Improve healthcare with analytics

Using sophisticated modeling to predict hospital stays and improve planning

EXL
look deeper.

Competition

The Heritage Health Prize is a two-year competition to predict the length of hospital stays for the members of Heritage Providers Network based on previous three years data. The competition, which ends in April 2013, has attracted more than 1,200 participants and nets $3 million for the winner.

Scope

› Proprietary analytics methodology
› Combination of modeling techniques
› Machine-learning algorithms to uncover hidden patterns in data

Background

The healthcare industry is on a continuous quest to use decision analytics to improve care and manage costs.

The Heritage Provider Network, a California healthcare provider, believes so and has put this to the test with a two-year analytics competition to predict the length of hospital stays for its members in the Heritage network within a year, using historical data for the previous three years.

Better outcomes can improve care and reduce the cost of care. Each year nearly 100 million people in the U.S. are admitted into the hospital, but studies show that unnecessary admission cost nearly $50 billion, according to Heritage. The competition has attracted more than 1,200 participants. The winning team will receive a $3 million prize.

The benefits to the healthcare industry would be substantial:

› Predict hospital stays to improve planning and budgeting

› Improve outcomes and reduce cost of care by early intervention to prevent hospitalization

› Emphasize prevention and overall health instead of caring for people as they get sick

.

Results

› Top five ranking on the daily leader board

› Predict hospital stays to improve planning and budgeting

› Improve outcomes and reduce cost of care by early intervention to prevent hospitalization

› Emphasize prevention and overall health instead of caring for patients as they get sick

› Create new, innovative analytical solutions to other problems in the healthcare industry

Improve healthcare with analytics

The solution

EXL has tapped both its healthcare experience and deep analytics expertise to create custom solutions for the Heritage competition. EXL employs a proprietary analytics methodology that allows it to create and validate predictive models more quickly and efficiently.

Although Heritage has provided health data about its members, all personally identifiable information is excluded.

EXL has performed thorough data preparation steps to maximally leverage raw variables such as age, gender, lab test data, prescription drugs and claim history. Claim history data contains several key parameters such as procedure, place of service, primary physician, previous lengths of stays and months since first claim.

Combined with thorough data preparation, EXL has used advanced machine learning and ensembling techniques, as well as proprietary variable transformation techniques.

The modeling approach has been highly effective. EXL finished in the top two among 1,353 competitors in the two-year analytics competition sponsored by Heritage Provider Network (2013).

Business impact

> Predict hospital stays to improve planning and budgeting

> Improve outcomes and reduce cost of care by early intervention to prevent hospitalization

> Emphasize prevention and overall health instead of caring for patients as they get sick

> Create new, innovative analytical solutions to other problems in the healthcare industry

About EXL

The EXL Insurance and Healthcare Practice includes a global team of over 8,800 highly-trained professionals and specialists who provide operations management, analytics, finance and accounting, legal support and technology services. EXL is a licensed third-party administrator in all U.S. jurisdictions and has received URAC accreditation. Associates receive extensive industry training, including CII, LOMA and CPCU, among others, at our in-house insurance and healthcare academies. EXL combines this with more than 600 medical and legal specialists. EXL also delivers industry-specific platforms, including Subrosource®, the leading third-party subrogation platform, and LifePRO®, also a leading Life and Annuity Policy Administration system". More than **500** of the world's leading insurance and healthcare companies have chosen EXL.

EXLservice.com

EXL
look deeper.