How to apply the multilevel modeling in large health care administrative data

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Abstract: In health care research, we often need to analyze the hierarchical or multi-level, or nested data. For example, long-term care residents living in the same nursing home have access to similar physicians and nurses with similar prescribing practices. Patients operated on by the same surgeon have outcomes that are more similar than those operated on by a different surgeon since outcome partly depends on the surgeon's skill; furthermore, patients of surgeons working at the same hospitals may have similar outcomes because post-operative care varies among hospitals. In this talk, I will share some experience on how the multilevel modeling has been applied in large health administrative data, plan to address some challenges when we are analyzing the health care big data (millions records), and demonstrate some tips/tricks on how we have handled multilevel modeling in some software such as SAS, R, STATA.

Keywords: multilevel modeling, health administrative data, SAS, R, STATA.