IEMS 308 Assignment 1 Executive Summary
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Executive Summary + Introduction

One of the fundamental values of Medicare lies in its fairness. Although different medical conditions and age of the service receivers (SRs) may cause some differences in Medicare coverage, the coverage, in general, should be in a relatively similar range. However, Medicare fraud is still prevalent; some service providers (SPs) charge SRs more by charging for services that were not provided. Sometimes, SPs may also find a way to charge SRs less, because they personally know each other.

Both of those abnormal cases should be addressed by Medicare. If someone is getting charged more than he/she should be, Medicare must intervene and make sure that everyone is paying a fair amount. Contrarily, if someone is getting charged less than others, and if Medicare is paying more for that service, Medicare should also intervene and save its spending on that service. Then, those savings can be used for funding other services that need more financial supports from Medicare. No matter what the situation is, the intervention would lead to a better and fairer financial support for everyone in Medicare.

Therefore, detecting abnormalities in services and charges by SPs would help Medicare identify rooms for improvements in its service and its fairness. With K-mean clustering, I identified a set of 15 SPs who behave differently from other SPs. That group purely consisted of SPs doing Chiropractic treatments. Some specialties of that group were: (1) they have comparatively high Medicare coverage and (2) they are located in the zip codes where there are not many SPs from other clusters. With these findings, Medicare can start to reevaluate whether high coverage of Chiropractic treatment is reasonable. Also, with further investigations on those 15 SPs (such as proofs of Medicare fraud, the correlation between remote locations and high Medicare coverage), Medicare might be able to find a room to save its fundings, redistribute money for the people who are really in need, and ultimately improve the fairness in its service.