

QUALITY OF HEALTH CARE FOR OLDER WOMEN: WHAT DO WE KNOW?

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As the proportion of the population age 65 and over continues to grow—to a projected 20.5% or 77.2 million by the year 2040—tracking the quality, access, and receipt of care for older women becomes more important, since the majority of older citizens are women. This article establishes a rough baseline for the quality of care, primarily preventive care, received by older women compared to older men, using selected measures and data of the 2004 *National Healthcare Quality Report* and *National Healthcare Disparities Report*. It highlights significant differences between women and men, as well as differences for racial, ethnic, and educational subgroups. Generally, older non-Hispanic white women frequently score higher than their Hispanic and non-Hispanic black counterparts, and more educated women often score significantly higher than their less-educated peers on several measures of quality of care. Compared to their male counterparts, older women are significantly less likely to have any colorectal screening test, to keep high blood pressure under control, and to receive aspirin or beta-blockers upon hospital admission or discharge for acute myocardial infarction. Results are mixed for the process measures related to diabetes, but improvements are clearly needed toward increased rates of eye and foot examinations. Rates of influenza and pneumococcal vaccinations are low but can be improved through Medicare-covered services. We also found that older women are screened less often for breast cancer than those ages 40 to 64. There is still a pervasive lack of knowledge in the research and clinical communities about the unique health care needs of and appropriate processes of care for older adults. More research needs to focus on the quality of care for this growing population in order to allow the development of geriatric-based quality measures and models of care that will set the standards of healthcare for older adults in general, and older women in particular.

Introduction

Women comprise almost 60% of those on Medicare and depend on the program for an average of 15 years compared to 7 years for men (*Older Women's League, 1999, Weitz & Estes, 2001*). Women also make up the vast majority of those more than 85 years old, the fastest growing group of older adults (*U.S. Department of Health and Human Services [HHS], 2001*). As the proportion of the population age

65 and over continues to grow, from 12.4% or 35 million in 2000 to a projected 20.5% or 77.2 million by the year 2040 (*Federal Interagency Forum on Aging-Related Statistics, 2000*), the importance of tracking the quality, access, and receipt of care for older women increases, as the majority of older citizens are women. Despite these growing numbers, the health care community has not yet begun to focus on older women's health in a way comparable to its focus on younger women including those of childbearing age as evidenced by the existence of numerous programs and research directed to maternal and child health (*U.S. Department of Health and Human Services, 2001*).

Health care and older adults

There is still a pervasive lack of knowledge within the research and clinical communities about the unique

¹The views expressed in this article are those of the authors and do not necessarily represent the views of the Agency for Healthcare Research and Quality or the Federal government.

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health care needs of and appropriate processes of care for older adults (Rady & Johnson, 2004; Collins et al., 2003; Solin et al., 1999). First, there is no agreed-upon definition of “elderly” or “older” (Lavina & Lickley, 1997). Some studies define older as those over 50, others over 65, and so on. Geriatric medicine is still not required by all medical schools, so physicians may lack the appropriate training to look for and treat the distinctive problems of older adults. The research base is also sorely limited. It has been noted that age-related physiological changes can alter the body's response to a wide range of therapies, including medications and surgery, yet little is known about how standard treatments for common conditions in older adults should be modified to accommodate such differences (Fletcher & Hirdes, 2001; Saudan et al., 2001; St. Peter, Clark, & Levos, 1998; Stack & Messana, 2000). Although heart disease and cancer are the two biggest killers of both men and women age 65 and over (American Cancer Society, 2001; Tsang, Barnes, Gersh, & Hayes, 2000), older adults are routinely underrepresented in clinical trials for these conditions (Barry, 1993; Hutchins et al., 1999; Kemeny et al., 2003; Lewis et al., 2003; Murthy, Krumholz, & Gross, 2004; Silber, 2003; Yee et al., 2003), preventing formation of the knowledge base critical for their proper treatment. A recent workshop jointly sponsored by the National Institute on Aging and the National Cancer Institute developed a preliminary research agenda to address gaps in knowledge about cancer in older adults, including patterns of care, treatment efficacy and tolerance, effects of comorbidities on cancer, prevention, risk assessment and screening, psychological, social and medical issues related to palliative and end-of-life care. Among other things, the workshop report notes that “It is surprising that so little descriptive information is available about cancer treatment in older persons” (National Institute on Aging, National Cancer Institute, 2001).

Unique issues of older women

Arguably, such a weak foundation of clinical knowledge affects older women more than their male counterparts, and not just because of their larger numbers. Women use health services more than men and consume more than twice as many drugs (Rodeheaver & Datan, 1988), due in part to the fact that they have more comorbidities, such as diabetes and hypertension, and are more likely to suffer from the chronic pain such conditions often entail (Correa-de-Araujo, 2004; Rice & Michel, 1998; Roberto & Reynolds, 2002). In contrast, men are more likely to have acute illnesses (Weitz & Estes 2001), and because the health care system is still organized around the treatment of acute and not chronic disease, it is less prepared to deal with the health issues of older women than of older men (Rice, 2000). Furthermore, research has shown that physicians are more likely to interpret older wom-

en's health problems as emotionally based (Commission on Women's Health, 1993) and to assume that “normal aging” is a prime cause of any symptoms reported, thus decreasing the likelihood that doctors will follow through on the patient's complaint (Henderson, 1997). Physicians often underestimate the lifespan of aged women, who, at 75 years of age, are expected to live another 12 years (Lavina & Lickley, 1997; Roberto & Reynolds, 2002) and may fail to offer a number of treatment options or refer patients to a clinical trial as a result (Kemeny et al., 2003; Silliman, Demissie, & Troyan, 1999). Finally, it is important to note that certain sociodemographic characteristics unique to older women also affect their health care. They are more likely than older men to live alone (Henderson, 1997) and lack the social support and additional informal home care often critical to chronic disease management (Estes & Michel, 1999). Older women have the highest poverty rate (Doress-Worters & Siegal 1994), and therefore fewer economic resources to draw upon to address such deficiencies. These factors point to the necessity of looking at older women as a separate group.

The purpose of this article is to establish a rough baseline for the quality of care, primarily preventive care, received by older women compared to that received by older men, as reflected in selected measures and data of the 2004 *National Healthcare Quality Report* (NHQR; Agency for Healthcare Research and Quality, 2004c) and *National Healthcare Disparities Report* (NHDR; Agency for Healthcare Research and Quality, 2004b). The overarching research question our work attempts to address relates to whether inequalities in quality of health care exist between older women and older men. The article's unique contribution resides in the fact that it goes beyond the scope of the two national reports by performing additional data analysis of the same data by gender and age, and within that, by race and ethnicity. These afford greater insight into the quality of care provided to older women and how it differs from that provided to older men and how differences by race, ethnicity, and education further shape older women's quality of health care. There is ample evidence compiled by the NHDR that differences in quality of care exist by sociodemographic groups. In addition, neither the NHQR nor the NHDR analyzed data by looking at groups defined by gender and age together; thus, no analyses were previously done to compare older women with older men.

Methods

The measures used in this paper are a subset of those selected for use in the 2004 NHQR and NHDR. This subset is summarized in Table 1.

Table 1. 2004 NHQR/NHDR data sources utilized to evaluate the quality of care for women and men age ≥ 65

Condition	Measure	Data Sources and Description
Cancer	<ul style="list-style-type: none"> Percent of women (age 40 and over) who report they had a mammogram within the past 2 years. Percent of men and women (age 50 and over) who report they ever had flexible sigmoidoscopy or colonoscopy. Percent of men and women (age 50 and over) who report they ever had flexible sigmoidoscopy or colonoscopy. Percent of men and women (age 50 and over) who report they had a fecal occult blood test within the past 2 years. Percent of men and women (age 50 and over) who report they had a fecal occult blood test within the past 2 years. The rate of colorectal cancer diagnosed at advanced stage (tumors diagnosed at regional or distant stage). The rate of women age 40 and over diagnosed at advanced stage (regional, distant stage or local stage with tumor greater than 2 cm). 	<p>Source: Center for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS) National Health Interview Survey (NHIS), 2000. See the following website for additional information: ftp://ftp/cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2001/srvydesc.pdf.</p> <p>Source: National Cancer Institute (NCI), Surveillance, Epidemiology, and End Result (SEER) program, age adjusted to the 2000 U.S. Standard million by 5 year age groups. See the following website for additional information: http://www.seer.cancer.gov/about/.</p>
	<ul style="list-style-type: none"> Percent of persons age 18 and older who have had their blood pressure measured within the preceding 2 years and can state whether it is normal or high. Percent of persons age 18 and older who have had a cholesterol screening within the past 5 years. Percent of persons age 18 and older who have had a cholesterol screening within the past 5 years. Percent of smokers receiving advice to quit smoking. 	<p>Source: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), National Health Interview Survey (NHIS), 2000. See the following website for additional information: ftp://ftp/cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2001/srvydesc.pdf.</p> <p>Source: Agency for Healthcare Research and Quality (AHRQ), Medical Expenditure Panel Survey (MEPS), 2000. See the following website for additional information: http://meps.ahrq.gov/PufFiles/h60/H60doc.htm.</p>
Cardiovascular	<ul style="list-style-type: none"> Percent of persons age 18 and older with hypertension whose blood pressure is under control 	<p>Source: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), National Health and Nutrition Examination Survey (NHANES), 1999–2000. See the following website for additional information: http://www.cdc.gov/nchs/about/major/nhanes/hlthprofess.htm.</p>
	<ul style="list-style-type: none"> Percent of patients administered aspirin within 24 hours of admission Percent of patients with aspirin prescribed at discharge Percent of patients administered beta-blocker within 24 hours of admission. Percent of patients with beta-blocker prescribed at discharge. Percent of patients with left ventricular systolic dysfunction prescribed ACEI at discharge. Median time to thrombolysis in patients with AMI. Median time to PTCA in patients with AMI. 	<p>Source: Centers for Medicaid and Medicare Services (CMS), Quality Improvement Organization, National Heart Failure and National Acute Myocardial Infarction Projects, 201–2002. For information on this data set, please see paper on Cardiovascular Disease in this supplement, Correa, R. et al.</p>
Respiratory	<ul style="list-style-type: none"> Percent of high risk persons age 18–64 who received an influenza vaccination in the past 12 months. Percent of persons age 65 and over who received an influenza vaccination in the past 12 months. Percent of high risk persons age 18–64 who ever received a pneumococcal vaccination. Percent of persons age 65 and over who ever received a pneumococcal vaccination. 	<p>Source: Center for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS) National Health Interview Survey (NHIS). See the following website for additional information: ftp://ftp/cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2001/srvydesc.pdf</p>
Diabetes	<p>Percent of adults age 18+ with diabetes who reported having:</p> <ul style="list-style-type: none"> A hemoglobin A1c measurement at least once in past year. A lipid profile in past 2 years. A retinal eye exam in past year. A foot examination in past year. An influenza immunization in past year. 	<p>Source: Agency for Healthcare Research and Quality (AHRQ), Medical Expenditure Panel Survey (MEPS), 2000. See the following website for additional information: http://meps.ahrq.gov/PufFiles/h60/H60doc.htm</p>

About the NHQR/NHDR

The definition of quality used for both reports (and our study) is “Quality health care means doing the right thing at the right time in the right way for the right person and having the best results possible. Quality health care means striking the right balance in the provision of health services, by avoiding overuse (e.g., getting unnecessary tests), underuse (e.g., not being screened for high blood pressure), or misuse (e.g., being prescribed drugs that have dangerous interactions)” (Kelley et al., 2005).

The quality measures presented in the reports come from a variety of national databases as indicated in Table 1. These sources include patient surveys, medical record reviews, administrative and claims data, and vital statistics. As described in Kelley et al. (2005), a Department of Health and Human Services Interagency Multidisciplinary Workgroup, which included representatives from the Agency for Healthcare Research and Quality, the National Center for Health Statistics, the Centers for Medicare and Medicaid Services (CMS), the National Institutes of Health, and the Office of the Assistant Secretary for Planning and Evaluation, issued a call for measures to all federal agencies, and the IOM issued a companion call to the private sector. Over 600 measures were received and then culled by the group to populate that framework with priority conditions (e.g., cancer, diabetes, heart disease, etc.) and quality measures for those conditions, the latter assessed according to the criteria of importance, scientific soundness, feasibility, and consistency with existing consensus-based measure sets. Through an extensive 3-year review process with federal agencies and public comment through a Federal Register solicitation, agreement was reached by the federal interagency multidisciplinary workgroup on the final set of quality measures.

According to the first edition of the NHDR, “The NHDR was required by congressional mandate to report on specific priority populations (e.g., women, children, elderly, racial and ethnic minority groups, low income group, rural populations, individuals with specific health care needs, people with disability, those in need of long-term care or end-of-life care). The NHDR measures have been developed around health care interventions for which there is sound scientific evidence of effectiveness and for which there is a professional consensus and expectation that these services would be provided to all patients. After accounting for variation in medical conditions and severity of illness, there should be little deviation from specific quality measures by population.” (Agency for Healthcare Research and Quality, 2004b)

Study population

We used age 65 and over as the age cutoff so that the focus is on those likely to be enrolled in Medicare,

providing some rough consistency in insurance status and health care access. The majority of the national data sources used in the NHQR and NHDR are not age-adjusted. Because we relied on data supplied by both reports for this study, our secondary data analyses are generally constrained by the same limitations.² With the exception of the National Cancer Institute's SEER data (see Table 1), none of the data used in this study are age-adjusted. Although this may be somewhat problematic, given our focus on older women compared to older men (and in the case of breast cancer, younger women), to the extent our findings are consistent with the literature, we feel that there is still much value in reporting these findings.

For all measures where we report comparison information with younger women and men, the sample was divided into those age 65 and over and those below age 65. The only measure for which such a split was not performed is that of mammography. This measure calls for the percentage of women age 40 and over who had a mammogram in the past 2 years, grouped by the National Health Interview Survey (NHIS) into those 40 to 64 years of age and those age 65 and over.

Statistical analysis

Both process measures (i.e., those that determine whether a particular service or procedure was provided or performed) and outcome measures (i.e., those assessing the results of that service or procedure) were analyzed. Our primary concentration is on measures related to preventive care (e.g., cancer screening, cholesterol and blood pressure levels, influenza and pneumococcal immunizations), as that is where the potential lies for the most impact to be made cost-effectively through quality improvement efforts. Additional process and outcomes measures related to cancer, diabetes, and cardiovascular disease care are also analyzed.

Results for all measures—where there are significant differences and where there are not—are presented in order to paint a fuller picture of the quality of care currently received by older women and men. Statistical significance is set at the .05 level for a two-tailed test and is assessed for all stratifications through Z scores (Agresti & Alan, 1990) to detect differences between gender, racial and ethnic, and educational groups. Z scores are significant if equal to or greater than ± 1.96 .

²In general, the NHQR/DR adhered to standards used by Healthy People 2010, age-adjusting databases that are typically adjusted in that report and not adjusting those that are not. HP2010 does not typically age-adjust measures unique to older adults; therefore, reliance upon and consistency with the NHQR/DR constrains our analyses for this article.

Table 2. Percentage of cancer preventive services for women and men age ≥ 65 (2004 NHQR/NHDR)

	Women 40–64 Years (%)	Women ≥ 65 Years (%)	Men ≥ 65 Years (%)	Z Value*
Colorectal cancer				
Any colorectal screening (FOBT, sigmoidoscopy, and colonoscopy)**				
Overall		43.18	50.22	-4.32
Non-Hispanic whites		45.46	51.60	-3.38
Non-Hispanic blacks		31.53	46.55	-3.13
Hispanics		30.11	37.80	-1.55
Less than high school		33.54	39.76	-2.43
High school graduate		43.84	49.29	-1.91
Some college		52.68	58.75	-2.29
FOBT within past 2 years**				
Overall		34.87	36.36	-0.91
Non-Hispanic whites		35.90	37.52	-0.88
Non-Hispanic blacks		34.91	30.62	0.91
Hispanics		20.48	24.62	-0.93
Less than high school		28.98	28.23	0.70
High school graduate		34.05	36.48	-0.89
Some college		41.63	41.82	-0.07
Breast cancer				
Mammography within past 2 years				
Overall	71.33	67.97		2.86
Non-Hispanic whites	73.97	68.25		4.28
Non-Hispanic blacks	68.66	65.87		0.81
Hispanics	59.36	68.23		-2.57
Less than high school	57.95	57.50		0.19
High school graduate	68.43	71.97		-1.88
Some college	76.62	74.12		1.36

FOBT, fecal blood occult test.

*Z is significant at ± 1.96 or greater.

**These two measures have cutoffs of 50 and older in the NHQR/DR and SEER database.

Results

The results presented in this article focus on comparisons between women and men and across subpopulations of women. Data on subpopulations of men, however, are displayed in the tables providing interested readers with additional relevant information.

Cancer measures

Data collected by NHQR/NHDR on screening measures for colorectal and breast cancers are presented in [Table 2](#).

Colorectal cancer

For colorectal cancer, two measures of screening were used: 1) the percentage of persons age 65 and over who ever received any colorectal cancer screening test (including sigmoidoscopy, colonoscopy and fecal occult blood tests [FOBT]); 2) the percentage of persons age 65 and over who had an FOBT within the past 2 years. With respect to colorectal cancer screening, older women do not fare as well as older men. Men are significantly more likely to have had any colorectal cancer-screening test than are women (50.22% versus 43.18%, $Z = -4.32$). This difference holds even when data are disaggregated by race, ethnicity, and education. Older men score higher than older women in

each racial/ethnic category and in each educational group. Generally, race, ethnic, and educational differences continue to be significant within each sex. Both non-Hispanic white older men and women fare significantly better than their Hispanic counterparts, and the most educated within each group score significantly higher than their less-educated peers.

The fairly consistent male advantage does not hold for all colorectal screening—older men are not significantly more likely to report getting an FOBT than are their female counterparts (36.36% versus 34.87%, Z score = -0.91). Again, Hispanics seem to fare the worst among the racial and ethnic groups, with non-Hispanic women scoring significantly higher than their Hispanic (but not their non-Hispanic black) counterparts. Better-educated women also score higher than their less educated peers.

Despite older women's lower rates of receipt of effective colorectal cancer screening procedures than older men, older women are diagnosed at advanced stages of colorectal cancer at lower rates than are their male counterparts (13.47% versus 17.0%, $Z = 9.25$). There are significant differences among older women, with black women being significantly more likely to be diagnosed at later stages than white women (16.14% versus 13.25%, $Z = 3.08$), and Hispanic

Table 3. Percentage of preventive services for cardiovascular disease for women and men age ≥ 65

	Women ≥ 65 Years (%)	Men ≥ 65 Years (%)	Z Value*
Blood pressure high or normal			
Overall	91.26	91.97	-0.85
Non-Hispanic whites	91.13	92.02	-0.96
Non-Hispanic blacks	90.56	93.96	-1.58
Hispanics	92.18	87.19	1.61
Less than high school	90.01	90.29	-0.19
High school graduate	91.13	91.03	0.07
Some college	92.81	94.25	-1.12
Cholesterol measured			
Overall	87.89	86.44	1.39
Non-Hispanic whites	88.53	87.53	0.26
Non-Hispanic blacks	86.45	80.04	0.76
Hispanics	70.17	78.66	0.11
Less than high school	84.27	78.73	2.71
High school graduate	88.69	86.51	1.21
Some college	91.30	92.57	-0.93
Received advice to quit smoking			
Overall	66.53	63.74	0.41
Non-Hispanic whites	64.53	64.51	0.00
Non-Hispanic blacks	63.10	61.15	0.09
Hispanics	95.45	67.19	1.50
Less than high school	66.57	60.16	0.47
High school graduate	70.52	74.51	0.34
Some college	62.66	58.06	0.42
Blood pressure under control			
Overall	20.40	31.98	-2.51
Non-Hispanic whites	19.59	30.30	-2.42
Non-Hispanic blacks	27.76	34.98	-1.09
Hispanics**			
Less than high school	18.14	26.98	-1.51
High school graduate	20.29	24.76	-0.57
Some college	23.54	36.07	-1.79

*Z is significant at ± 1.96 or greater.

**The data for this table were divided into different ethnic categories than the data for the preceding tables; specifically, Hispanics were further divided into Mexican-Americans and other Hispanics. It was not possible for us to get these two categories collapsed into one from the original dataset.

women being much less likely than non-Hispanic whites (9.0% versus 13.62%, $Z = 6.30$).

Breast cancer

The percentage of women age 40 and over who had a mammogram in the past 2 years was used for the breast cancer screening measure. Overall, women age 65 and over are screened significantly less than those ages 40 to 64 (67.97% versus 71.33%, $Z = 2.86$). However, this is not equally true across all racial, ethnic, and educational groups. Hispanic women age 40 to 64 are screened at lower rates than Hispanic women age 65 and over (59.36% versus 68.23%, $Z = -2.57$) and the difference between younger non-Hispanic black women and older non-Hispanic black women is not significant. Educational level seems sometimes to be more important than age. The advantage of younger women over older women disappeared when controlling for education, with younger women at all educational levels scoring about the same as their older peers. Importantly, for both younger and older women who had not graduated

from high school, their scores were strikingly similar and much lower than women with some college education (57.95% and 57.50% versus 76.62% and 74.12%, Z scores respectively, 9.24 and 7.62).

Older women have a much greater likelihood of being diagnosed with breast cancer at a more advanced stage (e.g., regional, distant stage, or local stage with tumor greater than 2 cm) than do women ages 40 to 64 (20.88% versus 12.51%, $Z = 2.59$). In contrast with many of the prevention measures, where Hispanic and non-Hispanic black women fare worse than do white women, here older non-Hispanic white women are significantly more likely to be diagnosed at late stages of breast cancer than are Hispanic women (23.2% versus 14.7%, $Z = 9.29$).

Cardiovascular disease measures

Data on four prevention measures of significance for heart disease are presented in Table 3. These measures include the percentage of: 1) persons age 18 and older who have had their blood pressure measured within the preceding 2 years and can state whether it is

normal or high; 2) persons age 18 and older who have had a cholesterol screening within the past 5 years; 3) smokers who have received advice to quit smoking; and 4) persons age 18 and older with hypertension whose blood pressure is under control.

For the first three prevention measures, no significant differences were observed between women and men age 65 and over. However, for the fourth, the percentage of those age 65 and over with hypertension whose blood pressure is under control, older women have significantly lower rates than do older men (20.40% versus 31.98%, Z score = -2.51) regardless of racial, ethnic, or educational subgroup. The picture is more complex, however, when comparing certain racial, ethnic, and educational subgroups of older women and men on some of these measures. For example, older Hispanic women are significantly less likely to have had their cholesterol checked than their white non-Hispanic counterparts (70.17% versus 88.53%, Z = 3.12). And higher levels of education make a difference in cholesterol checks for older women. Older women with some college score higher than women with less than a high school education (91.30% versus 84.27%, Z score = 4.63). The same pattern holds for blood pressure measurement as for cholesterol screening, where more highly educated older women score higher than those who did not graduate from high school (92.81% versus 90.01%, Z = 2.18).

Interestingly, elderly Hispanic women are much more likely to receive advice to quit smoking than non-Hispanic whites (95.45% versus 64.53%, Z = -4.59).

A more detailed discussion on eight additional quality-of-care measures for the Medicare population with acute myocardial infarction and heart failure is found in the study by Correa-de-Araujo et al., in this issue (Correa-de-Araujo et al., 2005). These additional measures were derived from the CMS' National Heart Failure and Acute Myocardial Infarction Projects. We summarize here only relevant findings from some of these additional cardiovascular measures as they are reported in the 2004 NHQR/DR. In the Medicare population composed primarily of older adults, female heart attack patients were less likely than their male counterparts to receive aspirin within 24 hours of admission or at hospital discharge (82.9% versus 87.5%, Z score = 7.74; 85.64% versus 89.04%, Z score = 5.83, respectively) or to receive beta-blockers either upon admission or at discharge (74.72% versus 77.03%, Z = 2.53; 80.09% versus 82.45%, Z = 4.59, respectively). For three additional process measures—median time to thrombolysis (42 minutes for men; 48 minutes for women), median time to percutaneous transluminal angioplasty (157.5 minutes for men, 214.5 minutes for women), and use of ACE inhibitors for left ventricular failure (67.7% for men, 65.1% for

women)—no gender differences were observed among the Medicare population.

Influenza and pneumonia immunization measures

Data were collected on two measures for older adults age 65 and over. These include the percentage of persons who received an influenza immunization in the past year and who ever received a pneumococcal vaccination. We found no significant difference between older women and men with respect to the receipt of influenza shots (63.19% versus 65.69%, Z = -1.87). Similarly, no difference was found between women and men in relation to receipt of pneumococcal vaccination (53.6% versus 51.96%, Z = 1.03). However, there are significant within group differences by race and ethnicity, with both older Hispanic women and older non-Hispanic black women having lower rates of influenza and pneumococcal vaccinations than do older non-Hispanic white women (57.43%, Z = 2.16 and 29.43%, Z = 9.51 for Hispanics; 49.09%, Z = 6.02 and 32.57%, Z = 10.37 for non-Hispanic blacks versus 65.20% and 57.63% for non-Hispanic whites). We again find that those with less education (i.e., older women with less than a high school education) have lower rates for both influenza and pneumococcal vaccinations compared to older women with some college education (influenza: 59.77% versus 67.42% Z = 4.31; pneumococcal: 45.86% versus 59.77% Z = 6.21).

Diabetes measures

Quality measures for diabetes included the percentage of adults age 18+ with diabetes who reported having: 1) a hemoglobin A1c measurement at least once in the past year; 2) a lipid profile in the past 2 years; 3) a retinal eye exam in the past year; 4) a foot examination in the past year; and 5) an influenza immunization in the past year. Virtually no significant differences were found between older women and men with diabetes with respect to the receipt of any of the five essential processes of care for which the NHQR/NHDR collected data. Indeed, although there are several areas where there is room for improvement (e.g., only 67% of older women and 71.81% of older men report having received a foot exam in the last year), overall there are almost no significant differences in receipt of these services, even between those age 65 and over and those under age 65. There are two exceptions: that of receiving influenza immunizations in the past year and foot exams. For influenza, older women and men report having received immunizations at higher rates than their younger counterparts (69.82% for older women and 72.14% for older men versus only 40.10% for women under age 65 and 46.96% for men under age 65). It is worth noting that for this disease group, those age 65 and over have higher rates of influenza immunization compared to the general population of those over age 65. With respect to foot exams, male

high school graduates age 65 and over are significantly more likely to report having had a foot exam (83.26%) than are female high school graduates age 65 and over (62.67%, $Z = 2.45$).

There is only one significant difference of note in receipt of diabetic services among aged women and men by racial/ethnic subgroup. Older non-Hispanic black women are significantly less likely than are older non-Hispanic white women to get influenza shots (46.95% versus 76.47%, $Z = 3.23$). When compared to their less educated peers, older women with some college are more likely to receive two important services: influenza immunizations (84.59% versus 65.14% for those with less than a high school education, $Z = 2.37$) and retinal eye exams (80.51% versus 62.37% for those with less than a high school education, $Z = 2.13$).

Discussion

More research needs to focus on the quality of care for the growing population of older adults, and minority older women in particular, to better understand the scope and nature of their ailments and degree to which prevention measures and available treatments are administered and how this varies by race, ethnicity, and education. Also, there is a need to identify where the response of older women to available therapies is the same as and where it is different from that of older men or younger women, and what the barriers are to improving the quality of care for this vulnerable group (Vaccarino et al., 1999). Such knowledge is critical to allow the delivery of culturally competent care and the development of geriatric-based quality measures and models of care that will set the standards of health care for older adults and older women in particular. In this regard, the National Committee on Quality Assurance is pioneering such an effort and is currently developing numerous geriatric quality measures (Personal communication, Dr. Correa-de-Araujo, member of National Committee on Quality Assurance's Geriatrics Measures Advisory Panel). This is a major step toward prolonging life and improving quality of life of older adults.

Although the picture of health care for older women presented here is not comprehensive, due to the limitations of both available measures and data, our findings provide support for the importance of focusing attention on older women and highlight opportunities to improve their preventive care. Clearly older women are at a disadvantage compared with older men in numerous measures analyzed in this study as discussed below.

The significant difference observed between older women and men in relation to colorectal cancer screening suggests that older women may not be

getting the most effective colorectal screening as often as older men. The National Cancer Institute recommends having a colonoscopy every 10 years or a sigmoidoscopy in combination with an FOBT every 5 years as the preferred screening methods. Hence, an FOBT alone, while acceptable, may not be as powerful a screening tool as it is when used in tandem with sigmoidoscopy, or a colonoscopy alone. Because colon cancer incidence is slightly higher in women compared to men and screening methods are effective in reducing mortality from colorectal cancer, it is recommended that all women age 50 and above be screened for colorectal cancer (U.S. Preventive Services Task Force, 2002).

Overall, women age 65 and over are screened significantly less often for breast cancer than those ages 40 to 64. It is important to note, though, that the incidence of breast cancer increases with age. At age 40 the probability is 1.5% for developing breast cancer within 10 years, at age 60, 3.4%, and at age 70, 4.2%. About 61% of deaths in women with breast cancer occur in those aged 60 and older (American Cancer Society, 2001). Our findings are consistent with those of other studies concerning both screening and re-screening, in which "a consistent observation has been an age-related decline in compliance with screening recommendations" (Lavina & Lickley, 1997). According to Fox et al. (2004) in spite of a higher incidence of breast cancer, higher rates of diagnosis in the later stages of the disease, and increased likelihood of mortality in older women, mammography rescreening rates are lower for older women than for younger women.

Although there is evidence for the efficacy of screening for breast cancer in those 40 and over and the 50–69 age group, the evidence is mixed on whether or not screening should be conducted for those over 69 (Lavina & Lickley 1997; Kerlikowske et al., 1999). In the absence of such a consensus, it is difficult to clearly interpret our findings. However, of interest are the reasons (e.g., lower socioeconomic and minority statuses; poor accessibility or lack of transportation; lack of information or lower levels of knowledge about breast cancer with increasing age; physician-related factors) proffered for different rates of mammography screening among older women, supplying specific avenues of investigation for quality improvement efforts (Fox et al., 2004; Lavina & Lickley, 1997; Coleman & O'Sullivan, 2001). Certainly, multiple factors play a role in the lower rates of mammography we observed in older women. It is critical to note that although the incidence of breast cancer is higher among non-Hispanic white women, the mortality rate is higher among non-Hispanic black women (Harris, Miller, & Davis 2003). Moreover, a recent analysis of the NHIS data showed that "black women were less likely than white women to be aware of and use breast cancer

screening tests," including breast self-exam, clinical breast exams, and mammograms, and those with lower levels of education and cancer knowledge and without a usual source of care were less likely to get a mammogram or have a clinical breast exam (Harris, Miller, & Davis, 2003).

Another significant difference between older women and men relates to keeping high blood pressure under control. Even though older men showed higher rates for blood pressure control, these rates are still very low. This is of particular concern because cardiovascular disease continues to be the number one killer of both women and men. In older adults, elevation of systolic blood pressure higher than 160 mm Hg increases cardiovascular mortality risk by 2 to 5 times, the risk of stroke by 2.5 times, and the overall mortality risk by 1.5 times (*The Merck Manual of Geriatrics*, 2000). Although deficiencies in the quality of care for hypertension are known to occur in the United States (McGlynn et al., 2003), being older has been associated with poor control of blood pressure (Andrade et al., 2004). In addition, in a study examining barriers to primary care physicians' willingness to increase the intensity of treatment among patients with uncontrolled hypertension, the most frequently cited reason for not addressing the problem related to physician's satisfaction with the current blood pressure level, even if it was above the threshold level for treatment. It is also possible that patients' low health literacy may affect their ability to properly self-manage hypertension, contributing to the lower rates of controlled high blood pressure (Gazmararian et al., 2003; Agency for Healthcare Research and Quality, 2004a).

It is clear that insurance coverage alone does not guarantee high rates of preventive service receipt. In the case of influenza and pneumococcal vaccinations, the rates for both sexes are similarly low. Given that influenza and pneumococcal vaccinations are Medicare-covered services, improvement in these rates should be possible for the population age 65 and over. However, Medicare coverage and promotion of influenza immunization for those age 65 and over does explain our findings indicating that older adults have higher rates of influenza immunization compared to younger adults.

We observed almost no differences between older women and men in their receipt of services for diabetes. Monitoring diabetes progress is critical as diabetes is a major risk factor for cardiovascular disease and those who develop this disease have a worse prognosis for survival compared to those without diabetes (Kuusisto et al., 1994; McGill & McMahan, 1998; Wilson, 1998). Older adults with diabetes are known to be hospitalized more than twice as frequently as those without the disease (Rosenthal et al., 1998). Diabetes in older adults is associated with a significant increase in all-cause mortality, with ischemic heart

disease and stroke being the leading causes of diabetes-related deaths (Bertoni et al., 2002). Therefore, because the risks of microvascular and macrovascular complications are greater in older patients with diabetes (American Diabetes Association, 2003; Meneilly & Tessier, 2001), it is very important that improvements also be made in the rates of eye and foot examination for older adults. Finally, the prevalence of diabetes markedly increases with age (Harris et al., 1998). It is known that about 20% of older adults have diabetes and over 70% of all patients with diabetes are older than 55 years of age (American Diabetes Association, 2002; Gossain, Carella, & Rovner, 1994; Perry, 1999), while in nursing homes, one in five residents has diabetes (American Diabetes Association, 2002). Additional discussion on diabetes is found in Corrae-Araujo et al., published in this issues (Corrae-Araujo et al., 2005).

Despite the limitations associated with the lack of age-adjustment in our data sources, our results are consistent with findings of other studies in each respective condition/area examined. We believe that these findings establish a good profile of the quality of health care for older women and will facilitate the development of future efforts to improve quality care.

There is an urgent need in particular to improve health care for older Hispanic women.

A number of notable subgroup differences, primarily within group advantages of non-Hispanic whites over Hispanics and non-Hispanic blacks, and the more highly over the less educated, were found in relation to breast and colorectal cancer, as well as cardiovascular and immunization measures. The disadvantage of older Hispanic patients with chronic diseases may be attributable in part to differences in their lower levels of insurance, lower use of disease management services, and higher levels of reporting difficulty in getting health care (Center on an Aging Society, 2003). The differences we found by educational level are relevant to recent research in health literacy, which found that lower levels of health literacy are more predominant among those with fewer years of education, older adults, and those from certain racial and ethnic groups (Agency for Healthcare Research and Quality, 2004a). More specifically, the report cited studies that found women with low literacy levels had "significantly greater odds of never having had a Pap smear or mammogram in the past 2 years" and that patients with low literacy levels had "significantly higher odds of not having had either an influenza or pneumococcal immunization" than those with adequate literacy levels.

Efforts should continue to target the identification and measure of quality of care for older women and men of all races and ethnicities, in particular for those who are frail and have complex chronic conditions. The gender-based approach is a relatively new and

promising one in the field. Effective models of care should take into account gender and race/ethnicity specific needs. Dissemination strategies should be developed to assure implementation into clinical practice is successful.

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