Hospital reimbursement in the presence of selection and upcoding

Nicos Savva

London Business School

Abstract

Hospitals throughout the developed world are reimbursed on the basis of diagnosis related groups (DRGs), a patient classification system first developed by the Operations Research department of Yale University. Under this scheme, patients are divided into a small number of clinically meaningful groups and hospitals receive a fixed fee per patient episode that depends only on the patient DRG. The fee is set equal to the average cost of providing care to patients that belong to the same DRG across all hospitals. This scheme provides incentives for cost reduction as no hospital wants to operate at a cost level that is higher than the average cost. Furthermore, it can be implemented using accounting data alone. Nevertheless, to the extent that there is heterogeneity in costs within a DRG, this scheme is vulnerable to patient selection problems, where providers “drop” patient that are more expensive to treat than their DRG average. To alleviate this problem, reimbursement systems have been steadily expanding the number of DRG classes so as to reduce this within DRG cost heterogeneity. In this paper, we show that such expansion fails to curtail cherry picking incentives if hospitals can also “up code” patients, i.e., intentionally assign patients to a more resource intensive DRG than needed in order to increase hospital income. This is because the practice of up-coding reintroduces within DRG cost heterogeneity -- less expensive patients are grouped together with more expensive patients. We examine potential solutions to this problem involving yardstick competition based on input statistics -- for example adding a payment that is proportional to the difference between the actual number of low-cost patients treated at the hospital and the expected number. This is joint work with Laurens Debo and Rob Shumsky.