IHS Diabetes Care and Outcomes Audit

Audit 2022 Reports: Basics and Beyond

IHS Division of Diabetes Treatment and Prevention
March 1, 2022

Topics

1. Audit reports - what are they and how to get them
2. Changes for 2022
3. Reading reports, including how statistics are calculated
4. Reviewing reports and graphs for potential data issues
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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 Report Basics

Data to Reports (Input to Output)

Input=Audit data file or paper forms

Output=reports and graphs
What are Audit Reports (capital R)

• The Audit Report (capital R) provides a basic summary of the data elements in the Audit for each year.

• Results are presented as the number and percent of patients who ‘meet’ each report item. For example, 63% of Audited patients have blood pressure <140/<90.

• Audit Reports can be obtained from the WebAudit or RPMS/DMS and possible other EMR systems. Results should be the same if run on the same patients and at the same date and time (exception is minor differences due to rounding).
  – IHS and Area results are provided on the WebAudit version for comparison, once all data are final.

Other Audit reports (lowercase R)

• Other Audit summary reports (lowercase r) for each year are available via the WebAudit and/or RPMS:
  – SDPI Key Measures (subset of main Audit Report):
    – WebAudit and RPMS
    – Means: WebAudit only

• Graphs of Audit results over time for selected measures are available via the WebAudit.
  – Trends Graphs
  – Means Graphs
How to get Audit reports

**NOTE:** WebAudit access is limited to individuals who participate in conducting Audits OR as determined by facility staff. RPMS/DMS access is determined by facility staff.

1. If you **do** have access to the WebAudit and/or RPMS:
   - WebAudit: [https://www.ihs.gov/diabetes/audit/](https://www.ihs.gov/diabetes/audit/)
   - RPMS: [https://www.ihs.gov/diabetes/audit/audit-rpms-dms-information/](https://www.ihs.gov/diabetes/audit/audit-rpms-dms-information/)

2. If you **do not** have WebAudit or RPMS access:
   - Request from your facility
   - Contact your **Area Diabetes Consultant**

Audit Report - WebAudit

First several items from page 1 of 8:
Audit Report – RPMS/DMS

First several items from page 1:

<table>
<thead>
<tr>
<th>LAB</th>
<th>Sep 22, 2021</th>
<th>Page 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMS Diabetes Care and Outcomes Audit – RPMS Audit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit Report for 2022 (Audit Period 09/01/2021 to 08/31/2022)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility: 2021 DEMO HOSPITAL (HRHF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Audit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>925 patients were audited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unless otherwise specified, time period for each item is the 12-month Audit Period</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% Patients</th>
<th># Considered</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Numerator)</td>
<td>(Denominator)</td>
<td></td>
</tr>
</tbody>
</table>

*** NOTE: 19 Patients were not included in this report because their data of onset was after the Audit period end date. |

1. Gender |
   - Male: 900 |
   - Female: 549 |

2. Age |
   - <20 years: 37 |
   - 20-45 years: 144 |
   - 46-65 years: 401 |
   - >65 years: 277 |

3. Diabetes Type |
   - Type 1: 24 |
   - Type 2: 925 |

4. Duration of Diabetes |
   - <1 year: 5 |
   - <5 years: 75 |

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Audit Report – General Info

- Results are presented as the number and percent of patients who ‘meet’ each report item.
- Items may be reported for:
  1. All patients
  2. A subgroup of patients: items reported for subgroups are indicated by keywords ‘In” or “If” (e.g., In patients aged 40-75). Some are also indented.
  3. Both of the above
- Order is not the same as the Audit Form.
- Patients with missing values for an item are counted in the denominator for most items.
- There are some changes to Audit Report every year. Some years these are minor, others more extensive.
Audit Report Changes for 2022

Audit Report Changes

• **When:** Audit Report (capital R) changes are made each year for the Annual Audit.

• **Why**
  1. Currency - To align with IHS and other national standards and reports, such as, IHS GPRA measures.
  2. Consistency – To be consistent with other materials from IHS and the Division of Diabetes.
  3. Clarity - To facilitate understanding of each item on the report.
  4. Completeness - To provide all the necessary information for interpreting the report items.
**Audit Report Changes for 2022**

1. **General**: Minor changes to wording for some items.
2. **Additions**: Details on following slides.

### Cardiovascular Disease (CVD) Section

<table>
<thead>
<tr>
<th>Cardiovascular Disease (CVD)</th>
<th>Count</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVD diagnosed ever</td>
<td>20</td>
<td>87</td>
<td>23%</td>
</tr>
<tr>
<td>CVD and mean BP &lt;140/&lt;90</td>
<td>13</td>
<td>20</td>
<td>65%</td>
</tr>
<tr>
<td>CVD and not current tobacco user</td>
<td>16</td>
<td>20</td>
<td>80%</td>
</tr>
<tr>
<td>CVD and aspirin or other antiplatelet/anticoagulant therapy currently prescribed</td>
<td>17</td>
<td>20</td>
<td>85%</td>
</tr>
<tr>
<td>CVD and GLP-1 receptor agonist currently prescribed</td>
<td>7</td>
<td>20</td>
<td>35%</td>
</tr>
<tr>
<td>CVD and SGLT-2 inhibitor currently prescribed</td>
<td>4</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>CVD and statin currently prescribed*</td>
<td>17</td>
<td>20</td>
<td>85%</td>
</tr>
</tbody>
</table>

*Excludes patients with an allergy, intolerance, or contraindication
Chronic Kidney Disease (CKD) Section

<table>
<thead>
<tr>
<th>Chronic Kidney Disease (CKD) (In age ≥ 18 years)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CKD²</td>
<td>32</td>
<td>87</td>
<td>38%</td>
</tr>
<tr>
<td>CKD² and mean BP &lt;140/&lt;90</td>
<td>19</td>
<td>33</td>
<td>58%</td>
</tr>
<tr>
<td>CKD² and ACE Inhibitor or ARB currently</td>
<td>24</td>
<td>33</td>
<td>73%</td>
</tr>
<tr>
<td>prescribed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CKD² and GLP-1 receptor agonist currently</td>
<td>13</td>
<td>33</td>
<td>39%</td>
</tr>
<tr>
<td>prescribed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CKD² and SGLT-2 inhibitor currently prescribed</td>
<td>4</td>
<td>33</td>
<td>12%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CKD Stage</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal: eGFR ≥60 ml/min and UACR &lt;30 mg/g</td>
<td>31</td>
<td>87</td>
<td>36%</td>
</tr>
<tr>
<td>Stages 1 and 2: eGFR ≥60 ml/min and UACR ≥30 mg/g</td>
<td>18</td>
<td>87</td>
<td>21%</td>
</tr>
<tr>
<td>Stage 3: eGFR 30-59 ml/min</td>
<td>12</td>
<td>87</td>
<td>14%</td>
</tr>
<tr>
<td>Stage 4: eGFR 15-29 ml/min</td>
<td>2</td>
<td>87</td>
<td>2%</td>
</tr>
<tr>
<td>Stage 5: eGFR &lt;15 ml/min</td>
<td>0</td>
<td>87</td>
<td>0%</td>
</tr>
<tr>
<td>Undetermined</td>
<td>24</td>
<td>87</td>
<td>28%</td>
</tr>
</tbody>
</table>

SDPI RKM Best Practice Changes for 2022

1. **General**: Minor changes to wording for some items.
2. **Specific**: Details on following slides.
   a. Hepatitis C (HCV) Screening
   b. Immunizations: Hepatitis B
   c. Tuberculosis (TB) Screening
Hepatitis C (HCV) Screening

- Numerator: now includes HCV diagnosed ever
- Denominator: now includes all patients age 18 years and older

<table>
<thead>
<tr>
<th>Year</th>
<th>Hepatitis C (HCV) Screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>In patients not diagnosed with HCV and age &gt;= 18 years, screened ever</td>
</tr>
<tr>
<td>2022</td>
<td>In age a 16 years, screened for HCV ever or HCV diagnosed ever</td>
</tr>
</tbody>
</table>

Immunizations: Hepatitis B

- Numerator: now includes immune to hepatitis B
- Denominator: now includes immune to hepatitis B

<table>
<thead>
<tr>
<th>Year</th>
<th>Immunizations: Hepatitis B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>Hepatitis B complete series - ever</td>
</tr>
<tr>
<td>2022</td>
<td>Hepatitis B complete series ever or immune to hepatitis B</td>
</tr>
</tbody>
</table>
Tuberculosis (TB) Screening

- Numerator: now includes TB diagnosed ever
- Denominator: now includes TB diagnosed ever

### 2021

<table>
<thead>
<tr>
<th>Tuberculosis (TB) Screening</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>If not diagnosed with TB ever, TB test done ever (skin test or blood test)</td>
<td>110</td>
<td>152</td>
</tr>
</tbody>
</table>

### 2022

<table>
<thead>
<tr>
<th>Tuberculosis (TB) Screening</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TB test done ever or TB diagnosed ever</td>
<td>35</td>
<td>87</td>
</tr>
</tbody>
</table>

How to read Audit Reports
Audit 2022 Report Header - WebAudit

87 charts were audited from 87 patients determined to be eligible by Test02 Sample Data. Unless otherwise specified, time period for each item is the 12-month Audit Period.

- **2022**: Audit “version”
- **01/01/2021-12/31/2021**: Audit (time) period for which data are reviewed
- Annual (vs. Interim) Audit
- Number of patients included out of how many eligible

Example 1: One response – Foot exam

Audit Form – page 1

Audit Report – WebAudit page 4

<table>
<thead>
<tr>
<th></th>
<th>56</th>
<th>87</th>
<th>64%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot exam - comprehensive</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example 1 continued

<table>
<thead>
<tr>
<th>Exams</th>
<th># of Patients (Numerator)</th>
<th># Considered (Denominator)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot exam - comprehensive</td>
<td>56</td>
<td>87</td>
<td>64%</td>
</tr>
</tbody>
</table>

- Percent calculation for foot exams:

\[
\frac{56}{87} = 0.64 \\
0.64 \times 100 = 64\%
\]

Numerator = 56 = number of patients Audited that had a foot exam
Denominator = 87 = number of patients Audited

- All patients either had a foot exam documented or not

Example 2: Number put in a category – A1C

Audit Form – page 2

Audit Report – WebAudit page 1

A1C: __________%  
A1C Date obtained: ________/_______/_______
Example 2 continued

<table>
<thead>
<tr>
<th>Blood Sugar Control</th>
<th># of Patients (Numerator)</th>
<th># Considered (Denominator)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1C &lt; 7.0</td>
<td>21</td>
<td>87</td>
<td>24%</td>
</tr>
<tr>
<td>A1C 7.0-7.9</td>
<td>17</td>
<td>87</td>
<td>20%</td>
</tr>
<tr>
<td>A1C 8.0-8.9</td>
<td>10</td>
<td>87</td>
<td>11%</td>
</tr>
<tr>
<td>A1C 9.0-9.9</td>
<td>12</td>
<td>87</td>
<td>14%</td>
</tr>
<tr>
<td>A1C 10.0-10.9</td>
<td>6</td>
<td>87</td>
<td>7%</td>
</tr>
<tr>
<td>A1C ≥ 11.0</td>
<td>9</td>
<td>87</td>
<td>10%</td>
</tr>
<tr>
<td>Not tested or no valid result</td>
<td>12</td>
<td>87</td>
<td>14%</td>
</tr>
<tr>
<td>A1C &lt; 8.0</td>
<td>38</td>
<td>87</td>
<td>44%</td>
</tr>
<tr>
<td>A1C &gt; 9.0</td>
<td>24</td>
<td>87</td>
<td>28%</td>
</tr>
</tbody>
</table>

• Percent calculation for A1C<7.0:

\[
\frac{21}{87} = 0.24 \\
0.24 \times 100 = 24\%
\]

Numerator = 21 = number of patients Audited with A1C<7.0
Denominator = 87 = number of patients Audited

• All patients in one main category and can also be in <8.0 or >9.0
• Sum of Percents for all main categories = 100%
• Important to individualize A1C goals

Example 3: Skip pattern – Depression

Audit Form – page 1

Audit Report – WebAudit page 5

Depression an active problem/diagnosis:
☐ Yes
☐ No

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

<table>
<thead>
<tr>
<th>Depression an Active Problem</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
<td>72</td>
</tr>
<tr>
<td>In patients without depression, screened for depression during audit period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened</td>
<td>66</td>
<td>72</td>
</tr>
<tr>
<td>Not screened</td>
<td>7</td>
<td>72</td>
</tr>
</tbody>
</table>
### Example 3 continued

**Depression an Active Problem**

<table>
<thead>
<tr>
<th></th>
<th># of Patients (Numerator)</th>
<th># Considered (Denominator)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15</td>
<td>87</td>
<td>17%</td>
</tr>
<tr>
<td>No</td>
<td><strong>65</strong></td>
<td><strong>87</strong></td>
<td>77%</td>
</tr>
</tbody>
</table>

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

| Screened    | 65                         | 72                         | 90%     |
| Not screened| 7                          | 72                         | 10%     |

- Percent calculation for **depression screening**:
  
  \[
  \frac{65}{72} = 0.90
  
  0.90 \times 100 = 90\%
  
  \]

  Numerator = 65 = number of patients Audited that were Screened

  Denominator = 87 = number patients Audited with No Depression (NOT total number of patients Audited)

- All patients in only one category
- Sum of Percents for all categories = 100%

---

### Example 4: All that apply – DM Therapy

Audit Form – page 1

**Elders Therapy**

Select all prescribed as of the end of the Audit period:

- Insulin
- Megformin (Glucophage, others)
- Sulfonylurea (gliptide, gliburide, glyburide)
- DPP-4 inhibitors (sitagliptin, saxagliptin, linagliptin, vildagliptin)
- GLP-1 receptor agonist (liraglutide, exenatide)
- Dipeptidyl peptidase-4 (saxagliptin, linagliptin, vildagliptin)
- Dipeptidyl peptidase-4 inhibitors (sitagliptin, saxagliptin, linagliptin)
- SGLT-2 inhibitor (empagliflozin, canagliflozin, dapagliflozin)
- Metformin (metformin or metformin extended release)
- Diuretic (loop, thiazide, other)
- Other (other)
- Peptide Receptor 1 Agonist (other)
- Other (other)
- Antihypertensive (other)
- Other (other)
- Other (other)
Example 4: DM Therapy continued

Two sections for this item:
1. How many medications currently prescribed
2. Which medications

Notes:
- Sum of percentages for section 1 = 100%
- Sum of percentages for section 2 can be >100% because patients can be on more than one med
Trends Graphs

- Available in the WebAudit.
- Two tabs: Data and Graphs.

Data (all measures)

<table>
<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>2020 %</th>
<th>2021 %</th>
<th>2022 %</th>
<th>2023 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Records</td>
<td>33</td>
<td>32</td>
<td>36</td>
<td>35</td>
</tr>
<tr>
<td>Gender Male</td>
<td>87</td>
<td>86</td>
<td>84</td>
<td>82</td>
</tr>
<tr>
<td>Age &lt; 20 years</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age &gt; 59 years</td>
<td>25</td>
<td>24</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Average Year</td>
<td>27</td>
<td>29</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Diabetes Type 1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Diabetes Duration</td>
<td>150</td>
<td>150</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Duration of Diabetes</td>
<td>30</td>
<td>27</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Extreme Values</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Graphs (selected measures)

Annual Audit Report Review – General Guidance

1. Print or pull up on screen:
   b. Trends Graphs from the WebAudit.

   a. Number of patients:
      i. Number included in Audit should be equal to or smaller than number in registry (aka eligible patients).
      ii. Number Audited and eligible for 2022 vs. 2021: Are they similar or different with good reason?
   b. Missing data: Are there unexpectedly large amounts of missing data for any items?
   c. Extreme values: Are there rows with unexpectedly low (near 0%) or high (near 100%) values?
Annual Audit Report Review – Guidance (continued)

3. **Review Trends Graphs:** Look for “big” changes from 2021 to 2022.
   - **Data tab:** Review DIFF 2022-2021 column.
     - Excel Table:
       | ITEMS | Report Item [Subgroup, if applicable] | 2020% | 2021% | 2022% | DIFF 2022-2021 |
       |-------|---------------------------------------|-------|-------|-------|----------------|
       | 85    | 83 Exams: Foot                        | 11    | 23    | 64    | 41             |
       | 86    | 84 Exams: Eye                         | 13    | 32    | 53    | 21             |
       | 87    | 85 Exams: Dental                      | 11    | 25    | 21    | -4             |
   - **Graphs tab:** Look for “spikes” up or down from 2021 to 2022.

4. **If any issues are found during review,** **correct** data as needed in RPMS or in the WebAudit.
   i. For Electronic Audits:
      a. Best to correct in RPMS (or other system), create a new data file, and reupload to the WebAudit.
      b. If corrections are made in the WebAudit, they should also be made in your EMR.
   ii. For Manual Audits, make changes to individual records in the WebAudit.
Audit Resources

1. **Website:** [https://www.ihs.gov/diabetes](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
   - Area Diabetes Consultants/Area Audit Support
   - RPMS questions and support (OIT Service Desk):
     [https://www.ihs.gov/Helpdesk/](https://www.ihs.gov/Helpdesk/)
   - RPMS recorded training (including DMS):
     [https://www.ihs.gov/rpms/training/recording-and-material-library/](https://www.ihs.gov/rpms/training/recording-and-material-library/)

WebAudit Demo
Questions?