A Standardized Quality Assessment System to Evaluate Pain Detection and Management in the Nursing Home

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Context: Assessment and management of pain for nursing home residents is frequently reported to be inadequate, yet few studies have used objective criteria to measure the quality of care related to pain.

Objective: Field test a standardized resident interview and medical record review protocol to assess and score quality indicators relevant to pain.

Design: Descriptive.

Setting: Thirty nursing homes (NHs).

Participants: Seven hundred ninety-four residents met overall eligibility criteria. Quality indicators were scored for those residents who met specific eligibility requirements for each pain indicator.

Measurements: Medical record reviews were completed for 542 participants, and data were used to score 12 indicators related to pain assessment, management, and response to treatment. A seven-item pain interview was attempted with all 794 participants and completed with 478 participants who were rated by NH staff as cognitively aware.

Results: Quality indicators could be reliably scored. Physicians scored low on assessment of pain, performing targeted history and physical examinations, documenting risk factors for use of analgesics, and documenting response to treatment. Forty-eight percent of participants (227/478) reported symptoms of chronic pain during the interview, and 81% of this group reported a preference for a pain medication. However, nearly half had no physician assessment of pain in the past year and only 42% were receiving pain medication. Licensed nurse assessments of pain were documented weekly; but, more than 50% of those reporting symptoms of chronic pain on interview had nurse pain scores of 0 for 4 consecutive weeks prior to interview.

Conclusions: Infrequent or incomplete physician pain assessment and treatment and inaccurate documentation by licensed nurses limits evaluation of pain care quality based on medical record review alone. A brief resident interview identified participants reporting symptoms of chronic pain not documented in the medical record and those with a preference for medication. Initial targeting of residents with self-reported pain maximizes the efficiency of the standardized scoring system described in this study. Focusing on explicit process measures clearly identifies areas for improvement and represents an important step in assessing the quality of pain care in the NH. (J Am Med Dir Assoc 2006; 7: S11–S19)

Keywords: Pain management; nursing homes; quality improvement
of this study was to operationalize and evaluate performance on 12 pain quality indicators that were determined by expert consensus both to reflect current standards of practice and feasible to implement in nursing homes.

The specific goals of this study were to:

1. Describe a standardized assessment system that combines medical record and interview data for scoring 12 pain quality indicators.
2. Measure performance on these 12 pain quality indicators for eligible residents in 30 NHs.
3. Examine the quality of pain assessment and management for a subset of residents who report significant pain during interview.

METHODS

Subjects and Setting

Thirty NHs located in California participated in this study. The homes ranged in size from 50 to 200 beds and were staffed according to industry standards. The UCLA Office for the Protection of Research Subjects approved all consent procedures. Participants were recruited over a 2-week period at each NH site. Only Medicare-covered short stay residents were excluded. Nine hundred seventy-three residents or their designated representative provided written informed consent (average consent rate was 37% per home). Seventy participants did not complete the project due to discharge, hospitalization, or death. Forty-three participants were excluded because their length of stay at the NH was less than 8 weeks, providing insufficient time to examine process of care measures. The demographic characteristics of the remaining 794 participants for whom data are reported in the study are shown in Table 1. Because each of the 12 quality indicators measured in this study have different eligibility requirements (Table 2), the number of residents scored on each indicator differs according to those criteria.

Measures

Pain Quality Indicators Measured Through Medical Record Review

The methodology used to develop the pain quality indicators and the evidence that supports the validity of each indicator has been reported elsewhere. The medical record review protocol utilized in this study to evaluate pain was modified from a larger protocol that measured multiple conditions. The pain quality indicators selected for inclusion in the study are listed in Table 2 and are grouped into the following four categories: (1) screening and assessment of chronic pain (indicators #1–4), (2) appropriate use of medications for treatment of chronic pain (indicators #5–8), (3) documenting response to treatment (indicator #9), and (4) treatment of osteoarthritis (indicators #10–12). Osteoarthritis was selected as a condition for additional focus because it has been identified as the most common source of pain among NH residents.

Staff recognition of pain was derived from two items on each participant’s most recent Minimum Data Set (MDS) assessment, which is completed by NH staff quarterly. The two MDS pain items (J2A and J2B) require NH staff to rate if a resident has mild, moderate, or excruciating pain on a daily or less than daily basis. In addition, because the passage of California Assembly Bill 791 in 2000 mandates that pain be included as a fifth vital sign for all NH residents, the highest level of pain documented for each participant during the month immediately preceding on-site chart abstraction and interview was recorded. The MDS recall scale, which measures a resident’s memory and awareness on four separate items, was also calculated for each participant. Scores of 2 or higher on this scale have been shown to be equivalent to a Mini Mental Status Exam (MMSE) score of 17 or higher and predictive of NH residents’ ability to accurately describe care that they have received.

Medical record reviews were completed for a subset of participants (n = 542) across all 30 NHs. All participants in the current analysis were enrolled in a larger study examining the quality of care for six other clinical conditions (pressure ulcers, incontinence, weight loss, depression, use of restraints, and immobility). A maximum of 20 medical records were selected for review in each NH due to time limitations and were selected based on the clinical condition(s) being studied in each NH as part of the larger study. All medical records were reviewed by a trained research physician or gerontological nurse practitioner for up to 12 months prior to the review date, or from the date of NH admission, if less than 12 months. Inter-rater reliability showed excellent agreement (kappa value range, 0.65–1.00; and percentage agreement range, 0.80–1.00, for pain indicators with insufficient “passes” or “fails” to calculate a kappa statistic).

Eligibility and Scoring Criteria for Pain Indicators

Eligibility for scoring and the criteria to pass each indicator are presented in columns 3 and 4 of Table 2. The number of eligible participants differs for scoring each indicator because some indicators applied to most participants (eg, pain assessment on admission for all residents admitted within the last 12 months—indicator #1) and others were scored only for subsets of participants such as those with pain documented in the medical record (eg, indicators #2–4), those being treated for pain (indicators #5–9) or those with osteoarthritis (indicators #10–12). A liberal approach for scoring was used to determine what medical record evidence was acceptable as meeting the “pass” criteria for each indicator. Explicit scoring rules were developed in this project and piloted so that reliability could be achieved between medical record reviewers.
<table>
<thead>
<tr>
<th>QI Category</th>
<th>Quality Indicator</th>
<th>Eligibility for Scoring (N for each Indicator)</th>
<th>Criteria Needed to Pass Indicator</th>
<th>% Pass (n) [Pass range]</th>
<th>% Fail (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening and assessment of chronic pain</td>
<td>1. ALL NH residents should be screened for chronic pain with documentation in the primary care provider’s note during the initial evaluation period and at least quarterly</td>
<td>All residents whose admission occurred up to 12 months prior to medical record abstraction (N = 388)</td>
<td>Any documentation of a pain assessment (type, intensity, location of pain), or “no distress” or “comfortable” in the admission H &amp; P or 1st progress note and once each quarter</td>
<td>15% (58) [0–43%]</td>
<td>85% (330)</td>
</tr>
<tr>
<td></td>
<td>2. IF a NH resident has pain on MDS screen or is diagnosed with chronic pain, THEN the resident should be evaluated for depression by a PCP within 1 month</td>
<td>All residents with MDS documented pain on the most recent assessment (N = 133)</td>
<td>Any documentation of mood by PCP or licensed mental health provider, or documentation of a standardized depression assessment by other staff during the abstraction period</td>
<td>49% (65) [0–100%]</td>
<td>51% (68)</td>
</tr>
<tr>
<td></td>
<td>3. IF a NH resident has a positive MDS screen for pain, THEN a quantitative pain assessment using a standard pain scale should be used (with its use not precluded but modified for cognitive impairment)</td>
<td>All residents with MDS documented pain on the most recent assessment (N = 132)</td>
<td>Any standard pain scale used by Licensed Nurse to document pain (0–10 scale, pain thermometer, faces rated scale, etc)</td>
<td>90% (119) [0–100%]</td>
<td>10% (13)</td>
</tr>
<tr>
<td></td>
<td>4. IF a NH resident has a newly reported painful condition, THEN a targeted H &amp; P should be done by the PCP and documented within 1 month</td>
<td>All residents with a new positive MDS pain screen during the abstraction period or initiation of pain management during the abstraction period (N = 161)</td>
<td>Documentation of onset/duration, location, quality/ severity of pain, response to prior treatment, and examination of the painful area by PCP</td>
<td>10% (16) [0–100%]</td>
<td>90% (145)</td>
</tr>
<tr>
<td>Appropriate use of medication for treatment of chronic pain</td>
<td>5. IF a NH resident has been prescribed a nonsteroidal anti-inflammatory drug (NSAID) for the treatment of chronic pain, THEN the medical record should indicate whether s/he has a history of peptic ulcer disease, and if a positive history is present, justification of NSAID use in place of alternative therapy should be documented</td>
<td>Any resident with an order for a non-COX 2 inhibitor NSAID (N = 41)</td>
<td>Any PCP documentation describing the presence or absence of history of peptic ulcer disease. If a positive history is documented, then any PCP statement that defends use of NSAID in place of alternative therapy</td>
<td>12% (5) [0–33%]</td>
<td>88% (36)</td>
</tr>
<tr>
<td></td>
<td>6. IF a NH resident over age 75 is being treated with a non-COX-2 inhibitor NSAID, and has any of the following: history of peptic ulcer disease, history of gastrointestinal bleed, or current warfarin use, THEN s/he should be offered treatment with misoprostol or a proton pump inhibitor</td>
<td>Any resident on a non-COX 2 inhibitor NSAID (whose medical record documents high risk status (history of peptic ulcer disease, gastrointestinal bleed, or current warfarin use (N = 0)</td>
<td>Documentation of PCP order for misoprostol or proton pump inhibitor</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>QI Category</td>
<td>Quality Indicator</td>
<td>Eligibility for Scoring (N for each Indicator)</td>
<td>Criteria Needed to Pass Indicator</td>
<td>% Pass (n) [Pass range]</td>
<td>% Fail (n)</td>
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<td></td>
<td>7. IF a NH resident with chronic pain is treated with opioids, THEN s/he should be offered a bowel regimen or the medical record should document the potential for constipation and/or explain why bowel treatment is not needed</td>
<td>Any resident with an order for opioids (N = 152)</td>
<td>PCP order for stimulant laxative or note indicating that it is not indicated. (order for colace alone or order for MoM prn only is not sufficient)</td>
<td>64% (97) [0–100%]</td>
<td>36% (55)</td>
</tr>
<tr>
<td></td>
<td>8. IF a NH resident requires analgesia, THEN merperidene should not be used</td>
<td>Any resident with a positive MDS pain screen at any time during the abstraction period (N = 132)</td>
<td>No order for or use of merperidene during the abstraction period</td>
<td>99% (130) [95–100%]</td>
<td>1% (2)</td>
</tr>
<tr>
<td>Documenting response to treatment</td>
<td>9. IF a NH resident is treated for a chronic painful condition, THEN s/he should be assessed for a response within 3 months</td>
<td>Any resident treated with pain medication for at least 3 months prior to medical record review (N = 121)</td>
<td>Any PCP documentation of response to treatment such as: symptoms improved, symptoms worse, no change in symptoms, any mention of medication side effects</td>
<td>44% (53) [0–100%]</td>
<td>56% (68)</td>
</tr>
<tr>
<td>Treatment of Osteoarthritis</td>
<td>10. IF an ambulatory NH resident is newly diagnosed with symptomatic osteoarthritis (OA) of the knee, has no contraindication to exercise, and is physically and mentally able to exercise, THEN a directed or supervised strengthening program should be prescribed within 1 month of diagnosis</td>
<td>Any resident with an admission diagnosis of OA if admitted during the medical record abstraction period, or for residents admitted prior to abstraction period, new diagnosis of OA documented during the abstraction period (N = 100)</td>
<td>Any order for lower extremity strengthening or ambulation with Physical Therapist or Restorative Nursing Assistant documented after the date of OA diagnosis</td>
<td>46% (46) [0–100%]</td>
<td>54% (54)</td>
</tr>
<tr>
<td></td>
<td>11. IF oral pharmacologic therapy is initiated to treat symptomatic osteoarthritis, THEN acetaminophen should be the first drug used</td>
<td>Any resident with original order for OA treatment in the medical record (N = 192)</td>
<td>Documentation that acetaminophen was used as initial treatment for OA</td>
<td>26% (50) [0–100%]</td>
<td>74% (142)</td>
</tr>
<tr>
<td></td>
<td>12. IF oral pharmacologic therapy for symptomatic osteoarthritis, is changed from acetaminophen, to a different agent, THEN there should be evidence that that the resident has had a trial of maximum dose acetaminophen (suitable for age/comorbidities)</td>
<td>Any resident with OA whose treatment was changed from acetaminophen to a different medication or had another medication added to acetaminophen (N = 8)</td>
<td>Documentation that resident received 4 g/d of acetaminophen without acceptable pain relief or note indicating that dose tried was the maximal recommended dose for resident</td>
<td>37% (3) [0–100%]</td>
<td>63% (5)</td>
</tr>
</tbody>
</table>

*H & P, history and physical examination; PCP, primary care physician.*
Results are presented in three sections. First, data are presented for residents who meet indicator specific eligibility requirements for scoring the 12 pain quality indicators based on medical record review. Next, the results of the pain interview are presented for 478 residents with MDS recall scores of 2 or more. Finally, the results of a subgroup analysis are presented for 146 participants with MDS recall scores of 2 or more who reported chronic pain during the interview and who had complete medical record review data.

Scores on Pain Quality Indicators Obtained from Medical Record Data

Screening and Assessment of Chronic Pain (Pain Indicators 1–4)

The last two columns of Table 2 present the pain quality indicator scores. We report data averaged across all 30 NHs, along with between-NH ranges to illustrate variability. The primary care physician (PCP) documented a pain assessment at admission and at least quarterly (within the 12-month medical record review period) for only 15% of all eligible participants (58/388), with a pass rate less than 50% in all 30 NHs (Table 2, indicator #1). Rates of quarterly assessments were adjusted for participants whose length of stay was less than 12 months. Because few medical records showed a chronic pain diagnosis or sufficient documentation from which to infer a diagnosis, eligibility for scoring indicators #2 and #3 was limited to participants who had documentation of pain on any MDS assessment during the medical record review period. Approximately one-half (49%) of those with MDS documented pain (65/132) had a depression assessment documented in the medical record (Table 2, indicator #2). However, in most cases, there was no evidence in the medical record that indicated a link between pain and depression assessments. The majority (90%) of the 132 eligible participants had a quantitative pain assessment documented in the medical record (Table 2, indicator #3). In almost every case, the pain assessment consisted of the use of a 0 to 10 rating tool21 by licensed nurses. The high pass rate reflects the results of recent California legislation that requires a nurse pain assessment as a fifth vital sign. However, despite the high pass rate on this indicator, the quality of the nurse pain assessments were questionable when compared with the results of the pain interview data. There was insufficient evidence in nearly every medical record to determine whether any modifications were made in the use of the pain assessment tool for residents with cognitive impairment.

Pain Interview

Pain interviews were attempted with all participants in each facility (n = 794). The purpose of the interview was to identify residents who reported pain that was not documented in the medical record. A standardized seven-item pain interview was conducted by trained interviewers with all participants, and no attempt was made to exclude participants based on cognitive status criteria. However, interview data in this analysis are reported only for participants with an MDS recall score of 2 or higher (n = 478).

All seven interview questions had a yes/no response format. The first four questions, which were derived from the Geriatric Pain Measure,20 elicited information about the frequency and functional impact of pain symptoms (Table 3). Responses to each of these four questions were scored as 1 (yes) or 0 (no). A total pain score was obtained by summing the point values for these first four questions only. Participants with a total pain score of 3 or higher or a report of daily pain alone were classified as having chronic pain.

Pain interview questions five through seven were related to communication about pain (Does the nursing staff ask you about your pain? Do you tell the nurse about your pain?), and treatment preferences (Would you prefer to take medication for your pain?). Inter-rater reliability showed excellent agreement for all pain interview questions (kappa value range = 0.83–1.00, P < .01). In addition, the stability of chronic pain status was assessed by repeating interviews for a sub-sample of 76 participants within 24 hours (kappa = 0.65, P < .01). Of these 76 participants, 37 (49%) reported no pain at either time and 26 (34%) met the criteria for chronic pain at both interviews. Seven participants (9%) met the threshold for reporting chronic pain at the first interview but reported milder pain (5/7) or no pain (2/7) at the second interview. Six participants (8%) reported mild pain (2/6) or no pain (4/6) at the first interview and reported moderate to severe and/or daily pain at the second interview.

### Table 3. Pain Scores for Subjects With Completed Interviews and MDS Recall Score of 2 or Higher (N = 478)

<table>
<thead>
<tr>
<th>Pain Score*</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>154</td>
<td>32</td>
</tr>
<tr>
<td>1</td>
<td>59</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>8</td>
</tr>
<tr>
<td>3 or 4 daily pain</td>
<td>227</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>478</td>
<td>100%</td>
</tr>
</tbody>
</table>

NOTE: Pain interview questions: 1. Do you feel pain anywhere right now? 2. Does pain ever keep you from doing things you enjoy? 3. Does pain keep you from sleeping at night? 4. Do you have pain every day?

* Pain Scores: 0 = participant answered “no” to all four pain interview questions; 1 = participant answered “yes” to any one of pain interview questions 1–3, but answered “no” to question 4; 2 = participant answered “yes” to any two of pain interview questions 1–3, but answered “no” to question 4; 3 or 4 or daily pain = participant answered “yes” to at least 3 pain interview questions, including question 4 or answered “yes” to question 4.

† Participants with pain scores of 3 or 4 or daily pain were classified as having chronic pain.
**Appropriate Use of Medications for Treatment of Chronic Pain (Pain Indicators #5–8)**

Forty-one participants with an order for a non-COX 2 inhibitor non-steroidal anti-inflammatory drug (NSAID) were scored on indicator #5. The majority (88%) of eligible participants failed this indicator due to lack of medical record documentation of either the presence or absence of any risk for peptic ulcer disease (PUD). This failure to document risk status resulted in the inability to score any participant on indicator #6 because this indicator applied only to those who would have been classified as “high risk” as defined by the quality indicator (Table 2, columns 2 and 3).

All participants with an order for any opioid were eligible for scoring of indicator #7. This included residents receiving opioids at any time during the medical record review period as well as those who had an order for an opioid to be administered as needed (prn) even if the medication was not administered. This scoring rule took into consideration the fact that opioid related constipation should be prevented with an appropriate laxative ordered at the same time as the opioid. Ninety-seven of the 152 eligible participants (64%) passed indicator #7 because they had documentation of appropriate orders for prevention of constipation associated with opioid use. The recurrent problem of inadequate medical record documentation affected the scoring of indicator #8 and a conservative approach was used to estimate the need for analgesia by including only participants who had MDS documented pain. Almost all eligible participants (99%) passed this indicator because they were not treated with merperidene (Demerol).

**Documenting Response to Treatment (Pain Indicator #9)**

One hundred twenty-one participants who received scheduled pain medication of any type (including adjuvants documented as being given for neuropathic pain) and/or prn medications that were given on at least half of the days in the previous month were eligible for scoring indicator #9. Of these 121 eligible participants, 81% were receiving regularly scheduled medications only, 11% were receiving prn meds only, and 8% were receiving both regularly scheduled and prn meds. Fifty-three residents (44%) passed this indicator by having some medical record documentation related to treatment response.

**Treatment of Osteoarthritis (Pain Indicators #10–12)**

One hundred participants who were diagnosed with osteoarthritis (OA) on admission or at some time during the medical record review period were eligible for scoring of indicator #10, and 46% had documentation that strengthening exercises were being done (Table 2, indicator #10). One hundred ninety-two participants had a diagnosis of OA, degenerative joint disease (DJD), or joint pain and had a physician order for a scheduled or prn pain medication. Fifty of these participants (26%) had acetaminophen prescribed as the first medication (Table 2, indicator #11). This number may overestimate actual treatment received because participants passed this indicator not only if they had an order for regular dosing of the medication but also if they had a prn order for acetaminophen, even if the medication was not administered at all in the last month. Only eight participants were eligible for scoring of indicator #12 because treatment was rarely changed from acetaminophen to another medication for participants. Three of the eight eligible participants (37%) had documentation that the acetaminophen dose of 4 g/d was tried prior to changing the medication.

**Pain Interview Data**

As shown in Figure 1, pain interviews were attempted with all 794 participants. Interview data from 316 participants (40%) were not included in the analysis because the participant was unable or refused to respond to the questions (n = 146), had missing MDS recall score data (n = 29), or completed the interview but had an MDS recall score less than 2 (n = 141). Thus, 478 of 794 participants (60%) completed the interview and had MDS recall scores of 2 or higher.

Responses to each of the pain interview questions from these 478 participants are summarized in Table 3 Forty-eight percent (n = 227) of the participants who completed the interview and who had an MDS recall score of 2 or greater reported daily pain or answered “yes” to three of the four pain questions and were thus categorized as having chronic pain.

One hundred forty-six of 227 participants (64%) who endorsed chronic pain in the interview also had complete medical record reviews, and this group comprises the sub-sample for analyses reported next. Table 4 shows the “yes” responses to each of the seven pain interview questions for this sub-sample of 146 participants. Only 48% of this subgroup with chronic pain reported that the nurse asks them about their pain, but 84% reported that they tell the nurse about their pain. Eighty-one percent reported that they would prefer to take medication for their pain.

**Under-Detection and Under-Treatment of Chronic Pain**

For this same subgroup of participants identified with chronic pain on interview, pain indicator #1 was re-scored to determine whether the frequency of physician pain assessment increased for those who reported symptoms indicative of chronic pain (n = 143; 3 residents excluded because of missing physician assessment data). Only 15 of these 143 participants (10%) had documentation of pain assessment at admission and at least quarterly thereafter, indicating a slightly lower, though not significantly different, pass rate compared with all residents (Table 1, indicator #1). Fifty-eight of the 143 participants with chronic pain (41%) did not have a single documented pain assessment by a physician for up to 12 months prior to the interview. Thirty-one percent of participants who had at least two documented quarterly pain assessments by a physician had an order for a routine pain medication compared with 21% of participants whose pain was assessed less than twice during the same time period (P < .05). Although this difference is statistically significant, the rate of routine pain medication prescription remained low for
all participants, even those with documented physician assessments.

As shown in Figure 2, only 42% of those with chronic pain who reported a preference for medication received either a routine scheduled medication daily or a prn medication at least 50% of the time, and 52% of those who preferred not to take medication were getting a routine medication daily or a prn medication at least 50% of the time. Only 24/52 (46%) of the total group receiving pain medication had any physician documentation of response to treatment. The results of the pain interview suggest that even those participants receiving pain medication may not have adequate treatment and might benefit from re-evaluation.

Similar problems with under-detection were noted with licensed nurse assessments of pain. Among the group of 143 residents with MDS recall scores of 2 or higher who reported symptoms indicative of chronic pain on interview, more than 50% had licensed NH staff documented pain scores of 0 for every weekly pain assessment in the 30 days immediately prior to the pain interview, and only 48% of these 143 residents reported that the nurse ever asks them about their pain.

**DISCUSSION**

A standardized system that combined medical record review and resident interview protocols for evaluating the quality of pain assessment and management in NHs was tested in this study. The strengths of the system are as follows: (1) the inclusion of evidence-based quality indicators with explicit selection and scoring criteria for each indicator to permit reliable data recording; and (2) a brief interview that identifies chronic pain in a stable fashion and which allows for judgments to be made about the quality of physician and NH staff documented pain assessments. The classification of the indicators (eg, assessment, management) allows quality reviewers to focus on all or part of the pain care process.

The overall results for the indicators relevant to pain detection and assessment showed significant problems across most NHs, even when the indicators were limited to residents...

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**Table 4.** Responses to Individual Pain Interview Questions Among Subset of Participants With MDS Recall Score ≥2 and Pain Score 3 or 4 and/or Daily Pain and Complete Medical Record Review (N = 146)

<table>
<thead>
<tr>
<th>Question #</th>
<th>Question</th>
<th>Residents Who Responded “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you feel pain anywhere right now?</td>
<td>108</td>
</tr>
<tr>
<td>2</td>
<td>Does pain ever keep you from doing things you enjoy?</td>
<td>103</td>
</tr>
<tr>
<td>3</td>
<td>Does pain keep you from sleeping at night?</td>
<td>91</td>
</tr>
<tr>
<td>4</td>
<td>Do you have pain every day?</td>
<td>132</td>
</tr>
<tr>
<td>5</td>
<td>Does the nursing staff ever ask you about your pain? (n = 145)</td>
<td>70</td>
</tr>
<tr>
<td>6</td>
<td>Do you ever tell the nursing staff about your pain?</td>
<td>122</td>
</tr>
<tr>
<td>7</td>
<td>Would you prefer to take medication for your pain?</td>
<td>117</td>
</tr>
</tbody>
</table>
for whom pain had been detected by NH staff on the MDS. These low pass rates on many indicators may be suggestive of findings from other studies that evidence based practice recommendations are not regularly incorporated into clinical practice.\textsuperscript{22–23} However, the absence of any documented pain assessments by physicians for more than half of the residents participating in this study (Table 2, indicator #1) may reflect either failure to document care that is being provided or, at worst, inadequate attention to pain as a clinical problem.

A closer look at the pass rates for some of the other indicators (Table 2, indicators #2, 4, 7, 9, 10, 11, 12) provides both positive and negative results. In this study, pass rates for each indicator were averaged across facilities and in doing so, some findings may be obscured. For example, when examining performance in individual facilities, there is evidence of variability in the pass rates both between facilities and for different residents within facilities. This variability is demonstrated in the Pass range section of column 4 in Table 2, where the pass rates range from 0\% to 100\% for several indicators. These results suggest that some facilities are providing care more consistent with expected standards than others. Additional analysis of these data found that facilities with a higher than average prevalence of pain reported on the MDS pain assessment also had higher rates of documented physician pain assessment, treatment, and posttreatment reassessment as well as consistency between rates of pain found through independent interviews and those documented in the medical records.\textsuperscript{24}

The cross-sectional methodology used in the current study does not allow determination of the direction of the relationship between documented physician pain assessment and MDS documentation of pain. It may simply mean that MDS coordinators use all available documentation of pain and, when physician documentation is present, it is reflected in the MDS prevalence rates. Alternatively, identification of pain on the MDS in combination with provision of care consistent with evidence based practice recommendations may reflect a broader institutional commitment to excellence in care of residents with pain.\textsuperscript{25} Further use of the system introduced in this study may help to answer these questions. Performance on these indicators within individual facilities and/or in multiple sites of a single corporation would provide powerful data for use by medical directors and institutionally based quality improvement teams.

The results of this study are consistent with previous work documenting the under-detection of pain among NH residents,\textsuperscript{1–8} but the results of this study also specifically illustrate how the evaluation of pain care quality based on medical record review alone will result in an incomplete picture. The addition of a simple resident interview improves the targeting of residents for whom the quality indicators should be focused and permits more accurate conclusions to be drawn about detection, assessment, and treatment of pain. One limitation of this study is that we did not include a pain assessment protocol for the minority of participants who could not complete the interview (Figure 1, 146/794 = 18\%). However, based on findings from this study as well as others\textsuperscript{3} we estimate that approximately 80\% of NH residents can be interviewed about their pain and that modified pain rating scales for more

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**Figure 2.** Medication preferences, administration of medications, and response to treatment for 118 subjects with chronic pain and an MDS recall score ≥ 2.
cognitively impaired residents\textsuperscript{26–28} could be added to the protocol described in this study.

REFERENCES