<Analysis of Health Care Billing via Quantile Variable Selection Models>

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Abstract:
<Fraudulent billing of health care insurance programs such as Medicare is in the billions of dollars. The extent of such overpayments remains an issue despite the emerging use of analytical methods for fraud detection. This motivates policy makers to also be interested in the provider billing characteristics and understand the common factors that drive conservative and/or aggressive behavior. Statistical approaches to tackling this problem are confronted by the asymmetric and/or leptokurtic distributions of billing data. This paper is a first attempt at using a quantile regression framework and a variable selection approach for medical billing analysis. The proposed method addresses the varying impacts of (potentially different) variables at the different quantiles of the billing aggressiveness distribution. We use the mammography procedure to showcase our analysis and offer recommendations on fraud detection.>

Keywords:
<Health Care Fraud>; <Quantile Regression>; <Upcoding>; <Bayesian Information Criterion>; <Medicare>