5)	DM AUDIT ACARBOSE DRUGS	DRUG
6)	DM AUDIT ACE INHIBITORS	DRUG
7)	DM AUDIT ALT TAX	LABORATORY TEST
8)	DM AUDIT AMYLIN ANALOGUES	DRUG
9)	DM AUDIT ANTIPLT/ANTICOAG RX	DRUG
10)	DM AUDIT ASPIRIN DRUGS	DRUG
11)	DM AUDIT AST TAX	LABORATORY TEST
12)	DM AUDIT BROMOCRIPTINE DRUGS	DRUG
13)	DM AUDIT CESSATION HLTH FACTOR	HEALTH FACTORS
14)	DM AUDIT CHOLESTEROL TAX	LABORATORY TEST
15)	DM AUDIT COLESEVELAM DRUGS	DRUG
16)	DM AUDIT CREATININE TAX	LABORATORY TEST
17)	DM AUDIT DIET EDUC TOPICS	EDUCATION TOPICS
18)	DM AUDIT DPP4 INHIBITOR DRUGS	DRUG
19)	DM AUDIT EXERCISE EDUC TOPICS	EDUCATION TOPICS
20)	DM AUDIT GLITAZONE DRUGS	DRUG
21)	DM AUDIT GLP-1 ANALOG DRUGS	DRUG
22)	DM AUDIT HDL TAX	LABORATORY TEST
23)	DM AUDIT HGB A1C TAX	LABORATORY TEST
24)	DM AUDIT INCRETIN MIMETIC	DRUG
25)	DM AUDIT INSULIN DRUGS	DRUG
26)	DM AUDIT LDL CHOLESTEROL TAX	LABORATORY TEST
27)	DM AUDIT METFORMIN DRUGS	DRUG
28)	DM AUDIT MICROALBUMINURIA TAX	LABORATORY TEST
29)	DM AUDIT OTHER EDUC TOPICS	EDUCATION TOPICS
30)	DM AUDIT QUANT UACR	LABORATORY TEST
31)	DM AUDIT SGLT-2 INHIBITOR DRUG	DRUG
32)	DM AUDIT STATIN DRUGS	DRUG
33)	DM AUDIT SULFONYLUREA DRUGS	DRUG
34)	DM AUDIT SULFONYLUREA-LIKE	DRUG

35) DM AUDIT TB LAB TESTS

LABORATORY TEST

Figure 2-10: Audit 2017 user-populated taxonomies

The taxonomies can be reviewed and updated with the TU17 option under the DM17 menu of the Diabetes Audit or the corresponding Visual DMS Update Taxonomy option.

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

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

Taxonomies in the following sections must be reviewed carefully in light of software changes or changes introduced in the 2017 Diabetes Audit. Possible members of the taxonomies are listed, but are by no means to be considered comprehensive.

### 2.4.1 Drug Taxonomies

The guidelines of DM Audit Drug Taxonomies (Table 2-1) are provided for populating drug taxonomies. New drugs can be available each year, so an updated list is provided for each of the drug taxonomies. Review the lists of drugs with the pharmacist to be sure of those that are available at a facility or may be ordered as Outside Medications.

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

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

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

There was a new taxonomy introduced for the 2016 Audit: BGP PQA STATIN MEDS. This taxonomy is pre-populated using the NDC numbers of Statin Drugs and does not need to be reviewed or populated on a local basis. It is not listed in the Table of drug taxonomies needing review.

Table 2-1: DM Audit Drug Taxonomies

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

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



Taxonomy	Drugs
DM AUDIT INSULIN DRUGS	Any Insulin product in Drug File – Insulin, REG, NPH, Lente, Ultralente, Insulin Lispro (Humalog), Insulin Glargine (Lantus), Insulin Detemir (Levemir), Insulin Aspart (Novolog), Insulin Glulisine (Apidra), Inhalable Insulin (Afreza, Exubera – discontinued 2007), Pre-Mixed Insulins (70/30, 75/25)
DM AUDIT METFORMIN DRUGS	Metformin (Glucophage, Fortamet, Glumetza, Riomet) Metformin extended release (Glucophage XR, Glumetza) Metformin and Alogliptin (Kazano) Metformin and Canagliflozin (Invokamet) Metformin and Dapagliflozin (Xigduo) Metformin and Glipizide (Metaglip) Metformin and Glyburide (Glucovance) Metformin and Linagliptin (Jentadueto) Metformin and Rosiglitazone(Avandamet) Metformin and Pioglitazone (Actoplus met) Metformin and Sitagliptin (Janumet) Metformin and Repaglinide (PrandiMet) Metformin and Saxagliptin (Kombiglyze XR)
DM AUDIT SGLT-2 DRUGS	Canagliflozin (Invokana) Dapagliflozin (Farxiga) Empagliflozen (Jardiance)
DM AUDIT STATIN DRUGS	Atorvastatin (Lipitor) Atorvastatin and Amlodipine (Caduet) Atorvastatin and Ezetimibe (Liptruzet) Fluvastatin (Lescol) Lovastatin (Mevacor, Altacor, Altoprev) Lovastatin and Niacin (Advicor) Pravastatin (Pravachol) Pitivistatin (Livalo) Rosuvastatin (Crestor) Simvastatin (Zocor) Simvastatin and Ezetimibe (Vytorin) Simvastatin and Niacin (Simcor) Simvastatin and Sitagliptin (Juvisync)

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

## 2.4.2 Laboratory Test Taxonomies

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

Table 2-2: DM Audit Laboratory Test Taxonomies

<b>Taxonomy</b>	<b>Topics</b>
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

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

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

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

Figure 2-11 is a Health Summary sample with recommended taxonomy placement noted after the lab test on the health summary.

HGB A1C-GLYCO (R)	01/16/09	5.7	%	4.3-6.1
<i>DM AUDIT HGB A1C</i>				
LIPID PROFILE (R)	01/16/09			
HDL CHOLESTEROL (R)	01/16/09	44	MG/DL	40-125
<i>DM AUDIT HDL CHOLESTEROL</i>				
TRIGLYCERIDE (R)	01/16/09	109	MG/DL	30-150
<i>DM AUDIT TRIGLYCERIDE</i>				
LDL CHOLESTEROL (R)	01/16/09	97	MG/DL	0-130
<i>DM AUDIT LDL CHOLESTEROL</i>				
CHOLESTEROL (R)	01/16/09	163	MG/DL	100-200
<i>DM AUDIT CHOLESTEROL</i>				
CHOL/HDL RATIO (R)	01/16/09	3.70	RATIO	0.00-4.44
CALCULATED GFR (R)	01/16/09			
_GFR AFRICN AMER	01/16/09	>60	ML/MIN	>60-
<i>BGP GPRA ESTIMATED GFR</i>				
_GFR NON AFR AMR	01/16/09	>60	ML/MIN	>60-
<i>BGP GPRA ESTIMATED GFR</i>				
COMPREHENSIVE-14 METABOLIC (R)	01/16/09			
AST (SGOT) (R)	01/16/09	18	U/L	0-40
ALT (SGPT) (R)	01/16/09	15	U/L	0-40
BUN (R)	01/16/09	11	MG/DL	5-19
ALBUMIN (R)	01/16/09	4.2	GM/DL	3.9-5.0
CHLORIDE (R)	01/16/09	104	MMOL/L	96-108
BILIRUBIN, TOTAL (R)	01/16/09	0.9	MG/DL	0.1-1.0
ALKALINE PHOS (R)	01/16/09	76	U/L	28-110
SODIUM (R)	01/16/09	139	MMOL/L	135-145
CREATININE (R)	01/16/09	0.86	MG/DL	0.50-1.00
<i>DM AUDIT CREATININE</i>				
CALCIUM (R)	01/16/09	8.9	MG/DL	8.5-10.5
POTASSIUM (R)	01/16/09	5.6 (H)	MMOL/L	3.5-5.5
PROTEIN, TOTAL (R)	01/16/09	7.7	GM/DL	6.7-8.3

GLUCOSE RANDOM (R)	01/16/09	68 (L)	MG/DL	70-100
CO2 (R)	01/16/09	23	MMOL/L	18-30
ANION GAP (R)	01/16/09	12	MM/L	5-16
URINE DIPSTICK (R)	03/10/08			
URINE COLOR	03/10/08	O		
URINE APPEARANCE	03/10/08	C		
SPECIFIC GRAVITY	03/10/08	1.001		1.001-1.035
URINE UROBILINOGEN	03/10/08	NORMAL	EU/dL	.2-1
URINE BLOOD	03/10/08	N	mg/dL	NEG-
URINE BILIRUBIN	03/10/08	N	mg/dL	NEG-
URINE KETONES	03/10/08	L	mg/dL	NEG-
URINE GLUCOSE	03/10/08	500	mg/dL	NEG-
URINE PROTEIN	03/10/08	L	mg/dL	NEG-
URINE PH	03/10/08	5		5-9
URINE NITRITE	03/10/08	N		NEG-
URINE LEUKOCYTE ESTERASE	03/10/08	N		NEG-
M-ALB/CREAT RATIO (R)	01/22/09			
_MICROALB, RANDOM	01/22/09	<5.0	MG/L	0.0-20.0
DM AUDIT MICROALBUMINURIA				
_ALB/CREAT RATIO	01/22/09	FOOTNOTE	MG/GCR	0.0-16.9
DM AUDIT QUANT UACR				
_CREAT UR, MG/DL	01/22/09	138	MG/DL	
_CREAT/100 Calc Malb	01/22/09	1.38	G/LFigure	

Figure 2-11: Health Summary of recommended taxonomy placement

### 2.4.3 LMR–List Labs or Medications Used at this Facility

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

1. At the Diabetes Management Systems menu, type **RP** and press Enter.
2. At the Reports menu, type **LMR** (List Labs/Medications Used at this Facility) and press Enter.
3. At the “Do you wish to list” prompt, type **L (LAB TESTS)** and press Enter.
4. Type the beginning and ending dates for the report (1/1/16 and 12/31/16 for the 2017 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 2-12.

Dec 31, 2016	Page 1
LAB TESTS Used at CIMARRON HOSPITAL	
Date Range: Jan 01, 2016 - Dec 31, 2016	

LAB TEST NAME TAXONOMIES	IEN	# DONE	UNITS	RESULT
HDL	244	1		40
DM AUDIT HDL TAX				
LDL	901	1		120
DM AUDIT LDL CHOLESTEROL TAX				
ALBUMIN/CREATININE RATIO	9034	1		3
DM AUDIT QUANT UACR				
ANION GAP	1160	2		
BASIC METABOLIC PANEL	9999068	2		
C DIFF A+B E/A (R)	9999195	3		
CALCIUM	180	2		
CHLORIDE	178	2		
CHOLESTEROL	183	1		240
DM AUDIT CHOLESTEROL TAX				
CO2	179	2		
CREATININE	173	3		0.6
DM AUDIT CREATININE TAX				
CRYSTALS, FLUID	9999199	1		
CULTURE, HSV RAPID (R)	9999198	1		
CYCLIC CITRULLINATED PEPTIDE A	9999172	1		
DIAGNOSIS:	9999089	3	WITHIN NORMAL LIMITS	
DILANTIN	210	1		
ESTIMATED GFR	9999103	3		>60
BGP GPRA ESTIMATED GFR TAX				
FERRITIN (SQ)	9999175	2		
FREE T3	9999176	1		
GLUCOSE	175	5	mg/dL	145
H PYLORI AG EIA	9999183	2		
H. PYLORI AG EIA	9999177	1		
HEMOGLOBIN	3	1	g/dL	5.0
LEAD	262	1	mcg/dL	6.7
LIPASE (R)	200	1	U/L	456

Figure 2-12 Sample Report of Labs Reported during the Audit Period

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

1. At the Diabetes Management Systems menu, type **RP** and press Enter.
2. At the Reports menu, type **LMR** (List Labs/Medications Used at this Facility) and press Enter.
3. At the “**Do you wish to list**” prompt, type **M (MEDICATIONS)** and press Enter.
4. Type the beginning and ending dates for the report (7/1/16 and 12/31/16 for the 2017 Annual Diabetes Audit), pressing Enter after each. For all except Aspirin/Anti-Platelet Drugs, the audit only reviews medications prescribed during the last 6 months of the audit period. Aspirin/Anti-Platelet Drugs are reviewed for the entire year of the audit period (1/1/2016 through 12/31/2016 for the 2017 Annual Diabetes Audit).
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 2-11:

Dec 31, 2016		Page 1	
MEDICATIONS (DRUGS) Used at CIMARRON HOSPITAL			
Date Range: Jul01, 2016 - Dec 31, 2016			
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 2-11: Sample Report of Drugs Prescribed during the Audit period

## 2.4.4 View/Print Any DM Audit Taxonomy

The option, View/Print Any DM Taxonomy, has been added to the Diabetes Management System under the 2017 Diabetes Program Audit Menu. It may be used to review any taxonomy of CPT Codes, Diagnoses Codes, LOINC Codes, Medications, Laboratory Tests, or Education Topics that are used by the 2017 Diabetes Audit.

- Select **DA**, the Diabetes QA Audit Menu.
- Select **DM17**, the 2017 Diabetes Program Audit.
- Select **VTAX** View/Print Any DM Audit Taxonomy.

A list of the taxonomies used in the 2017 Diabetes Audit are displayed (Figure 2-12). Note that there are six pages of taxonomies that may be displayed. The up arrow or down arrow may be used to browse the list of taxonomies.

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

The taxonomy contents may be browsed on the screen or printed to a RPMS printer.

```

2017 DM AUDIT TAXONOMY VIEW   Dec 07, 2016 15:45:23           Page:   1 of   6
TAXONOMIES TO SUPPORT 2017 DIABETES/PRE-DIABETES AUDIT REPORTING
* View Taxonomies

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

Which Taxonomy:  (1-95): 14

      Select one of the following:

          P          PRINT Taxonomy Output
          B          BROWSE Taxonomy Output on Screen

Do you wish to: B//

```

Figure 2-13: Example of the contents of a taxonomy.

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

Figure 2-12: Sample of a Taxonomy of Creatine Kinase LOINC Codes

### 2.4.5 View a SNOMED List Used by the DM Audit

The option, View a SNOMED List Used by the DM Audit, has been added to the Diabetes Management System under the 2017 Diabetes Program Audit Menu. It may be used to review any SNOMED list that is used by the 2017 Diabetes Audit (19).

1. Select **DA**, the Diabetes QA Audit Menu.
2. Select **DM17** the 2017 Diabetes Program Audit
3. Select **VSML** View a SNOMED List Used by the DM AUDIT. A list of the SNOMED Lists used in the 2017 Diabetes Audit are displayed in Figure 2-13 Note that there are only five SNOMED Lists.
4. Type **S** to indicate a selection will be made.
5. Enter the number preceding the SNOMED List. The contents of the SNOMED List may be browsed on the screen or printed to a RPMS printer.

2017 DM AUDIT SNOMED LIST VIEW	Dec 07, 2016 16:01:42	Page: 1 of 1
SNOMED LISTS TO SUPPORT 2017 DIABETES AUDIT REPORTING		
* View SNOMED Lists		
1) BREASTFEEDING PATIENT ED		
2) DEPRESSION DIAGNOSES		
3) DIABETES DIAGNOSES		
4) HYPERTENSION DIAGNOSES		
5) TOBACCO CESSATION PATIENT ED		
Enter ?? for more actions		
Select Action:+// S Select SNOMED List to View		
Which SNOMED List: (1-5): 5		
Select one of the following:		
P	PRINT Taxonomy Output	
B	BROWSE Taxonomy Output on Screen	
Do you wish to: B//		

Figure 2-13: Selecting a SNOMED List used in the 2017 Diabetes Audit



## 3.0 Run the 2017 Audit

The directions for creating and submitting an electronic Diabetes Audit data file are outlined in the Audit 2017 Instructions which follow or at:

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

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

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

### 3.1 Run an Individual Audit

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

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

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

ASSESSMENT OF DIABETES CARE, 2017	DATE AUDIT RUN: Jan 03, 2017	Page: 1
Audit Period Ending Date: Dec 31, 2016 Facility Name: 2013 DEMO HOSPITAL (CMBA)		
REVIEWER initials: LAB	Community: PARKER	
STATE of Residence: NM		
CHART #: 100430	DOB: Feb 24, 1958	SEX: FEMALE
PRIMARY CARE PROVIDER: SMITH,GEORGE LYON		
DATE of Diabetes Diagnosis:		
DM Reg: <not documented>	Problem List: <not documented>	1st PCC DX: 06/07/2001
DM TYPE: 2 Type 2		
DM Register: <not documented>	Problem List: 250.02;E11.9	PCC POV's: Type 2
Tobacco/Nicotine Use		
Screened for tobacco use during Audit period: 1 Yes		
Tobacco Use Status: 1	Current User CURRENT SMOKER, STATUS UNKNOWN	10/10/2016
Tobacco cessation counseling received? 1 Yes 10/10/2016 TO-QT		
Screened for electronic nicotine delivery system (ENDS) use during		
audit period: 1-Yes NEVER USED ENDS USER 10/10/2016		
ENDS use status: 2 Not a current user		
Visit Statistics		
HEIGHT (last ever): 63.50 inches 10/06/2011		
Last WEIGHT in audit period: 210 lbs	10/10/2016	BMI: 36.6
HTN (documented diagnosis): 1 Yes - DX on 03/28/2012 04/20/2012 04/04/2015		
Last 3 BLOOD PRESSURES during audit period: 159/90 mm Hg 07/10/2016		
Examinations during audit period		
FOOT EXAM - complete:	1 Yes	10/10/2016 Diabetic Foot Exam
EYE EXAM (dilated or retinal imaging):	1 Yes	10/10/2016 Diabetic Eye Exam
DENTAL EXAM:	1 Yes	12/01/2016 Dental Exam
Mental Health		
Depression an active problem? 2 No		
If 'No', Screened for depression during audit period:		
1 Yes - Exam: DEPRESSION SCR	10/10/2016	
Education during audit period		
NUTRITION INSTRUCTION:	1 Yes (RD)	RD: DM-MNT 10/10/2016
PHYSICAL ACTIVITY INSTRUCTION:	1 Yes	DM-EXERCISE 10/10/2016
DM Education (Other):	1 Yes	DM-LA 10/10/2016
ASSESSMENT OF DIABETES CARE, 2017	DATE AUDIT RUN: Jan 03, 2017	Page: 2
Audit Period Ending Date: Dec 31, 2016		
CHART #: 100430	DOB: Feb 24, 1958	SEX: FEMALE
-----		
Diabetes Therapy Select all prescribed, as of the end of the audit period:		
1	Diet & Exercise Alone	
X	2 Insulin	
X	3 Sulfonylurea (glyburide, glipizide, others)	
	4 Glinide (Prandin, Starlix)	
X	5 Metformin (Glucophage, others)	
	6 Acarbose (Precose) or miglitol (Glyset)	
	7 Pioglitazone (Actos) or rosiglitazone (Avandia)	

```

8 GLP-1 med (Byetta, Bydureon, Victoza, Tanzeum, Trulicity)
9 DPP4 inhibitors (Januvia, Onglyza, Tradjenta, Nesina)
10 Amylin Analog (Symlin)
11 Bromocriptine (Cycloset)
12 Colesevelam (Welchol)
13 SGLT-2 inhibitor (Invokana, Farxiga, Jardiance)

ACE Inhibitor/ARB Prescribed, as of the end of the audit period:
  2 No
Aspirin/Antiplatelet/Anticoagulant Therapy Prescribed, as of the end of the
audit period: 1 Yes 10/10/2016 ASPIRIN 81MG TAB CHEWABLE

Statin Therapy Prescribed, as of the end of the Audit period:
  1 Yes 10/10/2016 ROSUVASTATIN CA 5MG TAB
CVD: Cardiovascular disease diagnosed: 2 No

TB Testing
TB test done: 1 Skin test (PPD)
TB test result: 2 Negative 10/30/02 Reading: 0 Result: N
  If test positive, isoniazid tx complete:
  If test negative, Last test: 10/30/2002

Immunizations
Influenza vaccine during audit period: 1 Yes 10/10/2016
Pneumococcal vaccine - ever: 1 Yes 02/19/2002
Td or Tdap in past 10 yrs: 1 Yes 03/21/2012
Tdap ever: 1 Yes 03/21/2012
HEP B 3 dose series complete - ever: 1 Yes

LABORATORY DATA - most recent result during audit period
A1C: 10.5 11/10/2016 _HGB A1C
Total Cholesterol: 260 mg/dl 10/10/2016 SQL CHOLESTEROL 101
HDL Cholesterol: 40 mg/dl 10/10/2016 _HDL CHOLESTEROL
LDL Cholesterol: 140 mg/dl 10/10/2016 _LDL-CHOLESTEROL
Triglycerides: 250 mg/dl 10/10/2016 _TRIGLYCERIDE
Serum Creatinine: 1.2 mg/dl 10/10/2016 _CREATININE (R)
eGFR: 49 10/10/2016 ESTIMATED GFR (CALC)
Quantitative Urine Albumin: Creatinine Ratio UACR value:
  45 mg/g 10/10/2016 _MICROALB/CREAT.Ran

ASSESSMENT OF DIABETES CARE, 2017 DATE AUDIT RUN: Jan 03, 2017 Page: 3
Audit Period Ending Date: Dec 31, 2016
CHART #: 100430 DOB: Feb 24, 1958 SEX: FEMALE
-----
COMBINED: Meets ALL: A1C <8.0, statin prescribed, mean BP <140/<90
  2 No A1C: 10.5; statin prescribed: Yes; Mean BP: 159/90

Has e-GFR and UACR: Yes

Local Questions:

Extended Local Option question:

```

Figure 3-1: Individual Audit sample

## 3.2 Run a Cumulative Audit/Audit Report

Figure 3-2 shows a script to run a Cumulative Audit, also known as an Audit Report. The Audit Report can be either queued using the DM17 option in Visual DMS or run from the traditional RPMS menu. It is highly recommended that the 2017 Cumulative Audit be run and reviewed twice before creating a data file to submit for the Annual Diabetes Audit.

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

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

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

```
Diabetes Management System ...
DA  Diabetes QA Audit Menu ...
DM17 2017 Diabetes Program Audit ...
DM16 Run 2016 Diabetes Program Audit

          Select 2017 Diabetes Program Audit Option: DM17 Run 2017 Diabetes
Program Audit

In order for the 2017 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
LABORATORY TEST taxonomy [BGP CREATINE KINASE TAX] contains a panel test: SQL C
KMB 5030 and should not.
DRUG taxonomy [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

          ASSESSMENT OF DIABETES CARE, 2017

          PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DEMO HOSPITAL

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

Enter the Audit Date: 12/31/16 (DEC 31, 2016)

Select one of the following:

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

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

Enter the Name of the Register: IHS DEMO HOSPITAL

Do you want to select register patients with a particular status? Y// ES

Which status: A// ACTIVE

There are 873 patients in the IHS DEMO HOSPITAL REGISTER register with a status of A.

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

Limit the audit to a particular primary care provider ? N// O

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

Select one of the following:

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

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

Select one of the following:

I	Include Pregnant Patients
E	Exclude Pregnant Patients

Select whether to include or exclude pregnant patients in the audit: E// xclude Pregnant Patients

okay, hold on...this may take a few minutes..

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

There are 1227 patients selected so far to be used in the audit.

Select one of the following:

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

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

Select one of the following:

```

1      Print Individual Reports
2      Create AUDIT EXPORT file
3      Cumulative Audit Only
4      Both Individual and Cumulative Audits
5      SDPI Key Measures Report (2016 Version)
6      SDPI Key Measures Report (2017 Version)

Enter Print option: 1// 3 Cumulative Audit Only

Select one of the following:

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

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

Select one of the following:

P      PRINT Output
B      BROWSE Output on Screen

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

Figure 3-2: 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 Report

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

A sample 2017 Cumulative Audit is displayed in Figure 3-4.

LB	Jan 03, 2017	Page 1	
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016) for 2013 DEMO HOSPITAL (CMBA) 1227 patients were audited			
-----			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Gender			
Male	527	1,227	43%
Female	700	1,227	57%

Age			
<20 years	41	1,227	3%
20-44 years	243	1,227	20%
45-64 years	539	1,227	44%
65 years and older	404	1,227	33%
Diabetes Type			
Type 1	24	1,227	2%
Type 2	1,203	1,227	98%
Duration of Diabetes			
Less than 1 year	5	1,227	0%
Less than 10 years	308	1,227	25%
10 years or more	652	1,227	53%
Diagnosis date not recorded	267	1,227	22%
BMI Category			
Normal (BMI<25.0)	9	1,227	1%
Overweight (BMI 25.0-29.9)	5	1,227	0%
Obese (BMI 30.0 or above)	7	1,227	1%
Height or Weight missing	1,206	1,227	98%
-----			
Severely Obese (BMI 40.0 or above)	2	1,227	0%
Blood Sugar Control			
A1C <7.0	3	1,227	0%
A1C 7.0-7.9	0	1,227	0%
A1C 8.0-8.9	2	1,227	0%
A1C 9.0-9.9	1	1,227	0%
A1C 10.0-10.9	1	1,227	0%
A1C 11.0 or higher	3	1,227	0%
Not tested or no valid result	1,217	1,227	99%
Blood Pressure (BP) - Based on one value or mean of two or three values			
<140/<90	15	1,227	1%
140/90 - <160/<95	16	1,227	1%
160/95 or higher	7	1,227	1%
BP category Undetermined	1,189	1,227	97%
LB	Jan 03, 2017	Page 2	
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016) for 2013 DEMO HOSPITAL (CMBA) 1227 patients were audited			
-----			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Comorbidities			
Active Depression	123	1,227	10%
Current tobacco user	290	1,227	24%
Severely obese (BMI 40.0 or above)	2	1,227	0%
Diagnosed hypertension	993	1,227	81%
Diagnosed hypertension & mean BP <140/<90	12	993	1%

Diagnosed CVD	449	1,227	37%
Diagnosed CVD & mean BP <140/<90	10	449	2%
Diagnosed CVD & not current tobacco user	350	449	78%
Diagnosed CVD & statin prescribed*	314	447	70%
*Excludes patients with an allergy, intolerance, or contraindication			
Diagnosed CVD & aspirin or other antiplatelet/anticoagulant therapy prescribed	8	449	2%
In age 18+ chronic kidney disease (CKD)**	14	1,189	1%
CKD** & mean BP <140/<90	5	14	36%
CKD** & ACE Inhibitor or ARB prescribed	4	14	29%
In age 18+	1,189	1,227	97%
Chronic Kidney Disease Stage			
Normal: eGFR =>60 ml/min & UACR <30 mg/g	3	1,189	0%
Stages 1 & 2: eGFR =>60 ml/min & UACR =>30 mg/g	2	1,189	0%
Stage 3: eGFR 30-59 ml/min	4	1,189	0%
Stage 4: eGFR 15-29 ml/min	2	1,189	0%
Stage 5: eGFR <15 ml/min	3	1,189	0%
In age 18+ Chronic Kidney Disease Stage undetermined	1,175	1,189	99%
Number of comorbid conditions*****			
Diabetes only	144	1,227	12%
One	457	1,227	37%
Two	475	1,227	39%
Three	140	1,227	11%
Four	11	1,227	1%
Five	0	1,227	0%
Six	0	1,227	0%
LB	Jan 03, 2017	Page 3	
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016) for 2013 DEMO HOSPITAL (CMBA) 1227 patients were audited			
-----			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Tobacco & Nicotine Use			
Tobacco use screening during Audit period:			
Screened	34	1,227	3%
Not screened	1,193	1,227	97%
Tobacco use status:			
Current tobacco user	290	1,227	24%
In current users, counseled?			
Yes	6	290	2%
No	284	290	98%
Not a current tobacco user	886	1,227	72%
Tobacco use not documented	51	1,227	4%
Electronic nicotine delivery system (ENDS) use screening during the Audit period:			



Screened	11	1,227	1%
Not screened	1,216	1,227	99%
ENDS use status:			
Current ENDS user	4	1,227	0%
Not a current ENDS user	7	1,227	1%
ENDS use not documented	1,216	1,227	99%
Current user of both tobacco and ENDS	2	1,227	0%
LB	Jan 03, 2017	Page 4	
<p style="text-align: center;">IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT                      AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016)                      for 2013 DEMO HOSPITAL (CMBA)                      1227 patients were audited</p>			
-----			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
Diabetes Treatment			
Diet and exercise alone	1,215	1,227	99%
Diabetes meds currently prescribed, alone or in combination			
Insulin	5	1,227	0%
Sulfonylurea (glyburide, glipizide, others)	4	1,227	0%
Glinide (Prandin, Starlix)	0	1,227	0%
Metformin (Glucophage, others)	5	1,227	0%
Acarbose (Precose)/Miglitol (Glyset)	1	1,227	0%
Pioglitazone (Actos) or rosiglitazone (Avandia)	4	1,227	0%
GLP-1 med (Byetta, Bydureon, Victoza, Tanzeum, Trulicity)	2	1,227	0%
DPP4 inhibitor (Januvia, Onglyza, Tradjenta, Nesina)	1	1,227	0%
Amylin analog (Symlin)	0	1,227	0%
Bromocriptine (Cycloset)	0	1,227	0%
Colesevelam (Welchol)	0	1,227	0%
SGLT-2 Inhibitor (Invokana, Farxiga, Jardiance)	0	1,227	0%
Number of diabetes meds currently prescribed			
One med	6	1,227	0%
Two meds	2	1,227	0%
Three meds	4	1,227	0%
Four or more meds	0	1,227	0%

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IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT  
 AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016)  
 for 2013 DEMO HOSPITAL (CMBA)  
 1227 patients were audited

	# of Patients (Numerator)	# Considered (Denominator)	Percent
-----			
ACE Inhibitor or ARB Prescribed			
In patients with known hypertension***	6	993	1%
In patients age 18+ with CKD**	4	14	29%
Aspirin or Other Antiplatelet/Anticoagulant Therapy Prescribed			
In patients with diagnosed CVD	8	449	2%
Statin Prescribed			
Yes*	10	1,207	1%
Allergy, intolerance, or contraindication	20	1,227	2%
In patients with diagnosed CVD:			
Yes*	6	435	1%
Allergy, intolerance, or contraindication	14	449	3%
In patients aged 40-75:			
Yes*	6	873	1%
Allergy, intolerance, or contraindication	16	889	2%
In patients with diagnosed CVD and/or aged 40-75:			
Yes*	9	998	1%
Allergy, intolerance, or contraindication	19	1,017	2%
*Excludes patients with an allergy, intolerance, or contraindication.			
Exams			
Foot exam - comprehensive	12	1,227	1%
Eye exam - dilated or retinal imaging	12	1,227	1%
Dental exam	11	1,227	1%
Diabetes-Related Education			
Nutrition - by any provider (RD and/or other)	18	1,227	1%
Nutrition - by RD only	13	1,227	1%
Physical activity	9	1,227	1%
Other	9	1,227	1%
Any of above topics	21	1,227	2%
Immunizations			
Influenza vaccine during Audit period	11	1,227	1%
Refused - Influenza vaccine	1	1,227	0%
Pneumococcal vaccine - ever	825	1,227	67%
Refused - Pneumococcal	31	1,227	3%
Td/Tdap/DT - past 10 years	1,078	1,227	88%
Refused - Td/Tdap/DT	0	1,227	0%
Tdap - ever	1,066	1,227	87%
Refused - Tdap	0	1,227	0%

Hepatitis B 3-dose series complete - ever	750	1,216	62%
Refused - Hepatitis B	25	1,216	2%
Immune - Hepatitis B	11	1,227	1%

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IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT  
 AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016)  
 for 2013 DEMO HOSPITAL (CMBA)  
 1227 patients were audited

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Depression An Active Problem			
Yes	123	1,227	10%
No	1,104	1,227	90%
In patients without active depression, screened for depression during the audit period:			
Screened	24	1,104	2%
Not screened	1,080	1,104	98%

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	10	1,227	1%
LDL <100 mg/dl	1	1,227	0%
LDL 100-129 mg/dl	4	1,227	0%
LDL 130-189 mg/dl	3	1,227	0%
LDL >=190	2	1,227	0%
Not tested or no valid result	1,217	1,227	99%
HDL cholesterol	9	1,227	1%
In females			
HDL <50 mg/dl	4	700	1%
HDL >=50 mg/dl	1	700	0%
Not tested or no valid result	695	700	99%
In males			
HDL <40 mg/dl	3	527	1%
HDL >=40 mg/dl	1	527	0%
Not tested or no valid result	523	527	99%
Triglycerides****	9	1,227	1%
TG <150 mg/dl	5	1,227	0%
TG 150-999 mg/dl	4	1,227	0%
TG >1000 mg/dl	0	1,227	0%
Not tested or no valid result	1,218	1,227	99%

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IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT  
 AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016)  
 for 2013 DEMO HOSPITAL (CMBA)

1227 patients were audited			
	# of Patients (Numerator)	# Considered (Denominator)	Percent
<b>Kidney Evaluation</b>			
eGFR to assess kidney function (In age 18 and above)	19	1,189	2%
eGFR >= 60 ml/min	10	1,189	1%
eGFR 30-59 ml/min	4	1,189	0%
eGFR 15-29 ml/min	2	1,189	0%
eGFR < 15 ml/min	3	1,189	0%
eGFR Not tested or no valid result	1,170	1,189	98%
<b>Urine Albumin:Creatinine Ratio (UACR) to assess kidney damage</b>			
Yes	13	1,227	1%
No	1,214	1,227	99%
<b>In patients with UACR:</b>			
Urine albumin excretion - Normal <30 mg/g	4	13	31%
Urine albumin excretion - Increased			
30-300 mg/g	5	13	38%
>300 mg/g	4	13	31%
In patients age 18 and above, eGFR and UACR done	10	1,189	1%
<b>Tuberculosis Status</b>			
TB Test done (skin or blood)	727	1,227	59%
If test done, skin test	719	727	99%
If test done, blood test	8	727	1%
If TB test done, positive result	79	727	11%
If positive TB test, treatment completed	3	79	4%
If negative TB test, test done after DM diagnosis	425	646	66%
<b>Combined Outcome Measures</b>			
Patients age >= 40 meeting ALL of the following criteria: A1C <8.0, Statin* prescribed, and mean BP <140/<90	1	1,018	0%
*Excludes patients with a statin allergy, intolerance, or contraindication			
LB	Jan 03, 2017		Page 8
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT AUDIT REPORT FOR 2017 (Audit Period 01/01/2016 to 12/31/2016) for 2013 DEMO HOSPITAL (CMBA) 1227 patients were audited			
	# of Patients (Numerator)	# Considered (Denominator)	Percent

\*\* CKD: eGFR <60 or UACR =>30

\*\*\* Known hypertension: Has hypertension listed as an active problem, or three visits with a diagnosis of hypertension ever (prior to the end

```

of the Audit period).
**** For triglycerides: >150 is a marker of CVD risk, not a treatment
target; >1000 is a risk marker for pancreatitis.
***** Comorbid conditions counted are: active depression, current tobacco use,
severely obese (BMI 40 or higher), diagnosed hypertension, diagnosed CVD,
and CKD (eGFR<60 or UACR=>30

```

Figure 3-4: 2017 Cumulative Audit Report

### 3.3 Create an Audit Export (Data) File

A script for running the 2017 Diabetes Audit and creating an Audit Export (Data) file for submission via the WebAudit is shown in Figure 3-5

IHS recommends that the Annual Audit include the entire Active status category of Register patients unless a template must be created to eliminate patients on the register who are not active, do not have Type 1 or Type 2 diabetes, or otherwise do not meet the inclusion and exclusion criteria outlined in the Audit 2017 Instructions and in Section 2.1.

1. At the Diabetes Management Systems menu, Type **DA** and press Enter.
2. At the Diabetes QA Audit menu, Type **DM17** (2017 Diabetes Program Audit) and press Enter.
3. Select DM17, the option to Run 2017 Diabetes Program Audit.

The following sequence displays:

```

DM17  Run 2017 Diabetes Program Audit

          Select 2017 Diabetes Program Audit Option: DM17  Run 2017 Diabetes
Program Audit

In order for the 2017 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
LABORATORY TEST taxonomy [BGP CREATINE KINASE TAX] contains a panel test: SQL C
KMB 5030 and should not.
DRUG taxonomy [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

          ASSESSMENT OF DIABETES CARE, 2017

          PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DEMO HOSPITAL

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

```

Enter the Audit Date: 12/31/16 (DEC 31, 2016)

Select one of the following:

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

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

Enter the Name of the Register: IHS DEMO HOSPITAL

Do you want to select register patients with a particular status? Y// ES

Which status: A// ACTIVE

There are 873 patients in the IHS DEMO HOSPITAL REGISTER register with a status of A.

You have selected a register or template/cohort of patients.

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

Limit the audit to a particular primary care provider ? N// O

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

Select one of the following:

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

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

Select one of the following:

I	Include Pregnant Patients
E	Exclude Pregnant Patients

Select whether to include or exclude pregnant patients in the audit: E// xclude Pregnant Patients

okay, hold on...this may take a few minutes..

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

There are 861 patients selected so far to be used in the audit.

Select one of the following:

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

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

Select one of the following:

```

1      Print Individual Reports
2      Create AUDIT EXPORT file
3      Cumulative Audit Only
4      Both Individual and Cumulative Audits
5      SDPI Key Measures Report (2016 Version)
6      SDPI Key Measures Report (2017 Version)

Enter Print option: 1// 2  Create AUDIT EXPORT file

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

Enter the name of the FILE to be Created (3-20 characters): DKR 2017 AUDIT

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

Enter the name of the FILE to be Created (3-20 characters): DKR 2017 AUDIT

I am going to create a file called dkr 2017 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 2017 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 2017 audit.txt
are in a format readable by Excel. For a definition of the format
please see your user manual.

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

      Select one of the following:

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

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

Won't you queue this ? Y// ES

Requested Start Time: NOW//T@2000

```

Figure 3-5: Creating an Audit Export file

Make a note of the file name and notify the RPMS site manager that a Diabetes Audit has been run. Provide the name of the file and the directory where the file is stored. The site manager will place the file in a shared folder on the server where it can be accessed and uploaded to the WebAudit.

### 3.4 Run an SDPI Report

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

1. At the Diabetes Management Systems menu, Type **DA** and press Enter.
2. Type **DM17** (2017 Diabetes Program Audit) and press Enter.
3. Select **DM17** (Run 2017 Diabetes Program Audit) and follow the prompts as shown in the script in Figure 3-6 to generate an SDPI Key Measures Report.

```
Select 2017 Diabetes Program Audit Option: DM17 Run 2017 Diabetes Program Audit

In order for the 2017 DM AUDIT Report to find all necessary data, several
taxonomies must be established. The following taxonomies are missing or have
no entries:
LABORATORY TEST taxonomy [BGP CREATINE KINASE TAX] contains a panel test: SQL C
KMB 5030 and should not.
DRUG taxonomy [DM AUDIT AMYLIN ANALOGUES] has no entries
DRUG taxonomy [DM AUDIT COLESEVELAM DRUGS] has no entries
DRUG taxonomy [DM AUDIT INCRETIN MIMETIC] has no entries
DRUG taxonomy [DM AUDIT SGLT-2 INHIBITOR DRUG] has no entries
DRUG taxonomy [DM AUDIT SULFONYLUREA-LIKE] has no entries
End of taxonomy check. HIT RETURN:

                ASSESSMENT OF DIABETES CARE, 2017

                PCC DIABETES AUDIT

Enter the Official Diabetes Register: IHS DEMO HOSPITAL

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

Enter the Audit Date: 12/31/16 (DEC 31, 2016)

    Select one of the following:

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

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

Enter the Name of the Register: IHS DEMO HOSPITAL
Do you want to select register patients with a particular status? Y// ES
Which status: A// ACTIVE

There are 873 patients in the IHS DEMO HOSPITAL REGISTER register with a status of
A.

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

Limit the audit to a particular primary care provider ? N// O
```



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

Select one of the following:

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

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

Select one of the following:

- I Include Pregnant Patients
- E Exclude Pregnant Patients

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

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

There are 861 patients selected so far to be used in the audit.

Select one of the following:

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

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

Select one of the following:

- 1 Print Individual Reports
- 2 Create AUDIT EXPORT file
- 3 Cumulative Audit Only
- 4 Both Individual and Cumulative Audits
- 5 SDPI Key Measures Report (2015 Version)
- 6 SDPI Key Measures Report (2016 Version)

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

Select one of the following:

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

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

Select one of the following:

- P PRINT Output
- B BROWSE Output on Screen

Do you wish to: P//

&lt;BROWSE or PRINT as desired&gt;

The SDPI Key Measures Report [2016 Version] is displayed in Figure 3-6. Note that a new SDPI Report for 2017 has not been developed.

LAB		Jan 03, 2017		Page 1
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT SDPI Required Key Measures Report [2016 Version] (01/01/2016 to 12/31/2016) Facility: 2013 DEMO HOSPITAL (CMBA)				
Data for 1227 patients/participants were used for this report*				
		# of Patients (Numerator)	# Considered (Denominator)	Percent
Aspirin or Other Antiplatelet Therapy in Cardiovascular Disease				
In patients with diagnosed CVD, aspirin or other antiplatelet/anticoagulant therapy prescribed		8	449	2%
Blood Pressure Control				
Mean blood prssure <140/<90 mmHg (Mean of last 2, or 3 if available)		15	1,227	1%
Chronic Kidney Disease Screening and Monitoring				
In age 18+, both UACR & eGFR done		10	1,189	1%
Dental Exam				
Dental exam received		11	1,227	1%
Depression Screening				
In patients without active depression, screened for depression		24	1,104	2%
Diabetes-related Education				
Any diabetes topic (nutrition, physical activity, or other)		21	1,227	2%
Eye Exam - Retinopathy Screening				
Eye exam - dilated or retinal imaging		12	1,227	1%
Foot Exam				
Foot exam - comprehensive		12	1,227	1%
Glycemic Control				
A1C <8.0%		3	1,227	0%
Immunizations: Hepatitis B				
Hepatitis B 3-dose series complete - ever		750	1,227	61%
Immunizations: Influenza				
Influenza vaccine during report period		11	1,227	1%
Immunizations: Pneumococcal				
Pneumococcal vaccine - ever		825	1,227	67%

LAB	Jan 03, 2017	Page 2		
IHS DIABETES CARE AND OUTCOMES AUDIT REPORT - RPMS AUDIT SDPI Required Key Measures Report [2016 Version] (01/01/2016 to 12/31/2016) Facility: 2013 DEMO HOSPITAL (CMBA)				
Data for 1227 patients/participants were used for this report*				
		# of Patients (Numerator)	# Considered (Denominator)	Percent
Immunizations: Tetanus/Diphtheria				
Tetanus/diphtheria - past 10 years	1,078	1,227	88%	
Lipid Management in Cardiovascular Disease				
In patients aged 40-75 and/or with diagnosed CVD, statin prescribed	587	1,010	58%	
Nutrition Education				
Nutrition education - by any provider	18	1,227	1%	
Physical activity education				
Physical activity education	9	1,227	1%	
Tobacco Use Screening				
Screened for tobacco use during report period	34	1,227	3%	
Tuberculosis Screening				
TB test done (skin or blood)	727	1,227	59%	

Figure 3-6: SDPI Key Measures Report

## 4.0 Upload the Export (Data) File to WebAudit

Upload the completed data file to the WebAudit for data cleaning, report generation, and submission of data to the IHS Division of Diabetes. For further information and WebAudit frequently asked questions, visit the IHS Division of Diabetes Audit web site at: <https://www.ihs.gov/diabetes/audit/>

To upload the file:

1. Request and activate a WebAudit account if you do not already have one.
2. Log in to the WebAudit.
3. Select **Enter Facility Info** from the left-hand menu or from the Main Menu select **Facility Administration** then Enter Facility Information.
4. Enter the number of patients in the diabetes registry that meet the inclusion and exclusion criteria found in the 2017 Audit Instructions and Section 2.1.
5. Click **Save**.
6. Select **Upload Data** from the left-hand menu or from the Main Menu select **Data Processing** then **Upload Data**.
7. Select an Audit Type. For the Annual Audit submitted to the IHS Division of Diabetes, you will select **Annual Audit**. For all other audits, select **Interim Audit**.
8. Individuals with access to multiple facilities will need to select a Facility.
9. Click **Browse** and navigate to the data file, then click **Open**.
10. When the data file has been selected, click **Upload File**.
  - a. If the upload of the data file is successful, you will receive a message on the screen telling you that the file was successfully uploaded.
  - b. If the upload is unsuccessful, you will receive an on-screen message telling you that the file upload attempt was unsuccessful, with a brief description of the problem.
11. Once the file has been successfully uploaded, proceed with checking the data quality and generating reports, as described in the Audit 2017 Instructions ([https://www.ihs.gov/diabetes/includes/themes/newihstheme/display\\_objects/documents/audit/Audit\\_2017\\_Instructions.pdf](https://www.ihs.gov/diabetes/includes/themes/newihstheme/display_objects/documents/audit/Audit_2017_Instructions.pdf)).



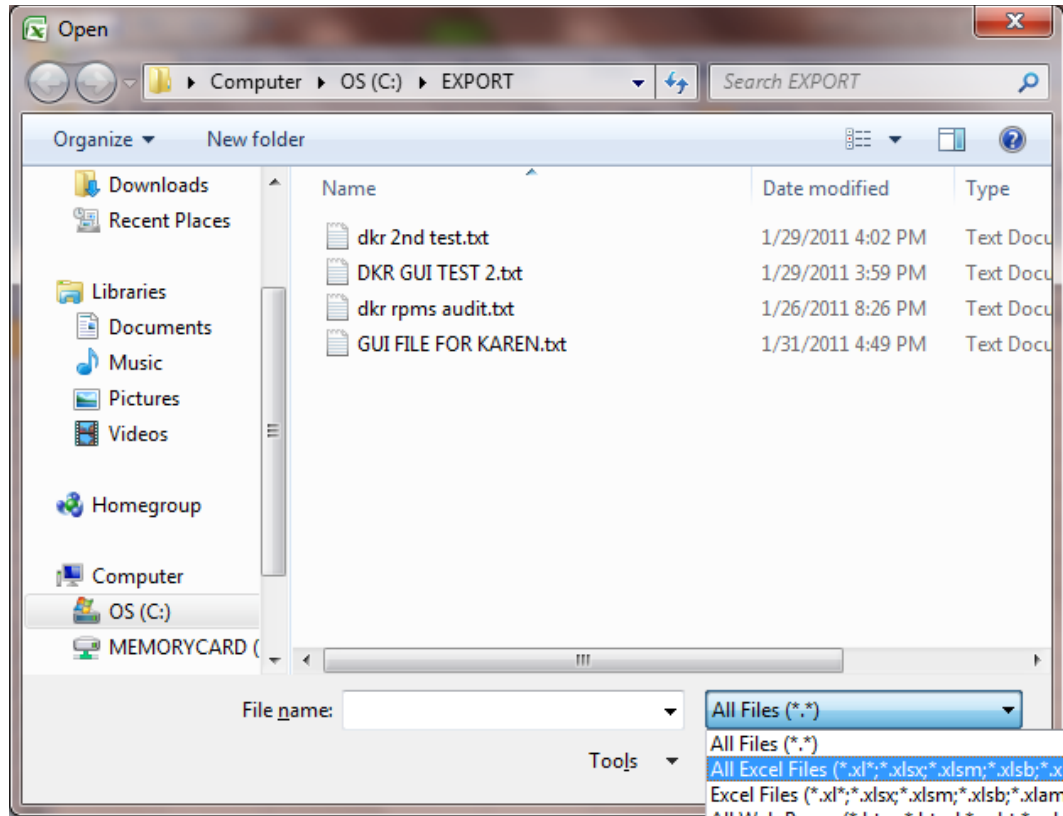


Figure 5-2: Excel Open dialog

3. Change the file type from All Excel Files to **All Files** in the list (Figure 5-2). This is necessary to see the Audit Export file name, which is not in an Excel format at this time.
4. Select the Audit Export file to be imported.
5. Click **Open**. The **Text Import Wizard dialog, Step 1 of 3** (Figure 5-3) displays.

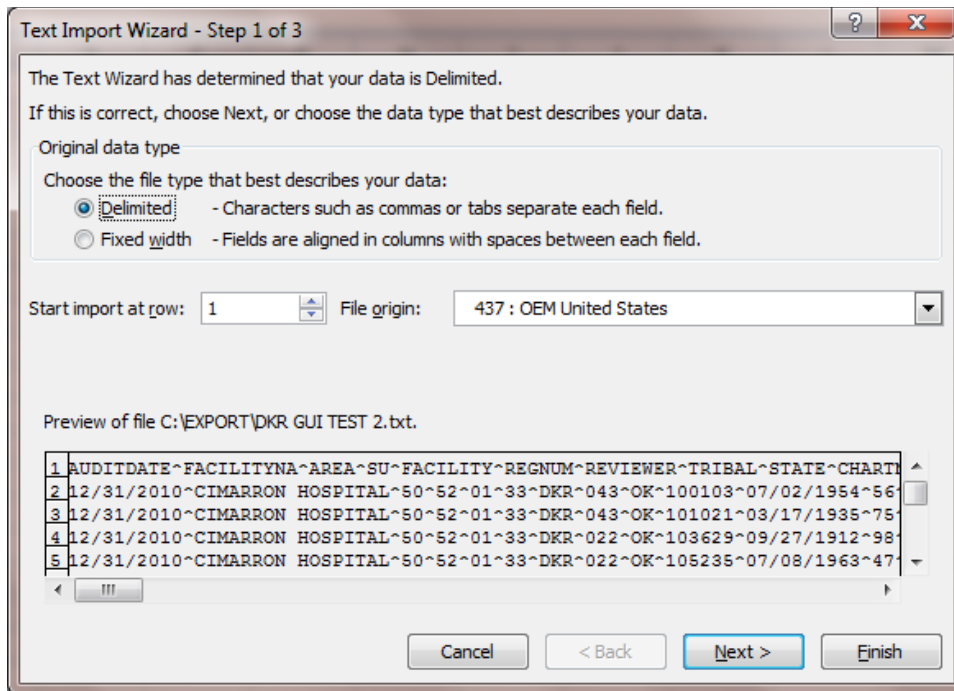


Figure 5-3: Text Import Wizard dialog, Step 1 of 3

6. If the Text Import Wizard does not correctly identify that this is a delimited file, select Delimited.
7. Click Next. The **Text Import Wizard dialog, Step 2 of 3** (Figure 5-4) displays.

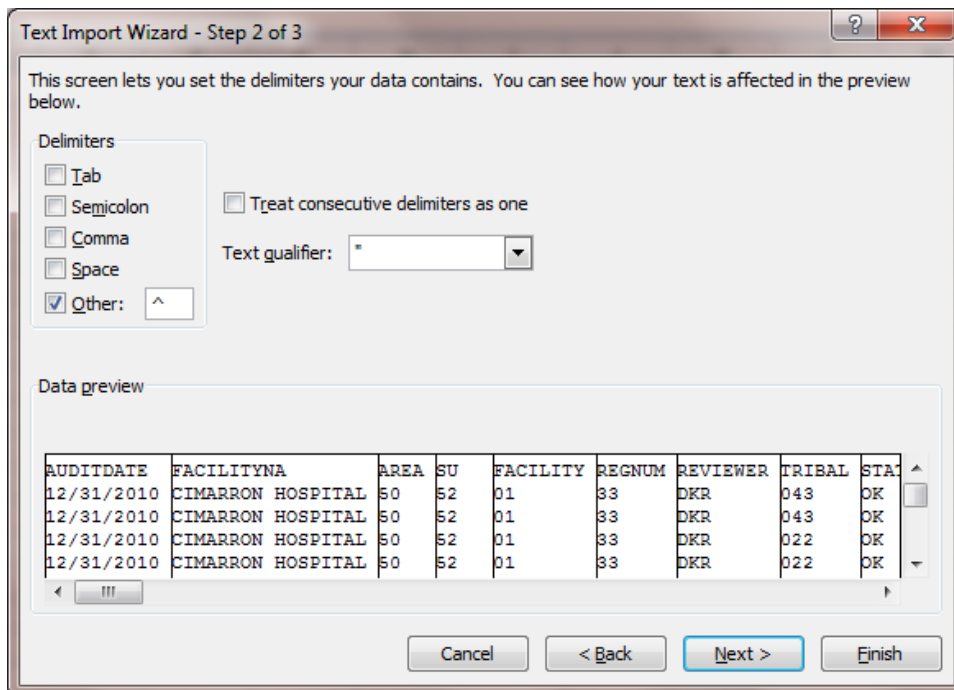


Figure 5-4: Text Import Wizard dialog, Step 2 of 3

8. Under Delimiters, select **Other** and type a caret (^) in the field to the right of the Other choice.
9. Deselect Tab.
10. Click **Next**. Vertical lines will display between the columns of data.
11. Click **Finish** to complete the import to Excel.

Columns can be expanded and data sorted as desired. To save the file in Excel format:

12. Select **Save As**.
13. Save as type Excel. Save the Excel file in a secure folder as identified by the information technology staff at your facility.

<p><b>Note:</b> The Excel file cannot be uploaded to the WebAudit; the delimited text file must be uploaded.</p>
--



## 6.0 Identify Patients with Errors on the Audit Export File

Since Medical Record Numbers and full Dates of Birth are no longer included in the Audit Export file or uploaded to the WebAudit, it may be somewhat challenging to identify patients whose records need review or correction.

To identify such records after data has been uploaded to the WebAudit, use the menu option in the WebAudit to do a Data Quality Check.

1. Of the several reports, available to confirm data uploaded, choose the option, **Annual Audit Potential Data Entry Errors Details**, as shown in Figure 6-1.

The screenshot shows the 'Diabetes WebAudit Data Quality Check Tool for Audit 2017' interface. On the left is a sidebar menu with categories: WebAudit Main Menu, Data Processing (Data Entry, Upload Data, View/Edit Data, Data Quality Check), Reports (Data Download, Audit Reports, Trends Graphs, Means Graphs), Facility Administration (Enter Facility Info, Lock Facility Data), Audit Resources 2016 (Instructions, Form, Manual Checklist, Electronic Checklist, Edit WebAudit Account Info), DDTTP Data Systems, and CONTACT US (DDTPWebAuditAdmins@ihs.gov). The main content area has a breadcrumb 'resources : audit : data quality check' and a title 'Diabetes WebAudit Data Quality Check Tool for Audit 2017'. It contains two dropdown menus: 'Select an Audit Type' (set to 'Annual Audit') and 'Select a Facility' (set to 'Test01'). Below these, it shows 'Facility: Test01' and '2017 Annual Audit'. There are four report options with checkboxes: 'Annual Audit Potential Data Errors Summary', 'Annual Audit Potential Data Errors Details' (checked), 'Annual Audit Upload Data Errors Summary', and 'Annual Audit Upload Data Errors Details'. A 'View Report(s)' button is below. The bottom section is titled 'List of Audit Potential Data Errors for 2017 Facility: Test01 2017 Annual Audit' and states 'There are 1227 records for this facility. 1269 Potential Data Errors were found. Table sorted by Field Name ascending.' It includes links for 'Download PDF Version' and 'Download Excel Version'. A table with columns: Edit, WebAudit ID, Yr/Mo of Birth, Sex, Date of Diagnosis, Field Name, Value, Error Type, Error Message, and Comments is shown. The first row has a blue checkmark icon, WebAudit ID 1507, Yr/Mo of Birth 1945 / 2, Sex F, Date of Diagnosis 07/05/1993, Field Name A1C, Value 53.1, Error Type Potential, and Error Message Value is ...

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

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

- a. The Yr/Mo of Birth, Sex, and Date of Diagnosis may all be used to identify the patient either via iCARE or using the GEN Report option in the Diabetes Management System.
- b. Once the patient is identified, the record may either be edited directly in the WebAudit using the View/Edit Data tool or may be corrected in RPMS and a new Audit Export file generated and uploaded.

In Figure 6-2, the first patient with a WebAudit ID of 1507 has an unlikely value recorded for A1C which should be investigated and corrected as necessary.

There are 1227 records for this facility. 1269 Potential Data Errors were found. Table sorted by Field Name ascending.									
<a href="#">Download PDF Version</a> <a href="#">Download Excel Version</a>									
Edit	WebAudit ID	Yr/Mo of Birth	Sex	Date of Diagnosis	Field Name	Value	Error Type	Error Message	Comments
	1507	1945 / 2	F	07/05/1993	A1C	53.1	Potential	Value is unusually high (greater than 18). Check this value and change if necessary.	<a href="#">Add comment</a>
	1771	1961 / 7	F	01/25/2010	Creatinine	30.0	Potential	Value is unusually high (greater than 15). Check this value and change if necessary.	<a href="#">Add comment</a>
	2108	1989 / 7	F		Creatinine	23.0	Potential	Value is unusually high (greater than 15). Check this value and change if necessary.	<a href="#">Add comment</a>
	2222	1934 / 12	F		Creatinine	23.0	Potential	Value is unusually high (greater than 15). Check this value and change if necessary.	<a href="#">Add comment</a>
	1197	2010 / 8	F	11/20/1991	Date of Diabetes Diagnosis	11/20/1991	Definite	Date of Diagnosis is earlier than Date of Birth. You must check both dates and change one or both dates.	<a href="#">Add comment</a>

Figure 6-2: Displaying Data Entry Detail Report

Two different options are shown using the GEN Report to assist in identifying the patient.

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

## 6.1 Identify patients by Date of Diagnosis

1. Type **RP** at the Diabetes Management System (as shown below in Figure 6-3) main menu and press Enter.
2. Type **RR** and press Enter.
3. Type **GEN** and press Enter.

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

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

4. At the “Do you want to use a PREVIOUSLY DEFINED REPORT?” prompt, press Enter to accept the default (bypass the option to use a previously defined report).

REGISTER: IHS DIABETES      USER: RUSSELL,DOROTHY

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

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

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

5. At the “Select Patients based on which of the above” prompt, type **33** (Date of Onset) and press Enter.

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

6. At the “Enter beginning Date of Onset for Search” prompt, type the date of diagnosis of the patient and press Enter.

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

7. At the “Enter ending Date of Onset for Search” prompt, type the date of diagnosis of the patient (the original date entered will display as a default date) and press Enter.

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

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

8. At the “Would you like to select additional PATIENT criteria?” prompt, press Enter to select the default (No).

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

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

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

```
At the "Choose Type of Report" prompt, press Enter to select the default (D Detailed Patient Listing).
```

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

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

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

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

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

10. Press Enter to accept the default column width for each data item to be printed.

```
PRINT Items Selected:
Patient Name - column width 20
Patient Chart # - column width 12
```

```

Patient Sex - column width 6
Patient DOB - column width 12
Date of Onset - column width 12
Total Report width (including column margins - 2 spaces): 72

```

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

11. At the “Would you like to select additional PRINT criteria?” prompt, press Enter to accept the default (No additional Print criteria).

```

REGISTER:  IHS DIABETES      USER:  RUSSELL,DOROTHY

```

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

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

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

12. At the “Sort Patients by which of the above” prompt, press Enter to accept the default (Patient Name).

```

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

```

13. At the “Would you like a custom title for this report?” prompt, press Enter to accept the default (no custom title).

```

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

```

14. At the “Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use?” prompt, press Enter to accept the default (No).

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

#### REPORT SUMMARY

```

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

```

```

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

```

```

Date of Onset - column width 12

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

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

DEVICE: HOME//
          CASE MANAGEMENT PATIENT REGISTER LISTING

REPORT REQUESTED BY: RUSSELL,DOROTHY

REGISTER: IHS DIABETES

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

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

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

Patients will be SORTED by: Patient Name

Hit return to continue...:
          CASE MANAGEMENT PATIENT LISTING                               Page 1
          IHS DIABETES REGISTER

PATIENT NAME          HRN          SEX          DOB          DATE ONSET
-----
BRANTLEY,LISA MILLER  WW-196226    FEMALE    05/08/1958    FEB 26, 2004
PRIGMORE,GLENDOLYN   WW-104534    FEMALE    02/24/1943    FEB 26, 2004

Total Patients 2
End of report.

```

Figure 6-3: Diabetes Management System

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

## 6.2 Identify Patients by Age and Sex

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

1. Type **RP** at the Diabetes Management System main menu and press Enter.
2. Type **RR** and press Enter.

3. Type **GEN** and press Enter.

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

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

## 4. At the “Do you want to use a PREVIOUSLY DEFINED REPORT?” prompt, press Enter to accept the default (bypass the option to use a previously defined report).

REGISTER: IHS DIABETES USER: RUSSELL,DOROTHY

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

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

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

5. At the “Select Patients based on which of the above” prompt, type **2,5,20** (Patient Sex, Patient Age, Register Status) and press Enter.

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

## 6. At the “ENTER Patient Sex” prompt, type the patient’s gender and press Enter.

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

## 7. At the “Enter a Range of numbers” prompt, type the patient’s current age for both the beginning and ending age (e.g., 72-72) and press Enter.

20) Register Status Selection.  
ENTER Register Status: ACTIVE

8. At the “ENTER Register Status” prompt, type **ACTIVE** and press Enter.

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

9. At the “Would you like to select additional PATIENT criteria?” prompt, press Enter to select the default (No).

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

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

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

10. At the “Choose Type of Report” prompt, press Enter to select the default (D Detailed Patient Listing).

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

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

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

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

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

12. Press Enter to accept the default column width for each data item to be printed.

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



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

13. At the “Would you like to select additional PRINT criteria?” prompt, press Enter to accept the default (No additional Print criteria).

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

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

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

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

14. At the “Sort Patients by which of the above” prompt, press Enter to accept the default (Patient Name).

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

15. At the “Would you like a custom title for this report?” prompt, press Enter to accept the default (no custom title).

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

16. At the “Do you wish to SAVE this SEARCH/PRINT/SORT logic for future use?” prompt, press Enter to accept the default (No).

17. The patient(s) found by Date of Diagnosis should display on the report (Figure 6-4).

#### REPORT SUMMARY

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

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

```

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

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

DEVICE: HOME//
      CASE MANAGEMENT PATIENT REGISTER LISTING

REPORT REQUESTED BY: RUSSELL,DOROTHY

REGISTER: IHS DIABETES

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

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

Patients will be SORTED by: Patient Name

Hit return to continue....:
      CASE MANAGEMENT PATIENT LISTING
      IHS DIABETES REGISTER
      Page 1

PATIENT NAME      HRN      SEX      DOB      DATE ONSET
-----
DEE      WW-201786      FEMALE  05/08/1943      OCT 01, 2010
-----
                                         -----DEMO,LENNY

Total Patients 1

End of report.
    
```

Figure 6-4: Report Summary of Patients displaying Age, Sex, Date of Onset

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

## 7.0 Display 2017 Diabetes Audit Logic

The revised logic for the 2017 Diabetes Audit is provided under the menu option DAL in the DA Diabetes QA Audit menu as shown in Figure 7-1

1. At the Diabetes Management Systems menu, type **DA** and press Enter.
2. At the Diabetes QA Audit menu, type **DAL** (Display Audit Logic) and press Enter.
3. At the “Select DMS AUDIT ITEM DESCRIPTIONS AUDIT YEAR” prompt, type **2017** for the audit year and press Enter to display the item list

```

DM AUDIT ITEM DESCRIPTION      Jan 03, 2017 10:08:46          Page: 1 of 1
DM Logic Display

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

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

```

Figure 7-1: Displaying 2017 Audit Logic

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

Appendix A: Shows a complete listing of the logic for all audit items.

## 8.0 Audit Resources

DMS v2.0 User Manual, (bdm\_020u.pdf).

Complete Diabetes Audit 2017 information can be found on the IHS Division of Diabetes website (Figure 8-1): <https://www.ihs.gov/diabetes/audit/>



Figure 8-1: IHS Diabetes Care and Outcomes Audit website

IHS Standards of Care and Clinical Practice Recommendations: Type 2 Diabetes are at: <https://www.ihs.gov/diabetes/clinician-resources/soc/>

## 9.0 Diabetes Patient Care Summary

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

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

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

```

***** CONFIDENTIAL PATIENT INFORMATION [LAB] Jan 03, 2017 *****
DIABETES PATIENT CARE SUMMARY          Report Date: 01/03/2017

Patient: LITTLE,MARY ANN                HRN: 100430
Age: 58 (DOB 02/24/1958)                Sex: FEMALE
CLASS/BEN: INDIAN/ALASKA NATIVE        Designated PCP: CABALLERO,GEORGE LYON

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

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

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

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

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

```

```

Yes 10/10/2016 ROSUVASTATIN CA 5MG TAB

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

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

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

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

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

Creatinine: 1.2 mg/dL 10/10/2016 _CREATININE (R)
***** CONFIDENTIAL PATIENT INFORMATION [LAB] Jan 03, 2017 *****

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

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

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

LITTLE,MARY ANN DOB: 2/24/1958 Chart #TST 100430

```

Figure 9-1: Diabetes Patient Care Summary sample

## 10.0 Visual DMS – 2017

### 10.1 Installation

In order to use Visual DMS for Diabetes Management System v2.0 p10, you must have the correct client installed. The process of installing the client has been modified so that the person installing the software may select a default directory where temporary files for displaying health summaries, audits, and other reports may be stored. This will prevent errors that some users have experienced in the past where the default directory was not a shared directory.

Selection of a default directory requires identification of a shared directory where users of the Visual DMS software will have read and write capability but which also meets the facility requirements for storing protected health information.

The steps for installing Visual DMS follow.

1. Find the folder where the Visual DMS files, `bdm_0200.10.msi` and `bdm_0200.10.exe` are located (Figure 10-1).

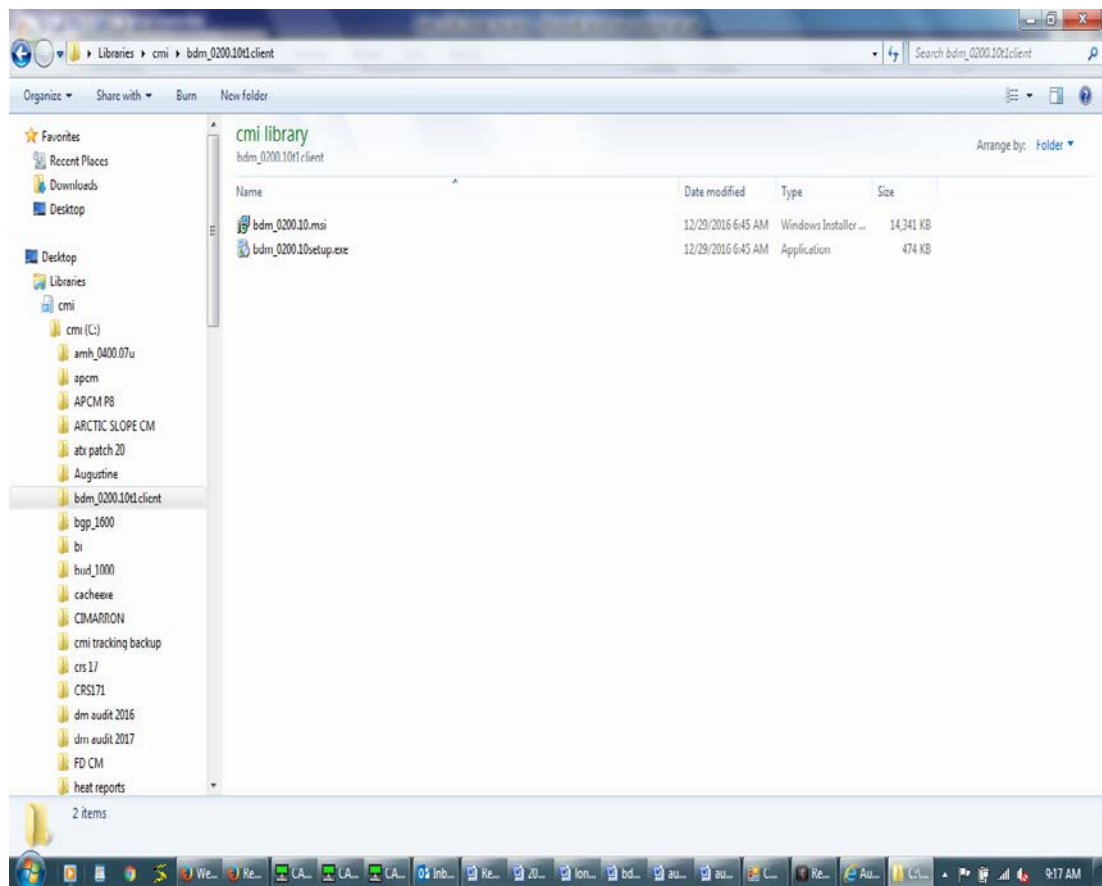


Figure 10-1: Visual DMS files

2. Double-click the **bdm\_0200.10.exe** file to launch the Windows Installer
3. You may be asked to confirm that you want to run this install, if so click **Run** as shown in Figure 10-2.

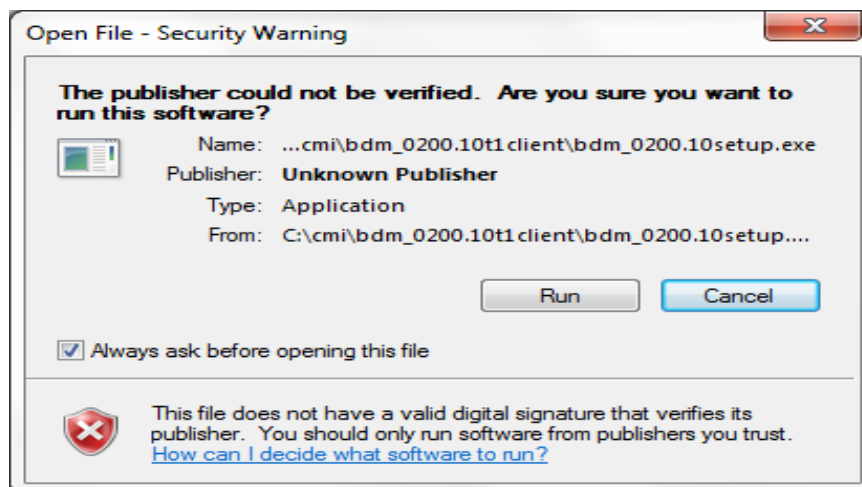


Figure 10-2: Confirmation Picture that you want to install software Select Run

4. You may be asked to accept the terms of the Crystal Reports Installation, if so click **Accept** as Shown in Figure 10-3.

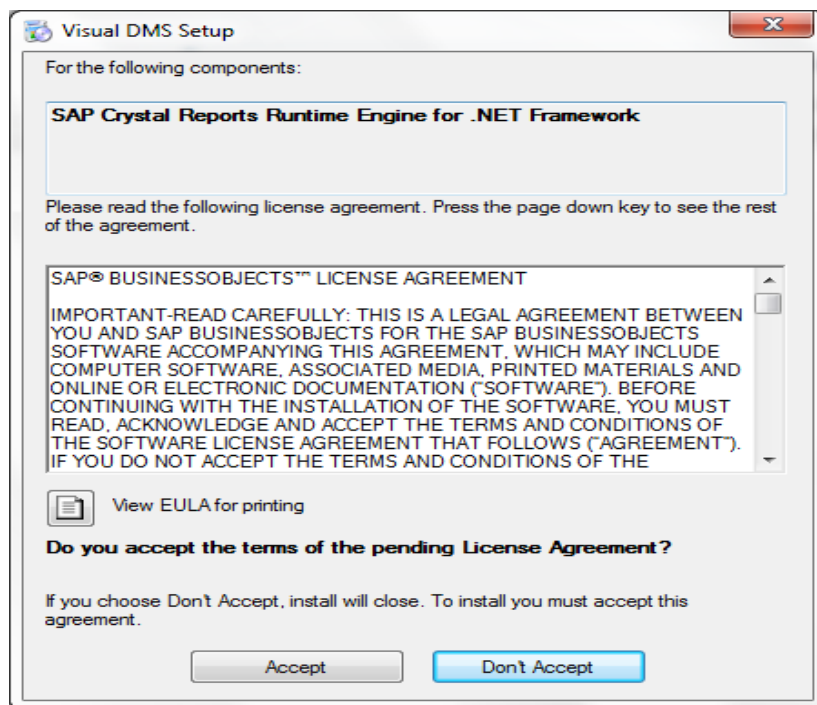


Figure 10-3 : Crystal Repots Installation Accept Terms

5. At this point Crystal report files will be downloaded and installed; if asked to run the program click **Run**.



6. You will now be asked to click **Next** to install Visual DMS. Click **Next** as shown in Figure 10-4.

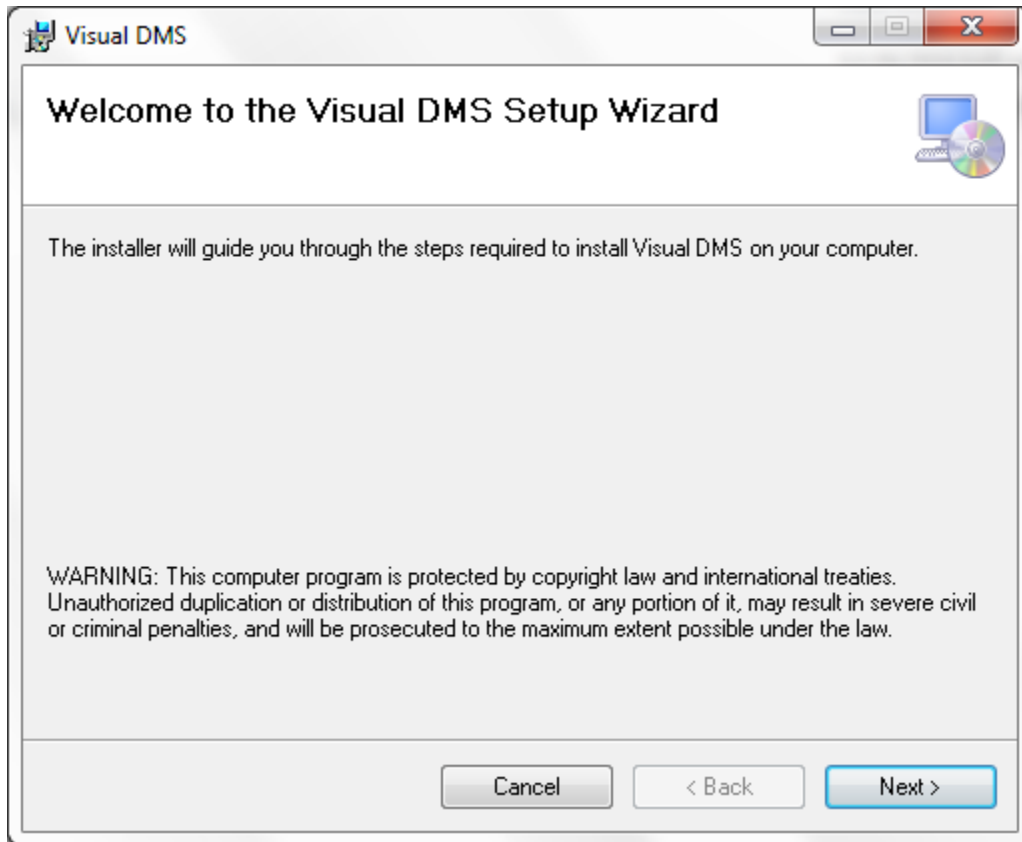


Figure 10-4: Visual DMS Window Select Next

7. Select the **Everyone** radio button as shown in Figure 10-5.

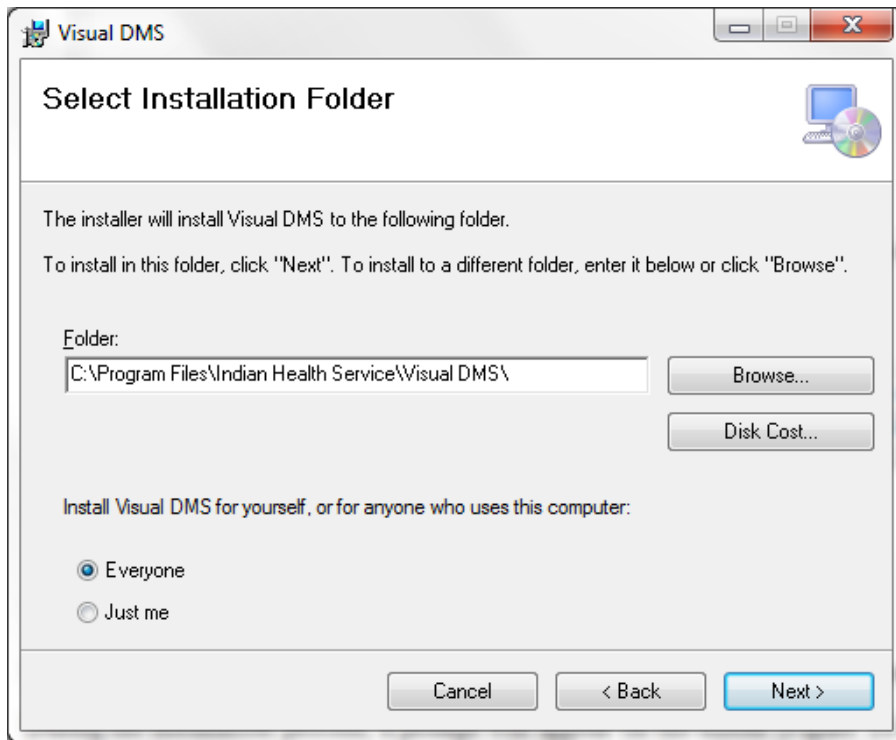


Figure 10-5: Select Everyone and Click Next to continue the installation of Visual DMS

8. Click **Next** and follow the prompts for a usual Windows installation process (Figure 10-6).

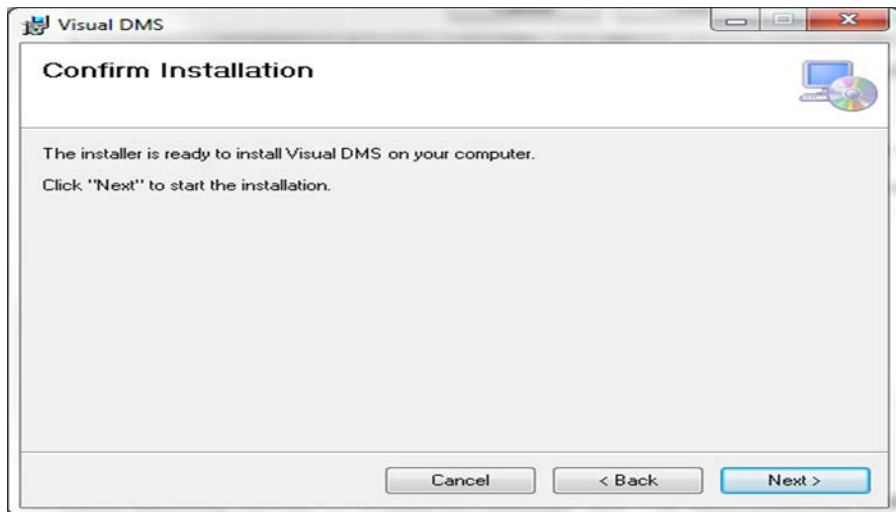


Figure 10-6: Click Next to confirm installation

During the installation process, a prompt may appear on the screen (Figure 10-7) to show a directory where temporary files for Visual DMS reports like health summaries, audit reports, SDPI reports, etc., will be stored.

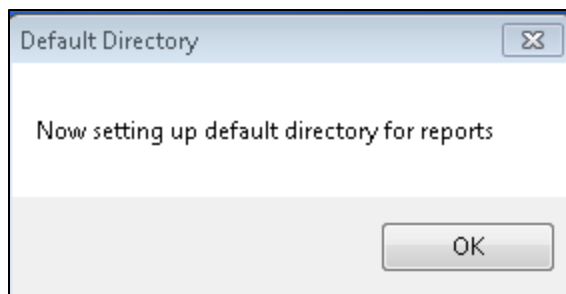


Figure 10-7: Default Directory dialog

A shared directory should be identified where the user will have both read and write capabilities but which will meet HIPAA standards for storing patient health information.

9. If this is the first time Visual DMS has been installed, the following steps must be completed to ensure that users have access to the application:
  - a. For each user of Visual DMS, assign option BDMGRPC as a secondary menu option with a synonym of **BDMG**.
  - b. For each user of Visual DMS, assign BMXRPC as a secondary menu option with a synonym of **BMX**.
  - c. Identify the server for the RPMS application for the Diabetes Management System.

**Note:** The version of the Visual DMS client must match the patch version of the Diabetes Management System to function correctly.

- d. Select a port that has been configured in BMX and assign that port when setting up the connection. Be sure that the BMX Monitors are running or Visual DMS will not launch.
- e. Test the connection and if it is OK, save the connection.
- f. Double click the Visual DMS desktop icon to display the correct patch 10. Version of the Visual DMS client (Figure 10-8).



Figure 10-8: Visual DMS v2.0 p10

- g. A logon dialog like (Figure 10-9) is displayed.

Figure 10-9: Logging into Visual DMS

- h. Log on using established RPMS/EHR user Access and Verify Codes. After logging on to Visual DMS, the user may be prompted to select a facility and Register.
- i. Click the **About** toolbar option to display the client version currently installed on the workstation. To successfully use p10 which includes the 2017 Diabetes Audit, the version should be 2.0.10.1 (Figure 10-10).

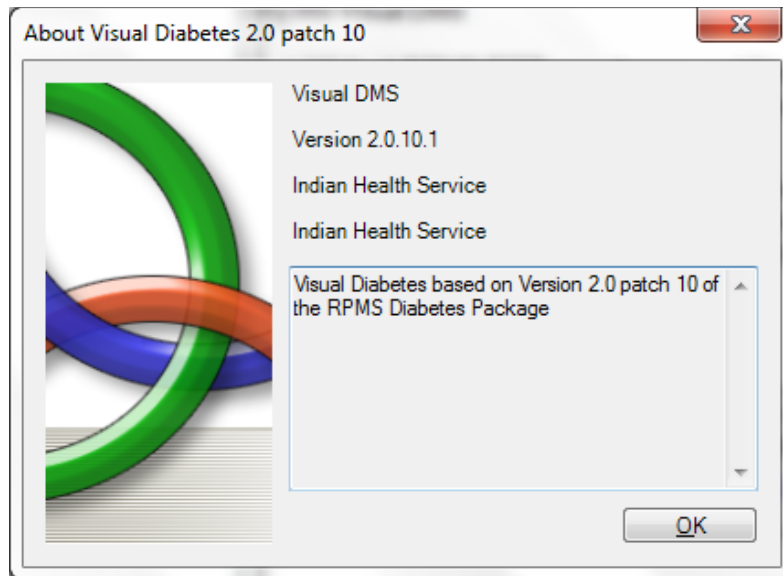


Figure 10-10: Version 2.10.5 of Visual DMS 10.1

**Note:** Full instructions are provided in the installation guide for the Diabetes Management System v2.0, released in 2007. ([https://www.ihs.gov/RPMS/PackageDocs/BDM/bdm\\_020i.pdf](https://www.ihs.gov/RPMS/PackageDocs/BDM/bdm_020i.pdf)).

## 10.2 Changes

The following changes have been implemented with Visual DMS in DMS p10. Refer to the *Visual DMS User Manual* (bdm\_0200) for full documentation on how to use this application.

- Added options for the 2017 Diabetes Audit
- Report outputs have been moved to Crystal Reports to negate the need to have Microsoft Office installed.
- SAVE and CLOSE buttons have been added to all windows so user no longer needs to X out of a window
- Diabetes QA Audit is now Diabetes Audit.
- The term exercise has been replaced by Physical Activity throughout the application.
- The term Pneumovax has been replaced by Pneumococcal throughout the application.
- Added the Electronic Nicotine Delivery System entry to Update Patient Data.
- Added Units to the entry of lab tests in Update Patient Data
- Added a fix so you can go from one patient to another without exiting the system.

## Appendix A: 2017 Diabetes Audit Logic

**Note:** Audit Logic uses several taxonomies for Diagnosis codes, CPT codes, LOINC codes, SNOMED codes, and Medications that are used by other national RPMS programs. The contents of those taxonomies may be reviewed by using the report option, VTAX View/Print Any DM Audit Taxonomy, found in the Reports menu of the Diabetes Management System. The contents of site-populated taxonomies may be viewed or printed using the menu option TU17 Update/Review Taxonomies for 2017 DM Audit under the DM17 menu option of the Diabetes Audit menu.

### DM AUDIT LOGIC DESCRIPTIONS

---

#### AUDIT DATE

This is the ending date of the audit period. The user supplies this date. It is used as the ending date to calculate the time range when looking for values. For example, if the audit date is December 31, 2016 then data is examined during the year prior to this audit date (January 1, 2016 through December 31, 2016).

#### FACILITY NAME

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

#### REVIEWER INITIALS

Initials of the person running the audit. A maximum of 3 initials may be used. This information is taken from the File 200 (New Person) entry for the user.

#### STATE OF RESIDENCE

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

#### CHART NUMBER

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

Note: This data item is not exported to the web audit.

#### DATE OF BIRTH

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

For the Web audit export only the month and year are exported. The age of the patient as of the audit date is also exported.

## SEX

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

## PRIMARY CARE PROVIDER

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

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

## DATE OF DIABETES DIAGNOSIS

The diabetes onset date. This date is used in the calculation of the duration of diabetes. Three different dates are displayed to the user:

The date of onset from the Diabetes Register.

The earliest date of onset from all diabetes related problems on the problem list. The problem list is scanned for all problems in the ICD diagnosis code ranges defined in the SURVEILLANCE DIABETES taxonomy.

The first recorded diagnosis (POV) of diabetes in PCC. ICD codes: Taxonomy SURVEILLANCE DIABETES.

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

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

## DM TYPE

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

1. If the diagnosis documented in the Diabetes Register is NIDDM the type is assumed to be Type 2.
2. If the diagnosis documented in the Diabetes Register is "TYPE II" the type is assumed to be Type 2.
3. If the diagnosis documented in the Diabetes Register contains a '2' the type is assumed to be Type 2.
4. If the diagnosis documented in the Diabetes Register contains IDDM the type is assumed to be type 1.
5. If the diagnosis documented in the Diabetes Register is "Type I" the type is assumed to be Type 1.
6. If the diagnosis documented in the Diabetes Register contains a '1' the type is assumed to be Type 1.
7. If no diagnosis is documented in the Diabetes Register, or it does not contain any of the above strings the problem list is then scanned. If any diabetes diagnosis on the problem list [SURVEILLANCE DIABETES] taxonomy is also in the DM AUDIT TYPE II DXS taxonomy then the type is assumed to be Type 2.
8. If any diabetes diagnosis on the problem list is also in the DM AUDIT TYPE I DXS taxonomy then the type is assumed to be Type 1.
9. If no diagnosis exists on the problem list or in the diabetes register, then the last PCC purpose of visit related to diabetes is reviewed. If the diagnosis is contained in the DM AUDIT TYPETYPE II DXS taxonomy the typeType is assumed to be TypeType II, if it is contained in the DM

AUDIT TYPE I DXS taxonomy it is assumed to be Type I.  
 10. If type is not determined by any of the above, type is assumed to be Type 2 for the Audit (Data) Export File and Cumulative Audit. For the Individual Audit and Diabetes Health Summary, "Not Documented" is displayed.

#### TOBACCO - SCREENED DURING AUDIT PERIOD

If any of the following items is documented during the audit period then a value of 1 - Yes is assigned. Otherwise, a value of 2 - No is assigned.

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

#### TOBACCO USE STATUS

The last documented of the following items is found:

1. Health Factors in the categories TOBACCO (SMOKING) and TOBACCO (SMOKELESS - CHEWING/DIP) that relate to the patient's tobacco use status. As of the DM Audit 2016 these are the health factors available: (the ones with one asterisk (\*) indicate a current user, those with two asterisks (\*\*) are non-tobacco users, the others are put in the "Not Documented" category).

- \*CURRENT SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
- \*\*PREVIOUS (FORMER) SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
- \*CESSATION-SMOKELESS TOBACCO (SMOKELESS - CHEWING/D
- SMOKELESS TOBACCO, STATUS UNKNOWN TOBACCO (SMOKELESS - CHEWING/D
- \*\*NEVER USED SMOKELESS TOBACCO TOBACCO (SMOKELESS - CHEWING/D
- \*\*NON-TOBACCO USER TOBACCO (SMOKING)
- \*CURRENT SMOKER, STATUS UNKNOWN TOBACCO (SMOKING)
- \*\*PREVIOUS (FORMER) SMOKER TOBACCO (SMOKING)
- \*CESSATION-SMOKER TOBACCO (SMOKING)
- \*CURRENT SMOKER, EVERY DAY TOBACCO (SMOKING)
- \*CURRENT SMOKER, SOME DAY TOBACCO (SMOKING)
- \*\*NEVER SMOKED TOBACCO (SMOKING)
- SMOKING STATUS UNKNOWN TOBACCO (SMOKING)
- \*HEAVY TOBACCO SMOKER TOBACCO (SMOKING)
- \*LIGHT TOBACCO SMOKER TOBACCO (SMOKING)

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

2. Diagnoses contained in the BGP TOBACCO DXS taxonomy. Both the V POVs and Problem List are checked. The latest documented diagnosis that is contained in the taxonomy is used. Diagnoses that indicate a tobacco user: diagnoses codes in the BGP TOBACCO USER DXS taxonomy, all others are considered non-tobacco user.

3. Dental ADA code 1320 - TOBACCO USE INTERVENTION TO PREVENT DISEASE. If this code is documented the patient is considered a tobacco user.

4. A CPT code documented that is in the BGP TOBACCO SCREEN CPTS taxonomy. If the code found is in the BGP TOBACCO USER CPTS taxonomy the patient is considered a tobacco user, all others are considered a non-tobacco user.



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

#### TOBACCO CESSATION COUNSELING

If the tobacco use status is "1 - Current user" then counseling documented in the past year is searched for.

Counseling is defined as any of the following:

1. A health factor containing the word CESSATION documented in the past year. (CESSATION-SMOKELESS, CESSATION-SMOKER) Taxonomy used: DM AUDIT CESSATION HLTH FACTOR.
2. A visit to clinic 94 - TOBACCO CESSATION CLINIC
3. A patient education topic that meets the following criteria:
  - a. Begins with TO- (e.g. TO-Q)
  - b. Ends in -TO (e.g. CAD-TO)
  - c. Begins with any Tobacco User diagnosis (taxonomy is BGP TOBACCO USER DXS) (e.g. 305.1-L)
  - d. Begins with any Tobacco User CPT code (e.g. 99407-L)
  - e. Begins with a SNOMED code from the TOBACCO CESSATION PATIENT ED SNOMED code list. 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 DM16 menu.
4. Any of the following CPT codes documented. These indicate tobacco use counseling: CPT code D1320, 99406, 99407, G0375 (old code), G0376 (old code), 4000F, 4001F, G8402 or G8453.
5. Dental ADA code 1320.

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

If no counseling is found then the system will look for a smoking aid prescribed:

Any prescription for a medication in the site-populated BGP CMS SMOKING CESSATION MEDS taxonomy that does not have a comment of RETURNED TO STOCK. A prescription for any medication with name containing "NICOTINE PATCH", "NICOTINE POLACRILEX", "NICOTINE INHALER", or "NICOTINE NASAL SPRAY" that does not have a comment of RETURNED TO STOCK.

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

#### ELECTRONIC NICOTINE (ENDS)-SCREENED/USE

The last recorded health factor in the category ELECTRONIC NICOTINE DELIV SYSTEM (ENDS) during the audit period is found.

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

If a health factor is found a value of 1 Yes is assigned.

If no health factors have been recorded during the audit period a value of 2 No is assigned.

ENDS use status:

Health factor and value assigned:

CURRENT ENDS USER: 1 Current User

CESSATION ENDS USER: 1 Current User

PREVIOUS ENDS USER: 2 Not a current user

NEVER USED ENDS USER: 2 Not a current user

No health factor recorded: 3 Not documented

#### HEIGHT

The last recorded height value taken on or before the ending date of the audit.

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

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

#### WEIGHT

The last recorded Weight value taken during the audit period.

AUDIT Export (Data) File: The last recorded weight during the audit period is passed to the export file. The weight is truncated to the nearest whole pound.

#### BMI

BMI is calculated in the following way:

$BMI = (\text{weight}/\text{height}^2) \times 703$

weight=the last weight (in lbs) in the one year prior to the audit date

height=the last height (in inches) recorded any time before the audit date

Cumulative Audit: BMI is used and percentages of patients in the specified BMI categories are calculated. If the patient did not have a height or weight recorded as described above they fall into the "Height or weight missing" category.

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

#### HYPERTENSION DOCUMENTED

If hypertension is on the problem list or the patient has had at least 3 visits with a diagnosis of hypertension ever, then it is assumed that they have hypertension and a value of 1 - Yes is assigned. Otherwise, a value of 2 - No is assigned. Taxonomy used: SURVEILLANCE HYPERTENSION. SNOMED List: HYPERTENSION DIAGNOSES. 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 DM16 menu.

#### BLOOD PRESSURES (LAST 1, 2 or 3)

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

If two or three blood pressures are available, then the mean is calculated and percentages of patients in the specified blood pressure categories are calculated

AUDIT Export file: The blood pressure values obtained above are passed on to the export record, mean blood pressure is not.

## FOOT EXAM - COMPLETE

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

1. A documented DIABETIC FOOT EXAM, COMPLETE (CODE 28) is searched for in the year prior to the audit date. This is recorded in V Exam. If found, no other processing is done, an exam is assumed to have been done.
2. CPT codes 2028F and G9226 in V CPT [Taxonomy: DM AUDIT CPT FOOT EXAM]
3. A visit on which a podiatrist (provider class codes 33=PODIATRIST, 84=PEDORTHIST or 25=CONTRACT PODIATRIST) that is not a DNKA visit is searched for in the year prior to the audit date. If found, it is assumed the exam was done and no further processing is done.
4. A visit to clinic 65=PODIATRY or B7=Diabetic Foot clinic that is not a DNKA is searched for in the year prior to the audit date. If found, no other processing is done.

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

## EYE EXAM (dilated or retinal imaging)

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

1. The system looks for the last documented Diabetic Eye Exam in the year prior to the audit date. Diabetic Eye Exam is defined as:
  - a. EXAM 03 - Diabetic Eye Exam
  - b. CPT in the DM AUDIT EYE EXAM CPTS taxonomy.
  - c. ICD Procedure in [DM AUDIT EYE EXAM PROCS] taxonomy.
2. If one of the above is found, the value 1 - Yes is assigned and no further processing is done.
3. If none of the above is found, then all PCC Visits in the year prior to the end of the audit 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.
4. If none of the above are found, the value 2 - No is assigned.

## DENTAL EXAM

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

1. A documented DENTAL EXAM (CODE 30) is searched for in the year prior to the audit date. If found, the value 1 - Yes is assigned and no other processing is done.
2. A visit to clinic 56 - DENTAL clinic that is not a DNKA is searched for in the year prior to the audit date. If found, and there is any ADA code other than 9991, then it is assumed the exam was done, the value 1 - Yes is assigned and no other processing is done.
3. A visit on which a dentist (provider class code 52 -DENTIST) that is not a DNKA visit is searched for in the year prior to the audit date. If found, and there is any ADA code other than 9991, then it is assumed the exam was done, the value 1 - Yes is assigned and no further processing is done.

4. A Visit on which a CPT code from the DM AUDIT DENTAL EXAM CPTS taxonomy was recorded.

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

#### DEPRESSION AN ACTIVE PROBLEM

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

If no problem is found on the problem list then the PCC and BH systems are reviewed for at least 2 diagnoses (POV's) of the codes listed above in the year prior to the audit date.

If either a problem is found on the problem list or 2 POV's are found then the value assigned is 1 - Yes. If not, then a value of 2 - No is assigned.

#### DEPRESSION SCREENING

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

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

V Exam 36 or Behavioral Health Module Depression Screening.

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

Education Topics - V EDUCATION or Behavioral Health Module DEP-SCR.

V Measurement PHQ2, PHQ9, PHQT.

Behavioral Health Module Diagnosis (POV) of 14.1.

Diagnosis in DM AUDIT DEPRESSIVE DISORDERS taxonomy in V POV.

Diagnosis in DM AUDIT DEPRESSIVE DISORDERS taxonomy in BH.

Problem Code of 14 or 15 in BH.

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

#### NUTRITION INSTRUCTION

The values in the audit are:

1 RD

2 Other

3 Both RD & Other

4 None

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

- If the primary provider on any visit is a DIETITIAN or NUTRITIONIST (codes 29, 07 or 34) then RD is assigned.

- If the visit does not have one of the above providers but has a Diagnosis of [BGP DIETARY SURVEILLANCE DXS] then Other is assigned.

- If the visit has a CPT documented of 97802, 97803, or 97804 then RD is assigned.

- If the visit contains any of the following education topics

Topic in the DM AUDIT DIET EDUC TOPICS taxonomy or any

Topic ending in -N

Topic ending in -DT

Topic ending in -MNT

Topic beginning with MNT-  
Topic beginning with DNCN-

The V PAT ED entry is examined and if the provider documented in that entry is a Dietitian or Nutritionist the RD is assigned if the provider is blank or not a dietitian/nutritionist then Other is assigned.

At this point:

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

Processing stops if a value is assigned.

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

#### PHYSICAL ACTIVITY INSTRUCTION

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

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

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

#### DM EDUCATION (OTHER)

All education topics documented in the year prior to the audit date are examined. If any topic meets the following criteria then the value assigned is 1 - Yes:

- topic does not end in -EX, -N, -DT or -MNT
- topic does not begin with MNT-
- topic is a member of the DM AUDIT EDUC TOPICS taxonomy OR the topic begins with one of the following:
  - DM- (e.g. DM-L)
  - DMC- (e.g. DMC-L)
  - an ICD Diagnosis code that is a member of the SURVEILLANCE DIABETES taxonomy (e.g. 250.00-L, E10.51-L)
  - a Diabetes SNOMED code (e.g. 46635009-L)

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

#### DIABETES THERAPY

All Visits in the 6 months prior to the audit date are reviewed. If any medication in the taxonomy specified is found, then an 'X' is placed by the therapy name and a value of 1 - Yes is entered in the Audit Export file. If no medications are found then the Diet & Exercise Alone item is marked with an 'X' and a value of 1 - Yes is entered in the Audit Export file for this item while a value of 2 - No is entered for all other therapy items.

Therapy	Taxonomy Name
Insulin	DM AUDIT INSULIN DRUGS
Sulfonylurea	DM AUDIT SULFONYLUREA DRUGS
Glinide	DM AUDIT SULFONYLUREA-LIKE
Metformin	DM AUDIT METFORMIN DRUGS
Acarbose, miglitol	DM AUDIT ACARBOSE DRUGS

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

#### ACE INHIBITOR OR ARB

1. If any drug in the DM AUDIT ACE INHIBITORS taxonomy or any drug with a VA Drug Class of CV800 or CV805 has been prescribed in the 6 months prior to the audit date a 1 - Yes is assigned.
2. If no drugs are found, a 2 - No is assigned.

#### ASPIRIN/ OTHER ANTIPLATELET/ANTICOAGULANT THERAPY

All medications in the past year are reviewed. If any of them are in the DM AUDIT ASPIRIN DRUGS or DM AUDIT ANTIPLT/ANTICOAG RX taxonomies then a value of 1 - Yes is assigned, no further processing is done.

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

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

#### STATIN THERAPY

##### Definition:

Any V Medication for any drug in the DM AUDIT STATIN DRUGS or BGP PQA STATIN MEDS taxonomy.

Medications are looked for in the past 6 months. Allergies documented are looked for any time before the end of the audit period.

##### Statin Allergy defined as:

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

##### Test Definitions:

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

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

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

Statin Intolerance/Contraindication defined as:

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

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

#### CVD

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

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

- One diagnosis ever of any diagnosis in the BGP CABG DXS taxonomy. The codes are:

Z95.1 (ICD-10) Presence of aortocoronary bypass graft

V45.81 (ICD-9) AORTOCORONARY BYPASS

- One diagnosis ever of any code in the BGP PCI DXS taxonomy. Codes are:

V45.82 (ICD-9) STATUS-POST PTCA

Z95.5 (ICD-10) Presence of coronary angioplasty implant and graft

Z98.61 (ICD-10) Coronary angioplasty status

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

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

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

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

taxonomy.

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

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

#### TB TEST DONE

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

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

#### TB TEST RESULT

If a TB test was done, the test result is determined in the following way:

1. If the patient has a TB health factor recorded, TB on the problem list or any diagnoses of TB documented in the PCC then the test result is assigned as 1 - Positive, no further processing is done. Taxonomy Used is DM AUDIT TUBERCULOSIS DXS taxonomy.
2. All recorded PPD entries and TB lab tests using the DM AUDIT TB LAB TESTS TAX prior to the audit date are gathered. If at least one is found the latest one is used, if it is a Skin test and the reading or result is Positive (reading >9) then it is assigned as 1 - Positive, if reading or result of last PPD is negative, then the values is 2 - Negative, if the test typeType is a blood test then the value of the test is examined, if it is Positive then 1 - Positive is recorded, if it is negative then 2 - Negative is assigned. If the results are null the value 3 - Unknown/Not offered is assigned.
3. If there are none found then the value assigned is 3 - Unknown/not offered.

#### TB RESULT POSITIVE, ISONIAZID TX COMPLETE

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

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

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

#### TB RESULT NEGATIVE, TEST DATE

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

#### INFLUENZA VACCINE DURING AUDIT PERIOD

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



prior to the audit date. Influenza vaccine is defined as:

- Immunization CVX codes: See BGP FLU IZ CVX CODES taxonomy
- CPT codes: BGP CPT FLU
- Diagnosis codes: BGP FLU IZ DXS (there are no ICD10 codes)

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

If no documented immunization is found, a documented refusal in the past 12 months is searched for. If one is found, then a value of 3 - Refused is assigned.

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

#### PNEUMOCOCCAL VACCINE EVER

Data is scanned for pneumococcal vaccine any time prior to the audit date. A pneumococcal vaccine is defined as:

- Immunization CVX codes: 33, 100, 109, 133, 152
- Diagnoses: V03.82 (there are no ICD10 codes)
- CPT codes: BGP PNEUMO IZ CPTS taxonomy (90669, 90670, 90732, G0009, G8115, G9279)

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

If none is found, the refusal file is checked for a documented refusal of this vaccination. Refusals documented in both the PCC and the Immunization register are reviewed. If one is found, then a value of 3 - Refused is assigned.

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

#### Td or Tdap IN PAST 10 YEARS

Immunizations are scanned for any tetanus vaccine in the 10 years prior to the audit date. Logic used to find a TD vaccine:

Immunization CVX codes : 1, 9, 20, 22, 28, 35, 50, 106, 107, 110, 112, 113, 115, 120, 130, 132, 138, 139

CPT Codes: APCH TD CPT

LOW VALUE: 90698 HIGH VALUE: 90698

LOW VALUE: 90700 HIGH VALUE: 90701

LOW VALUE: 90702 HIGH VALUE: 90702

LOW VALUE: 90703 HIGH VALUE: 90703

LOW VALUE: 90714 HIGH VALUE: 90714

LOW VALUE: 90715 HIGH VALUE: 90715

LOW VALUE: 90718 HIGH VALUE: 90718

LOW VALUE: 90720 HIGH VALUE: 90723

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

If none is found, the refusal file is checked for a documented refusal of this vaccination. Refusals documented in both the PCC and the Immunization register are reviewed. If one is found, then a value of 3 - Refused is assigned.

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

#### Tdap EVER

Immunizations are scanned for a Tdap vaccine ever. Tdap codes are:  
CVX code 115

CPT code 90715

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

If none is found, the refusal file is checked for a documented refusal of this vaccination. Refusals documented in both the PCC and the Immunization register are reviewed. If one is found, then a value of 3 - Refused is assigned.

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

#### HEPATITIS B 3-DOSE SERIES EVER

Data is scanned for hepatitis B vaccine any time prior to the audit date.  
HEP B definition:

CVX codes 8, 42, 43, 44, 45, 51, 102, 104, 110, 132, 146

CPT codes contained in the BGP HEPATITIS CPTS taxonomy: 90636, 90723, 90731, 90740, 90743, G0010, Q3021, Q3023

Vaccinations must be given at least 20 days apart. If three are found, a value of 1 - Yes is assigned.

If less than three vaccines found, the system will look for an Immune Contraindication in the Immunization contraindications file. If it is found, a value of 4 - Immune is assigned.

The system then looks for evidence of disease: Problem List or V POV of [BGP HEP EVIDENCE] Taxonomy. If it is found, a value of 4 - Immune is assigned.

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

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

#### A1C

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

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

Cumulative Audit:

If the result contains a ">" it goes into the 11.0 or higher category.

If the result contains a "<" it goes into the <7.0 category.

At this point everything is stripped from the result value except for numbers and ".". If after stripping, what is left is something other than a number then it is put in the "Not tested or no valid result" category.

If what is left is a numerical value, it is put in the appropriate category below:

HbA1c <7.0

HbA1c 7.0-7.9

HbA1c 8.0-8.9

HbA1c 9.0-9.9

HbA1c 10.0-10.9

HbA1c 11.0 or higher

Not tested or no valid result

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

#### TOTAL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT CHOLESTEROL TAX taxonomy or the BGP

TOTAL CHOLESTEROL LOINC taxonomy is found in V LAB.

Cumulative Audit: This result is not used.

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

#### HDL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT HDL TAX taxonomy or the BGP HDL

LOINC CODES taxonomy is found in V LAB.

Cumulative Audit:

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

In females

HDL <50 mg/dl

HDL >=50 mg/dl

Not tested or no valid result

In males

HDL <40 mg/dl

HDL >=40 mg/dl

Not tested or no valid result

Audit Export (Data) File:

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

#### LDL CHOLESTEROL

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT LDL CHOLESTEROL TAX taxonomy or the BGP LDL LOINC CODES taxonomy is found in V LAB. Tests with a result containing "CANC" are ignored.

Cumulative Audit:

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

value is "UNK",  
it will fall into "Not tested or no valid result".

LDL <100 mg/dl  
LDL 100-129 mg/dl  
LDL 130-189 mg/dl  
LDL >=190  
Not tested or no valid result

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

#### TRIGLYCERIDES

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

#### Cumulative Audit:

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

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

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

#### SERUM CREATININE

The last lab test with a result in the year prior to the audit date that is a member of the DM AUDIT CREATININE TAX taxonomy or the BGP CREATININE LOINC CODES taxonomy is found in V LAB. All tests with a result containing "CANC" are skipped.  
Specimen typeTypes are not examined so if the same creatinine test is used for serum creatinine as for urine creatinine, the audit is unable to distinguish between these values.

#### Result reporting:

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

#### eGFR (ESTIMATED GFR)

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

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

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

For the cumulative audit:

If the first character of the value is ">" it goes into  $\geq 60$  ml/min. Otherwise, all characters other than numbers and "." are stripped from the result value. The resulting value is placed in the following categories:

$\geq 60$

30-59

15-29

<15

Not tested or no valid result

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

#### QUANTITATIVE URINE ALBUMIN CREATININE RATIO (UACR)

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

If the test found does not have a valid numeric result then the system will look for a urine microalbumin test on the same visit date. If found, the result of that test is evaluated. If the result contains a < symbol or the words "less than," the patient is assigned a 1 - Yes that a UACR was done and a value of 5 is assigned to UACR value. If the result contains a > symbol or contains the words "greater than" the patient is assigned a 1 - Yes that a test was done and a value of 999 is assigned to UACR value.

If neither of the above is found, then a value of 2 - No is assigned for UACR done and UACR value is left blank.

#### COMBINED OUTCOMES MEASURE

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

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

#### e-GFR and UACR

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

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

#### COMORBIDITY

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

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

## Appendix B: Audit Export (Data) File Definition

### IHS Diabetes Care & Outcomes Audit for 2017 Audit Data Export File Format

#### General Description:

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

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

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

Table B-1: Variable List

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments
1	AUDITDATE	Ending date of the Audit period - 12/31/2016	N/A	mm/dd/yyyy	
2	FACILITYNA	Name or abbreviation for the facility	N/A	Character (max length=20)	
3	AREA	2 digit IHS code for Area	N/A	-Character (max length=2) -First 2 digits of ASUFAC code	ASUFAC codes can be found in the <a href="#">IHS Standard Code Book</a> .
4	SU	2 digit IHS code for Service Unit	N/A	-Character (max length=2) -Middle 2 digits of ASUFAC code	
5	FACILITY	2 digit IHS code for Facility	N/A	-Character (max length=2) -Last 2 digits of ASUFAC code	
6	REVIEWER	Reviewer's initials	N/A	Character (max length=3)	
7	STATE	Postal abbreviation for last known state of residence	N/A	Character (max length=2)	If the patient lives outside of the United States (e.g., in Canada), leave blank.
8	MOB	Month of birth	N/A	# with value 1-12	
9	YOB	Year of Birth	N/A	yyyy	

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
10	SEX	Gender	N/A	# field with: 1=Male 2=Female 3=Unknown		
11	DODX	Date of diabetes diagnosis	N/A	mm/dd/yyyy		
12	DMTYPETYPE	Diabetes typeType	N/A	# field with: 1=TypeType 1 2=TypeType 2 (or uncertain)		
13	TOBSCREEN	Screened for tobacco use	Audit period	# field with: 1=Yes 2=No		
14	TOBACCO	Tobacco use status	Most recent	# field with: 1=Current user 2=Not a current user 3=Not documented		
15	TOBCOUNSEL	[Only if TOBACCO=1] Tobacco cessation counseling received	Audit period	# field with: 1=Yes 2=No		
16	ENDSSCREEN	Screened for electronic nicotine delivery system (ENDS) use during Audit period	Audit period	# field with: 1=Yes 2=No	New for 2017	
17	ENDSSTATUS	ENDS use status	Most recent	# field with: 1=Current user 2=Not a current user 3=Not documented	New for 2017	
18	FEET	Last recorded height - feet part	Last ever	# with up to 2 decimal places	combine with INCHES	
19	INCHES	Last recorded height - inches part	Last ever	# with up to 2 decimal places	total or in combination with FEET	
20	WEIGHT	Weight in lbs	Audit period, most recent	# with 0 decimal places	Truncate to nearest pound.	
21	HTNDX	Hypertension diagnosed	Ever	# field with: 1=Yes 2=No		
22	SYST1	Most recent systolic BP (mmHg)	Audit period	#		



Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
23	DIAST1	Most recent diastolic BP (mmHg)	Audit period	#		
24	SYST2	Next most recent systolic BP (mmHg)	Audit period	#		
25	DIAST2	Next most recent diastolic BP (mmHg)	Audit period	#		
26	SYST3	Third most recent systolic BP (mmHg)	Audit period	#		
27	DIAST3	Third most recent diastolic BP (mmHg)	Audit period	#		
28	FOOTEXAM	Complete diabetic foot exam	Audit period	# field with: 1=Yes 2=No		
29	EYEEEXAM	Dilated retinal exam or retinal imaging exam	Audit period	# field with: 1=Yes 2=No		
30	DENTALEXAM	Dental exam including examination of teeth and gingiva	Audit period	# field with: 1=Yes 2=No		
31	DEPDX	Active diagnosis of depression	Audit period	# field with: 1=Yes 2=No		
32	DEPSCREEN	[Only if DEPDX=2] Screened for depression	Audit period	# field with: 1=Yes 2=No		
33	DIETINSTR	Nutrition instruction	Audit period	# field with: 1=Yes by RD 2=Yes by non-RD 3=Yes by RD & non-RD 4=None		
34	EXERCISE	Physical activity instruction	Audit period	# field with: 1=Yes 2=No		
35	DMEDUC	Diabetes education other than nutrition and physical activity	Audit period	# field with: 1=Yes 2=No		

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
36	TXDIET	Only therapy for diabetes is diet and exercise (no meds)	As of the end of the Audit period*	# field with: 1=Yes 2=No	-If this item=1:Yes, then all other TX fields should=2:No. -If all other TX fields=2:No, then this item should=1:Yes.	
37	TXINSUL	Prescribed any insulin	As of the end of the Audit period*	# field with: 1=Yes 2=No		
38	TXSUREA	Prescribed a sulfonylurea (such as glyburide or glipizide)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
39	TXSUREALK	Prescribed a glinide (sulfonylurea-like med) such as Prandin or Starlix	As of the end of the Audit period*	# field with: 1=Yes 2=No		
40	TXMETFORM	Prescribed metformin	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	TXGLIT	Prescribed a TZD ("glitazone") drug like pioglitazone (Actos) or rosiglitazone (Avandia)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
43	TXGLP1MED	Prescribed injectable GLP-1 med (Byetta, Bydureon, Victoza, Tanzeum, Trulicity)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
44	TXDPP4	Prescribed DPP4 inhibitor (Januvia, Onglyza, Tradjenta, Nesina)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
45	TXAMYLIN	Prescribed injectable amylin analog (Symlin)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
46	TXBROMO	Prescribed bromocriptine (Cycloset)	As of the end of the Audit period*	# field with: 1=Yes 2=No		

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
47	TXCOLESEV	Prescribed colesevelam (Welchol)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
48	TXSGLT2	Prescribed SGLT2 inhibitor (Invokana, Farxiga, Jardiance)	As of the end of the Audit period*	# field with: 1=Yes 2=No		
49	ACE	Prescribed an ACE inhibitor or ARB	As of the end of the Audit period*	# field with: 1=Yes 2=No		
50	ASPIRIN	Prescribed aspirin or other antiplatelet/ anticoagulant therapy	As of the end of the Audit period*	# field with: 1=Yes 2=No		
51	LLSTATIN2	Prescribed a statin drug	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 -See RPMS/DMS documentation for more information.	
52	CVDDX	Diagnosed cardiovascular disease (CVD)	Ever	# field with: 1=Yes 2=No	See Audit Instructions and DMS Audit Logic for more information	
53	TBTESTDONE2	Skin (PPD) or blood test for TB done with valid result	Ever	# field with: 1=Skin test (PPD) 2=Blood test (QFT-GIT, T-SPOT) 3=Unknown/not offered		
54	TBTESTRSLT2	[Only if TBTESTDONE2=1 or 2] TB test result	Ever	# field with: 1=Positive 2=Negative 3=Unknown		
55	TBINHTX2	[Only if TBTESTRSLT2=1] INH treatment complete	Ever	# field with: 1=Yes 2=No 3=Unknown	See Audit Instructions and DMS Audit Logic for more information	
56	TBTESTDATE	[Only if TBTESTRSLT2=2] Date of last TB test	Ever	mm/dd/yyyy		

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
57	FLUVAX	Influenza vaccine	Audit period	# field with: 1=Yes 2=No 3=Refused		
58	PNEUMOVAX	Pneumococcal vaccine	Ever	# field with: 1=Yes 2=No 3=Refused		
59	TD	Tetanus (Td, Tdap, or DT) vaccine	Past 10 years	# field with: 1=Yes 2=No 3=Refused		
60	TDAP	Tdap vaccine	Ever	# field with: 1=Yes 2=No 3=Refused		
61	HEPBVAX	Hepatitis B 3 dose vaccine series	Ever	# field with: 1=Yes 2=No 3=Refused 4=Immune		
62	HBA1C	HbA1c test result (%)	Most recent in Audit period	#, one decimal		
63	HBA1CDATE	Date of most recent HbA1c	Most recent in Audit period	mm/dd/yyyy		
64	CHOLVALUE	Total cholesterol value	Most recent in Audit period	#, no decimals		
65	HDLVALUE	HDL cholesterol value (mg/dl)	Most recent in Audit period	#, no decimals		

Order	Variable Name	Description	Timeframe	Format/Values/Units	Comments	
66	LDLVALUE	LDL cholesterol value (mg/dl)	Most recent in Audit period	#, no decimals		
67	TRIGVALUE	Triglyceride value (mg/dl)	Most recent in Audit period	#, no decimals		
68	CREATVALUE	Serum creatinine value (mg/dl)	Most recent in Audit period	#, two decimals		
69	EGFRVALUE	Estimated GFR value	Most recent in Audit period	#, one decimal	Use existing value if present. Calculate if no existing value but serum creatinine value is present in Audit Period.	
70	UPACRVAL	Quantitative urine albumin:creatinine ratio (UACR) value (mg/g)	Most recent in Audit period	#		
71	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.	
72	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.	
73	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	

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

## Acronym List

Acronym	Term Meaning
ASUFAC	Area, Service Unit, and Facility
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
DPCS	<del>Display a Patient's</del> Diabetes <u>Patient</u> Care Summary
eGFR	Estimated Glomerular Filtration Rate
EHR	Electronic Health Record
ENDS	Electronic Nicotine Delivery System
GEN	General Retrieval Report
GDM	Gestational Diabetes Mellitus
GPRA	Government Performance and Results Act
HTN	Hypertension
IFG	Impaired Fasting Glucose
IGT	Impaired Glucose Tolerance
IHS	Indian Health Service
LMR	Lists, Labs, or Medications used at this Facility
LOINC	Logical Observation Identifiers Names and Codes
NDC	National Drug Code
PCC	Patient Care Component
POC	Point of Care
RML	Master List Report
RPMS	Resource and Patient Management System
SDPI	Special Diabetes Program for Indians
SNOMED	Systematized Nomenclature of Medicine
UACR	Urine Albumin/Creatinine Ratio

## Contact Information

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

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

Web: <http://www.ihs.gov/helpdesk/>

Email: [support@ihs.gov](mailto:support@ihs.gov)