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Health Shocks and Couples' Labor Supply Decisions

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For people of near-retirement age, unexpected negative health events are unfortunately quite common. For example, men and women participating in the Health and Retirement Study (HRS) were found to have a 5% chance of having a heart attack, stroke, or new cancer diagnosis, a 10% chance of being diagnosed with a new chronic illness, and a 3% chance of having an accidental injury over a two-year period. These negative health events lead individuals to decrease their labor supply, as has been shown by McClellan (1998) and others. However, the effect of each spouse's health events on the other spouse's labor supply has not been previously studied.

There are two reasons to be concerned about the spouse's response to health shocks. The first is that it has important financial implications for the family. The family has suffered a drop in lifetime income as a result of the negative health event; a decrease in spousal labor supply will exacerbate that loss, putting the family at greater risk for poverty in retirement, while an increase in labor supply may partially offset the loss. The second is the possibility that the availability of government benefits such as Disability Insurance may "crowd out" the spousal labor supply response. A considerable amount of crowd out would suggest that the existence of these benefits does not raise family income significantly, though presumably it raises family utility by allowing the healthy spouse to be at home with the sick spouse.

This paper explores the effect of negative health shocks, such as heart attacks or new diagnoses of chronic illnesses, on the labor supply of both the affected spouse and his or her partner. In so doing, the paper links two important strands of the retirement literature, the large literature on health and retirement and the small but growing literature modeling retirement in a family context. This paper may also be viewed as an extension of the literature on spousal labor supply as insurance against negative events, which measures whether there is an "added worker effect" when one spouse becomes sick and whether it is crowded out by public insurance programs. This work uses the first five waves of the Health and Retirement Study (HRS), a recent, nationally representative survey of the young elderly with extensive information on health, labor force status, and demographics.

The use of health shocks as an alternative to self-reported health status is appealing due to the concern that health status may not be independent of labor force outcomes if people seek to rationalize their retirement status by claiming a health problem, a concern that has been validated in work by Bound (1991) and others. In theory, the onset of a negative health event may have several effects on the labor supply of the healthy spouse. The healthy spouse may increase labor supply, as the household has suffered a drop in lifetime income and the healthy spouse's leisure time is likely a normal good. The healthy spouse may also increase labor supply in order to provide health insurance for the family. Alternatively, the healthy spouse may decrease labor supply if the health event has resulted in a change in home production opportunities or in the complementarity of leisure among the spouses. Thus the effect of the health event on the spouse's labor supply is theoretically ambiguous.

This analysis examines the average response of spouses to their partners' health shocks, as well as the possibility of different responses by couples depending on the importance of the drop in lifetime income, caregiving opportunities and complementarity of leisure, and the need to provide health insurance in their families. Particular attention is paid to whether men and women have similar responses to a spouse's health shock, as Coile (1999) suggests that men and women respond differently to their spouse's financial incentives for retirement due to a difference in the strength of complementarity of leisure.

The paper has several major findings. First, health shocks have an important effect on own retirement: a heart attack accompanied by a significant decrease in functioning is associated with a labor supply reduction of 1,030 hours for men and of 654 hours for women. Second, in the sample as a whole, health shocks have no significant effect on spouse's retirement for either men or women. Third, there is some evidence that couples respond to health shocks in the way we would expect, such as decreasing hours if the sick spouse has retiree health insurance or increasing hours if alternate care-givers are available. This suggests that the aggregate non-response to health shocks may be explained by offsetting responses by different groups. These offsetting responses are more often found for men, suggesting that men may respond more to their spouses' health shocks than women. Finally, there is evidence of substantial crowd out of spousal labor supply by Disability benefits.

The remainder of the paper is organized as follows. Section I describes the previous literature on the topic. Section II discusses the data and empirical strategy. Section III presents the empirical results, first for models incorporating only the effect of own health shocks, then for models incorporating the effects of the spouse's health shocks. Section IV discusses the implications of the findings and directions for future research.

I. Previous Literature

Three strands of literature are relevant for this project. The first is the literature on health and retirement. Within this literature, several methods have been used to capture the effect of health on retirement, the first of which is to include self-reported health status or self-reported work limitations in the retirement model. Studies using this method have typically found large effects of health on retirement.[1] However, this method is subject to both measurement error, as individuals' subjective judgements of what constitutes poor health may vary substantially, and to endogeneity concerns, as self-reported measures may not be independent of labor force outcomes if people seek to rationalize their retirement status by claiming a health problem. If endogeneity is important, the estimates from these models may overstate the true importance of health.

As a result of these concerns, a second set of studies instead uses objective measures of health such as information on medical conditions or subsequent mortality.[2] While these measures may be only imperfectly correlated with working capacity, making estimates using them subject to measurement error, studies using them have found significant effects of health on retirement, though smaller than those estimated using self-reported health. A third set of papers instrument for self-reported measures using objective measures.[3] Bound (1991) finds that self-reported and objective measures are both subject to the problems discussed above and shows that instrumenting for self-reported measures with objective measures may actually exacerbate endogeneity concerns. Thus the conclusion of this literature is that health has an important effect on retirement, but there is no perfect method for estimating the magnitude of the effect.

McClellan (1998) avoids the endogeneity problem by using shocks to health that occur between waves 1 and 2 of the Health and Retirement Study to estimate the effect of health on retirement. He finds that acute health events have significant effects on labor supply: an event such as a heart attack is associated with a labor supply reduction of 600 hours, or 1700 hours if accompanied by a serious loss in functioning. However, the study touches only very briefly on

[1] See, for example, Diamond and Hausman (1984), Hanoch and Honig (1983), Burtless (1986), or Gustman and Steinmeier (1986).
[2] See, for example, Anderson and Burkhauser (1985), Bazzoli (1985), and Chirikos and Nestel (1984).
[3] See, for example, Stern (1989), Bound (1991), and Dwyer and Mitchell (1999).

the effect of one spouse's health shocks on the other spouse's labor supply, the subject of this analysis.

The second strand of literature that is relevant to this analysis is the literature on couples' retirement decisions. Several studies, including Hurd (1990), Maestas (1999), and Gustman and Steinmeier (2000), estimate structural models of joint retirement. These authors employ different models, but all find that complementarity of leisure is a key factor in explaining why so many husbands and wives retire simultaneously. A second set of studies, including Baker (1998), An et. al. (1999), Coile (1999), and Johnson and Favreault (2001), estimate reduced-form models exploring the cross effects of one spouse's characteristics on the other spouse's retirement decision. A feature common to both sets of studies, however, is that they either do not control for health or do so using self-reported health status, subjecting them to the critique that the resulting estimates of the effect of health are biased.[4]

Two studies on couples' labor supply deserve further mention. Coile (1999) examines the effect of one spouse's retirement incentives on the other spouse's labor supply and finds that men are more responsive to their wives' incentives due to a stronger complementarity of leisure effect. Gruber and Cullen (2000) points out that spousal labor supply can serve as insurance against a negative event (such as unemployment in their analysis, or a health shock here) and that the "added worker effect" may be crowded out by public insurance programs. This analysis builds on these studies by exploring whether the effect of health shocks on the spouse's labor supply is similar for men and for women and whether spousal labor supply responses are crowded out by the availability of government benefits such as Disability Insurance.

[4] Johnson and Favreault (2001) control for both self-reported health status and an objective measure, the number of functional impairments, in the analysis. However, that study does not look at the change in functional impairments or in other health measures over time, as is done here, or explore whether the effect of health measures on the spouse's labor supply depends on factors such as the family's access to health insurance.

Finally, the literature on health insurance and retirement is also relevant for this analysis, as the need to provide insurance may influence the spouse's response to the health shock. Using the first two waves of the HRS, Blau and Gilleski (1997) find that the availability of employer-provided retiree health insurance increases labor force exit by 2 percentage points if the individual shares the cost of coverage with the firm and 6 percentage points if the firm pays the entire cost. Exploiting federally mandated continuation of coverage provisions through COBRA, Gruber and Madrian (1995) find that an additional year of available coverage increases the probability of retirement by 2.2 percentage points.

In brief, this paper extends the previous literature on health and retirement by estimating reduced-form models that measure the effect of one spouse's health shocks on the other spouse's labor supply. The empirical analysis also allows the response to the spouse's health shocks to differ depending on factors such as access to health insurance. The paper explores the extent to which spousal labor supply serves as insurance in the event of a negative health shock and tests for asymmetrical responses to health shocks by husbands and wives.

II. Data and Empirical Strategy

The data for the project is the Health and Retirement Study (HRS), a survey of persons aged 51-61 in 1992 and their spouses. The survey contains extensive information on health, labor supply, and demographic characteristics. Data for the first five waves of the study, 1992-2000, are used.[5] The sample is constructed using the 4,617 married couples who are in the sample at wave 1 and are observed for at least two consecutive waves of the survey. The male and female samples consist of all person-year observations for waves 2-5 in which the individual

[5] The wave 5 data is the preliminary release; all other waves are final release data.

is between the ages of 50 and 69 and was working at the previous wave.[6] The final sample size is 9,699 male person-year observations and 8,135 female person-year observations.[7]

Following McClellan (1998), three types of health shocks are examined: acute health events (heart attack, stroke, new cancer), onset of new chronic illnesses (diabetes, lung disease, heart failure, and arthritis), and accidental injuries or falls.[8] Another key health variable is the functional impairment index. The index is based on whether the individual reports any difficulty in performing a series of seventeen activities of daily living (ADL), such as walking, climbing stairs, lifting ten pounds, and getting out of bed; the index ranges from 0 (difficulty in no activities) to 1 (difficulty in all 17 activities).[9] The analysis also makes use of the self-reported survival probabilities, as health shocks provide new information about mortality and this may influence labor supply decisions.

Table 1 shows the summary statistics for the male and female samples. Over a two-year period, the typical male decreases annual hours by 353 hours and has a 17% chance of exiting the labor force completely. Over a two-year period, 6% of men experience acute health events, 11% are diagnosed with a new chronic illness, and 3% are injured in an accident; 12% of men

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[6] Wave 1 observations cannot be used because the paper examines the effects of changes in health during the previous two years on labor supply, and it is not possible to determine whether health problems reported at wave 1 began within the past two years or at an earlier point in time.

[7] The standard errors in the regressions below are corrected for repeated observations on the same individuals.

[8] Measures are constructed so as to be as compatible across waves as possible. The two most significant changes are that asthma is included in the chronic illness measure only for waves 1-2 due to lack of data thereafter and that the question about accidents changes from recent accident or injury in waves 1-2 to fall-related injury in waves 3-5 (the fall-related injury question is also only asked of older respondents). Measures are also constructed to be similar to McClellan (1998); the most significant difference is the exclusion of back pain from chronic illness, due to implausibly large fluctuations in the number of new diagnoses in later waves.

[9] The choices offered to respondents for the ADL questions change across waves:

- Wave 1: "Is [the activity] not at all difficult, a little difficult, somewhat difficult, very difficult, or something that you can't do at all?"
- Wave 2: "Do you have any difficulty [with the activity]?" followed by "Is that a little or a lot of difficulty?"
- Waves 3-5: "Do you have any difficulty [with the activity]?"

In creating the index, individuals reporting any level of difficulty are treated as impaired, as this is the only measure available for all waves. On average, individuals are 1-2% more disabled at each passing wave; however, individuals are 4% less disabled at wave 2 than wave 1, presumably due to the change in definition. To make the measure more comparable across time, I decrease each individual's wave 1 impairment index by one activity (roughly 6%).

have experienced an acute health event at some point in the past and 46% have been diagnosed with a chronic illness. The typical male reports difficulty performing 10% of the 17 activities of daily living and has experienced a 1.5% increase in the ADL index during the past two years; he rates his odds of living to age 75 as 66%.[10] The average age of the male sample is 60. In the male sample, 24% of individuals have less than a high school education, 32% have high school only, 20% have some college, 11% have graduated from college, and 13% have graduate education. Median household net worth is $145,200 and median liquid assets are $4,700. The sample statistics for women are similar, except as noted. The typical female decreases hours by 275. Compared to men, women have a higher incidence of past chronic illness, 53%, and a higher ADL index, 13%. The typical female in the sample is younger (58) and has less education than the typical male.

The empirical strategy is to exploit exogenous shocks to health between waves of the survey to explore the effect of health on one's own and one's spouse's labor supply. Two dependent variables will be used: the change in hours (continuous) and exit from the labor force (dummy).[11] In addition to the health measures, the regressions will include a full set of age dummies, education dummies, industry and occupation dummies, net worth and liquid assets, and year dummies.

Table 2 displays trends in the incidence of health shocks and in the impairment index across waves of the survey. The fraction of men experiencing an acute event such as a heart

[10] This average corresponds well with the actual probability of living to age 75 from the 1995 life tables, which is .678 for the average man in the sample. Interestingly, men greatly overestimate their probability of living to age 85 (sample average of .449 vs. .320 from life tables), while women greatly underestimate their probability of living to age 75 (sample average of .682 vs. .782 from life tables) but make an accurate predication regarding age 85. Using wave 1 of the HRS, Hurd and McGarry (1995) have a similar finding.

[11] Results are very similar using a dummy=1 if hours go to zero or a dummy=1 if the individual switches from reporting himself as not retired or partly retired to completely retired. Labor force re-entry is also an interesting phenomenon to explore, though it is sufficiently infrequent (affecting about 3% of the sample between each wave) so as to make such analysis infeasible.

attack, stroke, or new cancer diagnosis is about 7% at each wave, though only 5% at wave 1. The fraction receiving a new diagnosis of a chronic illness such as diabetes or lung disease falls from 12% at wave 2 to 9% at wave 5. The fraction experiencing an accident fluctuates wildly due to changes in the question (see above). Overall, the percent of men experiencing any health event fell from 20% at wave 2 to 18% at wave 5. The ADL index remains roughly constant at 10%, despite the fact that the average person typically experiences a roughly 1% increase in the ADL index between waves. This apparent anomaly can be explained by sample selection: higher-ADL people are more likely to exit the labor force, so the overall ADL average is constant even though those remaining in the sample experience increases in impairment. Sample selection may also explain the decrease in new chronic illness diagnoses and in any health shock. The average self-reported survival probability to age 75 rises slightly across the waves and the typical change in survival probability between waves is about 1%.[12] This matches up well with the change in survival probability calculated from life tables.[13]

The trends for females are very similar for chronic illnesses and accidents. For acute health events, there is significantly more fluctuation, from a low of 2.7% in wave 2 to a high of 9% in wave 3. Interestingly, women's ADL index is about 4% higher than men's, indicating that the typical woman has difficulty with 2.5 out of 17 activities, vs.1.8 activities for men.

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[12] The decrease in survival probabilities between waves 1 and 2 is most likely due to the increase in the number of categories offered from 1-10 to 1-100. The decrease in survival probabilities between waves 3 and 4 is less easily explained, though it is interesting that the incidence of missing data is much lower at wave 4 than at waves 3 or 5.

[13] Surviving an additional year is associated with a decrease in life expectancy of approximately 0.8 years for this sample, so that the probability of living to a given age rises as the individual ages.

III. Results

Results Excluding Spouse Variables

The first set of results explores the effect of health shocks on own retirement, ignoring any response to the spouse's health shocks. Table 3a presents the regression results for men using the change in hours as the dependent variable; all models include dummies for age, education, occupation/industry, and year, as well as net worth and liquid assets. The first specification includes dummy variables for whether the individual has had an acute health event, a new chronic illness, or an accident since the last wave. An acute health event leads to a highly significant decrease in work of 319 hours, a large change relative to the baseline average reduction of 353 hours. The onset of a new chronic illness reduces hours by 140 and an accident reduces hours by 108; the former is significant at the 1% level and the latter at the 10% level. The second specification breaks the acute health event variable into three separate dummy variables for heart attack, new cancer, and stroke. All types of event are found to have a significant effect on hours (stroke is significant only at the 10% level), though the effect of the heart attack dummy, a 548 hour decrease, is roughly three times as large as the effect of other acute events. The third specification tests whether health shocks have long-term effects by including dummy variables for whether the individual has ever had a health shock. Past acute health events have no effect on current hours, though past chronic illnesses reduce hours by 57.

The fourth specification explores the role of the individual's level of functioning by adding a dummy variable indicating a large change in the ADL index (difficulty with 4 or more new ADLs) since the last wave, the value of the ADL index at the last wave, and interactions between the ADL change dummy and the health shock dummies. The coefficients on the ADL change dummy and past ADL level are both large and highly significant: having a past ADL of 1 instead of 0 is associated with a decrease of 356 hours and having a large increase in the ADL index between waves is associated with a decrease of 231 hours. Including the ADL variables lowers the magnitude of the health shocks variables by approximately half and the accident coefficient is no longer statistically significant, but the interaction of the ADL change dummy and the acute health event dummy is significant and extremely large, indicating a 660-hour decrease. Taken together, the point estimates from this specification suggest that someone experiencing a heart attack and a decrease in functioning of 4 ADLs would decrease labor supply by 1,030 hours more than would someone with no heart attack or change in the ADL index; this is more than three times the average reduction in hours.

Finally, the fifth specification examines whether a change in expected mortality amplifies the effect of a health shock. This specification adds a dummy variable indicating a significant change in the self-reported survival probability to age 75 (a decrease greater than 20%) since the last wave, the survival probability from the last wave, and interactions of the change dummy with the health event dummies.[14] Surprisingly, a large change in survival probability is not associated with a reduction in labor supply; the past survival probability also has no effect. However, the interaction of the change in survival probability dummy and the acute health event dummy is negative and significant, suggesting that a heart attack accompanied by a 20+% reduction in survival probability is associated with a decrease in labor supply of 482 hours.

Table 3b presents the linear probability model estimates using labor force exit between waves as the dependent variable. The results are quite similar. For example, a heart attack accompanied by a large decrease in functioning is associated with a 47% higher probability of exiting the labor force; this increase is more than twice the 17% baseline probability of exit.

[14] Results are quite similar if the cutoff for a large change in survival probabilities is a 10% decrease or a 25% decrease.

Similarly, a heart attack with a large decrease in survival probability is associated with a 23% increase in the probability of labor force exit.

The results for women are shown in Tables 4a and 4b. The results are largely similar to those for men, although the coefficients on acute event and chronic illness are consistently smaller than for men and the accident dummy is wrong-signed and insignificant. For example, the additional reduction in hours for a woman experiencing a heart attack and a large decrease in functioning is 654 hours, versus 1,030 hours for a man. Interestingly, while heart attacks have the largest effect of any acute health event for men, for women a new cancer has the largest effect on hours and a stroke has the largest effect on labor force exit.

Basic Results Including Spouse Variables

The effects of the spouse's health shocks on labor supply are shown in Tables 5a and 5b. All models include an equivalent set of own health shock variables and a set of demographic controls for each spouse; although not reported on the tables, the effects of own health variables are virtually identical to those shown in Tables 3a-4b. In the simplest specification, a spouse's acute event, chronic illness, or accident is found to generally increase the labor supply of the other spouse, but the effects are small and not statistically significant; the only significant result is that an accident suffered by a husband is associated with a wife increasing her labor supply by 102 hours.

The most interesting findings come from the specification including changes in the ADL index. The spouse's acute health event dummy is now associated with a larger increase in labor supply, while the spouse's ADL change * acute interaction is associated with a decrease in labor supply; many of the coefficients are significant at the 10% level or better. This suggests that there may in fact be offsetting labor supply responses by different groups. For example, a wife's acute event results in a 108 hour *increase* in the husband's labor supply if there is no major change in functioning, versus a 60 hour *decrease* if there is a major functioning decline; similarly, a husband's acute event *lowers* the wife's probability of labor force exit by 3.3 percentage point if there is no major change in functioning or *raises* it by 11 percentage points if there is a functioning decline. The hypothesis that there are offsetting responses by different groups is addressed at further length in the following sections. There is no evidence to this point that men and women respond differently to spouse's health shocks.

Health Insurance

A husband or wife may increase labor supply in response to a spouse's health shock if he or she needs to work to provide health insurance for the sick spouse, and conversely may decrease labor supply if there is no such need. Table 6 explores this hypothesis. The simplest specification (columns 1, 3, 5, and 7) adds dummies for whether each spouse has employer-provided health insurance and access to retiree health insurance through the employer, as well as a retiree health insurance * acute interaction term.[15] The effect of employer insurance may be to increase labor supply, as jobs with insurance have other attractive attributes that make people less likely to retire, but the effect of retiree insurance and the retiree * acute interaction should be to decrease labor supply both for the respondent and the spouse. In fact, however, the retiree health insurance effects are found to be insignificant and sometimes wrong-signed.

One possible explanation for this result come from Blau and Gilleskie (1997), who note that the cost of retiree health insurance is an important factor and speculate that some people who report having retiree insurance may in fact be referring to COBRA coverage. To address this concern, another specification is estimated that adds a dummy for whether the firm pays the full cost of retiree insurance (the firm pays some or none is the omitted category) and a firm pays all * acute interaction. The change in the results is dramatic. For men, the coefficient on the own firm pays all * acute interaction is −1,405 hours (or 46 percentage points in the labor force exit specification) and the effect of the equivalent wife's variable on husband's labor supply is −507 hours (or 16 percentage points). For women, the effect of the husband's firm pays all * acute variable is −593 hours (or 7 percentage points), though surprisingly there is no effect of the own variable. Thus it appears that if a spouse who has a health shock has access to generous retiree health insurance, this may allow the other spouse to reduce labor supply. However, it is worth emphasizing that the effect of the spouse's health insurance variables are generally not significant, so the results are suggestive rather than conclusive.[16]

Caregiving

One reason that a husband or wife may adjust their labor supply in response to a spouse's health shock is that the attractiveness of home production may have changed due to greater caregiving opportunities at home. In fact, this is consistent with the findings from Tables 5a and 5b that respondents reduce labor supply in response to a spouse's health shock when the event is accompanied by a major decrease in functioning.

A more direct test of the caregiving hypothesis is conducted here. In theory, the presence of adult children living within 10 miles prior to the health shock may be associated with a labor

[15] The remainder of the analysis focuses on acute health events, as these appear to be the health shocks that result in the largest labor supply response. Similar regressions utilizing a dummy for any health event in place of the acute health event variable yield results that are somewhat smaller and less significant.

supply increase by the non-affected spouse, as these children can serve as alternate caregivers. Results of this test are presented in Table 7.[17] As predicted, the husband's response to a wife's acute health shock is to increase labor supply by 179 more hours if adult children live nearby, and the effect is significant; there is also a decrease in his probability of retirement of 5 percentage points, though this effect is not significant. The wife's response to the husband's health shock does not appear to be influenced by the presence of local adult children in a consistent or significant way. One interpretation of this finding is that there is some asymmetry in spouses' responses to health shocks: men take advantage of the presence of other potential caregivers to do less caregiving and increase labor supply, while women do not.

It is also possible that a health shock may result in a change in the complementarity of leisure between the spouses, leading to a decrease in labor supply if leisure together is more enjoyable or an increase in labor supply if leisure together is less enjoyable. Unfortunately, it is difficult to test this hypothesis, despite the existence of potentially useful questions in the HRS.[18] One problem is that the number of respondents to these questions is very low in several waves. A second issue is that it is difficult to know whether a change in complementarity of leisure reported following a health shock reflects the effect of the shock only, or whether it is also influenced by a labor supply response that has already been made, so that the change is not exogenous to the labor supply decision. Thus no test of this hypothesis is presented here.

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[16] Unfortunately, less than 1% of the sample has a spouse with both an acute health event and retiree health insurance, so finding significant results is likely to be difficult.

[17] A second possible test of the hypothesis would involve looking at whether the response to a spouse's health shock depends on whether the sick spouse is receiving assistance with ADLs from the healthy spouse or from other caregivers. Presumably there would be a labor supply decrease if the healthy spouse were providing the care and a labor supply increase if other caregivers were doing so. Regression results are generally consistent with this, though often not significant. However, one concern with this test is that whether assistance is being provided by the spouse at the next wave reflects a labor supply decision that has already been made, introducing endogeneity into the estimation. Thus results of this test are not provided here. The other test is cleaner because it looks at the presence of potential caregivers prior to the health shock.

Income and Retirement Benefits

Finally, a husband's or wife's response to a spouse's health shock may depend on the importance of the sick spouse's lost income to the family and the family's ability to make up for the lost income with personal wealth, private pensions, or Social Security or Disability benefits. Several variables are added to the model to test this hypothesis, and results are presented in Table 8. The first variable is the income potentially lost as a result of the spouse's health shock, which is calculated as the discounted sum of earnings for the sick spouse up to the expected retirement age reported at the first wave.[19] The lost earnings measure the potential negative wealth shock suffered by the family; if leisure is a normal good, a larger loss in earnings should be associated with a larger labor supply increase by the healthy spouse. For men, this is the case: an increase in the wife's potential lost earnings of $100,000 (or less than one standard deviation) is associated with an increase in work of 70 hours, or a 3 percentage point decrease in the probability of retirement, and both results are significant at the 10% level. For women, however, the effect of husband's potential lost earnings is smaller and not significant.

Families with more liquid assets or higher net worth may also be able to weather this shock more easily than other families. To test this, dummy variables for liquid asset and net worth quartiles are included (lowest quartile is the omitted category), and the quartiles are interacted with the spouse's and own acute health event dummies. The net worth dummies have the expected sign: being in the highest net worth quartile leads to a reduction in labor supply of 183 hours for men or 129 hours for women; there is no clear pattern for liquid assets. If higher

[18] Questions which might be useful include "Generally speaking, would you say that the time spent together with your (husband/wife/partner) is extremely enjoyable, very enjoyable, somewhat enjoyable, or not too enjoyable?" and "Do you like to spend free time doing things together or doing things separately?".

wealth helps families weather health shocks, we might expect the spouse's acute * net worth interaction terms to exhibit the same pattern, indicating an even larger reduction in labor supply for a high net worth person if his or her spouse has had a health shock. However, there is no evidence of such a pattern.

Families also may be able to weather a health shock more easily if they have access to private pensions, Social Security, or Disability Insurance (DI) benefits. To test this, dummy variables are added for whether each spouse is eligible for Social Security (defined here as being age 62 or older) or for a private pension and for whether the individual has applied for or received DI; all dummies are interacted with own and spouse's health shocks. The Social Security and pensions results are not particularly compelling: being eligible for Social Security or pensions is associated with a decrease in labor supply, but the interactions of these variables with own or spouse's health shocks are insignificant and inconsistent.

The Disability Insurance results are more interesting. Being a DI applicant is associated with a very large decrease in labor supply for both men and work, as one might expect given that applicants must be out of the labor force; for men, being a recipient is associated with a further labor supply decrease. The own acute * DI interactions generally indicate a further labor supply reduction if the DI recipient has suffered an acute health event. However, the spouse acute * DI interactions are of central interest here: if the wife has an acute health event and receives DI, the husband lower labor supply by 813 hours, or has a 20 percentage point increased probability of retirement; the former effect is significant at the 10% level. Interestingly, if the wife applies for DI but does not receive it, the husband's hours rise by 651 and his probability of retirement falls by 22 percentage points. This suggests that the receipt of Disability benefits may be crowding

[19] Theoretically, the loss in accrual of additional Social Security and pension benefits should also be included. Unfortunately, including these benefits cuts the sample in half due to missing data.

out a labor supply increase by men in response to the wife's health shock. A rough back of the envelope calculation suggests that the crowd out of spousal labor supply by DI benefits may be close to dollar for dollar.[20] For women, once again, the effects are smaller, inconsistent in sign, and statistically insignificant.

To recap, health shocks are found to have no effect on the spouse's labor supply in the aggregate. However, there is some evidence that different groups of spouses are reacting differently, particularly for men. If the sick spouse has generous retiree health insurance coverage, the healthy spouse appears to reduce labor supply (though the effect is not statistically significant). If there are adult children living within 10 miles, men increase labor supply in response to a wife's health shock, though women do not. If the spouse's lost earnings are higher, men increase labor supply, though women do not. If the sick spouse receives Disability benefits, the husband reduces labor supply significantly, though the wife does not.

IV. Conclusions

Health events such as heart attacks or new diagnoses of chronic illnesses have a large effect on labor supply decisions for both men and women, particularly when accompanied by large changes in functioning. The onset of a heart attack or stroke accompanied by new difficulty in performing 4 ADLs is projected to decrease men's hours by 1,030 or to raise the probability of men's exiting the labor force by 42 percentage points. The comparable effect for women is a 654 decrease in hours or a 31 percentage point increase in the probability of labor force exit.

[20] If the 813-hour reduction is applied to median male earnings of $19,800, the reduction in earnings is $8,050. Average disability benefits for a female worker in 1999 were $630 per month, or $7,560 per year. In future work, the elasticity will be estimated directly from the sample using information on DI benefits received.

The effect of the spouse's health shocks on labor supply is shown to be small and insignificant in aggregate, suggesting that health shocks represent real financial losses for the family. However, there is evidence of offsetting labor supply responses for different groups, suggesting that behavior is affected by the need to provide health insurance, the presence of other potential caregivers, the importance of the lost income, and the availability of Disability benefits. Interestingly, such offsetting responses are typically significant for men but not for women, which is consistent with previous work that found men to be more responsive to their wives' financial incentives from Social Security and pensions. There is also evidence that Disability benefits significantly crowd out labor supply, suggesting that they do not raise family income substantially.

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Table 1: Summary Statistics

Variable	Male Sample		Female Sample	
	Mean	Std. Dev.	Mean	Std. Dev
Labor Force Variables				
Change in Hours	-353	1,080	-275	919
Exited Labor Force	0.174	0.379	0.182	0.386
Health Variables				
Acute Health Event	0.063	0.243	0.051	0.221
New Chronic Illness	0.105	0.307	0.100	0.299
Accident	0.034	0.181	0.029	0.166
Past Acute Event	0.118	0.322	0.103	0.304
Past Chronic Illness	0.463	0.499	0.533	0.499
ADL Index	0.101	0.139	0.130	0.145
Change in ADL Index	0.015	0.123	0.010	0.130
Self-Reported Prob Live to 75	0.659	0.275	0.682	0.268
Change in Prob Live to 75	0.002	0.269	0.000	0.262
Demographics				
Age	60.0	4.0	57.9	4.4
Educ: <HS	0.237	0.425	0.190	0.392
Educ: HS	0.321	0.467	0.409	0.492
Educ: Some college	0.196	0.397	0.228	0.419
Educ: College	0.110	0.313	0.079	0.269
Net Worth (median)	145,200	18,900,000	140,000	18,000,000
Liquid Assets (median)	4,700	363,996	5,000	394,835
Number of Obs	9,699		8,135	

Table 2: Changes in Health Status

Variable	Wave 2	Wave 3	Wave 4	Wave 5
Men				
Acute Event	0.047	0.074	0.070	0.070
Chronic Illness	0.118	0.110	0.094	0.088
Accident	0.058	0.005	0.030	0.037
Any Health Shock	0.204	0.175	0.179	0.179
Impairment Index	0.106	0.096	0.098	0.102
Change in Index	0.028	0.001	0.012	0.015
Self-Reported Prob Live to 75	0.651	0.664	0.658	0.669
Change in Prob Live to 75	-0.007	0.018	-0.008	0.010
Number of Obs	3,225	2,594	2,154	1,735
Women				
Acute Event	0.027	0.090	0.042	0.047
Chronic Illness	0.123	0.099	0.086	0.084
Accident	0.058	0.002	0.023	0.028
Any Health Shock	0.192	0.180	0.144	0.150
Impairment Index	0.148	0.136	0.136	0.138
Change in Index	0.013	-0.001	0.012	0.016
Self-Reported Prob Live to 75	0.663	0.685	0.689	0.699
Change in Prob Live to 75	-0.019	0.018	-0.003	0.009
Number of Obs	2,338	2,135	1,934	1,719

Table 3a: Effects of Own Health Shocks on Men's Hours

Variable	Specification				
	(1)	(2)	(3)	(4)	(5)
Acute Event Dummy	-319.1		-323.1	-139.0	-182.4
	(48.8)		(51.0)	(50.6)	(63.1)
Heart Attack		-548.1			
		(82.9)			
Stroke		-158.3			
		(90.3)			
Cancer		-201.5			
		(69.7)			
Chronic Illness Dummy	-140.8	-133.5	-142.1	-89.8	-93.2
	(36.3)	(36.2)	(36.6)	(38.5)	(46.1)
Accident Dummy	-108.1	-106.8	-105.3	-43.0	-165.4
	(59.4)	(58.8)	(59.8)	(64.1)	(89.8)
Past Acute Dummy			8.0		
			(31.4)		
Past Chronic Dummy			-57.4		
			(18.4)		
Increase in ADL Dummy (change>=4 activities)				-230.9	
				(51.8)	
Past ADL (0-1 Index)				-356.0	
				(82.6)	
Acute * ADL Change				-660.3	
				(128.8)	
Chronic * ADL Change				-35.5	
				(105.6)	
Accid * ADL Change				-136.5	
				(156.9)	
Decrease in Age75 Survival Prob (change<-.20)					-4.4
					(35.0)
Past Age 75 Surv Prob (0-1 Index)					58.7
					(41.3)
Acute * Survival Change					-299.0
					(133.2)
Chronic * Survival Change					-62.1
					(106.9)
Accid * Survival Change					123.8
					(213.0)
R-Squared	0.066	0.067	0.067	0.078	0.070
Number of Obs	9,699	9,699	9,551	9,699	7,037

Note:
(1) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.
(2) Standard errors are corrected for repeated observations on same individuals.

Table 3b: Effects of Own Health Shocks on Men's Labor Force Exit

Variable	Specification				
	(1)	(2)	(3)	(4)	(5)
Acute Event Dummy	0.161		0.145	0.081	0.083
	(0.020)		(0.020)	(0.020)	(0.025)
Heart Attack		0.209			
		(0.033)			
Stroke		0.161			
		(0.038)			
Cancer		0.092			
		(0.029)			
Chronic Illness Dummy	0.049	0.047	0.052	0.026	0.040
	(0.013)	(0.013)	(0.013)	(0.013)	(0.017)
Accident Dummy	0.022	0.020	0.017	-0.004	0.046
	(0.023)	(0.023)	(0.023)	(0.024)	(0.033)
Past Acute Dummy			0.043		
			(0.015)		
Past Chronic Dummy			0.030		
			(0.008)		
Increase in ADL Dummy				0.106	
(change>=4 activities)				(0.019)	
Past ADL (0-1 Index)				0.242	
				(0.036)	
Acute * ADL Change				0.278	
				(0.052)	
Chronic * ADL Change				0.010	
				(0.040)	
Accid * ADL Change				0.034	
				(0.064)	
Decrease in Age75 Survival Prob					-0.002
(change<-.20)					(0.012)
Past Age 75 Surv Prob (0-1 Index)					-0.050
					(0.016)
Acute * Survival Change					0.146
					(0.053)
Chronic * Survival Change					0.021
					(0.039)
Accid * Survival Change					-0.001
					(0.067)
R-Squared	0.111	0.112	0.114	0.133	0.100
Number of Obs	9,699	9,699	9,551	9,699	7,037

Note:
(1) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.
(2) Standard errors are corrected for repeated observations on same individuals.

Table 4a: Effects of Own Health Shocks on Women's Hours

Variable	Specification				
	(1)	(2)	(3)	(4)	(5)
Acute Event Dummy	-240.9		-260.4	-145.1	-147.6
	(51.2)		(51.0)	(54.5)	(63.5)
Heart Attack		-216.5			
		(146.2)			
Stroke		-183.6			
		(94.0)			
Cancer		-239.8			
		(63.8)			
Chronic Illness Dummy	-65.9	-64.7	-69.4	-42.8	-59.7
	(34.1)	(34.1)	(34.6)	(37.1)	(37.9)
Accident Dummy	40.1	39.5	31.6	103.0	85.5
	(70.8)	(70.8)	(70.6)	(75.2)	(88.5)
Past Acute Dummy			46.6		
			(34.6)		
Past Chronic Dummy			-23.5		
.			(17.6)		
Increase in ADL Dummy				-189.8	
(change>=4 activities)				(44.7)	
Past ADL (0-1 Index)				-301.4	
				(68.7)	
Acute * ADL Change				-320.2	
				(133.7)	
Chronic * ADL Change				-17.4	
				(97.4)	
Accid * ADL Change				-141.2	
				(186.7)	
Decrease in Age75 Survival Prob					34.5
(change<-.20)					(32.2)
Past Age 75 Surv Prob (0-1 Index)					-3.7
					(38.2)
Acute * Survival Change					-133.2
					(128.6)
Chronic * Survival Change					79.1
					(102.1)
Accid * Survival Change					-289.0
R-Squared	0.041	0.041	0.041	0.049	0.043
Number of Obs	8,135	8,135	8,041	8,135	7,077

Note:
(1) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.
(2) Standard errors are corrected for repeated observations on same individuals.

Table 4b: Effects of Own Health Shocks on Women's Labor Force Exit

Variable	Specification (1)	(2)	(3)	(4)	(5)
Acute Event Dummy	0.090		0.105	0.036	0.026
	(0.022)		(0.023)	(0.022)	(0.025)
Heart Attack		0.048			
		(0.058)			
Stroke		0.131			
		(0.047)			
Cancer		0.066			
		(0.027)			
Chronic Illness Dummy	0.041	0.040	0.048	0.031	0.037
	(0.015)	(0.015)	(0.015)	(0.016)	(0.017)
Accident Dummy	-0.016	-0.017	-0.015	-0.047	-0.040
	(0.028)	(0.028)	(0.028)	(0.029)	(0.031)
Past Acute Dummy			-0.038		
			(0.016)		
Past Chronic Dummy			0.027		
.			(0.009)		
Increase in ADL Dummy				0.096	
(change>=4 activities)				(0.018)	
Past ADL (0-1 Index)				0.218	
				(0.034)	
Acute * ADL Change				0.173	
				(0.060)	
Chronic * ADL Change				-0.004	
				(0.044)	
Accid * ADL Change				0.051	
				(0.075)	
Decrease in Age75 Survival Prob					0.006
(change<-.20)					(0.013)
Past Age 75 Surv Prob (0-1 Index)					0.000
					(0.017)
Acute * Survival Change					0.131
					(0.057)
Chronic * Survival Change					-0.018
					(0.041)
Accid * Survival Change					0.096
R-Squared	0.111	0.112	0.114	0.133	0.100
Number of Obs	9,699	9,699	9,551	9,699	7,037

Note:

(1) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.

(2) Standard errors are corrected for repeated observations on same individuals.

Table 5a: Effects of Spouse's Health Shocks on Men's Labor Supply

Variable	Change in Hours			Exit Labor Force		
	(1)	(2)	(3)	(4)	(5)	(6)
Spouse Health Variables						
Acute Event	57.3	107.7	-21.1	-0.014	-0.024	-0.015
	(40.8)	(48.9)	(63.9)	(0.016)	(0.018)	(0.024)
Chronic Illness	5.0	-4.7	-65.0	-0.009	-0.002	-0.008
	(34.9)	(38.7)	(47.6)	(0.012)	(0.013)	(0.017)
Accident	92.9	94.8	49.9	-0.013	-0.015	0.041
	(66.5)	(72.5)	(97.8)	(0.024)	(0.026)	(0.034)
Increase in ADL Dummy (change>=4 activities)		-30.9			0.001	
		(45.4)			(0.015)	
Past ADL (0-1 Index)		2.7			0.005	
		(57.0)			(0.024)	
Acute * ADL Change		-168.1			0.009	
		(93.9)			(0.038)	
Chronic * ADL Change		76.3			-0.044	
		(94.4)			(0.032)	
Accid * ADL Change		-4.5			0.004	
		(176.9)			(0.064)	
Decrease in Age75 Survival Prob (change<-.20)			4.3			-0.011
			(37.3)			(0.013)
Past Age 75 Surv Prob (0-1 Index)			-65.1			0.025
			(46.4)			(0.018)
Acute * Survival Change			249.7			0.001
			(116.5)			(0.047)
Chronic * Survival Change			20.0			-0.020
			(104.6)			(0.036)
Accid * Survival Change			-85.6			-0.012
			(221.6)			(0.085)
R-Squared	0.070	0.083	0.084	0.117	0.139	0.110
Number of Observations	9,464	9,432	6,113	9,464	9,432	6,113

Note:

(1) All regressions include the same own health shock variables; coefficients are very similar to those on Tables 3a-3b.

(2) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.

(3) Standard errors are corrected for repeated observations on same individuals.

Table 5b: Effects of Spouse's Health Shocks on Women's Labor Supply

Variable	Change in Hours			Exit Labor Force		
	(1)	(2)	(3)	(4)	(5)	(6)
Spouse Health Variables						
Acute Event	9.5	50.8	18.4	-0.003	-0.033	-0.028
	(36.9)	(40.5)	(57.4)	(0.016)	(0.017)	(0.024)
Chronic Illness	-38.1	-32.1	17.3	0.017	0.020	-0.002
	(34.2)	(37.4)	(47.5)	(0.014)	(0.015)	(0.019)
Accident	102.1	79.7	159.8	-0.008	0.004	-0.053
	(48.7)	(56.9)	(95.3)	(0.023)	(0.026)	(0.036)
Increase in ADL Dummy		-21.5			-0.011	
(change>=4 activities)		(43.8)			(0.017)	
Past ADL (0-1 Index)		-22.3			0.002	
		(63.7)			(0.029)	
Acute * ADL Change		-171.5			0.143	
		(93.9)			(0.043)	
Chronic * ADL Change		46.5			-0.035	
		(89.3)			(0.038)	
Accid * ADL Change		132.3			-0.060	
		(114.4)			(0.056)	
Decrease in Age75 Survival Prob			74.4			-0.033
(change<-.20)			(42.6)			(0.015)
Past Age 75 Surv Prob (0-1 Index)			-76.7			0.015
			(44.6)			(0.019)
Acute * Survival Change			-39.4			0.063
			(133.7)			(0.049)
Chronic * Survival Change			-130.3			0.030
			(124.1)			(0.044)
Accid * Survival Change			43.3			0.140
			(194.1)			(0.086)
R-Squared	0.050	0.058	0.056	0.109	0.127	0.114
Number of Observations	7,587	7,523	4,487	7,587	7,523	4,487

Note:

(1) All regressions include the same own health shock variables; coefficients are very similar to those on Tables 3a-3b.

(2) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.

(3) Standard errors are corrected for repeated observations on same individuals.

Table 6: Effects of Spouse Health Shocks -- Health Insurance

Variable	Dependent Var: Men's Labor Supply				Dependent Var: Women's Labor Supply			
	Change in Hours		Labor Force Exit		Change in Hours		Labor Force Exit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Spouse Variables								
Acute	57.8	57.1	-0.015	-0.015	-4.6	-4.6	0.002	0.002
	(41.6)	(41.6)	(0.016)	(0.016)	(37.4)	(37.4)	(0.016)	(0.016)
Employer HI	85.3	82.2	-0.054	-0.053	113.7	113.8	-0.054	-0.054
	(30.4)	(30.4)	(0.011)	(0.011)	(25.9)	(25.9)	(0.011)	(0.011)
Retiree HI	1.7	8.1	0.012	0.007	35.1	37.4	0.000	0.003
	(38.4)	(38.9)	(0.013)	(0.014)	(31.4)	(32.5)	(0.013)	(0.014)
Retiree HI * Acute	-116.6	-64.4	0.058	0.041	167.6	237.6	-0.014	-0.024
	(124.8)	(127.3)	(0.049)	(0.051)	(127.2)	(131.6)	(0.046)	(0.048)
Retiree HI * Firm Pays		-88.7		0.062		-23.2		-0.024
		(112.2)		(0.035)		(60.3)		(0.028)
Retiree * Firm Pays * Acute		-506.7		0.163		-593.4		0.071
		(425.7)		(0.162)		(373.2)		(0.149)
Own Variables								
Acute	-330.9	-331.0	0.167	0.167	-324.4	-325.1	0.112	1.112
	(55.6)	(55.6)	(0.021)	(0.021)	(60.3)	(60.3)	(0.026)	(0.026)
Employer HI	569.3	569.5	-0.252	-0.252	430.1	429.1	-0.247	0.247
	(26.4)	(26.4)	(0.009)	(0.009)	(24.5)	(24.6)	(0.010)	(0.010)
Retiree HI	-54.2	-43.6	0.030	0.025	-23.9	-20.9	0.020	0.016
	(24.0)	(24.1)	(0.007)	(0.007)	(23.7)	(24.6)	(0.008)	(0.008)
Retiree HI * Acute	199.7	349.3	-0.085	-0.134	324.2	325.6	-0.107	-0.101
	(113.4)	(106.5)	(0.040)	(0.037)	(82.9)	(85.4)	(0.034)	(0.035)
Retiree HI * Firm Pays		-108.0		0.050		-31.0		0.033
		(63.3)		(0.021)		(55.5)		(0.022)
Retiree * Firm Pays * Acute		-1404.9		0.456		-24.1		-0.064
		(343.3)		(0.146)		(156.0)		(0.049)
R-Squared	0.1273	0.1303	0.3384	0.3378	0.0958	0.0963	0.1872	0.1874
Number of Observations	8,973	8,973	8,973	8,973	7,218	7,218	7,218	7,218

Note:
(1) All regressions include own/spouse health shocks (acute/chronic/accident); coefficients are similar to those on Tables 3a-4b.
(2) Regressions include dummies for age, education, industry/occupation, and year, net worth and liquid assets.
(3) Standard errors are corrected for repeated observations on same individuals.

Table 7: Effects of Spouse Health Shocks -- Care-Giving

Variable	Dependent Variable: Men's Labor Supply		Dependent Variable: Women's Labor Supply	
	Hours	Exit	Hours	Exit
	(1)	(2)	(3)	(4)
Adult kids within 10 miles	-21.5	0.009	-17.1	0.006
(at last wave)	(20.7)	(0.008)	(20.5)	(0.010)
Spouse Variables				
Acute	-48.5	0.013	80.0	0.007
	(61.5)	(0.025)	(54.8)	(0.025)
Acute * Kids	178.5	-0.047	-111.9	-0.016
	(81.2)	(0.032)	(74.8)	(0.032)
Own Variables				
Acute	-319.0	0.141	-354.5	0.100
	(80.2)	(0.031)	(88.1)	(0.035)
Acute * Kids	12.4	0.030	112.5	0.005
	(102.9)	(0.040)	(109.7)	(0.045)
R-Squared	0.071	0.117	0.050	0.109
Number of Observations	9,464	9,464	7,587	7,587

Note:
(1) All regressions include own/spouse health shocks (acute/chronic/accident); coefficients are similar to those on Tables 3a-4b.
(2) Regressions include dummies for age, education, ind/occup, and year, net worth and liquid assets.
(3) Standard errors are corrected for repeated observations on same individuals.

Table 8: Effects of Spouse Health Shocks -- Wealth and Retirement Benefits

Variable	Dependent Variable: Men's Labor Supply		Dependent Variable: Women's Labor Supply	
	Hours	Exit	Hours	Exit
	(1)	(2)	(3)	(4)
Spouse Variables				
Acute * Earnings to Expected Ret Age in $100,000s	69.6	-0.029	2.5	-0.011
	(39.4)	(0.014)	(42.0)	(0.016)
Acute * Liquid Asset 2nd quartile	-147.5	0.052	15.3	-0.001
	(137.9)	(0.051)	(99.1)	(0.044)
Acute * Liquid Asset 3rd quartile	44.2	-0.052	70.8	-0.002
	(141.4)	(0.050)	(119.0)	(0.053)
Acute * Liquid Asset highest quartile	-226.7	0.003	21.3	0.046
	(195.2)	(0.077)	(164.4)	(0.074)
Acute * Net Worth 2nd quartile	127.9	-0.018	210.9	-0.005
	(135.8)	(0.051)	(112.7)	(0.046)
Acute * Net Worth 3rd quartile	38.2	-0.023	210.3	-0.048
	(144.7)	(0.055)	(129.3)	(0.055)
Acute * Net Worth highest quartile	-33.2	0.013	187.1	-0.075
	(179.2)	(0.069)	(137.3)	(0.060)
SS-eligible (age 62+)	-47.1	0.064	-147.5	0.019
	(143.6)	(0.065)	(95.0)	(0.043)
Pension eligible	-29.3	0.008	-35.1	0.029
	(24.4)	(0.011)	(22.3)	(0.012)
Acute * SS-eligible	92.6	-0.070	15.5	-0.012
	(128.6)	(0.050)	(87.5)	(0.036)
Acute * Pension-eligible	-36.0	0.062	-28.7	0.021
	(109.8)	(0.045)	(84.4)	(0.037)
DI Applicant	-269.7	0.082	-31.3	0.038
	(152.6)	(0.047)	(120.1)	(0.057)
DI Recipient	382.6	-0.063	-148.9	-0.014
	(228.8)	(0.089)	(186.2)	(0.075)
Acute * DI Applicant	650.5	-0.223	-105.9	0.006
	(347.8)	(0.063)	(221.3)	(0.097)
Acute * DI Recipient	-813.1	0.202	-247.0	-0.029
	(436.4)	(0.130)	(384.2)	(0.142)

Table 8: Effects of Spouse Health Shocks -- Wealth and Retirement Benefits

Variable	Dependent Variable: Men's Labor Supply		Dependent Variable: Women's Labor Supply	
	Hours	Exit	Hours	Exit
	(1)	(2)	(3)	(4)
Own Variables				
Acute * Earnings to Expected Ret Age in $100,000s	6.3	-0.020	15.9	-0.024
	(35.4)	(0.022)	(54.8)	(0.019)
Acute * Liquid Asset 2nd quartile	-22.1	0.027	-69.7	-0.002
	(148.2)	(0.058)	(162.6)	(0.059)
Acute * Liquid Asset 3rd quartile	-36.6	0.001	122.5	0.021
	(151.8)	(0.066)	(176.4)	(0.067)
Acute * Liquid Asset highest quartile	-107.0	0.062	380.8	-0.128
	(191.8)	(0.079)	(185.7)	(0.081)
Acute * Net Worth 2nd quartile	-154.0	-0.065	-131.5	0.015
	(163.2)	(0.059)	(178.2)	(0.063)
Acute * Net Worth 3rd quartile	-167.6	-0.062	-159.7	0.027
	(194.0)	(0.069)	(197.2)	(0.064)
Acute * Net Worth highest quartile	102.9	-0.188	-99.4	0.034
	(196.3)	(0.073)	(232.6)	(0.083)
SS-eligible (age 62+)	-636.7	0.316	-237.5	0.342
	(204.2)	(0.051)	(223.0)	(0.104)
Pension eligible	-85.1	0.057	-53.3	0.001
	(24.9)	(0.010)	(22.4)	(0.012)
Acute * SS-eligible	4.2	-0.052	-20.9	0.125
	(125.7)	(0.050)	(163.6)	(0.072)
Acute * Pension-eligible	-169.8	0.061	-14.7	-0.007
	(120.4)	(0.046)	(122.9)	(0.047)
DI Applicant	-769.6	0.526	-1290.1	0.604
	(219.8)	(0.082)	(146.2)	(.071)
DI Recipient	-713.4	0.213	389.4	-0.043
	(257.5)	(0.094)	(250.5)	(0.117)
Acute * DI Applicant	-738.6	0.054	377.5	0.141
	(287.9)	(0.117)	(347.6)	(0.110)
Acute * DI Recipient	1009.5	-0.138	-839.5	0.054
	(450.4)	(0.131)	(438.6)	(0.160)

Table 8: Effects of Spouse Health Shocks -- Wealth and Retirement Benefits

Variable	Dependent Variable: Men's Labor Supply		Dependent Variable: Women's Labor Supply	
	Hours	Exit	Hours	Exit
	(1)	(2)	(3)	(4)
Family Variables				
Liquid Asset 2nd quartile	-2.7	-0.023	22.3	-0.028
	(36.5)	(0.012)	(34.9)	(0.015)
Liquid Assets 3rd quartile	-15.2	-0.005	9.8	-0.011
	(39.4)	(0.014)	(37.2)	(0.017)
Liquid Assets highest quartile	24.4	0.022	65.1	-0.012
	(49.3)	(0.019)	(45.4)	(0.022)
Net Worth 2nd quartile	18.0	0.020	-86.9	0.013
	(34.0)	(0.013)	(34.0)	(0.016)
Net Worth 3rd quartile	-69.8	0.038	-139.4	0.053
	(36.7)	(0.014)	(37.4)	(0.017)
Net Worth highest quartile	-182.8	0.074	-128.8	0.077
	(47.5)	(0.018)	-45.4	(0.022)
R-Squared	0.115	0.188	0.060	0.1669
Number of Observations	6,754	6,754	5,523	5,523

Note:

(1) All regressions include own/spouse health shocks (acute/chronic/accident); coefficients are similar to those on Tables 3a-4b.

(2) Regressions include dummies for age, education, ind/occup, and year, net worth and liquid assets.

(3) Standard errors are corrected for repeated observations on same individuals.