



## Zorg en Zekerheid

*Health insurer detects insurance fraud with IBM SPSS predictive analytics software*

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### Overview

#### Business Challenge

Zorg en Zekerheid needed a more accurate and efficient solution to detect claims fraud – including the wrongful practices of “up-coding” and adapting invoices.

#### Solution

Zorg en Zekerheid turned to the data mining solution, IBM® SPSS® Modeler to detect anomalies regarding claims.

#### What Makes it Smarter

Modeler easily detects patterns and trends in structured or unstructured data using a unique visual interface, supported by advanced analytics. It has allowed the firm to more accurately and efficiently detect fraud better than previously-used data mining solutions.

#### The Result

IBM® SPSS® Modeler has taken the guesswork out of fraud detection by automatically discovering anomalies that point to fraud. Fraud investigations that once took weeks now take merely days.

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Zorg en Zekerheid is a medium-sized and independent regional health insurer in the Netherlands, with more than 460 employees and more than 380,000 policyholders. The company is committed to providing accessible and affordable healthcare. The customer's health is key, which is demonstrated by high-quality services, short lines of communication with healthcare providers and its non-profit basis. By keeping close contact with care providers, such as family practitioners, physiotherapists and other healthcare specialists, Zorg en Zekerheid is able to make good arrangements regarding the rates and the criteria with which health services must comply.

### Detecting fraud from millions of records

The majority of policyholders and healthcare providers submit claims for treatments that have actually taken place. However, a small number commit fraud – for example by adapting invoices. There are instances of policyholders who, after returning from vacation, submit invoices for medical costs made abroad. Further examination shows that the invoiced amount has been altered and is many times higher than the original amount.

There are also instances of “upcoding” – a form of fraud committed by healthcare providers performing simple services but claiming for more complex alternatives, which results in higher costs. Through active anti-fraud measures, Zorg en Zekerheid aims to reduce costs and ensure that premiums of policyholders remain affordable.

These days, most claims are submitted digitally, straight from the care provider to the insurance company. There are millions of records, and the challenge is to quickly identify the records that are fraudulent.





### Business Benefits

- Rather than manually selecting data on the basis of risk indicators, IBM SPSS predictive analytics software automatically discovers patterns and anomalies
- Significantly improved accuracy of detected deviations
- Previously, the full investigation process took weeks – now the firm can track down fraud cases within days
- Financial results of the Special Investigation Unit have doubled each year since 2007

In 1999, Zorg en Zekerheid set up a Special Investigations Unit to detect and combat fraud. This department of fraud experts – consisting of four investigators, an analyst and a unit manager – is primarily engaged in detecting anomalies regarding claims. These deviations are then investigated to determine possible fraudulent practices. Once providers engaging in fraudulent practices have been tracked down, money paid to them can then be recovered.

### Previous solutions time consuming, inaccurate

To uncover fraudulent cases, Zorg en Zekerheid was using software that analyzed data on the basis of pre-defined risk indicators. This required manually selecting the data on the basis of these indicators and subsequently determining if fraud was involved. This tended to be a very time-consuming process that did not always produce the desired results.

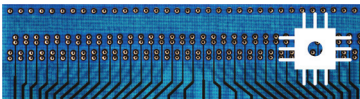
“For the detection of fraud, it is important for us to be able to look into data without knowing in advance what we are going to find and which records will be involved,” said Andor de Vries, fraud analyst with Zorg en Zekerheid. “This is referred to as ‘unsupervised learning’ and requires a solution capable of analyzing larger quantities of data, discovering patterns automatically and bringing anomalies to light.”

### Looking to increase accuracy and efficiency

After working with the previous software for three years, Zorg en Zekerheid sought a solution that would produce more accurate results. The main criterion was that the “chance of being caught” had to be greater. In other words, the new solution had to be capable of detecting deviations – and ultimately cases of fraud – more accurately and efficiently. Zorg en Zekerheid began examining various data mining solutions, including SAS® and IBM SPSS branded software solutions.

## Smarter Insurance:

## Using predictive analytics to better detect fraud



### Instrumented

IBM SPSS predictive analytics enables Zorg en Zekerheid to easily detect patterns and trends in structured and unstructured data – helping the firm to better identify fraud.



### Interconnected

Quick fraud detection helps Zorg en Zekerheid streamline its communication with healthcare providers – helping the insurer to keep its rates low and customer satisfaction high.



### Intelligent

IBM SPSS predictive analytics takes the guesswork out of fraud detection. Fraud investigations that once took weeks now take merely days.



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## Solution Component

### Software

- IBM® SPSS® Modeler
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*“While previously the full investigation process might have taken weeks, we’re now able to track down fraud cases within days. We typically express the added value of our department in terms of financial results. By using IBM SPSS Modeler, these results have doubled each year since 2007.”*

— Andor de Vries, fraud analyst,  
Zorg en Zekerheid

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“After the pilot with IBM SPSS Modeler, we were so enthusiastic about the results that I thought it was redundant to look elsewhere. We have worked with the software for two years now and I’ve never lost my initial enthusiasm. I recommend Modeler to everybody.”

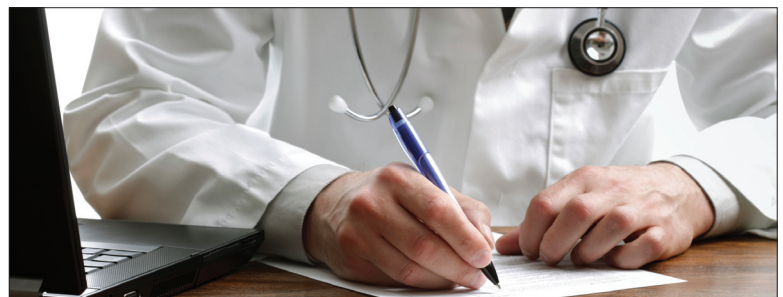
In order to demonstrate the power of IBM SPSS Modeler, a pilot project was set up in which a model was created to detect deviations in claims.

“We had just solved a fraud case and I gave the data regarding that case to IBM SPSS consultants to incorporate in the pilot project,” continued De Vries. “After a quick analysis, they selected five healthcare providers who were potentially submitting fraudulent claims, from a total of over a hundred providers. The healthcare provider which had just turned out to be fraudulent, was also on that list. From that moment on, I was sure that I was dealing with the right party.”

### **IBM SPSS Modeler shortens fraud investigations, saves money**

From day one, IBM SPSS Modeler has made a considerable contribution to Zorg en Zekerheid’s fraud detection approach, and the organization has made great progress in this regard ever since. Not only has the accuracy of detected deviations improved significantly, but the process moves much faster as well.

“While previously the full investigation process might have taken weeks, we are now able to track down fraud cases within days,” concluded De Vries. “We typically express the added value of our department in terms of financial results. By using IBM SPSS Modeler, these results have doubled each year since 2007. We are obviously very satisfied with this score.”



## About IBM Business Analytics

IBM Business Analytics software delivers complete, consistent and accurate information that decision-makers trust to improve business performance. A comprehensive portfolio of business intelligence, predictive analytics, financial performance and strategy management, and analytic applications provides clear, immediate and actionable insights into current performance and the ability to predict future outcomes. Combined with rich industry solutions, proven practices and professional services, organizations of every size can drive the highest productivity, confidently automate decisions and deliver better results.

As part of this portfolio, IBM SPSS Predictive Analytics software helps organizations predict future events and proactively act upon that insight to drive better business outcomes. Commercial, government and academic customers worldwide rely on IBM SPSS technology as a competitive advantage in attracting, retaining and growing customers, while reducing fraud and mitigating risk. By incorporating IBM SPSS software into their daily operations, organizations become predictive enterprises – able to direct and automate decisions to meet business goals and achieve measurable competitive advantage. For further information or to reach a representative visit [www.ibm.com/spss](http://www.ibm.com/spss).



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