Forum

The Nursing Home Minimum Data Set Assessment Instrument: Manifest Functions and Unintended Consequences—Past, Present, and Future

Anna N. Rahman, MSW,[1,2] and Robert A. Applebaum, PhD[3]

The Minimum Data Set (MDS) is a uniform instrument used in nursing homes to assess residents. In January 2008, the Centers for Medicare and Medicaid Services published a draft of a new MDS—version 3.0. This article traces the instrument's development and the design decisions that shaped it, discusses the MDS's manifest functions—data collection intended to drive quality improvement and the unintended consequences of its use—paper compliance and diminished attention to resident quality of life, and examines the revised version to gauge its success in meeting the instrument's objectives. Although results of the national evaluation of MDS 3.0 are promising, the revisions, especially those pertaining to quality-of-life assessment and the use of resident interviews and standardized assessment procedures, raise questions for future consideration. Additionally, past research suggests that the MDS's impact on quality-of-care improvement will be limited unless efforts are directed toward resolving the industry's persistent struggles with staffing, survey effectiveness, and the development of feasible care processes. MDS 3.0 seems most likely to achieve its potential if it operates within a multifaceted quality improvement framework.

Key Words: Nursing home, Quality indicators, Long-term care, Medicare, Medicaid, Minimum Data Set, Resident assessment

The Minimum Data Set (MDS) is a uniform instrument used in nearly every nursing home in the United States to assess resident condition. With its roots in the landmark Institute of Medicine (IOM) Report on Nursing Home Quality (IOM, 1987), the MDS was seen as a critical component in the needed efforts to improve the quality of care in America's nursing homes. From its inception, the MDS was intended to serve multiple purposes: to collect data to both inform care plans and describe the resident population, to generate quality indicators (QIs) to evaluate nursing homes and guide improvement interventions, and to serve as a data source for nursing home payment systems. In an effort to better inform consumers, MDS data are also now used to develop publicly reported quality measures.

To adapt to changes in the industry and improve on how the MDS is used, the instrument was recently revised. In January 2008, the Centers for Medicare and Medicaid Services (CMS) published the "final draft revision" of a new MDS—version 3.0 (CMS, 2008a). This article examines

[1]Address correspondence to Anna N. Rahman, Miami University, Dept. of Sociology and Gerontology, Upham Hall, Room 396, Oxford, Ohio 45056-1879. E-mail: rahmananna@yahoo.com
[2]Department of Sociology and Gerontology, Miami University, Oxford, Ohio.
[3]Department of Sociology and Gerontology, Scripps Gerontology Center, Miami University, Oxford, Ohio.

the MDS approach and the proposed reforms by tracing the instrument's evolution through an analysis of its manifest functions and unintended consequences. Thus, this article starts with an historical review of the instrument's development, identifying design and utilization decisions that have proven controversial. A basic premise of this article is that both the MDS's design and incentives embedded in the prescribed uses of the instrument may separately and jointly contribute to potential unintended consequences of MDS use. We examine this possibility by reviewing studies that have evaluated the extent to which the MDS has met its manifest— or intended—functions (accurate resident data collection and care improvement) and resulted in unintended consequences (paper compliance and diminished attention to resident quality of life). We then examine the newest draft in an attempt to gauge whether it is likely to meet expectations for resident assessment and care improvement.

The MDS in Historical Context

The IOM set the stage for the development of the MDS, with its report's recommendations prompting passage of the Omnibus Reconciliation Act of 1987, which required sweeping changes in federal standards to improve nursing home quality of care, including a mandate for resident assessment, the second recommendation of 47 in total. The resident assessment was designed to formulate individual care plans, which in turn were expected to drive improvements in care quality. But the committee also recognized that the data collected could and should be used for regulatory functions (IOM, 1987). Thus, surveyors could use the data to draw their resident samples and states could use outcome data to evaluate facilities' quality of care. The data also could generate information for case mix reimbursement calculations. Such a multipurpose assessment can lead to unintended consequences, for each of these uses has embedded within it an incentive for facilities to classify residents as more impaired to receive higher payments or to show residents as less impaired to avoid possible survey deficiencies.

The assessment was to focus on "each resident's functional, medical, mental, and psychosocial status" (IOM, 1987, p. 74). Missing from this list is residents' quality of life, an omission now often cited as one of the MDS's major shortcomings (R. A. Kane et al., 2003; Ouslander, 1997; Uman, 1997). The IOM committee did not overlook this domain; their report discusses quality of life at length, using concepts that resonate today (R. A. Kane et al., 2003). However, they viewed quality-of-life assessment as a task for surveyors, not assessment nurses.

The First MDS

Development of the first MDS began in 1988 and included 20 major draft versions and a two-state field test (Morris et al., 1990). Certain MDS design decisions with potential for triggering unintended consequences have sparked debates that continue today. The first concerns the instrument's lack of attention to quality of life, which some now argue undermines nursing home efforts to improve in this area (R. A. Kane et al., 2003). A related debate involves the fact that the MDS does not require resident interviews. Although nurses *may* interview residents, the user manual also gives them discretion to collect data from other sources, including other staff members, medical charts, and resident observations. Critics charge that these indirect methods may lead to inaccurate assessments and underreporting, especially of such subjective states and conditions as pain, depression, and mood (Chu, Schnelle, Cadogan, & Simmons, 2004; R. A. Kane et al., 2003; Uman, 1997). The countercharge raises several concerns that many residents are too cognitively impaired to be reliable reporters, that there is no consensus protocol for identifying accurate reporters (R. A. Kane et al., 2003), that assessment results may vary from one interviewer to the next depending on how the questions are worded (Simmons & Ouslander, 2005), and that staff interviewers—as opposed to third-party assessors—may elicit socially desirable responses from residents (R. A. Kane et al., 2003).

A final controversy relates to the MDS's lack of standardized assessment protocols. Neither the instrument nor the user manual, for example, stipulates use of a standardized scale for measuring pain, although a number of these now exist. The same applies to other assessments—among them, incontinence, dementia, and mood—for which standardized reliable protocols are now widely used. Instead, nurses who complete the MDS are given discretion to assess resident outcomes and conditions by using diverse methods, including chart reviews and staff consultations, and fluid processes, such as a "conversation" to assess depression. Schnelle (2007) has argued that this absence of standardized assessment procedures compromises the reliability of MDS data.

The resident assessment protocols (RAPs), developed as an MDS adjunct to provide additional assessment items and background information when common clinical problems such as incontinence and delirium are identified, have been faulted for many of the same reasons the MDS has been criticized. A recent evaluation noted deficiencies in most RAPS—there are 18 of them—with respect to validity and reliability and recommended the use of well-established standardized clinical tools, such as the Braden Scale for pressure ulcers, to correct these problems (Dosa, Bowers, & Gifford, 2006).

From Debut to Present

Nationally implemented in 1991 as a resident assessment and quality improvement tool, the MDS now serves additional purposes in an expansive agenda that could produce unintended consequences (Figure 1). In 1998, Medicare and several state Medicaid programs began using MDS data to classify residents into resource utilization groups, which reflect residents' care needs and thus their resource needs; these groups are used to calculate nursing home reimbursements under prospective payment systems (Office of the Inspector General [OIG], 2001b). In 1999, CMS started requiring surveyors to use MDS-based QIs to guide their nursing home evaluations. In 2002, CMS launched

Year	Development
1990	First MDS introduced
1991	First MDS nationally implemented
1991	Enhanced MDS, the MDS+, developed for resource utilization group and quality indicator development project
1995	MDS 2.0 nationally implemented
1995	Zimmerman et al. (1995) report on 24 MDS-based quality indicators
1998	Medicare prospective payment system for skilled nursing homes nationally implemented
1998	Nursing homes required to electronically submit MDS data to CMS
1998	Resource Utilization Groups become basis for Medicare's nursing home prospective payment system
1999	State surveyors required to use the quality indicators to guide nursing home evaluations.
2002	Medicare's Nursing Home Compare Web site launched
2005	Development of Quality Indicator Survey initiated
2006	Nursing home Pay-for-Performance demonstration project launched
2008	MDS 3.0 final draft published
2010	Nationwide implementation of MDS 3.0 slated for October

Figure 1. Nursing home MDS time line. MDS = Minimum Data Set; CMS = Centers For Medicare and Medicaid Services.

the Nursing Home Compare Web site, a consumer information site that presents MDS-based quality ratings for virtually all nursing homes. Most recently, CMS has instituted its nursing home star rating system. As noted earlier, each of these uses provides an incentive to "doctor" MDS data to receive higher payments, by overestimating resident needs, or to avoid survey deficiencies and fare better in public reports, through underestimation.

Taking into account both the instrument's design and the system in which it operates, we assess the current MDS's strengths and weaknesses by examining the degree to which it has met its manifest functions and resulted in unintended consequences.

The MDS's Manifest Functions

Manifest functions of the MDS are its foremost uses as identified by the IOM committee: (a) to assess resident condition and needs and thereby (b) improve quality of care and resident outcomes.

Data Collection

MDS versions 1 and 2 were subjected to extensive reliability testing that found excellent levels of interrater reliability for most items (Casten, Powell, Parmelee, & Kleban, 1998; Lawton et al., 1998; Morris et al., 1990, 1997). Additionally, a number of studies have validated that MDS data in aggregate predict hospitalization, mortality, and functional decline (e.g., Intrator et al., 2004; Teno et al., 2002). These studies, however, tested MDS items under ideal conditions using trained research nurses, so results may vary in practice. Indeed, there is widespread acknowledgment that different facilities may use different methods to assess residents, making definitive judgments about the reliability of MDS data impossible (Mor, 2005; Sangl, Saliba, Gifford, & Hittle, 2005; Ouslander, 1997).

Beyond reliability testing, a number of studies have assessed data accuracy and found evidence of MDS errors. Chu and colleagues (2004) found that of 309 residents who reported chronic pain in interviews with research staff, only 37% had pain documented on their most recent MDS assessment. Other studies have found that facility staff tend to underreport residents' depression and pain and overreport their functional dependency (Schnelle, 2007).

Recognizing that MDS errors could potentially lead to higher payments to nursing homes, CMS in 1998 funded a data verification study. Results found MDS errors in all of the 30 participating

facilities (General Accounting Office [GAO], 2002). Similarly, the OIG (2001a) compared MDS data with residents' medical charts and found that, on average, 17% of the 406 MDS fields for each resident were different from the medical record. Although MDS inaccuracies found in both studies affected payments, they did not result in *systematic* overpayments or underpayments. More recent research designed to correct some of the methodological flaws in the earlier studies have found lower MDS error rates but reveal wide variability in the data across facilities for reasons that have yet to be determined (Mor et al., 2003; Wu, Miller, Lapane, Roy, & Mor, 2005).

An additional concern about the MDS data collection process involves time frame. Residents are required to be assessed on admission and then every 90 days. Major resident changes that happen after the 7- or 14-day look-back period are supposed to trigger a new assessment. However, because of resource constraints, these reassessments rarely occur (Mehdizadeh & Applebaum, 2005). Thus, efforts by nursing home staff to use MDS data to monitor resident changes in condition and provide timely responsive care are hampered by a considerable amount of missing observations.

Given the important and myriad uses of the MDS, state surveyors are expected to audit MDS data during facility reviews. There is no evidence, however, that surveyors regularly conduct audits of the MDS for accuracy (GAO, 2002). In sum, the reports reviewed here—singly or together—are insufficient to either wholly deflate confidence in MDS data or inspire confidence in it. Consequently, questions about the data's integrity persist.

Care Improvements

Since passage of OBRA '87, there have been undeniable improvements in some care processes (e.g., restraint use has decreased) and resident outcomes (e.g., pressure ulcer incidence has dropped), despite increases in resident acuity (Feng et al., 2006). To what extent has use of the MDS—or the MDS-based QIs—triggered such improvements?

A series of studies reported in 1997 evaluated the effect of MDS use on selected resident outcomes (Fries et al., 1997; Hawes et al., 1997; Phillips et al., 1997). On the whole, the researchers found improvement in outcome measures from pre- to post-MDS implementation. Three response editorials, however, questioned the MDS's value as a quality improvement tool, citing problems with its reliability and its dearth of quality-of-life indicators (Ouslander, 1997; Schnelle, 1997; Uman, 1997).

Introduction of the nursing home QIs (in 1999) and quality measures (in 2002) has not settled matters. In both cases, there was hope that facilities would use these MDS-based measures to strengthen their improvement efforts, but the data are problematic on two counts. First, this quality improvement information also serves a policing function, alerting surveyors (via the QIs) and consumers (via the quality measures) to poorly performing facilities. This dual use bucks a basic tenet of continuous quality improvement that the data required to improve care should not be used to punish the service providers (Deming, 1986).

The second problem is that MDS-based QIs have sometimes proved insensitive to actual improvements in care (Lynn et al., 2007; Stone et al., 2002). Similarly, in a series of studies, facilities' QI scores bore little relationship to the quality of the care their staffs actually provided to residents, based on independent research observations (Bates-Jensen et al., 2003; Schnelle et al., 2003; Simmons et al., 2003). These results suggest that the QIs are limited in their value for quality assessment and improvement purposes.

Research has also shown that simply reporting quality information to facilities does not lead to care improvements (Rantz et al., 2001). However, subsequent research has found that QIs improve when researchers pair information with clinical consultations (Rantz et al., 2001, 2003). In recent years, CMS has adopted this model, supporting more intensive interventions for quality improvement (Lynn et al., 2007) and requiring state Quality Improvement Organizations (QIOs) to work with facilities to enhance resident care. Thus, although the MDS may have triggered improvements in resident care and outcomes immediately following its national implementation, more recently these data have proved to be an insufficient catalyst for change. Instead, more intensive multifaceted interventions appear to hold greater promise (Rantz et al., 2001, 2003; Lynn et al., 2007).

The MDS's Unintended Consequences

Unintended consequences of the MDS's design and multipurpose use could theoretically undermine the instrument's manifest functions. As early as 1990, researchers warned that paper compliance was a potential unintended consequence of

MDS use (R. L. Kane, 1990). An additional possible unintended consequence is diminished attention to residents' quality of life.

Paper Compliance

A number of studies have reported evidence that facilities tend to document higher levels of care (toileting, restraint release, repositioning) than they actually deliver while underestimating the prevalence of certain problem conditions such as pain, depression, and low oral intake (Bates-Jensen et al., 2003; Chu et al., 2004; Schnelle, 1997; Simmons et al., 2003). Schnelle, Ouslander, and Cruise (1997) argue that these results are indicative of a paper compliance culture that has flourished in a flawed system: Workers respond to pressure to provide quality care by underreporting problems and documenting service levels that are not met and care plans that are not honored because they lack effective feasible interventions and because surveyors rely so heavily on MDS and medical chart reviews. Critics suggest that this mindset results in MDS compliance procedures becoming the lens through which nursing home staff view resident care, replacing good clinical judgment.

This criticism is coupled with other concerns, including that many nursing homes lack sufficient numbers of staff to provide quality care (Harrington et al., 2000), that federal and state regulatory systems are limited (GAO, 2003), and that too little is known about interventions that work well (Weiner, Freiman & Brown, 2007). These are the very problems that Schnelle and colleagues (1997) have argued can lead to paper compliance. Certainly, many administrators are keenly aware of how MDS data can affect their operations (e.g., Ungar, 2007); their concerns have prompted a market response, giving rise to commercial software products designed to help facilities maximize their reimbursements while avoiding survey deficiencies.

Resident Quality of Life

Critics have argued that quality of care, rather than quality of life, has been the dominant concern in nursing homes (R. A. Kane, 2001). MDS-related evaluations have reinforced this premise: Just 2 of the 24 original MDS-based QIs were related to quality of life (Zimmerman, 2003), and more recent research has shown that the QIs are not strongly related to residents' self-reported quality of life or satisfaction (Degenholtz, Kane, Kane, Bershadsky, & Kling, 2006; Bailer, Straker, Noble,

Hughes, & See, 2007). Based on the Lord Kelvin observation that "If you cannot (or do not) measure it, you cannot improve it," the underrepresentation of quality of life on the MDS may contribute to the lack of attention to resident life quality. In part to rectify this oversight, two states—Ohio and Minnesota—publish online reports of nursing home residents' satisfaction ratings and quality-of-life ratings, respectively (Ohio Department of Aging, 2009; Minnesota Department of Human Services, 2009).

Although critics acknowledge that the MDS has made contributions to long-term care, this review reveals questions about the instrument's reliability, validity, and usefulness for quality improvement. These questions appear to stem from the MDS's design in concert with its multipurpose use. Relying on staff discretion for some assessments, for instance, may not be problematic—unless the system includes incentives to over- or underestimate problem conditions, which may increase the likelihood that unintended consequences will result. Teasing out the separate contributions of these influences is impractical in such a complex system, and none of the numerous MDS studies—together or separately—has reported sufficient evidence to definitively confirm or refute underlying concerns. The third revision of the MDS represents an attempt to respond to these ongoing concerns.

MDS 3.0

The draft MDS 3.0, while still undergoing refinement in anticipation of being nationally implemented in October 2010, includes major changes to version 2.0 (Figure 2). Designed to give residents voice and to improve clinical relevance, accuracy, efficiency, and clarity, draft MDS 3.0 was developed with input from MDS users, resident advocates, and subject area experts (Saliba, 2008). In the final development phase, the instrument was tested in 71 facilities in eight states using 3,800 residents. Two types of nurses collected the assessment data: "gold standard" research nurses and one nurse in each participating facility. The facility nurse data were shown to be reliable (and in comparisons, as reliable as the data collected by the gold standard nurses; Saliba). Overall Kappa values for the sections that underwent the most revision—mental status, mood, pain, behavior, and customary routines and activities—ranged from .92 to .97; item reliabilities for delirium, included in the mental status section, were lower, but still considered excellent, ranging

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> MDS Sections Requiring Resident Interview:
> - Mental status, including delirium items
> - Mood
> - Pain
> - Quality of life
>
> Sections with Significant Changes:
> - Behavior
>   - Revised language
>   - Added operational definitions
> - Pressure Ulcer
>   - Eliminated reverse staging
>   - Adds present on admit
> - Balance
>   - Refocused on movement and transitions
> - Falls
>   - Introduced type of injury
> - Bowel & bladder
>   - No longer rate catheter as continent
>   - Improved toileting item
> - Activities of daily living
>   - Single response scale
> - Goals of care and return to community items added
> - Oral/dental item improved
> - Swallowing item
>   - Checklist of observable signs and symptoms
> - Restraints
>   - Separates bed and chair
>
> *Source: Saliba, D. (2008).*

Figure 2. Summary of MDS 3.0 changes. MDS = Minimum Data Set.

from .75 to .89 (Saliba). Similarly, the vast majority of nurses who conducted assessments reviewed the MDS 3.0 positively (Saliba). Overall, the instrument reduced the assessment time by 45% to an average of 62 min (Saliba).

In the following sections, we examine whether the new MDS, with changes that directly address previous criticisms, is likely to fulfill its manifest functions while avoiding the unintended consequences associated with its predecessor.

Manifest Functions

Data Collection

In a departure from earlier versions, draft MDS 3.0 features resident interviews and greater use of standardized assessment procedures in an effort to improve measurement reliability, accuracy, and validity (CMS, 2008b; Saliba, 2008).

The MDS 3.0 requires resident interviews with scripted questions to assess such subjective states as pain, mood, depression, cognitive functioning, and personal preferences for services and activities (CMS, 2008b). The pilot evaluation found high completion rates and good to excellent reliability results for these items, demonstrating that most residents can participate meaningfully in interviews

(Saliba, 2008). Additionally, instructions for these items are designed to prevent possible selection and response biases. Thus, nurses are directed to ask *all* residents standardized questions that are scripted word for word (e.g., "Ask resident: 'Have you had pain or hurting at any time in the last 5 days?'"). Exceptions apply only if the resident is rarely or never understood, fails to complete the section, or needs an interpreter but none is available (CMS, 2008a; Saliba). In these cases, nurses assess the items.

There are two interrelated concerns. The first is that nurses could sidestep the intended protocol because professional discretion is needed to determine whether some exceptions apply. For example, there is no standardized protocol within the MDS 3.0 for assessing a resident's communication abilities. Similarly, there is little guidance for nurses to determine what is meant by "(resident) unable to complete" the section. The second concern is that many nurses in the pilot evaluation were initially hesitant to attempt resident interviews because they viewed the questions as too personal (Saliba, 2008). Both concerns raise questions about whether assessment nurses will circumvent MDS protocol.

Compared with previous versions, MDS 3.0 makes greater use of standardized assessment procedures, a change that in the pilot evaluation resulted in increased measurement reliability, validity, and accuracy (Saliba, 2008). The delirium items, for example, have been previously validated for frail adults. The pain assessment uses resident ratings on the commonly used 0–10 scale. Depression is assessed with the Patient Health Questionnaire (PHQ-9), based on the widely used *Diagnostic and Statistical Manual of Mental Disorders*-IV criteria (Saliba). Pressure ulcer items draw from the National Pressure Ulcer Advis ory Panel's PUSH tool (Saliba). Additionally, the highly structured interviews for the new preference assessment tool (PAT) and the cognitive assessment constitute standardized procedures.

There has been some concern that standardized procedures will require more staff time and training to implement reliably and regularly than many nursing homes can commit to. Evaluation findings, however, suggest that the 3.0 procedures are feasible to implement: Nurses completed the items reliably; and, again, the average assessment time dropped (Saliba, 2008). If these findings hold true following national implementation of the MDS 3.0, then the revised instrument may indeed increase measurement reliability and validity.

Quality Improvement

At the same time, nursing homes could face increased scrutiny by surveyors and consumers if the use of standardized assessments leads to increased prevalence rates for common but heretofore underreported conditions. Such was the case in the national evaluation, where the MDS 3.0 assessments found higher prevalence rates for delirium (7% vs. 3%) and pain (64% vs. 50%) when compared with the MDS 2.0 assessments. As noted earlier, this detection quandary arises when the same data are used to punish providers and improve care and could unintentionally prompt providers to thwart the new assessment procedures.

Despite the potential improvements included in MDS 3.0, implementation questions have been raised in a number of areas. For example, will facility nurses exclude too many residents from the interview process? Will prevalence rates for certain conditions, such as pain, be underreported? Many of these challenges can be addressed through the development of a sound audit process involving an independent validation assessment of a sample of residents using external staff. Such a system could be implemented on a state or national basis on a sample of facilities.

Unintended Consequences

Paper Compliance

Even if MDS 3.0 performs as well in practice as it has in the pilot evaluation, some providers may still resort to paper compliance rather than actual care improvements in the absence of other industry reforms. The new MDS will inherit the old system, with its incentives to use MDS data for purposes other than assessment and quality improvement. It will also not increase staffing levels, strengthen the survey process, or identify new care processes that are both effective and feasible to implement—all reforms that some say are necessary to improving care and combating paper compliance.

Quality of Life

MDS 3.0 attempts to directly assess quality of life through a PAT, which replaces 2.0's 20-item customary routine assessment and its activities assessment (gone entirely is 2.0's psychosocial assessment). The tool includes 16 interview items divided into two categories: daily preferences and activity preferences (Figures 3 and 4). Nurses are instructed to attempt to interview all residents.

Although intended to tap into widely recognized quality-of-life domains (Degenholtz et al., 2006; R. A. Kane et al., 2003), its design is potentially problematic in three respects. First, the instrument does not assess such important quality-of-life domains as dignity, enjoyment, and comfort (R. A. Kane et al., 2003) and pays limited attention to such domains as security and relationships. Second, there is lingering concern about whether staff interviewers can elicit honest opinions from residents who are dependent on the facility's workers for their care. The PAT addresses this problem by using questions and response categories that seem likely to mitigate an acquiescence response bias. For each PAT item, residents are asked, "While you are in this facility, how important is it to you to …?" This focus on residents' interests is in contrast to other quality-of-life instruments that use questions and response categories that reflect on facility or staff performance (e.g., by asking residents whether an activity happens often enough or whether they are satisfied with various aspects of their life; R. A. Kane et al., 2003; Straker, Ejaz, McCarthy, & Jones, 2007). Thus, the third problem with the PAT's approach is that it weakens the instrument's usefulness as a quality improvement tool: Knowing how important an item is to a resident does not tell you whether that preference is being met.

○ Choose what clothes to wear
○ Take care of personal items
○ Choose between a tub bath, shower, bed bath, or sponge bath
○ Have between-meal snacks available
○ Stay up past 8 p.m.
○ Have family or close friend involved in care discussions
○ Use the phone in private
○ Have a place to lock personal items

Response categories: important; not important; important, but can't do or no choice; no response or nonresponsive

Source: CMS, 2008a

Figure 3. Preference assessment tool—Daily preference items.

○ Have books, newspapers, and magazines to read
○ Listen to music you like
○ Be around animals such as pets
○ Keep up with the news
○ Do things with groups of people
○ Do favorite activities
○ Go outside
○ Participate in religious services or practices

Response categories: important; not important; important, but
can't do or no choice; no response or nonresponsive

Source: CMS, 2008a

Figure 4. Preference assessment tool—Activity preference
items.

Looking Forward

Results of the evaluation test of MDS 3.0 are promising, with revisions that appear to yield increased measurement accuracy, reliability, and validity (Saliba, 2008). These advances could lead to more accurate resident assessments and spur more effective quality improvement efforts. But some design features may produce unintended consequences that threaten these improvements. MDS 3.0, for instance, appears to shortchange the quality-of-life assessment; nurses retain sufficient discretion to sidestep recommended interview protocols; and there remain concerns about whether facilities, under usual care conditions, can implement the standardized assessment items regularly and reliably. Looking forward, MDS training programs that provide hands-on practice with the instrument, especially with items requiring a resident interview or a standardized assessment, along with timely performance feedback will be needed to help assessment nurses adapt to the new protocols *and* detach from past practices.

Unintended consequences may also arise from the MDS's continued multipurpose use. In its efforts to serve consumers, facilities, regulators, funders, and researchers, even an improved MDS may fall short of expectations due to conflicting demands: Asking facilities to collect data that can be used to both improve and punish violates a cardinal rule of quality improvement; and asking staff to collect data from residents that affect revenues violates good data collection practice. Reforming the system will entail curtailing reliance on the MDS and employing new strategies for assessment and quality improvement.

To date, however, most CMS-sponsored efforts to improve care since OBRA '87 have centered on MDS-related assessment activities (see, again, Figure 1). In a hopeful sign of change, more recent initiatives are less MDS dependent. The Quality Indicator Survey (QIS) makes greater use of resi-

dent interviews and observations than its predecessor, which the QIS is gradually replacing. Also noteworthy is CMS's engagement of state QIOs to work with nursing homes, a quality improvement initiative that favors direct care strategies over assessment strategies. Additionally, many QIOs as well as culture change proponents are advocating that nursing homes continuously evaluate and monitor new improvement initiatives using measures (again, resident interviews and observations) that are independent of the MDS (e.g., Advancing Excellence in America's Nursing Homes, 2009; Rhode Island Quality Partners, 2009).

Even more emphasis on direct care interventions may be needed. Some long-term-care experts have called for increasing staffing levels to meet standards for quality care (Harrington et al., 2000), whereas others have called for more support to develop care processes that improve resident outcomes (Schnelle et al., 1997). Thus far, these proposals have received less attention than the assessment approaches, although assessing need may be insufficient to produce change without feasible interventions to improve care and a stable staff of sufficient size to provide service.

The question is not whether efforts to improve the MDS are important but rather that these improvements are best viewed as part of a more balanced set of intervention efforts. For MDS 3.0 to achieve its manifest functions—and sidestep potential unintended consequences—it needs to operate as originally envisioned, within a broad multifaceted quality improvement framework.

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