

How do Hospitals Respond to Financial Incentives: Evidence from Mid-night Emergency Medical Services*

Reo Takaku[†] Atsushi Yamaoka[‡]

April 21, 2014

Abstract

This paper shows how physicians and hospital staff respond to financial incentive in the context of emergency medical services (EMS). In Japan, the reimbursement for the hospitals with emergency department is linked to the length of stay since reimbursement system for acute-care and hospital stay is based on fee-for-services or *per-diem* prospective payment. Under these reimbursement systems, hospitals may have strong incentive to accept emergency patients just before mid-night since patients arrive *before* mid-night brings an additional reimbursement by one-night hospitalization, compared with those who arrived *after* mid-night. We test this prediction using the administrative record of all emergency medical transportations in Japan from 2008 to 2011, which contains 1.2 million records of ER visit around mid-night. We find significant bunching of the number of arrival to emergency hospital around mid-night; the number heaps a few minutes before mid-night, but drops just after mid-night. Given that the number of emergency call is completely smooth during night, these results suggest that physicians and hospital staffs manipulate emergency arrival times to raise additional revenue, while the size of manipulation is not large compared with that of previous studies which reports manipulative behavior in the other context. In addition, we show manipulation exists only for the slightly or modestly injured who do not need long hospitalization. This is because hospitals do not have incentive to prolong hospitalization to severely-ill patients since reimbursement is decreased to hospitalization over 14 days. Finally, manipulation of emergency arrival time is frequent in the area where private for-profit hospitals account for large share of medical care for emergency patients, suggesting hospital ownership is deeply related to the manipulation.

Keywords : *supplier-induced demand, manipulation, emergency medical services, fee for services, hospital ownership*

JEL classification : *I10, I13*

*We acknowledge the Fire Defense Agency in Japan for the use of the data. This project is supported by Institute for Health Economics and Policy. The views expressed in this paper do not necessarily reflect the views of these institutions. All errors are our own.

[†]Corresponding author. Institute for Health Economics and Policy. No.11 Toyo-kaiji Bldg.,1-5-11 Nishi-Shinbashi, Minato-ku, Tokyo 105-0003, Japan. Telephone: +81 3-3506-8529 Facsimile: +81 3-3506-8528. Email address: reo.takaku@ihp.jp

[‡]Institute for Health Economics and Policy.