

# How Much Choice Is Too Much? The Case of the Medicare Prescription Drug Benefit

*Yaniv Hanoch, Thomas Rice, Janet Cummings, and Stacey Wood*

---

**Objective.** To study the impact of the number of choices and age on measures of performance in choosing a Medicare prescription drug plan.

**Data Source/Study Setting.** One hundred ninety-two healthy individuals age 18 and older, half age 65 or older, in Claremont, California.

**Study Design.** Participants were randomly assigned to 3, 10, or 20 hypothetical drug plans and asked four factual questions. Statistical models controlled for experimental group, age, gender, race, education, income, marital status, and health status.

**Primary Findings.** Older age and greater number of plans were significantly associated with fewer correct answers. Although older adults were less likely to identify the plan that minimized total annual cost, they were more likely to state that they were “very confident” they chose the correct plan.

**Conclusions.** The results raise concerns about the difficulties that older adults may have in navigating the wide range of drug plan choices available.

**Key Words.** Choice, prescription drugs, Medicare, elderly

---

A hallmark of personal freedom is choice: having alternatives available, and being given the autonomy to choose among them. Is it possible, then, to have too much choice? This would appear to be heretical, at least in economics, as consumers can always ignore the poorer alternatives. Some researchers, however, are starting to question the merits of consumers having a large array of choices. Large choice sets coupled with the desire to maximize (that is, choose the very best) have been found to be significantly related to greater sense of regret, reduced happiness, and even less satisfaction with the choices made (Schwartz et al. 2002).

Given this, it is noteworthy that the Medicare prescription drug benefit has so many plan choices. In 2008, nearly all states had more than 50 stand-alone drug plans from which to choose. When the stand-alone plans are combined with Medicare managed care plans, older adults often faced over

100 choices for drug coverage (Kaiser Family Foundation 2007). In contrast, among the working-age population who are covered by employment-based insurance, 37 percent have just one plan choice, and only 20 percent have more than five (Hanoch and Rice 2006).

While a number of studies have examined the relationship between choice size and consumers' decision quality and satisfaction, little research has been devoted to examining the effects of age on decision making. This is surprising as older adults are frequently asked to make many complex financial and medical decisions (Hanoch, Wood, and Rice 2007) even though cognitive ability tends to decline with age.

This Research Brief reports on an experiment in which older and younger adults were randomly assigned to a different number of hypothetical prescription drug plans that resemble those in the marketplace. Subjects, half of whom were age 65 or older, were assigned to a choice set of 3, 10, or 20 plans. We report on how age and number of plans affect objective measures of performance as well as subjective assessments of the experience, and we draw conclusions about problems associated with the design of the Medicare drug benefit.

## BACKGROUND: CHOOSING A MEDICARE PRESCRIPTION DRUG PLAN

Surprisingly, little is known about how beneficiaries decide which prescription plan to purchase. There is, however, both objective and subjective evidence that the large number of Medicare drug plan choices has been problematic. The primary objective evidence so far concerns stickiness—that is, unwillingness to change plans from year to year, even when it is economically wise to do so. Two national surveys found that fewer than one tenth of enrollees switched drug plans during the open enrollment period between the first and second years of the Medicare drug program, and nearly half of those were low-income beneficiaries who were required to switch because their plan no longer covered them (Campbell and Morgan 2007; Neuman et al. 2007). This is of

---

Address correspondence to Yaniv Hanoch, Ph.D., School of Psychology, University of Plymouth, Drake Circus, Plymouth, U.K., PL4 8AA; e-mail: yaniv.hanoch@plymouth.ac.uk. Thomas Rice, Ph.D., is with the Department of Health Services, UCLA School of Public Health, Los Angeles, CA. Janet Cummings, B.A., is with the Department of Health Services, UCLA School of Public Health, Los Angeles, CA. Stacey Wood, Ph.D., is with the Department of Psychology, Scripps College.

potential concern because plans that may have low costs 1 year often raise their premiums or change their formulary, leading to dramatic increases in premiums the following year (Kritz 2007). Furthermore, as Domino and colleagues (2008) have shown, 43 percent of beneficiaries change the prescriptions they use to such an extent that it would be cheaper if they switched to another plan, with potential savings of about \$500 annually (Domino et al. 2008).

There is also subjective evidence that the amount of choice faced by older adults is problematic. Indeed, nearly three quarters (73 percent) of beneficiaries agree that the drug program is too complicated (Kaiser Family Foundation/Harvard School of Public Health 2006). Additionally, older adults say that they would prefer fewer choices. When a national survey asked older adults whether they would like Medicare to offer a select number of plans or dozens of plans, over two thirds (68.5 percent) favored the idea of Medicare offering only a handful of plans, with the remaining third favoring the dozens (Kaiser Family Foundation/Harvard School of Public Health 2006; T. Rice, Y. Hanoch, and J. Cummings, unpublished data).

## DATA AND METHODS

### *Data*

Data come from an experiment conducted in January to May 2007 with 192 participants in Claremont, California, 30 miles east of Los Angeles. Half of the sample was age 65 or older, and the other half, between the ages of 18 and 64. Participants (younger and older) were randomly assigned into three groups: those choosing among 3, 10, or 20 hypothetical Medicare prescription drug plans. Plans were identified using letters of the alphabet so that company name would not influence the results. Participants received a table that included the following information about each drug plan: total estimated annual cost (including both premiums and cost-sharing requirements), annual deductible, the cost-sharing requirements per prescription after the deductible is paid, whether drugs could be obtained by mail order, the number of pharmacies in the area participating with the plan, and distance in miles that the respondent would have to go to find the closest pharmacy. A glossary of terms was also provided. A copy of this information, along with the table for those assigned to 20 plans, appears in the Appendix SA2.

The information provided closely modeled that found on the Medicare website. Nevertheless, the decision environment faced by participants was far

simpler than Medicare beneficiaries face in the real world: there was a maximum of 20 plans, rather than the 50+ Part D plans available on the market; complex elements of Part D, such as drug formularies and “donut holes,” were not part of the study; and because company name was not given, the participants did not have to consider the reputation of the company. Perhaps most important of all, participants did not have to navigate through the Medicare website and type in detailed information about their prescriptions, which oftentimes leads to errors. Rather, the survey employed a “pen and paper” format, one that older adults in particular are more familiar with compared with using the Internet. As a result of these simplifications, any problems in task performance found in this study are likely to underestimate those in the marketplace.

After reviewing the information, participants were asked questions about what plan they would advise a friend to choose. Four of these had correct answers ([1] identifying the plan that minimizes annual costs; [2] identifying the plan that minimizes annual costs so long as drugs could be obtained by mail order; [3] identifying the company that had the most pharmacies, and [4] identifying the company that did not offer mail order prescriptions but had the closest pharmacy). These questions were chosen to test volunteers’ ability to read and assess tabular information, an essential skill needed to use the comparative plan information provided by Medicare. The survey also asked how confident respondents were that they provided the right answer to a particular question.

Nearly all participants completed the questionnaires associated with the study at the Department of Psychology at Scripps College, Claremont University. The median time it took to complete the questionnaires was about 45 minutes; participants were paid \$10/hour so there was no incentive to answer quickly. Older participants’ cognitive function was tested using the Mini-Mental State Exam to confirm that they were free of cognitive impairments. To create the analytic sample, 12 observations were dropped because they were missing values on one or more variables (mainly, missing race/ethnicity). This yielded an analytic sample of 180 observations.

### *Variables*

Three dichotomous dependent variables in the study include the following: (1) an indicator for respondents who correctly answered the question about which health plan minimized the total annual cost of prescription drugs; (2) an indicator for respondents who responded that they were very confident that

they correctly identified the health plan that minimized the total annual cost, and (3) an indicator for respondents who answered at least three of the four factual questions correctly. The original confidence variable was measured in a five-unit Likert scale, in which the choices ranged from not confident at all (category 1) to very confident (category 5). Based on the distribution, we collapsed the bottom four categories to enable comparisons between respondents who were very confident and those who were not very confident in their response.

The independent variables of interest include two indicators for whether the participant was assigned to 10 plans or 20 plans (compared with the omitted category, three plans), and an indicator for age group (1 = 65+, 0 = 18–64). Control variables include gender, race/ethnicity (White, Asian/Pacific Islander, Other), education (less than college, college graduate, more than college), marital status (1 = currently married), and continuous measures of physical health and mental health status. The last two items are measured using items from the SF-8 Health Survey to create composite scores for physical health and mental health based on the SF-8 scoring algorithms (Ware et al. 2001). Higher scores on these variables correspond with better physical and mental health.

### *Statistical Methods*

Models are estimated using logistic regressions. For each outcome variable, two models are estimated. The first model includes the main effects for number of plans and age, and the second model adds control variables for socio-demographics and health status. For the models that examine predictors associated with total score and answering the question regarding total annual cost, we also included interaction terms between age and number of plans (not presented). Because these interaction terms were not significant, they were not included in our final models.

## RESULTS

Nearly three fourths of the sample answered at least three of four questions correctly (Table 1). Moreover, 56 percent provided the correct answer as to which plan minimized total annual cost. This compares to 42 percent who said they were “very confident” that they identified the lowest-cost plan.

When examining variables associated with participants’ ability to identify the prescription drug plan that minimizes total annual costs (Table 2),

Table 1: Descriptive Statistics for Analytic Sample

	<i>Analytic Sample (N = 180) Proportion/Mean (SD)</i>
<i>Dependent variables</i>	
Correctly chose which plan minimized total annual cost	56.1%
Confidence level on choosing plan to minimize cost (1–5, 5 = very confident)	3.9 (1.2)
Very confident	42.2%
Answered at least three of four factual questions correctly	74.4%
<i>Sociodemographics</i>	
Older adults (1 = 65+)	50.0%
Female	64.4%
Married	43.3%
<i>Race</i>	
White	70.6%
Asian/Pacific Islander	13.3%
Other	16.1%
<i>Education</i>	
Less than college	30.6%
College graduate	32.2%
More than college	37.2%
<i>Health status</i>	
Physical health score	12.4 (4.5)
Mental health score	7.6 (2.8)

older adults are less likely to choose the correct plan compared with younger adults (OR = 0.41, 95 percent CI = 0.22, 0.75). After variables controlling for sociodemographics and health status are included in Model 2, age is no longer significant, likely because many of the covariates that are added are correlated with age. However, when examining predictors of respondents' level of confidence in choosing the correct drug plan to minimize annual costs in Model 3, older adults are more likely than younger adults to indicate that they are very confident that they chose the correct answer (OR = 1.93, 95 percent CI = 1.06, 3.54). This finding is strengthened once control variables are included in Model 4.

When examining the predictors associated with answering at least three of four questions correctly (Table 3), results indicate that age and number of plans are significantly associated with the number of correct answers. Older adults are less likely to answer at least three questions correctly compared with younger adults (OR = 0.33, 95 percent CI = 0.16, 0.70). Additionally, those assigned to 10 plans and 20 plans are less likely to answer at least three questions correctly than those assigned to three plans, with odds ratios of 0.18

Table 2: Predictors Associated with Identifying the Cheapest Drug Plan and the Level of Confidence Associated with This Answer

	Correctly Identified Plan the Minimized Total Annual Cost						Very Confident That the Correct Plan Was Identified to Minimize Total Annual Cost (Versus Confident or Less Than Confident)					
	Model 1			Model 2			Model 3			Model 4		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
10 plans <sup>†</sup>	0.69	0.33	1.47	0.75	0.34	1.66	1.42	0.67	2.99	1.49	0.62	3.56
20 plans <sup>†</sup>	0.57	0.27	1.19	0.55	0.25	1.23	1.74	0.84	3.64	1.60	0.66	3.84
Age (1 = 65+) <sup>‡</sup>	0.41***	0.22	0.75	0.74	0.35	1.57	1.93**	1.06	3.54	3.18***	1.33	7.58
Female	—	—	—	0.44**	0.22	0.88	—	—	—	0.21***	0.10	0.46
Married	—	—	—	0.56*	0.29	1.10	—	—	—	1.77	0.86	3.61
Asian/PI <sup>§</sup>	—	—	—	2.13	0.71	6.37	—	—	—	0.65	0.20	2.14
Other <sup>§</sup>	—	—	—	0.86	0.33	2.23	—	—	—	0.57	0.19	1.65
College graduate <sup>¶</sup>	—	—	—	2.05	0.81	5.20	—	—	—	3.87*	1.39	10.79
More than college <sup>¶</sup>	—	—	—	1.71	0.72	4.09	—	—	—	1.04	0.40	2.73
Physical health score	—	—	—	1.02	0.98	1.06	—	—	—	1.03	0.99	1.08
Mental health score	—	—	—	0.99	0.95	1.03	—	—	—	1.04*	0.99	1.09

\* $p < .10$ .

\*\* $p < .05$ .

\*\*\* $p < .01$ .

Omitted reference categories:

<sup>†</sup>3 plans.

<sup>‡</sup>Younger adults 18–64.

<sup>§</sup>Non-Hispanic Whites.

<sup>¶</sup>Less than College.

Analytic sample:  $N = 180$ .

(95 percent CI = 0.06, 0.53) and 0.13 (95 percent CI = 0.04, 0.37), respectively. After adding control variables in Model 2, age and number of plans remain negatively associated with the number of correct answers. The findings for number of plans remain highly significant while age becomes significant at the 0.10 level.

## DISCUSSION

A number of surveys have reported that many older adults find the Medicare prescription drug program to be confusing and difficult to comprehend

Table 3: Predictors Associated with Answering at Least Three of Four Factual Questions Correctly

	Model 1			Model 2		
	OR	95% CI		OR	95% CI	
10 plans <sup>†</sup>	0.18***	0.06	0.53	0.17***	0.06	0.54
20 plans <sup>†</sup>	0.13***	0.04	0.37	0.10***	0.03	0.31
Age (1 = 65+) <sup>‡</sup>	0.33***	0.16	0.70	0.42*	0.16	1.09
Female	—	—	—	0.45*	0.19	1.08
Married	—	—	—	0.56	0.25	1.25
Asian/PI <sup>§</sup>	—	—	—	0.49	0.13	1.81
Other <sup>§</sup>	—	—	—	0.42	0.12	1.39
College graduate <sup>¶</sup>	—	—	—	1.26	0.44	3.63
More than college <sup>¶</sup>	—	—	—	1.22	0.47	3.18
Physical health score	—	—	—	1.04	0.99	1.09
Mental health score	—	—	—	0.96*	0.91	1.01

\* $p < .10$ .

\*\* $p < .05$ .

\*\*\* $p < .01$ .

Omitted reference categories:

<sup>†</sup>3 plans.

<sup>‡</sup>Younger adults 18–64.

<sup>§</sup>Non-Hispanic Whites.

<sup>¶</sup>Less than College.

Analytic sample:  $N = 180$ .

(Kaiser Family Foundation/Harvard School of Public Health 2006; Campbell and Morgan 2007). Others report that beneficiaries think that there are too many plans on the market and would prefer that Medicare take a more active role in reducing the number of plans on the market (Cummings, Rice, and Hanoch 2009). The growing evidence regarding the complexity of the program fits nicely with recent analysis showing that < 10 percent of enrollee chose the lowest-cost plan available under Part D (Gruber 2009). That is, beneficiaries “are not financially optimizing in their choice of a Medicare drug plan” (Gruber 2009, p. 5). One possible reason for this finding is the complexity of the program. Our study provides important support for this intuition. The results show that decision quality deteriorated as the number of plans increases. Moreover, not only do seniors perform more poorly, but paradoxically they exhibit greater confidence than younger people that they were able to choose the lowest-cost plan when the opposite is the case.



The study has several limitations. First, our sample is not representative of the general population. In particular, the participants, who live in or near a college town, have a much higher education level. Nearly 73 percent of those in this sample between the ages of 18 and 64 and nearly 65 percent of those ages 65 and older have at least a college degree, compared with 27 percent and 23 percent of younger and older adults in the California population, respectively (U.S. Census Bureau 2006). These differences reflect the nature of the Claremont, California, community. In one respect, this limitation makes the findings more conservative, as a more representative population would likely score worse on tests like those we administered. Second, the sample size of about 200 may not be sufficient to detect all relationships, especially those involving interactions. Finally, although we tried to provide a decision environment that closely resembled the actual Medicare drug benefit, it was not possible to make them identical and, of course, the decisions that sample members were making did not directly affect their welfare.

It has been easy for those favoring the current configuration of the Medicare drug benefit to point to various successes: satisfaction, while starting low, has steadily risen; enrollment is high; and premiums are lower than originally predicted (Centers for Medicare and Medicaid Services 2008). As noted earlier, however, other indicators are worrisome, particularly seniors' lack of understanding of the drug benefit and their strong reluctance to switch to (cheaper) plans during open enrollment. Moreover, if beneficiaries are not optimizing, as the study by Gruber (2009) clearly indicates, it is also costing the federal government money because the drug benefit is highly subsidized.

Policy alternatives are available but they will face political hurdles. The most dramatic would be to switch from the current system, which relies on private insurance, to a defined benefit system more akin to Medicare Parts A and B. Although perhaps unlikely, it should be recalled that the current Part D benefit was approved after an extraordinarily bitter debate with Republicans controlling the Senate, House, and Presidency.

Another option is standardizing the benefit. Under standardization, any company can sell a product, but it must conform its benefits to one or more particular set as specified by regulation. The main example of this is the Medigap market—that is, private insurance sold to Medicare beneficiaries to supplement those benefits. Before standardization, which began in 1992, the market was criticized a great deal, in part due to marketing abuses that were facilitated by the difficulty in comparing policies. Standardization has been very successful in improving beneficiary understanding and raising

satisfaction levels in the Medigap market (Fox, Snyder, and Rice 2003). This is largely because it allows prospective purchasers to make apples-to-apples comparisons between the products of different insurers, allowing them to focus on premiums. Hoadley (2008) has proposed and analyzed several different ways in which the Part D benefit could be standardized (Hoadley 2008).

A third policy option is that, rather than eliminating choice, policy makers could attempt to reduce the number of competing plans (e.g., to 10 plans). One way to do this is to carry out a competitive bidding process, where Medicare would choose a subset of plans that would be made available to beneficiaries. Reducing the number of plans would likely resonate well with beneficiaries, who have voiced a preference for greater government involvement in simplifying the program and limiting the number of plans (Cummings, Rice, and Hanoch 2009).

Our findings, coupled with those of others (Campbell and Morgan 2007; Neuman et al. 2007; Domino et al. 2008), raise concerns about beneficiaries' ability to use available information to make the best choice of a Medicare prescription drug plan. Given the importance of drug coverage and the potential saving involved, policy makers should be attuned to these issues and consider ways to make the decision making process easier and more effective.

## ACKNOWLEDGMENTS

*Joint Acknowledgment/Disclosure Statement:* Support for research was provided by an RWJF Investigator Award in Health Policy Research from the Robert Wood Johnson Foundation, Princeton, New Jersey. The views expressed imply no endorsement by the Foundation nor from the reviewers who provided helpful comments on a draft of this article: Brian Elbel, Daniel Kao, and Tricia Neuman. We would like to thank Betty Tanius for her assistance with data collection.

*Disclaimers and Disclosures:* None.

## REFERENCES

- Campbell, A. L., and K. J. Morgan. 2007. *Policy Feedbacks and the Medicare Modernization Act of 2003: The Political Ramifications of Policy Change*. American Political Science Association Annual Meeting. Chicago.

- Centers for Medicare and Medicaid Services. 2008. *Lower Medicare Part D Costs Than Expected in 2009, Beneficiary Satisfaction Remains High*. Press Release: August 14, 2008.
- Cummings, J. R., T. Rice, and Y. Hanoch. 2009. "Who Thinks That Part D Is Too Complicated? Survey Results on the Medicare Prescription Drug Benefit." *Medical Care Research and Review* 66 (1): 97–115.
- Domino, M. E., and S. C. Stearns. Domino, M. E., S. C. Stearns, and W. S. Yeh. 2008. "Why Using Current Medications to Select a Medicare Part D Plan May Lead to Higher Out-of-Pocket Payments." *Medical Care Research and Review* 65 (1): 114–26.
- Fox, P. D., R. E. Snyder, and T. Rice. 2003. "Medigap Reform Legislation of 1990: A 10-Year Review." *Health Care Financing Review* 24 (3): 121–37.
- Gruber, J. 2009. "Choosing a Medicare Part D Plan: Are Medicare Beneficiaries Choosing Low-Cost Plans?" [accessed on March 20, 2009] Available at <http://www.kff.org/medicare/upload/7864.pdf>
- Hanoch, Y., and T. Rice. 2006. "Can Limiting Choice Increase Social Welfare? The Elderly and Health Insurance." *Milbank Quarterly* 84 (1): 37–73.
- Hanoch, Y., S. Wood, and T. Rice. 2007. "Bounded Rationality, Emotions, and Older Adult Decision Making: Not So Fast and Yet So Frugal." *Human Development* 50: 333–58.
- Hoadley, J. 2008. "Medicare Part D: Simplifying the Program and Improving the Value of Information for Beneficiaries." *Issue Brief (Commonwealth Fund)* 39: 1–15.
- Kaiser Family Foundation. 2007. "Medicare Part D Plan Characteristics, by State, 2008: Fact Sheet" [accessed on December 12, 2007]. Available at [http://www.kff.org/medicare/upload/7426\\_04.pdf](http://www.kff.org/medicare/upload/7426_04.pdf)
- Kaiser Family Foundation/Harvard School of Public Health. 2006. "Seniors and the Medicare Prescription Drug Benefit" [accessed on December 12, 2006]. Available at <http://www.kff.org/kaiserpolls/upload/7604.pdf>
- Kritz, F. L. 2007. "Take with Some Research: Changes Next Year to Medicare's Drug Program Mean Consumers Need to Do a Little Studying." *Los Angeles Times*.
- Neuman, P., M. K. Strollo, S. Guterman, W. H. Rogers, A. Li, A. M. Rodday, and D. G. Safran. 2007. "Medicare Prescription Drug Benefit Progress Report: Findings From a 2006 National Survey of Seniors." *Health Affairs (Millwood)* 26 (5): w630–43.
- Schwartz, B., A. Ward, J. Monterosso, S. Lyubomirsky, K. White, and D. R. Lehman. 2002. "Maximizing Versus Satisficing: Happiness Is a Matter of Choice." *Journal of Personality and Social Psychology* 83 (5): 1178–97.
- U.S. Census Bureau. 2006. "California Public Use Microdata Sample (PUMS) File from the American Community Survey" [accessed on December 10, 2008]. Available at <http://ftp.cdc.gov/pub/HealthStatistics/NCHS/DatasetDocumentation/NAMCS/doc06.pdf>
- Ware, J. E., J. E. Kosinski, B. Dewey, and Gandek. 2001. *How to Score and Interpret Single-Item Health Status Measures: A Manual for Users of the SF-8™ Health Survey*. Lincoln, RI: QualityMetric Incorporated.

## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

Appendix SA2: Information Provided to Survey Participants Who Were Randomly Assigned to 20 Prescription Drug Plan Choices.

Please note: Wiley-Blackwell is not responsible for the content or functionality of any supporting materials supplied by the authors. Any queries (other than missing material) should be directed to the corresponding author for the article.