

## Clique and Clan Analysis of Patient-Sharing Physician Collaborations

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**Abstract :** The collaboration among physicians during episodes of care for a hospitalised patient has a significant contribution towards effective health outcome. This research aims at improving this health outcome by analysing the attributes of patient-sharing physician collaboration network (PCN) on hospital data. To accomplish this goal, we present a research framework that explores the impact of several types of attributes (such as clique and clan) of PCN on hospitalisation cost and hospital length of stay. We use electronic health insurance claim dataset to construct and explore PCNs. Each PCN is categorised as 'low' and 'high' in terms of hospitalisation cost and length of stay. The results from the proposed model show that the clique and clan of PCNs affect the hospitalisation cost and length of stay. The clique and clan of PCNs show the difference between 'low' and 'high' PCNs in terms of hospitalisation cost and length of stay. The findings and insights from this research can potentially help the healthcare stakeholders to better formulate the policy in order to improve quality of care while reducing cost.

**Keywords :** clique, clan, electronic health records, physician collaboration

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