Reviewer’s report

Title: Payer leverage and hospital compliance with a benchmark: A population-based observational study

Version: 1 Date: 25 January 2007

Reviewer: Vivian Ho

Reviewer’s report:

General

This manuscript aims to test whether hospitals that have a higher proportion of Medicare patients in their transplant caseload are more likely to meet CMS’ minimum volume criteria. The authors hypothesize that if Medicare represents a larger portion of the hospital’s revenue, then the hospital faces a stronger incentive to meet CMS’ requirements. The authors also test whether higher patient volume is associated with lower mortality rates for transplant recipients.

The authors are focusing on a research question with timely policy relevance both for transplant patients, and for the broader question of how financial incentives may possibly used to obtain better outcomes for health care providers. They perform their analysis using the HCUP Nationwide Inpatient Sample, which insures a large sample size which is also representative of most parts of the U.S.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

I have one major concern regarding the analysis. To measure the association between hospital volume compliance and Medicare Market share, the authors estimate a logistic regression (p.8), which includes Medicare Market share and donor organ supply as explanatory variables. They interpret the large and precisely estimated coefficient on the odds ratios for Medicare Market Share for most procedures as indicating that caseloads with a high proportion of Medicare patients will lead hospitals to work harder to meet the minimum caseload requirements. However, one could also conclude that hospitals with a proportion of Medicare patients merely reflects a hospital’s greater access to a patient population that has high needs for transplantation. The authors address this issue by comparing kidney transplantation (which they argue has greater financial incentives) to other transplant procedures. This approach is somewhat convincing, although these procedures also have minimum caseload requirements specified by Medicare.

A more convincing analysis would be to also include analysis of one or two procedures where Medicare does not specify minimum caseload requirements. I don’t know if this is the case, but one could try using angioplasty or open heart surgery, where the American Heart Association has specified minimum requirements, or the whipple procedure or esophagectomy, where the Leapfrog Group has specified minimum volume standards. If the authors’ hypothesis is true, then the odds ratios in similar regressions for these procedures would be much smaller in magnitude.

The manuscript would also benefit from a clearer discussion upfront of exactly what leverage that minimum compliance standards imposed by CMS actually have on hospitals. There is a brief description at the very end of the manuscript recognizing that the volume standards are not strictly enforced. This should be described clearly up front. I was confused while reading most of the manuscript, because I could not understand why a noncompliant hospital had any Medicare transplant patients at all. I would also have appreciated a discussion of how CMS arrived at its minimum volume standards. The authors should also clarify why compliance with volume standards should be higher for kidney transplantation, versus the other transplantation procedures. I am guessing that this has to do with CMS reimbursing for all care for ESRD patients, but I couldn’t quite reason this through by myself.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author
In the volume compliance regressions, the authors should also acknowledge that there may be other demand factors that might influence caseload size for hospitals, such as the number of patients with ESRD in the nearby area, the number of smokers (for lung transplants, and the number of other providers. I realize that it is difficult or impossible to obtain measures of these variables as controls, but the shortcoming should be noted.

The authors should also acknowledge that what they are interpreting as a leverage effect may instead be a selection effect—hospitals that achieve lower mortality rates may be able to attract more patients, particularly those covered by Medicare.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions
Level of interest: An article of outstanding merit and interest in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests.