

**IHS Diabetes Care and Outcomes Audit**

**Audit 2022 Orientation**

**IHS Division of Diabetes Treatment and Prevention  
2/2/2022**

**Today's Topics**

- 1. Audit overview**
- 2. Process and methods – electronic and manual**
- 3. Changes for 2022**
- 4. Data Quality Check and more**
- 5. Resources**
- 6. Website and WebAudit demonstrations**

## Diabetes Audit Team

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## Abbreviations

- **ADC** = Area Diabetes Consultant
- **AI/AN** = American Indian/Alaska Native
- **Audit** = IHS Diabetes Care and Outcomes Audit
- **BP = Best Practice** = SDPI Diabetes Best Practice
- **DDTP** = IHS Division of Diabetes Treatment and Prevention
- **DMS** = RPMS Diabetes Management System
- **GPRA** = Government Performance and Results Act
- **EMR** = Electronic Medical Record (RPMS or other)
- **I/T/U** = IHS, Tribal, and Urban
- **RKM** = Required Key Measure
- **RPMS** = IHS Resource and Patient Management System
- **SDPI** = Special Diabetes Program for Indians
- **SOS** = SDPI Outcomes System

## Audit Overview

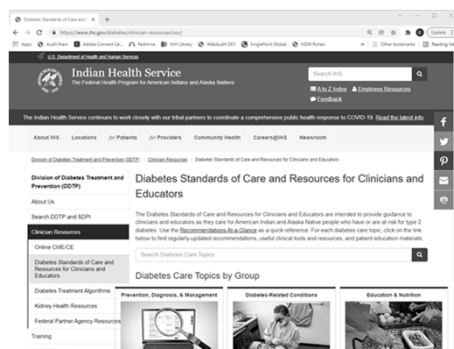
### What is the Audit and why do it?

**What:** A process for assessing diabetes care and health outcomes for American Indian and Alaska Native people with diagnosed diabetes.

**Why:**

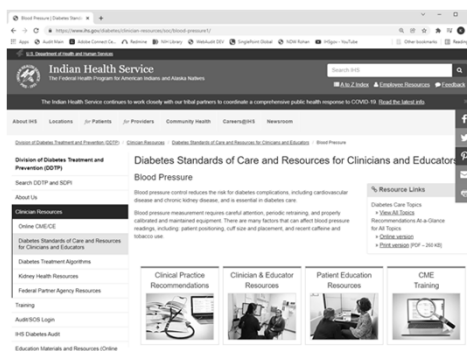
1. To work towards the goal of providing all diabetes patients with the highest quality of care, as outlined in the IHS Diabetes Standards of Care
2. To assess the diabetes care provided at a facility, including strengths and areas for improvement
3. To fulfill requirements of Special Diabetes Program for Indians (SDPI) grants (participation in Annual Audit)
4. To contribute to Area and IHS outcome measures and reports

## Diabetes Standards of Care and Resources for Clinicians and Educators



Main "landing" page

### Blood Pressure SOC



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

## When are Audits done?

1. **Annual Audit:** Once per year, data submitted to and processed by the IHS Division of Diabetes
  - a. **Audit Period for 2022: Jan 1-Dec 31, 2021**
  - b. **Due date for Audit 2022: 3/15/2022**
2. **Interim Audits\*:** Can be many times per year, for SDPI, Area, or local use
  - a. **Period of care:** Locally or Area determined
  - b. **Due date:** Locally or Area determined

\*Use of the IHS Diabetes Care and Outcomes Audit tools for any purpose other than the *Annual Audit*



## Different Time Periods for Different Items



12 month (Audit) period for most, including:

- Tobacco screening
- Weight
- Blood pressure
- Education
- Exams
- Labs



Exceptions include

- Tobacco use (last known)
- Height (last ever)
- TB test/results/tx (ever)-Immunizations (except flu)
- Health conditions (e.g., HTN, CVD)
- Medications (as of Audit period end)

Look for key words, such as : “Audit period”, “ever”

## Special Cases

- For most items, one response is selected or provided for each patient.

### Exceptions:

1. Skip patterns: Some items will be skipped, based on response to previous item.
  - a. Tobacco cessation counseling
  - b. Depression screening
  - c. TB items
  - d. HCV screening
2. Diabetes therapy: Select **all** that apply.

**Mental Health**

Depression an active problem/diagnosis:

☐ 1 Yes

☐ 2 No

→ Screened for depression (during Audit period):

☐ 1 Yes

☐ 2 No

**Diabetes Therapy**

Select **all** prescribed (as of the end of the Audit period):

☐ 1 None of the following

☐ 2 Insulin

☐ 3 Metformin [Glucophage, others]

☐ 4 Sulfonylurea [glipizide, glyburide, glimepiride]

☐ 5 DPP-4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyze), sitagliptin (Januvia)]

☐ 6 GLP-1 receptor agonist [exenatide (Byetta, Bydureon), liraglutide (Victoza, Saxenda), lixisenatide (Aduvia), semaglutide (Ozempic, Rybelus, Wegovy)]

☐ 7 SGLT-2 inhibitor [canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)]

☐ 8 Pioglitazone [Actos] or rosiglitazone [Avandia]

☐ 9 Acarbose [Precose] or miglitol [Glyset]

☐ 10 Repaglinide [Prandin] or nateglinide [Starlix]

☐ 11 Pramlintide [Symlin]

☐ 12 Bromocriptine [Cycloset]

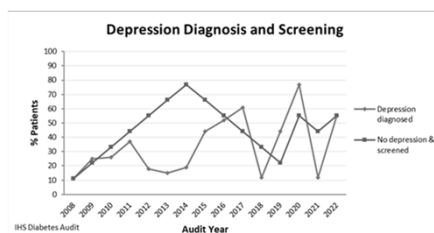
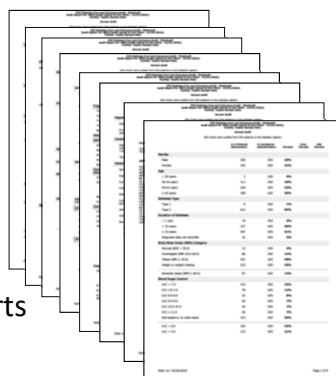
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## How are results provided? (Output)

Input=Audit data  
file or paper forms



Output=reports  
and graphs



## Audit Report (Output)

Sample section from WebAudit Audit Report

|                             | # of Patients<br>(Numerator) | # Considered<br>(Denominator) | Percent | Area<br>Percent | IHS<br>Percent |
|-----------------------------|------------------------------|-------------------------------|---------|-----------------|----------------|
| <b>Gender</b>               |                              |                               |         |                 |                |
| Male                        | 305                          | 647                           | 47%     |                 |                |
| Female                      | 342                          | 647                           | 53%     |                 |                |
| <b>Age</b>                  |                              |                               |         |                 |                |
| < 20 years                  | 2                            | 647                           | 0%      |                 |                |
| 20-44 years                 | 110                          | 647                           | 17%     |                 |                |
| 45-64 years                 | 277                          | 647                           | 43%     |                 |                |
| ≥ 65 years                  | 257                          | 647                           | 40%     |                 |                |
| <b>Diabetes Type</b>        |                              |                               |         |                 |                |
| Type 1                      | 8                            | 647                           | 1%      |                 |                |
| Type 2                      | 639                          | 647                           | 99%     |                 |                |
| <b>Duration of Diabetes</b> |                              |                               |         |                 |                |
| < 1 year                    | 20                           | 647                           | 3%      |                 |                |
| < 10 years                  | 255                          | 647                           | 39%     |                 |                |
| ≥ 10 years                  | 375                          | 647                           | 58%     |                 |                |
| Diagnosis date not recorded | 17                           | 647                           | 3%      |                 |                |

There are changes every year!

## **Big picture: encounters to data submission**

### **Throughout the year:**

1. Patient encounters take place – Visits with providers, medication refills, lab tests done, immunizations given, education provided, others.
2. Information about all encounters is documented in EMR (or paper chart).
3. Other (historical) information can also be documented (e.g., TB diagnosed >10 years ago).

## **Big picture: encounters to data submission (cont.)**

### **At Audit time:**

1. **Identify** eligible patients with diabetes at facility.
2. **Gather** data for eligible patients.
3. **Submit** data to DDTP via WebAudit.
4. **Review** data quality.
5. Repeat steps above, if necessary.

See the [Audit 2022 Instructions](#) for additional information.



### **WebAudit**

- The WebAudit is a set of internet-based tools for Audit data submission, processing, and reporting.
- All Annual Audit data are submitted to the IHS Division of Diabetes via the WebAudit.
- Once data are submitted, all data processing and report tools are the same.
- Data and reports from previous Annual Audits are retained.
- Can also be used for Interim (non-Annual) Audits.
- At least one person each from facility has access.

### **Audit Processes and Methods**

## Before you begin

- Notify your Area Diabetes Consultant that you are planning to start Audit activities.
- Gather and review resources and materials.
  - From DDTP: [Audit resources webpage](#)
  - Local: Previous year's reports, site specific documentation, others

## Identify Eligible Patients

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

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

Then, **exclude patients** who:

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

## Gather Data: Electronic Audit

1. **Update** diabetes registry/patient list in your EMR to include only eligible patients, as needed, **OR** identify diabetes patients via search.
2. **Prepare** electronic medical record system for current Audit software (2022).
3. **If using RPMS/DMS, run and review Data Quality Check Report.** Correct as many errors as possible.
4. **Create** Audit data file for 12-month time period of interest (“Audit period”) in the specified format.
5. **Retrieve** Audit data file – may require assistance from OIT.

## Electronic Audits: RPMS vs. other EMRs

**Below are some specific examples. There are many other differences!**

| Activity                             | RPMS  | Other EMR                  |
|--------------------------------------|---|----------------------------|
| Software programming:<br>done by ... | IHS   | Software company or vendor |
| Identify eligible patients           | Registry or QMAN search   | Software dependent         |
| Preparation                          | -Install patch 15<br>-Update site populated taxonomies<br>-Review and update registry or create list of diabetes patients | Software dependent         |
| Education documentation              | RPMS specific coding  | System dependent           |

**Contact the Audit team for “non-RPMS” electronic Audit resources.**

**Details (aka specifications):** Available in the [Audit 2022 Instructions](#)

### List of Fields

| Order | Field Name | Description  | Timeframe | Format/Values/Units       | Comments   |
|-------|------------|--|-----------|---------------------------|--|
| 1     | AUDITDATE  | Ending date of the Audit period - 12/31/2021 for Annual Audit 2022 | N/A       | mm/dd/yyyy                |  |
| 2     | FACILITYNA | Name or abbreviation for the facility                              | N/A       | Character (max length=20) |  |
| 3     | REVIEWER   | Reviewer's initials  | N/A       | Character (max length=3)  |  |
| 4     | STATE      | Postal abbreviation for last known state of residence              | N/A       | Character (max length=2)  | Do not populate if patient's address is outside of the US (e.g., in Canada). |
| 5     | MOR        | Month of birth   | N/A       | # with value 1-12         |  |

**Sample:**

2022auditexport2012.txt - Notepad

File Edit Format View Help

[illegible]

1. **Select** charts to review from eligible patients according to Audit 2022 Instructions (all or a sample).
2. **Review** each selected medical chart.
3. **Complete** one Audit 2022 form for each chart.

## Paper Audit Form

IHS Diabetes Care and Outcomes Audit 2022

Audit Period Ending Date: 12/31 2021

Facility Name: My Facility

Reviewer Initials: KJ

State of residence: N.M.

Month/Year of Birth: 10 / 1963

Sex: ☐ Male  
☒ Female  
☐ Unknown

Date of Diabetes Diagnosis: 3/21/2008

DM Type: ☐ Type 1  
☒ Type 2

**Tobacco/Nicotine Use**

Screened for tobacco use (during Audit period):  
☒ Yes  
☐ No

Tobacco use status (most recent):  
☐ Current user  
☒ Not a current user  
☐ Not documented

Tobacco cessation counseling received (during Audit period):  
☐ Yes  
☒ No

Electronic Minnesota Palliative Care (EMPC)

**Examinations (during Audit period)**

Foot (comprehensive or "complete"):  
☒ Yes  
☐ No

Eye (dilated or retinal imaging):  
☐ Yes  
☒ No

Dental:  
☒ Yes  
☐ No

**Mental Health**

Depression an active problem:  
☐ Yes  
☒ No

Screened for depression (during Audit period):  
☒ Yes  
☐ No

**Education (during Audit period)**

Nutrition:  
☒ RD } ☐ Both RD and Other  
☐ Other }  
☐ None

Physical activity:  
☐ Yes  
☒ No

Other diabetes:

## Submit and Review Data via the WebAudit

| Step | WebAudit Tool(s)  |
|------|---|
| 1    | Enter facility information  |
| 2    | Enter Facility Info   |
| 3    | Submit data (choose one)<br>Electronic Audit      ➡ Upload Data<br>Manual Audit          ➡ Data Entry |
| 4    | Check data for potential errors → edit data as needed   |
| 5    | Data Quality Check<br>View/Edit Data  |
| 6    | Review reports and graphs of results<br>→ edit data as needed   |
| 7    | Audit Reports & Trends Graphs<br>View/Edit Data   |
| 8    | "Lock" data   |
| 9    | Lock Facility Data  |
| 10   | Complete Audit evaluation (optional)  |
| 11   | Link on screen and in email   |

## Electronic Audits – Common Issue #1

Issue: Audit data file created with “old” version of software in DMS or other EMR.

What you’ll see in the WebAudit (example):

The screenshot shows the 'Diabetes WebAudit' interface. On the left is a navigation menu with options: Facility Administration, Data Processing (highlighted), Data Entry, Upload Data, View/Edit Data, Data Quality Check, and Reports. The main area is titled 'Upload Data' and includes a dropdown menu for 'Audit' set to '2022'. Below this, a black error banner displays a red triangle icon and the word 'ERROR'. The message states: 'Line 1 of your uploaded file has 74 fields. There should be 76 fields in each line. Please check your file and [upload again](#).'

Solution: Update software, if needed. Create new Audit data file with current version then upload.

## Electronic Audits – Common Issue #2

Issue: Very low percentage of patients with education provided.

What you’ll see in the WebAudit (example):

| Diabetes-Related Education                    |    |     |    |  |
|---|----|-----|----|--|
| Nutrition – by any provider (RD and/or other) | 3  | 468 | 1% |  |
| Nutrition – by RD                             | 3  | 468 | 1% |  |
| Physical Activity                             | 21 | 468 | 4% |  |
| Other diabetes education                      | 2  | 468 | 0% |  |
| Any of above                                  | 25 | 468 | 5% |  |

Solution: Requires troubleshooting in your EMR. Could be an issue with data entry, coding, or where EMR is “looking” for this information.

### Electronic Audits – Common Issue #3

**Issue:** Very low percentage of patients with results for a lab test.

What you'll see in the WebAudit (example):

|                               |     |     |      |  |  |
|-------------------------------|-----|-----|------|--|--|
| LDL cholesterol               | 0   | 291 | 0%   |  |  |
| LDL <100 mg/dl                | 0   | 291 | 0%   |  |  |
| LDL 100-189 mg/dl             | 0   | 291 | 0%   |  |  |
| LDL ≥190 mg/dl                | 0   | 291 | 0%   |  |  |
| Not tested or no valid result | 291 | 291 | 100% |  |  |

**Solution:** Requires troubleshooting in your EMR. In RPMS, most likely due to taxonomy updates needed.

### Electronic Audits – Common Issue #4

**Issue:** Large number of patients missing all key data fields

What you'll see in the WebAudit (example):

| Field Name ^ v | Number of Potential Errors |
|----------------|----------------------------|
| Year of Birth  | 3                          |
| Weight         | 388                        |

**Solution:** Could result from including patients not truly eligible OR patients only having telehealth visits during Audit period. If necessary create and upload a new data file.

## Changes for 2022

### What's New for Audit 2022

#### 1. Data items (input)

- a. **New:** None
- b. **Changed:** None
- c. **Deleted:** None

#### 2. Audit Report (output)

- a. Cardiovascular Disease (CVD): Added items for GLP-1 and SGLT-2 medications prescribed in patients with diagnosed CVD.
- b. Chronic Kidney Disease (CKD): Added items for GLP-1 and SGLT-2 medications prescribed in patients with CKD.
- c. Other minor changes to labels and formatting



## What's New for Audit 2022

### 3. SDPI Key Measures Report (output)

- a. HCV item changed to: In age => 18 years, screened for HCV ever or HCV diagnosed ever
- b. Hepatitis B vaccination item changed to: Hepatitis B complete series ever or immune to hepatitis B
- c. TB item changed to: TB test done ever or TB diagnosed ever
- d. Other minor changes to labels and formatting

## What's New for Audit 2022 RPMS/DMS

1. **Changes** on Audit Form and Reports integrated throughout.
2. **For additional information**, see DMS manuals for Version 2.0, Patch 15:
  - [DMS User Manual](#)
  - [DMS 2022 Diabetes Audit User Addendum](#)



### **What's New for Audit 2022 WebAudit**

1. Changes on Audit Form and Report integrated throughout.
2. Not much else!

### **Data Quality Check and More**

## Data Quality Check

Reviews each data item and looks for things that might be and/or are definitely incorrect.

- Two types of errors:
  - **Potential:** Value might be incorrect. Generally values that are higher or lower than expected (e.g., A1c<2).
  - **Definite:** Value is definitely incorrect according to Audit logic. Generally dates and skip patterns (e.g., date of diagnosis is before date of birth; received cessation counseling but not a current tobacco user).
- WebAudit and DMS versions have the same checks, for the most part.
- If data are corrected:
  - in RPMS before uploading, errors will not appear in WebAudit version.
  - in WebAudit but not RPMS, errors will still appear in DMS version.
- **Be sure to verify data before making any changes in RPMS.**

## Data Quality Check Report - DMS

LAB Jan 28, 2022 Page 1

DIABETES AUDIT EXPORT DATA QUALITY CHECK REPORT  
 Audit Date 12/31/ 2021 (01/01/ 2021 to 12/31/ 2021  
 Facility: DEMO HOSPITAL

| PATIENT NAME  | HRN    | DOB        | SEX | AGE | VALUE      | ERR TYPE  |
|---|--------|------------|-----|-----|------------|-----------|
| DEMOPAT,JOE   | 104017 | 02/05/1953 | M   | 65  |            | POTENTIAL |
| ERROR: ALL KEY DATA MISSING-Data is missing for all key fields: weight, blood pressure, A1c, LDL, uACR. |        |            |     |     |            |           |
| DEMOPAT,MARY ANN  | 103886 | 08/29/2001 | F   | 17  | 05/15/1983 | DEFINITE  |
| ERROR: DATE OF DX BEFORE YOB-Date of Diabetes Diagnosis is before year of birth.                        |        |            |     |     |            |           |
| DEMOPAT,MARY ANN  | 103886 | 08/29/2001 | F   | 17  | 35         | DEFINITE  |
| ERROR: DURATION OF DM-Duration of Diabetes is less than 0 or greater than the patient's age.            |        |            |     |     |            |           |
| DEMO,BENJAMIN SR  | 893856 | 08/06/2012 | M   | 6   | 07/12/2011 | DEFINITE  |
| ERROR: TB TEST DATE < YOB-Date of TB Test is earlier than year of birth.                                |        |            |     |     |            |           |

## Data Quality Check Report - WebAudit

List of Audit Potential Data Errors for 2022  
Facility: Test04 KLS  
2022 Annual Audit

There are 87 records for this facility.  
14 Potential Data Errors were found.  
Table sorted by Field Name ascending.

 [Download PDF Version](#)

 [Download Excel Version](#)

| Edit                                | WebAudit ID | Yr/Mo of Birth | Sex | Date of Diagnosis | Field Name          | Value | Error Type | Error Message  | Comments                    |
|-------------------------------------|-------------|----------------|-----|-------------------|---------------------|-------|------------|--|-----------------------------|
|                                     | ^v          | ^v             | ^v  | ^v                | ^v                  |       | ^v         |  | ^v                          |
| <input checked="" type="checkbox"/> | 1002        | 1963 / 6       | F   | 01/19/2012        | A1C                 | 27.9  | Potential  | Value is unusually high (greater than 18). Check this value and change if necessary.   | <a href="#">Add comment</a> |
| <input checked="" type="checkbox"/> | 1007        | 1985 / 5       | M   | 07/20/2011        | BMI                 | 150.7 | Potential  | Value is unusually high (greater than 80). Check height and weight values and change one or the other if necessary.  | <a href="#">Add comment</a> |
| <input checked="" type="checkbox"/> | 1035        | 1989 / 8       | M   | 03/01/2019        | BMI                 | 1.9   | Potential  | Value is unusually low (less than 16). Check height and weight values and change one or the other if necessary.  | <a href="#">Add comment</a> |
| <input checked="" type="checkbox"/> | 1061        | 1947 / 10      | M   | 04/15/2006        | Estimated GFR Value | 54.0  | Potential  | There is a large discrepancy between the system-calculated eGFR ( > 60) and the eGFR value entered. Check the eGFR value and serum creatinine value and change if necessary. | <a href="#">Add comment</a> |

## Audit Data Security

**Manual Audits:** Paper forms contain patient data and should be handled according to facility policies.

### Electronic Audits

- RPMS/DMS Audit data files and some reports contain patient data and should be handled according to facility policies.
- Save DMS Audit files in a secure location, as instructed by your facility.

### WebAudit

- Do not give your username/password to anyone.
- Lock your workstation or log out if you need to do something else.
- Handle files and documents with patient data (from View/Download Data or Data Quality Check tool) according to facility policies.

## Tips for a Successful Audit

1. **Review the Instructions and other materials before starting.**
2. **Start early!** Average time spent in 2021 was ~28 hours, but can take (sometimes much) longer depending on the situation at your facility.
3. **WebAudit access:** If you ever had it but don't remember your login info, contact us instead of creating a new account.
4. **WebAudit**
  - a. **Login** – In your browser, bookmark the Audit website or WebAudit login page.
  - b. **Data Entry** – Use the tab and number keys.

## Audits: Annual vs. SDPI RKM Data vs. Interim

|                                       | Annual Audit  | SDPI RKM Data                                 | Other Interim Audit           |
|---------------------------------------|---|---|-------------------------------|
| <b>Frequency</b>                      | Once per year   | As many as needed                             | As many as needed             |
| <b>WebAudit Audit Type</b>            | Annual  | Interim                                       | Interim                       |
| <b>WebAudit Versions Available</b>    | Current year only   | Current + previous year                       | Current + previous year       |
| <b>Conducted When</b>                 | Feb through mid-March   | One or more times a year                      | Any time of year              |
| <b>Period Covered</b>                 | 2022: Jan 1-Dec 31, 2021  | Jan 1-Dec 31                                  | Locally determined            |
| <b>Due Date</b>                       | 2022: 3/15/2022   | 2021 Final: 1/31/22<br>2022 Baseline: 2/28/22 | Determined by Area or program |
| <b>Who is included</b>                | <b>Electronic:</b> All eligible DM patients<br><b>Manual:</b> All or sample of eligible DM patients | SDPI Target Group                             | Determined by Area or program |
| <b>Data reviewed by DDTP</b>          | Yes   | In SOS only                                   | No                            |
| <b>Data used for national reports</b> | Yes   | Yes (baseline & final only)                   | No                            |

## Audit Resources

1. **Website:** <https://www.ihs.gov/diabetes> -> Select "IHS Diabetes Audit" from menu
  - Materials: Form, Instructions, Checklists, RPMS/DMS documentation
  - Training: Live, recorded, DMS
  - Other information and resources
2. **Support**
  - **Audit team (WebAudit and general questions):** email [diabetesaudit@ihs.gov](mailto:diabetesaudit@ihs.gov)
  - **Area Diabetes Consultants/Area Audit Support**
  - **RPMS questions and support (OIT Service Desk):** <https://www.ihs.gov/Helpdesk/>
  - **RPMS DMS recorded training:** <https://www.ihs.gov/rpms/training/recording-and-material-library/>

## Upcoming Audit 2022 Webinar

- **Audit 2022 Reports**
  - Tuesday, 3/1/2022
  - 3pm ET / 2pm CT / 1pm MT / 12pm PT / 11am AKT (1 hour)
  - Overview of changes to the Audit Report for 2022 and guidance for reading and reviewing Audit reports.
  - Time for Q&A
  - Will be recorded.

## **Website & WebAudit Demonstrations**