

Patterns of Older Americans' Health Care Utilization Over Time

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In choosing to seek medical care, individuals weigh the financial cost of treatment against its perceived benefit to their health. Clearly physician input, in combination with the presence and generosity of health insurance coverage, weighs heavily in this decision. As individuals age they begin to experience the onset of new health conditions at the same time that their households often begin to deplete their savings to finance retirement.¹⁻⁴ Because of these new experiences and potentially limited financial resources, older individuals may become more selective in which types of care they receive, perhaps focusing first on their most pressing medical needs or delaying or skipping procedures prescribed by their physician that they deem relatively costly or not immediately necessary.

Studies have investigated the differences in health care expenses for the elderly by health status and changes in health status,⁵ the changes in health related to persistence or changes in health insurance coverage for the near elderly,⁶ correlation between health and health insurance coverage,^{7,8} and the relationship between functional change and hospital use and cost.⁹ None of these studies, however, has focused on the relative importance of financial versus health factors in determining an elderly population's persistent or intermittent health care use over time.

The motivation for our study comes from a related recent analysis we conducted showing that dental use was surprisingly resistant to changes in household net wealth and household income.¹ We found that only when household net wealth falls by 50% or more were older adults less likely to seek dental care.¹ This finding inspired our interest in pursuing related findings for medical care.

In this study, we determined correlates of continuous and intermittent health care use for a population of civilian, noninstitutionalized Americans older than 50 years. This population is of particular concern because they consume an increasingly disproportionate share of health

Objectives. We analyzed correlates of older Americans' continuous and transitional health care utilization over 4 years.

Methods. We analyzed data for civilian, noninstitutionalized US individuals older than 50 years from the 2006 and 2008 waves of the Health and Retirement Study. We estimated multinomial logistic models of persistent and intermittent use of physician, inpatient hospital, home health, and outpatient surgery over the 2004–2008 survey periods.

Results. Individuals with worse or worsening health were more likely to persistently use medical care and transition into care and not transition out of care over time. Financial variables were less often significant and, when significant, were often in an unexpected direction.

Conclusions. Older individuals' health and changes in health are more strongly correlated with persistence of and changes in care-seeking behavior over time than are financial status and changes in financial status. The more pronounced sensitivity to health status and changes in health are important considerations in insurance and retirement policy reforms. (*Am J Public Health.* 2013;103:1314–1324. doi:10.2105/AJPH.2012.301124)

care as the baby boomer generation advances to the top of the national age distribution. We investigated the relative strengths of financial factors and health factors at 1 point in time and over time as correlates of this older population's altering or continuing medical care use.

Our analysis is particularly relevant at a time when the financial status of many US households has been affected adversely by economic conditions.¹⁰ We used longitudinal data from the 2006 and 2008 waves of the Health and Retirement Study (HRS) to explore health and financial factors associated with older adults' changes in and persistence of health care use between these periods, including (1) physician visits, (2) overnight hospital stays, (3) outpatient surgery, and (4) home health care. We hypothesized for this population that health factors would outweigh financial factors in explaining continuous and intermittent health care use over this period.

METHODS

The HRS is a nationally representative longitudinal household survey in the United States that collects self-reported data from

interviews with individuals older than 50 years and their spouses every 2 years. We used the 2006 and 2008 waves of the HRS for our study, which contain 18 469 and 17 217 sampled persons, respectively. Administered by the Institute for Social Research at the University of Michigan and sponsored by the National Institute on Aging, the HRS is useful for the study of aging, retirement, and health among older populations in the United States.^{11,12}

Each HRS respondent is asked a battery of questions about demographics, income and assets, physical and mental health and cognition, family structure and social supports, health care utilization and costs, health insurance coverage, labor force status and job history, and retirement planning and expectations. The HRS is an appropriate data source for this study because of the breadth of data available across health and labor force measures and the large sample of older Americans in the survey. Each wave of the HRS contains self-reported information about medical care use since the previous survey wave, which was approximately 2 years earlier. Respondents who reported having visited a physician are

asked how many visits they made; those who had at least 1 overnight hospital stay were also asked about the number of total nights in the hospital. Respondents are also asked whether they used home health care services or had outpatient surgery during the 2 years before each HRS wave.

Our analysis consisted of regression models in which the dependent variable captured health care use between the 2006 and 2008 HRS waves covering the periods 2004–2006 and 2006–2008, respectively. Individuals were classified as continuous users (use in both periods), continuous nonusers (no use in either period), or intermittent users (use in 1 period but not the other). Specifically, for each type of use, we developed a multinomial logistic model to assess (1) the probability of not having use during the 2-year period ending in 2006 but having use in the 2-year period ending in 2008, (2) the probability of having use in the 2-year period ending in 2006 but not having use in the 2-year period ending in 2008, (3) the probability of having use in both 2-year periods, and (4) the probability of having no use in either period.

To guide our analysis, we leaned heavily on the Andersen behavioral model of health service use, which in its original form posited that health services use is determined in part by a combination of the predisposing, enabling, and need factors.¹³ We included our regression covariates in accordance with this conceptual framework. Our measures of need included self-reported health status in the 2006 wave and changes between the 2006 and 2008

waves, the number of doctor-diagnosed chronic health conditions in the 2006 wave and changes between the 2006 and 2008 waves, body mass index in the 2006 wave, and the number of difficulties with activities of daily living (ADLs) in the 2006 wave and the change between the 2006 wave and the 2008 wave.

Our measures of enabling factors included household wealth and wealth change, household income and income change, health insurance coverage and coverage change, and labor force and retirement status between periods. Medical coverage refers to supplementary coverage for those on Medicare. For ease of interpretation, we collapsed raw household income and wealth data into categories. Finally, our models also contained predisposing covariate factors, including age, gender, race/ethnicity, education, household size, and marital status.

The HRS core sample design is a multistage area probability sample of households, so we computed all estimates and statistics reported taking into account this design with the use of the software packages SUDAAN version 6.40 (RTI International, Research Triangle Park, NC) and Stata version 7.0 (Stata-Corp LP, College Station, TX).^{14,15} For ease of interpretation across multiple models, we have discussed only results that are significant at least at the .05 level.

RESULTS

As shown in Table 1, more than 90.0% of older Americans had at least 1 physician visit in

both the 2004–2006 and 2006–2008 HRS survey periods, whereas only about 1.5% used home health care in both periods. Almost two thirds of this population had neither an inpatient stay nor any outpatient surgery in either period. Between 2004 and 2008, hospital inpatient care was used intermittently by nearly one quarter and continuously by only 10.0% of this older population. We found similar patterns for outpatient surgery over this period: about 8.0% had outpatient surgery in both periods, whereas more than 26.0% had outpatient surgery in 1 period. Across each medical care type, about the same percentage of this population transitioned out of medical care use as transitioned into medical care use between periods.

Continuous Utilization

Health factors. As shown in Table 2, health factors were strongly correlated with medical care use in both 2-year periods. For each medical care type, the odds of utilization in both periods compared with no utilization in either period were positively correlated with the number of chronic conditions in 2006 and, except for outpatient surgery, with an increase in the number of conditions between periods. For each medical care type, the odds of utilization in both periods compared with no utilization are also greater for persons with worsening health status between periods than for those with no change. Similarly the odds of having use in both periods for inpatient and home health care are positively correlated with the number of difficulties with ADLs in

TABLE 1—Older Americans’ Health Care Use: Health and Retirement Study (HRS), 2004–2008

Medical Care	Percentage Without Use, 2004–2008 ^a	Percentage With Use, 2004–2008 ^b	Percentage With Use, 2004–2006 and Without Use, 2006–2008	Percentage Without Use, 2004–2006 and With Use, 2006–2008
Physician visit	2.16	90.58	3.41	3.85
Inpatient hospital ^c	65.24	10.02	11.31	13.43
Outpatient surgery	64.78	8.33	13.53	13.36
Home health care	91.27	1.43	3.01	4.28

Note. The sample size for the table contains 11 847 persons, representing 56.036 million older Americans who were in intact reporting households in both the 2006 and 2008 HRS with positive person weights and without missing values. The base for the percentages is the total weighted population of 56.036 million persons. Percentages may not equal 100% because of rounding.

^aIndicates no medical care use in the HRS survey periods 2004–2006 and 2006–2008.

^bIndicates medical care use in both HRS survey periods 2004–2006 and 2006–2008.

^cUse indicates at least 1 overnight stay in a hospital during a 2-year HRS survey period.

TABLE 2—Medical Use Compared With No Medical Use: Health and Retirement Study, United States, 2004–2008

	Physician, AOR (95% CI)	Hospital, AOR (95% CI)	Outpatient Surgery, AOR (95% CI)	Home Health, AOR (95% CI)
Needs groups status				
Health status				
Fair or poor	1.04 (0.53, 2.04)	2.74** (1.93, 3.88)	1.10 (0.80, 1.51)	2.05 (0.93, 4.51)
Good	1.13 (0.66, 1.95)	1.90** (1.46, 2.47)	0.90 (0.68, 1.19)	2.02* (1.00, 4.07)
Very good or excellent (Ref)	1.00	1.00	1.00	1.00
Change in health status				
Worse	2.39** (1.28, 4.46)	2.02** (1.58, 2.58)	1.61** (1.20, 2.16)	2.14** (1.34, 3.43)
Same (Ref)	1.00	1.00	1.00	1.00
Better	1.63 (0.66, 4.02)	2.21** (1.57, 3.10)	1.11 (0.78, 1.58)	3.10** (1.50, 6.42)
Number of chronic conditions	3.50** (2.47, 4.97)	1.69** (1.57, 1.81)	1.31** (1.20, 1.43)	1.50** (1.27, 1.77)
Change in number of conditions	5.41** (1.77, 16.53)	1.86** (1.51, 2.28)	1.13 (0.95, 1.34)	1.57* (1.01, 2.43)
Body mass index				
Underweight (< 18.5 kg/m ²)	0.44 (0.09, 2.11)	1.88 (0.87, 4.04)	1.12 (0.43, 2.88)	0.81 (0.17, 3.98)
Normal (18.5–24.9 kg/m ² ; Ref)	1.00	1.00	1.00	1.00
Overweight (25.0–29.9 kg/m ²)	0.82 (0.47, 1.45)	1.04 (0.79, 1.36)	0.92 (0.71, 1.20)	0.69 (0.39, 1.20)
Obese (≥ 30 kg/m ²)	1.33 (0.62, 2.82)	1.00 (0.74, 1.36)	1.03 (0.81, 1.33)	1.11 (0.64, 1.93)
Number of ADLs	1.45 (0.46, 4.58)	1.20* (1.05, 1.38)	0.90 (0.75, 1.09)	2.19** (1.81, 2.64)
Change in ADLs	0.77 (0.28, 2.13)	1.15* (1.03, 1.30)	0.90 (0.77, 1.05)	1.31** (1.12, 1.53)
Enabling groups status				
Household wealth decile				
1–3	0.17** (0.06, 0.43)	1.68** (1.16, 2.43)	0.73 (0.47, 1.15)	4.71* (1.03, 21.47)
4–6	0.22** (0.07, 0.64)	1.29 (0.91, 1.84)	0.64 (0.39, 1.05)	4.61* (1.09, 19.57)
7–9	0.35* (0.14, 0.89)	1.15 (0.80, 1.66)	0.90 (0.60, 1.35)	2.96 (0.82, 10.76)
10 (Ref)	1.00	1.00	1.00	1.00
Household wealth change				
Increase ≥ 50%	1.58 (0.70, 3.56)	1.02 (0.76, 1.38)	0.86 (0.67, 1.11)	1.07 (0.52, 2.17)
Increase 10%–50%	1.90 (1.00, 3.60)	0.96 (0.72, 1.27)	0.84 (0.64, 1.11)	0.78 (0.34, 1.78)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	0.90 (0.52, 1.58)	0.98 (0.74, 1.30)	0.73* (0.54, 0.98)	1.34 (0.59, 3.04)
Decrease ≥ 50%	0.72 (0.40, 1.31)	0.91 (0.68, 1.23)	0.66** (0.50, 0.87)	1.90 (0.92, 3.95)
Household income ^b				
Poor	0.48 (0.14, 1.69)	0.68 (0.43, 1.07)	0.43** (0.24, 0.76)	0.84 (0.33, 2.11)
Low income	0.60 (0.30, 1.18)	0.77 (0.55, 1.07)	0.75 (0.52, 1.09)	1.04 (0.53, 2.04)
Middle income	0.63 (0.36, 1.10)	0.82 (0.63, 1.08)	0.70* (0.53, 0.93)	0.68 (0.53, 2.04)
High income (Ref)	1.00	1.00	1.00	1.00
Household income change				
Increase ≥ 50%	1.37 (0.66, 2.87)	1.35* (1.02, 1.77)	0.83 (0.61, 1.13)	2.12* (1.09, 4.14)
Increase 10%–50%	1.61 (0.84, 3.10)	1.04 (0.78, 1.39)	0.84 (0.62, 1.15)	1.28 (0.68, 2.41)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	1.05 (0.51, 2.17)	1.52* (1.09, 2.12)	0.81 (0.58, 1.13)	1.98* (1.03, 3.83)
Decrease ≥ 50%	0.52 (0.24, 1.11)	1.02 (0.65, 1.60)	0.75 (0.55, 1.03)	1.19 (0.58, 2.47)
Coverage				
Public only	2.70 (0.98, 7.45)	2.40** (1.35, 4.26)	3.27* (1.31, 8.18)	10.70 (0.99, 115.95)
Private only	2.01 (0.50, 8.14)	1.49 (0.66, 3.35)	1.54 (0.68, 3.47)	9.81* (1.01, 95.04)
Public and private	3.17 (0.58, 17.31)	2.45* (1.14, 5.28)	3.04* (1.20, 7.69)	13.48* (1.07, 169.92)

Continued

TABLE 2—Continued

No coverage (Ref)	1.00	1.00	1.00	1.00
Coverage change				
Always covered	2.29 (0.85, 6.16)	1.62* (1.04, 2.52)	1.50 (0.95, 2.37)	1.18 (0.54, 2.56)
Lost coverage	1.87 (0.63, 5.54)	1.18 (0.77, 1.83)	1.30 (0.76, 2.21)	0.96 (0.37, 2.49)
Gained coverage	1.85 (0.80, 4.28)	1.66* (1.07, 2.56)	1.74* (1.13, 2.68)	1.06 (0.46, 2.42)
Never covered (Ref)	1.00	1.00	1.00	1.00
Labor force or retirement status				
Always fully retired	0.75 (0.34, 1.68)	1.57* (1.09, 2.26)	0.98 (0.71, 1.36)	0.67 (0.27, 1.61)
Always in labor force (Ref)	1.00	1.00	1.00	1.00
Always partially retired	1.19 (0.39, 3.64)	0.67 (0.43, 1.03)	0.96 (0.62, 1.49)	0.31 (0.07, 1.48)
Never in labor force, not retired	1.10 (0.20, 5.89)	1.37 (0.80, 2.36)	0.47* (0.24, 0.90)	0.77 (0.29, 2.08)
Became fully retired	0.82 (0.32, 2.12)	1.52 (0.97, 2.37)	1.13 (0.71, 1.79)	0.42 (0.14, 1.27)
Became partially retired	0.46 (0.18, 1.16)	0.97 (0.53, 1.76)	0.80 (0.45, 1.45)	0.27 (0.03, 2.42)
Joined the labor force	0.58 (0.19, 1.77)	1.33 (0.56, 3.19)	0.41 (0.17, 1.02)	0.82 (0.13, 5.31)
Left labor force, not retired	0.32 (0.04, 2.32)	1.66 (0.77, 3.58)	0.99 (0.49, 1.99)	1.09 (0.29, 4.15)
Predisposing groups status				
Age, y				
51–64 (Ref)	1.00	1.00	1.00	1.00
65–69	0.66 (0.37, 1.16)	0.82 (0.58, 1.17)	0.72 (0.47, 1.11)	1.27 (0.58, 2.77)
70–74	0.81 (0.38, 1.73)	0.80 (0.53, 1.22)	0.69 (0.45, 1.05)	2.41 (1.00, 5.84)
75–79	2.37 (0.68, 8.25)	1.03 (0.66, 1.61)	0.80 (0.51, 1.25)	2.77* (1.11, 6.91)
≥ 80	2.77 (0.64, 11.96)	1.14 (0.79, 1.64)	0.41** (0.24, 0.68)	3.68** (1.61, 8.40)
Gender				
Woman	2.84** (1.63, 4.95)	0.79* (0.64, 0.97)	1.13 (0.90, 1.43)	1.00 (0.60, 1.66)
Man (Ref)	1.00	1.00	1.00	1.00
Race/ethnicity				
Black, non-Hispanic	2.24** (1.34, 3.74)	0.76 (0.54, 1.08)	0.72 (0.52, 1.00)	1.56 (0.94, 2.59)
Hispanic	2.85* (1.26, 6.45)	0.73 (0.47, 1.13)	0.94 (0.57, 1.53)	0.87 (0.18, 4.19)
Other non-Hispanic	0.87 (0.27, 2.80)	0.39* (0.19, 0.79)	0.74 (0.39, 1.39)	2.10 (0.63, 7.02)
White, non-Hispanic (Ref)	1.00	1.00	1.00	1.00
Education				
< high school	0.15** (0.07, 0.30)	0.91 (0.59, 1.39)	0.90 (0.63, 1.27)	0.82 (0.37, 1.80)
High school graduate	0.42** (0.24, 0.72)	1.14 (0.84, 1.54)	0.84 (0.66, 1.07)	0.77 (0.35, 1.67)
College graduate (Ref)	1.00	1.00	1.00	1.00
Marital status				
Widowed or divorced	0.37** (0.19, 0.71)	0.94 (0.65, 1.36)	0.76 (0.51, 1.12)	0.92 (0.48, 1.76)
Never married	0.22** (0.09, 0.51)	1.05 (0.60, 1.84)	1.05 (0.50, 1.64)	1.00 (0.34, 2.91)
Married (Ref)	1.00	1.00	1.00	1.00
Household size				
1 (Ref)	1.00	1.00	1.00	1.00
2	0.57 (0.27, 1.24)	0.82 (0.56, 1.20)	0.76 (0.49, 1.16)	0.43* (0.20, 0.91)
≥ 3	0.54 (0.26, 1.13)	0.94 (0.68, 1.30)	0.65* (0.42, 0.99)	0.39* (0.19, 0.82)

Note. ADL = activity of daily living; AOR = adjusted odds ratio; CI = confidence intervals; HRS = Health and Retirement Study. The sample size for the multinomial logistic regressions contains 11 847 persons representing 56.036 million older Americans who were in intact reporting households in both the 2006 and 2008 HRS with positive person weights and without missing values for any variables in the model. The AOR point estimate for dichotomous covariates is the estimate of (probability of medical use in both 2004–2006 and 2006–2008 divided by probability of no medical use in either period) for persons with row characteristic divided by (probability of medical use in each period divided by probability of no medical use in either period) for persons in the reference group. For continuous covariates the AOR point estimate is derived from a 1-unit change in the variable. The adjusted value refers to the inclusion in the regression of the control variables listed in the rows of the table.

^a10%–10% indicates an increase of ≤ 10% or a decline of ≤ 10%.

^bWhere low income refers to persons in families with incomes 101%–199% of the poverty line (according to US Census); middle income, 201%–400% of the poverty line; and high income, > 400% of the poverty line. Poor persons are at or below 100% of the poverty line and include persons in families with negative income.

* $P \leq .05$; ** $P \leq .01$.

2006 and changes in them between 2006 and 2008. Older persons in very good or excellent health were less likely than were those in fair, poor, or good health in 2006 to have overnight inpatient hospital stays in both periods.

Weight status had no influence on this population's persistent medical care use over this period. The only anomalous finding shown in Table 2 was that persons whose health status improved between periods were also repeat users of inpatient hospital and home health care services.

Financial factors. Income and wealth were not as strong as were health factors as predictors of this older population's persistent medical care services use. Persons in households at the highest wealth decile in 2006 were more likely to use physician services in both periods than were those in less wealthy households, yet those in households in the lowest wealth deciles were more likely than were those in households at the highest decile to be repeat inpatient hospital and home health care users. Not surprisingly, those with household wealth declines of 10% or more and those living in poor- or middle-income households were less likely to be persistent users of outpatient surgery services than were those with changes in either direction of less than 10% and those in high-income households. Repeat users of inpatient hospital and home health care services were also characterized by persons living in households with 50% or greater increases in income between periods, but the same holds true, by contrast, for those with income declines of 10%–50% between periods.

Interestingly, persons with public coverage or public and private coverage combined were more likely to be repeat users of hospital inpatient, outpatient surgery, and home health care services than were those with no coverage in 2006. Repeat users of inpatient services were also characterized by those who gained coverage or remained covered between periods compared with those uninsured for the entire period. Similarly, those gaining coverage between periods were more likely than were the uninsured to be persistent users of outpatient surgery. Labor force and retirement status and transitions had little or no correlation with the persistent use of medical care services. We did find, however, that the fully retired

had greater chances of being repeat users of inpatient hospital care over the entire 4-year period than did those in the labor force.

Other factors. There were several interesting predisposing factors correlated with repeat health care use. Women and racial/ethnic minorities were more likely than were, respectively, men and White non-Hispanics to be continuous users of physician services; whereas non-college graduates and nonmarried persons were less likely than were, respectively, college graduates and married persons to be continuous users of physician services. Those aged 80 years and older were less likely, and those aged 75 years and older were more likely, to be repeat users of outpatient surgery and home health care, respectively, than were those aged between 51 and 64 years.

Intermittent Utilization

Health factors. Health-based factors were strongly correlated with intermittent medical care use between the 2006 and 2008 waves (as seen in Tables 3 and 4). Specifically, we found that the likelihood of transitioning into use, that is, from nonusers to users, for hospital, outpatient surgery, and home health services was higher for those in worse health than for those with no change in their health status between survey periods (Table 3). By contrast, persons with worse health were less likely to transition out of use, that is, from users to nonusers, for medical care of any type between periods than were those with no change in their health status between periods (Table 4).

The odds of older adults transitioning into use between periods were positively correlated with the number of chronic conditions they had in 2006 (for health care use of each type except home health care) and changes in the number of conditions between periods (for health care use of each type; Table 3). On the other hand, the odds of transitioning out of use between periods for physician and inpatient care were negatively correlated with the number of chronic conditions in 2006 and changes in the number of them between periods (Table 4). Similar results were not as widespread across types of medical care use for both the number in 2006 and changes in the number between periods of difficulties with ADLs. Both increases in the number and changes in the number of difficulties with ADLs

were positively correlated with transitions between periods into home health care (Table 3). Transitioning out of inpatient hospital care is less likely as the number of ADLs increases between periods, and the odds of transitioning out of home health care is less likely as the number of ADLs in 2006 increases (Table 4).

Not surprisingly those in very good or excellent health in 2006 were less likely to be transitioning into use between periods than were those in fair, poor, or good health for inpatient hospital and home health services (Table 3). Those in poor health were less likely to be transitioning out of use between periods than were those in very good or excellent health for hospital services (Table 4).

In general, weight status had little or no effect on intermittent health services use between periods. The only anomalous finding was that persons with better health status since the previous period were more likely to transition into hospital and home health services (Table 3).

Finances. We found few instances in which changing income or wealth had the expected correlation with transitioning into or out of health care use between survey periods. In fact, we found as many cases in which the correlation was counter to expectations (higher income or wealth gains or status correlated with transitioning out of use and higher income or wealth losses correlated with transitioning into use) as those that were consistent with expectations (higher income or wealth gains correlated with transitioning into use and higher income or wealth losses correlated with transitioning out of use). For example, persons living in households with wealth gains of 50% or more were, as expected, more likely to be transitioning into home health services use than were those with only modest gains or losses (< 10%) between survey periods (Table 3). However, persons in households with wealth losses of 10% or more were unexpectedly also more likely to be transitioning into home health services use between periods. We also found similar contradictory results for wealth status and change and for income change for hospital services.

Older persons in the lowest household wealth deciles or with declines in household income of at least 50% were more likely to transition out of physician care than were those

TABLE 3—Transitions From No Medical Use in 2004–2006 to Medical Use in 2006–2008 Compared With No Medical Use in 2004–2008: Health and Retirement Study, United States

	Physician, AOR (95% CI)	Hospital, AOR (95% CI)	Outpatient Surgery, AOR (95% CI)	Home Health, AOR (95% CI)
Needs groups status				
Health status				
Fair or poor	0.68 (0.31, 1.52)	1.36** (1.14, 1.62)	0.91 (0.68, 1.22)	2.19** (1.57, 3.07)
Good	1.05 (0.54, 2.02)	1.33* (1.04, 1.70)	0.89 (0.76, 1.05)	1.55** (1.14, 2.12)
Very good or excellent (Ref)	1.00	1.00	1.00	1.00
Change in health status				
Worse	2.04 (0.96, 4.37)	1.95** (1.54, 2.47)	1.28* (1.03, 1.60)	1.93** (1.48, 2.51)
Same (Ref)	1.00	1.00	1.00	1.00
Better	1.45 (0.49, 4.31)	1.50* (1.05, 2.15)	1.27 (1.00, 1.62)	2.11** (1.34, 3.31)
Number of chronic conditions	1.62* (1.09, 2.39)	1.27** (1.18, 1.38)	1.09* (1.01, 1.17)	1.07 (0.97, 1.19)
Change in number of conditions	7.22** (2.30, 22.65)	2.50** (2.18, 2.87)	1.37** (1.19, 1.58)	1.94** (1.61, 2.34)
Body mass index				
Underweight (< 18.5 kg/m ²)	0.77 (0.12, 4.82)	1.35 (0.62, 2.95)	0.97 (0.41, 2.26)	0.51 (0.18, 1.43)
Normal (18.5–24.9 kg/m ² ; Ref)	1.00	1.00	1.00	1.00
Overweight (25.0–29.9 kg/m ²)	0.45* (0.25, 0.83)	0.90 (0.72, 1.13)	1.08 (0.87, 1.34)	0.78 (0.58, 1.04)
Obese (≥ 30 kg/m ²)	1.03 (0.41, 2.56)	0.95 (0.75, 1.22)	1.20 (0.95, 1.52)	0.91 (0.67, 1.23)
Number of ADLs	1.74 (0.54, 5.63)	1.09 (0.93, 1.26)	0.88 (0.73, 1.04)	1.45** (1.24, 1.71)
Change in ADLs	0.72 (0.24, 2.12)	0.99 (0.87, 1.13)	0.96 (0.85, 1.10)	1.37** (1.19, 1.58)
Enabling groups status				
Household wealth decile				
1–3	0.36 (0.10, 1.24)	0.84 (0.58, 1.20)	1.08 (0.75, 1.56)	1.18 (0.63, 2.22)
4–6	0.46 (0.13, 1.67)	0.84 (0.62, 1.15)	0.99 (0.72, 1.37)	1.25 (0.71, 2.19)
7–9	0.49 (0.15, 1.66)	0.74* (0.56, 0.99)	0.94 (0.69, 1.28)	1.09 (0.66, 1.78)
10 (Ref)	1.00	1.00	1.00	1.00
Household wealth change				
Increase ≥ 50%	1.94 (0.74, 5.06)	1.12 (0.89, 1.42)	1.09 (0.77, 1.53)	1.65* (1.09, 2.50)
Increase 10%–50%	2.19 (0.93, 5.16)	1.31 (0.94, 1.83)	1.26 (0.93, 1.70)	0.98 (0.64, 1.50)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	1.43 (0.70, 2.91)	0.99 (0.77, 1.26)	1.12 (0.85, 1.47)	1.66** (1.18, 2.34)
Decrease ≥ 50%	0.74 (0.32, 1.68)	1.53** (1.20, 1.94)	0.84 (0.61, 1.15)	1.78** (1.19, 2.66)
Household income ^b				
Poor	0.56 (0.16, 1.97)	0.79 (0.54, 1.16)	0.68 (0.46, 1.03)	1.15 (0.59, 2.25)
Low income	0.48 (0.19, 1.17)	0.88 (0.68, 1.15)	0.92 (0.74, 1.15)	0.76 (0.47, 1.21)
Middle income	0.78 (0.41, 1.47)	0.91 (0.75, 1.11)	1.04 (0.87, 1.26)	1.00 (0.68, 1.46)
High income (Ref)	1.00	1.00	1.00	1.00
Household income change				
Increase ≥ 50%	1.52 (0.65, 3.55)	0.90 (0.69, 1.17)	1.11 (0.85, 1.44)	1.06 (0.73, 1.55)
Increase 10%–50%	1.73 (0.80, 3.75)	0.79* (0.63, 1.00)	1.11 (0.91, 1.37)	1.33 (0.97, 1.82)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	1.10 (0.46, 2.65)	0.85 (0.65, 1.11)	1.04 (0.80, 1.35)	1.09 (0.73, 1.63)
Decrease ≥ 50%	0.79 (0.30, 2.09)	0.74 (0.53, 1.03)	1.04 (0.77, 1.42)	0.81 (0.52, 1.26)
Coverage				
Public only	1.87 (0.69, 5.12)	1.65* (1.01, 2.70)	1.88 (0.97, 3.65)	3.66 (0.76, 17.56)
Private only	2.13 (0.48, 9.38)	1.63 (0.95, 2.79)	1.32 (0.68, 2.57)	1.91 (0.46, 7.94)
Public and private	1.76 (0.28, 10.93)	1.68 (0.99, 2.86)	1.69 (0.78, 3.69)	2.85 (0.59, 13.81)

Continued

TABLE 3—Continued

No coverage (Ref)	1.00	1.00	1.00	1.00
Coverage change				
Always covered	0.91 (0.27, 3.05)	1.11 (0.81, 1.51)	1.58* (1.07, 2.33)	1.52* (1.00, 2.29)
Lost coverage	1.40 (0.34, 5.74)	0.76 (0.52, 1.11)	1.39 (0.91, 2.12)	1.32 (0.78, 2.25)
Gained coverage	1.40 (0.55, 3.57)		1.53* (1.10, 2.13)	1.45 (0.86, 2.43)
Never covered (Ref)	1.00	1.00	1.00	1.00
Labor force or retirement status				
Always fully retired	0.93 (0.38, 2.30)	1.31 (0.96, 1.79)	1.15 (0.84, 1.58)	1.18 (0.68, 2.04)
Always in labor force (Ref)	1.00	1.00	1.00	1.00
Always partially retired	1.32 (0.36, 4.87)	1.16 (0.87, 1.54)	1.03 (0.68, 1.55)	0.89 (0.46, 1.74)
Never in labor force, not retired	1.98 (0.35, 11.14)	1.20 (0.75, 1.94)	1.13 (0.72, 1.77)	0.73 (0.32, 1.64)
Became fully retired	0.91 (0.32, 2.56)	1.51* (1.02, 2.24)	1.73** (1.26, 2.38)	1.11 (0.47, 2.59)
Became partially retired	0.67 (0.19, 2.34)	1.29 (0.84, 1.97)	1.35 (0.88, 2.08)	0.75 (0.30, 1.86)
Joined the labor force	0.35 (0.10, 1.27)	0.64 (0.32, 1.26)	0.82 (0.40, 1.68)	0.35 (0.07, 1.84)
Left labor force, not retired	1.23 (0.18, 8.25)	1.47 (0.81, 2.66)	0.84 (0.47, 1.51)	2.34 (0.99, 5.51)
Predisposing groups status				
Age, y				
51–64 (Ref)	1.00	1.00	1.00	1.00
65–69	0.77 (0.39, 1.54)	1.21 (0.90, 1.62)	0.97 (0.64, 1.46)	1.22 (0.76, 1.98)
70–74	1.11 (0.47, 2.66)	1.35 (0.96, 1.90)	0.92 (0.62, 1.36)	1.91** (1.19, 3.09)
75–79	2.90 (0.60, 13.98)	1.45 (0.97, 2.16)	1.09 (0.70, 1.69)	2.21** (1.29, 3.78)
≥ 80	2.22 (0.35, 13.95)	1.41 (0.94, 2.11)	0.65 (0.39, 1.08)	2.93** (1.62, 5.29)
Gender				
Women	0.86 (0.46, 1.61)	0.90 (0.75, 1.08)	1.08 (0.88, 1.33)	0.89 (0.67, 1.18)
Men (Ref)	1.00	1.00	1.00	1.00
Race/ethnicity				
Black, non-Hispanic	1.79 (0.87, 3.68)	0.79 (0.60, 1.05)	0.51** (0.38, 0.68)	1.03 (0.69, 1.53)
Hispanic	2.34 (0.90, 6.07)	0.83 (0.59, 1.16)	0.61* (0.38, 0.98)	1.00 (0.53, 1.89)
Other non-Hispanic	1.17 (0.23, 5.94)	1.26 (0.75, 2.10)	0.68 (0.40, 1.14)	0.31 (0.08, 1.16)
White, non-Hispanic (Ref)	1.00	1.00	1.00	1.00
Education				
< high school	0.27** (0.11, 0.68)	1.05 (0.75, 1.47)	0.60** (0.47, 0.77)	0.79 (0.53, 1.18)
High school graduate	0.49* (0.26, 0.92)	1.14 (0.90, 1.44)	0.86 (0.70, 1.05)	1.02 (0.70, 1.48)
College graduate (Ref)	1.00	1.00	1.00	1.00
Marital status				
Widowed or divorced	0.49 (0.24, 1.01)	1.04 (0.77, 1.42)	1.50** (1.16, 1.94)	1.25 (0.88, 1.78)
Never married	0.35* (0.15, 0.81)	0.95 (0.56, 1.60)	1.07 (0.72, 1.59)	1.29 (0.67, 2.48)
Married (Ref)	1.00	1.00	1.00	1.00
Household size				
1 (Ref)	1.00	1.00	1.00	1.00
2	0.38** (0.19, 0.77)	1.14 (0.84, 1.55)	1.22 (0.97, 1.52)	1.17 (0.83, 1.67)
≥ 3	0.54 (0.24, 1.19)	1.04 (0.78, 1.39)	1.11 (0.85, 1.46)	0.92 (0.57, 1.48)

Note. ADL = activity of daily living; AOR = adjusted odds ratio; CI = confidence intervals; HRS = Health and Retirement Study. The sample size for the multinomial logistic regressions contains 11 847 persons representing 56.036 million older Americans who were in intact reporting households in both the 2006 and 2008 HRS with positive person weights and without missing values for any variables in the model. The AOR point estimate for dichotomous covariates is the estimate of (probability of no medical use in 2004–2006 and medical use in 2006–2008 divided by probability of no medical use in either period) for persons with row characteristic divided by (probability of no medical use in 2004–2006 and medical use in 2006–2008 divided by probability of no medical use in either period) for persons in the reference group. For continuous covariates the AOR point estimate is derived from a 1-unit change in the variable. The adjusted value refers to the inclusion in the regression of the control variables listed in the rows of the table.

^a10%–10% indicates an increase of ≤ 10% or a decline of ≤ 10%.

^bWhere low income refers to persons in families with incomes 101%–199% of the poverty line (according to US Census); middle income, 201%–400% of the poverty line; and high income, > 400% of the poverty line. Poor persons are at or below 100% of the poverty line and include persons in families with negative income.

* $P \leq .05$; ** $P \leq .01$.

TABLE 4—Estimates of Transition from Medical Use in 2004–2006 to No Medical Use in 2006–2008 Compared with Medical Use in 2004–2008: Health and Retirement Study, United States

	Physician, AOR (95% CI)	Hospital, AOR (95% CI)	Outpatient Surgery, AOR (95% CI)	Home Health, AOR (95% CI)
Needs groups status				
Health status				
Fair or poor	1.08 (0.67, 1.72)	0.60* (0.67, 1.72)	0.96 (0.66, 1.39)	1.23 (0.48, 3.12)
Good	1.11 (0.77, 1.61)	0.74 (0.77, 1.61)	1.17 (0.86, 1.60)	0.87 (0.43, 1.78)
Very good or excellent (Ref)	1.00	1.00	1.00	1.00
Change in health status				
Worse	0.44** (0.24, 0.81)	0.56** (0.39, 0.79)	0.69* (0.51, 0.93)	0.50* (0.27, 0.93)
Same (Ref)	1.00	1.00	1.00	1.00
Better	0.62 (0.30, 1.30)	0.80 (0.59, 1.09)	0.96 (0.64, 1.45)	0.73 (0.36, 1.52)
Number of chronic conditions	0.53** (0.44, 0.62)	0.89* (0.80, 0.98)	0.91 (0.83, 1.01)	0.92 (0.76, 1.11)
Change in number of conditions	0.40** (0.25, 0.65)	0.58** (0.43, 0.79)	0.96 (0.76, 1.20)	0.59 (0.32, 1.06)
Body mass index				
Underweight (< 18.5 kg/m ²)	2.23 (0.66, 7.50)	1.25 (0.51, 3.11)	1.20 (0.47, 3.03)	1.84 (0.29, 11.55)
Normal (18.5–24.9 kg/m ² ; Ref)	1.00	1.00	1.00	1.00
Overweight (25.0–29.9 kg/m ²)	0.97 (0.59, 1.60)	0.97 (0.69, 1.36)	1.04 (0.73, 1.48)	1.93* (1.02, 3.65)
Obese (≥ 30 kg/m ²)	1.02 (0.61, 1.70)	0.86 (0.62, 1.20)	1.21 (0.89, 1.67)	1.00 (0.51, 1.96)
Number of ADLs	0.99 (0.75, 1.31)	0.89 (0.75, 1.07)	1.04 (0.85, 1.28)	0.63** (0.52, 0.76)
Change in ADLs	0.87 (0.59, 1.30)	0.84* (0.73, 0.97)	1.12 (0.95, 1.31)	0.90 (0.72, 1.12)
Enabling groups status				
Household wealth decile				
1–3	2.74* (1.08, 6.93)	0.63 (0.37, 1.05)	1.06 (0.62, 1.79)	0.16* (0.03, 0.70)
4–6	2.06 (0.88, 4.80)	0.80 (0.49, 1.30)	1.29 (0.82, 2.04)	0.12** (0.03, 0.51)
7–9	1.94 (0.89, 4.24)	0.77 (0.48, 1.22)	1.02 (0.65, 1.62)	0.19* (0.05, 0.68)
10 (Ref)	1.00	1.00	1.00	1.00
Household wealth change				
Increase ≥ 50%	1.24 (0.64, 2.38)	0.95 (0.62, 1.45)	1.52 (1.10, 2.11)	1.02 (0.43, 2.40)
Increase 10%–50%	1.09 (0.55, 2.14)	1.21 (0.81, 1.80)	1.40 (1.01, 1.93)	1.17 (0.38, 3.56)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	1.20 (0.64, 2.27)	1.01 (0.69, 1.48)	1.60** (1.15, 2.24)	0.96 (0.35, 2.64)
Decrease ≥ 50%	1.64 (0.93, 2.90)	1.02 (0.67, 1.54)	1.53* (1.05, 2.22)	0.60 (0.25, 1.44)
Household income^b				
Poor	2.13 (0.79, 5.76)	1.28 (0.73, 2.24)	2.03 (0.92, 4.51)	2.75 (0.87, 8.73)
Low income	1.24 (0.67, 2.28)	1.34 (0.98, 1.82)	1.46 (0.91, 2.34)	1.06 (0.44, 2.56)
Middle income	1.30 (0.77, 2.18)	1.20 (0.92, 1.57)	1.51* (1.10, 2.08)	1.20 (0.56, 2.55)
High income (Ref)	1.00	1.00	1.00	1.00
Household income change				
Increase ≥ 50%	1.35 (0.76, 2.38)	0.73 (0.52, 1.02)	0.97 (0.62, 1.51)	0.45 (0.19, 1.04)
Increase 10%–50%	1.23 (0.77, 1.96)	0.85 (0.59, 1.23)	1.18 (0.80, 1.73)	1.12 (0.55, 2.28)
10%–10% ^a (Ref)	1.00	1.00	1.00	1.00
Decrease 10%–50%	1.32 (0.79, 2.22)	0.73 (0.49, 1.10)	1.13 (0.75, 1.71)	0.64 (0.33, 1.24)
Decrease ≥ 50%	1.87* (1.04, 3.34)	0.73 (0.43, 1.25)	1.17 (0.72, 1.89)	0.94 (0.39, 2.29)
Coverage				
Public only	1.08 (0.38, 3.06)	0.54 (0.25, 1.17)	0.62 (0.22, 1.77)	0.05* (0.00, 0.69)
Private only	0.89 (0.31, 2.61)	1.05 (0.46, 2.39)	1.05 (0.37, 2.97)	0.07* (0.01, 0.79)
Public and private	0.94 (0.26, 3.39)	0.65 (0.25, 1.68)	0.66 (0.21, 2.08)	0.04* (0.00, 0.67)

Continued

TABLE 4—Continued

No coverage (Ref)	1.00	1.00	1.00	1.00
Coverage change				
Always covered	0.47* (0.23, 0.94)	0.73 (0.44, 1.21)	0.94 (0.57, 1.56)	1.05 (0.40, 2.76)
Lost coverage	0.63 (0.28, 1.43)	0.67 (0.38, 1.17)	0.78 (0.43, 1.40)	0.65 (0.20, 2.07)
Gained coverage	0.86 (0.40, 1.84)	0.80 (0.52, 1.24)	0.60* (0.38, 0.94)	0.91 (0.35, 2.41)
Never covered (Ref)	1.00	1.00	1.00	1.00
Labor force or retirement status				
Always fully retired	0.54 (0.27, 1.06)	0.87 (0.53, 1.41)	1.23 (0.80, 1.91)	2.86 (0.83, 9.88)
Always in labor force (Ref)	1.00	1.00	1.00	1.00
Always partially retired	0.79 (0.38, 1.64)	1.47 (0.80, 2.71)	1.07 (0.60, 2.09)	5.01 (0.83, 30.44)
Never in labor force, not retired	0.59 (0.23, 1.48)	0.93 (0.50, 1.75)	2.23 (0.95, 5.24)	2.06 (0.59, 7.21)
Became fully retired	0.80 (0.35, 1.83)	0.87 (0.50, 1.54)	1.34 (0.79, 2.28)	4.32* (1.11, 16.77)
Became partially retired	1.58 (0.64, 3.87)	1.48 (0.74, 2.94)	1.49 (0.77, 2.88)	7.59 (0.72, 79.68)
Joined the labor force	1.15 (0.72, 1.86)	0.75 (0.30, 1.89)	4.51** (1.61, 12.62)	2.59 (0.21, 32.25)
Left labor force, not retired	1.70 (0.72, 4.00)	0.87 (0.35, 2.12)	0.81 (0.34, 1.91)	2.09 (0.51, 8.58)
Predisposing groups status				
Age, y				
51–64 (Ref)	1.00	1.00	1.00	1.00
65–69	0.45 (0.20, 1.04)	1.16 (0.78, 1.73)	1.23 (0.75, 2.00)	1.46 (0.60, 3.56)
70–74	0.71 (0.31, 1.63)	1.49 (0.98, 2.25)	1.34 (0.82, 2.20)	1.00 (0.35, 2.85)
75–79	0.85 (0.32, 2.25)	1.31 (0.80, 2.14)	1.40 (0.85, 2.30)	0.53 (0.16, 1.68)
≥ 80	1.16 (0.51, 2.63)	1.54 (0.97, 2.45)	2.39** (1.36, 4.18)	0.88 (0.34, 2.26)
Gender				
Woman	0.70 (0.49, 1.02)	1.09 (0.84, 1.40)	0.88 (0.69, 1.13)	0.79 (0.41, 1.52)
Man (Ref)	1.00	1.00	1.00	1.00
Race/ethnicity				
Black, non-Hispanic	1.19 (0.68, 2.09)	1.29 (0.84, 2.00)	0.97 (0.67, 1.40)	0.45* (0.23, 0.90)
Hispanic	1.37 (0.81, 2.31)	1.46 (0.84, 2.54)	0.79 (0.42, 1.50)	0.96 (0.20, 4.62)
Other non-Hispanic	1.17 (0.49, 2.79)	2.01 (0.85, 4.77)	0.81 (0.35, 1.89)	0.25 (0.04, 1.45)
White, non-Hispanic (Ref)	1.00	1.00	1.00	1.00
Education				
< high school	2.31** (1.27, 4.21)	0.87 (0.56, 1.36)	1.01 (0.65, 1.57)	0.80 (0.27, 2.34)
High school graduate	1.06 (0.64, 1.76)	0.89 (0.64, 1.25)	1.07 (0.78, 1.46)	1.09 (0.47, 2.51)
College graduate (Ref)	1.00	1.00	1.00	1.00
Marital status				
Widowed or divorced	1.52 (0.88, 2.61)	0.99 (0.64, 1.52)	1.18 (0.76, 1.84)	1.57 (0.79, 3.14)
Never married	0.91 (0.33, 2.53)	0.82 (0.42, 1.58)	0.84 (0.45, 1.58)	1.62 (0.45, 5.86)
Married (Ref)	1.00	1.00	1.00	1.00
Household size				
1 (Ref)	1.00	1.00	1.00	1.00
2	1.38 (0.77, 2.45)	1.24 (0.75, 2.07)	1.38 (0.89, 2.15)	2.86** (1.34, 6.09)
≥ 3	1.09 (0.55, 2.15)	1.31 (0.86, 2.02)	1.62* (1.01, 2.59)	2.71* (1.13, 6.52)

Note. ADL = activity of daily living; AOR = adjusted odds ratio; CI = confidence intervals; HRS = Health and Retirement Study. The sample size for the multinomial logistic regressions contains 11 847 persons representing 56.036 million older Americans who were in intact reporting households in both the 2006 and 2008 HRS with positive person weights and without missing values for any variables in the model. The AOR point estimate for dichotomous covariates is the estimate of (probability of medical use in 2004–2006 and no medical use in 2006–2008 divided by probability of medical use in both periods) for persons with row characteristic divided by (probability of medical use in 2004–2006 and no medical use in 2006–2008 divided by probability of medical use in both periods) for persons in the reference group. For continuous covariates the AOR point estimate was derived from a 1-unit change in the variable. The adjusted value refers to the inclusion in the regression of the control variables listed in the rows of the table.

^a10%–10% indicates an increase of ≤ 10% or a decline of ≤ 10%.

^bWhere low income refers to persons in families with incomes 101%–199% of the poverty line (according to US Census); middle income, 201%–400% of the poverty line; and high income, > 400% of the poverty line. Poor persons are ≤ 100% of the poverty line including persons in families with negative income.

*P ≤ .05; **P ≤ .01.

in the highest household wealth decile or with changes in household income of 10% or less. Similarly, persons in households with wealth declines of 10% or more or in middle-income households were more likely to be transitioning out of outpatient surgery use than were those, respectively, in households with wealth changes of 10% or less or in high-income households. By contrast, we found that those in households with wealth increases of 10% or more were more likely to be transitioning out of outpatient surgery use than were those in households with only 10% or less change in wealth between periods, as were those in the highest household wealth decile for home health services compared with those in the lower deciles.

Health insurance status in 2006 and changes between periods had infrequent but reasonable correlation with intermittent medical care use during this period. Older persons covered in both 2006 and 2008 by primary health insurance for the near elderly and supplementary coverage for the Medicare population were more likely to transition into outpatient surgery and home health care than were those without such coverage in either period. Those who gained such coverage between periods were also more likely to transition into outpatient surgery use than were the uninsured over the entire period.

Those with any type of coverage in 2006 were less likely to transition out of home health care use between periods than were those without any coverage in 2006. Older persons covered in both periods were less likely to be classified as transitioning out of physician services use than were those without coverage in either period, as were those gaining coverage between periods for outpatient surgery.

As seen in Table 2, labor force and retirement status in 2006 and changes between periods had little or no correlation with intermittent medical care use. We did find that older persons becoming fully retired between periods had greater odds of transitioning into inpatient hospital and outpatient surgery than did those in the labor force in both periods (Table 3).

Other factors. As expected, those aged 70 years and older and those aged 80 years and older were more likely to transition, respectively, into home health care and out of

outpatient surgery between periods than were those in the youngest age group (aged 51–64 years). Non-college graduates and the never married had lower odds of transitioning into physician services use than did college graduates and married persons. Widowed and divorced persons had greater odds than did married persons and those without high school diplomas had lesser odds than did college graduates of transitioning into outpatient surgery between periods. Table 4 shows that those without a high school diploma were more likely to transition out of physician care between periods than were college graduates. Minorities were less likely than were Whites of transitioning into outpatient surgery use and less likely of transitioning out of home health care services.

DISCUSSION

We examined whether health or financial factors were more strongly correlated with persistent and with intermittent use of medical care for older Americans over the 2004–2008 period. In analyzing physician, hospital, outpatient surgery, and home health care services, we found that health needs predominated over financial means as correlates of these patterns of health care use.

Generally, results for the health variables were in the expected direction; that is, worse health and worsening health were associated with greater likelihood of (1) persistent medical care use, and (2) transitioning into care and not transitioning out of care over time. The anomalous cases of improved health status and repeated use of or transitions into hospital and home health care may reflect successful outcomes of services administered during the survey period rather than need for them at the time of the survey interview.

The financial variables were less frequently significant and in the expected direction than were the health variables. We often found unanticipated correlation between financial variables and medical care use over this period; that is, lower household wealth or income status in 2006 or declining wealth or income between 2006 and 2008 correlated with repeated use of inpatient hospital or home health care services. It is conceivable that wealth losses of 50% or more, irrespective of the

cause, affect a person's health and contribute to repeated, or transitions into, hospital episodes or home health care.^{10,16,17} On the other hand, persons with significant gains in wealth or income may adopt healthier lifestyles and need fewer health care services.

The health insurance coverage variables were more frequently correlated with persistent and intermittent medical care use in the expected directions; that is, coverage or gains in coverage were associated with more likely repeated or transitions into use and less likely transitions out of use between periods.

Limitations

There were limitations to our study. We were unable to differentiate routine versus urgent care services with the HRS data. The HRS does not collect information on the reasons for doctor visits, hospitalizations, and outpatient surgeries or the intensity of services provided. We were unable to analyze changes in the number of prescription drugs used because the HRS only collects data on whether at least 1 prescription was purchased in each survey period and not on the number or type of prescriptions purchased. We did run similar models using HRS data on increases or decreases in the number of physician visits and nights in a hospital without any notable changes to the results reported in Tables 2 through 4.

The self-reported nature of the HRS data is another limitation that may impose a downward bias on the relationships we estimated. Finally, medical and insurance providers are often more instrumental than are individuals in making health care utilization decisions, other than perhaps the individual's initial decision to contact a physician for treatment. This influence, too, can dampen the effect of household finances on medical care choices at a point in time or over time. At best, these results only suggest the possible associations we examined, and in no way can they be construed as causal relationships.

Conclusions

For future study we plan to adapt our model to changes in preventive behaviors between survey periods that may be more discretionary and that are collected in the HRS, such as the use of flu shots, blood tests for cholesterol, mammograms, pap smears, and tests for

prostate cancer. Other possible future refinements include analyzing (1) whether results differ between the Medicare and non-Medicare populations, (2) increasing or decreasing numbers of physician visits or hospital nights by the magnitude, not just the direction, of the change, and (3) changes in out-of-pocket expenditures for different types of health care.

Knowing the correlates of older Americans' repeated medical care use or transitions into and out of such use over time is essential in designing policies to help curb the growth of our national health care use and expenditures. Our findings suggest that even an economic downturn as serious as the recent one is unlikely to arrest the Medicare and near Medicare population's contributions to this growth. In some cases, shrinking finances may even contribute to a greater need for and use of health care. Policies designed to provide more preventive care and healthier lifestyles to minimize the need for care may be more effective at stemming growth in this older population's medical care use. ■

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Contributors

R. J. Manski conceptualized and supervised the study and served as content expert on health policy. J. F. Moeller supervised the analyses. J. F. Moeller, J. Schimmel, and J. V. Pepper assisted with the writing of the article. H. Chen and P. A. St. Clair assisted with analyses. J. Schimmel served as content expert on health economics. J. V. Pepper served as content expert on economics.

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Human Participant Protection

The institutional review board of the University of Maryland, Baltimore, determined this study to be exempt from human participant review because we used secondary data.

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