OBJECTIVES: Efficiency in health systems is often a matter of concern and differences on the expected productivity of a given procedure might lead to inefficient variations in the performance of such interventions. Health economics literature has extensively revisited the topic of variations in health care using multivariate modeling approaches, but geographic region has been an issue. The clustering effect of facilities as a functional unit, however, has not been described before. This analysis examines the extent to which facilities explain geographic variation in health care.

METHODS: A set of individual data on all births from a Contributory-Regimen insurer in Colombia was assessed. We performed a multilevel logistic regression model, taking hospitals as the clustering variable. In addition, we included an alternative variance decomposition specification to estimate the attributable effect of geographic region on the variability across hospitals. We used a set of variables including socioeconomic education and income, physician fees, and complications during pregnancy to control for in this analysis.

RESULTS: Our results reveal that hospitals account for 20% of variation on the probability of performing cesarean sections. Geographic area only explains one-third of the variance attributable to the hospital.

CONCLUSIONS: This paper contributes to previous research by using a multilevel model approach and by defining hospitals as cluster. We found a strong effect of hospitals on determining variations. In addition, we found how supply-side factors such as physician fees and demand-side factors (proxies for preferences) such as mother’s education and income are affecting variations across hospitals and regions. The effect of facility as well as individual-level variables should be taken into account when researching variations in health care.