Gender Disparities in Health and Healthcare Use Among Older Adults

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Abstract

Background: Gender differences in health and the use of health services are a long-standing concern for the U.S. medical system. Our purpose was to examine if there are patterns of gender differences in the type of medical service used among older Americans.

Methods: We conducted a prospective study of 9164 Americans aged ≥ 65 followed through the Health and Retirement Study (HRS), a national probability sample of community dwelling adults. Self-reported medical utilization between 2002 and 2004 was modeled as a function of 2002 baseline characteristics of the sample.

Results: Health needs were substantially greater among older women compared with men, but women had fewer economic resources. Controlling for health needs did little to explain gender differences in preventive care and increased gender differences in the use of hospital services. Women were less likely to have hospital stays (adjusted odds ratio [OR] = 0.79) and had fewer physician visits (3.07 vs. 3.30 median visits within 2 years) than men with similar demographic and health profiles. In contrast, the greater use of home healthcare among women was almost entirely explained by their greater health needs.

Conclusions: These national data show that simple evaluations of age-adjusted gender differences in the use of hospital and physician services that do not account for underlying health needs are in danger of understating these disparities.

Introduction

IT IS WELL KNOWN that healthcare spending in the United States is rising as the baby boomers age. In 2007, healthcare spending reached \$2.3 trillion (representing 16.2% of the gross domestic product)¹ and was projected to reach \$2.4 trillion in 2008. It is further projected to reach \$4.4 trillion by 2018.² Furthermore, medical consumption is disproportionately high among seniors: in 2004 people aged ≥ 65 comprised 12% of the U.S. population yet accounted for 42% of healthcare spending.³

Gender differences in health and the use of health services are a long-standing concern for the U.S. medical system. Such differences have been documented in physician and home care use, hospital service, outpatient surgery, and preventive services.^{4–7} The health and use of health services among adults aged ≥ 65 is of particular interest because of the heavy use of medical services by this age group, which is largely paid through Medicare. As women constitute the majority of Medicare beneficiaries, achieving equitable use of these services by women and men is paramount.

This study uses data from the Health and Retirement Study (HRS) to evaluate the relationship of gender to medical use among a national sample of community-dwelling adults aged ≥ 65 . The role of demographics, social factors, health needs, and economic access barriers in gender differences and medical use by seniors is systematically addressed by the following questions: First, are there gender differences in healthcare use, and do they persist after adjusting for other demographic differences? Second, does one's living arrangement (alone or with others) influence healthcare use across gender? Third, to what extent do health needs (e.g., mobility limitations, disability, specific chronic conditions) influence gender differences in healthcare use? This question is important from a policy perspective because it addresses inequities in the use of medical care among people with similar health burdens. Fourth, to what extent do economic access factors (e.g., wealth, income, education) explain gender differences in use? Gender differences in wealth, income, and education are long recognized and have been documented as being greatest among older adults.⁸ These differences can translate into reduced access to healthcare services, which in turn may influence the use of medical care.

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Materials and Methods

Study population and sample

This study analyzes data from the 2002 and 2004 HRS interviews.⁹ The HRS is a national probability sample of community-dwelling adults. The 2002 sample included 4502 men and 5960 women aged ≥ 65 years. Participants were recontacted in 2004 and asked to complete a second interview; 95.6% of the cohort alive in 2004 ($n = 9164$) completed this second interview. Self-reported healthcare use between 2002 and 2004 was modeled as a function of 2002 baseline characteristics of the sample. HRS data include information from proxy respondents; thus, of the 9164 participants in our sample, 872 (4.29%) had proxy interviews. People excluded are 826 deceased (49.5% women), 428 nonrespondents in the 2004 interview (57.0% women), and 44 persons with incomplete baseline data (missing one or more of the factors listed in Table 1).

Outcome variables

Healthcare use. The HRS included self-reported information on healthcare services, including physician visits, preventive care, hospital stays, outpatient surgery, and home healthcare. In 2004, respondents were asked to report how many times in the last 2 years they saw or talked to a medical doctor (including emergency room and clinic visits); these responses were used to determine if they had any physician contact. Respondents were also asked if, within the past 2 years, they were an overnight hospital patient (any hospital admission), if they had outpatient surgery, if a medically trained person came to the home (among people not residing in a nursing home), or if they had received a flu shot or cholesterol screening (preventive care). These measures of healthcare use were determined from participant responses to the 2004 HRS.

The use of self-reported data is common for large national studies of older adults' health. Comparisons of self-reported data with administrative data found that measures of any medical use were more accurate than measures of quantity, which has been subject to both underreporting and overreporting.¹⁰⁻¹³ Among older adults, the numbers of physician and hospital visits are subject to the greatest reporting error.^{11,13} To limit this problem, we emphasized measures of any use, and for physician visits, we examine median rather than mean number of visits.

Predictor variables

All reported predictor variables were determined from the baseline characteristics reported by the sample in the 2002 baseline interview.

Demographic factors. Age, gender, and race/ethnicity were included as demographic factors. HRS race/ethnicity information was used to classify people into four mutually exclusive groups: non-Hispanic white, Hispanic, non-Hispanic African American, and other race/ethnicity.

Living arrangement. Living arrangement captured the social support network surrounding respondents and was dichotomized as lives alone or lives with others. Of note, individuals who resided in a nursing home or other care facility at the time of the baseline interview were not eligible to par-

ticipate. However, a small percentage (2.51%) of the sample reached in 2004 had transitioned to a nursing home or care facility since 2002 (1.83% men, 2.99% women, chi-square 9.42, $p < 0.05$); these people were included in the analysis.

Health needs. Health needs were represented by functional health, disability, and medical conditions. Functional health was based on responses to a series of questions examining degrees of impairment in mobility, stair climbing, and upper extremity tasks. Mobility was assessed via respondent report of being able to walk several blocks without difficulty, to walk one block without difficulty, or unable to walk one block without difficulty. Stair climbing was assessed as being able to climb several flights without difficulty, to climb one flight without difficulty, or not able to climb one flight. Upper extremity task function was assessed as having any difficulty extending arms above the shoulders, pulling or pushing large objects such as a living room chair, or lifting or carrying weights over 10 pounds such as a heavy bag of groceries. Disability in daily task limitations were determined from respondent report of having difficulty and receiving help with any of six basic activities of daily living (ADL) tasks (walking across a room, dressing, bathing, eating, using the toilet, and transferring from a bed) and five instrumental activities of daily living (IADL) tasks (preparing hot meals, shopping for groceries, making telephone calls, taking medications, and managing money). Chronic conditions were assessed via respondent report of affirmative responses when asked if a physician ever said the respondent had arthritis, cancer, diabetes, heart disease (heart attack, coronary heart problem, angina, congestive heart failure, other heart condition), hypertension, lung disease, stroke, or bad vision, or if the respondent had obesity based on a body mass index (BMI) > 30 calculated from self-reported height and weight [weight (kg)]/[height (m)²]. Because of missing height or weight on 2.5% (232) of the sample, we imputed the missing value using an age/gender/race specific sample median to estimate BMI for those people. Analytical results with and without imputed BMI values were identical.

Access factors. Economic access factors refer to a respondent's human capital, measured by education and ability to pay for medical care. Education was assessed as completed years of education reported at the initial interview. Financial access was measured by income, wealth, and health insurance. For analytical purposes, income and wealth were dichotomized using the lowest population-weighted quartiles of \$16,716 and \$49,500, respectively. These quartiles were based on HRS calculations of income and wealth, which included imputed estimates of portions of income or wealth used only when partial information was provided to the HRS.¹⁴ Health insurance was categorized into six groups: health maintenance organization (HMO) enrollment, Medicare Part A only, Medicare Part A and B only, Medicaid, private or other government insurance, and no coverage or missing.

Statistical analysis

All analyses are weighted and account for the complex sampling design to reflect the national population. Adjusted odds ratios (OR) and adjusted medians are calculated to account for the potential influence of baseline factors on gender

TABLE 1. BASELINE CHARACTERISTICS OF THE HEALTH AND RETIREMENT STUDY SAMPLE (N=9164)

Baseline (2002) characteristics	Male n = 3883 %	Female n = 5281 %	p value from chi-square test
Demographics			
Age			
65–74	60.14	52.46	<0.0001
75–84	33.17	37.38	
≥85	6.67	10.15	
Race/ethnicity			0.1210
White	84.67	83.82	
African American	7.72	8.75	
Hispanic	5.34	5.56	
Other	2.25	1.85	
Social factors			
Live alone	18.46	40.38	<0.0001
Health needs			
Mobility			<0.0001
Walk several blocks	72.05	59.89	
Walk one block	15.08	20.68	
Not able to walk 1 block	12.85	19.41	
Stairs			<0.0001
Climb several flights	54.42	37.36	
Climb one flight	30.80	37.10	
Not able to climb one flight	14.77	25.52	
Upper extremity			<0.0001
Able to do all 3 tasks	70.33	45.78	
Able to do 2 tasks	16.34	21.30	
Able to do 1 task	8.23	21.22	
Unable to do tasks	5.09	11.68	
Disability			<0.0001
None	87.11	82.30	
IADL (no ADL)	5.84	6.64	
1–2 ADL	5.16	8.32	
3 ADL or more	1.87	2.72	
Chronic conditions			
Arthritis	58.17	71.06	<0.0001
Cancer	17.71	15.50	0.0035
Diabetes	19.48	15.74	0.0002
Heart disease	34.04	25.90	<0.0001
Hypertension	54.04	59.67	<0.0001
Obesity	19.32	20.40	0.2440
Pulmonary disease	10.19	10.01	0.7863
Stroke	8.66	7.93	0.2149
Vision (poor/legally blind)	5.43	6.89	0.0095
Economic Access			
Education <12 years	29.03	27.61	0.2022
Household income <25th percentile	15.77	35.76	<0.0001
Family wealth <25th percentile	17.28	26.11	<0.0001
Health insurance			<0.0001
HMO	27.87	24.48	
Medicare A only	1.38	1.29	
Medicare A + B only	9.88	10.50	
Any Medicaid	4.94	8.34	
Other government or private	55.35	54.96	
None	0.56	0.41	

ADL, activities of daily living; IADL, instrumental ADL.

differences and subsequent use of healthcare services. These adjusted analyses are obtained hierarchically, based on a widely used behavioral model of healthcare services use proposed by Andersen.¹⁵ This model evaluates the effect of (1) demographic factors influencing the propensity of individuals to use healthcare services, (2) enabling resources, measured in this study as living arrangements, (3) health needs,

the most immediate cause of health services use, and (4) economic access factors, or the financial means and human capital people have to access medical services.

Multiple logistic regression models are estimated by applying Taylor series methods with between-cluster robust estimation to adjust for the complex sampling design using SUDAAN software.^{16,17} Number of physician visits is

modeled using median quantile regression using Stata software.¹⁸ The literature indicates that the counts of physician visits are less reliably reported than whether or not a visit occurred.¹¹ Therefore, we wanted to discount the influence of extreme values. For that purpose, rather than directly model those counts, we chose to model the median, which is less subject to influence of extreme values in contrast to the mean or raw counts. The results from quantile regression on the median are interpreted parallel to simple linear regression in which mean values are modeled. As quantile regression is robust to outliers and does not require assumptions about the underlying distribution of the outcome to obtain valid inference tests, the method is advantageous for modeling use outcomes that are not normally distributed.¹⁹ The variance of the median quantile regression coefficients is estimated using balanced repeated replication methods²⁰ to account for potential correlation among outcomes due to the complex sampling design.

Analyses are restricted to people who participated in both interviews. To make inferences about people alive in 2004, we adjust for potential bias resulting from nonresponse by handling respondents as an additional sampling stage, using standard sampling methodology.²¹ Respondents were compared to nonrespondents to identify differential baseline characteristics. The sampling weight for 2004 respondents equals the 2002 HRS sampling weight multiplied by the inverted probability of having a 2004 interview given these characteristics; that probability was estimated using logistic regression. Statistical significance is determined at a nominal $\alpha = 0.05$ level of testing.

Results

The 9164 respondents in the study cohort represent a population of community-dwelling Americans aged ≥ 65 that was primarily female (58.3%), with an average age of 74 years, and included 8.3% African Americans and 5.8% Hispanics. Almost all respondents had health insurance, largely through Medicare (97.1%).

Table 1 presents 2002 baseline characteristics of this cohort by gender. Among adults $>$ age 65, women tended to be older than men and were more likely to live alone. Women reported more health needs in terms of functional limitations (mobility, stair climbing, upper extremity difficulty) and disability than men. An analysis of systematically ascertained chronic conditions demonstrated that women reported more arthritis, hypertension, and poor vision than did men, whereas men reported a higher incidence of cancer, diabetes, and heart disease. No gender difference was identified for obesity, pulmonary disease, or stroke. Women also reported fewer economic resources in terms of income and wealth than men. Although similar proportions of men and women had health insurance coverage through Medicare, Medicaid coverage was more frequent among women.

Analyses by gender showed variation in medical use, including instances of no gender difference as well as areas where gender differences exist. Figures 1A and 1B show age/race adjusted use rates of medical services by gender. Women and men reported similar numbers of physician visits over this 2-year period, and physician contact was similar across gender. However, women received preventive care less frequently in terms of flu shots (75.4%) and cholesterol screening (87.3%) than men (flu shot 77.3%,

cholesterol screening 88.8%) (Fig. 1A). Women less frequently reported hospital admissions (27.5%) compared with men (29.4%), as well as fewer outpatient surgeries (women 23.5% vs. men 25.5%), although women were more likely than men to receive home healthcare (women 7.7% vs. men 6.2%). (Fig. 1B).

Figure 2 shows the age-adjusted percentages of men and women with health needs related to functional limitations and disability. Functional limitations and disability are largely consequences of disease and are indicators of the severity of health needs. Across all functional (mobility, stair climbing, and upper extremity) and disability measures, women were strikingly more likely than men to report limitations (Fig. 2). For mobility, among women, 14.0% and 17.7% were unable to walk one block or walk several blocks, respectively, compared with 9.6%, and 13.1% of men, controlling for age. Separate age-specific analyses (not shown) showed mobility limitations of older women were comparable to those of men 10 years older. For example, the frequency of mobility limitations among women 65–74 was similar to those of men aged 75–84 (unable to walk one block: women 65–74, 14.0% vs. men 75–84, 15.9%; unable to walk several blocks: 17.3% vs. 16.8%). For stair climbing, women reported difficulty more frequently than did men (55.7% versus 41.3%) and tended to experience difficulty at earlier ages. Women aged 65–74 were as limited in terms of stair climbing (57.3%) as men aged 75–84 (53.8%).

FIG. 1. (A) Age/race-adjusted self-reported 2-year medical use by gender: Physician services and preventive care. (B) Age/race-adjusted self-reported 2-year medical use by gender: Hospital services and home health care.

FIG. 2. Age-adjusted functional health, disability, and chronic conditions by gender.

For upper extremity tasks, 45.7% of women had some task difficulty compared with 25.8% of men. Women aged 65–74 were more frequently limited in upper extremity tasks (46.0%) than men aged ≥ 85 (42.8%). Gender differences in disability were evident in ADL/IADL disabilities. Women more frequently reported IADL/ADL limitations than men (10.8% vs. 8.4%).

These apparent differences in health needs of women compared with men lead to the question: To what extent do health needs contribute to gender differences in the use of medical services? Specifically, do gender differences in health needs explain differences in the use of healthcare or mask even greater differences? Table 2 illustrates how gender differences in the use of medical care change by sequentially adjusting for demographics, living arrangements, health needs, and economic access factors. Gender differences based on logistic regression are reported as ORs. Table 2 also illustrates quantile regression results from the number of physician visits, reported as median usage.

Hospital services had lower use by women than men that approached significance (OR = 0.91, 95% CI 0.82–1.00) controlling for demographic differences; use remained similar when controlling for living arrangements. Lower use among women became more pronounced and statistically significant when accounting for health needs (OR = 0.81) and economic access factors (OR = 0.79). The use of any outpatient services by women compared with men did not differ after accounting for demographic, living arrangement, health needs, and economic access factors.

In contrast, the significantly greater use of any home healthcare by women compared with men after accounting for

demographic differences (OR = 1.25, 95% CI 1.08–1.45) was slightly attenuated by living arrangements (OR = 1.23) and attenuated further by health needs (OR = 0.99) and economic access factors (OR = 0.97). Thus, although greater proportions of women than men reported home health visits, among individuals with similar living arrangements, health, needs, and economic profiles, there was similar use of home care services.

Preventive healthcare was underused by women compared with men. Women received flu shots (OR = 0.89, 95% CI 0.83–0.96) and cholesterol screening (OR = 0.86, 95% CI 0.75–0.99) significantly less frequently when demographic differences were considered. Flu shot differences persisted when controlling for both living arrangements and health needs and trended toward significance after further adjustment for economic access factors. The less frequent report of cholesterol screening by women was attenuated by adjusting for living arrangements, health needs, and economic access factors.

We separately modeled the use of any physician services, reflecting entry into the medical system, and the median number of physician visits, which was influenced by the healthcare provider.²² Table 2 shows no significant gender differences related to seeing a physician, even controlling for demographic (OR = 1.16), living arrangements (OR = 1.22), health needs (OR = 1.12), or economic differences (OR = 1.09), supporting similar pursuit of physician services by men and women. Despite similar proportions of women and men who contacted a physician, women reported significantly more physician visits than men (6.46 vs. 6.25 median visits, difference = 0.21, 95% CI 0.10–0.32) when demographic differences are considered. However, when analyses were further adjusted for health needs, women had significantly fewer

TABLE 2. PARTICIPANTS' SELF-REPORTED 2-YEAR HEALTHCARE USE BETWEEN 2002 AND 2004

<i>Gender odds ratio: Women vs. men</i>	<i>Adjusted odds ratio (95% confidence interval)</i>			
	<i>Model 1^a demographics</i>	<i>Model 2^b + living arrangement</i>	<i>Model 3^c + health needs</i>	<i>Model 4^d + economic access factors</i>
Hospital admission (<i>n</i> = 9138)	0.91 (0.82-1.00)	0.91 (0.82-1.00)	0.81 (0.73-0.90)	0.79 (0.71-0.88)
Outpatient surgery (<i>n</i> = 9141)	0.89 (0.78-1.02)	0.89 (0.77-1.02)	0.87 (0.75-1.01)	0.88 (0.76-1.02)
Home healthcare (<i>n</i> = 9146)	1.25 (1.08-1.45)	1.23 (1.05-1.44)	0.99 (0.83-1.17)	0.97 (0.81-1.16)
Physician contact (<i>n</i> = 9160)	1.16 (0.93-1.46)	1.22 (0.97-1.54)	1.12 (0.87-1.44)	1.09 (0.86-1.39)
Preventive care				
Flu shot (<i>n</i> = 9134)	0.89 (0.83-0.96)	0.92 (0.86-0.99)	0.92 (0.85-0.98)	0.92 (0.86-1.00)
Cholesterol screening (<i>n</i> = 8989)	0.86 (0.75-0.99)	0.89 (0.78-1.01)	0.93 (0.79-1.08)	0.96 (0.81-1.12)
Median number of 2-year physician contact by gender (<i>n</i> = 9160) ^e				
Men	6.25		3.30	3.36
Women	6.46		3.07	3.08
Men vs. women difference	0.21 (0.10-0.32)		-0.23 (-0.29--0.17)	-0.27 (-0.34--0.21)

Statistically significant differences are in bold.

^aModel 1. Use adjusted for demographic factors (age, race/ethnicity).

^bModel 2. Use adjusted for demographic factors + social factors (living arrangement).

^cModel 3. Use adjusted for demographic factors + social factors + health needs (mobility limitation, stair climbing limitation, upper extremity limitations, ADL/IADL disability, arthritis, cancer, diabetes, heart disease, hypertension, obesity, pulmonary disease, stroke, poor vision/legally blind).

^dModel 4. Use adjusted for demographic factors + social factors + health needs + economic access factors (education, income, wealth, health insurance).

^eNote that the referents are males or females aged 65–74 who are not living alone (all models), without comorbidities or functional problems (models 2 and 3), and who have HMO coverage and higher economic status (model 3).

physician visits (median = 3.07) compared with men (median = 3.30, difference = -0.23, 95% CI -0.29--0.17). This finding indicates that among those with similar health needs, women tend to have fewer visits than their male counterparts. Potential underuse of physician services by women measured by the number of visits persisted after further adjustment for economic access factors (Table 2).

Discussion

This study analyzed national data on 9164 representative Americans aged ≥65 to investigate gender differences in the use of healthcare and the extent to which any observed gender differences were mediated by differential health needs and economic access. Significant and resilient gender differences were found for median number of physician visits, hospital services, and home healthcare. In regard to physician visits, the age-adjusted median number of physician visits was significantly greater for women than for men; however, after controlling for the greater health needs among women, there was evidence of lower use of physician services by women relative to men. Preventive care, in terms of flu vaccination and cholesterol screening, and hospital admissions were less frequent among women compared with men. Controlling for health needs did little to explain gender differences in influenza vaccination and increased gender differences in the use of hospital services. In contrast, the greater use of home healthcare among women was almost entirely explained by their greater health needs.

The use of physician services by men and women show some interesting patterns. Older women are as likely as men to contact a physician. Over 95.2% of men and 96.0% women reported seeing a physician in the previous 2 years, indicating that men and women enter the medical system at a similar

frequency. Once they are in the system, however, there is evidence that women received fewer physician services than men with similar health needs. Although the unadjusted median numbers of physician visits in a 2-year period was greater for women than for men, among individuals with similar levels of chronic conditions, functional limitations, and disability, women had significantly fewer physician visits than their male counterparts. Adjusting for health needs is paramount, as studies have shown that men appear to have fewer physician visits than do women²³ and seek preventive care less often.²⁴ Based on our results, however, with and without adjustment for health needs, unadjusted data appear to tell only part of the story. This study suggests there may be some underuse of preventive care by older women compared with men. Women reported significantly fewer flu vaccinations, and cholesterol screening occurred less often (approaching significance) than in men. These differences were slightly explained by differences in health needs, social factors, and economic access factors, although a trend approaching significance continued to exist for gender disparities in influenza vaccination. Medicare covers annual influenza vaccination for all enrollees²⁵; thus, our results indicating that women entered the medical system at a similar frequency to men but appeared to report lower influenza vaccination rates suggests the possibility of missed vaccination opportunities for women who are already in the medical system. Missed opportunities are a known contributor to low vaccination rates.^{26–28}

Our findings that women have fewer hospital admissions than men are consistent with other studies based on national probability samples. These studies show that women are less likely to use hospital services^{23,29–32} and, among those hospitalized, tend to have shorter hospital stays. The current study finds that women use hospital services 21% less often

than men, after controlling for differences in demographics, social factors, health needs, and economic access factors. Explanations for these gender differences in hospitalizations are diverse. Physicians may be concerned with greater risks of mortality or morbidity for women during treatment and choose less aggressive care options.^{33,34} Communication styles can influence care recommendations. Male patients tend to convey more facts than women in a similar time frame, which may lead to difficulty in assessing disease symptoms in women early in a physician-patient relationship.³⁵ Patient preferences may influence these differences. Men are more likely to describe themselves as risk takers than women, giving them a greater affinity toward invasive medical procedures.^{34,36} Men appear to be more likely than women to inaccurately report hospitalization.¹³ Women tend to have more caregiving responsibilities than men⁷ and may choose to forgo hospitalization rather than transfer responsibilities.

Several limitations common to secondary databases may affect these findings. We recognize that medical service outcomes are not independent; that is, physicians are gatekeepers for use of other medical services. As the HRS does not provide measures for disease severity, we can only use functional limitation as a surrogate. However, functional limitation is a global measure rather than specific measure of disease severity. These analyses are adjusted for potential nonresponse bias but are limited to those alive at the 2-year follow-up. Thus, findings here cannot be extended to make inferences about use of decedents; those who died may be expected to have higher use rates, on average but a shorter exposure period. Also, whether men or women receive appropriate treatment could not be determined from this study. These findings are also subject to limitations related to self-reported use data. Wolinsky et al.¹³ recently demonstrated that self-report and claims data were in concordance for reporting of hospital episodes but were less concordant when reporting physician visits. They also found that women were more likely to overreport their number of physician visits. If women are indeed overreporting their number of physician visits, our findings of fewer physician visits among women compared with men with similar demographic and health profiles is conservative; the gender disparity may be even greater than what is reported here. Future research may consider ascertaining if gender disparities are similar across both primary and specialty physician care; the data analyzed in this study did not distinguish between such types of care.

Conclusions

Despite these limitations, this study provides valuable insight into healthcare patterns of older women. Despite the fact that women contact the healthcare system at a similar frequency to men, initial disparities in the use of physician services related to preventive care emerged, specifically as related to receipt of influenza vaccination, although the difference remained only borderline significant when health and economic factors were added to the model. These findings resonate with the literature that identifies missed opportunities for preventive medical care. Current initiatives toward using outcomes to evaluate physician performance may be an important step to improve such outcomes and to reduce gender differences in preventive services. Future research may wish to consider elaborating on these findings by as-

sessing such preventive care as other recommended vaccinations (e.g., pneumococcal, shingles) as well as cancer screenings (in particular, colorectal cancer, as it affects both men and women).

These national data show strong gender disparities in the use of hospital and physician care. Simple evaluations of gender differences in the use of these services that do not account for underlying health needs will understate these disparities. Our analyses, accounting for differences in health needs, show that women were substantially less likely to have hospital stays and to have fewer physician visits than men with similar health profiles. Not only did older women have more frequent reports of functional limitations and disability, but older women were also twice as likely to live alone as men. Women with healthcare problems may thus be more isolated, limiting their ability to obtain medical care. This concern is underscored by the finding that economic access is not driving these differences. If corroborated through the use of alternative data sources (e.g., claims data, electronic medical record), these findings support the need for community support of older citizens, particularly those who are isolated by failing health and through the loss of family and friends. The reasons contributing to the identified trends merit further exploration, a call further supported by the American Medical Women's Association (AMWA) that research should "not only include both genders but also analyze and report data according to sex and gender."³⁷(p. 1557)

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Disclosure Statement

The authors have no conflicts of interest to report.

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