
Achieving Improvement Through Nursing Home Quality Measurement

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CMS has initiated the Nursing Home Quality Initiative (NHQI) to improve the quality of nursing home care. Central to the NHQI is the public reporting of nursing home quality measures that serve as the basis for the Initiative's communication and quality improvement program. This article provides an overview of the NHQI, focusing on the role of nursing home quality measures in achieving improvements in nursing home care. We also describe the evolution of quality measurement in nursing homes, a recent CMS project to improve measures through risk adjustment and other refinements, the use of these measures in a pilot of the NHQI, and the lessons learned for future work in this area.

INTRODUCTION

CMS covers almost 40 million people with Medicare. Over the years, CMS's role has evolved from that primarily of claims administrator to one of insurer and information resource for the beneficiaries covered under the Medicare and Medicaid Programs. A key challenge in that evolution is effective communication of the quality of Medicare services provided under the program in terms that beneficiaries can understand.

In this article, we describe CMS's initiative to use nursing home performance measurement as a tool to share information on the quality of care provided in nurs-

ing homes for beneficiaries and their families. The article emphasizes the evolution of performance measurement in nursing homes and recent efforts by CMS to develop new measures. We also describe a major CMS pilot project to test the feasibility and effectiveness of the new communications program for beneficiary choice and quality improvement. We conclude with a discussion of the key challenges facing the pilot and national NHQI.

CONSUMER EDUCATION AND OUTREACH CAMPAIGN

In the past year, CMS has launched several new initiatives to improve its communications with Medicare beneficiaries. The "Helping You Help Yourself" media campaign is a multi-million dollar effort to help Medicare beneficiaries and their families utilize Medicare's information resources more effectively; to get help with questions, recognize their options, and better understand Medicare coverage policies. This campaign makes use of bilingual television, radio, and newspaper advertisements as well as use of the Internet to reach the diverse population of Medicare beneficiaries.

CMS also publishes an annual handbook, *Medicare & You*, which is mailed to every beneficiary household each fall, and to new enrollees each month. It is available in Spanish, Braille, audiocassette, and large print and can also be downloaded from www.medicare.gov, which is CMS's Internet site for Medicare beneficiaries. The hand-

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book provides basic information on Medicare enrollment, covered services, cost sharing, rights and protections, and health care choices for receiving Medicare benefits.

CMS also runs a 24-hour call center that can be reached at 1-800-MEDICARE. Approximately 15,000 individuals call in each week with questions about their Medicare coverage, requests for personalized material, and for guidance about choosing a health care provider.

CMS's most recent initiative is to provide public information on characteristics of Medicare plans and providers through the use of the Internet. CMS currently has a Web site www.medicare.gov where consumers can compare dialysis facilities, managed care plans, and nursing homes. Nursing home information is available on the Nursing Home Compare portion of this Web site (www.medicare.gov/nhcompare/home.asp). Nursing Home Compare includes resident characteristics, State survey deficiency data, and facility characteristics such as bed size and ownership. This information is helpful in drawing a picture of the types of individuals residing in the home. Information on the resident characteristics is drawn from two main data sources: five of these resident characteristics (dependency in eating, bedfast, contractures, unplanned weight gain or loss, and inappropriate behavior) are derived from information collected by each State's survey and certification team during their annual surveys of all Medicare and Medicaid certified facilities. Another set of three resident characteristics (incontinence, physical restraints, and pressure [bed] sores) is derived from the Minimum Data Set (MDS), an assessment instrument developed for the purpose of patient assessment and care planning. The MDS-based data have been published on the Web site since 2000.

Beginning in fall 2002, CMS plans to enhance the Nursing Home Compare Web site by publishing a much broader array of quality measures characterizing the performance of nursing home facilities across the Nation. To prepare for the national release, CMS is sponsoring a pilot demonstration in six States to assess the value of these measures as a tool to assist consumers in their decision process as well as an instrument for enhancing quality improvement. This pilot, which began in April 2002, will test new communication mechanisms for reaching Medicare beneficiaries that will not only inform the national release later this year, but potentially provide the template for public reporting initiatives in home health and hospital care as well. The following section provides a background on the development of quality measures for consumer information and quality improvement, with specific reference to the nursing home industry.

QUALITY MEASUREMENT IN NURSING HOMES

In 1987, Congress passed the Omnibus Budget Reconciliation Act which required that the U.S. Department of Health and Human Services (DHHS) develop and implement a comprehensive patient assessment tool which would collect uniform patient information on all nursing home residents and could be used to assist in patient care planning. The resulting instrument was the MDS, a clinical data set that includes over 400 items measuring a variety of functional, behavioral, social and clinical aspects of nursing home residents (Morris et al., 1990). Nationwide collection of the MDS began in the 1990s. All Medicare and Medicaid certified nursing facilities are required to fill out a MDS at least every 3 months for every resident living in the

nursing home and more frequently for recent admissions. These assessments are transmitted to CMS through the State and, since June 1998, have served as the basis for the prospective payment system for all Medicare related charges and some State's Medicaid reimbursements to certified nursing homes.

The MDS collects a wide array of information that can be utilized to describe the population residing in a nursing home at any given time, as well as to provide information which can be used to monitor and track care practices across time. The MDS was originally used as a resident care-planning tool. However, since implementation, its role has expanded to serve as the basis for the prospective payment system for nursing homes, for use in research and policy development, and as the basis for the creation of quality indicators (QIs).

DEVELOPMENT OF NURSING HOME QIs

Beginning in the mid-1990s, the Health Care Financing Administration sponsored a major Medicare skilled nursing facility prospective payment demonstration and contracted with the Center for Health Systems Research and Analysis (CHRSA) at the University of Wisconsin to develop and test a set of MDS-based nursing home QIs to monitor quality under the demonstration (Phillips et al., 1997). These 24 QIs covered four domains of care: clinical, psychosocial, functional, and pharmacological. Twenty of these QIs are prevalence measures meaning that they give a picture of the resident at a point in time. The other four QIs are incidence measures; therefore, they measure a new or recently developed condition. Four of the 24 QIs are stratified into two groups (high and low

risk) to take into account individual factors that may place some residents at higher risk for a condition.

Preliminary validation of these QIs was conducted by the University of Wisconsin, the contractor originally tasked with their development (Zimmerman et al., 1995; Zimmerman and Karon, 1997). As of September 1997, CHSRA completed validation studies in nine facilities in three States with a total of 378 resident-level QIs. Overall, CHSRA's research indicated that QIs with high rates of occurrence, scoring at very high percentages, are useful tools for identifying quality of care problems at both the facility and resident levels. The QIs generally had high accuracy ratings, and most identified severe problems for all or some residents. However, few conclusions can be drawn about the QIs at low rates of occurrence, since only a limited amount of information was collected about them in the study. The CHSRA team identified the need for further research in identifying possible QI specific thresholds (Berg et al., 2001).

Four major limitations have been identified with the use of the CHSRA QIs for public reporting of nursing home performance. The first stems from the limitation of the MDS data set itself. Because MDS was not originally conceived as a quality measurement tool, one challenge facing CMS has been to try to take advantage of this clinical data set to meet a multipurpose quality measurement agenda. The MDS items are self-reported data. As such, the U.S. General Accounting Office and the Office of the Inspector General have raised concerns regarding the accuracy of the reported data (www.gao.gov; oig.hhs.gov/oei/summaries/b503.pdf). However, these reports may overstate the limitations because they are based on retrospective

chart reviews and not first-hand resident observations (Lawton et al., 1998). In general, independent studies of the MDS have found it to meet or exceed acceptable standards for inter-rater reliability. Preliminary validation of the MDS by its developers found reliability to be at least 75 percent for all of the functional-related items and only slightly lower for a majority of the other items (Morris et al., 1990). CMS has been working to address data accuracy. It conducts annual training and is in the process of revising the manual to better educate nursing home staff on how to accurately fill out the MDS.

A second limitation of the CHSRA QIs is their completeness in representing the quality of nursing home care. With few exceptions, the initial CHSRA indicator set was, by design, developed to be markers for potential quality problems in the nursing home. The QIs were not developed to be a complete representation of the quality of care for the concept measured by the indicator. In particular, because the QIs only identify observed conditions among the residents, they fail to take into account whether these conditions were avoidable (e.g., was the condition “expected” based on the resident’s risk factors) as well as selection and ascertainment bias. Even the CHSRA QIs that are stratified into low and high risk may misrepresent variation in performance because the method assumes that nursing homes provide uniform quality within each strata. CHSRA acknowledges on its Web site that the QIs are “markers that indicate the presence or absence of potentially poor care practices or outcomes” (www.chsra.wisc.edu/CHSRA/Quality_Indicators/Nursing_Homes/toc.htm). As such, these QIs are not considered definitive measures of quality but rather serve to identify potential poor care practices or outcomes that should be targeted for further review.

A third limitation is that the QIs were developed for the chronic care nursing home population with lengths of stay beyond 90 days. The QIs were not developed for the Medicare skilled nursing facility population, most of whom leave the nursing home within 30 days of admission. This is an important limitation in measuring the quality of care that many Medicare beneficiaries receive in nursing homes because, based on CMS analyses of MDS and claims data, approximately 40 to 50 percent of all nursing home admissions are comprised of short stay, post-acute care residents.

The final limitation of the measures is the lack of extensive consumer testing of their utility for public reporting. Very little formal research has been done to test the relevance of these measures for use by the elderly, nursing home residents and their families in selecting a nursing home (Mattke et al., 2001). Work by CHSRA and others has demonstrated the ability of nursing home providers and State surveyors to understand and use the measures for quality improvement and oversight; however, research outside the nursing home field suggests that condensing complex clinical information in a manner that is understandable to lay audiences is not easy (Hibbard, Sofaer, and Jewett, 1996). Consumer research on how to best display and communicate nursing home QIs is still in its infancy. More work needs to be done to assure that the measures, once published, are conveying messages that are meaningful and accurate to the public.

In spite of these limitations, the CHSRA nursing home QIs are a major advancement in nursing home performance measurement and are currently used for a variety of purposes by CMS and external organizations. These QIs are used by the State Survey and Certification Agencies, which conduct surveys for CMS, to focus specific

areas of their annual review of the facilities' compliance with the Nursing Home Requirements of Participation. State surveyors (trained nurses, social workers, and therapists) generate samples of residents in each area of care for focused review. Surveyors use these QIs to determine whether nursing homes that "flag" on these QIs (e.g., have values significantly above the normal range), have underlying quality problems. The incorporation of QIs into the survey process has benefited CMS's quality assurance process in a number of significant ways. First, use of QIs has allowed more consistency in the sample selection methodology. By using QIs to target residents for further review, all surveyors follow the same protocol and are, therefore, conducting their surveys in similar manners. In addition, the QI reports help surveyors by providing better information on what are certain problem areas that warrant closer review.

The nursing home QIs are also used by a number of nursing facilities to identify their own care problems and conduct internal quality improvement programs to correct any weak processes or poor outcomes before they become serious and widespread. In fact, several State governments, industry groups, and research organizations have developed various software and reporting protocols that use facility QI scores to educate and guide a facility in how to focus its energies in terms of improving patient care outcomes. The Medicare quality improvement organizations (formerly known as the peer review organizations) in several States have utilized a variety of MDS-based QIs, not just limited to those developed by the CHSRA team, to engage the industry in quality improvement projects on such topics as pressure ulcer treatment. This type of provider accountability—having providers proactively use quality measures to identify

quality concerns and improve care practices—is a major goal of CMS's performance measurement program.

CURRENT USE OF QIs IN NURSING HOME PUBLIC REPORTING

As described earlier, CMS posts a select number of these QIs on its Medicare.gov Internet tool called "Nursing Home Compare." This site is available to all consumers, providers, and industry groups and allows individuals to look at the performance of all Medicare-certified nursing homes on specific QIs such as the prevalence of incontinence, pressure sores, and the use of physical restraints. The Web site language describes each of these measures, explains their importance and recommends that people use this information in combination with onsite visits to help make more informed decisions about their care. The Web site also allows consumers to compare individual facilities to one another as well as to the State and national averages for each of these performance measures. The nursing home specific QIs can be downloaded directly from the Web site. Nursing Home Compare is the most frequently visited quality Web site at CMS, accounting for close to 500,000 visits monthly.

Several States have begun reporting the MDS-based nursing home QIs on their own Web sites and publication vehicles. Wright et al. (2002) found that 20 States, as well as 9 non-government sites, currently provide access to information on quality of care in nursing homes. These sites vary from providing information about the facility and the characteristics of its residents to information on deficiencies identified during State survey and certification inspections. Two of these States (Maryland and Florida) already use the CHSRA QIs on a facility specific basis to inform the public on nursing home

quality of care (Wright et al., 2002). Other States, such as California, Rhode Island, and Ohio are in the process of developing reporting systems that use MDS-based QIs.

The proliferation of nursing home QIs has demonstrated that broad interest exists among States and consumers in the publication of these data. However, the limitations in the measures have called for improvements in the QIs to enhance their utility as performance measures for comparing and rating performance at the provider-specific level.

REFINEMENTS TO THE NURSING HOME QIs

Since 1998, CMS has contracted with a research consortium led by Abt Associates to review the current state of the art in nursing home performance measurement, refine existing QIs as appropriate, and develop new measures in areas where gaps in measurement currently exist. The project identified a set of 39 measures that build on the MDS and could be implemented with no additional burden on the nursing home industry (Berg et al., 2001). Many of these measures are similar to the CHSRA QIs currently in use; that is, they measure the quality of care for chronically ill residents who stay in the facility longer than 90 days. However, measures have been developed to capture several new areas of care for long-stay residents, such as inadequate pain management and the prevalence of infections.

Additionally, CMS developed measures for the short-stay, post-acute care residents. As stated earlier, this population represents between 40 and 50 percent of all nursing home admissions. However, because these residents typically stay for less than 3 weeks in the nursing home before returning to the community, past QIs did not accurately capture their needs

and clinical complexity. The new set of measures includes nine QIs developed specifically for measuring the quality of care provided for short-stay, post-acute nursing home residents. These QIs measure conditions of care that are specific to a shorter-stay, more acute resident and include several outcome-based measures that identify changes in resident status during their stay. Examples of the outcome-oriented post-acute measures include failure to improve in physical function during the early post-acute period (first 14 days in the nursing facility), failure to manage symptoms of delirium, and improvement in walking.

Like the previous set of measures, these new nursing home QIs are derived from the MDS. However, several of these measures are risk adjusted to take into account individual resident level differences, which would place a resident at greater risk for a condition. Traditional risk-adjustment approaches tend to stratify populations into high- and low-risk groups, use exclusions, or employ regression-based or other multivariate modeling methods to improve the comparability of populations being measured (Iezzoni, 1994). The Abt team employed a combination of these methods to adjust risk at the individual level.

In addition, the Abt team recommended a new risk-adjustment approach that adjusts the quality measures based on the differences in the nursing home's admission profile. This Facility Admission Profile (FAP) adjustment takes into account facilities that admit a sicker resident population and are, therefore, at higher risk for poor outcomes because of the clinical complexity of their resident population. Nursing home admission practices vary widely. Many nursing homes admit a sicker resident population or specialize in treating certain types of residents. As such, their case mix, on the whole, is more dependent and has more adverse

conditions, which would cause the facility to have a high percentage of negative conditions. For example, some facilities house a special wound care unit and, therefore, specialize in the treatment of residents with advanced stage pressure ulcers. While the facility may do a stellar job at resolving these pressure ulcers, because they treat a large portion of residents with these conditions their pressure ulcer rate will appear high. Therefore, this adjustment technique would take the overall case mix of the facility into consideration, thus, acknowledging that a facility may care for a more acute population of residents.

Another use of the FAP is in addressing the issue of ascertainment bias. Ascertainment bias means that some facilities are better at identifying certain conditions than others. This is especially true for the detection of pain, which can be difficult to detect, especially among nursing home residents who may be cognitively impaired and not able to effectively communicate their level of pain. Research by Teno et al. (2001) has shown that in some States, such as Oregon, the average level of pain in nursing homes is close to 35 percent while in the State of Mississippi the average facility only has a 10-percent prevalence of pain. It seems unlikely that nursing home residents in Oregon experience 25 percent more pain than residents in Mississippi. What is more likely is that staff in Oregon are better trained to assess pain through the State's efforts to educate medical staff as to the importance of proper detection of pain. However, if facilities in Oregon do a better job at detecting pain, these facilities will report a higher percentage of residents with pain. By taking into account the types of residents admitted to a facility over a period of time, it is possible to account for both the selection bias (i.e., types of residents typically admitted to the nursing home) and the ascertainment bias (ability to detect condi-

tions which may not be as easy to see). This helps improve the comparability of the measures across facilities, thereby making it easier for consumers to use the quality measures to evaluate one facility's performance versus another.

Because a national validation of this new risk-adjustment technique had not yet been completed, CMS decided to forego the use of the FAP in its calculation of the quality measures for use in the pilot Public Reporting Initiative that began in April 2002. The utility of this technique to adjust for selection bias and ascertainment bias will be evaluated as part of the national validation. The contract team will also use the national validation effort to test alternative resident-level covariates to better adjust these measures for resident level differences which are outside of the control of the nursing home yet may affect resident outcomes. One alternative is the development of a resident "frailty" index that could take into account resident comorbidities and disease diagnoses which might contribute to a higher likelihood of adverse outcomes on certain quality measures.

A national validation of these quality measures has been conducted in six nationally representative States (California, Tennessee, Missouri, Ohio, Illinois, and Pennsylvania). As part of the validation, trained nurses entered over 200 facilities to review charts, speak with residents and staff, and observe the facility's care practices. The nursing home administrator was also asked to fill out a questionnaire related to the facility's protocols, policies, and staff. This information was used to monitor whether the quality measures accurately predicted outcomes that are under the control of the facility. Preliminary validation work conducted in 45 facilities in Massachusetts had provided evidence that facilities with quality protocols and practices in place tend to perform better on the

quality measures. The preliminary results of the validation with information on more than 1,200 residents is currently available on www.cms.hhs.gov.

NURSING HOME QUALITY INITIATIVE

A set of validated quality measures will become the basis for CMS's national public reporting initiative, which is scheduled to begin fall 2002. The goal of this initiative is to provide more current, useful information to consumers and their families to help them make more informed decisions in selecting a nursing home. As such, CMS plans to post a subset of nursing home quality measures on its Nursing Home Compare Internet tool. CMS also plans to broadly publish these measures to help inform people with Medicare about their options. By making this information publicly available, both on the Internet and through the media, it is also hoped that this effort will motivate providers to proactively address and improve quality of care.

A further goal of this public reporting initiative is to help nursing homes begin to improve their quality. To meet this end, CMS has contracted with the Quality Improvement Organizations (QIOs) which are located in each State to collaborate with Medicare providers and conduct quality improvement projects to improve care practices. The QIOs will be tasked with disseminating the quality measure information at the State level through the media, press releases, and other venues. In addition, they will work with nursing homes to help facilities to improve their care. The QIOs will educate these facilities on how to use their own self-reported data to identify opportunities for improvement, will share best practices, and will partner with them to help them improve the quality of care.

SIX-STATE NURSING HOME PILOT

CMS recognized the need for public education regarding the use of quality information to guide consumer choice of nursing homes and the need to test these concepts prior to the national release. Therefore, CMS decided to develop a pilot demonstration project to test the feasibility and effectiveness of this model to inform the national implementation of the initiative. In November 2001, Secretary Thompson announced the DHHS' intent to establish a multi-state pilot prior to the national implementation. Secretary Thompson also announced that CMS would work with the National Quality Forum (NQF) to select the measures to be publicly reported in the pilot program. The NQF (www.qualityforum.org) was established as a result of a Presidential Advisory Committee on Quality to help the health care industry set standards for quality performance measurement and reporting. The NQF established a Steering Committee to advise CMS on measure domains for the pilot and recommended nine domains of care to be used in this pilot public reporting initiative. As described in Table 1, these domains included measurement of three areas of care provided to short-stay residents (residents who are expected to have a short stay and then return to the community) and measurement of six areas of care for nursing home residents with longer stays. Three of these measures will employ individual-level covariates to take into account resident characteristics that may affect outcomes. Eight out of the nine pilot measures also employ exclusion criteria to exclude certain individuals from the calculation of the measure. For example, individuals who are terminally ill are excluded from the calculation of the weight loss measure because residents who are close to death tend to lose weight regardless of the efforts employed by facility staff.

Table 1
Quality Measures Used in Nursing Home Quality Initiative 6-State¹ Pilot: April-October, 2002

Quality Measure	Definition	Exclusions (Short-Stay) Measures	Covariates
Delirium	Percent of residents with new or worsening symptoms of delirium	Comatose	Prior nursing home admission
		End-stage disease Hospice	
Pain	Percent of residents with moderate pain daily or excruciating pain at any time	None	None
Improvement in Walking	Percent of residents whose ability to walk has improved since admission	Comatose	None
		End-stage disease	
		Hospice	
		Quadriplegic	
		Paraplegic Ventilator dependent	
Weight Loss (frailty)	Percent of residents who have lost a significant amount of weight	Chronic Care (Long-Stay) Measures	
		Newly admitted residents	Long-term memory problem Leaves 25 percent of food uneaten Problems with bed mobility (proxy for physically abusive behavior)
		End-stage disease	
		Hospice	
		Advanced directives for feeding restrictions	
Pressure Ulcers	Percent of residents with at least 1 pressure ulcer (stage 1-4)	Advanced directives for feeding restrictions	None
		Newly admitted residents	
Physical Restraints	Percent of residents who are in physical restraints daily	None	None

See footnotes at end of table.

Table 1—Continued
Quality Measures Used in Nursing Home Quality Initiative 6-State¹ Pilot: April-October, 2002

Quality Measure	Definition	Exclusions	Covariates
Infections	Percent of residents with an infection (e.g. pneumonia, septicemia, respiratory infection)	Newly admitted residents	None
Pain	Percent of residents with moderate pain daily or excruciating pain at any time	Newly admitted residents	Difficulty in daily decisionmaking (proxy for cognitive impairment) Difficulty establishing own goals (proxy for cognitive impairment)
ADL Decline	Percent of residents who have declined in their ability to perform ADLs	Already fully dependent Comatose End-stage disease Hospice	None

¹The 6 States that agreed to participate in the pilot are Maryland, Rhode Island, Colorado, Florida, Ohio, and Washington State. These States were selected because of their diversified range of nursing homes—large and small, urban and rural, and for- and non-profit facilities.

NOTE: ADLs is activities of daily living.

SOURCE: Harris, Y., Centers for Medicare & Medicaid Services, 2002.

CMS set the length for the pilot at 7 months, from April-October 2002. Six States agreed to participate in the pilot: Maryland, Rhode Island, Colorado, Florida, Ohio, and Washington State. These States were selected because they are home to a diverse range of nursing homes including both small and large, urban and rural homes, as well as for- and non-profit facilities. Most also had experience with publicly reporting nursing home quality information. In addition, all of these States had Medicare QIOs with some familiarity in conducting nursing home quality improvement projects. The States agreed to work with CMS and the QIOs through their participation in this public reporting/quality improvement initiative based on the nine nursing home performance measures selected by NQF.

The pilot program is designed to test several aspects of a communication strategy for nursing home quality. In these six States, the nine measures are reported on a facility-specific basis in a uniform format on CMS's Nursing Home Compare Web site. The formats and descriptive language accompanying the measures have undergone extensive consumer focus testing prior to implementation on the web. The QIOs will be responsible for developing and implementing media dissemination strategies, including the purchase of media advertisement space in major newspapers and communications with other information intermediaries, such as physician organizations, hospital discharge planners, Area Agencies on Aging, and State Long-Term Care Ombudsman Programs. The QIOs will also engage the industry to voluntarily participate in quality improvement projects to improve their performance on the publicly reported measures. The goal is to leverage public reporting of performance with the availability of tools and

technologies for quality improvement to improve care practices and outcomes in nursing homes in these six States.

The experience of the pilot States will be used to inform the national implementation scheduled for fall 2002. CMS plans to review the experiences of beneficiaries, nursing facilities, and QIOs who participate in the pilot to better understand the utility of the measures and the communication and quality improvement strategies to improve nursing home performance. The limited timeframe for the pilot program (7 months) creates challenges in this regard, but CMS is planning a multi-phased approach to examine these issues and the lessons learned. These findings will be made available to the QIOs and the States as they work together in an effort to improve the national program for public reporting of nursing home measures.

DISCUSSION

The NHQI is an important first step towards using quality measurement to help consumers and their families make better-informed decisions when selecting a nursing home. Consumer research suggests that most individuals do not factor quality information as a priority in their decision-making process (Lewin, 2002). This is due, in part, to the lack of useful information and, in part, to delays in the publication of timely information. In general, most consumers assume that a facility provides an adequate level of quality and, therefore, base their selection of health care providers on other features such as convenience, cost, and availability. Nursing home quality reporting holds promise because of the widespread public concern over the quality of nursing home care and concerns expressed by many elderly persons and their families who are engaged in

the selection process. The availability of timely, relevant, and understandable quality information may have greater significance in the selection of a nursing home than in other aspects of health care delivery. This initiative will be the first time that CMS has aggressively conducted outreach through advertising and other communication vehicles to engage Medicare beneficiaries, their families, and information intermediaries. The goal is to educate consumers on the importance of quality in the provision of health care services. CMS hopes to relate the message that quality measures may be a useful tool in distinguishing among nursing homes on the basis of the quality of care provided.

The NHQI also recognizes that public information presents other market pressures to improve performance. Concerned about market share and community image, nursing home owners and administrators may be more motivated to improve care practices, especially on the publicly reported measures. This was the experience in New York State where public reporting of outcomes following coronary artery bypass surgery resulted in overall quality improvement (Hannan et al., 1994). Use of the MDS as the basis for quality measurement is particularly useful in this regard because it allows the measures to be updated quarterly, facilitating rapid cycle quality improvement. The quality improvement component of the initiative recognizes that many nursing homes may need technical assistance with identification and enactment of quality improvement projects. For this reason, the Medicare QIOs' strategy to work with nursing homes in the States is a key element of the initiative. Medicare QIOs have been leaders in this type of improvement initiative. Historically, when QIOs have shared easy to read and understandable quality information—and worked with providers on improvement—there

has been a 10-20 percent relative improvement in performance (American Health Quality Association, 2000).

Through the public reporting pilot initiative, CMS hopes to learn a great deal about these issues, including how to best bring quality information to the attention of consumers, how best to display and explain the information so that it is understandable, and which measures are most useful in supporting the consumer's decision-making process and nursing home's internal quality improvement efforts.

CMS also recognizes that this is the beginning, not the end, of an evolution towards better communication on quality with Medicare beneficiaries. Research investigating the best approach to risk adjustment of quality measures will continue to evolve over the coming years. In addition, the MDS must continue to evolve if it is to better support public information programs. The MDS provides a wealth of information on clinical processes and outcomes, but limitations still exist in key areas of interest to consumers.

As described in this article, even when the measurement issues are worked out, there is still the challenge of displaying and explaining the information to the public. Much more research is needed on the best mechanisms for organizing the measurement data (i.e., individual measures or composite scores), displaying the measures to the public, and explaining the measures in a way that resonates with consumers and clearly outlines both the strengths and limitations of the information.

Finally, there is concern that public reporting, if not structured properly, may create disruptions in the nursing home market place that could potentially create an adversarial relationship between providers and consumers. Evidence from other systems of care suggests these concerns may be overstated. Public reporting in man-

aged care and in renal dialysis has not created disruptions in the market place to date, and the evidence suggests that quality of care has improved as a result of these initiatives (National Committee on Quality Assurance, 2001; Frederick et al., 2002). In fact, public reporting may benefit the nursing home industry because, for the first time, it provides public information that displays the exceptional quality of care provided by many nursing homes in America. Most of the information currently available through survey and certification deficiency data limits the selection decision to avoiding poor quality facilities. Nursing home quality measures that report on the full spectrum of performance provide the opportunity to identify and select excellent facilities as well. The NHQI represents a first step towards a more complete and open communication with consumers on the quality of care available in nursing homes that participate in the Medicare and Medicaid Programs.

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