Emerging Trends in Healthcare Analytics: An Overview

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Abstract: Given the recent efforts to reform the U.S. healthcare system, healthcare organizations are expected to build more sustainable systems that can deliver more performance-based, patient-centered care, improve care quality and collaboration, increase operating margins, while reducing overall cost. Moreover, with the recent investment in electronic health records (EHRs), more and more data is being collected at hospitals across the country every day. Given the explosion in the volumes and variety of data being collected and stored, it becomes more challenging for healthcare organizations to extract useful information from this massive data to make more informed decisions. To become more proactive and predictive, therefore, healthcare organizations are turning to healthcare analytics and clinical intelligence for effective transformation of data into information and wisdom through a scientific process, in ways that go beyond routine reporting functions of performance management. Given the emerging need for analytics in healthcare, it is necessary to understand past and current research in analytics and business intelligence to realize their potential impact in the healthcare industry. Therefore, this research aims at reviewing technology solutions for analytics in the healthcare environment to gain a complete understanding of the clinical analytics and business intelligence methods and tools available, as well as commercial solutions from industry leaders. Examples of web-based analytic solutions and big data analytics are also summarized in this article. The article also attempts to identify challenges and future trends in the area of healthcare analytics.

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