

# ADVANCED ANALYTICS IN INSURANCE AND REINSURANCE

Elder Research identifies areas for growth, provides training and support, and delivers actionable insights through predictive modeling.

## EXPERIENCE

- » Reinsurance
- » Health Insurance
- » Long-term Disability Insurance
- » Life Insurance
- » Property and Casualty Insurance

## INSURANCE & REINSURANCE APPLICATIONS

- » Claims Handling
- » Underwriting
- » Marketing
- » Fraud, Waste, and Abuse

## HEALTH INSURANCE APPLICATIONS

- » Providers
- » Employers
- » Payers
- » Prescriptions
- » Connected Devices
- » Medicaid
- » Medicare
- » Population Health
- » Insurance Claims

## INSURANCE & REINSURANCE ANALYTICS



**Insurance companies are racing to embed analytics into every aspect of their business, and we at Elder Research are supporting our Insurance clients by assessing, identifying, and leveraging opportunities to harness the power of predictive analytics.**

Elder Research has a long history of providing analytic support to insurance and reinsurance providers. Whether in long-term disability, term life, or property and casualty insurance, we have worked across business lines to improve claims handling, approval speed, and accuracy, forecast claims volume, and identify fraud, waste, and abuse. Through analytics training and the application and deployment of advanced analytics, we have helped our insurance clients save money, time, and improve their customer experience. Analytic power can come from data driven insights, expert knowledge, or a combination of the two (Figure 1). Pairing experts in analytic methodologies with experienced actuaries is one recipe for analytic success. Elder Research is experienced working with subject matter experts and large data sets to help you find the analytic solution that is right for your company.

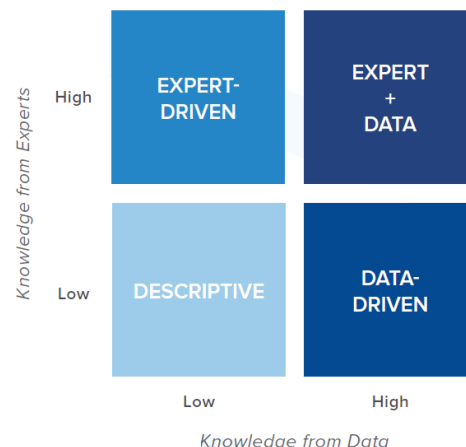


Figure 1. Data-driven vs. Expert-Driven Knowledge.

## HEALTH INSURANCE ANALYTICS



**The healthcare industry is experiencing rapid change in how care is delivered, driven by the dramatic increase in information availability in the era of Big Data.**

Rising medical costs, scarce provider time, and progress toward greater data availability are driving stakeholders across all facets of healthcare to turn to advanced analytics to improve performance, reduce costs, and deliver improved patient outcomes. New challenges abound with deriving valuable insights from interconnected health devices and Electronic Medical Records (EMRs). Our cross-industry experience makes Elder Research an ideal partner for navigating the disruptive, data-driven changes in the healthcare sector.

### Contact Us

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**ELDER RESEARCH**  
 — DATA SCIENCE · AI · MACHINE LEARNING —

### Office Locations

Charlottesville, VA  
 Washington, DC  
 Baltimore, MD  
 Raleigh, NC  
 London, UK

## SOLUTIONS & SERVICES

Whether we're working with newly formed analytics teams or established professionals, we help our clients understand their data, strengthen their teams' abilities, and identify insights aligned to their needs. In addition to modeling services, Elder Research can provide:

- **Analytics Training:** Develop a common foundation for data analytics, for leaders and practitioners
- **Analytics Assessment:** A customized appraisal of your organization's current analytical maturity
- **Analytics Survey:** A cost effective, high-level overview of your organization's analytic capabilities
- **Software Tools and Engineering:** Software solutions to more effectively visualize data, integrate into business and operational processes, and drive better decisions

### CASE STUDY

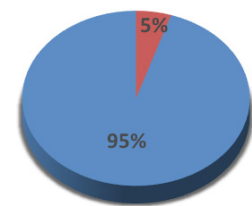
#### Detecting Potential Provider Fraud, Waste, and Abuse with Predictive Modeling in Healthcare Insurance

Investigating providers suspected of billing for fraudulent procedures can be a costly and time consuming process. With our client experiencing an estimated 5% global rate for provider fraud, it was critical to focus investigations on cases most likely to be fraudulent or non-compliant.

Elder Research developed an advanced analytics model for a Medicaid and Medicare Dental Insurance provider to detect potential provider fraud, waste, and abuse by ranking potentially fraudulent providers for targeted intervention. For providers suspected being potentially fraudulent for specific procedures, the model provided explainable and defensible evidence, a critical component required to support an investigation. The model also increased the fraudulent case hit rate to 48% of cases in the top 50 riskiest providers. Providers who were ranked in the top 50 by the model were over nine times more likely to commit fraud than a provider picked at random. This analytics solution helped investigators focus their time and efforts by providing an automated tool to prioritize cases for investigative review.

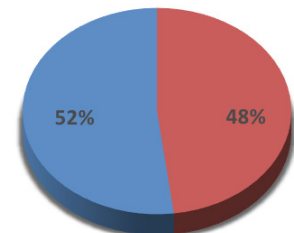
For further information about this case study and others, visit our website at [elderresearch.com](http://elderresearch.com).

Global Rate



Fraud Not Fraud

Top 50



Fraud Not Fraud

## ABOUT ELDER RESEARCH

Elder Research is a data science and predictive analytics consultancy and a recognized industry leader in the science, practice, and technology of advanced analytics. Founded in 1995 by Dr. John Elder, Elder Research has over 20 years of experience partnering with hundreds of companies ranging from large Fortune 50, multinational corporations to small startups in diverse industry segments, including healthcare, insurance and reinsurance, retail, telecommunications, banking, investment, and oil and gas exploration.

**To learn more about Elder Research and how we can support your company's analytics initiatives, please visit our website or contact us at our Charlottesville, VA headquarters at (855) 973-7673.**