

# How to Leverage Data Analytics in Healthcare Auditing

*Unleash the power of the computer to vastly improve your audit reach*

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Healthcare auditing is on the cusp of significant change and you need to be there. To be an effective audit function in the years ahead, you and your department will have to step up your game. Tools are available now that allow you to leverage your skills and capabilities. Here are ideas on how you can multiply the value of your internal audit function without asking for more manpower.

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CHAN HEALTHCARE provides internal audit services to 20 healthcare networks across the nation and operates in more than 350 hospitals and healthcare facilities.

**D**ata analytics has been one of the primary drivers of the healthcare internal audit profession's progress in the past decade. Given the complex healthcare risk environment, adopting innovative methods for assessing and managing risk is critical. Data analytics can help simplify and improve the audit process by increasing operational efficiencies, reducing costs while detecting operational fraud, errors and abuse—and providing a higher-quality audit.

A survey by Frost & Sullivan revealed only 10 percent of U.S. hospitals implemented health data analytics tools in 2011. It is estimated that 50 percent of U.S. hospitals will use data analytics tools by 2016, representing a 37.9 percent compound annual growth rate.

Data analytics in the audit process permits the analysis of an entire population rather than a statistical sample, increases efficiency by analyzing more data in less time, allows more audits to be performed and improves the ability of the hospital to identify and respond to urgent events.

## Data analytics in the audit process

In our experience, leveraging data analytics during an audit is a team effort. A Data Analytics Audit Manager (DAAM) from a centralized team collaborates with an operational audit manager based in the client's facility. Additional support comes from the coding compliance audit team. Coding compliance audit managers have been instrumental in developing and supporting data analytics tools related to the revenue cycle.

Planning meetings are held at the outset of an audit to determine the audit scope and objectives and to provide the initial basis for the data analytics testing. Next, the DAAM prepares a data request that is submitted to the client. Typically, 100 percent of a patient population for a period of six months is tested. However, testing may include only a few months or a year or more of data, based on potential scope issues and client needs.



After the data is received, but before any detailed testing is performed, the DAAM generates several reports that are used by the audit manager to validate that the data in total appears to represent a reasonable and complete data set as requested from the client.

Following data validation, the DAAM performs detailed analytics testing, noting potential exceptions for the audit manager, who reviews and validates them. To enhance the audit quality and to gather information to help refine the tools, the DAAM reviews the audit manager's work of the validated exceptions.

### Use of data analytics in healthcare

Even though the healthcare industry is very broad, data analytics can be used in many areas, including physician contracts, compliance, excluded provider analysis, supply chain and revenue cycle. The revenue cycle is composed of patient access, Charge Description Master (CDM), charge capture, late charges, managed care contract compliance, length of stay, denials and accounts receivable valuation.

Data analytics conducted during a patient access audit helps identify front-end data entry problems that occur during the patient admission or registration process. Specifically, reports can be generated that include demographic data errors and omissions, patients over 65 without Medicare, patient accounts missing an admitting diagnosis code, or patient accounts with missing, duplicate, or multiple assigned medical record numbers.

Within a CDM audit, data analytics helps address areas such as coding compliance related to Current Procedural Terminology (CPT) codes, Healthcare Common Procedure Coding System (HCPCS) codes, revenue codes and drug dosages. In addition, CDM pricing versus reimbursement rates is analyzed, as is the completeness of CPT and HCPCS codes.

### Data analytics defined

In the past, we used the term Computer-Assisted Audit Techniques" (CAAT) primarily to describe testing using ACL-type software. The term "data analytics" is now used to describe the process of inspecting, cleaning, transforming and modeling data with the goal of highlighting useful audit information, suggesting audit conclusions and improving decision-making.

Data analytics tools include everything from simple sorts and filters in Microsoft Excel and Access to complex joins and analysis using ACL and structured query language (SQL). Using data analytics in an audit increases the quality and makes auditing more efficient and effective, providing valuable information for an enhanced understanding of audit findings and leading to more informed decision-making.

Effectively capturing all charges related to providing healthcare services is critical to a hospital's bottom line. Audits in this area have helped to identify:

- Failure to identify payment rule changes
- Lack of coordination among departments
- Information technology and interface failures
- Lack of effective charge capture policies and procedures

When developed on various coding elements, as well as some hospital-specific elements, data analytics can address charge capture. The tests are conducted under the premise that if the population condition is found, and the charge in question is not found, a potential exception exists.

Charge capture testing can be conducted on a broad spectrum of clinical and operational areas, including the emergency department, surgery, cardiac catheterization and

electrophysiology lab, interventional radiology, diagnostic radiology, pharmacy, oncology, reference and pathology lab, maternity and respiratory therapy.

In addition to charge capture, data analytics can be used to evaluate late charges to help an organization address the timeliness of the charge entry process throughout the hospital. Departments with a high volume of late charges are identified, providing information that might assist in root-cause analysis.

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Managed-care contract payment compliance audits can use data analytics by modeling the contract terms and calculating the expected reimbursement. To determine payment compliance, the expected reimbursement is compared to actual payments received.

Accounts receivable valuation is performed by comparing actual historical payment, adjustment and write-off activity for a given period to the reserves recorded against the same accounts receivable to determine if the reserves were appropriately stated. The analysis can be performed for both bad-debt write-offs and contractual allowances, and it provides a matrix of percentages classified by payer and aging categories that can be applied prospectively as a basis to record current reserves.

The premise for physician contract analysis is to compare accounts payable, payroll and nonpatient accounts receivable data to credentialed physician information and physician contract information to validate the accuracy and propriety of payments to physicians.

Data analytics can be used in compliance-related audits, such as patient credit balances, one-day patient stays, same-day readmissions, the three-day rule, transfers in lieu of discharges and 30-day readmissions. Emerging compliance areas in which data analytics can be used include the federal 340B Drug Pricing Program and Meaningful Use attestation.

Healthcare organizations need to screen physicians, employees, contractors and vendors for persons and entities excluded from participating in federal healthcare programs. The routines developed identify potentially excluded individuals based on listings accessed from the U.S. Department of Health and Human Services Office of Inspector General and various state Medicaid agencies.

To address the significant supply costs affecting clients, data analytics can be used to provide feedback about spending controls and compliance with contractual relationships with vendors.

### Other uses of data analytics

To identify control weaknesses and potential instances of fraud, standard payroll tests can be used, including:

- Duplicate employee master file records
- Duplicate payroll register payments
- Excessive or unexpected overtime
- Reasonableness of on-call and call-back pay
- Exempt employees with unexpected premium pay

Addressing similar risks, tests for the accounts payable area can also be developed. Standard accounts payable tests include:

- Duplicate vendor master records
- Duplicate payments
- Cash management analysis of lost discounts, invoices paid early, and invoices paid late
- Payments made exceeding certain approval limits
- Potential matches between the accounts payable and payroll master file
- Listing of accounts payable vendors with no payment activity

Data errors, unique transactions and weaknesses affecting internal controls in operating environments can be identified with an analysis of a facility's journal entries and general ledger trial balance.

Using data analytics on journal entries provides a variety of reports, including round dollar journal entries, entries to retained earnings, the last journal entry posted each period, journal entries posted by executive staff, manual journal entries to accounts payable and accounts receivable, a summary of journal entries by

user and journal entries with no description or “red flag” descriptions.

Trial-balance data analytics addresses the percentage change from the beginning to the ending balance for each general ledger account and identifies accounts without a “normal” or “expected” balance, such as asset accounts with negative balances.

In addition to identifying data errors, unique transactions and weaknesses in internal controls, a sequence of data analytics tests can be used to uncover errors, leakage, fraud and abuse in the employee expense reimbursement process. The tests compare facility expense reporting data, credit card transactions and payroll data.

Other potential areas of concern can be identified by digital analysis, Benford’s law analysis and the identification of invalid Social Security Numbers by comparing employee numbers to the Death Master table published by the National Technical Information Service of the U.S. Department of Commerce.

**Continuous monitoring solutions**

Data analytics tools are valuable for managing risks and enhancing controls in the audit process. In today’s highly complex, ever-changing healthcare environment, hospitals need monitoring solutions to make processes more efficient and to enable management to address risks, errors and potential process breakdowns as early as possible. Data can be accessed through automated interfaces on a scheduled basis to perform these tests and provide management with ongoing information about the effectiveness of controls.

Data analytics tests can be used to uncover errors, leakage, fraud and abuse.

**Risk assessment**

Incorporating data analytics into the risk assessment process has the potential to add tremendous value. Analyzing large amounts of high-level clinical, operational and financial data can help to identify potential risk areas that might otherwise go undetected.

Common reports for risk assessment include analysis and benchmarking of patient registrations by month, charges by financial class and patient type, hospital-acquired

conditions, 30-day readmissions, managed care carve-out opportunities, implant charges as a percentage of surgery charges, one-day stays, point-of-service payments as a percentage of total payments, charges summarized by revenue code, reimbursement percentages by payer, late charges, credit balances and billing delays.

Data analytics tools developed for repeated use must be evaluated frequently to address changes in coding and billing guidance obtained from various sources.

Sometimes more focused risk-assessment activities are desired, which can include accessing a six-month patient account data set and performing charge capture or compliance testing across a number of operational areas. The results can be used to identify the areas of highest risk.

**Data analytics quality**

For high-quality reports and deliverables, a checklist of items to review in the data analytics documentation should be developed. These items might include:

1. Detailed reviews of the data request
2. Data validation reports
3. Exception reports (deliverables)
4. ACL project and logs
5. Documentation of planning meetings
6. Scope and objectives
7. Review of reports
8. Auditor support
9. Follow-up
10. Data archiving

To monitor and address potential issues identified during the quality review process, all checklist results can be plotted into a spreadsheet. Results can be summarized and shared with the team so that potential issues can be addressed.

Often, test criteria are refined based on feedback from audit managers and clients in the normal course of the audits. However, data analytics tools developed for repeated use must be evaluated frequently to address changes in coding and billing guidance obtained from various sources, such

as the Centers for Medicare and Medicaid Services and the American Medical Association.

Each tool also should be subject to periodic quality reviews by an auditor who is independent of the subject-matter expert responsible for developing and maintaining the respective tool.

It is important to have all auditors, not just the members of the data analytics team, undergo baseline assessments and receive appropriate training to ensure they are savvy about data analytics. The critical factors for success in data analytics include:

- Expanded use of data analytics by all auditors and throughout the audit process, from risk assessment to audit follow-up
- Expansion of continuous monitoring in multiple areas of the hospital

- Expansion of risk assessment analytics
- Continual pursuit of higher-quality data analytics to enhance the audit process

### Conclusion

As compliance and audit issues in the healthcare industry become more complex, healthcare internal auditors can leverage the value of data analytics to identify potential issues by using and analyzing data in new and creative ways. **NP**

### Reference

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*The best way to predict your future is to create it.*

~Peter Drucker

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