

Importance of Analytics in Healthcare

Healthcare has always been a data intensive industry due to stringent record-keeping and regulatory requirements. A report suggests that in 2012, the industry generated over 500 petabytes of data after the introduction of Healthcare Affordable Care Act in an attempt to provide value-based care to patients while reducing costs and increasing efficiency of services. As a result, healthcare analysts are presented with the unique challenge of translating huge volumes of structured and unstructured data into knowledge that can help improve the efficiency of healthcare services, as well reduce costs and redundancy.

The Role of Analytics in Transforming Healthcare

Using the advanced health care informatics technology, genome analyzers, and other analytics tools, healthcare industry can move from reporting facts to discovery of insights and transform information into actionable insights to eliminate inefficiencies and achieve better health outcomes for the patients.

Here are a few ways healthcare organizations can make use of the administrative and clinical information obtained from electronic medical records and other resources for increased efficiency and improved clinical outcomes.

1. Disease Surveillance and Preventative Management

Healthcare analysts not only use the data provided to them by healthcare organizations, but also scour unstructured information from nontraditional sources, such as text messages, social media, and search engine to detect disease outbreaks and gauge their scope. This data can then be used to:

- Analyze disease patterns and track disease outbreaks for improved health surveillance and prompt response to healthcare emergencies
- Development of better targeted preventative techniques and vaccines
- Conducting need assessment and providing prompt care to the affected populations to prevent crises and morbidity and mortality caused by a disease

2. Development of Clinically Relevant and More Effective Diagnostic and Therapeutic Techniques

Healthcare analytics can help organizations bring together clinical, financial, and operational data to determine the efficiency of their processes, the state of their patients, and the effectiveness of their programs.

Some areas in which healthcare providers can particularly benefit from healthcare informatics and predictive analytics include:

- Identifying consumers who are at the greatest risk of developing adverse health outcomes and developing more targeted wellness programs to optimize their health status
- Identifying programs and processes that are not generating the desired results or are costing too much

- Reducing readmissions by identifying behaviors that may trigger an adverse effect
- Analyze and optimize resource utilization, productivity, and throughput

3. Development of a Faster, Leaner, and More Productive R&D Pipeline

The overwhelming process of developing a new molecule, getting it through clinical trials, and receiving an approval from FDA is a major concern for pharmaceutical industries, as well as healthcare providers. Using predictive modeling, statistical tools and algorithms, and healthcare analytics, pharmaceutical companies can:

- Develop a low-attrition, leaner, faster, and more productive R&D pipeline
- Improve patient recruitment processes and clinical trial design to prevent failures and speed up the process of drug development
- Use patient records to identify any adverse effects resulted from the use of the new drug before it reaches the market

While the importance of analytics in healthcare is acknowledged by all stakeholders, the approach of healthcare organizations towards healthcare informatics and analytics remains fragmented. In order to realize the true benefits of analytics, it is imperative that healthcare organizations invest in more sophisticated tools and techniques to be able to integrate, analyze, and leverage their administrative and clinical information.