Monitoring the Impact of COVID-19 Across the Healthcare Continuum Based on Medical Claims Data

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Abstract:
The global pandemic of COVID-19 has caused a lot of shocks to the healthcare industry. Utilization of healthcare services experienced dramatic changes in response to different phases of the pandemic. For example, during the height of the Spring lockdown in 2020, many procedures, such as colonoscopy and cataract surgery, came to a nearly complete halt. As the fight against the pandemic continues, continuously monitoring for these changes, quantifying their impact, and reporting them in a timely manner is critical to empower decision makers in strategizing resource allocation and anticipating future costs. This talk presents some results of a research project that aimed at providing such a capability. The project, called Medical Claims Monitor (MCM), systematically and continuously analyzes the medical and pharmacy claims in monthly releases of IBM's MarketScan® Research Database. By applying various grouping methodologies based on medical claim taxonomy, the claims data are organized into a large number of clinically meaningful viewpoints and units where monthly time series are constructed for multiple statistics that characterize cost and utilization patterns. Year-over-year changes in these statistics are detected by statistical process control (SPC) techniques; their impacts as drivers of the overall cost are also quantified. The project produces a monthly report of top drivers; these reports have been posted for public consumption since May 2020 on the website https://researcher.watson.ibm.com/researcher/view_group.php?id=10570. This talk discusses some examples of the top drivers found in various phases of the pandemic.

Keywords:
Change detection; COVID-19; healthcare cost; statistical process control