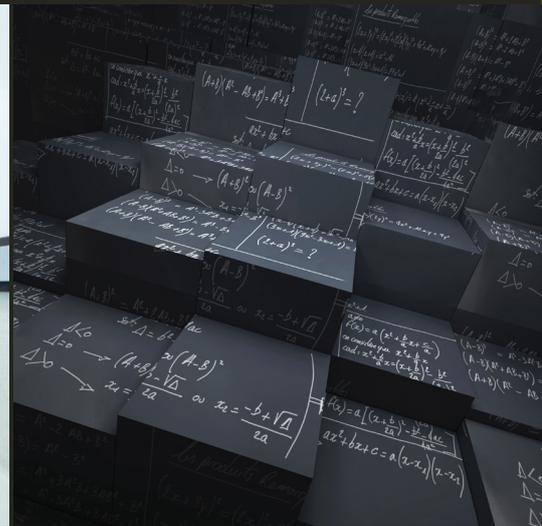
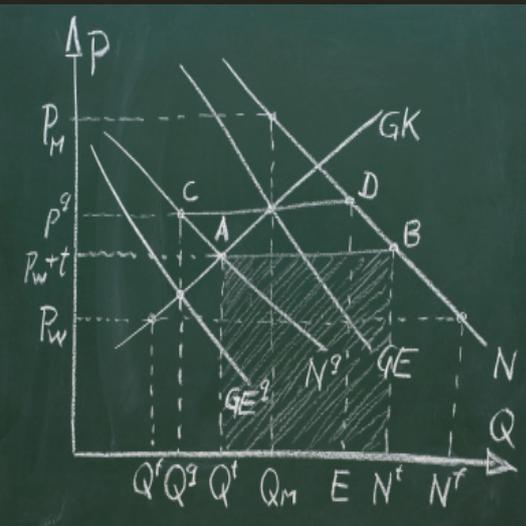


# Health Economics & Statistics



When It Has To Be Right

# ADVANCED ANALYTICAL

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## CONSULTING GROUP

### **About Advanced Analytical Consulting Group (AACG)**

*Founded by former Senior Managers and national leadership of the Economics and Statistical Consulting Group of Deloitte's Financial Advisory Services in 2009, AACG provides economic, statistical, and computing consulting for business decisions and litigation. AACG assists business clients with strategic and operational consulting based on in-depth quantitative analysis of corporate data and the client's position in the market. AACG provides expert testimony, support for academic experts, and assistance in identifying the right expert from academic and business settings. From our corporate office in Boston and senior personnel in Chicago and Los Angeles, AACG has served clients in Afghanistan, Australia, Belgium, Britain, Canada, Cambodia, India, Indonesia, Kazakhstan, South Korea, Malaysia, Mexico, New Zealand, Peru, Qatar, Russia, Singapore, Thailand, Trinidad and Tobago, United Arab Emirates, and the United States.*

# Health Economics & Statistics

*The US health care industry is large, complex, diverse, and growing. So too are its litigations and regulatory actions. In this industry, with its complicated regulations layered over an array of for-profit and non-profit providers, resolution of disputes often requires a detailed understanding of the underlying economic forces in the market, knowledge of advanced statistics and sampling, and experience analyzing the enormous data sets generated by individual health records related to Medicaid and Medicare among others. To add to its complexity, health care's payor system differs from that in other industries, with a relatively minor role for direct patient payors in favor of private health insurers, self-insured employers, Medicare, and Medicaid. Providers are increasingly subject to whistleblowers with alleged False Claims Act (FCA) violations and audits by the Centers for Medicare and Medicaid Services (CMS) through risk-based methods, which require advanced statistical knowledge to understand or challenge.*

## How We Can Help

Ph.D. health economists with backgrounds in academia and research comprise the senior level of AACG. With over 25 years of experience, our experts are recognized for their rigorous analyses of complex and voluminous data, in matters ranging from statistical issues and appropriate benchmarking in billing disputes to competitive landscape analyses in mergers and acquisitions. We combine our economic and statistical skills with deep industry knowledge to clarify and explain the issues under dispute. Our experts are adept at lucidly communicating their technical analyses to non-economist audiences and have been retained by providers, attorneys, and government agencies.

## Litigation and Regulatory Support Services

AACG provides expert analysis in all facets of health care litigation and regulation, including:

- Fraudulent or improper billing practices
- CMS audits
- Self-disclosure issues and exposure analysis
- Kickback schemes
- Self-insured group health plans
- Multiple Employer Welfare Arrangements (MEWAs)
- Subrogation
- Off-label marketing of pharmaceuticals
- Market structure analysis for mergers & acquisitions
- Monitoring of corporate integrity agreements
- Class action issues
- Damages analysis

## Large-Scale Data Analysis

Health care analyses often require large amounts of data from providers' billing systems or CMS claims files. The size and complexity of these datasets often call for a team of economists and statisticians versed in applied economic analysis. AACG economists have worked extensively with hospital cost reports, Medicare reimbursement databases (MedPAR for inpatient hospitalizations, Carrier Statistical Analysis Files for outpatient care), and large-scale surveys collected by agencies of the U.S. Department of Health and Human Services (National Health Interview Survey, Medicare Current Beneficiary Survey). Where information is costly or time-consuming to obtain, we tend to design and adopt a stratified sampling approach to ensure cost-effective results.

## Our Experience

### Medicare Reimbursement (Alleged Overbilling)

The Department of Justice (DOJ) investigated a medical testing laboratory for allegedly carrying out more extensive flow cytometry tests than medically necessary for the diagnosis of leukemia. A health economist now at AACG challenged the DOJ's expert, who had compared the laboratory's claims to those of all providers who had billed for a certain CPT code, regardless of diagnosis (ICD-9) code. Our economist refined the peer group to include only independent medical laboratories and further refined the benchmarking claims to only those aimed at testing for leukemia. His expert report showed that the test panels of the laboratory under investigation were closely in line with those at appropriately defined industry peers.

In a similar dispute over a dermatologist's billing practices, our health economist demonstrated that the DOJ's expert had included mostly non-dermatologists in his "peer group" comparison, thereby understating the volume and nature of peer physicians' billings.

### Medicare Reimbursement (Alleged Charge Manipulation)

Health economists now at AACG assisted in the defense of several DOJ investigations in which hospitals were alleged to have manipulated their billed charges in order to extract hundreds of millions of dollars in Medicare Outlier overpayments. Our economists demonstrated that client hospitals' charge increases were generally in line with those of neighboring hospitals. They also established scientific links between Outlier payments and factors that legitimately affected the cost to serve patients, such as patient mix and quality of care. Our economists also reverse-engineered the Outlier payment algorithm and conducted what-if scenarios of hypothetical charge increases to demonstrate how much client hospitals would have received under alternative charge behaviors.

### Medicare Reimbursement (Alleged DRG Upcoding)

The DOJ investigated a large health care provider for allegedly improperly upcoding DRG billing records. Health economists and analysts now at AACG evaluated and critiqued the DOJ's method and assisted the provider with assessing its potential exposure. Using benchmarking, statistical sampling, and predictive modeling, they prepared a counterclaim supported by advanced scientific methods.

## **Transfer of Obligation to Perform Hospital Services**

A hospital system that had entered into a Health Care Access Agreement (HCAA) to provide certain services and programs to the residents of a county sought to modify the HCAA and transfer its obligations to a third party. The county government retained a health economist now at AACG to forecast the county's future demand for certain acute and emergent care services and to determine whether that demand could be met. His expert report mapped out demographic trends and their implications for health care utilization, compared those to existing and planned capacity of the county's hospitals, and identified areas of care that would likely become underserved as a result of the hospital system's proposals.

## **Alleged Violation of Anti-Kickback Statute**

The DOJ alleged that a large operator of nursing homes engaged in an unlawful scheme to steer the sale of durable medical equipment and home health and therapy services to related companies, including a company that DOJ characterized as a "sham company." An AACG expert analyzed the business ties among the companies at issue, including the procurement process by which those ties were established. His analysis demonstrated that the procurement had been proper, that the "sham company" in fact bore entrepreneurial risks for performing operations at substantial costs, and that the prices for services and equipment represented fair market prices.

## **Self-Disclosure of Outdated CPT Coding**

Economists now at AACG assisted a health care provider that had become aware of the use of outdated CPT codes in its Medicare claim filings. They designed a stratified sample of patient billing records and demonstrated that the coding issue materially affected only a single area. Based on an extrapolation of the sampling results, they estimated the amount by which the provider had been overpaid.

## **Reinstatement of HMO**

Based on the results of a statistical analysis, a state government alleged financial irregularities at a health insurer and barred that insurer from providing certain HMO services. An economist now at AACG assisted the health insurer with a critique of the government's statistical sample. He identified extrapolation errors and provided rebuttal testimony. The state reinstated the HMO plan.

## **Merger Analysis in the Health Care Industry**

In multiple cases, AACG has assisted in the evaluation of health insurance mergers or acquisitions. In each of these cases, a large regional health insurer agreed to take over a health plan in another state. The state insurance commissions typically needed an evaluation of whether such acquisitions would harm consumers. In one case, due to the close association between certain medical institutions and the PPO and HMO insurers, the state insurance commission was particularly concerned that consumers of emergency room services and certain specialties such as cardiology could be negatively impacted.

In these cases, economists at AACG gathered information about the total number of lives covered by insurers within the state, the number of institutions providing various services in medical specialties, and the affiliations of each health care provider with the insuring institution. Through this type of market analysis, economists at AACG have provided an overall picture of the health

insurance market within each of the states and demonstrated the strengths and weaknesses of the competitive landscape before and after each of the proposed acquisitions.

In some of these proposed acquisitions or mergers, parties are interested in the effect of additional investments and/or job creation programs that are proposed as part of the merger/acquisition terms. AACG's economist evaluated the job creation and investment programs on regional economies.

## Related Issues

### Accuracy Claims of Medical Monitoring Devices

Former employees of a medical monitoring devices company alleged that the company, in violation of the False Claims Act (FCA), had overstated the accuracy of its devices. Plaintiffs had cherry-picked results from small-scale trials to buttress their case. Our health economist conducted a comprehensive review of all available trials and demonstrated that the accuracy of the company's devices was far higher than the whistleblowers had anecdotally alleged. Separately, an opposing expert had calculated damages based on reimbursement claims files. Our health economist found that the opposing expert had double-counted many claims, had misinterpreted sales returns as sales, had drawn unsupported conclusions from ambiguous data, and had made numerous factual errors.

### Patent Litigation in Pharmaceuticals and Medical Devices

In various patent litigations, economists at AACG have studied the markets, demand, and costs associated with health-related products. These analyses have typically called for analysis of market shares, calculations of the extent of substitutability between products in the market, and detailed categorization/econometric analysis of fixed and marginal costs.

### Pricing of Medical Products and Devices

For medical device manufacturers, AACG has analyzed sales volumes and gray market distribution.

### Price-Fixing in Vitamins

For a class action antitrust matter in vitamins, economists at AACG assessed the structure of the market and the similarities and differences among plaintiffs to determine the extent of a viable class. The damages phase of this analysis called for an analysis of the price elasticities of products from producers to various levels of intermediate distributors and processors through to the final customer, due to claims from indirect purchasers.

## Selected Experts

**Daniel S. Levy, Ph.D.** is an expert in sampling and statistical techniques related to mortality and morbidity. His health-related statistical work has been published in peer-reviewed journals and funded by government grants. He has developed new statistical techniques to determine the quality of, and potential biases in, incomplete health records used in calculating mortality rates. He has developed, tested, fielded, and analyzed health surveys for morbidity and mortality. He has estimated the total corporate liabilities due to exposure of populations to hazardous materials based on detailed demographic, exposure, and morbidity records. In addition, he has developed analyses to help assess liability and apportion damage among companies that have produced toxic material.

Dr. Levy has also performed economic and statistical work relating to pharmaceuticals and medical devices. He has provided expert testimony in statistics, sampling, economic issues, and health/injury matters before courts, state and federal commissions and agencies, and has served as an expert arbitrator. He has provided advice in False Claims Act matters and served as an expert witness.

**Constantijn (Stan) Panis, Ph.D.** is an expert in health care, demographic issues, statistics, and forecasting. He has served as economic expert witness in health care, labor, and class action cases. He is widely published, was an award-winning teacher in MBA and undergraduate programs, and co-founded a successful company that developed statistical software to disentangle causality, reverse causality, and selection effects in economic models. Prior to joining AACG, Dr. Panis was a senior economist at the RAND Corporation, where his research on health and health care utilization was funded by the National Institutes of Health, the Centers for Medicare and Medicaid Services, and other federal agencies. He served on the faculty of the University of Southern California and the University of California at Irvine, teaching undergraduate and graduate statistics and economics courses. His work has been published in the *Journal of Health Economics*, *Medical Care*, *Health Affairs*, *Health Policy Research*, and many other professional journals.

**Timothy J. Tardiff, Ph.D.** is an expert in economic and statistical methods used to analyze competition in health care and other industries traditionally subject to economic regulation. He was recently an expert economic for a state insurance regulator, analyzing the competitive and public interest impact likely to result from the acquisition of a Blue Cross Blue Shield provider by a larger multistate provider. He has also been an expert in a Department of Health and Human Services administrative proceeding, in which he evaluated the adequacy of the statistical sampling used to estimate the extent of allegedly improper Medicare billing. Dr. Tardiff has participated in an economic evaluation of a False Claims Act action against a major pharmaceutical distributor and nursing home chain alleging improper Medicare billing by establishing a sham durable medical equipment distributor. More generally, Dr. Tardiff has been an expert witness, consultant, and/or author of publications in economic and legal journals on issues such as product and geographic markets, determining whether competition is sufficient to constrain market power, evaluating claims of predatory pricing and other exclusionary conduct, and the economic basis for regulated prices.

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