

## **Predictive Model for Forecasting Clinical Outcomes of Rehabilitation Patients Using Advanced Technologies**

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### **Abstract**

Historically, when healthcare researchers sought to analyze data on patients, they were presented with the obstacle of being able to obtain significant population data to conduct their analysis. The primary source of data information for this research came from working with one of the largest single healthcare providers of in-patient rehabilitation services. This research is able to overcome the difficulty of data collection to obtain a large volume of patient data in a short time. Over the course of one year, data was obtained for over 15,000 patients, at over 90 separate hospitals with 17 different types of technology. Access to such a significant amount of data allowed this research to identify and assess the key factors, skill competencies, and the need for personnel to be trained in essential knowledge that go into the usage of advanced technology in rehabilitation settings. A predictive model was then developed based on these factors that will supply healthcare providers with routines for using advanced technology that generate the optimal clinical and therapeutic outcomes of good rehabilitation for a defined patient population, which it is a critical aspect of the wellbeing of these individuals. This paper will address fundamental concepts of the predictive model.

### **Keywords**

Data Analytics, Predictive Modeling, Rehabilitation, Healthcare Operations

### **Biography**

**Marvin Rothwell** is the Director of Analytics and Performance Measurement for the Pharmacy Technology Group at Omnicare. He has almost 10 years of experience in the fields of Supply Chain Logistics Management, Healthcare Analytics, Lean Six Sigma Training/ Implementation, and Standard & Quality policy. Marvin has a Masters in Industrial and Systems Engineering from North Carolina A&T State University and a Bachelor of Science in Mathematics and Statistics from the University of North Carolina at Wilmington. His interest fields are Data Analytics, Healthcare Operations, Decision Sciences and Lean & Six Sigma.