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## Usability of the Medicare Health Web Site

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**To the Editor:** The use of Internet-based applications to support health management tasks has grown enormously.<sup>1</sup> Studies investigating these applications have focused on prevalence of or reasons for use. We evaluated the ability of a sample of older adults to use the Medicare.gov Web site to make decisions concerning eligibility for services and prescription drug plans.

### Methods

Two hundred eighteen people responded to newspaper advertisements and flyers in community and senior centers in the greater Miami area through telephone contact. Participants were required to be aged at least 50 years; be cognitively unimpaired (Mini-Mental State Examination<sup>2</sup> score >26); have had computer experience (assessed via questionnaire<sup>3</sup>); be English speaking; and not have depressive symptoms or severe visual or hearing impairments. Following screening, 201 were eligible for participation, 64 of whom expressed lack of interest or did not report for the study. Participants were enrolled consecutively; 112 completed the protocol and were compensated \$50 (Table 1). To characterize the sample, data were collected on age, education, and race/ethnicity (based on self-report using fixed categories<sup>4</sup>). Data were collected at the University of Miami between February 2006 and May 2007. The study was approved by the university's institutional review board, and all participants provided written consent.

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**Additional Contributions:** Tamar El-Attar, MS, University of Miami Department of Industrial Engineering, and Mario Hernandez, MS, Center on Aging, University of Miami, both provided assistance in data collection. Chin Chin Lee, MS, MSPH, Center on Aging, University of Miami, provided administrative assistance and study supervision. Shih Hua Fu, MS, Center on Aging, University of Miami, provided technical assistance. No one received compensation for their roles.

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**Author Contributions:** Mr Nair had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

*Study concept and design:* Czaja, Sharit, Nair.

*Acquisition of data:* Czaja.

*Analysis and interpretation of data:* Czaja, Sharit, Nair.

*Drafting of the manuscript:* Czaja, Nair.

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Participants were asked to use the Medicare.gov Web site to (1) determine eligibility for home health care services, (2) select a home health agency to meet specified needs, (3) make a decision about enrollment in Medicare Part D based on specified criteria, and (4) select a drug plan and determine associated costs based on a specified medication regime. They provided written responses. Participants also evaluated Web site usability and the value of Internet health information via questionnaire. Responses were rated by 2 investigators using a scoring sheet and through analysis of video records.<sup>6</sup> Interrater reliability on 2 problems in a random sample of 20 participants was good ( $r=0.96$  and  $r=0.97$ ).

During data collection, changes were made to the appearance of the home page and sizing of selection buttons on the Web site; content was not altered. To assess comparability, we compared performance scores, usability ratings, and characteristics of participants who used the initial ( $n=82$ ) and modified ( $n=30$ ) versions using  $\chi^2$  tests,  $t$  tests, and Wilcoxon tests. No differences were found for ratings of usability or performance scores. A greater percentage of Hispanic (46.2%) and non-Hispanic white (44.9%) participants used the initial version than non-Hispanic black participants (9.0%), but more non-Hispanic black participants (42.9%) used the modified version than Hispanic (28.6%) or non-Hispanic white participants (28.6%) ( $P<.001$ ). Analyses were performed using SPSS 15.0 (SPSS Inc, Chicago, Illinois), with 2-sided significance set at  $P<.05$ .

## Results

Most participants were unable to specify all eligibility criteria for home health services ( $n=77$  [68.8%; 95% confidence interval {CI}, 59.8%–76.8%]), choose the correct home health agency ( $n = 90$  [80.4%; 95% CI, 72.3%–86.9%]), or execute computation procedures needed for making a plan enrollment decision ( $n=94$  [83.9%; 95% CI, 76.3%–89.8%]). Only about half ( $n=64$  [57.1%; 95% CI, 47.9%–66.0%]) were able to make an enrollment decision. Most participants ( $n=81$  [72.3%; 95% CI, 63.5%–80.0%]) were unable to select a drug plan or had problems navigating to the necessary Web pages, locating needed information, or executing actions required for plan selection. Participants also reported problems with usability (Table 2), but almost all indicated that the Internet was a valuable source of health information.

## Comment

A sample of relatively well-educated adults with computer experience had difficulty using the Medicare.gov Web site to determine eligibility for services and enroll in a drug plan. Participants also reported problems navigating within the Web site and locating information. Although the sample was relatively small and restricted to people aged 50 years or more, it was diverse and larger than samples included in most usability studies. It is likely that persons with less computer experience would have even greater difficulty. To ensure that electronic health tools reach their full potential, broad and inclusive input from consumers should serve as the basis for design.

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## References

1. Expanding the reach and impact of consumer e-Health tools. US Department of Health and Human Services; [Accessed July 24, 2008].  
<http://www.health.gov/communication/ehealth/ehealthTools/executivesummary.htm>
2. Folstein MF, Folstein SE, McHugh PR. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res* 1975;12(3):189–198. [PubMed: 1202204]
3. Czaja SJ, Charness N, Dijkstra K, Fisk AD, Rogers WA, Sharit J. Computer and technology experience questionnaire [CREATE Technical Rep No. CREATE-2006–03]. 2006
4. Czaja SJ, Charness N, Dijkstra K, Fisk AD, Rogers WA, Sharit J. Demographic and background questionnaire [CREATE Technical Rep No. CREATE-2006–02]. 2006
5. Baker DW, Williams MV, Parker RM, Gazmararian JA, Nurss J. Development of a brief test to measure functional health literacy. *Patient Educ Couns* 1999;38(1):33–42. [PubMed: 14528569]
6. HyperCam [computer program]. Murrysville, PA: Hyperionics Technology; 2006.



**Table 2**  
Task Performance and Usability Ratings (n = 112)

	Time, Score, or Rating
Task performance times, median (IQR), min	10 (8.3–11.8)
Specify eligibility for home health care	
Choose correct home health agency	20 (18–22)
Execute annual cost computation procedure	15.5 (11.3–20)
Selection of prescription drug plan	29 (21–31)
Task performance measures, median (IQR)	0 (0–4)
Specify eligibility for home health care <sup>a</sup>	
Navigation score <sup>b</sup>	9 (2–12)
Performance score <sup>c</sup>	7 (0–9)
Interpretation score <sup>d</sup>	2 (0–3)
Medicare Web site usability ratings, No. (%) [95% CI] <sup>e</sup>	69 (61.6) [52.4–70.2]
I found it difficult to navigate within the site—I was getting lost	
I became frustrated using the Web site to search for information	68 (60.7) [51.5–69.4]
In general, I found it difficult to locate the information that I needed within the Web site	61 (54.5) [45.2–63.5]
Overall, I found the Web site difficult to use	55 (49.1) [40.0–58.3]
Rating of Internet information, No. (%) [95% CI] <sup>e</sup>	106 (94.6) [89.3–97.7]
I think the Internet is a valuable tool for finding health information	
In general, I would use the Internet to find health-related information	107 (95.5) [90.5–98.3]

Abbreviations: CI, confidence interval; IQR, interquartile range.

<sup>a</sup>The correct number of 4 required criteria provided by the participant (scores range from 0 to 4 with higher scores indicating better performance).

<sup>b</sup>The number of required Web pages accessed and method of access for selection of prescription drug plan (scores range from 0 to 14 with higher scores indicating better performance).

<sup>c</sup>The number of required actions correctly executed for selection of prescription drug plan (scores range from 0 to 13 with higher scores indicating better performance).

<sup>d</sup>Correct interpretation of required out-of-pocket costs for selection of prescription drug plan (scores range from 0 to 5 with higher scores indicating better performance).

<sup>e</sup>Persons responding strongly agree or agree on a 5-point scale (strongly agree, agree, neutral, disagree, strongly disagree).