

Published in final edited form as:

J Am Med Dir Assoc. 2014 ; 15(11): 802–806. doi:10.1016/j.jamda.2014.01.012.

Finding Gertrude: The Resident's Voice in MDS 3.0

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Abstract

Purpose of the Study—The new MDS 3.0 was designed to improve the assessment process by requiring nursing home (NH) staff to attempt to interview residents with scripted questions to assess subjective states such as pain, mood, and cognitive functioning. While the case has been made that resident self-report is important, it is unknown whether facilities are doing so in practice. We examined the frequency of attempts to interview residents in order to elucidate the types of residents able to be interviewed about their clinical conditions and facility characteristics related to the likelihood of attempt.

Design and Methods—Data come from MDS 3.0 annual assessments for 757,044 residents in 15,030 NHs during 2011–2012 and the 2011 Online Survey, Certification, and Reporting database. Hierarchical generalized linear models were conducted to test the association between resident and facility characteristics and the attempt rate of resident interview for three clinical domains (cognition, mood, and pain).

Results—Over 83% of long-stay residents attempted all three self-report clinical items. The rates of attempt for mood, cognition, and pain were 88%, 89%, 92%, respectively. Results from hierarchical generalized linear models suggest that certain resident characteristics are related to the likelihood of participating in interviews, in particular neither having a diagnosis of dementia nor cognitive impairment, exhibiting signs of delirium, nor a documented prognosis of six months or

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less to live. Residents in smaller, chain-affiliated nursing homes with fewer Medicare residents and fewer assessments per administrative nurse and registered nurse were more likely to attempt the resident interview items.

Implications—This paper documents the high rate of NH residents' participation in interviews about their clinical states. Furthermore, we identify types of residents for whom additional investigation into ways to achieve higher rates of participation is required and facility resources that are related to the likelihood of high rates of attempt.

Keywords

Nursing Home; Long-term Care; MDS

INTRODUCTION

In response to a series of studies in 1997 evaluating the effect of Minimum Data Set (MDS) use on selected resident outcomes,^{1–3} three response editorials questioned the MDS' value, citing problems with its reliability and the fact that it ignored the quality of residents' life from their own perspective.^{4–6} In one editorial entitled "Where's Gertrude," Gwen Uman wrote about Gertrude, the all-too-common case of the missing "person" in the face of the excessive medicalization of the nursing home (NH) environment through tools like the MDS.⁶

Almost two decades later, the new MDS 3.0 was designed to improve the assessment process including requiring NH staff to attempt to interview residents with scripted questions to assess subjective states such as pain, mood, and cognitive functioning.^{7,8} The Centers for Medicare and Medicaid Services (CMS) posited that including residents in the assessment process offered several benefits including encouraging ownership over care, promoting resident-centered care, and improving the accuracy of subjective measures.⁹ With the MDS 3.0 in its third year of use, there remains little evidence as to how residents are performing on these scales and what types of residents are able to complete these items.

The case has been made that resident self-report is important.^{10–15} Although the pilot and national testing of MDS 3.0 showed that residents can answer items related to mood, pain, and cognitive impairment, it is unknown whether facilities are asking residents to participate in these interviews in the "real-world," particularly long-stay NH residents who are typically frail with multiple chronic illnesses and high levels of cognitive and functional impairment.¹⁶ Both pilot and national testing with these new measures demonstrated high response rates;^{8,17} however, the testing took place with trained nurses who were aware that their collection of the items was being observed. Therefore, it is possible that the high levels of resident self-report that were seen in the pilot and national evaluations may differ from what happens in actual practice. The purpose of this paper was to examine the rate of resident participation in interviews during their annual assessments and elucidate the types of residents who were approached to be interviewed about their clinical conditions. In addition, this paper also identifies facility resources that may influence the higher likelihood of interview attempt for long-stay residents.

DESIGN AND METHODS

Data

Data come from the Minimum Data Set 3.0, a U.S. federally mandated process for clinical assessment of all residents in Medicare or Medicaid certified NHs (American Health Care Association Data Use Agreement #18458). These assessment data include information about residents' physical, clinical, psychological, and psycho-social functioning. We also include information about NHs from the Online Survey, Certification, and Reporting database, a data network maintained by the Centers for Medicare and Medicaid Services (CMS) in cooperation with the state long-term care surveying agencies. OSCAR includes information collected by surveyors during the annual inspection required for certification. It contains facility level information on the operations, patient census, and regulatory compliance of NHs.

Sample

Our sample includes all long-stay residents with an annual MDS assessment completed between July 1, 2011 and July 1, 2012 (N=871,315). We matched these data with the 2011 OSCAR data (863,944 annual assessments were able to be matched to a facility). We excluded residents who were categorized as comatose, never or rarely understood, or never or rarely able to understand (N=106,900) on the assessor's report. The CMS's Resident Assessment Instrument Version 3.0 Manual instructs assessors to code residents as being rarely or never understood if, at best, their understanding is limited to staff interpretation of highly individual, resident-specific sounds, or body language (e.g., indicated presence of pain or need to toilet). A code of rarely/never understands are reserved for residents who demonstrate very limited ability to understand communication. The MDS 3.0 instructs the assessor not to proceed with the resident interview if the resident is either comatose or unable to be understood. Therefore, by removing these residents from the sample, we hoped to elucidate the other qualities that might either encourage or discourage assessors from attempting to interview residents. Our final analytic sample consisted of 757,044 residents from 15,030 NHs

Variables

To determine participation in assessment through resident interviews, we examined the items C0100, D0100, and J0200, indicating "Should the Brief Interview for Mental Status/ Resident Mood Interview/Pain Assessment Interview be Conducted," respectively. In CMS's Resident Assessment Instrument Version 3.0 Manual, it instructs the assessor to first determine if the resident is rarely/never understood verbally or in writing. If the resident is identified as being rarely/never understood the assessor is to complete the Staff Assessment of Mental Status/Mood/Pain. Assessors are then instructed to review the language item (item A1100), to determine if the resident needs or wants an interpreter. If the resident needs or wants an interpreter, the interview is to be conducted with an interpreter. The items are to be coded 0, no, if the interview should not be attempted because the resident is rarely/never understood, cannot respond verbally or in writing, or an interpreter is needed but not available. If the items were coded as 1 ("yes"), the resident interview items were counted as "attempted". We created a new variable to indicate if all of the resident interview items were

attempted. Therefore, our outcome variable is a measure of attempt on all clinical interview items.

We examined a number of resident characteristics from the MDS assessment that we believed, a priori, would be related to the likelihood that residents would be asked to participate in the interviews. We included demographic characteristics (resident age (both a linear and quadratic form), race (white/not white), gender, and being married), a variety of diagnoses (Alzheimer's disease, non-Alzheimer's dementia, stroke, and severe mental illness (SMI) consisting of a diagnosis of either schizophrenia, psychotic disorder, and/or manic depression), and whether or not the resident was admitted from the community or had a documented prognosis of six months or less. We also included whether or not the resident needed an interpreter and displayed any symptoms of delirium as indicated on the Confusion Assessment Method (CAM)¹⁸ measures. Finally, we included the presence of behavior symptoms (item E0300) if the resident exhibited physical, verbal or other behavioral symptom toward others, daily.

We included a number of facility characteristics that we hypothesized may be related to the rates of long-stay resident interviews in NHs: for profit status, whether or not the facility affiliated with a chain, size (as measured by the total number of beds), the facility occupancy rate, percent of residents funded by Medicaid, and the percent of residents funded by Medicare. Because of the time required to conduct the resident interviews, we hypothesized that the workload of individuals conducting the assessments may be related to the likelihood that resident interviews were attempted. Therefore, we included total number of all types of MDS assessments conducted in the facility per full-time equivalent (FTE) administrative nurse. Administrative nurses were measured as the sum of two OSCAR variables: nurses with administrative duties and the director of nursing.¹⁹ We also controlled for the total number of assessments per FTE licensed nurse (excluding director of nursing and nurses with administrative duties) during the year. We standardized all continuous facility level variables.

Analyses

We used hierarchical generalized linear models that can both account for clustered data and non-normally distributed outcomes. The analyses were conducted in the Stata 11 procedure GLLAMM. We examined the relationship between resident characteristics and attempt of each of the resident interview items, separately; however, because the results did not greatly differ between items, we report only the results of the model examining attempt of all three resident interview items. We do, however, present the univariate results for each interview item. We controlled for all of the resident characteristics that were significant in the first model to isolate the effect of facility characteristics on the likelihood of attempt on the resident interview items. Following others,¹⁹ in the facility analysis we treated NHs that reported zero administrative nurse hours (less than 0.5% of total observations) as outliers (potentially due to reporting errors) and trimmed them from the final analytic sample. We also excluded from our facility analysis 644 hospital-based facilities, which primarily serve short-stay post-acute Medicare patients. These facilities tend to operate quite differently from freestanding NHs, often sharing staffing and resources with the affiliated hospital.

RESULTS

Our examination of the individual scales found that the Brief Interview of Mental Status (BIMS) was attempted by 89% of long-stay residents on their annual assessment (N= 673,769). Of those who started the interview, 7% were unable to complete the cognition self-report assessment. The average score was 9.6 (SD= 4.8) indicating that the average resident in our sample had moderate cognitive impairment.

Of the 88% (N= 666,199) who attempted the Patient Health Questionnaire-9 (PHQ-9), 5.7% were not able to complete the assessment. For those that were able to complete the mood interview, the average score was 7.8 (SD=8.8) suggesting the average resident in our sample was mildly depressed. The interview on pain was the scale having the greatest attempt rate with 92% of residents reported as having attempted to complete the self-report pain scale (N= 696,480). Of these, 5.4% were missing at least one pain item resulting in 13.4% with complete missing pain scales.

All resident interview items were attempted by 83% of long-stay residents in our sample (See Table 1). Univariate results examining attempt of each interview item are presented in Table 2. When examining the prevalence of initiation of self-report items across facilities, we found that the average facility rate of not initiating the interview for at least one item was 16.4% (SD=15.7%) with a range from 0–100% of residents not attempting the interviews (see Figure 1).

Results from the hierarchical generalized linear model suggest that certain resident characteristics are related to the likelihood of attempting the clinical interviews in MDS 3.0 (see Table 3). Residents who were older (AOR=1.06 95% CI=(1.05–1.06), white (AOR=1.22, 95% CI=(1.19–1.24), not married (AOR=0.91, 95% CI=(0.89–0.93), did not need an interpreter (AOR=0.45, 95% CI=0.43–0.47), did not exhibit behavioral problems (AOR=0.64, 95% CI=(0.62–0.65), had not been diagnosed with stroke (AOR=0.75, 95% CI=0.73–0.76), delirium (AOR=0.19, 95% CI=0.19–0.20), Alzheimer's Disease (AOR=0.50, 95% CI=0.49–0.51), or other dementing disorder (AOR=0.61, 95% CI= 0.60–0.62), and did not have a documented prognosis of six months or less to live (AOR=0.46, 95% CI=0.44–0.48) had a greater likelihood of attempting to complete the clinical interview items.

A number of facility characteristics explain the variation in the rate of initiation of long-stay resident interviews. When controlling for resident characteristics, we found that residents in smaller (AOR=0.91, 95% CI= 0.89–0.92), chain-affiliated NHs (AOR=1.05, 95% CI= 1.01–1.11), with a smaller proportion of Medicare residents (AOR=0.93, 95% CI= 0.90–0.96), and fewer assessments per administrative nurse (AOR=.91, 95% CI= 0.90–0.93), and licensed nurse (AOR=0.98, 95% CI= 0.96–0.99), were more likely to attempt the self-report scales.

DISCUSSION

We found that the vast majority of NH residents participated in self-reporting clinical conditions: 83% of long-stay residents attempted all of the interview items. Our results

suggest that the items with the greatest attempt rate are the pain scale, followed by mood, and finally cognition. In addition, we have identified a number of resident characteristics and facility characteristics that are related to the likelihood that residents participate in the self-assessments.

Resident interview is an improvement in the assessment process. Observation alone can be misleading and therefore successful completion of these items is important for maintaining a safe environment, designing and implementing sound care plans, and providing appropriate discharge planning. We were surprised by the correspondence of the actual attempt rates found in our study to those reported in the national evaluation.^{8,20,21} Our analysis shows much higher fidelity than would be expected as it is rare for an evaluation of effectiveness to be so highly concordant with prior studies of efficacy. The high rates of resident interviews are encouraging and proponents of resident-centered care are likely to be very excited about this finding: NH residents are being asked, and are able, to participate in their care. Our results suggest that not only have NHs adapted to the new change in assessment protocol, but residents are able to self-report subjective states which directly impact care planning and delivery.

The MDS 3.0 manual instructs that resident interview items are not to be conducted if the resident is “rarely/never understood.” It is important to note that individuals who met these criteria on their MDS assessments were excluded from the sample. Therefore, our results suggest the reason for excluding individuals from being interviewed about their cognition, mood, and pain goes beyond clinically being identified as not able to be understood. It is possible that nurses could sidestep the intended protocol because professional discretion is needed to determine whether residents are able to answer the items; therefore, they may forgo interviews based on their own opinions regarding the resident’s ability. More research is needed to understand why residents who are able to be understood are not participating in these interviews.

Our results call to the need for NHs to focus efforts on interviewing certain residents. With the increasing numbers of minorities and non-native English speakers in NHs, it is important that residents have access to an interpreter to complete the interviews and participate in other health communication. In the pilot and national evaluation of the MDS 3.0, most residents with mild or moderate impairment could and did complete the self-report items. In addition, some residents with severe cognitive impairment were able to complete the interview, but the completion rates were lower in that group. Our results suggest that residents who have been diagnosed with dementia, Alzheimer’s disease, or exhibit a symptom of delirium are at increased risk of not participating in the resident interview. Additional training might be required for nurses to determine the appropriateness of interviewing these individuals as well as appropriate ways to obtain this information for these specific populations.

Results from this study suggest that individuals with a documented prognosis of fewer than six months to live were at increased risk of not participating in interviews that assess cognition, mood, and pain. It is particularly concerning, and somewhat surprising, that some residents at the end of life are not being asked to self-report their pain, often referred to as

the “fifth vital sign,” because self-report is the gold standard for pain assessment. Ongoing assessment of pain at the end of life is crucial as the effective management of pain relies on accurate assessment of pain. With the increasing prevalence of end-of-life care provided to long-stay residents in NHs, it is important that pain assessments be conducted to ensure dying residents are comfortable.

In addition, our results suggest that there is variation in the attempt rate of the resident interview items across facilities. When controlling for resident characteristics and exploring potential causes of this variation, it appears as though facility resources to conduct these interviews are related to the differential rate of attempt on these resident self-report items. It is likely that staff who are overburdened with completing a high number of assessments are less likely to attempt to interview long-stay residents, particularly those long-stay residents that reside in large facilities that serve a number of Medicare/post-acute patients and have fewer staff available to complete assessments. Our results suggest that large facilities responsible for completing a high number of resident assessments should focus their efforts on increasing the number of personnel assigned to complete these assessments in order to ensure that long-stay NH residents are asked to participate in their assessment and care planning.

CONCLUSION

With the introduction of self-report measures in the new MDS 3.0, it appears as though the NH industry is on its way to “Finding Gertrude.” As the importance of resident-centered care is recognized and promoted, it is likely we will see additional emphasis on incorporating residents into their plans for care and day to day activities, ultimately improving the care and quality of life of older adults who call a NH, “Home.”

Acknowledgments

This work was supported by the National Institute on Aging (P01 AG-027296) and the Agency for Healthcare Research and Quality (T32 HS-000011). The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs.

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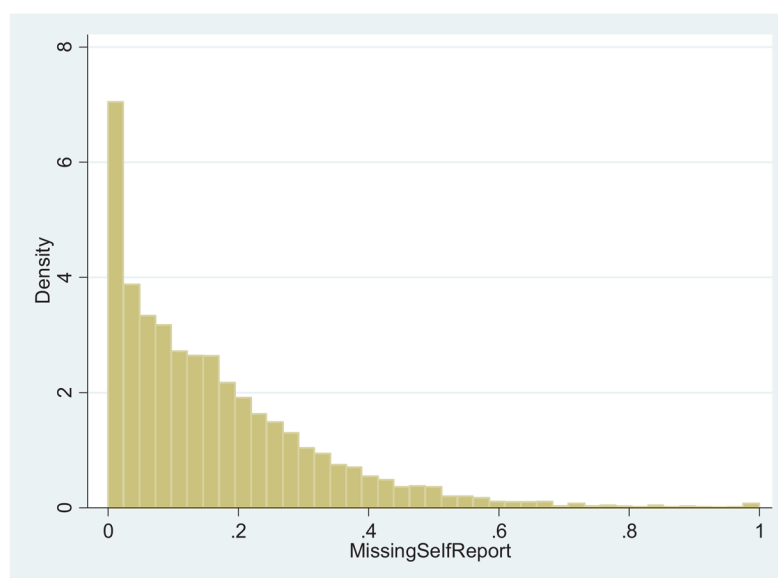


Figure 1.
Facility Average Rate of Annual Assessments Missing at Least One Resident Interview

Table 1

Descriptive Characteristics of Sample with MDS 3.0 Annual Assessments, FY 2011–12

	Mean (SD) or %
Interview Attempt	83%
Age (Mean)	80 (13)
White	77%
Female	69%
Behavioral Problems	15%
Needs Interpreter	3%
Married	20%
Admitted from Community	12%
Alzheimer's Disease	16%
Stroke	18%
Dementia	47%
Symptom of Delirium	25%
SMI	23%
Documented Six-Month Prognosis	2%

Notes. N= 757,044 resident assessments; SMI=serious mental illness

Table 2

Univariate Results for Attempt of Each Interview Item

Univariate Results for Attempt of Each Interview Item				
	Cognition	Mood	Pain	All Three
Age	79.3 (mean)	79.2 (mean)	79.4 (mean)	79.2 (mean)
Age ²	6473.3 (mean)	6458.5 (mean)	6489.1 (mean)	6452.1 (mean)
White	77.4%	77.4%	77.3%	77.7%
Female	68.6%	68.4%	68.6%	68.4%
Behavioral Problems	13.7%	13.4%	14.1%	13.1%
Needs Interpreter	2.9%	2.9%	3.1%	2.8%
Married	20.5%	20.6%	20.4%	20.5%
Admitted from Community	12.0%	12.0%	12.0%	12.0%
Alzheimer's Disease	14.7%	14.3%	14.9%	14.0%
Stroke	17.9%	18.0%	18.1%	17.8%
Dementia	45.6%	45.1%	46.2%	44.7%
Symptom of Delirium	22.0%	21.2%	23.2%	20.4%
SMI	22.4%	22.3%	22.4%	22.2%
Documented Six-Month Prognosis	1.4%	1.4%	1.5%	1.3%

Notes. N= 757,044 resident assessments from 15,030 nursing homes; SMI=serious mental illness

Table 3

Multivariate Results from Hierarchical Generalized Linear Model Examining Resident Characteristics Related to Attempting All Interview Items

Multivariate Results Examining Attempting All Interview Items		
	AOR	(95% CI)
Age	1.06	(1.05 – 1.06)
Age ²	1.00	(1.00 – 1.00)
White	1.22	(1.19 – 1.24)
Female	1.01	(1.00 – 1.03)
Behavioral Problems	0.64	(0.62 – 0.65)
Needs Interpreter	0.45	(0.43 – 0.47)
Married	0.91	(0.89 – 0.93)
Admitted from Community	0.98	(0.96 – 1.00)
Alzheimer's Disease	0.50	(0.49 – 0.51)
Stroke	0.75	(0.73 – 0.76)
Dementia	0.61	(0.60 – 0.62)
Symptom of Delirium	0.19	(0.19 – 0.20)
SMI	1.00	(0.99 – 1.02)
Documented Six-Month Prognosis	0.46	(0.44 – 0.48)

Notes. N= 757,044 resident assessments from 15,030 nursing homes; AOR= Adjusted Odds Ratio; CI= Confidence Interval; SMI=serious mental illness

Table 4

Results from Hierarchical Generalized Linear Model Examining Facility Characteristics Related to Attempting Interview Items

	AOR	(95% CI)
For Profit	1.04	(0.98 – 1.10)
Chain Affiliation	1.05	(1.01 – 1.11)
Total Number of Beds *	0.91	(0.89 – 0.92)
Occupancy Rate *	0.99	(0.97 – 1.01)
Percent Medicare *	0.93	(0.90 – 0.96)
Percent Medicaid *	0.99	(0.97 – 1.02)
Number of Assessments per Administrative Nurse *	0.91	(0.90 – 0.93)
Number of Assessments per Licensed Nurse *	0.98	(0.96 – 0.99)

Notes. Model controls for resident age, age², race, gender, behavioral problems, needing an interpreter, marital status, admission from community, Alzheimer's disease, stroke, dementia, symptom of delirium, documented six-month prognosis N= 719,899 resident assessments from 14,337 nursing homes; AOR= Adjusted Odds Ratio; CI= Confidence Interval; RN= Registered Nurse;

* Variable standardized