**IT601- Research Topics**

**Predictive Analytics in healthcare: Promise and potential**

**Abstract:**

The healthcare industry historically has generated large amounts of data, driven by record keeping, compliance & regulatory requirements, and patient care (Raghupathi, 2010). While most data are stored in hard copy form, the current trend is toward rapid digitization of these large amounts of data. Driven by mandatory requirements and the potential to improve the quality of healthcare delivery meanwhile reducing the costs, these massive quantities of data (known as ‘big data’) hold the promise of supporting a wide range of medical and healthcare functions, including among others clinical decision support, disease surveillance, and population health management (Burghard et al., 2012). Predictive analytics is the use of data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data. The goal is to go beyond knowing what has happened to providing a best assessment of what will happen in the future. It makes it possible to harness the power of big data to improve the health of patients and lower the cost of health care. Predictive analytics encompasses a variety of statistical techniques from predictive modeling, machine learning, and data mining that analyze current and historical facts to make predictions about future, or otherwise unknown events (Encyclopedia WTF). In medicine, the convergence of meaningful use of electronic medical records, ICD-10 diagnostic coding, data warehouses, and integrated healthcare systems are bringing such predictive analytics to the bedside and clinics in order to improve the health of the nation. The U.S. is investing a significant amount of resources into the informational technology infrastructure with the intent of harnessing such big data to help predict, diagnose, and treat medical conditions and thereby improve population health (Ustun et al., 2016).

The paper describes the nascent and fast-evolving field of Predictive Analytics in healthcare, provides a broad and general overview of Predictive Analytics for healthcare practitioners and researchers.

Reference

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