

Medical Spending of the U.S. Elderly

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Why Focus on the Medical Spending of the Elderly?

- Average medical expenditures for an American aged 65 or older were 2.6 times the national average (2010).
- The population is aging fast.
- A large share of this is paid for by the U.S. government.

Goals: Within the 65+ population, establish

- Who pays for medical spending?
- Who receives medical care?
- Why is U.S. medical spending so large?
 - Is it driven largely by expenditures by those at the top of the spending distribution or by those close to death?
 - How high is the concentration of medical spending in the US?
 - How persistent is medical spending in the US?

The U.S. Health Care Market After Age 65

- Virtually everyone is eligible for Medicare, a government-provided health insurance program – pays for most of the cost of hospital stays and doctor visits.
- Medicaid (a means-tested program) pays for a big share of catastrophic expenses, like nursing home care.
- But still lots of items not fully covered—many people have supplementary coverage.

Who Pays For Medical spending on the US Elderly?

Payor	Type of Expenditure					
	Hospitals	Professional Services	Nursing Care	Retail Drugs	Other	All
Out-of-pocket	1.1%	9.4%	28.2%	18.6%	27.9%	13.2%
Private Insurance	13.4%	18.6%	7.8%	23.4%	3.8%	13.3%
Medicaid	6.8%	2.1%	29.7%	1.3%	21.9%	11.1%
Medicare	69.7%	64.3%	24.3%	52.8%	36.5%	54.4%
Other	9.0%	5.6%	10.0%	4.0%	10.0%	8.0%

Table: Funding Sources of the Elderly's Personal Health Care Expenditures, 2010. Data from the National Health Expenditure Accounts.

- Medicare and Medicaid pay for over 65% of personal care expenditures.
- Personal health care spending: total amount spent on all medical treatments for all individuals (excludes Government R & D, etc).

Data: Medicare Current Beneficiary Study, 1996-2010

- Survey of Medicare beneficiaries, includes virtually the entire age 65+ population
- Data of very high quality
 - Survey data are matched to Medicare administrative records.
 - Includes information for those in nursing homes.
 - Includes information of those right before death – children of deceased are asked about medical spending before death.
- Captures about 85% of Medicare spending.
- Captures about 80% of Medicaid spending.

We focus on total medical spending, from all payers.

How Big are Mean Personal Care Expenditures?

Income Quintile	Income	Total Exp.	Exp. Less NH	Hospital Exp.
All	28,280	14,120	11,210	4,890
Bottom	8,000	17,410	11,890	5,660
Fourth	14,260	14,940	11,490	5,370
Third	20,620	13,180	10,990	4,840
Second	30,080	12,650	10,900	4,430
Top	68,930	12,430	10,800	4,180

Table: Annual Mean Income and Medical Expenditure by Income.

- Average medical spending is big.
- Average medical spending on the low income is greater than for the high income.
- The income gradient does *not* condition on health or age.
- Much of the gradient is due to nursing home spending.

Who Pays for them at Different Income Levels?

	Everyone	Bottom	Fourth	Third	Second	Top
<i>Income</i>	28,280	8,000	14,260	20,620	30,080	68,930
<i>Medical Expenditures</i>						
All Payors	14,120	17,410	14,940	13,180	12,650	12,430
Out-of-Pocket	2,740	2,480	2,780	2,700	2,750	3,000
Medicare	7,720	9,490	8,430	7,460	6,950	6,270
Medicaid	1,320	3,900	1,590	570	260	270
Government Other	360	510	460	320	270	230
Private Insurance	1,760	860	1,450	1,920	2,170	2,420

Table: Mean Medical Expenditure by Income Quintile and Payor.

- Out-of-pocket spending is nearly constant by income.
- Medicare is an important payor at every income quintile.
- Medicaid is much more income-based.
- Private insurance: more important for higher income people.

Concentration of Medical Spending

	Total medical spending averaged over:		
	1 year	2 years	3 years
Gini coefficient on medical spending	0.67	0.61	0.58
Percentage spent by top 1% of spenders	11.9%	9.6%	8.7%
Percentage spent by top 10% of spenders	52.0%	45.5%	42.7%

Table: Measures of the Concentration of Medical Spending over 1, 2, and 3 Years.

- Medical spending is concentrated among a few recipients.

Concentration of Medical Spending by Payor

Spending Percentile	All Payors Percentage of total	Out-of-Pocket Percentage of total
95-100%	34.6%	49.1%
90-95%	17.3%	12.2%
70-90%	29.1%	21.3%
50-70%	11.0%	9.9%
0-50%	8.0%	7.6%

Table: Medical Spending by Spending Percentile, MCBS. The Results for each payor are sorted by that payor's spending.

- Out-of-pocket spending far more uneven than total spending ⇒ public insurance does not eliminate medical expenditure risk.

Persistence of Total Medical Spending

One-year transitions					
Current Year	Next year				
	Bottom	Fourth	Third	Second	Top
Bottom	61.9	17.8	8.9	6.5	5.0
Fourth	24.1	36.6	19.4	12.1	7.8
Third	9.8	25.4	32.3	21.0	11.5
Second	6.0	13.6	25.9	34.2	20.3
Top	3.5	6.6	11.9	24.3	53.8

- Medical spending is very persistent over time.
- The persistence is concentrated in the top and bottom tails of the spending distribution.

Average Total Medical Expenditure by Age

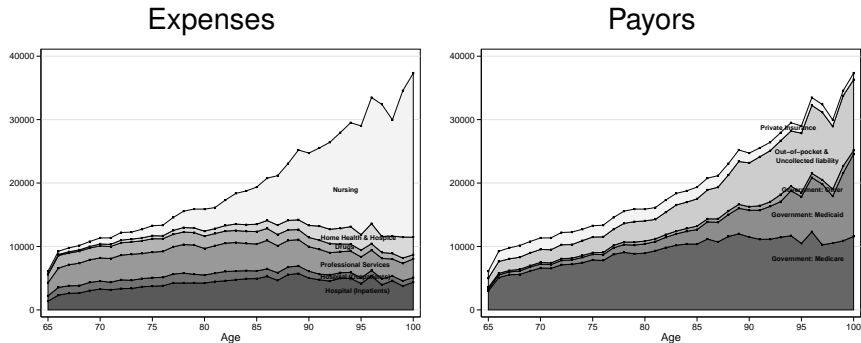


Figure: Average Total Medical Expenditure and its Payors, by Age.

- Medical spending rises rapidly after age 65.
- Especially so for nursing home costs.

Medical Spending in the Last 12 Months of Life

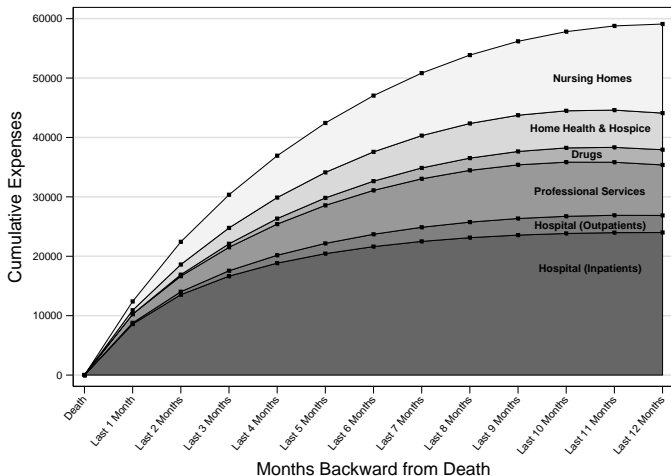


Figure: Spending in the Last 12 Months of Life, by Payor Type

Medical Spending in Last Year of Life, % of Aggregate Spending

	Total population (Nat'l Stats)	Age-65+ population (Nat'l Stats)	(MCBS)
<i>Data</i>			
Year of death	4.9%	10.5%	12.2%
Hospitals	2.4%	5.3%	6.1%
Nursing Home Care	1.0%	2.2%	2.6%
<i>Corrected Data</i>			
Final 12 months	6.7%	14.4%	16.8%
Hospitals	3.0%	6.5%	7.6%
Nursing Home Care	1.7%	3.6%	4.3%

Conclusions

- The government pays for over 65% of personal care expenditures.
- Medical spending is very concentrated in the top 10% of recipients.
- At the top and the bottom end of the medical expense shocks, these expenses are very persistent over time.
- Medical expenses before death comprise a relatively small fraction of total medical expenses over the life cycle. Thus,
 - They are not primarily responsible for high medical spending in the U.S.
 - They are likely not the largest risk that people face over their life cycle.

The U.S. Health Care Market After Age 65

- Prior to age 65:
 - Insurance mostly provided privately, mainly through employers,
 - But many people uninsured.
- After age 65:
 - Virtually everyone is eligible for Medicare, a government-provided health insurance program – pays for most of the cost of hospital stays and doctor visits.
 - Medicaid (a means-tested program) pays for a big share of catastrophic expenses, like nursing home care.
 - But still lots of items not fully covered—many people have supplementary coverage
- Discontinuity in who pays for medical care at age 65.

The U.S. Health Care Market: Supply

- Provision of health care (hospitals, nursing homes, pharmacies, doctors) is private.
- Payment for health care: governments and insurers use multiple approaches to limit costs:
 - Medicare: pay by diagnosis.
 - Private insurers: negotiate prices with providers.

Persistence of Total Medical Spending

Panel A: One year transition					
Current Year	Quintile		Next year		
	Bottom	Fourth	Third	Second	Top
Bottom	61.9	17.8	8.9	6.5	5.0
Fourth	24.1	36.6	19.4	12.1	7.8
Third	9.8	25.4	32.3	21.0	11.5
Second	6.0	13.6	25.9	34.2	20.3
Top	3.5	6.6	11.9	24.3	53.8

Panel B: Two year transition					
Current Year	Quintile		Two years ahead		
	Bottom	Fourth	Third	Second	Top
Bottom	58.3	17.6	10.3	7.5	6.3
Fourth	26.0	32.2	19.0	12.7	10.2
Third	11.9	25.6	28.3	20.5	13.8
Second	7.3	15.3	25.7	31.0	20.6
Top	4.7	8.5	13.5	25.1	48.2

- Medical spending is very persistent over time.
- The persistence is concentrated in the top and bottom tails of the spending distribution.

Measuring Medical Spending in the Last 12 Months of Life

- Medical spending for the “year of death” mixes together those who died in January (one month of spending in the “year of death”) with those who died in December (12 months of spending).
- Control for this with the following regression:

$$E_i = \beta_0 + \beta_1 \sqrt{m_i} + \beta_2 m_i + \beta_3 m_i^2 + \epsilon_i,$$

where E_i is total medical spending in the calendar year of death for individual i , and m_i is individual i 's exact month of death.

- Dead in January $\Rightarrow m_i = 1$
- Dead in December $\Rightarrow m_i = 12$