Estimating Medical Costs from a Transition Model

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Abstract: Analyses of medical cost data have been proposed in a variety of settings. We describe a general longitudinal framework in which costs emanate from two streams, during sojourn in health states and in transition from one health state to another. We consider estimation of net present value for expenditures incurred over a finite time horizon from medical cost data that might be incompletely ascertained in some patients. Because patient specific demographic and clinical characteristics would influence total cost, we use a regression model to incorporate covariates. We discuss similarities and differences between our net present value estimator and other widely used estimators of total medical costs. Our model can accommodate heteroscedasticity, skewness and censoring in cost data and provides a flexible approach to analyses of health care cost.