Appendix to "Caring to Work or Working to Care: The Intra-Family Dynamics of Health Shocks"

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July 2022

A. Model Setup

We exposit a purposefully simple, stylized model in order to formalize the idea that there are two forces at play, the income effect and the caregiving effect, which induce opposite signed effects on family labor supply. In this simple setup, we look at the intensive margin choices of hours to work, setting variables such as wages to be constant and exogenous. Note that in our empirical results, we explore a wide variety of labor market outcomes, including the extensive margin and wage changes. Given that the goal of the model is to just highlight the two different effects, this model abstracts from the wider array of choices people make and the complicated ways in which a medical shock might manifest itself in a family.

We start with a static model of individual labor supply decisions. This individual is the family member who himself does not receive a health shock, but is affected by the consequences of the health shock. In the simplest possible framework, we focus just on this family member, and assume that she cares only about her own consumption and hours worked. There is a continuum of states of the world, indexed by s, where larger values of s signifies a worse state of the world. The individual does not anticipate the state of the world.

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She simply wakes up and a state is realized. The individual faces the following maximization problem:

$$\max_{c,l} \quad U(c,l) = u(c) - \beta(s)v(l) \qquad s.t. \quad c + I(s) = wl, \tag{1}$$

where $u(c)$ is the concave utility from consumption ($u'(c) > 0$, $u''(c) < 0$) and $v(l)$ is the convex disutility from labor ($v'(l) > 0$, $v''(l) > 0$). We model a health shock to a family member as affecting this individual through two channels; $I(s)$, the unearned income where $\frac{\partial I(s)}{\partial s} > 0$, and $\beta(s)$, the degree of disutility from work where $\frac{\partial \beta(s)}{\partial s} > 0$. $I(s)$ is intended to capture a state dependent income, such as out-of-pocket medical spending or the income produced by other members in the family. When there are worse states of the world, the individual perceives higher medical costs or lower income brought in by other family members. On the other hand, $\beta(s)$ changes the dis-utility from working, which is also state dependent. As s increases, and the state of the world gets worse, β also increases, signifying that each additional hour of work is more costly in a worse state of the world. From this setup, $I(s)$ will govern the income effect channel, while $\beta(s)$ will capture the caregiving channel. Note that there are numerous ways to model caregiving; Crespo and Mira (2014) and Johnson and Sasso (2000) have utility maximization problems where the well-being of the family member enters into the value function, and time spent caregiving (not working) positively affects the relative's well-being. For the purposes of this model, such a setup will complicate the framework, without generating additional insights. Therefore, we favor this 'reduced form' way of capturing caregiving through adjusting β.

This section proceeds as follows. We will first assume that there is no caregiving effect ($\beta(s) = 1 \quad \forall s$) to show unambiguously that labor in the equilibrium will increase as a function of s. Next, we will instead assume that there is no income effect ($I(s) = 0 \ \forall s$), and show that optimal labor will decrease as s increases. Finally, we put both pieces together to

demonstrate that the sign of optimal labor as a function of s is ambiguous.

A.1. CASE 1: PURE INCOME EFFECT

Let $\beta(s) = 1 \ \ \forall s$, and $l^*(I(s), w)$ denote the optimal hours of work chosen for each combination of levels of $I(s)$ and w. We show that $\frac{\partial l^*(I(s),w)}{\partial s} > 0$.

The first order conditions produce

$$u'(c) = \frac{v'(l)}{w}$$

Plug in the budget constraint and take the derivative of both sides with respect to s:

$$wu''(wl^* - I(s)) \left[w \frac{\partial l^*}{\partial I(s)} \frac{\partial I(s)}{\partial s} - \frac{\partial I(s)}{\partial s} \right] = v''(l^*) \frac{\partial l*}{\partial I(s)} \frac{\partial I(s)}{\partial s}$$

$$\frac{\partial l^*(I(s), w)}{\partial s} = \frac{\partial l^*}{\partial I(s)} \frac{\partial I(s)}{\partial s} = \frac{\frac{\partial I(s)}{\partial s} wu''(wl^* - I(s)}{w^2 u''(wl^* - I(s)) - v''(l^*)} > 0$$

Given the concavity of $u(\cdot)$ and $\frac{\partial I(s)}{\partial (s)} > 0$, the numerator is negative, while the denominator is negative. Therefore, as the state increases, or the health shock is worse, the individual unambiguously works more in equilibrium through the income effect. The income effect is larger when worse health states induces larger income losses.

A.2. CASE 2: PURE CAREGIVING EFFECT

Let $I(s) = 0 \ \ \forall s$. We show that $\frac{\partial l*(\beta(s),w)}{\partial s} < 0$.

The first order conditions now become

$$u'(c) = \frac{\beta(s) v'(l)}{w}$$

Plugging in the budget constraint and taking the derivative of both sides with respect to s produces a similar equation as above except for the numerator:

$$wu''(wl^*)\frac{\partial l^*}{\partial \beta(s)}\frac{\partial \beta(s)}{\partial s} = \beta(s)v''(l^*)\frac{\partial l^*}{\partial \beta(s)}\frac{\partial \beta(s)}{\partial s} + v'(l^*)\frac{\partial \beta}{\partial s}$$

$$\frac{\partial l^*(\beta(s), w)}{\partial s} = \frac{\partial l^*}{\partial \beta(s)}\frac{\partial \beta(s)}{\partial s} = \frac{v'(l^*)\frac{\partial \beta(s)}{\partial s}}{w^2u''(wl^*) - \beta(s)v''(l^*)} < 0$$

The magnitude of caregiving is governed by the magnitude that an additional worse state imposes on the disutility of work for the individual. Unambiguously, health shocks (worse states) induce the individual to work less.

A.3. CASE 3: THE INCOME AND CAREGIVING EFFECTS

It should be clear that the intuition from above carries through when the health shock produces both income losses and the desire to take care of the injured individual. For completion, we show $\frac{\partial l^*(I(s),\beta(s),w)}{\partial s}$ which is the sum of income and caregiving effects demonstrated in Cases 1 and 2, derived following the same steps as above.

$$\frac{\partial l^*(I(s), \beta(s), w)}{\partial s} = \frac{\partial l^*}{\partial I(s)}\frac{\partial I(s)}{\partial s} + \frac{\partial l^*}{\partial \beta(s)}\frac{\partial \beta(s)}{\partial s} = \frac{v'(l^*)\frac{\partial \beta(s)}{\partial s} - wu''(wl^* - I)\frac{\partial I(s)}{\partial s}}{w^2u''(wl^* - I(s)) - \beta(s)v''(l^*)}$$

The denominator is negative. The first term in the numerator is the caregiving effect, which is positive, while the second term is the income effect, which is negative. Therefore, the overall sign is ambiguous and depends on which effect is larger. For example, if a health shock happens to a child and produces little out-of-pocket spending, then it is likely that the caregiving effect dominates and the individual works less.

B. Medical Expenditure Panel Survey: Attrition

We note some characteristics of the MEPS data set. MEPS is a unique dataset available for the United States that allows us to link individuals into households and follow them for a 2-year panel, with both labor market information and rich records of medical events. It allows us to focus on the few months after the shock, where the family might feel the effects most acutely. On average, panels in MEPS have an attrition rate of 7.8%, which is the fraction of individuals who responded to the first round of the panel and were "in-scope" (part of the civilian non-institutionalized population that is the focus of this survey) and subsequently had missing rounds of data. This attrition includes households who became out-of-scope for the survey (e.g., died or institutionalized). Households who become unresponsive are entirely dropped from the MEPS. Hence, we are unable to assess selection in attrition. For example, if a health event leads the household's reference person (i.e., the person who responds to the survey on behalf of the household) to provide caregiving to the extent that it leads to them to become unresponsive, this household is excluded from the MEPS. Our estimates are, therefore, potentially biased for the universe of households who suffer health events (in that it excludes such households who become unresponsive), yet remain internally valid for the sample of households in our dataset. This type of attrition is less of a concern for ED events given that we observe households being responsive to hospitalizations, which, as we show, are events with larger income and caregiving effects, and hence more prone to potentially leading to unresponsiveness. This suggests households suffering ED events are sufficiently far away from the threshold level in caregiving that might lead to unresponsiveness.

C. Robustness: Conditions Heterogeneity

C.1. MILD ED EVENTS

The goal is to identify "mild" ED events as medical conditions that are unlikely to be associated with large costs to the family. We identify these conditions in the data by determining medical conditions with low charges. Charge is a proxy for the amount of medical intervention necessary.

For each medical condition associated with an ED visit (identified by CCC - Clinical Classification Code), we average across charges associated all individuals who had an ED visit with that condition. We define "mild" ED condition as an ED condition at the at bottom quintile of charges. We do think this meaningfully picks up more mild conditions. For example, the top 3 most common conditions in the mild category are "Other Upper Respiratory Infections", "Otitis Media and Related Conditions", and "Allergic Reactions". Meanwhile, the top 3 most common conditions for conditions at the top quintile of charges are "Nonspecific Chest Pain", "Calculus of Urinary Tract", and "Cardiac dysrhythmias". Therefore, we would consider heart-related conditions (possibly a sign of a heart attack) to be more serious than colds, ear infections, and allergies.

We characterize an individual has having a mild ED event in a round if the individual visits the ED with associated medical conditions that are all mild. This way, a person with simultaneously a heart attack and a respiratory infection would not be identified as having a mild ED event. Among all family members where someone in the family had an ED event, approximately 8% are family members to mild ED events. We acknowledge that focusing on a subset of ED events, while meaningful, also results in a loss of statistical power.

Appendix Figure D11 shows the effect of mild ED events on family members' log total income and employment in the top panel. While we note the loss of power, we do not see a statistically significant effect on labor supply for men or women in the family. This is suggestive evidence that the overall family labor supply effects are not being driven by mild

ED events that were unlikely to induce effects on the family, and provides a falsification test to our main results.

C.2. NON-DEFERRABLE CONDITIONS

The literature generally separates out non-deferrable medical conditions, which are conditions that are very serious and requires immediate medical attention.

For example, in Card, Dobkin, and Maestas (2009), events such as heart attacks, strokes, and asthma attacks fall into this category. The methodology for finding these conditions is to examine all conditions that result in inpatient admission, and to see which medical events have similar inpatient admissions during the week compared with the weekend. Ideally, we would like to apply this analysis to our data set and pick out non-deferrable ED events. However, despite the fact that we have ED admissions files, our challenge is that the ED event file only provides the month and year that the individual was admitted to the ED; without the exact day, we are unable to run this type of analysis. Furthermore, MEPS does not provide the ICD code associated with each ED visit, and instead bundles ICD codes into CCC codes. It is not clear, with this lack of conditions granularity, that the Card, Dobkin, and Maestas (2009) methodology could still hold.

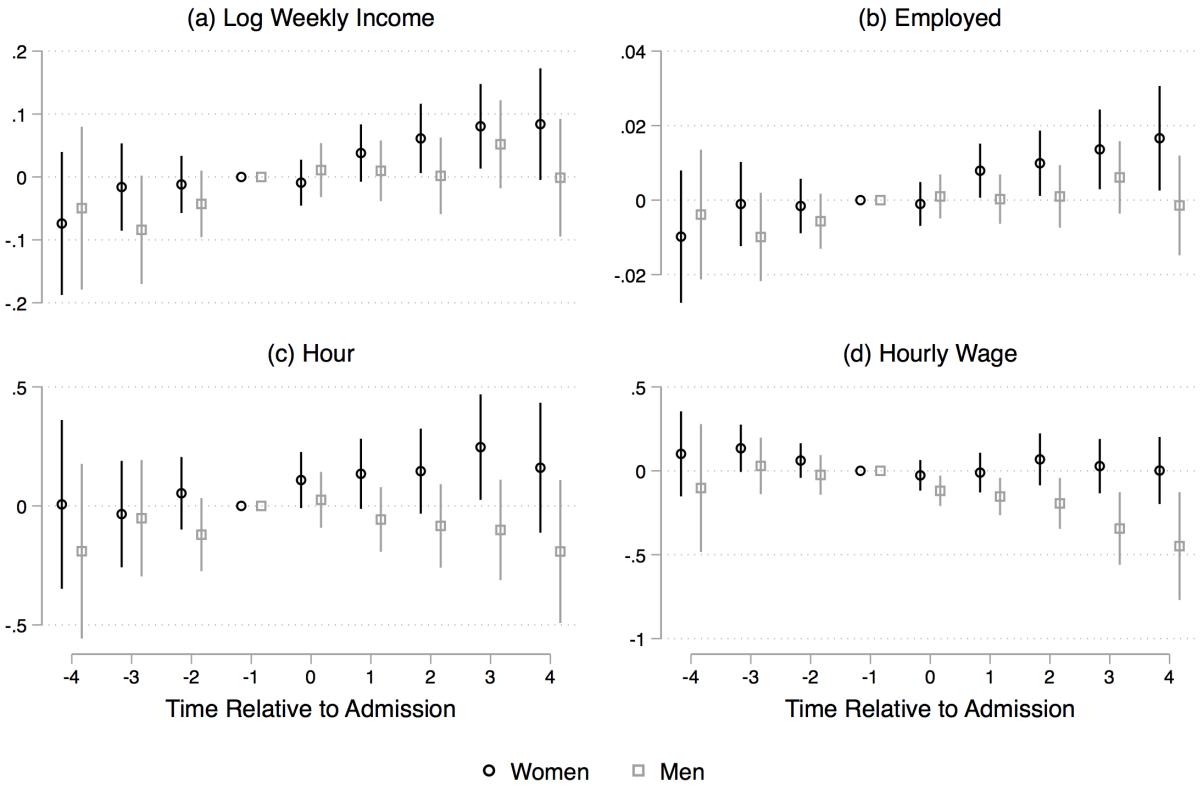
Barcellos and Jacobson (2013) also use MEPS and they consult a team of medical doctors to have them pick out a list serious and non-deferrable medical conditions. The full list of these conditions are: Septicemia (except in labor), Acute Posthemorrhagic Anemia, Meningitis, Encephalitis, Acute Myocardial Infarction, Cardiac Arrest and Ventricular Fibrilation, Acute Cerebrovascular Disease, Transient Cerebral Ischemia, Aortic and Peripheral Aterial Embolism or thrombosis, Aspiration Pneumonitis; food/vomitus, Respiratory Failure; Insufficiency; Arrest (adult), Appendicitis and other appendiceal condition, Respiratory Distress Syndrome, Fracture of Neck of Femur (hip), Spinal Cord Injury, Fracture of Lower Limb, Other Fractures, Crushing injury or Internal Injury. We examine those conditions here; however, these conditions do constitute a small fraction of all emergency room events. Among

all family members where someone in the family had an ED event, approximately 6% are family members to non-deferrable events. Given the already smaller sample size of MEPS and that ER events happen to around 20% of the population, focusing on this subsample would be a loss in power.

We note that while non-deferrability helps us limit to medical conditions where the individual is unlikely to have delayed the medical intervention (and thus, the exact timing is likely more exogeneous in nature), these are also more serious medical conditions. As discussed in the Conceptual Framework of the main text, more serious medical conditions produce theoretically ambiguous effects on family labor supply. While the income effect is larger, the caregiving effect is larger as well. The bottom two charts in Appendix Figure D11 shows the effect of non-deferrable ED events on the labor supply of family members. There is not detect a statistically significant effect on labor supply for either men or women in the family.

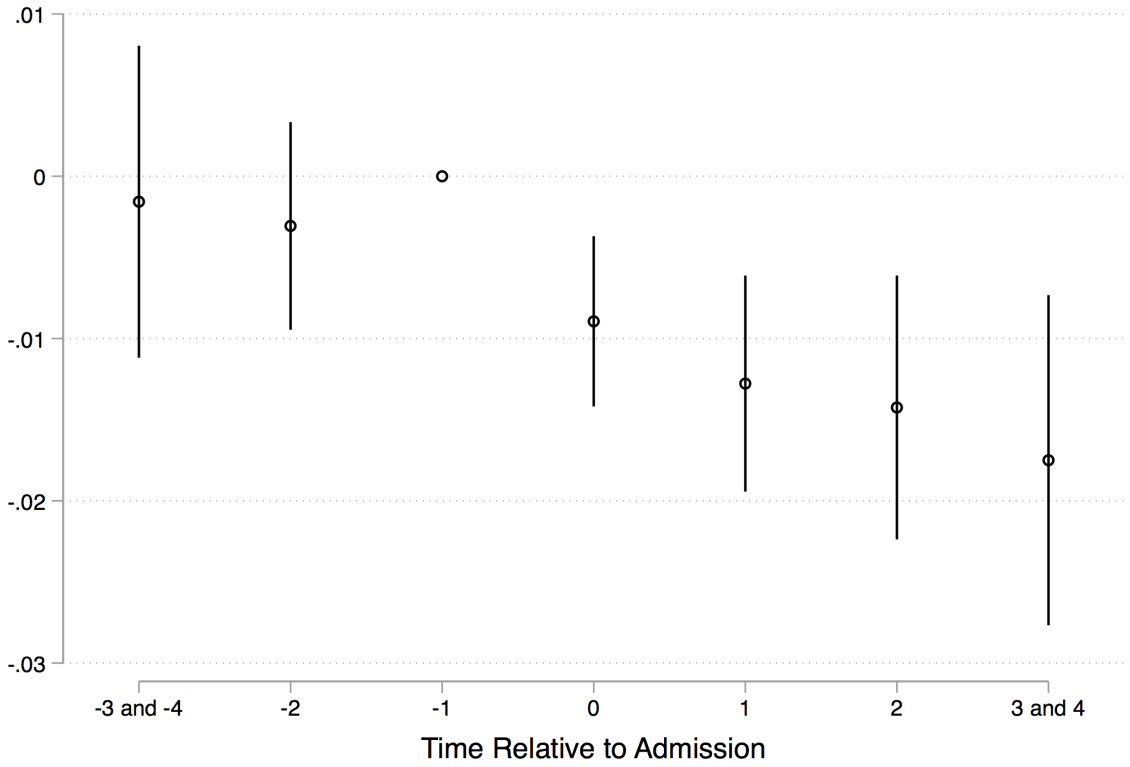
D. Appendix Figures

Figure D1: Effect of Emergency Department Event on Family Members' Labor Supply



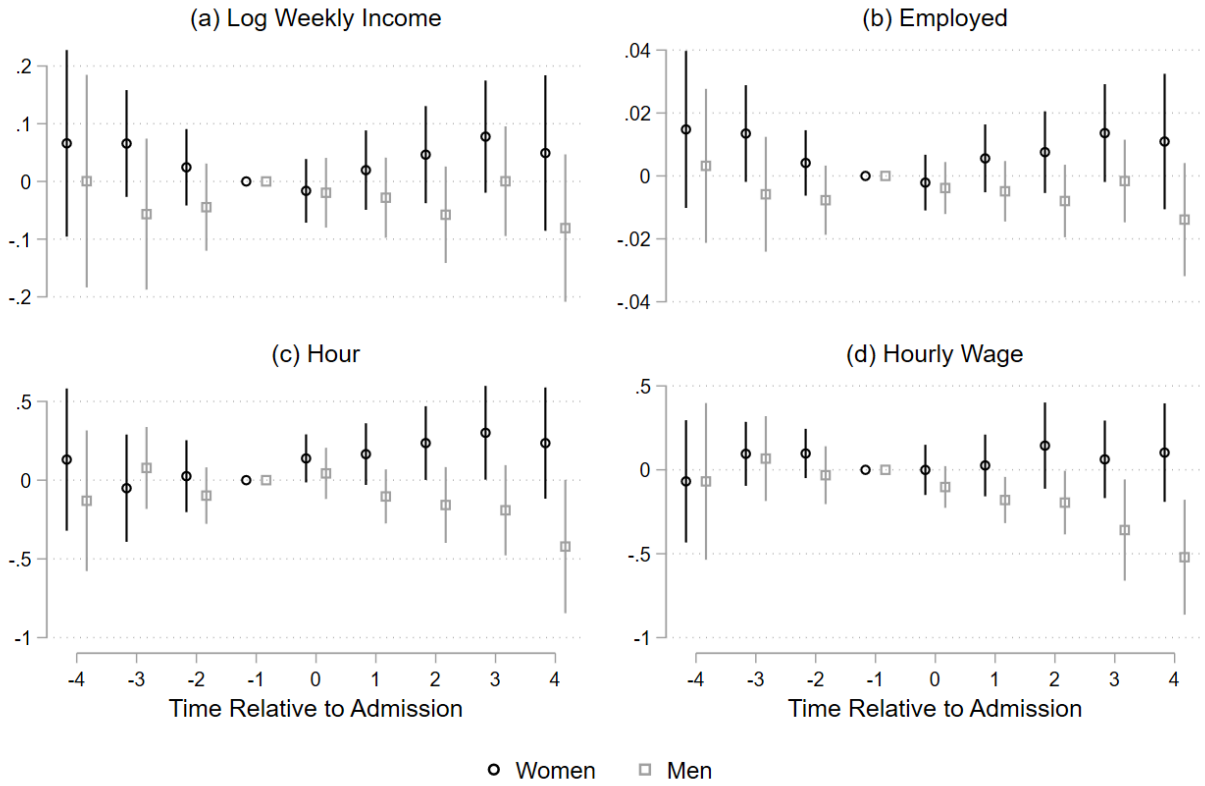
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. This version differs from the figure in the text only by not pooling the -4/-3 and +3/+4 time periods together. Excludes pregnancy-related ED events. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D2: Effect of Emergency Department Event on Likelihood of Working More than 1 Job for Individual Who Suffered Event



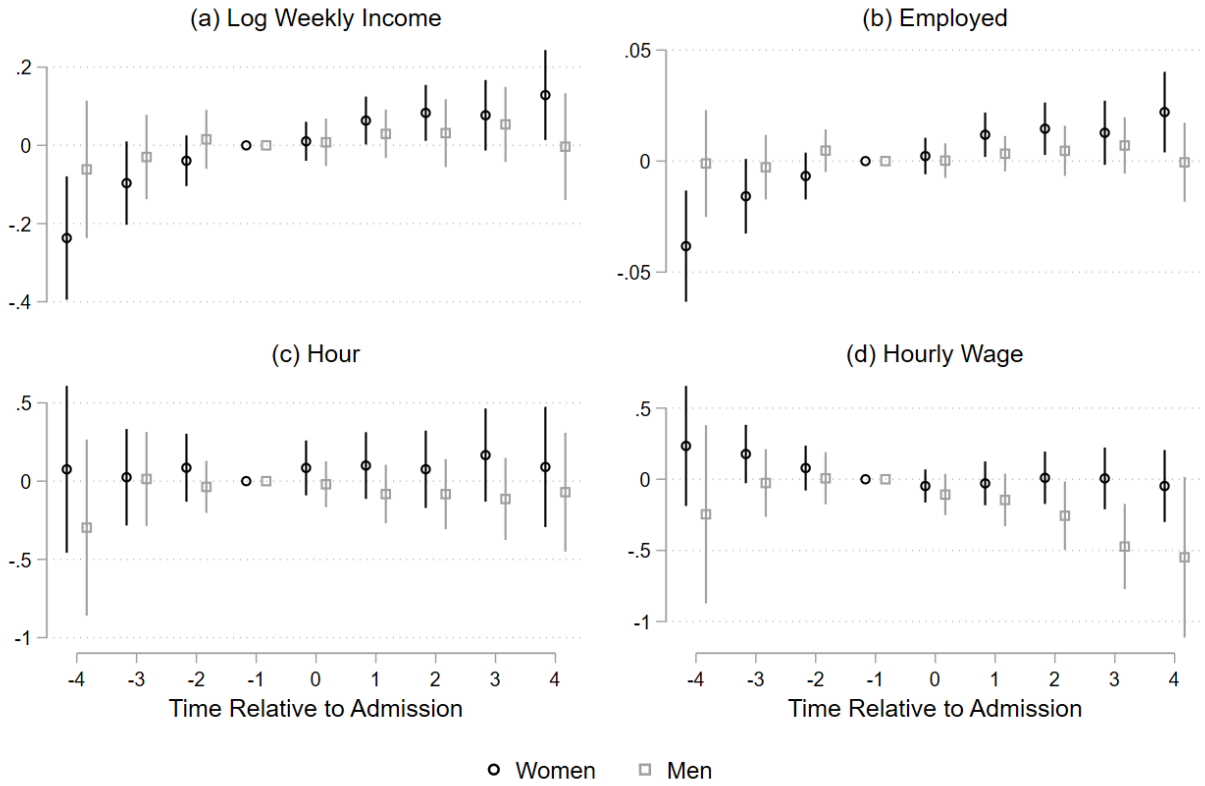
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events and those in single member families. Outcome variable is an indicator for working more than one job. Robust standard errors are clustered at the individual level.

Figure D3: Effect of Emergency Department Event on 'same-generation' Family Members' Labor Supply (spouse, partner, sibling, cousin)



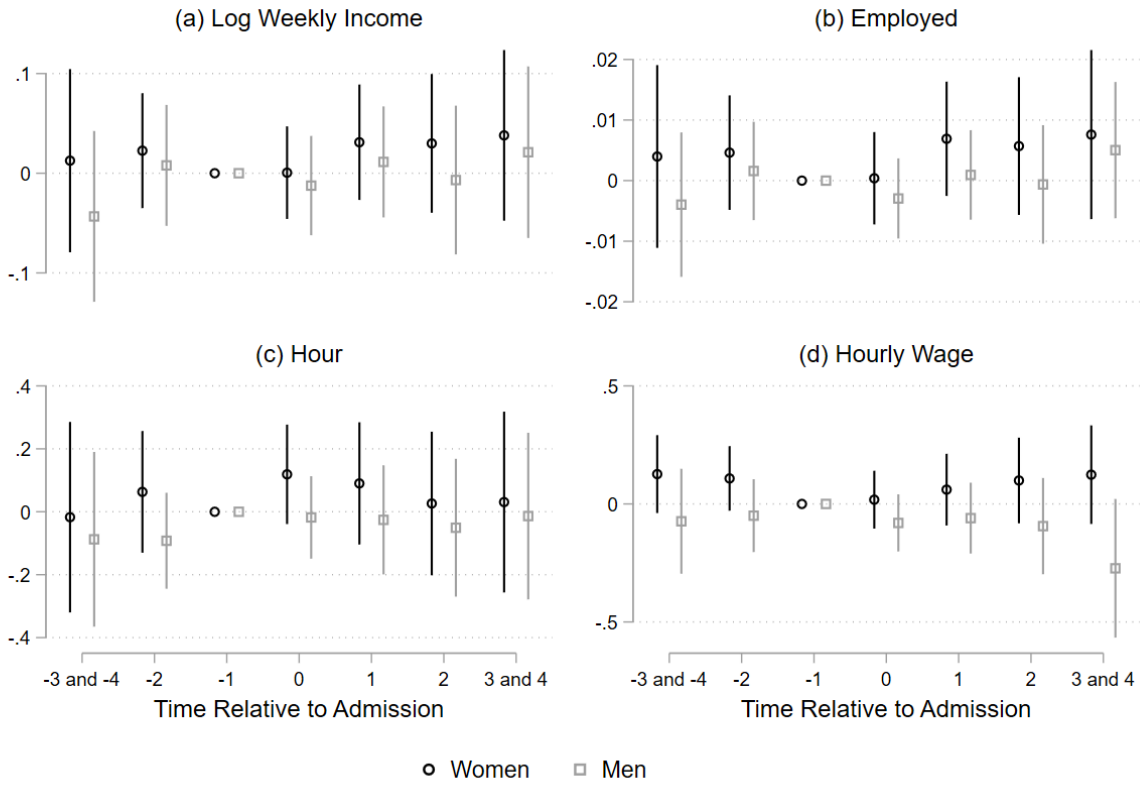
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old who are spouse, partner, sibling, or cousin of individual who visits emergency department. Excludes pregnancy-related ED events. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D4: Effect of Emergency Department Event on 'senior-generation' Family Members' Labor Supply (parent, uncle, aunt)



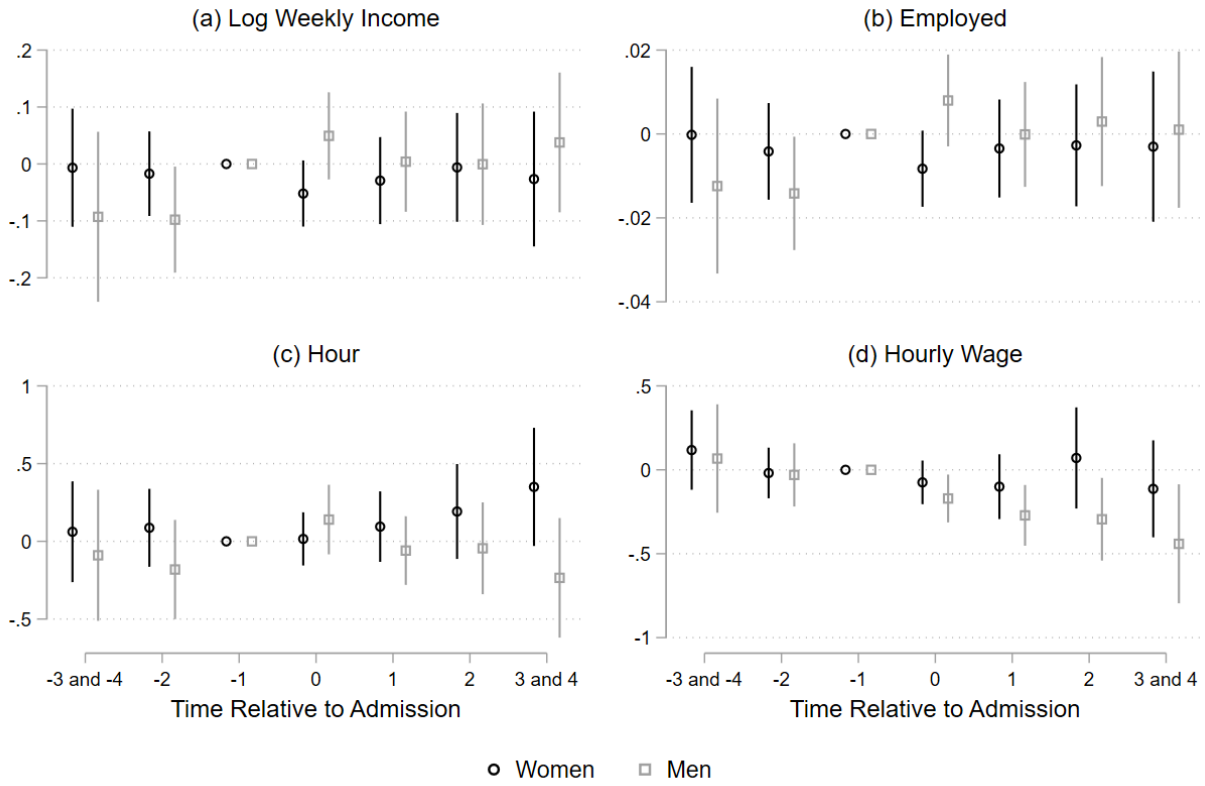
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old who are parent, uncle or aunt of individual who visits emergency department. Excludes pregnancy-related ED events. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D5: Effect of Emergency Department Event on Family Members' Labor Supply - Households with members below age 18



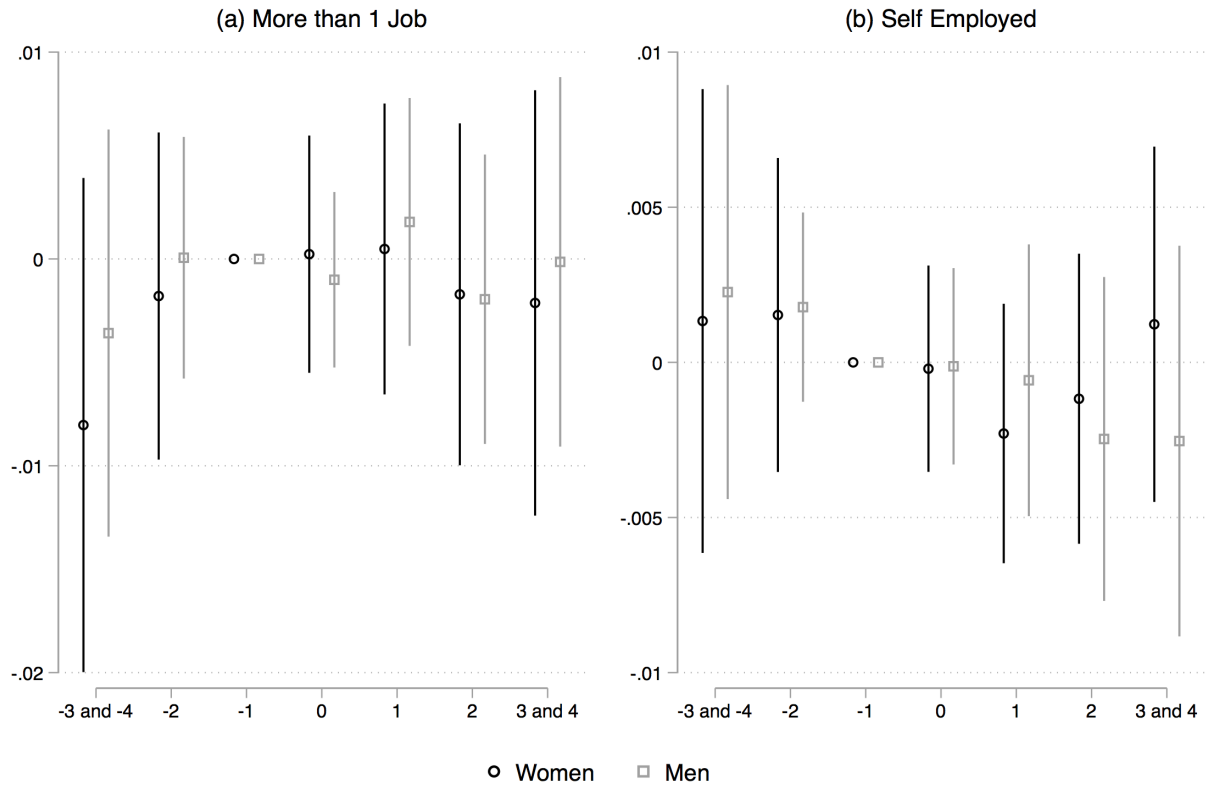
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old who are in households with a member under the age of 18. Excludes pregnancy-related ED events. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D6: Effect of Emergency Department Event on Family Members' Labor Supply - Households without members below age 18



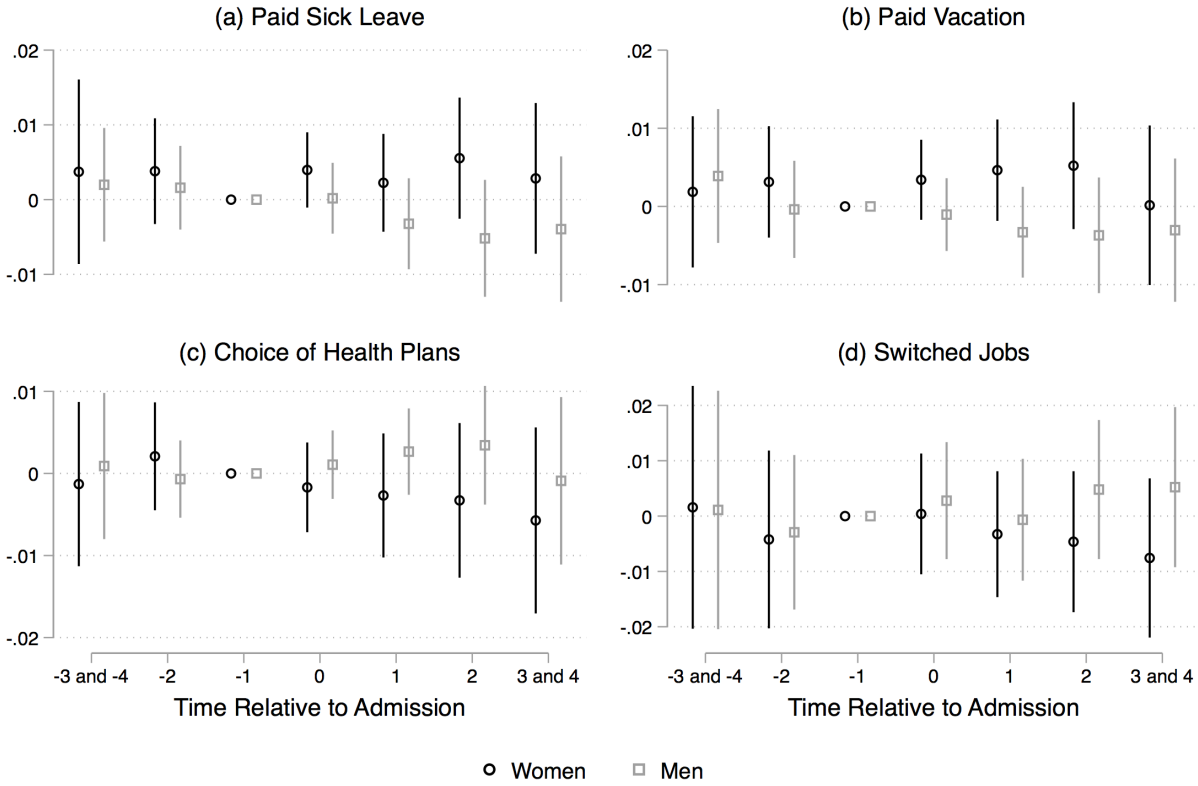
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old who are in households with no member under the age of 18. Excludes pregnancy-related ED events. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D7: Effect of Emergency Department Event on Family Members' Alternative Labor Supply Measures



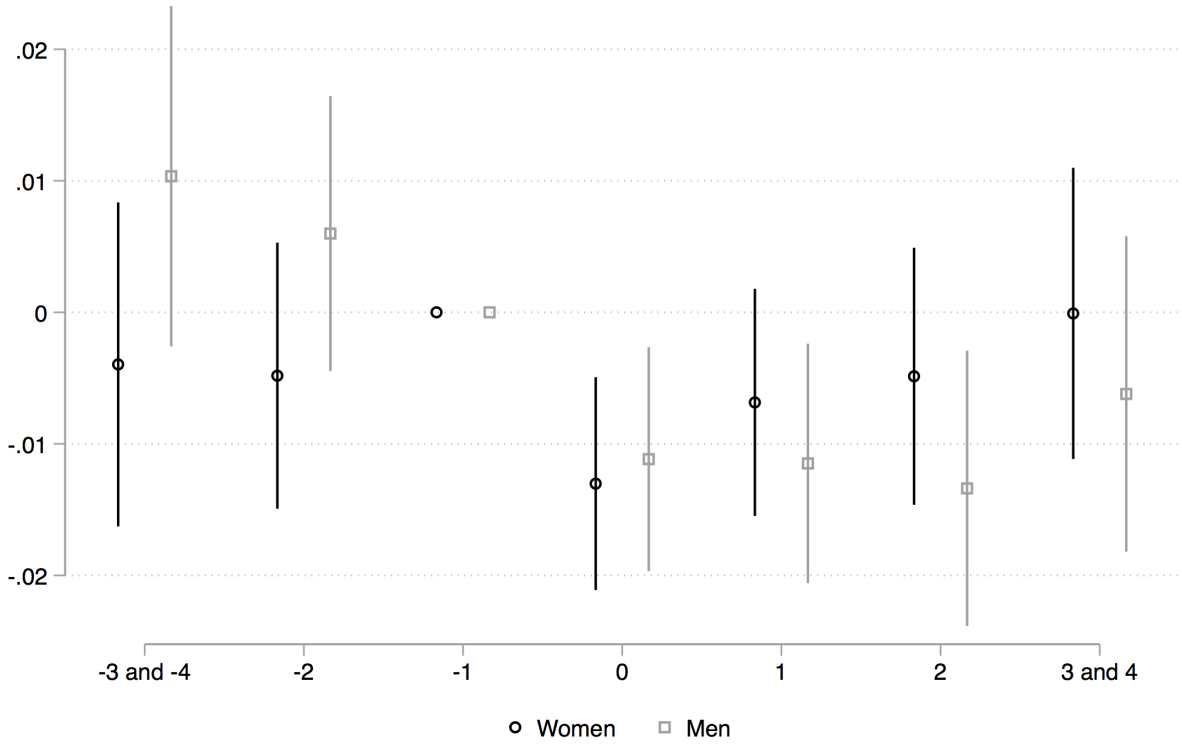
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events. Outcome variables are indicators for having more than 1 job and for being self-employed as a main job. Estimates show no statistical significant effect for either gender. Robust standard errors are clustered at the family level.

Figure D8: Effect of Emergency Department Event on Family Members' Employment Benefits and Probability of Switching Jobs



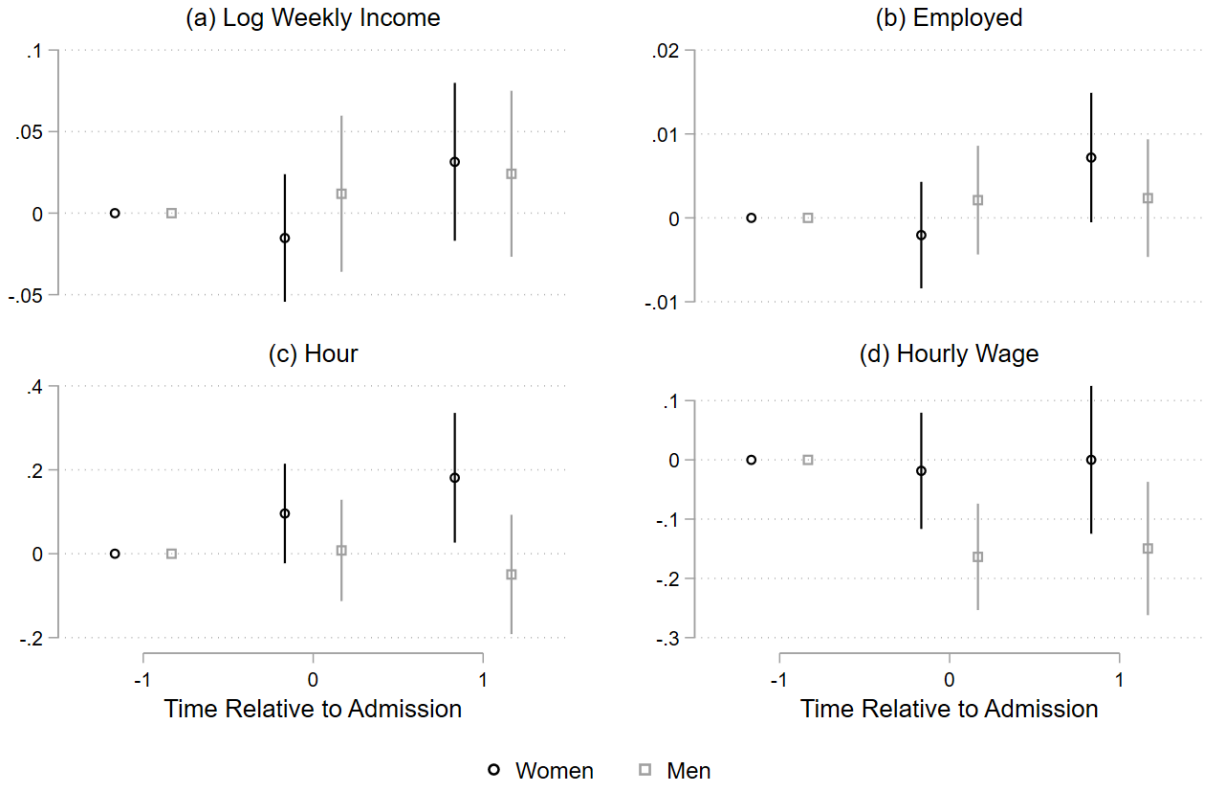
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events. *Paid Sick Leave* is an indicator for the employer offers paid sick leave, *Paid Vacation* is an indicator for offering paid vacation days, and *Choice of Health Plans* refers to whether a choice of health plans is offered. These variables were not asked of the self employed, and are conditional on being employed. *Switched Jobs* is an indicator for the individual switching her current main job. Robust standard errors are clustered at the family level.

Figure D9: Effect of Emergency Department Event on Family Members' Mental Health Status



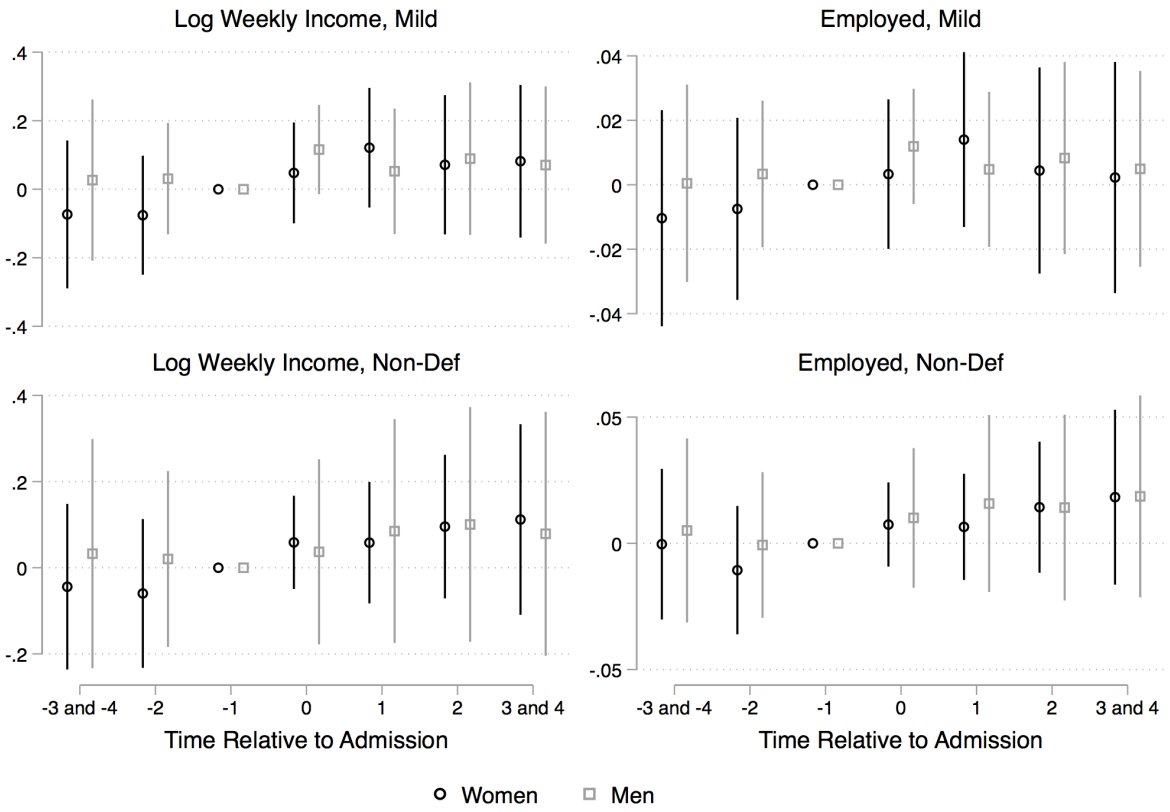
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events. The outcome variable is an indicator for having "Great Mental Health" or better. This is derived from a variable that identifies the individual's mental health status on a scale from 1 through 5 (5 point Likert Scale), where *Great Mental Health* is scale value 1 (Excellent) or 2 (Great). The regressions suggest a 0.5% decrease for women and a 1.4% for men. Robust standard errors are clustered at the family level.

Figure D10: Effect of Emergency Department Event on Labor Supply of Family Member



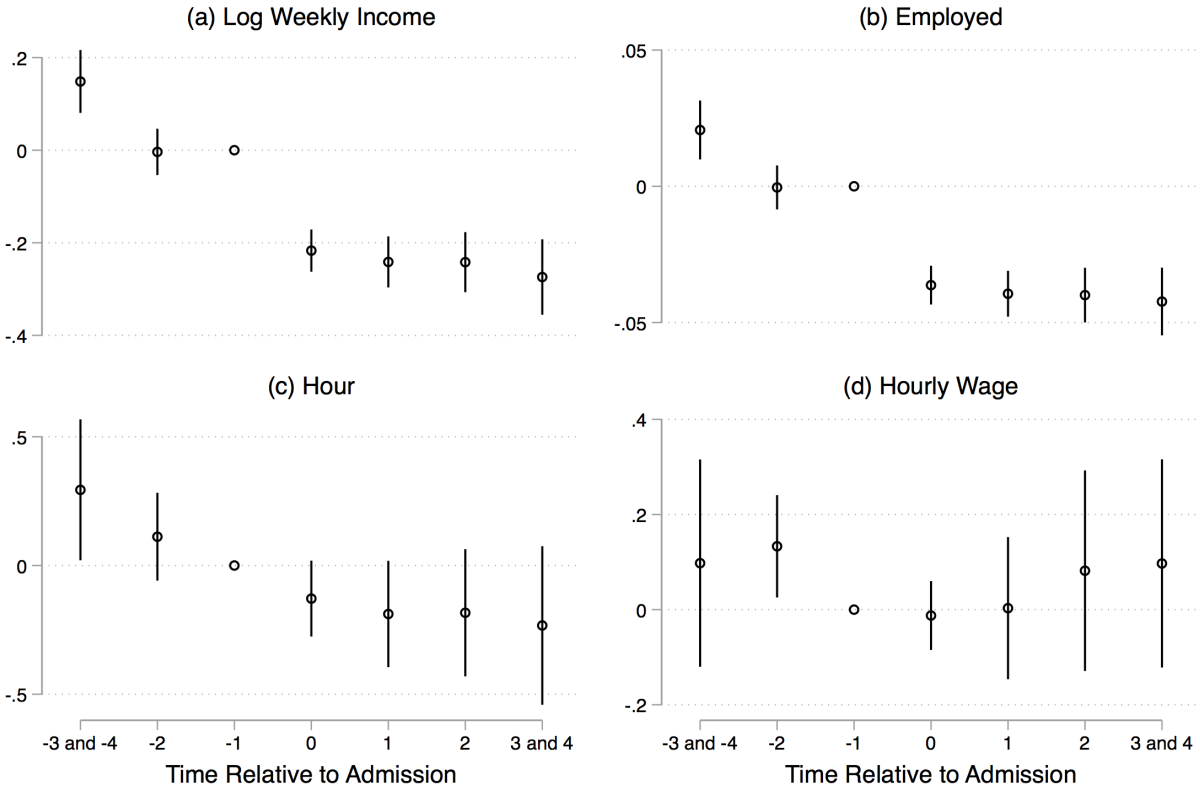
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes events that are pregnancy-related. Excludes families with events during round 1 or 5 of the panel. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

Figure D11: Effect of Mild/Non-Def ED Conditions on Family Members



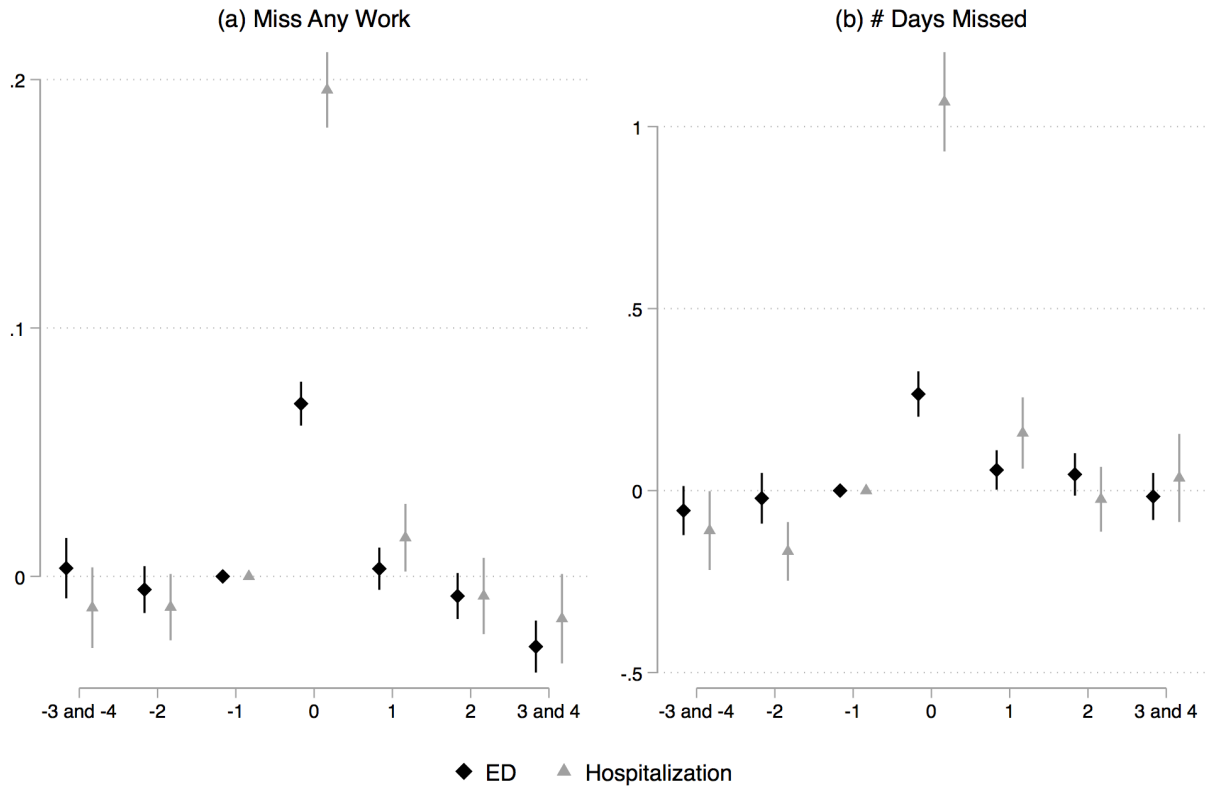
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes events that are pregnancy-related. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero and *Employed* is an indicator for employment. The top 2 panels restrict to ED events that are mild in nature, while the bottom 2 panels restrict to ED events that are non-deferrable in nature. Robust standard errors are clustered at the family level.

Figure D12: Effect of Hospitalization on Labor Supply of Ill Individual



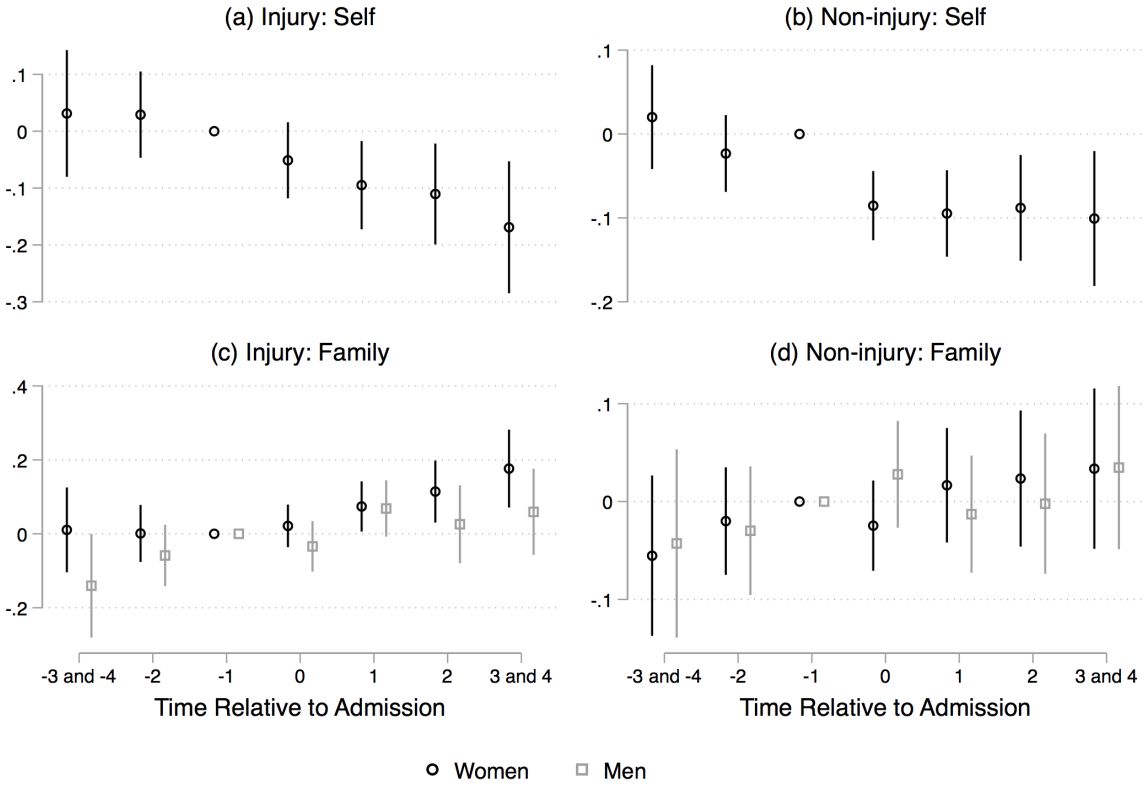
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes events that are pregnancy-related and individuals in single member families. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the individual level.

Figure D13: Effect of Emergency Department Event and Hospitalizations on the Family Members' Missing Work for Caregiving



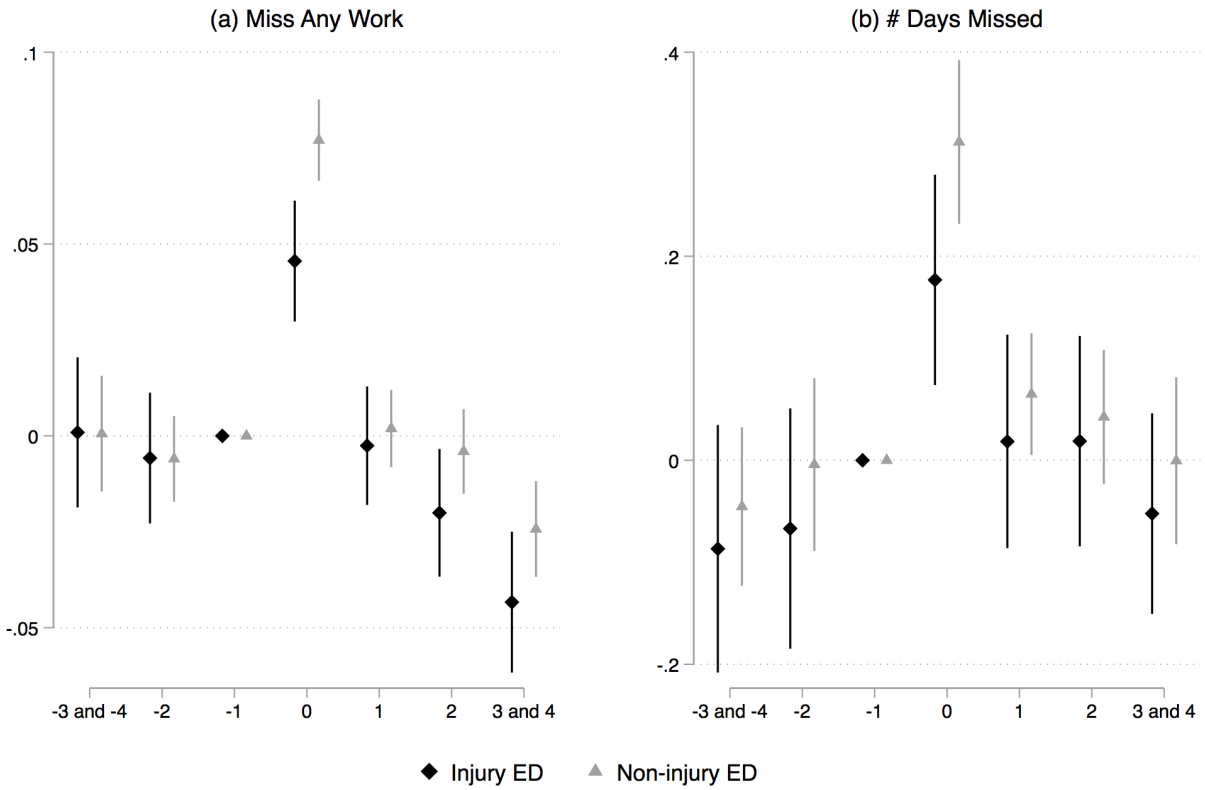
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes ED events and hospitalizations that are pregnancy-related. *Miss Any Days* refers to a binary variable of having missed at least a half day of work for caring for family members. *# of Days Missed* refers to number of at least half days missed for caring for family members. Both are conditional on being employed. Robust standard errors are clustered at the family level.

Figure D14: Effect of Injury/Non-Injury-Related Emergency Department Event on Log Weekly Income



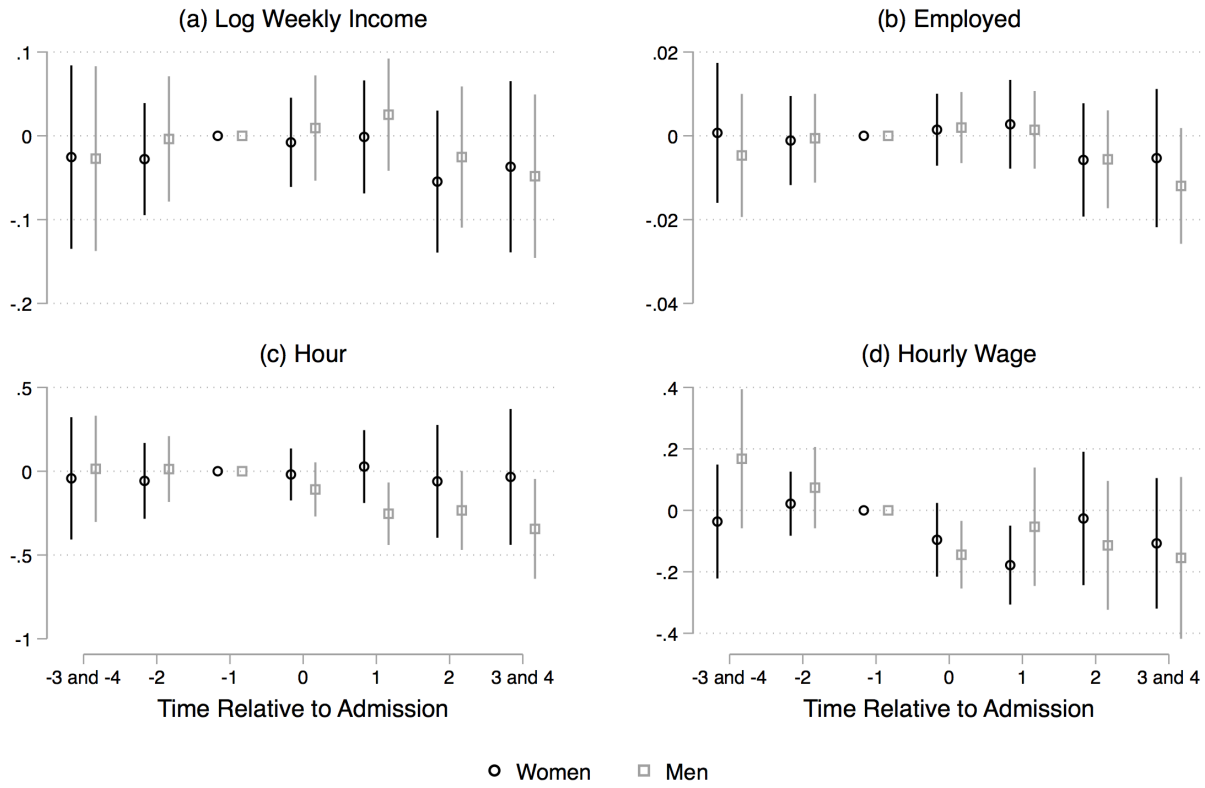
Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events and individuals in single member families. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero. Robust standard errors clustered at the individual level for self effect and clustered at the family level for family effects.

Figure D15: Effect of Injury-Related Emergency Department Event on Caregiving Outcomes, by Gender of the Family Member



Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes pregnancy-related ED events. *Miss Any Days* refers to a binary variable of having missed at least a half day of work for caring for family members. *# Days Missed* refers to number of at least half days missed for caring for family members. Both are conditional on being employed. Robust standard errors are clustered at the family level.

Figure D16: Effect of Hospitalization on Labor Supply of Family Member



Note: Observations from MEPS 1996-2017 sample between 25 and 65 years old. Excludes events that are pregnancy-related. *Log Weekly Income*, or $\log(1+income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *hour* is weekly hours conditional on being employed, and *Hourly Wage* is hourly wage in dollars conditional on being employed. Robust standard errors are clustered at the family level.

E. Appendix Tables

Table E1: Descriptive Statistics

	Obs.	Mean	Std. Dev.	Min.	Max.
Female (%)	281638	52.52	49.94	0	100
Age	281638	36.71	22.15	0	90
Family Size	281638	3.39	1.70	1	14
Hispanic (%)	281638	26.58	44.18	0	100
Black (%)	281638	17.67	38.14	0	100
White (%)	281638	73.89	43.92	0	100
Employed (%)	220455	59.39	45.09	0	100
Weekly Hours Worked	147978	37.41	12.57	1	168
Wage Weekly Income	131806	744.64	613.71	0	8071
Has some insurance (%)	281638	82.92	33.96	0	100

Note: Observations from MEPS 1996-2017 sample. *Weekly Hours Worked* is conditional on being employed, and *Wage Weekly Income* is wage in 2017 dollars conditional on being employed.

Table E2: Descriptive Statistics for those who visit the Emergency Department

	Obs.	Mean	Std. Dev.	Min.	Max.
Female (%)	45778	55.58	49.69	0	100
Age	45778	40.14	23.65	0	90
Family Size	45778	3.05	1.65	1	16
Hispanic (%)	45778	22.33	41.64	0	100
Black (%)	45778	20.61	40.45	0	100
White (%)	45778	72.97	44.41	0	100
Employed (%)	36741	51.23	48.50	0	100
Weekly Hours Worked	19712	37.49	12.97	1	168
Wage Weekly Income	17522	714.29	590.72	0	6026
Has some insurance (%)	45778	85.23	34.29	0	100

Note: Observations from MEPS 1996-2017 sample for rounds before the Emergency Department visit. *Weekly Hours Worked* is conditional on being employed, and *Wage Weekly Income* is wage in 2017 dollars conditional on being employed.

Table E3: Descriptive Statistics for family members of those who visit the Emergency Department

	Obs.	Mean	Std. Dev.	Min.	Max.
Female (%)	50851	51.24	49.99	0	100
Age	50851	29.93	20.51	0	90
Family Size	50851	4.24	1.63	1	15
Hispanic (%)	50851	30.39	45.99	0	100
Black (%)	50851	17.65	38.12	0	100
White (%)	50851	74.67	43.49	0	100
Employed (%)	33719	62.58	46.68	0	100
Weekly Hours Worked	21961	37.86	12.63	1	168
Wage Weekly Income	19395	756.21	618.76	0	7266
Has some insurance (%)	50851	82.32	36.99	0	100

Note: Observations from MEPS 1996-2017 sample for rounds before the Emergency Department visit. *Weekly Hours Worked* is conditional on being employed, and *Wage Weekly Income* is wage in 2017 dollars conditional on being employed.

Table E4: Relationship to ill in round of event for working age population

Individual	ED Event (%)	Hospitalization (%)
Ill themselves	46	48
Spouse/Partner/Sibling/Cousin	23	29
Child/Stepchild/Niece/Nephew	4	8
Grandchild	0	0
Parent/Aunt/Uncle	26	14
Grandparent/Elderly	1	0
Other	0	0
Total	100	100

Notes: Only for individuals between 25 and 65 years old, in families where at least one member visited the ED or was hospitalized. The 'Ill themselves' label refers to individuals in the family who visited the ED themselves. The rest of family members are labelled relative to their relationship to them.

Table E5: Family Emergency Department Shock Labor Outcomes: Overall

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Event	0.0314	0.00451	-0.0932	0.0724	0.0367	0.177
	(0.0145)	(0.00215)	(0.0368)	(0.0475)	(0.00344)	(0.0232)
Constant	4.885	0.772	22.41	40.77	-0.177	-2.061
	(0.333)	(0.0489)	(0.827)	(1.007)	(0.0747)	(0.533)
Obs.	517208	585682	380701	438656	432857	445040
Mean Dep. Var	5.143	0.803	23.42	40.69	0.0641	0.196
SD Dep. Var	2.859	0.398	13.67	11.84	0.245	1.715

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017. The sample excludes ED events that are pregnancy related. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

Table E6: Injury Emergency Department Self Effect

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week
Post Event	-0.0973	-0.0145	-0.0873	-0.123
	(0.0329)	(0.00473)	(0.0858)	(0.117)
Constant	5.003	0.787	22.62	40.67
	(0.308)	(0.0453)	(0.746)	(0.913)
Obs.	492715	558840	362925	419326
Mean Dep. Var	5.036	0.791	21.94	41.27
SD Dep. Var	2.886	0.407	12.55	12.02

Note: Robust standard errors clustered at the individual level. Observations are from MEPS 1996-2017. The sample excludes individuals in single member families, ED events that are pregnancy related, and events with no injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1+income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed.

Table E7: Noninjury Emergency Department Self Effect

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week
Post Event	-0.0909	-0.0179	0.0639	-0.0695
	(0.0212)	(0.00321)	(0.0576)	(0.0729)
Constant	4.824	0.764	22.29	40.49
	(0.301)	(0.0445)	(0.722)	(0.887)
Obs.	526851	595853	382135	440932
Mean Dep. Var	4.508	0.718	21.93	40.13
SD Dep. Var	3.109	0.450	13.05	12.01

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017. The sample excludes individuals in single member families, ED events that are pregnancy related, and events with injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed.

Table E8: Injury Emergency Department Family Effect: Men

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Event	0.0560	0.00939	-0.197	0.00284	0.0209	0.0782
	(0.0347)	(0.00454)	(0.0995)	(0.125)	(0.00647)	(0.0262)
Constant	5.965	0.899	24.27	43.09	-0.112	-0.574
	(0.539)	(0.0738)	(1.437)	(1.573)	(0.0942)	(0.631)
Obs.	193667	229379	157668	189131	187347	191674
Mean Dep. Var	5.627	0.857	25.20	43.16	0.0447	0.134
SD Dep. Var	2.638	0.350	14.38	11.44	0.207	1.539

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017, only including men. The sample excludes ED events that are pregnancy related, and events with no injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

Table E9: Injury Emergency Department Family Effect: Women

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages (S)	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Event	0.0553	0.00788	-0.0236	0.147	0.0132	0.169
	(0.0304)	(0.00487)	(0.0969)	(0.122)	(0.00923)	(0.0592)
Constant	4.314	0.705	21.66	37.62	-0.190	-2.696
	(0.500)	(0.0780)	(1.083)	(1.601)	(0.128)	(0.957)
Obs.	228770	251029	155138	173270	170234	175776
Mean Dep. Var	4.716	0.751	21.63	37.83	0.0824	0.256
SD Dep. Var	2.973	0.432	12.64	11.65	0.275	1.890

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017, only including women. The sample excludes ED events that are pregnancy related, and events with no injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

Table E10: Noninjury Emergency Department Family Effect: Men

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Event	0.0265	0.00200	-0.155	0.0395	0.0275	0.121
	(0.0267)	(0.00375)	(0.0568)	(0.0722)	(0.00470)	(0.0398)
Constant	5.738	0.867	23.81	44.43	-0.136	-1.314
	(0.509)	(0.0701)	(1.364)	(1.472)	(0.0923)	(0.630)
Obs.	219894	258519	178175	211717	209757	214747
Mean Dep. Var	5.616	0.855	25.10	43.14	0.0457	0.138
SD Dep. Var	2.643	0.352	14.36	11.41	0.209	1.555

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017, only for men. The sample excludes ED events that are pregnancy related and injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1+income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

Table E11: Noninjury Emergency Department Family Effect: Women

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Event	0.0184	0.00380	-0.0311	0.107	0.0533	0.277
	(0.0242)	(0.00387)	(0.0556)	(0.0767)	(0.00672)	(0.0450)
Constant	4.308	0.706	21.48	37.37	-0.209	-2.912
	(0.483)	(0.0756)	(1.060)	(1.520)	(0.124)	(0.929)
Obs.	253503	277165	169776	188854	185679	191655
Mean Dep. Var	4.703	0.749	21.61	37.87	0.0817	0.255
SD Dep. Var	2.980	0.434	12.63	11.63	0.274	1.871

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017, only for women. The sample excludes ED events that are pregnancy related and injury conditions. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1+income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

Table E12: Inpatient Self Effect

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages (S)	(4) Hours per week
Post Inpatient	-0.259	-0.0420	-0.0463	-0.245
	(0.0234)	(0.00359)	(0.0597)	(0.0827)
Constant	4.704	0.742	21.84	40.79
	(0.278)	(0.0413)	(0.664)	(0.835)
Obs.	629721	708766	451032	518216
Mean Dep. Var	4.183	0.669	22.02	40.57
SD Dep. Var	3.219	0.470	13.34	12.13

Note: Observations are from MEPS 1996-2017 and regression output includes 25-65 year olds who themselves were hospitalized. The sample excludes events that are pregnancy related and individuals in single member families. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1 + income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed.

Table E13: Inpatient Family Effect: Overall

	(1) Log(Weekly Income)	(2) Employed	(3) Hourly Wages	(4) Hours per week	(5) Miss Work to Caregive	(6) Days Missed to Caregive
Post Inpatient	0.00886	0.00130	-0.143	-0.0790	0.103	0.631
	(0.0214)	(0.00313)	(0.0459)	(0.0663)	(0.00565)	(0.0474)
Constant	4.769	0.751	21.82	41.04	-0.173	-1.791
	(0.315)	(0.0465)	(0.767)	(0.947)	(0.0701)	(0.491)
Obs.	602261	678832	438358	503227	496490	510570
Mean Dep. Var	5.094	0.798	22.94	40.57	0.0706	0.210
SD Dep. Var	2.866	0.402	13.54	11.85	0.256	1.701

Note: Robust standard errors clustered at the family level. Observations are from MEPS 1996-2017. The sample excludes events that are pregnancy related. Includes controls for family size, insurance status, linear age. *Log Weekly Income*, or $\log(1+income)$ includes those not employed with income set to zero, *Employed* is an indicator for employment, *Hourly Wage* is hourly wage in 2017 dollars conditional on being employed, and *Hours per Week* is weekly hours conditional on being employed. *Miss Work to Caregive* refers to a binary variable of having missed at least a half day of work for caring for family members. *Days Missed to Caregive* refers to number of at least half days missed for caring for family members. Both caregiving variables are conditional on being employed.

References

Barcellos, Silvia Helena, and Mireille Jacobson. 2013. "The Effects of Medicare on Medical Expenditure Risk and Financial Strain." *Working Paper.*

Card, David, Carlos Dobkin, and Nicole Maestas. 2009. "Does Medicare save lives?" *The quarterly journal of economics* 124 (2): 597–636.

Crespo, Laura, and Pedro Mira. 2014. "Caregiving to elderly parents and employment status of European mature women." *Review of Economics and Statistics* 96 (4): 693–709.

Johnson, Richard W, and Anthony Thomas Lo Sasso. 2000. "The trade-off between hours of paid employment and time assistance to elderly parents at midlife."