



Focused Audits

A novel approach to monitoring data quality
in the central registry

Cheryl Moody, BA, CTR

California Cancer Reporting & Epidemiologic Surveillance (CalCARES)
Program

Institute for Population Health Improvement
UCD Health System



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

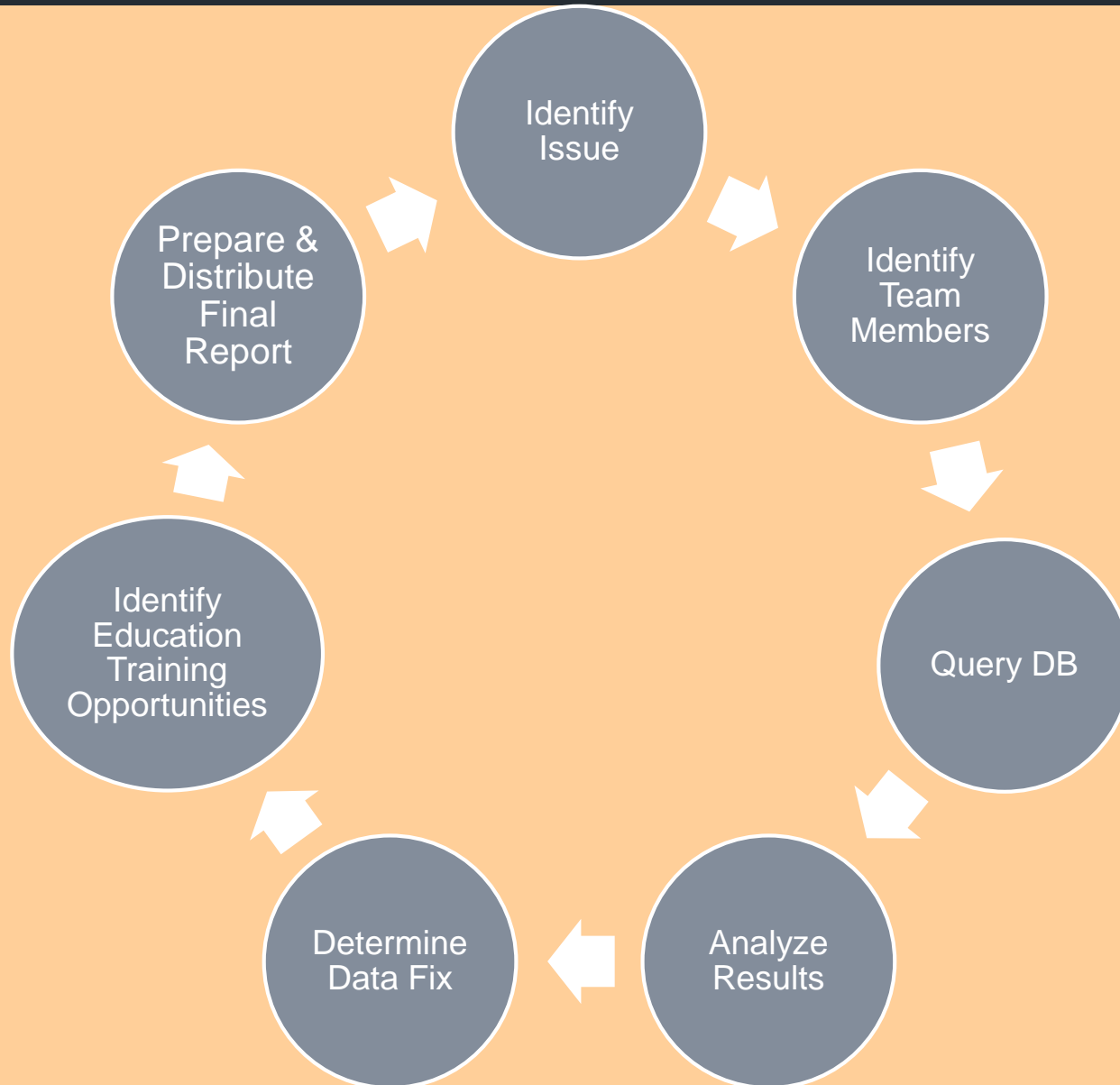
- Data Fix Options
 - Global data fixes
 - Developed to address existing miscodes in DB
 - Edits/automation rules
 - Proposed to prevent future miscodes
 - Manual corrections
 - Performed by regional or central registry staff

Focused Audit – Process



- Education/training opportunities identified
 - Determine discrepancy patterns and trends
- Final report
 - Prepared and submitted to management

Focused Audit Process





Benefits

Focused Audit	Recoding Audit
Data Quality Monitored Frequently	Minimum – once per year
1 Month	3-4 months
All cases in DB with issue included	Random Sample
Retrospective & Prospective Approach	Correct cases in sample only



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?





CONTACT INFO

CHERYL MOODY, BA, CTR
(916) 731-2540
CMOODY@CCR.CA.GOV