

Compliance and Operational Risk Management using Data Analytics

Presenters: Scott Robinson – Account Executive, ACL Public Sector
 Mark Swann – Metropolitan Auditor, Metropolitan Government of Nashville
 Britt Wood – Auditor IV, Tennessee Treasury Department
 Col. Bill Kelley (Ret.) – ACL Senior Advisor

Agenda

- ACL Overview
- Mark Swann – Major Crime Statistics
- Britt Wood – GASB 68
- Col. Bill Kelley – War Stories
- Q&A

ACL History

For 28 years, ACL has been the world's leader in audit analytic technology serving over 15,000 organizations, and over 250,000 user worldwide.

ACL is growing


Went global with offices in North America, Asia and the EU

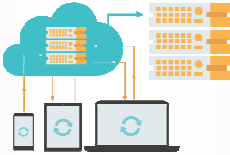
ACL Today

Trusted by audit, risk management, and compliance professionals, ACL is the only software provider to seamlessly integrate data analytics, risk assessment, audit management, workpapers, and issues tracking in one beautiful experience.


What is data-driven GRC?

- Analytics**
100% Analytical
Any source, any size
Automated testing / monitoring
- GRC**
Audit Case Management
Risk Assessment
Scheduling / Time Tracking
- Board & Exec Insight**
Gain insight like never before
Dashboards
Audit Reports

Keep your audits in your pocket 



Integrated and Data-Driven
 Easily link the identification and management of risks, mitigation and assurance projects, data analysis, issues, and monitoring activities.



Mark Swann
 Metropolitan Auditor – Metropolitan Gov't of Nashville

Bio

- 30 years of combined internal audit and IT experience in gov't and oil & gas
- 11 years with Metro Gov't and City of San Antonio
- Responsible for assurance services including Education, Public Safety, Justice Service, Economic Development, and many other operations
- BBA in Accounting from Abilene Christian University
- CPA, CIA, CISA, and ACDA


Analytics Related to Reports on Crime Statistics 

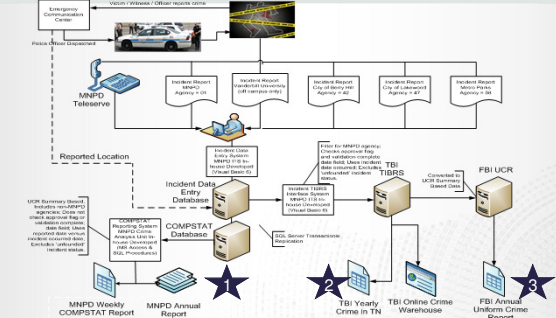


1. Metro Nashville Police Department 2008 Annual Report

2. CRIME IN TENNESSEE 2008

3. FEDERAL BUREAU OF INVESTIGATION UNIFORM CRIME REPORTING (UCR)

Overview of MNPD Crime Statistical Reporting Process 



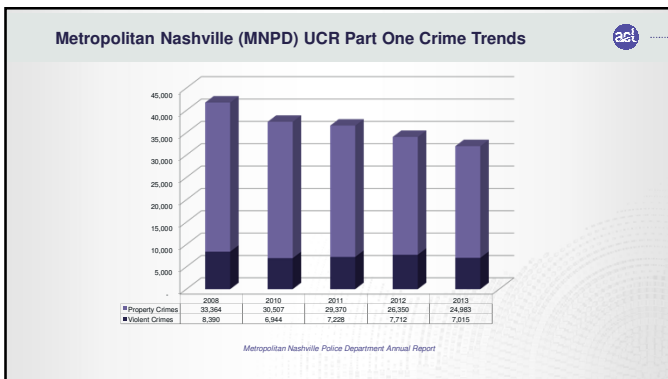
Reported Location


Incident Data Entry Database


COMPSTAT Databases

TIBRS

FBI UCR



Is the Downward Trend in Major Crimes True? 



The City Paper

Nashville crime rate drops to 20-year low
 Wednesday, February 17, 2010 at 9:42pm

The overall major crime rate for Metro Nashville fell for the sixth consecutive year during 2009 — to the lowest level in 20 years, according to statistics released Wednesday.

Audit Scope and Incident Population

Scope: Calendar Years 2007, 2008, and 2009

Example ACL Extract Log
 .11/02/2010 14:28:49 ComplaintMaster EXTRACT RECORD IF
 Between(Comp_IncidentDate, '20070101', '20071231') TO
 "ComplaintMstr2007Compstat.FIL" OPEN

2007 - Input : Records:1,885,962 Control Total:0 Output: Records:114,844

2008 - Input : Records:1,885,962 Control Total:0 Output: Records:113,090

Summary of Audit Analytic Testing

Test: Used ACL to compare MNPD and TBI data.

Result: 10,906 offense records not sent to TBI

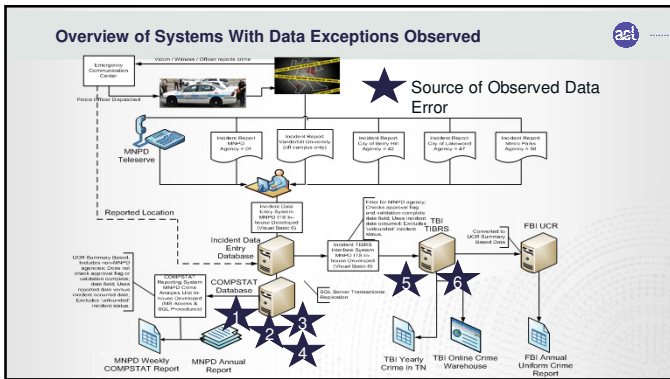
- 9,710 not sent due to computer syntax error (under reporting)
- 1,196 not finalized at MNPD (under reporting)
- Additional 682 non-reportable incidents sent to TBI in error

MNPD Crime Reporting Computer Processing Errors

Issues	Total	Part A Crime Count Impact
1. Incident report completed in MNPD incident Database and not in TBI System	9,710	Under Reported
2. Incident report completed in MNPD Incident Database but not validated or approved	1,196	Under Reported
3. Incident report in MNPD Document Management System and not completely entered in MNPD Incident Database	364	Potential Under Reported
4. Incident report with blank date in MNPD Incident Database	18	Potential Under Reported


Summary of MNPD Computer Processing Errors (Continued)

Issues	Total	Part A Crime Count Impact
5. Incident in TBI System but failed validation in MNPD Incident Database	300	Potential Under or Over Reported
6. Non-MNPD agency code incident report in TBI System	197	Over Reported
7. Incident in TBI System but "Unfounded" in MNPD Incident Database.	210	Over Reported




Part I Unfounded Crime Status Analysis

Year	Unfounded Part I Crimes	% Prior Year	Total UCR Part I Crimes	Unfounded to Total Crimes
2009	376	-32%	34,544	1.1%
2008	556	-23%	39,397	1.4%
2007	720	-4%	40,800	1.8%
2006	749	23%	41,741	1.8%
2005	607	80%	43,333	1.4%
2004	338	-1%	42,861	0.8%

Audit Recommendations 

- Compare TBI Reporting System with the MNPD's Advanced Records Management System to verify business rules are consistently working.
- Check for valid offense codes, incident report date, no blank or null required fields.
- Check that only MNPD (Agency 1) is counted in the TBI Reporting System crime counts.
- Ensure the ability for parties to modify/delete information in the Advanced Records Management System is restricted and changes are tracked.
- Perform periodic aging analysis of all records not validated and/or approved in the incident database.




Britt Wood
Auditor IV – Tennessee Treasury Department

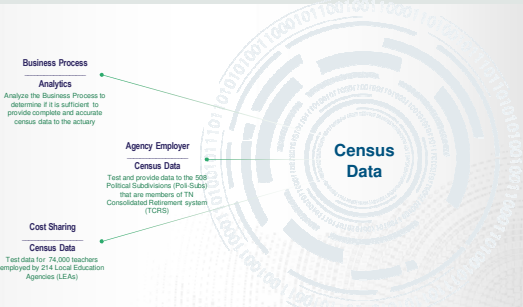
Bio

- Former member of ACL Amtrak OIG team
- 20 year member of the AGA
- Holds CGFM, CPA, CISA, CFE, and ACDA designations
- Formerly with TN Dept of Revenue (EDP Group)


GASB 68: Single-Employer and Cost-Sharing: Issues Associated with Testing Census Data in an Audit of Financial Statements


Our objectives were to provide data to the Single Employers and test the state's Teacher's Cost Sharing plan to obtain sufficient appropriate evidence regarding the completeness and accuracy of the census data underlying certain financial statement elements of the plan.

Three Main Areas 




- Business Process**
 Analytics
 Analyze the Business Process to determine if it is sufficient to provide complete and accurate census data to the actuary
- Agency Employer**
 Census Data
 Test and provide data to the 558 Political Subdivisions (Pol Subs) that are members of the Consolidated Retirement system (TCRS)
- Cost Sharing**
 Census Data
 Test data for 24,000 teachers employed by 214 Local Education Agencies (LEAs)

Business Process 




- Requested access to the data tables needed to test the business process.
- Obtained business process documentation from IT for producing the Active Employee Actuary file and the Retired Member's Actuary file.
- Replicated the business process using management's assumptions and the data elements using ACL.
- Evaluated the assumptions during the process.
- Compared data obtained using ACL using the business process to the final reports sent to the actuary.

Getting data to the Employers/CPA firms



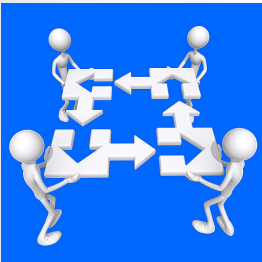
- Used ACL to create spreadsheets from the final approved actuary data with all active employees for each of the 508 employers.
- Created an email listing from the data tables for each employer's contact person.
- Sent mass email using the notify command to all 508 employers including attaching instructions on sending data through the state's secure encrypted email service.

Retiree Actuary Data



- 39,829 Retirees or Beneficiaries were paid benefits of \$304 Million from Poli-Subs/Agency Employers.
- Recalculated 98% of Retiree's initial base benefit
- Recalculated COLA for 96% of retirees since retirement date – 1971 was the oldest retirement date

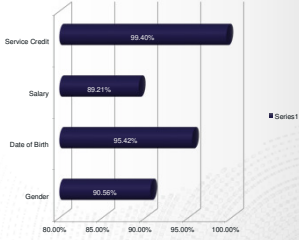
Teacher's Cost-Sharing Plan




- Data was requested from the following Departments:
 - Department of Safety and Homeland Security
 - Department of Labor and Workforce Development
 - Department of Education
- Tested 100% of the data for the LEAs
 - Date of Birth
 - Gender
 - Salary
 - Service Credit
 - Certified Teacher
 - Retirement Code

Data Analysis Results 100% of Cost Sharing Population

- 73,964 Active Teachers
- \$3,925,169,146 Reported Teacher Salaries
- \$348,475,000 Contributions
- \$1 billion in benefits



Category	Percentage
Service Credit	99.42%
Salary	99.21%
Date of Birth	95.42%
Gender	92.56%




COL Bill Kelley (ret.)
ACL Senior Advisor

Career Highlights


- Four decades serving for the US military and government
 - Award winning leader in forensic auditing
 - Creator of DoD Data Mining Directorate
- Implemented data mining for DoD purchase card data (\$13B annually)
 - Testified to congress on the benefits of data mining

Risks Concepts




Framework for Aggressive Active Oversight 

- **Data analytics-driven, risk-based methodology to improve oversight**
 - Identify institutions that may not use Federal funds properly
 - Techniques to surface questionable expenditures
- **Life cycle approach to oversight**
 - Mapping of end-to-end process to identify controls
 - 100% review of key financial and program information
 - Focus attention to award and expenditure anomalies
- **Complements traditional oversight approaches**
 - Techniques to review process and transactions are similar
 - Transactions of questionable activities are targeted


Case Examples 


Five VMF supervisors accepted bribes in exchange for directing \$13 million in maintenance work to a contractor.

- Bribes to one supervisor included thousands of dollars in drinks and lap dances at a local strip club, a \$3,000 paver patio installed in his backyard, and the services of a prostitute on a weekly basis.
- Bribes to another supervisor included more than \$65,000 in cash, thousands of dollars in free service work on cars, and a custom-modified, high-performance Ford Pinto



Working with Data




DoD Joint Purchase Card Review (2002) 


- **Purpose**
 - Develop an automated oversight capability to identify anomalies in purchase card data that may indicate fraud or abuse
 - Joint effort of all Defense audit and investigation organizations
- **Transaction Universe**
 - 12 million purchase card transactions (\$6.5B)
 - 200,000 cardholders and 40,000 authorizing officials
- **Data mining Results**
 - Developed 46 fraud indicators
 - 6.5 million transactions (1+ indicator)
 - 13,393 transactions (combinations of indicators)
 - 8243 transactions (researched by auditors)
- **Outcomes**
 - 175 cases of misuse and 75 investigations opened
 - Capability to embed data mining indicators in credit card company systems to promote continuous monitoring

Oops Management Gave Us Data now What 



BAH 

- We analyzed 70,123 records for military members who lived in military family housing at 62 Air Force locations as of 30 November 2000.
- We compared these housing record data to Air Force personnel data to validate the social security account numbers contained in the housing data.
- We then matched the housing records to the payroll records (Air Force, Army, and Navy payroll information) to identify military members occupying military family housing and receiving BAH as of 30 November 2000.



BAH



- We determined whether controls over BAH payments at 34 locations were proper to prevent and detect unauthorized payments to military members occupying military family housing.
- DFAS control procedures for preventing and detecting BAH overpayments to military members occupying military family housing needed improvement. At 21 of 34 locations reviewed, 69 military service members inappropriately received BAH payments (\$789,600) while occupying military family housing.



BAH



- In addition, we identified 548 members at 28 other locations (unaudited) who potentially may have received improper BAH payments
- We provided the 69 BAH overpayments to the Air Force financial service offices who initiated collection actions to recoup the overpayments.



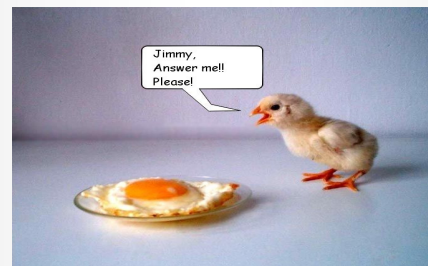
BAH



- We recommended that senior Air Force financial managers, in coordination with DFAS, automate the current manual process for initiating and terminating BAH payments; provide an automated tool for performing the annual BAH verifications; and revise guidance requiring verification between payroll and housing records for all military members occupying Air Force family housing.



Anomalies Happen



Everything isn't always what it seems to be!

High Level Deliverables



- Facilitate the identification of high risk activities and weaknesses for further review by applying business rules to purchase card transactional data to help agency better understand its compliance with existing rules.
- Define new rules and related controls based on results of analysis.
- Assist in development of continuous monitoring procedures to mitigate future fraud, waste and abuse.
- Produce on-going analysis/reporting, metrics and other identified indicators.
- Recommend corrective action to facilitate a sustainable process to include deploying tools to efficiently perform continuous routing and monitoring of high risk transactions with limited manual intervention.
- Identify those activities to target for further investigation.
- Assist in the deployment of an exception manage tool to track and document those activities targeted.

Outcomes



Anticipated outcomes of transaction oversight:

- Strengthening internal control monitoring over the program.
- Identifying potential and actual card misuse.
- Reducing program financial exposure.
- Identifying policy flaws like organizational-wide, office, or individual training gaps.
- Identifying opportunities to use BPAs and standardize equipment purchases to reduce costs.
- Supporting assurance over purchase card reported data.

Frauds happen in a context



Auditor Developed Context Should:

1. Make the complex, simple.
2. Tell a simple compelling story, and
3. Anticipate defenses.



Q&A