IHS Diabetes Care and Outcomes Audit

Audit 2021 Reports:
Basics and Beyond

IHS Division of Diabetes Treatment and Prevention
March 3, 2021

Topics

1. Audit reports - what are they and how to get them

2. Changes for 2021

3. Reading reports, including how statistics are calculated

4. Reviewing reports and graphs for potential data issues

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Audit Report Basics

What are Audit Reports (capital R)

- The Audit Report (capital R) provides a basic summary of the data elements in the Audit for <u>each</u> 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 EHR 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 <u>get</u> 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 <u>do</u> have access to the WebAudit and/or RPMS:
   - WebAudit: https://www.ihs.gov/diabetes/audit/
   - RPMS: **https://www.ihs.gov/diabetes/audit/audit-rpms-dms-information/**
2. If you <u>do not</u> have WebAudit or RPMS access:
   - Request from your facility
   - Contact your <u>Area Diabetes Consultant</u>

Audit Report - WebAudit

First several items from page 1 of 8:

IHS Diabetes Care and Outcomes Audit - WebAudit
DRAFT Audit Report for 2021 (Audit Period 01/01/2020 - 12/31/2020)
Facility: Test02 Sample Data

Annual Audit

170 charts were audited from 170 patients determined to be eligible by Test02 Sample Data.
Unless otherwise specified, time period for each item is the 12-month Audit Period.

	# of Patients (Numerator)	# Considered (Denominator)	Percent	Area Percent	IHS Percent
Gender					
Male	57	170	34%		
Female	113	170	66%		
Age					
< 20 years	0	170	0%		
20-44 years	66	170	39%		
45-64 years	79	170	46%		
≥ 65 years	25	170	15%		
Diabetes Type					
Type 1	0	170	0%		
Type 2	170	170	100%		
Duration of Diabetes					
< 1 year	1	170	1%		
< 10 years	53	170	31%		
≥ 10 years	114	170	67%		
Diagnosis date not recorded	3	170	2%		

Audit Report – RPMS/DMS

First several items from page 1:

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LAB                          Nov 03, 2020                    Page 1

                  IHS Diabetes Care and Outcomes Audit - RPMS Audit
              Audit Report for 2021 (Audit Period 01/01/2020 to 12/31/2020)
                      Facility: 2020 DEMO HOSPITAL (INST)
                              Annual Audit
                          978 patients were audited
    Unless otherwise specified, time period for each item is the 12-month Audit
    Period
    --------------------------------------------------------------------------
                                        # of        #           Percent
                                      Patients    Considered
                                     (Numerator) (Denominator)

    Gender
      Male                              394          978           40%
      Female                            584          978           60%

    Age
      <20 years                          25          978            3%
      20-44 years                        89          978            9%
      45-64 years                       300          978           31%
      >=65 years                        564          978           58%

    Diabetes Type
      Type 1                             36          978            4%
      Type 2                            942          978           96%

    Duration of Diabetes
      <1 year                             0          978            0%
      <10 years                          19          978            2%
      >=10 years                        582          978           60%
      Diagnosis date not recorded       377          978           39%
```

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 <u>not</u> the same as the Audit Form.

- Patients with missing values for an item are counted in the denominator for <u>most</u> items.

- There are some changes to Audit Report every year. Some years these are minor, others more extensive.

Audit Report Changes for 2021

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 2021

1. **General:**
   a. Minor changes to wording for some items.
   b. Medication lists: alphabetized and case corrected.

2. **Specific:** Details on following slides

Immunizations

2020

Immunizations

- Influenza vaccine during Audit period
- ~~Refused – Influenza vaccine~~
- Pneumococcal vaccine - ever
- ~~Refused – Pneumococcal vaccine~~
- Td/Tdap/DTaP/DT - past 10 years
- ~~Refused – Td/Tdap/DTaP/DT~~
- Tdap - ever
- ~~Refused – Tdap~~
- Hepatitis B complete series - ever
- ~~Refused – Hepatitis B~~
- Immune - Hepatitis B

2021

Immunizations

- Influenza vaccine during Audit period
- Pneumovax/PPSV23 - ever
- Td/Tdap/DTaP/DT - past 10 years
- Tdap - ever
- Hepatitis B complete series - ever
- Immune - Hepatitis B

New!
- In patients age >= 50 years Shingrix complete series - ever

Tuberculosis (TB) Changes

2020

Tuberculosis (TB) Status

~~TB test done ever (skin or blood)~~

~~If test done, skin test~~

~~If test done, blood test~~

~~If TB test done, positive result~~

~~If positive TB test, treatment completed~~

If negative TB test, test done after diabetes diagnosis

2021

New!

Tuberculosis (TB) Status

TB diagnosis documented ever and/or positive test result ever

If not diagnosed, TB test done ever (skin test or blood test)

If TB diagnosis documented and/or positive test result, treatment initiated ever

If most recent TB test result was negative, was test done after diabetes diagnosis

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How to <u>read</u> Audit Reports

Data to Reports (Input to Output)

Input=data file or
paper forms

Output=reports
and graphs
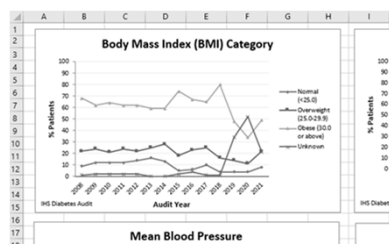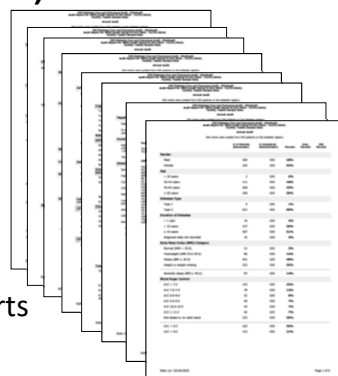
Audit 2021 Report Header - WebAudit

IHS Diabetes Care and Outcomes Audit – WebAudit
DRAFT Audit Report for 2021 (Audit Period 01/01/2020 - 12/31/2020)
Facility: Test02 Sample Data

Annual Audit

170 charts were audited from 170 patients determined to be eligible by Test02 Sample Data.
Unless otherwise specified, time period for each item is the 12-month Audit Period.

- **2021:** Audit "version"
- **01/01/2020-12/31/2020:** 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

Foot (comprehensive or "complete", including evaluation of
sensation and vascular status):
☐1 Yes
☐2 No

Exams

| Foot exam - comprehensive | 53 | 170 | **31%** |

Example 1 continued

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Exams			
Foot exam - comprehensive	53	170	**31%**

• Percent calculation for foot exams:

53 / 170 = 0.31
0.31*100 = 31%

Numerator = 53 = number of patients Audited that had a foot exam

Denominator = 170 = 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: _____/_____/_____

Blood Sugar Control			
A1C < 7.0	33	170	19%
A1C 7.0-7.9	18	170	11%
A1C 8.0-8.9	14	170	8%
A1C 9.0-9.9	13	170	8%
A1C 10.0-10.9	14	170	8%
A1C ≥ 11.0	21	170	12%
Not tested or no valid result	57	170	34%
A1C < 8.0	51	170	30%
A1C > 9.0	46	170	27%

Example 2 continued

Blood Sugar Control	# of Patients (Numerator)	# Considered (Denominator)	Percent
A1C < 7.0	33	170	19%
A1C 7.0-7.9	18	170	11%
A1C 8.0-8.9	14	170	8%
A1C 9.0-9.9	13	170	8%
A1C 10.0-10.9	14	170	8%
A1C ≥ 11.0	21	170	12%
Not tested or no valid result	57	170	34%
A1C < 8.0	51	170	30%
A1C > 9.0	46	170	27%

• Percent calculation for A1C<7.0:

33 / 170 = 0.19
0.19*100 = 19%

Numerator = 33 = number of patients Audited with A1C<7.0
Denominator = 170 = 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:
- ☐1 Yes
- ☐2 No
  - → Screened for depression (during Audit period):
    - ☐1 Yes
    - ☐2 No

Depression an Active Problem

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Yes	55	170	32%
No	115	170	68%
In patients without active depression, screened for depression during Audit period			
Screened	79	115	69%
Not screened	36	115	31%

Example 3 continued

Depression an Active Problem

	# of Patients (Numerator)	# Considered (Denominator)	Percent
Yes	55	170	32%
No	115	170	68%
In patients without active depression, screened for depression during Audit period			
Screened	79	115	69%
Not screened	36	115	31%

- Percent calculation for <u>depression screening</u>:

  79 / 115 = 0.69
  0.69*100 = 69%

  Numerator = 79 = number of patients Audited that were Screened
  Denominator = 115 = 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

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 DPP4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)]

☐6 GLP-1 receptor agonist [dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus)]

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

☐8 Pioglitazone [Actos] or rosiglitazone [Avandia]

☐9 Acarbose [Precose] or miglitol [Glyset]

☐10 Repaglinide [Prandin] or nateglinide [Starlix]

☐11 Pramlintide [Symlin]

☐12 Bromocriptine [Cycloset]

☐13 Colesevelam [Welchol]

Example 4: DM Therapy continued

Audit Report – WebAudit page 3

Diabetes Treatment

Number of diabetes medications currently prescribed

	# of Patients (Numerator)	# Considered (Denominator)	Percent
None	59	170	35%
One medication	48	170	28%
Two medications	40	170	24%
Three medications	17	170	10%
Four or more medications	6	170	4%

Diabetes meds currently prescribed, alone or in combination

Insulin	58	170	34%
Metformin [Glucophage, others]	83	170	49%
Sulfonylurea [glyburide, glipizide, others]	28	170	16%
DPP4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)]	19	170	11%
GLP-1 receptor agonist [dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus)]	6	170	4%
SGLT-2 inhibitor [canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)]	2	170	1%
Pioglitazone [Actos] or rosiglitazone [Avandia]	8	170	5%
Acarbose [Precose] or miglitol [Glyset]	0	170	0%
Repaglinide [Prandin] or nateglinide [Starlix]	0	170	0%
Pramlintide [Symlin]	0	170	0%
Bromocriptine [Cycloset]	0	170	0%
Colesevelam [Welchol]	0	170	0%

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

Diabetes Treatment

1 Number of diabetes medications currently prescribed

None	59	170	35%
One medication	48	170	28%
Two medications	40	170	24%
Three medications	17	170	10%
Four or more medications	6	170	4%

2 Diabetes meds currently prescribed, alone or in combination

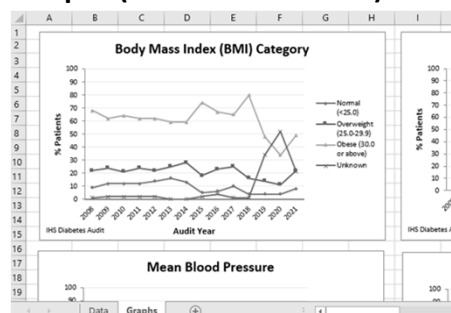|			
Insulin	58	170	34%
Metformin [Glucophage, others]	83	170	49%
Sulfonylurea [glyburide, glipizide, others]	28	170	16%
DPP4 inhibitor [alogliptin (Nesina), linagliptin (Tradjenta), saxagliptin (Onglyza), sitagliptin (Januvia)]	19	170	11%
GLP-1 receptor agonist [dulaglutide (Trulicity), exenatide (Byetta, Bydureon), liraglutide (Victoza), lixisenatide (Adlyxin), semaglutide (Ozempic, Rybelsus)]	6	170	4%
SGLT-2 inhibitor [canagliflozin (Invokana), dapagliflozin (Farxiga), empagliflozin (Jardiance), ertugliflozin (Steglatro)]	2	170	1%
Pioglitazone [Actos] or rosiglitazone [Avandia]	8	170	5%
Acarbose [Precose] or miglitol [Glyset]	0	170	0%
Repaglinide [Prandin] or nateglinide [Starlix]	0	170	0%
Pramlintide [Symlin]	0	170	0%
Bromocriptine [Cycloset]	0	170	0%
Colesevelam [Welchol]	0	170	0%

Trends Graphs

- Available in the WebAudit (soon!).
- Two "tabs": Data and Graphs.

Data (all measures)

	ITEM DATAFIELD	2008 %	2009 %	2010 %	2011 %	2012 %	2013 %
1	1 Number of Records						
3	2 Gender: Male	33	32	35	36	35	38
4	3 Gender: Female	67	68	65	64	65	63
5	4 Age: < 20 years	2	2	1	1	1	0
6	5 Age: 20-44 years	23	24	25	25	25	31
7	6 Age: 45-64 years	48	46	44	48	46	45
8	7 Age: 65 years and older	27	29	30	27	28	24
9	8 Diabetes Type: 1	0	0	0	0	0	0
10	9 Diabetes Type: 2	100	100	100	100	100	100
11	10 Duration of Diabetes: < 1 year	8	4	4	4	3	0
12	11 Duration of Diabetes: < 10	62	57	54	51	46	46
13	12 Duration of Diabetes: 10 years	38	43	46	49	54	54
14	13 Duration of Diabetes:	0	0	0	0	0	0

Data | Graphs

Graphs (selected measures)

Body Mass Index (BMI) Category

Mean Blood Pressure

Data | Graphs

Annual Audit Report Review – General Guidance

1. **Print or pull up on screen:**
   a. Annual Audit Reports from the WebAudit for 2021 and 2020.
   b. Trends Graphs from the WebAudit.
2. **Review Audit Report for 2021.**
   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 2021 vs. 2020: 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 2020 to 2021.
   – **Data tab:** Review DIFF 2021-2020 column.

	A	B	N	O	P	Q
1	ITEM	DATAFIELD	2019%	2020%	2021%	DIFF 2021-2020
83	82	Exams: Foot	54	11	31	20
84	83	Exams: Eye	42	13	29	16
85	84	Exams: Dental	35	11	14	3

   – **Graphs tab:** Look for "spikes" up or down from 2020 to 2021.

Exams

IHS Diabetes Audit
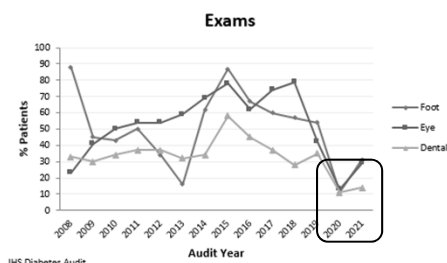
Annual Audit Report Review – Guidance (continued)

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 EHR.

   ii. For Manual Audits, make changes to individual records in the WebAudit.

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 from Audit team (WebAudit and general questions):** email diabetesaudit@ihs.gov

3. **Area Diabetes Consultants/Area Audit Support**

4. **RPMS**
   a. **Questions and support (OIT Service Desk):** https://www.ihs.gov/Helpdesk/
   b. **Diabetes Management System recorded training**: email RPMSTraining@ihs.gov

WebAudit Demo

Questions?