Leveraging Social Network Analytics to Prevent Fraud and Improper Payments

Advanced Analytics Connects the Dots in Major Medicaid Fraud Ring

Overview

Advanced analytics leveraging massive public records data sets are changing the way health care enterprises detect and prevent fraud. As a reaction to organized crime's move into healthcare, there is a much needed shift from reactive to proactive identification taking place, empowering organizations to root out fraudulent activity before it hits their bottom line. A pilot program conducted by LexisNexis® Risk Solutions for the Office of the Medicaid Inspector General (OMIG) of a large Northeastern state not only showcased the power of social networking analytics – integrated with comprehensive external data and powerful linking technology – but also helped reveal the foundations of a massive fraud scheme.

Background

Traditionally, and for the most part today, health care fraud detection and recovery is done at the back end of the workflow, with claims submitted by providers and paid without a sufficient analysis to determine their validity. If, after a claim has been paid, the payer finds it to be questionable, the recovery process is labor-intensive and costly.

As a result, success in stemming health care fraud, waste and abuse across commercial and government programs has been far less than satisfactory. Moreover, as budgetary pressures intensify, these traditional approaches will become increasingly inadequate. LexisNexis is seeking to change all that, incorporating state-of-the-art linking, big data and predictive and social analytics to create transparency into the investigation of fraud and improper payments. A key factor in this process is the use of social network analytics, which looks at data points and links people, businesses and assets in a way that is relevant to the situation at hand and draws attention to the areas that require focus.

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Proof of Concept

When the OMIG sought to shift its process from a claims focus to a behavior focus, it called on LexisNexis. As a proof of concept, the two organizations created a pilot program around a suspected fraud ring, a situation that the OMIG and, in fact, virtually any other organization like it, lacks the resources to properly address.

The OMIG suspected fraud among a group of state Medicaid recipients, all of whom were living in the same high-end condominium complex – and all of whom were on Medicaid. Unfortunately, however, no commercial or government health care organization has the time or manpower to investigate numerous new, separate cases, much less uncover connections the individuals may have attempted to keep under wraps.

LexisNexis was charged with identifying the hidden relationships between the million-dollar condo-dwellers and their assets, providers, medical facilities or others providing care to the state's Medicaid recipients. To accomplish this, it would integrate data and investigative resources from the OMIG with its high-performance computing platform-based Social Network Analysis system.

To initiate the investigation, LexisNexis was given the list of names and addresses of the targeted group – and nothing more. The results, however, were far more expansive.

Methodology

Leveraging 50 terabytes of public data, LexisNexis built a large-scale network map of the targeted Medicaid recipients and everyone associated within two degrees. Next, patented LexisNexis algorithms were used to cluster the network map and generate statistics to measure every cluster.

The graph for the cluster was then queried for significant statistics, such as:

- How many of them were living in expensive residences, owned expensive property or drove expensive cars?
- How many recipients were related closely with a medical business or provider?
- How many medical businesses were associated with any of the people in the cluster?
- How many of the persons represented were receiving benefits?

The resulting connections enabled LexisNexis to quickly discover the key players in the suspected ring, including major players not in the data we were supplied. The analyses revealed hundreds of high-end automobiles, other properties owned and links to provider networks. It also revealed very suspicious volumes of "deed flipping" within the group, potentially indicative of mortgage fraud and money laundering. The investigation is ongoing.

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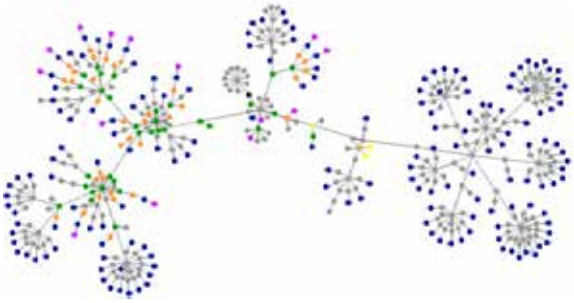
- Provider of risk-related information and analytics with leading positions in insurance, financial services, corporate, government and screening, as well as in legal markets.
- One of the most comprehensive databases of public record information in the United States, with 34 billion public records, significant contributory databases and market-leading technology and proprietary analytics.
- Combined knowledge base of more than 200 years' experience in commercial and government health care sectors.
- More than a century of cutting-edge data analytics experience.

Conclusion

Today, this state's OMIG leads the nation in current techniques using provider behavior analysis to target interventions.

LexisNexis, in turn, continues to push the boundaries of this new frontier, with analytics examining up to 20 billion data points to create variables that allow for predictive analysis incorporating relationship context and associated risk. It also is taking the lessons learned in the pilot to continue to expand its capabilities, integrating more public data from other systems and following up on analytics using relational data in designing interventions, audits and investigations.

Social Network Analytics Diagram



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Our health care solutions assist payers, providers and integrators with ensuring appropriate access to health care data and programs, enhancing disease management contact ratios, improving operational processes, and proactively combating fraud, waste and abuse across the continuum.

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