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Nursing Homes in Equilibrium: Implications for Long-term Care Policies

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With the aging of the population, older Americans become more likely to need long-term care (LTC), the high out-of-pocket cost of which forces many Americans to rely on public long-term services and supports (LTSS) programs. In this paper, we argue that the effects of public LTSS policies go beyond the budgetary and consumer insurance implications: They have nontrivial effects on the nursing home market, which, in turn, affect care allocation and distribution of welfare gains and losses from the LTSS policies.

We build a model of a nursing home market to quantitatively evaluate LTSS policies. Our model explicitly captures the decision-making of both consumers and producers of long-term care. On the demand side, we consider retired households that are heterogeneous in age, financial resources, health, and family status, with a particular focus on their long-term care choice. Each period, individuals with LTC needs choose between nursing home care and home-and-community-based care (HCBC). While nursing homes provide a fixed intensity of care, households can freely choose HCBC intensity. Although nursing home care is inflexible, the institutional setting allows nursing homes to provide care at a potentially lower unit cost compared to HCBC. HCBC's out-of-pocket cost differs depending on the availability of family support. Moreover, individuals without family face a substantial fixed cost when using HCBC to outsource basic home production. Poor households eligible for Medicaid decide whether

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to forfeit their resources and use Medicaid LTSS (for either nursing-home care or HCBC) or pay for the HCBC out of pocket (and use low-intensity care). The individual choice of care gives rise to the demand for nursing homes. The demand-side of our model successfully generates the key care-demand patterns observed in the Health and Retirement Study data.

On the supply side, we consider nursing home competition in a local market. Facing the identical cost structure, each nursing home decides the out-of-pocket price of bed and intensity of care so as to maximize its profits, taking as given the household demand for care, the Medicaid bed reimbursement rate (set below the out-of-pocket price), as well as prices and care intensity of the competitors. Medicaid regulations prohibit denying nursing home entry to its enrollees. The supply-side of our model matches the key statistics from the Pennsylvania Department of Health's Nursing Home Reports.

We use our model to quantitatively evaluate the efficiency and distributional effects of four LTSS policies. Two of them target the supply-side of the nursing home market: (i) more generous Medicaid reimbursement of nursing home beds and (ii) a nursing home's subsidized entry into a market. The other two target the demand side: (iii) more generous Medicaid means-test for single households and (iv) HCBC subsidy for individuals with no family support.

A higher Medicaid reimbursement rate increases the return on Medicaid beds. In order to attract more Medicaid residents, nursing homes increase the care intensity. We find that a 10% increase in the Medicaid reimbursement rate raises the care intensity by 3% and the out-of-pocket price by 2%. New Medicaid beds amount to 3.6% of the baseline number, and crowd out private beds (1.9% of the baseline number). Nursing home profits increase by 37% and the Medicaid expenditures increase by 11%. Households in the middle of the wealth distribution have small welfare gains from the higher intensity of nursing home care. Households in the top wealth quartile have small welfare losses from the higher price.

A subsidized entry of a nursing home intensifies the local competition. We find that incumbents not only reduce the price by 10.7%, but also reduce the care intensity by 7.3%. These nursing home decisions induce movements in and out of institutional care. Wealthier individuals, benefiting from the lower price and a larger selection of facilities, leave the out-of-pocket HCBC for nursing homes. Individuals in the bottom half of the wealth distribution, hurt by the lower intensity of nursing home care, leave Medicaid beds for Medicaid and out-of-pocket HCBC. This reallocation of care increases the number of out-of-pocket residents by 13.8% and reduces Medicaid beds by 18.4% per nursing home. This ends up decreasing the total number of Medicaid nursing home residents even though there are more nursing homes available.

We then consider a more generous Medicaid policy on the demand side by raising the amount of wealth single individuals can keep when qualifying for Medicaid — from virtually zero to $10,000. We find that nursing homes react to the larger pool of single Medicaid enrollees by increasing care intensity by 6.7% and further

stimulating the demand for Medicaid beds, with a total increase of 34.5%. The 12.9% higher bed price discourages private residents from entering nursing homes, reducing their number by 22.1%. Although most consumers benefit from this policy — with the largest gains for the middle two quartiles — the increase in the Medicaid outlays exceeds the increase in the consumer surplus by nearly a factor of two, while nursing homes experience a small loss.

Lastly, we introduce a $10,000 subsidy, covering half the fixed HCBC cost, to individuals with no family support. As private residents with no family support leave nursing homes for cheaper out-of-pocket HCBC, the nursing homes react by reducing both the price (-4.5%) and the care intensity (-7.7%). The lower care intensity makes nursing homes less valuable to Medicaid enrollees, reducing Medicaid residents by 12.8%. More than half of them switch to out-of-pocket HCBC, reducing the Medicaid outlays by 2.7%. Even though nursing homes lose 12% of their residents, their profits are almost unaffected due to cost savings. Consumers in the bottom wealth quartiles experience welfare gains from more affordable out-of-pocket HCBC; those in the top wealth quartiles experience welfare gains from the cheaper nursing home price.

All these policy experiments confirm that the reactions of both sides of the market are important for accurately assessing the aggregate and distributional impact of each policy, and even more so for evaluating policy efficiency. ❖

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