

Behavioral Implications of Out-of-Pocket Health Care Expenditures

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1. Introduction

There is a long literature in health economics on what predicts health expenditures at both the national level and at the individual level (e.g., NEWHOUSE, 1992; WAGSTAFF et al., 1999; MEARA, WHITE, and CUTLER, 2004). The existing literature has almost always focused on total or public expenditures. Surprisingly little literature addresses out-of-pocket expenditures, which, for certain elderly people, are large both in absolute terms and relative to income. Knowing the extent of out-of-pocket health care expenditures and who faces the greatest risk of high expenditures is important to understand any economic behaviors resulting from facing expenditure risk.

In the United States, out-of-pocket health care expenditures fall into two general categories, distinguished by type of care, provider, and insurance. Acute illness tends to be treated by physicians in hospitals or clinics and covered by Medicare. The out-of-pocket portion of expenditures for acute illness is limited by Medicare, Medigap insurance, or Medicaid. Chronic illness and disability tend to be treated in nursing homes and covered primarily by out-of-pocket expenditures or Medicaid. Out-of-pocket expenditures on long-term care are not as limited by public insurance as acute expenditures are, and so can add up unrelentingly (NORTON, 2000). This division between acute and long-term care expenditures is important for understanding out-of-pocket expenditure risk.

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The pattern of expenditure risk for long-term care out-of-pocket expenditures is fundamentally different than all other categories combined. Medicare pays for relatively little nursing home care, with benefits falling after 20 days and constrained to 100 days per benefit period. Only a small percentage of elderly hold private long-term care insurance (MURTAUGH, KEMPER, and SPILLMAN, 1995; COHEN and KUMAR, 1997). Medicaid is the safety net for most people. However, because Medicaid requires a deductible roughly equal to one's wealth less \$2,000, and a co-payment nearly equal to one's income, out-of-pocket expenditures for nursing home care are high, even after becoming eligible for Medicaid. For example, for a typical middle-class elderly widow who enters a nursing home for a few years, out-of-pocket expenditures will likely exceed income until her wealth is nearly depleted, and then Medicaid will only pay the additional amount required over monthly income including the Social Security payment. Therefore, persons who use long-term care pay a lot out of pocket, even when covered by Medicaid.

After showing the degree of out-of-pocket expenditure risk by age in the United States, we discuss four possible ways that out-of-pocket expenditures may affect economic behavior. One reason to save over the life-cycle is to self-insure against the financial risk of out-of-pocket expenditures. We consider this logic in light of other work about means-tested insurance programs. The effect of out-of-pocket health expenditures on life-cycle savings assumes that people are rational and forward-looking. However, elderly persons may not correctly forecast the general gains in longevity. We ask how unexpected increases in longevity further affect savings rates. Because health expenditures at the end of life tend to be large, short-term relative changes in spending patterns at that time may have large effects on absolute expenditures. Finally, out-of-pocket expenditures also reduce the amount of money available to transfer to the next generation. Therefore, we discuss how higher expenditures may affect intergenerational transfers of time and money.

All these issues depend on how high out-of-pocket health expenditures are, either in absolute terms or relative to income. Therefore, after reviewing some important institutional features of the U.S. health care system, of graphs of out-of-pocket health expenditures, or expenditures relative to income, by age are used to motivate the extent of the problem.

2. Data

The data come from the 1992–1998 Medicare Current Beneficiary Survey (MCBS) Cost and Use files. The MCBS is a continuous, multi-purpose longitudinal survey sponsored by the Centers for Medicare and Medicaid Services (CMS) of over 10,000 Medicare beneficiaries each year for up to three years of follow-up. The Cost and Use files are a combination of the MCBS survey data and Medicare claims as well as other data from the CMS administrative files. The combined data files provide complete and accurate information on health services received, amounts paid, and sources of payment. The MCBS includes information on use and cost of prescription drugs and long-term care, which are often not covered by Medicare. The CMS claims files include data on use, cost, and payment source of various health services received by Medicare beneficiaries such as inpatient hospitalizations, physician services, and durable medical equipment (MCBS Public Use File Documentation, 1993).

Our analysis includes MCBS respondents age 66 to 95 who are in both Medicare Part A and Part B. We deleted respondents who are 95 or older due to the small sample in this age group. Our sample includes 709,413 observations at the person-month level for 24,636 unique people. On average, each person has approximately 29 months of data. Because people who die usually have less than 12 months in their last calendar year of life, aggregation to the annual level is not appropriate. Instead, we calculated the average expenditures per month during the calendar year by dividing the total expenditures by the number of months observed. The final analysis file has 62,028 observations at the person-year level, and expenditures are the average monthly expenditure per calendar year. We used cross-sectional weights and adjusted for the estimates of the means and standard errors of monthly expenditures for the complex survey design.

The main variable for our analyses is the average monthly out-of-pocket health expenditures of the elderly per calendar year. The average value is \$151 per person per month, but the distribution is highly skewed. Ten percent spend \$5 or less out of pocket per month, the median is only \$51, the 90th percentile is \$252, and the 99th percentile is \$2,520.

We also analyze two important components of total out-of-pocket health expenditures: non-long-term care expenditures and long-term care expenditures. On average, elderly people spend \$28 out of pocket on drugs per month, and the median expenditure is \$13. It is also a highly skewed distribution. The ratio of out-of-pocket drug expenditures to income is 3 percent on average, and the median is less than 1 percent. However, 10 percent of the observations spent more than 7 percent of average monthly income on drugs per year. Long-term

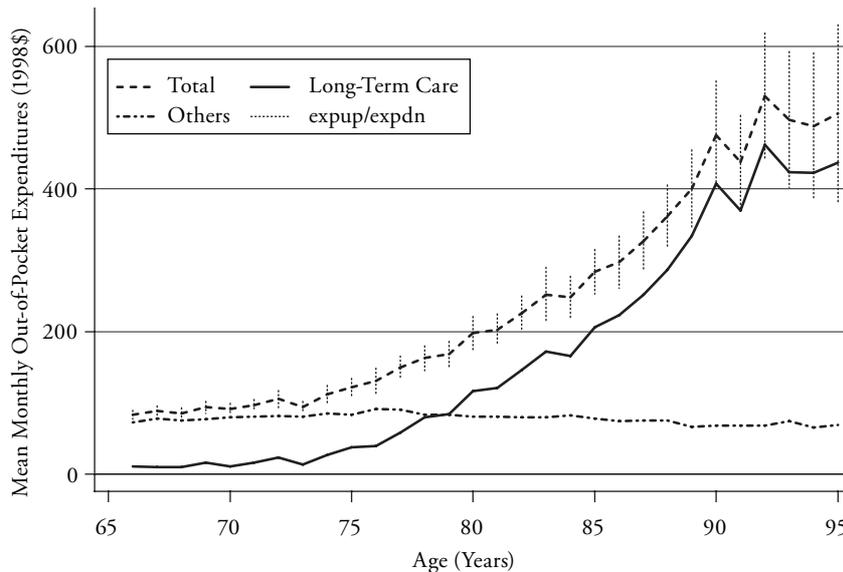
care expenditures include expenditures on long-term facilities and skilled nursing homes. Although 94 percent of the person-year observations did not incur any out-of-pocket long-term care expenditures, 6 percent of individuals spent \$231 on average per month per year. So a small proportion of high-spending elderly drove the mean out-of-pocket expenditure for long-term care to \$70 per month per year. Because 94 percent of the observations did not have any out-of-pocket long-term care expenditures, the ratio of out-of-pocket long-term care expenditures to income is zero at the 90th percentile. However, 6 percent of the observations spent more than a quarter of their monthly income on long-term care.

The mean age of the whole sample is 75 years old. About forty percent of the people are men. Whites account for 89 percent, African-Americans account for eight percent, and just over one percent are Hispanic. More than half of the people in the sample are married while 37 percent are widowed. The mean grade achieved is 10th grade and less than one-fourth of the people have more than a high school education. The mean monthly income of the observations is \$1,911, the median is \$1,320, the 75 percentile is over \$2,200, and the maximum reaches over a million. Thirteen percent are Medicaid eligible. All monthly expenditures were adjusted for inflation to 1998 dollars using the medical care component of the Consumer Price Index (Bureau of Labor Statistics, US Department of Labor).

3. Results

Two striking graphs motivate our discussion of out-of-pocket health care expenditures paid by elderly Americans. The first graph shows that mean monthly out-of-pocket health care expenditures rise steadily as a function of age (see Figure 1), based on data from the Medicare Current Beneficiary Survey 1992–1998. Average out-of-pocket health care expenditures increase nearly six-fold during old age, from \$85 per month at age 66 to \$485 per month at age 95. Figure 1 also reveals the fundamental difference between long-term care expenditures and expenditures on all other services. The increase in total out-of-pocket health care expenditures is driven almost entirely by long-term care. Other out-of-pocket expenditures – primarily inpatient care, physician services, and pharmaceuticals – are essentially independent of age. So the young elderly face entirely different health care expenditure risk than older elderly in both magnitude and composition.

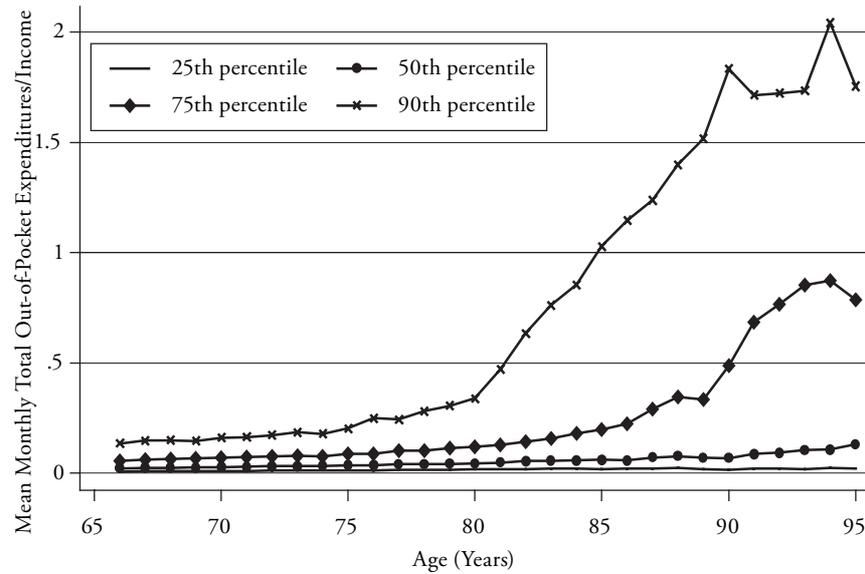
Figure 1: Out-of-Pocket Expenditures (Means) by Age and Type



The second graph shows that the expenditure risk relative to income also increases with age (see Figure 2). Furthermore, out-of-pocket health care expenditures are a substantial fraction of income for many elderly persons. By age 81, more than 10 percent of elderly persons spend half of their income on health care. By age 90, more than 25 percent do. When individuals face this level of financial risk, it is bound to affect personal finance decisions.

For elderly persons, out-of-pocket health care expenditures are important because health expenditures are the largest expenditure risk most elderly face, so out-of-pocket health care spending necessarily influences all other personal finance as well as choices between certain types of health care services. Consumption, savings, bequests, inter-vivos transfers, and decisions about formal versus informal care all depend on whether someone is likely to incur large medical bills. One reason that people do not follow the simple life-cycle model, which predicts that adults save during their working years and spend-down their wealth in retirement to die with no assets, is uncertainty about health care expenditures. It is this risk that drives many personal decisions.

Figure 2: Total Out-of-Pocket Expenditures/Income by Age



4. Discussion

For most Americans, the major source of expenditure risk is from long-term care expenditures, particularly late in life. Hospital, physician, and pharmaceutical expenditures, although quite large in total, are generally well insured in the United States. Individuals generally spend little out-of-pocket on these other types of health care. These facts have four behavioral implications. First, the risk of high out-of-pocket expenditures should affect savings over the life cycle. Our results shed more light on the model of HUBBARD, SKINNER, and ZELDES (1995), which showed that because Medicaid provides a safety net for long-term care insurance, some persons will save less than they would without the means-tested insurance. They predict that persons with relatively small amounts of wealth will intentionally under-save because it is optimal to consume more now and let Medicaid pay for more in the event of needing long-term care. The marginal propensity to consume out of wealth is negative for a critical range of wealth (CARROLL and SAMWICK, 1998; KAZAROSIAN, 1997; PALUMBO, 1999). Our results argue

that for people who live a long life, the threshold value of wealth dividing those who under-save from those who over-save is high.

Second, a related point is that if the recent gradual increases in longevity are unanticipated, then elderly may not have saved enough over the life cycle. Elderly persons who saved during their working years for retirement may not have saved the optimal amount if they did not anticipate the gradual lowering of mortality rates among elderly persons. Because out-of-pocket expenditures increase with age, greater longevity implies higher out-of-pocket expenditures.

Third, our results add to the “red herring” literature on the role of age in predicting end-of-life expenditures. ZWEIFEL and colleagues (1999) argue that age is not an important predictor of health expenditures after controlling for time until death. The empirical evidence by others has been mixed, with some finding no relationship between age and end-of-life expenditures, while others find a weak relationship (YANG, NORTON, and STEARNS, 2003; SESHAMANI and GRAY, 2004; CHERNICHOVSKY and MARKOWITZ, 2004; STEARNS and NORTON, 2004). We find that age weakly predicts non-long-term care out-of-pocket expenditures, even after controlling for time until death, while age strongly predicts long-term care out-of-pocket expenditures. Therefore, increases in longevity, if they have no other effect (such as on use of new medical technologies), may raise the risk of high long-term care expenditures.

Fourth, high out-of-pocket expenditures among the oldest old may provide an alternative motivation for the exchange of financial assets from elderly parents to their adult children for time and attention. The literature on intergenerational giving through bequests and inter-vivos transfers has identified exchange as one motive for savings above and beyond that needed for the basic life cycle model. However, if informal care is a substitute for formal care (VAN HOUTVEN and NORTON, 2004), then an adult child may use informal care to achieve exchange, even if the parent makes no inter-vivos transfers and divides their bequest equally among all children. A child might use informal care as a low cost substitute to formal care, thereby increasing their share of the bequest.

In summary, out-of-pocket health care expenditures, although not studied frequently in the literature, have strong patterns and broad implications for individual behavior.

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