PROBLEM SOLUTION FIT

There isn't a domain or discipline where Analytics has not made a significant impact. One of the sectors where Analytics has left an indelible mark is on the healthcare sector. From the ubiquitous fitness bands to robotic surgeries, technology has revolutionalized healthcare and changed the norms of how we approached physiological and mental issues in the past. Not only the private sector but also the public sector is benefitting from the volumes of healthcare data at disposal. This presents an enormous opportunity for professionals in the domain to learn and apply advanced analytics to translate business challenges into business successes. Here are hand-picked examples of how analytics resolved some of the biggest healthcare problems:

- Effectiveness of Clinical Trials
- Avoid Preventable Deaths
- Better Clinical Decisions
- Fraud Analysis
- Imporove Quality of Life
- Preventing Epidemics
- DNA and Disease Risks
- Detect Side Effects of Drugs
- Reseach

Examples of how Analytics resolved Health Care Problems

1. **Reduce high costs of care associated with avoidable ER visits –** A multi-billion dollar healthcare payer wanted to identify members likely to make avoidable emergency visits and steer them to more cost-effective alternatives. Avoidable ER visits stem from a lack of coordinated medical attention that drives higher costs of care, long

wait times and sub-standard health outcomes. Redirecting only 20% of ER visits to lower-cost alternatives, such as urgent care or Primary Care Physicians (PCP), could save $4.4 billion.

2. **Developed an outsourcing strategy for a large pharmaceutical company to conduct effective clinical studies –** To conduct cost-effective clinical trails, a strategy was developed by Mu-Sigma, in harmony with the marketplace, where certain studies and activities were outsourced. The strategy was not only effective and less time consuming, but also led to 2% cost savings for the client.
3. **Leverage external data to improve pricing and underwriting decisions –** A leading health insurer wanted to leverage the predicted claims experience to improve pricing for new business, by considering external data in addition to internal factors such as age, gender, and region. Fractal Analytics proposed a rating modifier to be built leveraging expected claims experience that is informed based on external data.
4. **Built a customer retention model for a large managed healthcare insurance provider –** The healthcare insurance provider faced customer churn (switches to the competitor insurance) during the Annual Election Period (AEP) and Open Enrollment Period (OEP). Mu Sigma Team identified key drivers of retention to design targeted promotions for members at risk. The model helped the business revive 11% potential attrition cases as compared to almost no revival previously.
5. **Improve medication adherence to lower health costs and improve patient outcomes –** A top 5 health insurance payer wanted to improve medication adherence of patients with chronic conditions to lower health risks, improve health outcomes and lower costs. The organization also wanted to improve customer engagement. Fractal Analytics developed a medication non-adherence framework to identify individual patients less likely to adhere to their prescribed drug regimen during one year as part of a 3-stage solution.
6. **Patients Predictions for improved staffing** – Every staff manager in a hospital faces the problem of staff allocations at a given period. Big data is helping to solve this problem. Data scientists crunch 10 years

worth of hospital admission records using time series analysis techniques. The processed data allows researchers to see relevant patterns in admission rates and can use machine learning algorithms to predict future trends. The result is an interface designed for doctors, nurses and hospital administration to forecast visit and admission rates for the next 15 days. This approach helps the hospital management to draft extra staff only when a high number of visitors are arriving. Application of big data reduces patient wait times and help the hospital workforce to serve better quality of care and attention.