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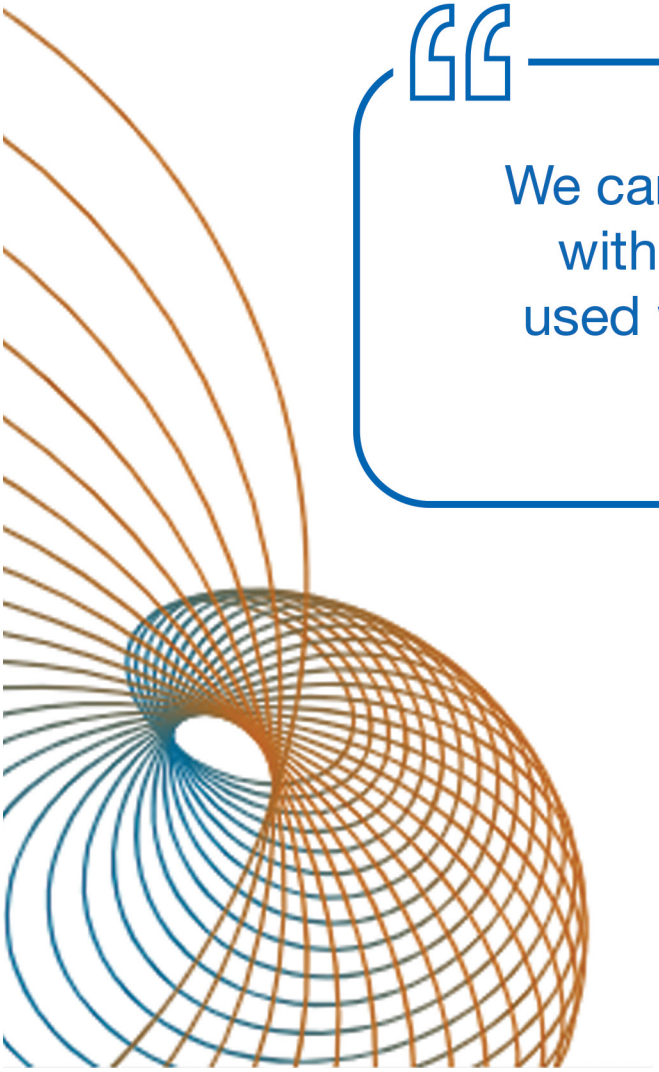
Staying a Step Ahead

Leveraging the power of predictive analytics for audit risk management

Introduction

Healthcare providers are under siege. Not only is it difficult to get properly compensated for the services you provide, but then a growing pack of regulators from the public and private sector bay at your door to claw back the revenue that you ultimately collected. This white paper will explain the growth and financial impact of regulatory audits and how you can fight back using predictive analytics.



> We cannot solve our problems with the same thinking we used when we created them.
>
> *- Albert Einstein*

The Big Picture: **What You Are Up Against**

Investigational audits of physician practices continue to climb. Last year, it was estimated that nearly 15 of every 100 physicians underwent some type of a billing and coding audit. That means if you haven't yet been audited, odds are you likely soon will be.

Whether you are ultimately tagged with a reimbursement finding or not, you lose – in terms of expense, resources, and lost time. In the *Denials and Appeals Survey* that we conducted several years ago, respondents told us that the average paid amount for an audit unit (i.e., claim, code, beneficiary, etc.) was $96 and the cost to appeal the audit unit was $108. That means that, even if you win the appeal, your net cost is $12 - hardly a fair exchange.

When the federal government – and increasingly even private payers – take you on, it's hardly a fair fight. In 2011, the CMS implemented the Fraud Prevention System (FPS), an advanced statistical application that uses predictive analytics to identify the likelihood that a given claim or set of claims should not be (or should not have been) paid. Since July 1, 2011, 100% of all Medicare fee-for-service claims are passed through the FPS prior to payment. According to the 2015 CMS Annual Report to Congress[1], in just the first three years following implementation, the FPS "identified or prevented $820 million in inappropriate payments." And these are the dollars that the practice didn't get paid.

[1] *Annual Report to Congress on the Medicare and Medicaid Integrity Programs for Fiscal Year 2015.* Department of Health and Human Services, February 3, 2016.

According to that same report, “CMS estimates that program integrity activities saved Medicare $17.0 billion in FY 2015, for a three-year return on investment of 12.4 to 1 for the period that ended on September 30, 2015.“

The use of sophisticated high-tech systems built on machine learning algorithms and advanced statistics by government and private payers is here to stay. The critical question then becomes: What should be your plan moving forward? The answer is to fight fire with fire: implement your own risk-based auditing system built on a foundation of predictive analytics to determine when you are at risk of an audit. This is the best way for you to stay one step ahead.

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[2] *Predictive and Prescriptive Analytics in Healthcare: A Survey.* Volume 170, 2020, Pages 1029-1034, ISSN 1877-0509, *https://doi.org/10.1016/j.procs.2020.03.078. Procedia Computer Science, João Lopes, Tiago Guimarães, Manuel Filipe Santos*

Predictive **Analytics 101**

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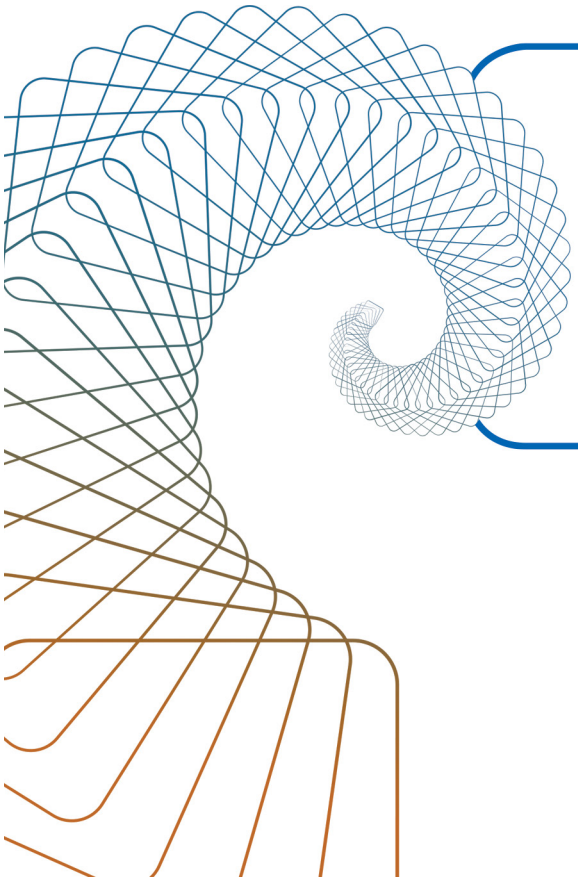

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Predictive analytics is the branch of statistics used to make predictions about unknown future events.

For example, predicting:

- The likelihood that a given physician will be audited in the future.
- Which procedure codes/modifiers are most likely to be targets?
- Which provider is likely to be sued for malpractice?
- Which patient is most likely to sue?
- The likelihood that a given patient will return to the hospital within 30 days
- The time it will take for a new physician to break even

Predictive analytics uses many techniques from data mining, statistics, modeling, and artificial intelligence to analyze prior data in order to make predictions about future. One of the key contributors to predictive analytics is machine learning.

What is machine learning?

Machine Learning (ML) is a method of data analysis that automates analytical model building. It is a branch of Artificial Intelligence (AI). It is based on the idea that systems can learn from their own data, identify patterns, and improve decision-making with minimal human intervention.

Deep-learning systems have made great gains over the past decade in domains like object detection and recognition, text-to-speech, information retrieval, and others. Research is now focused on developing data-efficient machine learning, i.e., deep learning systems that can learn more efficiently, with the same performance in less time and with less data, in cutting-edge domains like personalized healthcare, robot reinforcement learning, sentiment analysis, and others. Amazon, for example, uses this technology to discern whether a comment on a product is sincere or sarcastic!

Artificial Intelligence vs. Augmented Intelligence

Artificial Intelligence is the theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and transition between languages.

Augmented Intelligence, also referred to as intelligence augmentation (IA) and cognitive augmentation, is a complement – not a replacement – to human intelligence. It helps humans become faster and smarter at the tasks they're performing.

Many analytics products claim to be driven by artificial intelligence – often because that is the buzzword of the day. But they are not. Rather, they use some forms of applied statistics, such as benchmarking or regression to estimate, rather than predict, some future outcome. The difference is that predictive analytics solutions are based on augmented intelligence – providing the expert-based tools that audit and risk people need to do their jobs more accurately and efficiently.

The Next Step: **Predictive Analytics and Audit Risk Management**

Prediction vs. Estimation

When it comes to risk-based audit management, many healthcare providers use systems and processes based on estimation, which is restricted to those data points within a specific known data range. While using estimation to assess audit risk can be helpful, it simply can't get to the level of detail necessary to best identify high-value risk targets. The difference has to do with the level of uncertainty and whether or not the predictions are within or outside of the current universe of data. Estimation is restricted to the known data, while prediction is extended beyond the known data.

For example, many billing and coding audits end in extrapolation. That is, the auditor takes the results from some small sample of claims and then "estimates" what the total overpayment amount might be if every claim was audited. This is not predicting but rather estimating based on a known data set. In this case, that is the universe of claims from which the sample was drawn. In this scenario, predicting would be able to help the organization understand what episodes of care, events, visits, etc., might be most likely to be subject to this type of audit in the future, or beyond the existing universe of data, helping to mitigate risk through advanced intelligence.

Not everything is risk-based

Although the CMS and most payers have embraced risk-based auditing – a solid approach to creating checks and balances for compliance strategies - the fact is that not every method that seems risk-based is risk-based. For example, if one were to line up every procedure billed over a period of time and then sorted that list by frequency, it would be logical to start with those procedures billed out the most. But that's not risk, that's baselining.

One could also compare the utilization for some procedure code against the utilization for some other group, like the Medicare utilization data set. But that's not risk either; that's benchmarking - an approach that reminds you where you have been, not where you are going. While benchmarking can play a role in predictive modeling, you still need to properly integrate the data within predictive algorithms to push the models to the next level. The reality is, if you want to look through the windshield rather than the rear-view mirror when it comes to minimizing your audit risk, you should be looking to invest in real predictive analytics – just as government and private payer regulators are doing.

Each of those linear methods plays a part in risk, but they do not alone define risk. Risk is an actuarial model that requires a non-linear approach.

Defining Risk

To properly assess the probability of your audit risk, you should conduct assessments of physicians in five primary component areas:

1. Procedure Code Utilization
2. Modifier Utilization
3. Relative Value Unit Utilization
4. E&M Categorical Distribution
5. Provider Time

Each of these categories has its own set of algorithms for measuring risk, and different auditing entities take an interest in each category based on their audit model. Comparisons should be specialty-specific and support most physician and advanced practice providers (APP). Remember, the goal is to predict risk into the future, not just assess (or estimate) where your risks are now.

Mitigating Risk

The first step you must take to protect yourself from the damaging impact of a government or private payer audit is to identify which codes and modifiers for which providers are most at risk. The second step is to conduct an in-depth audit of those potential risk events, either validating or invalidating the risk analysis and identifying which encounters are inclusive.

The reality is, if you want to look through the windshield rather than the rear-view mirror when it comes to minimizing your audit risk, you should be looking to invest in **real predictive analytics** — just as the government and private regulators are doing.

If you do identify documentation or medical necessity issues, then you can establish remediation and educational policies and efforts to correct these right away, mitigating the risk of a negative audit outcome. The most important part of this process is development of the audit plan, which provides detail on the specific procedure codes and/or modifiers for each provider that are most likely to be subject to an external audit.

You should also consider the other side of the risk mitigation coin. Not only are you avoiding extra costs, but you are also creating additional revenue opportunities by ensuring that your coding is being done properly. This can be a huge benefit for your CDI and revenue cycle efforts.

Impact of predictive analytics on audit risk management

A Comprehensive Error Rate Testing (CERT) study conducted by CMS showed that some 9.5 percent of all Medicare Part B FFS claims are billed in error. That means a random probe audit of all of your claims would likely uncover somewhere around 9.5 percent of claims in error. But that is an impossible ask since no organization has the resources to manual review all of their claims. The typical probe audit of, say, 10 encounters per provider misses over 90 percent of your risk opportunities. This is because the typical provider reports (or bills for) in excess of 100 unique services and procedures, and pulling just a few encounters could never cover that spread.

A positive consequence of risk-based auditing, when done correctly, is the ability to increase the CERT error rate based on the simple fact that the technology allows you to statistically review 100% of your claims rather than some minimal amount. In this way, the model will have identified those procedures that have a higher risk of audit and are statistically more likely to have billing errors, as defined by the algorithms and supported by CERT. A system using true predictive analytics can identify your high-value targets now and into the future, whether they are associated with the provider in general or specific codes and modifiers for that provider or patient population.

Predictive analytics can significantly increase the uncovered error rate and better identify the chances of an external compliance audit. In one analysis of nearly 3,500 audits conducted by providers using a predictive analytics system to identify risk, the average error rate was nearly 18 percent, or just about twice that of a probe audit. This type of predictive analytics model is not designed to identify specific encounter errors but rather to predict the likelihood of an audit or review.

More likely than not, you already know those few providers that pose the greatest threat for audit and recoupment. What manual processes cannot help with, however, is identifying the risk posed by the remaining vast majority of your providers. While big money fraud detection from the FPS systems gets the headlines, the most common areas that trigger an audit come from errors, waste, and abuse. A risk-based auditing system driven by predictive analytics can help you identify those areas before they result in a regulatory compliance audit, thereby mitigating any damage that might result.

Conclusion

So, what's a compliance professional to do? There's little disagreement over the lengths to which private and government payers will do to attempt recouping payments to providers. The question becomes, how badly do you want to keep the moneys you have rightfully earned? According to the most recent reports from the U.S. Department of Health & Human Services[3], only 31% of appeals and 14% of claims received an unfavorable decision at the ALJ hearing. That means that, during an audit, the overwhelming majority of claims adjudicated as overpaid were, in fact, not! Integrating an effective predictive analytics strategy into your compliance plan can help identify these issues on the front end, saving the time and money required to go through the entire appeals process. What will you do?