Focused Audits
A novel approach to monitoring data quality in the central registry

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Overview

- Background
- Focused Audit Process
- Benefits
- Examples
- Audit Template
Background
Background

- Typically, in California
  - Recoding Audits – audit of choice for evaluating codes without reviewing source documents
  - Modeled after audits performed by National Organizations (i.e., NPCR, SEER)

- Site and various data fields determined

- Cases randomly selected

- Proportional Stratified Sampling method utilized
  - Population, confidence level and margin of error
  - Approximately, 350 cases
Background

- PEER Review method
  - Primary & Secondary Auditor recode independently
  - Reconcile differences

- Relatively structured

- Focus is on random sample of cases

- Routine data quality check
Background

- However
  - Issues/concerns identified throughout the year relative to data quality

- Concept of “Focused audit” developed in response to recurring need for complex analyses to analyze data quality
Focused Audit

Process
Focused Audit Process

▪ Focus:
  ▪ Known or suspected data quality issue identified

▪ Team:
  ▪ Can vary from one CTR to a team of staff members from multiple departments depending on issue complexity
Focused Audit Process

▪ Analysis:
  ▪ SQL queries developed
  ▪ Run on entire DB to identify issue impact
  ▪ Cases reviewed
    ✓ Identify miscodes
    ✓ All miscoded cases in DB are included in audit
    ✓ Determine data fix
Focused Audit – Process

Data Fix Options

- Global data fixes
  - Developed to address existing miscodes in DB

- Edits/automation rules
  - Proposed to prevent future miscodes

- Manual corrections
  - Performed by regional or central registry staff
Focused Audit – Process

- Education/training opportunities identified
  - Determine discrepancy patterns and trends

- Final report
  - Prepared and submitted to management
Focused Audit Process

1. Identify Issue
2. Identify Team Members
3. Query DB
4. Identify Education Training Opportunities
5. Determine Data Fix
6. Analyze Results
7. Prepare & Distribute Final Report
BENEFITS
<table>
<thead>
<tr>
<th>Benefits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focused Audit</strong></td>
<td><strong>Recoding Audit</strong></td>
</tr>
<tr>
<td>Data Quality Monitored Frequently</td>
<td>Minimum – once per year</td>
</tr>
<tr>
<td>1 Month</td>
<td>3-4 months</td>
</tr>
<tr>
<td>All cases in DB with issue included</td>
<td>Random Sample</td>
</tr>
<tr>
<td>Retrospective &amp; Prospective Approach</td>
<td>Correct cases in sample only</td>
</tr>
</tbody>
</table>
Focused Audit - Examples
Example #1
Race
RACE – FOCUSED AUDIT

✓ Race fields 1-5 analyzed

  ✓ Race is important to researchers – decision to evaluate data quality

✓ Source and update logic reviewed and revised

✓ Goal

  ✓ Revise logic to be 100% automated
  ✓ Facilitate global reconsolidation processes
Race - Focused Audit

- Global fixes applied to DB
  - 2,045 fields updated - Duplicate Codes replaced with code 88
  - 367 cases updated - Reorder Race 1 and Race 2 in hierarchical order
  - 257 cases updated - Race 1 and 2 corrected with specific race code (04-17) when 96 and specific code submitted

- Source and Update logic reviewed and automated

- Logic conforms to SEER’s coding instructions & California specific exceptions (as appropriate)

- California’s Volume I – Cancer Reporting Standards for Abstractors – revised to strengthen coding skills for Race

- Submitted final report to management
Example #2
Co-Morbidities
Comorbidities – Focused Audit

- Comorbidity fields 1-10 analyzed
- Source and update logic reviewed and revised

Goal:
- Revise logic to be 100% automated
- Conform logic to CoC and NPCR coding rules
Comorbidities – Focused Audit

- Global fixes applied to database
  - 10,425,294 fields - Correct Source Co-morbidity and ICD Revision codes
  - 59,183 fields - Non-allowable values < 5 digits corrected to 0’s
  - 32,262 fields - Re-sort codes to remove blanks between valid codes
  - 6,929 fields - Duplicate codes removed
  - 4,464 fields - Non-allowable values removed

- Source and Update logic is now 100% automated

- Coding instructions for co-morbidities strengthened in California’s Abstracting and Coding guidelines, Volume I

- Final report submitted to management
Example #3

Gender
Gender – Focused Audit

- Gender specific cancers with sex coded to a value other than male or female; and Gender coded to unknown for all sites

Goal:
- Evaluate extent of issue statewide
- Strengthen existing edit(s)
Gender – Focused Audit

- **Results:**
  - 164 gender specific cases not coded as male or female
    - 127 (77.4%) miscoded
  - 435 cases with sex coded to unknown
    - 198 (46%) miscoded
  - Regions provided spreadsheets to manually correct specific cases
  - Strengthen abstractor instructions in California’s Abstracting & Coding Guidelines, Volume I
Gender-Focused Audit

- Change sex default in Eureka New Case Entry from 9 to blank
- Discussions with Research to allow passive follow-up code to over-ride unknown in consolidated record
- Final report submitted to management
Future Audits
Future Focused Audits

- Radiation Treatment Codes for Prostate cases and GYN cases
- Review TNM values (2015 date dx) from CoC facilities
- Unknown Primary Site
- LNs Pos/Ex indicate lymph nodes examined, but no corresponding codes in Scope of Regional Lymph Node Surgery
- Male Breast cases – confirm sex is male
Report template
Five Sections

- Background
- Methods
- Results
- Recommendations
- Conclusions
Background

- Describe the data quality issue, how it was identified, by whom, and the team member(s) assigned to analyze the issue.

- Describe the purpose or intent of the audit

Examples:

- To change existing source logic to conform to SEER’s coding rules (with California exceptions)

- To revise the source logic to be 100% automated

- To correct Race data fields 1-5 with discrepancies in priority order per SEER coding rules
Method

- Describe in detail the methodology utilized to conduct the focused audit.

Include information such as:

- ✓ timeframe of the analysis
- ✓ team members and their role in the analysis/audit
- ✓ queries performed (if applicable)
- ✓ team consensus obtained
- ✓ clarifications required from standard setters (if applicable).
Results

- Describe in detail the findings from the focused analysis/audit.
  
  ✓ Include information regarding the number of miscoded cases per data field

  ✓ Describe the approach that will be employed to correct existing cases with identified data quality issue, number of cases involved, and timeframe for correction.
    ✓ Global data fix or Manual correction

  ✓ Discuss the approach that will be employed to ensure future cases will be correct in terms of the identified data quality issue.
    ✓ Edit, Automation rule, Education
Recommendations

- Outline the step-by-step recommendations identified as a result of conducting this focused analysis/audit

For example:

- Education and training, if applicable

- Modifications to existing guidelines, if applicable

- Communication of results to appropriate management

- Post-audit follow-up after an identified period of time to ensure data quality issue has been fully resolved.
Conclusion

- Include a brief one – two paragraph summary of the audit findings and analysis conclusions.
SUMMARY
Summary

- Adopt a new approach to issue investigation
- Recognize issues as opportunities to monitor and improve data quality
- Maximize these opportunities by formalizing the analysis and communicating results to management
- Turn issue investigations into “Focused Audits”
Questions?
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