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Highmark  
vice president  
**SHAWN McNELIS**  
(left), and **TOM  
BRENNAN**, director  
of the Special  
Investigations Unit



## Detecting a Web of Fraud

### UNUSUAL TREATMENT AND BILLING PATTERNS RAISED RED FLAGS, HELPING TO TRAP INSURANCE SCAMMERS

BY JENNIFER McADAMS

**A** BAND of chiropractors, with the help of insured “patients,” recently bilked several insurance companies out of millions. Now they’re facing \$7 million in fines and up to seven years’ imprisonment. In this major case of insurance fraud, independent Blue Cross Blue Shield provider Highmark Inc. used a new business intelligence application to fight back. Nearly 50 people in-

sured by Pittsburgh-based Highmark also face prosecution, having allegedly received kickbacks from the chiropractors.

The insurance company’s Special Investigations Unit (SIU) spearheaded this successful, far-reaching probe through the use of detailed BI analysis data and reports. BI data helped turn up suspicious treatment and billing patterns. The carrier then tipped off other insurance providers to the falsified claims and collectively filed charges against the chiropractors, one of whom will be sentenced this fall.

Nailing the case had everything to do with Highmark executives’ decision to give agents working on cases of potential fraud immediate access to a homegrown BI application. Highmark’s FIRST (Financial Investigation Reporting System Tool) system eliminates the need for agents to constantly badger analysts in the health care informatics department for information they need to track patterns of treatment or billing that don’t match set parameters.

Indeed, FIRST helped detect unusual patterns among the group of chiropractors. “The practitioner we prosecuted along with two other chiropractors was doing

**BI Home  
Runs**

very little, but all three were living very well," says Highmark's SIU director, Tom Brennan.

FIRST hinges on software developed internally that detects irregular patterns using data served up via a BI system built by SAS Institute Inc. Cary, N.C.-based SAS has coupled Highmark's BI functionality with Java interfaces. "We also rely heavily on the use of databases implemented on Teradata servers to help us retrieve, process and store data quickly and efficiently," says Shawn McNelis, Highmark's vice president of health care informatics, research and analysis.

Such systems are necessary to fuel the amount of BI data that investigations require, notes Keith Gile, a principal analyst in Forrester Research Inc.'s information delivery research group. "What's needed is granular data, preferably at the transaction level; a detailed set of rules that establishes the boundaries between what is and what is not fraudulent; and the ability for the BI platform to process all of this data in a short period of time," observes Gile.

In Highmark's case, granular data that includes process codes and detailed patient information is served up in what-if scenarios within seconds. That information is crucial to fraud detection, says Brennan.

"Examples of improvements we've been

able to accomplish using BI include identification of an 'impossible day.' This is a scenario in which a practitioner, such as a physical therapist, bills for a lot of hours — so many that it points to the fact that these services could not possibly be rendered in such a short amount of time. There are just not that many hours in a day," Brennan says.

Once the possibility of fraud is detected, insurance companies such as Highmark must build a solid case. "Data quality is always an issue," notes McNelis. The company's data warehouse staff constantly combs information for any problems — taking pressure off SIU agents, since claims are loaded into Highmark's new enterprise data warehouse almost immediately.

The warehouse then spits out BI data that has been summarized and analyzed before it reaches SIU agents. "A request is made by the SIU analyst through an easy-to-use Web interface to extract the data needed for a particular report," says McNelis.

Federal health agencies estimate that 3% to 10% of all insurance claims are fraudulent. "If you use the low figure of 1% and bear in mind that we pay out about \$7 billion per year, you quickly realize that we can save a heck of a lot of millions through fraud detection," Brennan says. He estimates that Highmark realizes a substantial

## HIGHMARK INC.

This \$8 billion umbrella insurance company oversees many health, dental and vision plans.

**PROJECT CHAMPIONS:** Tom Brennan, director of the Special Investigations Unit; Shawn McNelis, vice president of health care informatics, research and analysis

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**IT DEPARTMENT:** 1,700 employees

.....  
**PAYBACK:** 2005 savings of \$11.5 million by detecting fraud.

return on investment with its BI capabilities.

Yet the insurer plans to become even more aggressive in the face of escalating fraud. Currently in development is a system to detect insurance abuse earlier.

"Once our new models are built, we will be able to do preadjudication work and identify abnormalities or aberrances prior to the money going out the door," Brennan says. "This will yield substantial savings, since we normally recover only 20% to 30% of the funds once the money has been disbursed."

Customer-facing organizations that are exposed to fraud may want to follow Highmark's lead and step up the use of BI, especially for preventing fraudulent payments before funds are allocated. ▀