Lapses in Long-Term Care Insurance

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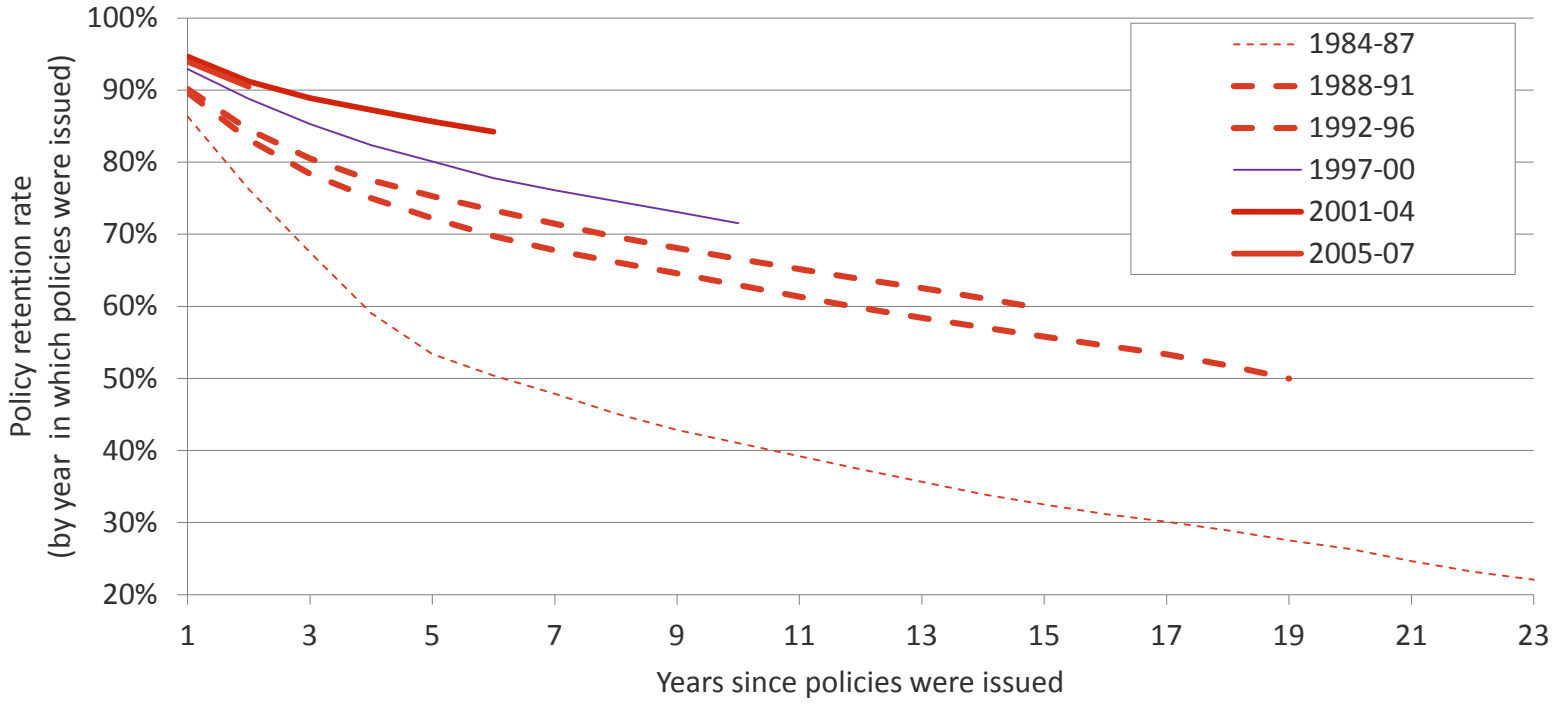
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Long-term care is a substantial financial risk for older Americans

- Nursing home use after age 65 is high
  - 44% of men, 58% of women
  - entrants stay on average for 0.85, 1.37 years
- Average annual cost is very high
  - $79,800, in 2012
- Limited government coverage
  - Medicare only pays for 100 days, in limited circumstances
  - Medicaid is subject to stringent means test

About a quarter of long-term care insurance policies held at age 65 lapse before death



HRS Summary Statistics

Has LTC insurance in 2002, aged 65+ (N = 891)	All	Non-lapsers	Lapsers

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Entered nursing home, 2006-12 (N = 823)	0.323	0.310	0.416 ***

Overview of Paper

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We evaluate evidence for three explanations for lapsing

- Strategic lapsing
  - individuals receive new information about their risk of needing care
- Financial lapsing
  - decline in wealth

    reduces ability to pay premiums
    reduces need to protect wealth from Medicaid
- Unintended lapsing
  - due to time-inconsistent preferences or loss of financial competence

We examine nursing home use among lapsers, non-lapsers

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Simulation evidence:

- Policyholders build up "aging reserves"
  - at young ages, premiums exceed expected claims

- We build an intertemporal optimization model with Medicaid
  - consider role of changes in information, financial situation
  - **these would have to be implausibly large to make lapsing optimal**

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Empirical evidence:

- **Lapse rates are significantly higher among the cognitively impaired**
  - HRS, 2002-06
  - suggests substantial unintended lapsing
  - significant but very small roles for strategic, financial lapsing

We examine nursing home use among lapsers, non-lapsers

- **Cognitively impaired are more likely to enter nursing home**
  - HRS, 2006-12
  - shows significant dynamic advantageous selection

Outline

Outline

1. Simulation evidence about lapsing explanations

2. Empirical evidence about lapsing explanations
   - with detour about HRS measures of insurance holding, lapsing

3. Empirical evidence about nursing home use
   - to gauge dynamic selection in insurance holding, as a result of lapsing

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Simulation Evidence about Lapsing

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To gauge explanations for/welfare cost of lapsing

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- Life cycle model
  - optimal wealth spend-down path, given Medicaid
  - unmarried retiree at age 65
- Assumptions
  - CRRA = 3, time discount rate = 3%
  - monthly care transition matrix, with five care states
    - Friedberg, Hou, Sun, Webb, Li (2016)
  - typical policy from Brown & Finkelstein (2007), updated

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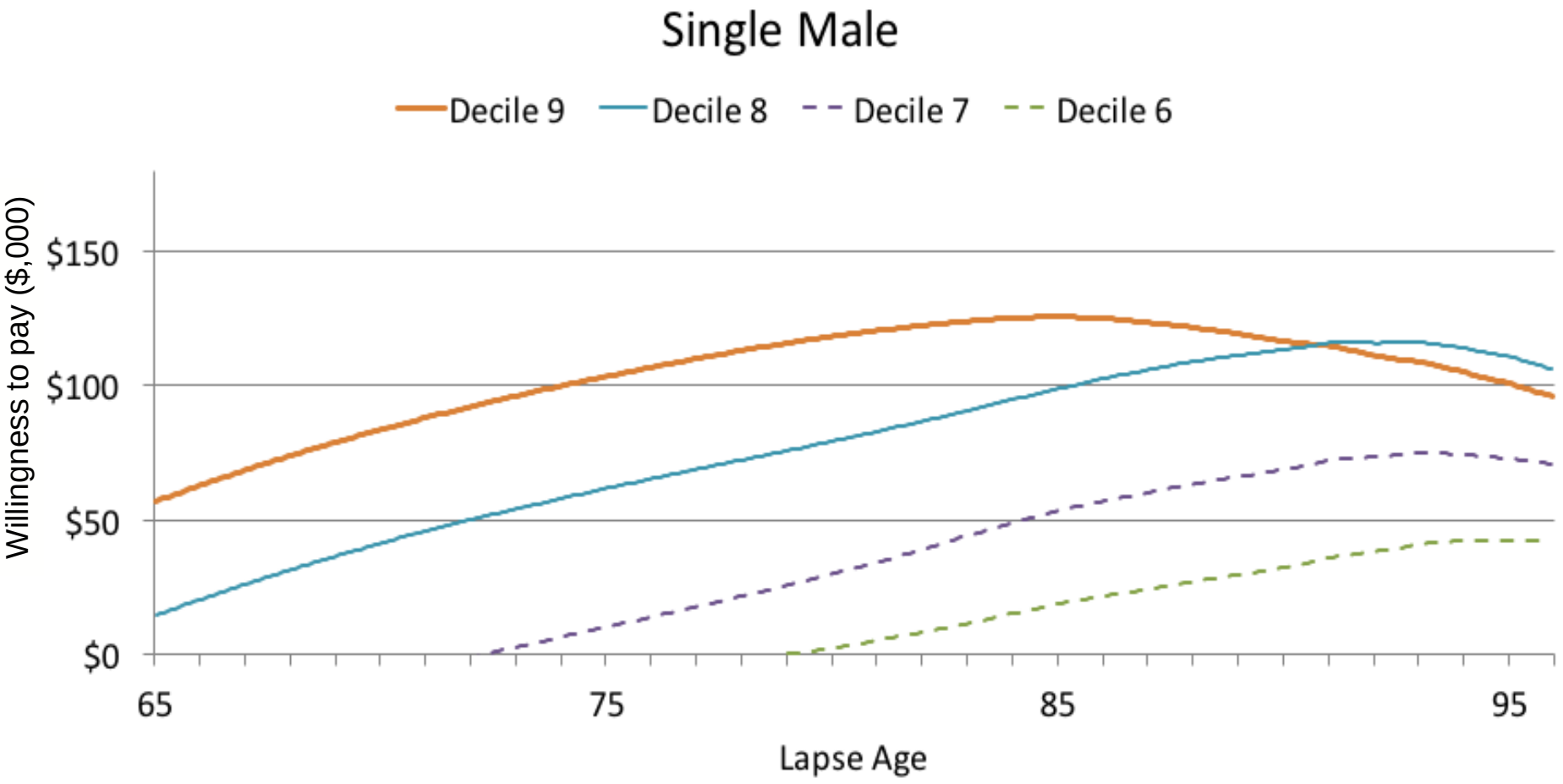
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  - typical policy from Brown & Finkelstein (2007), updated
- Compute willingness to hold insurance at age-65 price
  - purchase at age 65, or hold on at later ages

Willingness to pay to avoid lapsing

(by wealth deciles)

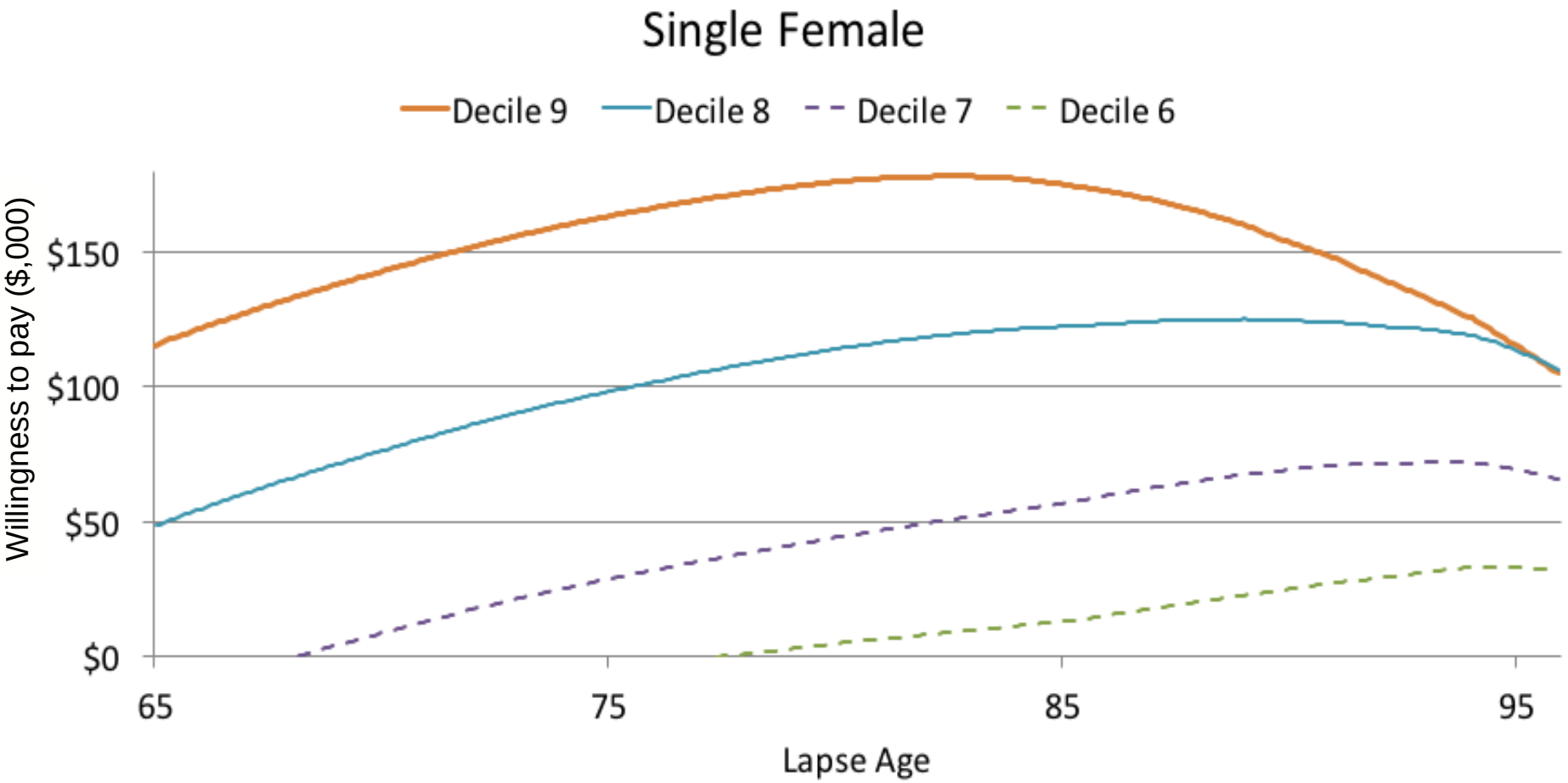
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Simulation Evidence about Lapsing

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- **Optimal lapsing is unlikely**
  - requires very large change in beliefs, even when healthy
  - financial shock would also have to be substantial
- But if mis-sold policy in first place
  - lapsing may then be optimal
  - may explain early lapses

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Empirical Analysis

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- 2002+, participants asked:
  "do you hold any long-term care insurance – is it one of the plans you told me about previously"
  - 23% of policies are eliminated by follow-up question
  - can compute wave-to-wave lapsing, not ever lapsing
  - but, wave-to-wave lapse rates are much more reasonable 2002+
  - and, this allows us to study proximate factors associated with lapsing

Empirical Analysis of Lapsing

$$Pr(LAPSE_i = 1) = \Phi\left(\beta_x strategic_i + \beta_f financial_i + \beta_u unintended_i + \beta X_i\right)$$

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strategic	self-assessed probability of needing care, ADLs, log medical expenditures, self-reported health
financial	log financial wealth, log income
unintended	self-reported difficulty with handling money, cognitive score (based on Hurd et al *JAMA* 2013)

- HRS participants aged 65+, have long-term care insurance in 2002
- $LAPSE$ observed 2002-2006
- N = 891, 13.0% of policies lapse

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- Note: we do not observe changes in these variables since policy was purchased
  - we rely on Hendren (2013): policies only sold to people in good financial, physical, mental condition
  - moreover, this approach allows us to be agnostic about timing: we don't know (and can't observe) *when* change in status may induce lapsing

HRS Summary Statistics

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Has LTC insurance in 2002, aged 65+ (N = 891)	All	Non-lapsers	Lapsers
Age	75.6	73.2	75.7 ***
Self-assessed prob (nursing home, next 5 yrs) (1-100)	19.5	19.6	18.7
Cognitive Score	2.99	3.02	2.76 ***
Male	0.402	0.403	0.396
Less than high school education	0.084	0.079	0.114
Some college	0.574	0.585	0.503
Fair or poor health	0.135	0.125	0.205 *
Has limitations in Activities Daily Living	0.024	0.021	0.044
Has difficulty handling money	0.313	0.310	0.336
Log financial wealth	11.0	11.1	10.0 ***
Log household income	10.7	10.8	10.5 ***
Have children	0.926	0.931	0.895
Have daughters	0.763	0.781	0.643 ***
Log medical expenditure	7.13	7.14	7.06
Married or partnered	0.690	0.708	0.566 **
LTC policy lapsed, 2002-2006	**0.130**	**0**	**1**
Entered nursing home, 2006-12 (N = 823)	**0.323**	**0.310**	**0.416 *****

Empirical Analysis of Lapsing

$$Pr(LAPSE_i = 1) = \Phi\left(\beta_x strategic_i + \beta_f financial_i + \beta_u unintended_i + \beta X_i\right)$$

Empirical Evidence about Lapsing

Probability of lapse 2002-2006 (mean = 0.130, N = 891)	Marginal effect	Standard Error
Age	0.0043	0.0020 **
Self-assessed prob (nursing home, next 5 years) (1-100)	-0.0012	0.0006 *
Cognitive Score	-0.0887	0.0265 ***
Male	0.0195	0.0244
Less than high school education	-0.0199	0.0343
Some college	-0.0038	0.0245
Fair or poor health	0.0484	0.0381
Has limitations in Activities Daily Living	0.0607	0.0839
Has difficulty handling money	-0.0016	0.0086
Log financial wealth	-0.0094	0.0034 ***
Log household income	-0.0277	0.0179
Have children	0.0245	0.0394
Have daughters	-0.1000	0.0360 ***
Log medical expenditure	-0.0016	0.0053
Married or partnered	-0.0202	0.0281

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Empirical Evidence about Lapsing

- Financial lapsing
  - 10% reduction in financial wealth, associated with 0.1% increase in probability(lapse)
- Strategic lapsing
  - self assessed prob (need care) is significant at 10%, effect is small
- **Unintended lapsing**
  - one standard deviation decrease in cognitive score, associated with 4.5 percentage point increase in lapse rate
  - relative to overall rate of 13%

Welfare costs of unintended lapsing are substantial

- We don't do full welfare analysis
  - would have to compute gain to non-lapsers from lower premiums
- Welfare loss to lapsers has two components
  - wasted premiums (loss if lapse is anticipated)
  - inappropriately optimistic wealth drawdown path (loss if lapse is unanticipated)

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- At 80th percentile wealth, cost of lapsing at age 75 is:

	Loss if anticipated	Loss if unanticipated
Men	$41,516	$56,978
Women	$90,708	$98,247

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Empirical Analysis of Care Use

$$Pr(CARE_i = 1) = \Phi\left(\beta_x strategic_i + \beta_f fin_i + \beta_u unintend_i + \delta lapse_i + \beta X_i\right)$$

- HRS participants aged 65+, have long-term care insurance in 2002
- $CARE$ = 1 if enter a nursing home at any time, 2006-2012
- N = 823, 32.3% enter nursing home at some point

- standard test of dynamic adverse selection:
  - those who learn that their risk is lower than expected are more likely to lapse, less likely to use care
  - $\delta \neq 0$ if other unobservable factors that induce lapsing (conditional on other controls) are correlated with later care use

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Empirical Evidence about Care Use

Probability nursing home 2006-2012 (mean = 0.323, N = 823)	Marginal Effect	Standard Error
LTC policy lapsed, 2002-2006	-0.0253	0.0569
Age	0.0231	0.0036 ***
Self-assessed prob (nursing home, next 5 years) (1-100)	0.0012	0.0011
Cognitive Score	-0.2570	0.0565 ***
Male	-0.0258	0.0400
Less than high school education	-0.0346	0.0686
Some college	0.0705	0.0415 *
Fair or poor health	0.1130	0.0644 *
Has limitations in Activities Daily Living	0.3950	0.1320 ***
Has difficulty handling money	0.0414	0.0164 ***
Log financial wealth	0.0009	0.0067
Log household income	0.0019	0.0292
Have children	-0.1870	0.0959 *
Have daughters	0.0542	0.0512
Log medical expenditure	-0.0030	0.0101
Married or partnered	-0.0659	0.0474

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Married or partnered	-0.0659	0.0474

Empirical Evidence about Care Use

- Lapsers are more likely to use care in raw data
  - but this is explained by other covariates
  - so, no other unobserved factors related to lapsing generate selection among insurance holders
- **Cognitive impairment is associated with greater care use**
  - so, it generates dynamic advantageous selection
  - one standard deviation reduction in cognitive score, associated with 10.8 percentage point increase in nursing home entry
  - relative to overall rate of 32.3%

Implications

- As currently functioning, LTC insurance is not the solution to the problem of funding long-term care
  - for many reasons, including high lapse rates
  - generates especially pernicious form of advantageous selection
- How to address unintended lapsing
  - could be eliminated by paying premiums as a lump sum
  - deploy behavioral toolkit to develop effective, targeted nudges

Thank you

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