Quality Dimensions That Most Concern People With Physical and Sensory Disabilities

Lisa I. Iezzoni, MD, MSc; Roger B. Davis, ScD; Jane Soukup, MSc; Bonnie O’Day, PhD

Background: People with physical and sensory disabilities face important challenges in obtaining high-quality health care. We examined whether persons who are blind or have low vision, who are deaf or hard of hearing, or who have mobility impairments or manual dexterity problems are satisfied with the technical and interpersonal aspects of their care.

Methods: By using a 1996 nationally representative survey of 16,403 community-dwelling elderly and disabled Medicare beneficiaries, we identified persons with disabling conditions. Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) controlled for demographic characteristics and managed care membership in predicting dissatisfaction with 12 dimensions of care.

Results: Of an estimated 33.58 million noninstitutionalized Medicare beneficiaries, 64.1% (an estimated 21.51 million) reported at least 1 potential disability and 29.5% (an estimated 9.89 million) reported more than 1 potential disability. Roughly 98% of people with and without disabilities believed their physicians were competent and well trained. But statistically significantly more people with disabilities reported dissatisfaction with care for 10 of the 12 quality dimensions. Persons reporting any major disability were more likely to be dissatisfied with physicians completely understanding their conditions (AOR, 2.4; 95% CI, 1.9-3.1), physicians completely discussing patients’ health problems (AOR, 2.4; 95% CI, 1.9-2.9), physicians answering all patients’ questions (AOR, 2.3; 95% CI, 1.7-3.1), and physicians often seeming hurried (AOR, 1.6; 95% CI, 1.4-1.9).

Conclusions: Persons with disabilities generally reported positive views of their care, although they were significantly more likely to report poor communication and lack of thorough care. These findings held regardless of the disabling condition. Thoughtful systematic approaches are required to improve communication and to reduce time pressures that might compromise the health care experiences of people with disabilities.

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such as long-term physical therapy or assistive technologies.\textsuperscript{12-17} In these circumstances, discussing options and developing alternative approaches to meet patients' needs may require additional time with clinicians.

Little systematic information exists about how persons with specific disabilities perceive their care. Herein, we look at patients' views of technical and interpersonal dimensions. For persons with disabling conditions, technical quality is important because of patients' frequently complicated medical conditions. Interpersonal quality is salient given potential communication barriers and continuing societal discomfort with disabilities. We use a nationally representative survey of Medicare beneficiaries to examine our hypothesis that persons with potentially disabling conditions perceive more problems with technical and interpersonal quality than do other people.

\begin{tabular}{|c|c|}
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\textbf{METHODS} & \\
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\multicolumn{2}{|c|}{\textbf{DATABASE}} \\
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We examined responses from 16,403 community-dwelling (non-institutionalized) Medicare beneficiaries interviewed in the 1996 Medicare Current Beneficiary Survey (MCBS). Medicare covers almost all elderly persons (those aged \geq 65 years) and people younger than 65 years who have met the Social Security Administration's definitions of disability (unable to work for at least 1 year) and have received disability insurance (Social Security disability insurance).\textsuperscript{18} This administrative definition, however, may not reflect functional abilities over time. We used these responses to identify 5 categories of potential disabilities pertaining to vision, hearing, walking, reaching overhead, and grasping and writing (algorithm available from the authors). For each category, we created 2 levels based on answers about the extent of difficulties, assigning people to the most severe level for which they qualified. We also created 2 summary measures, each with 3 groups (no difficulty, any minor or moderate difficulty, and any major difficulty), and 0, 1, or 2 or more disabling conditions. These summary measures produced similar results, and we report findings using the first approach.

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\textbf{PERCEPTIONS OF CARE} & \\
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The September to December round of the MCBS includes supplemental surveys on experiences with and perceptions of respondents' usual source of care. The questionnaire asks about 12 aspects of physicians' technical quality (carefulness, competence, understanding of medical history, understanding of clinical conditions, completeness, and patients' confidence in their physician) and 6 dimensions of interpersonal quality (physician seems hurried, physician does not explain, physician acts as if he or she is doing the patient a favor, physician informs the patient completely, physician answers all questions, and whether patients depend on physicians to feel better). Interviewees were asked to respond to 12 statements reflecting these dimensions, with the following response options: strongly agree, agree, disagree, and strongly disagree. We grouped agree and strongly agree responses (and likewise disagree and strongly disagree responses). The directionality of the 12 statements varied. Agreement sometimes suggested poor experiences and sometimes good care. We modeled responses with negative connotations. One statement ("depends on doctor in order to feel better both physically and emotionally") offers mixed messages: neither agreement nor disagreement necessarily indicates poor experiences, simply different views of physicians' roles. For this statement, we model disagreement.

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\textbf{MANAGED CARE MEMBERSHIP} & \\
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People enrolled in managed care might have different experiences and satisfaction levels than beneficiaries enrolled in traditional Medicare.\textsuperscript{12,18,19} In 1996, the MCBS added a special supplement of persons enrolled in "risk" health maintenance organizations (HMOs), 22.9% of our sample. In addition, Medicare administrative records indicated that 22.7% of MCBS respondents had been enrolled in an HMO for at least part of the previous calendar year. About 2.6% of persons had discordant information about HMO participation. We designated persons as having managed care membership if they were in the HMO supplement or if Medicare administrative records indicated HMO membership during the prior year.

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\textbf{ANALYSES} & \\
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We used the direct standardization method of SUDAAN statistical software to adjust for age, using 7 groups (18-44, 45-64, 65-69, 70-74, 75-79, 80-84, and \geq 85 years). For each disability cat-
egory and each quality dimension, we produced 2 multivariable logistic regression models predicting negative perceptions of care based on the following: (1) age group, sex, and presence and extent of the disabling condition; and (2) age group, sex, disabling condition, race, ethnicity, residence location (urban vs rural), educational level, annual household income (<$25,000 and ≥$25,000), and managed care participation. The second model, thus, adjusts for other patient and organizational attributes that could affect perceptions of care to isolate the contributions of disability. We report adjusted odds ratios (AORs) with 95% confidence intervals.

We also produced separate multivariable models for persons 65 years and older and those younger than 65 years (ie, persons receiving Social Security disability insurance). We failed to find consistent important numerical differences by these broad age groups, although in some instances a nonsignificant trend suggested that younger persons were less satisfied than older persons. Herein, we report the results from the models combining elderly and younger respondents. Only 117 MCBS respondents were blind; results from this group are unstable, rarely reaching statistical significance.

We used the Cronbach α coefficient to assess whether the directionality of responses agreed across sets of questions.

### RESULTS

Of an estimated 33.58 million noninstitutionalized Medicare beneficiaries, 64.1% (an estimated 21.51 million) reported at least 1 of 5 potentially disabling conditions (Table 1) and 29.5% (an estimated 9.89 million) reported more than 1 potentially disabling condition. Among people younger than 65 years (10.9% of noninstitutionalized Medicare beneficiaries, or 3.67 million persons), 73.1% (an estimated 2.68 million) noted at least 1 of the 5 disabling conditions and 45.4% had more than 1 condition.

Across the 5 disability categories, from 93.3% to 96.7% of persons 65 years and older reported having a usual source of care. At that usual care source, 88.8% to 94.0% saw a specific physician (Table 1). Among persons younger than 65 years, 4.5% to 8.8% did not have a usual source of care, with roughly 34.6% of blind persons lacking a usual care source. Younger Medicare beneficiaries were less likely to have specific physicians at their usual care site (Table 1).

Among persons 65 years and older, those with more severe impairments were older, on average, than those with less severe limitations. After adjusting for age, higher percentages of women than men reported all disabling conditions, except hearing difficulties. After adjusting for age and sex, higher percentages of black than white persons reported all disabling conditions, except hearing difficulties. Adjusted percentages for Hispanic persons and people of other races varied by disabling condition. Persons with disabling conditions were more likely than others to have only high school educations and annual incomes of less than $25,000.

### PERCEPTIONS OF TECHNICAL AND INTERPERSONAL CARE

Tables 2 and 3 show percentages of persons (adjusted for age and sex) reporting negative views of their care for those without the specific disability or with only minor difficulties, those with moderate difficulties, and those with major limitations. Among the technical quality dimensions across all disabilities (Table 2), respondents most commonly reported that they “often have health problems that should be discussed but are not,” with 12.1% to 15.0% of persons with major disabilities expressing this view, significantly higher than for persons without disabilities (P < .001), except for the vision category. The next most common concerns were generally that physicians are not “very careful to check everything when examining [them]” and do not have “a complete understanding of the things that are wrong with [them],” cited by 7.0% to 11.0% of persons with major

### Table 1. Population Estimates of Disabling Conditions and of Having a Specific Physician by Age*

<table>
<thead>
<tr>
<th>Disabling Condition</th>
<th>All (N = 33.58)†</th>
<th>&lt;65 y (n = 3.67)</th>
<th>≥65 y (n = 29.91)</th>
<th>Has a Specific Physician‡</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vision</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Blind</td>
<td>0.21 (0.6)</td>
<td>0.04 (1.2)</td>
<td>0.17 (0.6)</td>
<td>65.4 (94.0)</td>
</tr>
<tr>
<td>Very low vision</td>
<td>2.88 (8.6)</td>
<td>0.45 (12.3)</td>
<td>2.43 (8.1)</td>
<td>84.9 (91.3)</td>
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<tr>
<td><strong>Hearing</strong></td>
<td></td>
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</tr>
<tr>
<td>Deaf or very hard of hearing</td>
<td>2.43 (7.2)</td>
<td>0.22 (6.1)</td>
<td>2.20 (7.4)</td>
<td>86.8 (88.8)</td>
</tr>
<tr>
<td>Hard of hearing</td>
<td>12.41 (37.0)</td>
<td>0.91 (24.9)</td>
<td>11.50 (38.5)</td>
<td>81.8 (91.8)</td>
</tr>
<tr>
<td><strong>Walking</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Major difficulties</td>
<td>4.97 (14.8)</td>
<td>0.85 (23.0)</td>
<td>4.12 (13.8)</td>
<td>88.5 (92.4)</td>
</tr>
<tr>
<td>Moderate difficulties</td>
<td>5.17 (15.4)</td>
<td>0.97 (26.5)</td>
<td>4.20 (14.1)</td>
<td>84.1 (90.0)</td>
</tr>
<tr>
<td><strong>Reaching overhead</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major difficulties</td>
<td>2.94 (8.8)</td>
<td>0.73 (19.4)</td>
<td>2.24 (7.5)</td>
<td>85.9 (91.4)</td>
</tr>
<tr>
<td>Moderate difficulties</td>
<td>2.60 (7.8)</td>
<td>0.51 (13.5)</td>
<td>2.10 (7.0)</td>
<td>86.6 (92.0)</td>
</tr>
<tr>
<td><strong>Grasping and writing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major difficulties</td>
<td>2.06 (6.1)</td>
<td>0.45 (12.1)</td>
<td>1.61 (5.4)</td>
<td>90.3 (92.2)</td>
</tr>
<tr>
<td>Moderate difficulties</td>
<td>2.50 (7.5)</td>
<td>0.54 (14.8)</td>
<td>1.96 (6.6)</td>
<td>84.9 (91.7)</td>
</tr>
</tbody>
</table>

*Data are from the 1996 Medicare Current Beneficiary Survey.
†Data are given as population estimates in millions (population percentages). The population estimates were reweighted for Medicare beneficiaries, excluding those qualifying because of end-stage renal disease.
‡Data are given as percentage of persons, among those who report having a specific physician at a usual source of care. For all beneficiaries regardless of the presence of a disabling condition, 81.3% younger than 65 years and 89.8% 65 years and older had a specific physician.
limitations. Few people reported problems with other technical dimensions of care, with more than 90% saying they have “great confidence in [their] doctor.”

Interpersonal quality seemed more problematic than technical quality (Table 3). Respondents most commonly reported that the “doctor often seems to be in a hurry,” with 15.8% to 24.1% of persons with major disabilities noting this (vs <11.6% of those without disabilities). The next most frequent concern was that the “doctor often does not explain medical problems,” expressed by 12.9% to 16.7% of those with major limitations. Regardless of disability, more than 85% of persons do not rely on their physician “in order to feel better both physically and emotionally.”

We tested whether responses to the 6 interpersonal quality questions pointed in the same direction (negative vs positive views). The Cronbach α for these questions exceeded .85 for all disability categories; persons dissatisfied with one interpersonal dimension tended strongly to be dissatisfied with other dimensions.

**DISABILITY AND PERCEPTIONS OF CARE**

Table 4 and Table 5 show the AORs of reporting concerns about technical and interpersonal dimensions of care, after controlling for demographic characteristics and HMO enrollment. We did not find statistically significant and consistent associations between satisfaction and basic demographic characteristics (age <65 or ≥65 years, sex, race, ethnicity, educational level, income, and urban vs rural residence) across the dimensions of care and disability groups.

Adjusted odds ratios were generally statistically significant for all disability categories for all 12 dimensions of care with 2 exceptions: perceptions of competence and whether people rely on their physicians to feel better. Although the AORs tended to be somewhat higher for interpersonal than technical dimensions, persons with disabilities seemed much more concerned than others about both broad aspects care. Adjusted odds ratios were generally more significant for the 3 disabilities relating to impaired mobility compared with the vision and hearing categories, but all 5 disability groups reported problems.

We considered whether proxy respondent status affected perceptions of care by adding proxy status to our multivariable regression models. Proxy respondent status rarely reached statistical significance, although we found a trend toward proxies reporting more negative views of care. Even these trends, however, varied across dimensions of care and disability groups.

Persons enrolled in HMOs reported significantly more problems for all dimensions of care except for physician competence and whether physicians seem hur-
Most persons with disabilities were satisfied with their care and equally likely as those without disabilities to perceive their physicians as competent and well trained. The most common concern was that physicians seem hurried, articulated by roughly one fifth of respondents, regardless of disability and HMO membership. Under such conditions, persons with disabilities may face special risks from time constraints for 3 reasons: complex underlying medical conditions; extra knowledge, skill, sensitivity, or time required because of the disabling condition itself; and discordant perceptions and expectations between physicians and patients, especially about the experience of disability. Examples include informing blind persons about actions during the physical examination or discussing treatment plans with a deaf person through an American Sign Language interpreter. Positioning people with extensive mobility limitations on examination tables generally takes more time than required for other patients. Physicians may focus on the disabling conditions when patients prefer to address wellness care or other clinical concerns.20,30

The MCBS has important limitations for our purpose. We cannot assess whether specific accommodations may resolve dissatisfaction articulated by respondents. All functional deficits are self-reported, raising questions; and feel better, “depends on doctor in order to feel better both physically and emotionally” (the table presents the percentage of persons who receive their physicians as competent and well trained. The AORs associated with HMO membership were similar across the 5 disability categories.

**Table 3. Those Concerned About the Interpersonal Quality of Care Provided by Their Usual Physician for a Disabling Condition**

<table>
<thead>
<tr>
<th>Disabling Condition</th>
<th>Aspect of Interpersonal Quality†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hurry</td>
</tr>
<tr>
<td>Vision</td>
<td></td>
</tr>
<tr>
<td>No or minor difficulty</td>
<td>14.2‡</td>
</tr>
<tr>
<td>Very low vision</td>
<td>18.3‡</td>
</tr>
<tr>
<td>Blind</td>
<td>24.1</td>
</tr>
<tr>
<td>Hearing</td>
<td></td>
</tr>
<tr>
<td>No or minor difficulty</td>
<td>13.1†</td>
</tr>
<tr>
<td>Hard of hearing</td>
<td>16.7‡</td>
</tr>
<tr>
<td>Deaf or very hard of hearing</td>
<td>18.7‡</td>
</tr>
<tr>
<td>Walking</td>
<td></td>
</tr>
<tr>
<td>No or minor difficulty</td>
<td>13.8</td>
</tr>
<tr>
<td>Moderate difficulty</td>
<td>16.1§</td>
</tr>
<tr>
<td>Major difficulty</td>
<td>17.9‡</td>
</tr>
<tr>
<td>Reaching overhead</td>
<td></td>
</tr>
<tr>
<td>No or minor difficulty</td>
<td>14.0</td>
</tr>
<tr>
<td>Moderate difficulty</td>
<td>17.2</td>
</tr>
<tr>
<td>Major difficulty</td>
<td>17.9†</td>
</tr>
<tr>
<td>Grasping and writing</td>
<td></td>
</tr>
<tr>
<td>No or minor difficulty</td>
<td>14.2</td>
</tr>
<tr>
<td>Moderate difficulty</td>
<td>18.6</td>
</tr>
<tr>
<td>Major difficulty</td>
<td>15.8</td>
</tr>
<tr>
<td>Any of the conditions listed</td>
<td></td>
</tr>
<tr>
<td>No difficulty</td>
<td>11.6</td>
</tr>
<tr>
<td>Any minor or moderate difficulty</td>
<td>15.7‡</td>
</tr>
<tr>
<td>Any major difficulty</td>
<td>17.1‡</td>
</tr>
</tbody>
</table>

*Data are given as adjusted (rewighted) population percentages. Values were adjusted by age group (18-44, 45-64, 65-69, 70-74, 75-79, 80-84, and ≥85 years) and sex. Data are from the 1996 Medicare Current Beneficiary Survey.

†Hurry indicates “doctor often seems to be in a hurry”; explains, “doctor often does not explain medical problems”; favor, “doctor often acts as though he/she was doing you a favor by talking to you”; informs, “doctor tells [you] all [you] want to know about your condition and treatment”; answers, “doctor answers all your questions”; and feel better, “depends on doctor in order to feel better both physically and emotionally” (the table presents the percentage of persons who disagree or strongly disagree with this statement).

Coffee indicates P<.001 vs persons with no or minor difficulties.

P<.05 vs persons with no or minor difficulties.

P<.01 vs persons with no or minor difficulties.

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questions about their validity. The use of proxy respondents further complicates the interpretation of findings, although research offers contradictory evidence about the direction of potential bias. The MCBS does not indicate the extent of respondents' acute and chronic underlying disease nor long they spent with physicians during office visits. Therefore, we cannot directly test the hypothesis that disabled patients are especially susceptible to time constraints. Finally, the MCBS does not identify instances during which effective communication is impeded by stigmatizing attitudes about disability among physicians.
Other studies suggest that satisfaction with care relates strongly to time spent; patients with longer visits report greater satisfaction. Persons with substantial health problems generally are less satisfied with medical care than healthier individuals, possibly because they believe their needs are not fully met. Whether visit lengths have diminished in recent years and the relationship between time spent and managed care insurance remain controversial. Nevertheless, most agree that the average office visit lasts less than 20 minutes.

Anecdotal reports raise questions about how much more time might be needed to accommodate persons with sensory or physical disabilities. An internist, for example, described a routine office visit with a middle-aged woman with multiple sclerosis. The internist and her assistants tried unsuccessfully to lift the woman onto the high unadjustable examining table; the patient’s daughter, familiar with transferring her mother, performed the maneuver. Valuable time, thus, was expended simply positioning the patient before more meaningful interactions could occur. The various interchanges that build patient-physician relationships, confidence, and trust—and may be valued more highly than technical competence—must await these most basic accommodations. Inaccessible facilities also implicitly suggest that the needs of persons with disabling conditions have not been adequately addressed within a practice.

Our results support the recommendations of Wagner and colleagues, who examined the research evidence from the United States and Europe about improving health care outcomes for persons with chronic conditions. Providing complete information was 1 of 4 essential elements when designing systems of care, as were practice redesign, patient education, and expert systems (eg, physician education and consultations). Other investigators have found that communication, respect, and involvement in decision making are especially valued by patients. Patients who report that their physicians “do not always take enough time to answer questions” or “do not provide sufficient information” are likely to consider changing physicians. Perceptions of stigmatizing attitudes about disabling conditions certainly could compound these problems.

Thoughtful systematic approaches are required to improve accommodations for communicating with blind and deaf persons and to reduce the time demands and physical efforts of people with impaired mobility (eg, moving around offices, undressing and dressing, and positioning on examination tables). These concerns largely reflect the structure of the health care system, the often-neglected branch of the structure-process-outcome quality triad articulated by the late Avedis Donabedian. Although analysts frequently reduce structure to “bricks and mortar,” Donabedian’s original formulation reached more broadly, encompassing physician characteristics, their “tools and resources,” and the physical and organizational settings in which they work. The concept of structure includes the human, physical, and financial resources that are needed to provide medical care.

For people with disabilities, many and varied structural accommodations are important to ensure delivery of the highest-quality care. Some do involve bricks and mortar (eg, ramps, widened doorways, and automatically adjustable examination tables), while others represent essential tools (eg, large-print and braille written materials and readily available sign language interpreters), and yet others reflect policies (eg, scheduling longer appointments). Strategies may reach beyond individual practices to the broader health care system, such as paying more for routine visits of persons needing interpreters or special physical accommodations.

Additional investigations must explore why people with disabilities are generally less satisfied with their care than others. Solutions that improve care for persons with disabilities are likely to improve experiences for everyone.

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