

## Cardiac research program improves patient outcomes with IBM® SPSS® Statistics\*

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### Overview

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#### ■ Challenge

*CaliforniaPacific Medical Center's cardiac research program needed to manage, track and analyze vast amounts of disparate patient data collected from departments throughout the hospital.*

#### ■ Why SPSS

*IBM SPSS software provided the power, flexibility and ease of use the research team needed to support multi-disciplinary, data-intensive projects.*

#### ■ Solution

*IBM SPSS Statistics*

#### ■ Key Benefits

- *More accurate cardiac risk models*
- *A centralized database of hospital wide patient statistics*
- *Improved post-surgical recovery times*
- *Shorter length of stay and cost savings*



CaliforniaPacific Medical Center in San Francisco, an affiliate of Sutter Health, is one of the largest private, not-for-profit academic medical centers in California. The medical center's mission is to serve the community by providing high-quality, cost-effective health care service in a compassionate and respectful environment, supported and stimulated by education and research. In addition to primary and acute care, CaliforniaPacific serves as a regional referral center providing advanced medicine to communities throughout the state.

Through the medical center's Research Institute, patients and physicians have opportunities to participate in ground-breaking clinical studies in a number of disciplines, including cardiology, oncology and neurology.

Approximately 60 principal investigators, both laboratory and clinical researchers, work within the Research Institute and the medical center. Some of these scientists are engaged in clinical research and



*“IBM SPSS Statistics allows us to handle disparate data in many different formats and easily combine it into a single dataset for analysis. It also offers many time-saving features that enable us to obtain and publish results faster.”*

*Dr. Richard Shaw  
Director of Cardiac Research,  
Division of Cardiology  
California Pacific Medical Center,  
A Sutter Health Affiliate*

clinical trials, while others are engaged in research that will help them understand the function of certain human cells, genes, proteins and other fundamental structures of the human body.

#### **Challenges**

The cardiac research program, led by Richard Shaw, PhD, Director of Cardiac Research for California Pacific Medical Center, plays an important role in the Medical Center's efforts to discover the most effective new treatments and technologies. Dr. Shaw and a team of cardiology fellows and faculty typically conduct between 10 and 15 ongoing studies to test the validity of procedures that could advance the treatment and survival rate of patients with cardiovascular disease.

Industry-based clinical trials include studies on devices used to improve heart function in patients with end-stage heart disease, such as the use of left ventricular assist devices (VADS) for bridging patients to heart transplant and new coronary artery stents used in the cardiac catheterization laboratory, among many others

The team also participates in a number of collaborative efforts with local institutions to conduct multicenter clinical studies on rare cardiac conditions and evaluation of new imaging modalities for assessing coronary artery disease and structural heart disease.

Faculty members in the cardiac research program are also involved in investigator-initiated studies, many of which utilize data from the Sutter-wide Apollo cardiac database, which is supplemented with long-term patient follow-up. Recent projects have included long-term studies of patients who had coronary stents used in the treatment of unprotected left main disease and late outcomes of HIV patients treated with drug-eluting coronary stents. In addition, an extensive surgical database is used to study patients undergoing cardiac surgery, including an evaluation of long-term results of the surgical replacement of aortic valves and late outcomes of patients who underwent a surgical procedure for treatment of atrial fibrillation.

Because these complex, multi-disciplinary projects generated vast amounts of patient data, Shaw and his team sought a solution that would enable them to:

- Manage, track and analyze large amounts of disparate patient data quickly and accurately
- Accurately predict patients' risk of developing complications after treatment for coronary disease
- Enhance standard diagnostic tests with decision models to achieve faster and more accurate diagnoses, resulting in more appropriate use of resources and more efficient testing
- Potentially shorten lengths of stay and improve long-term outcomes as a result of more effective treatments

### **Solution**

IBM SPSS Statistics, with its powerful data management and manipulation capabilities and automated functions, is integral to Dr. Shaw's research. His team uses the software to manage and analyze thousands of data elements and track the outcomes for thousands of patients with cardiac disease and for patients receiving heart transplants. The results of these analyses enable cardiology trainees and physicians to find more effective ways to treat patients and develop new treatment protocols that can be shared with and adopted by cardiologists worldwide.

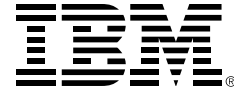
Implementing IBM SPSS Statistics for data analysis and data management enabled the cardiac research team to:

- Develop accurate cardiac risk models that improved patients' long-term outcomes
- Create a single database of patient statistics generated by medical teams hospital wide
- Predict which patients would develop multi-vessel coronary disease and improve recovery times for diabetic surgical patients
- Shorten patients' length of stay and reduce costs of treatment

## **About SPSS, an IBM Company**

SPSS, an IBM Company, is a leading global provider of predictive analytics software and solutions.

The company's complete portfolio of products – data collection, statistics, modeling and deployment – captures people's attitudes and opinions, predicts outcomes of future customer interactions, and then acts on these insights by embedding analytics into business processes. IBM SPSS solutions address interconnected business objectives across an entire organization by focusing on the convergence of analytics, IT architecture and business process. 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. SPSS was acquired by IBM in October 2009. For further information, or to reach a representative, visit [www.spss.com](http://www.spss.com).



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