Direct Observations of Nursing Home Care Quality: Does Care Change When Observed?

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Objectives: Recent research demonstrates that care recorded by nursing home (NH) staff is often inaccurate. Direct observations of care may therefore be of critical importance in assessing and improving care in this setting. Unfortunately, despite their apparent use in several types of quality assurance activities, there is little written information about the reliability or accuracy of observational procedures in NHs. This paper provides information about one important measurement issue (reactivity) that is often cited as a limitation of observational procedures in measuring usual care practices accurately.

Design: Descriptive.

Setting: Seven nursing homes.

Participants: Staff and residents.

Measurements: Direct observational time in bed; repositioning and feeding assistance.

Results: Observational measures of care quality were stable over multiple observation periods and consistently detected quality problems even on the first and last days of observation.

Conclusion: Direct observations of care provided to residents do not appear to change provider behavior. (J Am Med Dir Assoc 2006; 7: 541–544)

Nursing home (NH) quality has been reported to be poor in studies of many different conditions, and the Institute of Medicine as well as many other organizations has repeatedly called for improvements of care in this setting. In order to improve care, reliable and accurate measures of care quality must be available to assess and monitor NH care quality by both external reviewers (eg, federal and state survey teams; joint commission) as well as internal quality committees. The results of recent studies have shown that direct observations of NH care delivery produces quality information different from medical record documentation for numerous daily care activities. Specifically, NH medical record documentation appears to reflect better care delivery than that observed as provided by staff to the resident. These findings suggest that NH staff self-reports of care provision require auditing to ensure accuracy. Observational data collected by people other than those directly responsible for care provision can afford such auditing information. However, little is known about the quality of observational data collected related to quality assessment activities in the NH setting.

Observational protocols useful for NH medical record auditing must evaluate care at the resident level (eg, the amount of feeding assistance observed compared to the amount documented in the medical record for a specific resident). Moreover, the protocols should stand up to a critical review of their reliability and accuracy. In this regard, one common concern expressed about direct care observations is “reactivity.” In short, observing persons providing care may alter their behavior such that the observational data may not accurately reflect usual NH care conditions. Reactivity is a legitimate concern, even though no data exist describing how much reactivity influences observational assessments in the NH setting.

The best way to estimate the degree of reactivity is to simultaneously implement 2 observational protocols that dif-

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fer on the level of obtrusiveness. For example, simultaneous observations would be conducted of the same subject by 1 visible, or obtrusive, observer and 1 invisible, or unobtrusive, observer. In practice, it is difficult for any observer to be completely unobtrusive. There are data from 2 studies that approximate this design in which data collected by primary research staff observers were compared during times when they knew other research staff were present versus not present. There was a 10% to 20% difference in the data recorded between the 2 observation periods. These results suggest that the primary observers “reacted” to the presence of the other observers. Whether this 10% to 20% estimate of reactivity can be generalized across different protocols or types of observers (eg, survey staff) is unknown, but it does not appear to be unusually high when compared to other methods of measurement. In other areas it has been reported that people quickly adapt to being observed via videotape and that there are minimal reactive effects on behavior.

A second method to evaluate the effects of reactivity is to conduct observations over multiple observation periods. One would hypothesize that if the observational protocols were reactive, trends in the data would occur as the subjects who were the focus of observation became accustomed to being observed. The purpose of this article is to report observational data collected by research staff over multiple observation periods as part of 3 separate studies conducted in several NHs. The objective is to describe the extent to which observational data and corresponding NH care quality conclusions derived from these data change over time in a manner that may reflect reactivity, and discuss the implications of these data for developing a scientifically defensible observational system to evaluate NH care quality.

**METHODS**

**Subjects and Settings**

Observational data were collected in 7 NHs in 2 states as part of 3 studies. All consent and data collection procedures were approved by a university Institutional Review Board and the NH administration of each participating site. All resident participants provided consent to participate in the 3 studies, but consent was not obtained from indigenous NH staff. However, NH administrative staff was informed that the observational protocols were part of the studies. Three of the 7 NHs were proprietary. Bed size ranged from 90 to 250 and nurse aide and licensed nurse staffing ratios, as reported by the directors of nursing, were within the 50th to 90th percentile reported for the nation’s NHs.

**Observational Protocol to Measure Number of Hours a Resident Spends in Bed**

The first observational protocol was conducted during the baseline phase of a clinical trial testing a behavioral intervention to improve sleep hygiene in NH residents. This observational protocol, used to assess the amount of time a resident spends in bed during the day, has been described in 3 separate papers. Briefly, one observer located a resident every 15 minutes and noted their location (eg, in bed, sitting in a chair or reclining chair, wheelchair, other). The results of previous studies indicated that the Minimum Data Set (MDS) item “bedfast” underestimated the number of residents who spent more than 22 hours per day in bed as compared to observational data. In this study, observational data on the first 120 residents of the 4 NHs participating in the sleep intervention protocol are reported. All residents rated by NH staff as unable to transfer from bed independently at night were eligible for the study. Thus, the time that residents spent in bed was dependent on the assistance they received from NH staff.

**Observational Protocol to Measure Repositioning Care Activities Provided by Staff**

The second observational protocol was a component of a study assessing a device designed to objectively measure the frequency at which immobile residents are repositioned. The device is described in previous reports, and involves residents wearing a monitor on their thigh that continuously measures horizontal and vertical movement. The thigh monitor is held in place by an elastic knee brace, obvious to anyone providing care. Previous studies have demonstrated that most residents who are monitored with this device can spend up to 4 to 5 hours in the same position. In contrast, medical record documentation indicates that these same residents were repositioned every 2 hours. In this paper, repositioning data for 5 residents in 1 NH who had medical record documentation of a 2-hour repositioning schedule are reported. All 5 residents were determined by research staff to be unable to move independently based on a performance assessment; hence, repositioning could not occur without staff assistance. The residents wore the thigh monitors for 3 consecutive 24-hour periods, while research staff conducted observations every 15 minutes from 7 AM to 7 PM. Six months later, the thigh monitor and observational measures were repeated on the same subjects in 2 consecutive 24-hour periods. Research staff were in the facility 5 days per week during the 6-month interim period implementing a feeding assistance intervention and conducting observations in multiple care domains (eg, observing how much assistance was provided to residents in the dining room). In short, NH staff had extensive experience with the observers (and being observed) by the second round of observations, thus enabling any effects of reactivity to be assessed.

**Observational Protocol to Measure Nutritional Care Provision**

The third observational protocol was carried out during observations of mealtime feeding assistance. Previous papers describe the observational protocol conducted during regularly scheduled meals (breakfast, lunch, dinner) to measure nutritional care quality including, but not limited to, total percentage of foods and fluids consumed by the resident, accuracy of medical record documentation related to residents’ oral food and fluid consumption, amount of time residents has access to their meal trays, amount and quality of feeding assistance provided by staff, and accuracy of medical record documentation related to feeding assistance care pro-
The results of these previous studies have shown that NH staff medical record documentation reflects an overestimate for both residents’ oral food and fluid consumption and feeding assistance care provision compared to direct observations during meals.11–13 In this paper, mealtime observational data are reported for 23 residents in 2 NHs who were rated by NH staff on the MDS as requiring assistance to eat (section G, item 1h, which includes eating dependency ratings of limited, extensive, or total dependence). All data reported were collected prior to a feeding assistance intervention trial for 2 consecutive days, or a total of 6 scheduled mealtime periods. Two observation-based quality measures for each of the 6 meals during the 2-day assessment period are reported: (1) the average amount of time that NH staff were observed providing feeding assistance relative mealtime periods for residents who were noted by nursing staff as requiring assistance with eating. The average amount of time spent by NH staff providing feeding assistance resulted from the first. Moreover, the fourth and fifth observation periods, which were completed after research staff had been in the study homes for 6 months, produced data essentially identical to the same data. The high and consistent standard deviations reported in the table reflect the fact that over 40% of the residents were observed in bed on 4 or more of the observations between 8 AM and 4 PM. As previously reported, this group of residents is likely to be in bed on all hours of observation between 4 PM and 8 AM the next day, or over 18 hours per day.8

The second row of Table 1 shows the average longest time that a resident who could not reposition independently spent in the same position for each 24-hour period of observation. This statistic was calculated by identifying the longest interval each subject spent in the same position over a 24-hour period and dividing by the number of subjects. The first 3 columns in this row show data collected over the first 3 consecutive 24-hour periods. These data indicate that the 2-hour repositioning schedule documented in the medical records for the 5 study participants was not implemented on any of these observation days. The average longest interval each of the 5 subjects spent in the same position ranged from 4 to 7 hours. The second 24-hour observation period resulted in the longest time interval, which might suggest reactivity (ie, staff reacted on the first observation period with better care), but the third observation period produced the same quality conclusion as the first. Moreover, the fourth and fifth observation periods, which were completed after research staff had been in the study NHs for 6 months, produced data essentially identical to that produced during day 1 and day 3.

The third and fourth rows of Table 1 illustrate the 2 feeding assistance observational measures collected across 6 consecutive mealtime periods for residents who were noted by nursing staff as requiring assistance with eating. The average amount of time spent by NH staff providing feeding assistance revealed the same care pattern over the 6 observed meals with little variation between days (range 8.5 to 11.1 minutes per person per meal). The meal with the lowest average assistance

Table 1 shows the data collected with the 3 different observational protocols by the different periods of observation. The first row illustrates the percentage of observations of residents who could not independently transfer who were observed in bed per 8-hour period (8 AM to 4 PM). There was an extremely small range over the 7 consecutive days (25% to 29%), and residents were consistently observed in bed an average of 2 hours between 8 AM and 4 PM. The absence of a trend that may indicate reactivity is best illustrated by the first and seventh days of observation, which produced essentially

<table>
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<tr>
<th>Table 1. Observational Data From 3 Separate Studies Conducted in 7 Different Nursing Homes*</th>
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<tr>
<td><strong>Observational Period</strong></td>
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<tr>
<td><strong>Study 1 – Behavioral Intervention for Sleep Hygiene</strong></td>
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<td><strong>Study 2 – Thigh-Monitoring Device to Assess Repositioning of Immobile Residents</strong></td>
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<td>Longest time in hours in the same position‡ (n = 5)</td>
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<td><strong>Study 3 – Assessment of Mealtime Feeding Assistance</strong></td>
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<td>Average feeding assistance time§ (minutes) (n = 23)</td>
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<td>Proportion who received &lt;5 minutes of assistance© (n = 23)</td>
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*Data shown are means with standard deviations in parentheses.
†Percent observations in bed represents 7 consecutive days (columns 1–7).
‡Longest time in same position represents 3, consecutive 24-hour periods (columns 1–3) followed by 2 consecutive 24-hour periods (columns 4–5) after 6 months of research staff presence in the study homes.
§Feeding assistance observation period; columns 1-6 represent 6 meals (breakfast, lunch, dinner) across 2 consecutive da.
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In this paper, mealtime observational data are reported for 23 residents in 2 NHs who were rated by NH staff on the MDS as requiring assistance to eat (section G, item 1h, which includes eating dependency ratings of limited, extensive, or total dependence). All data reported were collected prior to a feeding assistance intervention trial for 2 consecutive days, or a total of 6 scheduled mealtime periods. Two observation-based quality measures for each of the 6 meals during the 2-day assessment period are reported: (1) the average amount of time that NH staff were observed providing feeding assistance during each meal, and (2) the proportion of residents rated by NH staff as requiring (limited, extensive, or total) assistance but who received less than 5 minutes of assistance. The rationale for these 2 quality measures has been reported elsewhere. Briefly, NH residents who require assistance to eat typically need an average of 20 to 30 minutes of assistance per meal to encourage independence in eating and adequate oral food and fluid consumption.14

RESULTS

Table 1 shows the data collected with the 3 different observational protocols by the different periods of observation. The first row illustrates the percentage of observations of residents who could not independently transfer who were observed in bed per 8-hour period (8 AM to 4 PM). There was an extremely small range over the 7 consecutive days (25% to 29%), and residents were consistently observed in bed an average of 2 hours between 8 AM and 4 PM. The absence of a trend that may indicate reactivity is best illustrated by the first and seventh days of observation, which produced essentially the same data. The high and consistent standard deviations reported in the table reflect the fact that over 40% of the residents were observed in bed on 4 or more of the observations between 8 AM and 4 PM. As previously reported, this group of residents is likely to be in bed on all hours of observation between 4 PM and 8 AM the next day, or over 18 hours per day.8

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The third and fourth rows of Table 1 illustrate the 2 feeding assistance observational measures collected across 6 consecutive mealtime periods for residents who were noted by nursing staff as requiring assistance with eating. The average amount of time spent by NH staff providing feeding assistance revealed the same care pattern over the 6 observed meals with little variation between days (range 8.5 to 11.1 minutes per person per meal). The meal with the lowest average assistance
time on both observation days was the evening meal (columns 3 and 6). This same care pattern was evident based on the second quality measure, the proportion of eating-dependent residents who received less than 5 minutes of assistance (row 4). This proportion ranged from 27% to 52% across the 6 meals, again with the evening meal (columns 3 and 6) revealing the highest numbers reflective of substandard feeding assistance care. There was no trend across the 6 observed meals based on either measure to indicate that NH staff reacted to the observers by providing either worse or better feeding assistance care.

DISCUSSION

The results of this study showed that data collected with 3 different observational protocols of common NH care routines demonstrated no evidence of trends indicative of reactivity. Specifically, the data derived from these observational protocols suggest substandard care across all days of observation, which is inconsistent with the expected direction of a reactivity effect. One would expect staff to provide better care at least during the initial stages of observation. In short, observing care does not appear to influence staff behavior, and an observer could arrive at a stable measure of usual NH care quality during 1 day of observation in these 3 care areas.

This paper provides the only published data relevant to how reactive staff might be to direct NH observational protocols. However, there are important study limitations to consider. In particular, one might hypothesize that federal and state survey staff or other observers who control incentives for NH staff might influence staff behavior more so than the research staff observers used in this study. Given the importance of direct care observations in the federal survey process, as well as the need to audit medical record accuracy about care in the 3 domains targeted in this study, this hypothesis should be tested in future studies.

CONCLUSION

Medical directors and supervisory nurses should be particularly aware of the need to collect direct observational data given evidence that medical record documentation is inaccurate in many care domains. Repositioning, feeding assistance, bed rest, physical restraint release, and the delivery of oral liquid nutritional supplements are only some care areas often the focus of physician orders for which medical record accuracy has been shown to be erroneous. Fortunately, there are standardized direct observational protocols, relevant to all of these care areas that have been developed and validated in previous long-term care studies. We have described how observational protocols useful for NH quality improvement should be validated in these and other areas. Providers responsible for ensuring quality should consider adopting these protocols to audit medical record accuracy. Most of these observational protocols, with the exception of repositioning, do not require instrumentation and can be implemented in less than 1 hour per week. This cost should be within the limitation of a NH quality assurance budget and the data provided in this study suggests that these observational protocols will not be limited by reactivity problems.

REFERENCES