

Formal Home Health Care, Informal Care, and Family Decision Making

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We develop and estimate a game-theoretic model of families' decisions concerning the provision of formal and informal care for elderly individuals. Our game-theoretic framework specifies a utility function for each family member having consumption, leisure, time spent with the elderly parent(s), and the health status of the elderly parent(s) as arguments. The health of each parent is a function of his/her initial health endowment, the time each family member spends with the parent, and the amount of formal care received. Preferences are allowed to vary across family members as a function of both observable and unobservable characteristics of each family member. The unobservable characteristics play the role of errors. Each individual or married couple makes caregiving decisions and decisions about leisure and consumption conditional on the decisions of the other family members. We use the first-order conditions for each family member to solve for the errors as relatively simple functions of the parameters and observable characteristics and construct a likelihood function for estimation. In other words, the errors both "explain" variation in family choices not captured by variation in observable family characteristics, and their careful placement in the model facilitates computation of the likelihood function.

We model Medicaid as providing a fixed amount of funds for home health care subject to health characteristics and income restrictions. We ignore asset restrictions because the asset data in our data is not of sufficient quality to measure against state restrictions. We use the covariation in home health care Medicaid subsidies and wage rates for home health care providers with the use of formal care to help identify the value of formal care.

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We use the first wave of the AHEAD data (1993) to estimate the parameters of the model. The parameters include effects of parent and child observable characteristics on preferences and marginal product of informal care, some informal care and formal care technology parameters, and some variance and covariance parameters. We use data on characteristics of each family member, observed choices about informal and formal care, (implied) leisure and consumption, and answers to questions about the “happiness” of each parent to estimate the model. The “happy” answers are used as a proxy for quality of health.

The structure of the model allows us to distinguish among three underlying explanations for patterns in care provision. First, some family members find providing care more burdensome than do others both as a function of observable and unobservable characteristics. Second, some members are more adept at providing care again as a function of observable and unobservable characteristics. Third, opportunity costs in the form of foregone earnings vary across the family. The “happiness” data allow us to separately identify burden effects and quality of care effects in that, to the degree that variation in informal care is not reflected in the parent’s happiness, it must be explained by variation in burden of caregiving. We find that caring for an elderly parent or spouse is burdensome for most individuals and that informal care has a relatively small effect on health quality. More precisely, the marginal utility of time spent by a kid with the parent is usually negative, and the marginal effect on parent health of time spent by a kid with the parent is small. Consequently, children and spouses provide little informal care. We use the structure to shed light on why, in the raw data, daughters are more likely than sons to provide care and why blacks are more likely than whites to provide care. Differences in burden and quality of care dominate opportunity costs, but the effects vary by marital status of the children.

Goodness of fit tests show that our model fits the data fairly well. In addition, we fail to reject the hypothesis that there is no additional variation across states not captured in our model. This result suggests that our simplification of the Medicaid benefit structure performs well.

We exploit the structural nature of the estimates to perform policy experiments similar to those suggested in public policy discussions. For example, we simulate the provision of a lump sum that can be spent only on care as well as price subsidies for informal and formal home care. Consistent with the finding that formal and informal home care are largely ineffective in increasing health quality, we find little effect of these policy changes.

These results should be interpreted carefully in light of the nature of our data. The first wave of AHEAD data does not include any nursing home residents. Subsequent waves of AHEAD contain nursing home residents and will thus allow us to include them in the model. The survey instrument was also improved in later waves to elicit information about more caregivers.

In addition, the availability of panel data will enable us to estimate dynamic models of care arrangements for elderly individuals. In particular, we plan to estimate a dynamic extension of our structural model with more waves of AHEAD data. Using panel data, we can explore whether siblings take turns caregiving or

whether certain children specialize in caregiving while others specialize in market production or other forms of nonmarket production. If children do, in fact, take turns caregiving, the use of panel data will enable us to examine possible causes of this behavior including burnout.

Moreover, the inclusion of nursing home residents in subsequent waves of AHEAD provides us with an opportunity to investigate the effects of proposed or actual policies on the use of institutional care. For example, subsidies for home health care may induce some families to care for the elderly at home rather than in an institution.