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Comment Hidehiko Ichimura

A Summary

Main Findings

The chapter documents the authors' extremely interesting finding that a small fraction of "complex" patients constitute a major share of Medicare expenses. The authors use the universe of the 2009 Medicare claims to show that patients with six or more comorbid conditions (using forty-four illness categories they define for this study) constitute about 3 percent of the service months and 31 percent of Medicare spending, and patients with four or more comorbid conditions constitute about 8 percent of the service months and 52 percent of spending.

Patients with six or more comorbid conditions suffer from almost 4.2 million combinations of major conditions, and patients with four or more

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comorbid conditions suffer from almost 5.5 million combinations of major conditions over a five-month period.

In annual context for beneficiaries, 18 percent of Medicare beneficiaries experienced four or more major health conditions during 2009, and they accounted for 63 percent of total Medicare spending, suffering from almost 7.5 million combinations of major health conditions, and about 7 percent of Medicare beneficiaries experienced six or more major health conditions and they accounted for 41 percent of spending, suffering from more than 6.4 million combinations of major health conditions.

Implications

The authors argue that “risk-adjustment models currently used by Medicare inadequately compensate for complex patients” because they inadequately take into account the exponential nature of the costs with respect to the number of comorbidities. They also argue that “it is likely that many health care providers will have limited experience with the precise combination of conditions presented in a given patient, and will face uncertainties in determining the optimal treatment.”

Authors’ Suggestions

The authors suggest investigating the effectiveness of integrated delivery models (e.g., those used by managed care plans). They also suggest improving the sharing of information across different specialists “through continued shifts toward electronic recordkeeping” and suggest CMS or the NIH promote more research on effective disease management models for complicated patients.

Comments

Suggestions for Further Clarifications of the Situation

One of the main difficulties they point out about their findings is the difficulty health care providers will have given that they have limited experience with the precise combination of conditions presented in a given patient. To see if this is really the case, it will be useful to find out whether the top X highest frequency cells (say, $X = 10,000$ cells) among patients with four or more comorbid conditions amounts to a large fraction of total spending. This may give us cases to focus on to medically examine each of the X cases.

Finding out whether cells with more than N patients (say, $N = 1,000$ patients) amount to a large fraction of total spending may be useful. This may isolate cells so we have some hope of learning something from data.

To understand the source of the high cost, it may be useful to break up the per-month spending into different items such as hospital care, physician and clinical services, drugs, and so forth.

In order to address the coordination issue across specialists/departments, it may be useful to examine comorbidity issues using illness category classification based on relevant departments/specialists. One may redo the two exercises above using the classification.

Is the “Complexity” Issue Distinct from the “End-of-Life” Issue?

It may be useful to try to see to what extent the “high comorbidity-high cost” issue is distinct from the “high cost in the last year of life” issue. A simple measure may be to compute the number of patients who acquired new illness categories within X months prior to their death and have four or more major health conditions at death in a given year over the number of patients who die in the given year. One can do the same with spending, instead of numbers.

On a related issue, it will be useful to understand how the complexity develops. To understand this, it may be useful to distinguish patients who come into Medicare with multiple health problems from those who do not have any health problems (for, say, one year into the program). Among the latter group, it may be interesting to examine how the number of comorbid conditions progress over time to explore how different combinations of illness categories give rise to additional categories using a hazard function.

On the Interpretation of Table 8.4

Looking at table 8.4: 932 out of potential ${}_{44}C_2 = 946$ combinations are realized. Because of a very large number of observations, this implies a very accurate estimate of a low probability for fourteen combinations. Analogously, 10,784 out of potential ${}_{44}C_3 = 13,244$ combinations are realized. If the only low probability combinations are those fourteen cases, then the number of cells with low probability is below 14×44 and we have 2,460 cells with very low probability; there seems to be new information from this beyond what is implied by the earlier observation. Analogous observations can be made for other cells, too.

Accounting for the Benefit Side

It may be interesting to take into account the benefit side by defining “recovery” by “no illness in the same category within X years.” One simple measure may be the average cost per recovery. A better measure may require using data that link health data and earnings data, for example. This type of measure may convey even a bleaker picture than that reported in this chapter.