Improving Long Term Care Quality through Better Information

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Purpose

• Provide background to use of Information to Improve quality in Long Term Care
• Examine conceptual and empirical issues underpinning the quality of quality data
• Review impact of information on quality on providers’ quality improvement efforts
• Review impact of information on quality on consumers’ choices and experiences
• Propose needed research to fill gaps in measures and quality improvement
Background

- Quality “mantra” throughout health care
- Error reduction and Quality Improvement are focus of industry wide efforts
- Long Term Care, while relatively deficient in resources, has head start with uniform clinical assessment tools in nursing homes and home health agencies
- MDS for nursing homes and OASIS for home health emerged from acknowledged need to improve care quality -- train staff to assess and they’ll know how to treat.
- MDS and OASIS implemented and applied to policies ranging from case mix reimbursement to quality review
The Nursing Home Resident Assessment Instrument (RAI)

- 1986 Institute of Medicine Report on Nursing Home Quality Recommended a Uniform Resident Assessment Instrument to Guide Care Planning
- OBRA ‘87 Contained Nursing Home Reform Act Including RAI Requirement
- A 300 Item, Multi-Dimensional RAI – MDS was Tested for 2 Years
- Mandated Implementation in 1991
- Fully Computerized in 1998
- Case Mix Reimbursement in 1999
- Quality Reporting in 2002
The Outcome and Assessment Information Set (OASIS)

• Initially designed as an outcome measurement tool for home health agency staff to track how well their patients progress

• Transformed into a multi-purpose tool for:
  – patient assessment and care planning for individual adult patients
  – agency-level case mix reports
  – internal HHA performance improvement
  – Case-Mix Reimbursement mandated by BBA
  – National Home Health Quality Compare 2003
Basis for OASIS Outcome Domains

- Original work designed to measure improvements or decline in home health patient functioning
- Functioning domains in ADL, IADL, Pain and Preventing Emergency Care & Hospitalization
- Based upon simple measures of traditional Gerontological Outcomes
## Performance Measure Domains in MDS

<table>
<thead>
<tr>
<th>Left Column</th>
<th>Right Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Ulcers</td>
<td>Communication</td>
</tr>
<tr>
<td>ADL Decline</td>
<td>Pain</td>
</tr>
<tr>
<td>Falls</td>
<td>Mobility</td>
</tr>
<tr>
<td>Restraint Use</td>
<td>Incontinence</td>
</tr>
<tr>
<td>Cognitive Decline</td>
<td>Catheter Use</td>
</tr>
<tr>
<td>Mood State</td>
<td>Weight Loss</td>
</tr>
<tr>
<td>Social Involvement</td>
<td>Relationships</td>
</tr>
<tr>
<td>Behavior Problems</td>
<td>Anti-Psychotic Use</td>
</tr>
<tr>
<td>Swallowing</td>
<td>Infections</td>
</tr>
</tbody>
</table>
Outcome Measure Domains in OASIS

- Improvement in:
  - Dressing
  - Bathing
  - Toileting
  - Transfer
  - Ambulation
  - Confusion Frequency
  - Pain Interfering with Activity

- Management of Oral Medications
- Emergent Care Episodes
- Acute Hospitalization
Measurement Models
Underlying Assessments

• **MDS**
  - Facility based observer
  - Describes care needs and Staffing needed
  - Records behavior fx
  - Inter-shift variation
  - Focused on observable behavior and actions

• **OASIS**
  - Assessed in home by RN visiting 1st time
  - Most function NOT observed; inferred
  - Relies on patient/family report or RN judgment
  - Post-acute care recovery rapid so much change is observed
OASIS Pain Measure

(M0420) Frequency of Pain interfering with patient’s activity or movement:

☐ 0 - Patient has no pain or pain does not interfere with activity or movement
☐ 1 - Less often than daily
☐ 2 - Daily, but not constantly
☐ 3 - All of the time

(M0430) Intractable Pain: Is the patient experiencing pain that is not easily relieved, occurs at least daily, and affects the patient’s sleep, appetite, physical or emotional energy, concentration, personal relationships, emotions, or ability or desire to perform physical activity?

☐ 0 - No
☐ 1 - Yes
MDS Pain

<table>
<thead>
<tr>
<th>PAIN SYMPTOMS</th>
<th>(Code the highest level of pain present in the last 7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. FREQUENCY with which resident complains or shows evidence of pain</td>
<td></td>
</tr>
<tr>
<td>0. No pain (skip to J4)</td>
<td></td>
</tr>
<tr>
<td>1. Pain less than daily</td>
<td></td>
</tr>
<tr>
<td>2. Pain daily</td>
<td></td>
</tr>
<tr>
<td>b. INTENSITY of pain</td>
<td></td>
</tr>
<tr>
<td>1. Mild pain</td>
<td></td>
</tr>
<tr>
<td>2. Moderate pain</td>
<td></td>
</tr>
<tr>
<td>3. Times when pain is horrible or excruciating</td>
<td></td>
</tr>
</tbody>
</table>
Conceptual Issues in Quality Measurement

• Aggregating Quality Measures
  – Is Quality the sum of individuals’ experience?

• Comparing Providers’ Quality Measures
  – Can we be “sure” one’s better without an RCT?

• Process or Outcome Measures
  – Process measures may be idiosyncratic but Outcomes are hard to attribute to providers

• Which measures are important?

• Are the measures valid? How do we know?

• Determining the correct benchmarks
  – Peers, state, national all have different implications
  – Should benchmarks be relative or absolute, fixed or changing over time; should we raise the bar?
Technical Issues in Quality Measurement

• Reliability of the items and of the measures
• Inter-facility variation in reliability
• To risk adjust or not to risk adjust
• Provider specialization and selection bias complications in case mix adjustment
• Creating composite measures; is a good provider always a good provider?
How Good are the Data?

• What is the Evidence for the Reliability of MDS and OASIS data items?
• What is the Evidence for the Validity of MDS and OASIS items and Measures?
OASIS Reliability Estimates

• Hittle, et al. 2003
  – Interrater reliability for OASIS data items was estimated using independent assessments by two clinicians for a sample of 66 patients. Incremental assessment time due to OASIS was estimated using interview data from two agency-matched groups of clinical care providers--one group who used OASIS in the assessment and a second group whose assessment did not include OASIS items. Interrater reliability is excellent (kappa > .80) for many OASIS items and substantial (kappa > 0.60) for most items.

• Madigan & Fortinsky, 2000
  – The functional domain had the best reliability and validity. The affect and behavioral domains had adequate kappa scores
### OASIS Reliability (N=66)

<table>
<thead>
<tr>
<th>OASIS Variable</th>
<th>Weighted Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Ulcer present</td>
<td>1.0</td>
</tr>
<tr>
<td>Behavioral Problem</td>
<td>.96</td>
</tr>
<tr>
<td>Current Mgt of Meds</td>
<td>.94</td>
</tr>
<tr>
<td>Current Eating</td>
<td>.89</td>
</tr>
<tr>
<td>Current Ambulation</td>
<td>.87</td>
</tr>
<tr>
<td>Primary Dx Severity</td>
<td>.74</td>
</tr>
<tr>
<td>Intractable Pain</td>
<td>.67</td>
</tr>
<tr>
<td>Anxiety Level</td>
<td>.61</td>
</tr>
<tr>
<td>Current Housekeeping</td>
<td>.54</td>
</tr>
<tr>
<td>Caregiver Assistance</td>
<td>.40</td>
</tr>
</tbody>
</table>

Source: HHA Demo Final Report; Vol 3; CMS HHA Web site
<table>
<thead>
<tr>
<th>Item</th>
<th>Percent Agree</th>
<th>Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grooming</td>
<td>74.7%</td>
<td>.83</td>
</tr>
<tr>
<td>Dressing</td>
<td>77.0</td>
<td>.85</td>
</tr>
<tr>
<td>Bathing</td>
<td>64.8</td>
<td>.80</td>
</tr>
<tr>
<td>Transfer</td>
<td>74.3</td>
<td>.88</td>
</tr>
<tr>
<td>Laundry</td>
<td>81.9</td>
<td>.61</td>
</tr>
<tr>
<td>Med Mgt</td>
<td>65.1</td>
<td>.72</td>
</tr>
</tbody>
</table>

Source: Abt Home Health Demonstration Project Report; Supplemental Analyses
# OASIS Reliabilities (N=300)

<table>
<thead>
<tr>
<th>OASIS Item</th>
<th>% Agree</th>
<th>Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressed Mood</td>
<td>85.2%</td>
<td>.64</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>92.1</td>
<td>.39</td>
</tr>
<tr>
<td>Recurrent Death Thoughts</td>
<td>97.7</td>
<td>.35</td>
</tr>
<tr>
<td>Diminished Interest</td>
<td>87.5</td>
<td>.57</td>
</tr>
<tr>
<td>Change in Appetite</td>
<td>91.5</td>
<td>.43</td>
</tr>
<tr>
<td>Agitation</td>
<td>93.4</td>
<td>.51</td>
</tr>
</tbody>
</table>

Source: Abt Home Health Demonstration Project Report; Supplemental Analyses
MDS Inter-Rater Reliability Test:
Weighted Kappa: 5758 Residents; 209 Facilities

<table>
<thead>
<tr>
<th>Item</th>
<th>Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do Not Resuscitate</td>
<td>.70</td>
</tr>
<tr>
<td>Short Term Memory</td>
<td>.63</td>
</tr>
<tr>
<td>Decision Making</td>
<td>.83</td>
</tr>
<tr>
<td>Making Self Understood</td>
<td>.82</td>
</tr>
<tr>
<td>Motor Restlessness</td>
<td>.59</td>
</tr>
<tr>
<td>Sad Expression</td>
<td>.55</td>
</tr>
<tr>
<td>Wandering</td>
<td>.70</td>
</tr>
<tr>
<td>Bed Mobility</td>
<td>.79</td>
</tr>
<tr>
<td>Pain Intensity</td>
<td>.66</td>
</tr>
<tr>
<td>Pressure Ulcer</td>
<td>.70</td>
</tr>
</tbody>
</table>

Source: Quality Measure Validation Report. 2002. CMS web site
Variation in MDS Reliability

- While average Reliability in a large sample of facilities is good
- Many examples of poorly performing facilities on selected types of measures
- Facilities in some states demonstrate worse inter-rater reliability than others
- Unfortunately, no organizational factors predict which homes measure poorly!
Pennsylvania PAIN

QA kappa pain1

Std. Dev = .28
Mean = .48
N = 30.00
“Gold Standard” vs. Facility Nurse data in Pressure Ulcer Rate: PA
Importance of Risk Adjustment

• To make proper and fair comparisons among facilities must take into account bias due to
  – Variation in facility admission practices (facilities willing to admit severity ill patients should not be at a disadvantage)
  – Regional variation in referrals and service availability

• Purpose of the risk adjustment and the audience for the QI rates are critical in deciding whether and how much is appropriate
Patient Level Adjustment

- Including diagnosis & hospital information adjusts for pre-existing clinical condition
- Incorporating patients’ admission characteristics to adjust for much later outcomes – adjusts with unknown error
- Incorporating factors that have already been influenced by the provider – over-adjusts
- Including earlier outcome within the facility – over-adjusts
  - Over-adjustment may affect longitudinal outcomes, rate of change as well as cross-sectional outcomes
Nursing Home & Home Health Risk Adjustment Approaches

• Nursing Home
  – Some adjusted some not adjusted
  – Adjustments use stratification & denominator exclusion
  – No regression based adjustment
  – Earlier versions adjusted for Facility Admission Profile

• Home Health
  – Logistic Regression used to Adjust patients Outcome “risk”
  – Some models are composites of multiple equations
  – No minimum number of observations per agency
  – No exclusions from models
MDS Pain Quality Measure

- High Adjusted, Average Raw
- Average Adjusted, Average Raw
- High Adjusted, High Raw
- Average Adjusted, High Raw

Potential false negative

Potential false positive
Selection and Specialization

• Like many health care providers nursing homes and home health agencies choose to specialize and referral sources know it
• Hospital based providers do post-acute
• Nursing homes “partner” with others like hospices and specialty therapists to offer services for very sick patients
• Pediatric, neurological and other specialty providers exist everywhere
• Case mix adjustment may not work where differences are so extreme – no overlap in distributions of patient characteristics
Within State Variation in PU Prevalence on Admission Assessment

Percent of Facilities in Each State in 1999

- [Color bar legend]
  - Blue: Over 20%
  - Green: 5 to 20%
  - Red: Below 5%

Admission Prevalence
Inter & Intra-State Variation in Anti-Psychotic Use Admission Prevalence

Percent of Facilities in Each State in 1999

- Admission Prevalence:
  - Over 20%
  - 5 to 20%
  - Under 5%

States are color-coded based on their admission prevalence:
- Hawaii
- Montana
- District of Columbia
- Iowa
- Wyoming
- Arizona
- New Mexico
- Oregon
- Wisconsin
- Illinois
- Colorado
- Minnesota
- South Dakota
- Nebraska
- Washington
- Maine
- Kansas
- California
- Idaho
- Missouri
- Delaware
- West Virginia
- Nevada
- Maryland
- Rhode Island
- Florida
- Texas
- New Jersey
- Indiana
- Ohio
- Oklahoma
- North Dakota
- Pennsylvania
- Michigan
- Vermont
- Virginia
- Utah
- Louisiana
- Massachusetts
- New Hampshire
- New York
- North Carolina
- Kentucky
- Alaska
- Connecticut
- South Carolina
- Tennessee
- Mississippi
- Arkansas
- Alabama
- Georgia
Combining Multiple QIs into Composite Quality Measure(s)

- Literature and preliminary evidence suggests little correlation among QIs
- Conceptually, QIs seem drawn from same domain
- Consumers of QI information want summary measures capturing global domain
- Challenge to Balance Empirical & Conceptual Approaches
Distribution of OASIS OBQIs

Graphs by measureid
## Distribution of HHA Compare OBQIs (N=1155)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk better</td>
<td>34.80834</td>
<td>6.063936</td>
<td>17</td>
<td>60</td>
</tr>
<tr>
<td>Bed transfer</td>
<td>49.98566</td>
<td>8.8265</td>
<td>18</td>
<td>87</td>
</tr>
<tr>
<td>Toilet Improve</td>
<td>60.7601</td>
<td>7.684023</td>
<td>25</td>
<td>89</td>
</tr>
<tr>
<td>Pain Reduced</td>
<td>58.69883</td>
<td>8.874776</td>
<td>23</td>
<td>91</td>
</tr>
<tr>
<td>Bathing Improved</td>
<td>58.83442</td>
<td>6.63305</td>
<td>33</td>
<td>78</td>
</tr>
<tr>
<td>Meds Improved</td>
<td>36.75228</td>
<td>7.186706</td>
<td>10</td>
<td>63</td>
</tr>
<tr>
<td>Dressing Improved</td>
<td>62.51369</td>
<td>6.722357</td>
<td>30</td>
<td>83</td>
</tr>
<tr>
<td>Bathing Same</td>
<td>91.28944</td>
<td>2.499542</td>
<td>79</td>
<td>95</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>26.11213</td>
<td>6.891963</td>
<td>8</td>
<td>57</td>
</tr>
<tr>
<td>Urgent Care Use</td>
<td>21.17471</td>
<td>6.699498</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>Confused less</td>
<td>42.50847</td>
<td>9.953003</td>
<td>6</td>
<td>72</td>
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</table>
## Inter-Correlation of OBQI Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Toileting</th>
<th>Pain Less</th>
<th>Bathing Im</th>
<th>Medication</th>
<th>Dressing</th>
<th>Bathing S</th>
<th>Hospital</th>
<th>Urgent Care</th>
<th>Confused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toileting</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain less</td>
<td>0.2500</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathing I</td>
<td><strong>0.5781</strong></td>
<td>0.3317</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td>0.3904</td>
<td>0.2909</td>
<td><strong>0.5778</strong></td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dressing</td>
<td><strong>0.6671</strong></td>
<td>0.3233</td>
<td><strong>0.6596</strong></td>
<td><strong>0.4163</strong></td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathing S</td>
<td>-0.0058</td>
<td>0.0140</td>
<td>0.1955</td>
<td>-0.0297</td>
<td>0.0709</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td>-0.1843</td>
<td>-0.0300</td>
<td>-0.2167</td>
<td>-0.1234</td>
<td>-0.2329</td>
<td>-0.0767</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urgent Care</td>
<td>-0.1045</td>
<td>-0.0885</td>
<td>-0.1747</td>
<td>-0.1964</td>
<td>-0.1441</td>
<td>-0.0264</td>
<td></td>
<td><strong>0.5814</strong></td>
<td>1.0000</td>
</tr>
<tr>
<td>Confused</td>
<td>0.2946</td>
<td>0.3292</td>
<td><strong>0.4024</strong></td>
<td><strong>0.4805</strong></td>
<td>0.3217</td>
<td>-0.2045</td>
<td>-0.2325</td>
<td>-0.2098</td>
<td>1.0000</td>
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</tbody>
</table>
## Inter-Correlation of Nursing Home Compare Measures

<table>
<thead>
<tr>
<th></th>
<th>pain</th>
<th>infect</th>
<th>ADL</th>
<th>Ulcer LO</th>
<th>Ulcer HI</th>
<th>Restraint</th>
<th>Deficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>pain</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>infection</td>
<td>0.1226</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADL Decline</td>
<td>0.0231</td>
<td>0.1643</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulcer No risk</td>
<td>0.0416</td>
<td>0.2519</td>
<td>0.1073</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulcer Risk</td>
<td>0.0521</td>
<td>0.2346</td>
<td>0.1343</td>
<td>0.9064</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restraint</td>
<td>-0.0024</td>
<td>0.0770</td>
<td>-0.0100</td>
<td>0.0902</td>
<td>0.0656</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Deficiencies</td>
<td>0.0111</td>
<td>0.0019</td>
<td>0.0326</td>
<td>0.0798</td>
<td>0.0740</td>
<td>0.0428</td>
<td>1.0000</td>
</tr>
</tbody>
</table>
### Characteristics of Facilities Ranking Among the Worst One-Half on Three Indicators in OHIO

#### Ohio Nursing Homes in 1999

<table>
<thead>
<tr>
<th>Ranked in bottom half on all three QIs</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Medicaid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>470</td>
<td>.6260</td>
<td>.1934</td>
</tr>
<tr>
<td>yes</td>
<td>75</td>
<td>.6912</td>
<td>.1545</td>
</tr>
<tr>
<td>Total Deficiencies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>470</td>
<td>8.24</td>
<td>6.83</td>
</tr>
<tr>
<td>yes</td>
<td>75</td>
<td>10.48</td>
<td>9.17</td>
</tr>
<tr>
<td>Health Deficiencies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>470</td>
<td>5.40</td>
<td>5.55</td>
</tr>
<tr>
<td>yes</td>
<td>75</td>
<td>7.92</td>
<td>8.43</td>
</tr>
</tbody>
</table>
MDS QI Stability: Changes in Facility Classification

Note: There was an average of 5 months time between sample selection and actual on-site participant observation of care processes in sample facilities.
Implications for Public Reporting

- Quality is Multidimensional even using limited scope of Care Quality; even without Quality of Life & Satisfaction
- Consumers won’t find the “best” home
- Only a small proportion of homes are in the “worst” [bottom third] group in any state
- BUT, situation in nursing homes no worse than in hospitals where data reduction hasn’t produced simple, reproducible dimensions
- If Public Reporting, then summary measures won’t summarize in a valid way
Relationship between Quality and Provider Organization

• Few structural characteristics of NHs or HHAs appear to be related to superior performance on quality measures

• Rantz studied 92 facilities in Missouri finding process and leadership differences in high and poor performing facilities BUT no cost, staffing or case-mix differences; MDS QI Validation Studies observed similar results

• No such literature found for HHAs
Adjusted Quality Indicators by Medicaid Payment Categories

Source: Grabowski, et al, Health Affairs, 2004
Risk Adjusted 6 Month Hospitalization Rate by State

Source: Intrator & Mor. JAGS, 52:1-6; 2004
Inter-state variation

• Different states have different long term care systems
• Different states present different patterns of care
• Intra-state variation in admission and care practices is the norm
Among residents who spent 90+ days in a nursing home, the percent with low-need.

Source: MDS, 2000 – 48 contiguous states (narrow definition of low-need)
State
Variation in
Tube Feeding for Cognitively Impaired

Using Quality Information for Continuous Quality Improvement

- OASIS based OBQI demonstrations in New York and other states were all predicated upon “value of information” for instituting quality improvement.
- 6 State Nursing Home Case Mix Quality and Payment Demonstration had feedback of quality indicators to stimulate improvement.
- Quality Improvement Organizations (QIO’s) have contracts to show providers how to use quality reports and public reports.
- Selected Trials and demonstrations in NHs and HHAs now underway.
OASIS QI Process

The Quality Assessment Target: A Two-Stage Quality Improvement Screen

1st Stage
- Outcome Analysis by Patient Group
  - Risk Factor or Case-Mix Adjustment (as Needed)
    - Outcome Report Triggers Specific Groups/Outcomes to Examine

2nd Stage
- Case Review for Triggered Groups and Outcomes
  - Process Assessment by Domains of Service
    - Actions to Change or Reinforce Care Behaviors

### All Patients’ Risk Adjusted Outcome Report

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Elig. Cases</th>
<th>Signif.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement in Upper Body Dressing</td>
<td></td>
<td></td>
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<tr>
<td>-</td>
<td>203</td>
<td>64.5%</td>
</tr>
<tr>
<td>-</td>
<td>136</td>
<td>51.3%</td>
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<tr>
<td>-</td>
<td>11326</td>
<td>57.7%</td>
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<tr>
<td>Improvement in Lower Body Dressing</td>
<td></td>
<td></td>
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<tr>
<td>-</td>
<td>327</td>
<td>66.1%</td>
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<tr>
<td>-</td>
<td>203</td>
<td>60.8%</td>
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<tr>
<td>-</td>
<td>13951</td>
<td>68.1%</td>
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<tr>
<td>Improvement in Toileting</td>
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<td></td>
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<tr>
<td>-</td>
<td>175</td>
<td>52.0%</td>
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<tr>
<td>-</td>
<td>92</td>
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</tr>
<tr>
<td>-</td>
<td>6202</td>
<td>70.2%</td>
</tr>
<tr>
<td>Improvement in Light Meal Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>474</td>
<td>53.2%</td>
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<tr>
<td>-</td>
<td>229</td>
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</tr>
<tr>
<td>-</td>
<td>15632</td>
<td>66.5%</td>
</tr>
<tr>
<td>Stabilization in Light Meal Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>336</td>
<td>85.4%</td>
</tr>
<tr>
<td>-</td>
<td>254</td>
<td>85.9%</td>
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<tr>
<td>-</td>
<td>19908</td>
<td>92.0%</td>
</tr>
<tr>
<td>Improvement in Management of Oral Medication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>266</td>
<td>37.2%</td>
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<tr>
<td>-</td>
<td>159</td>
<td>33.5%</td>
</tr>
<tr>
<td>-</td>
<td>11085</td>
<td>35.6%</td>
</tr>
</tbody>
</table>

** The probability is 5% or less that this difference is due to chance, and 95% or more that the difference is real.
Nursing Home Quality Indicators Profile

Facility Name: Robert E. Lee Manor

Report Period: 7/1/96 to 12/31/96

<table>
<thead>
<tr>
<th>Domain/Quality Indicator</th>
<th>Number with QI</th>
<th>Number in Denom</th>
<th>Facility Percentage</th>
<th>Peer Group Percentage</th>
<th>%ile Rank</th>
<th>Flag</th>
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<tbody>
<tr>
<td><strong>Accidents</strong></td>
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<tr>
<td>1. Incidence of New Fracture</td>
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<td>79</td>
<td>1.3%</td>
<td>1.8%</td>
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<tr>
<td>2. Prevalence of Falls</td>
<td>14</td>
<td>79</td>
<td>17.7%</td>
<td>13.3%</td>
<td>81</td>
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<tr>
<td><strong>Behavioral/Emotional</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Prevalence of Behavioral Symptoms</td>
<td>21</td>
<td>79</td>
<td>26.6%</td>
<td>21.2%</td>
<td>76</td>
<td></td>
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<tr>
<td>High Risk</td>
<td>19</td>
<td>56</td>
<td>33.9%</td>
<td>26.4%</td>
<td>79</td>
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<td>Low Risk</td>
<td>2</td>
<td>23</td>
<td>8.7%</td>
<td>10.2%</td>
<td>58</td>
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<tr>
<td>4. Symptoms of Depression</td>
<td>23</td>
<td>79</td>
<td>29.1%</td>
<td>15.1%</td>
<td>91</td>
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<tr>
<td>5. Symptoms of Depression without Antidepressant Therapy</td>
<td>13</td>
<td>79</td>
<td>16.5%</td>
<td>7.9%</td>
<td>93</td>
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<tr>
<td><strong>Clinical Management</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Use of 9+ Medications</td>
<td>22</td>
<td>79</td>
<td>27.8%</td>
<td>27.6%</td>
<td>52</td>
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<tr>
<td><strong>Cognitive Patterns</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Onset of Cognitive Impairment</td>
<td>1</td>
<td>24</td>
<td>4.2%</td>
<td>10.3%</td>
<td>19</td>
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</table>

Page 1 of 4

©Center for Health Systems Research and Analysis, University of Wisconsin - Madison
<table>
<thead>
<tr>
<th>California State Average</th>
<th>City</th>
<th>Patients who get better at bathing</th>
<th>Patients who get better at walking or moving around</th>
<th>Patients who get better at taking their medicines correctly (by mouth)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clyde</td>
<td>60%</td>
<td>35%</td>
<td>37%</td>
</tr>
<tr>
<td>Addus H C</td>
<td>Clyde</td>
<td>73%</td>
<td>46%</td>
<td>44%</td>
</tr>
<tr>
<td>Affiliated Home Calls</td>
<td>Alameda</td>
<td>61%</td>
<td>32%</td>
<td>42%</td>
</tr>
<tr>
<td>Asian American Home Care</td>
<td>Oakland</td>
<td>65%</td>
<td>33%</td>
<td>40%</td>
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<tr>
<td>At Home Health Care</td>
<td>Redwood City</td>
<td>51%</td>
<td>37%</td>
<td>33%</td>
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<tr>
<td>Bay Area Care Team</td>
<td>San Francisco</td>
<td>66%</td>
<td>50%</td>
<td>38%</td>
</tr>
<tr>
<td>Crossroads Home Care &amp; Hospice</td>
<td>San Francisco</td>
<td>63%</td>
<td>37%</td>
<td>34%</td>
</tr>
<tr>
<td>Health at Home</td>
<td>San Francisco</td>
<td>56%</td>
<td>30%</td>
<td>38%</td>
</tr>
<tr>
<td>Heartland Home Health Care And</td>
<td>Concord</td>
<td>63%</td>
<td>37%</td>
<td>37%</td>
</tr>
<tr>
<td>Incare Home Health Services SF</td>
<td>San Francisco</td>
<td>70%</td>
<td>52%</td>
<td>53%</td>
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<tr>
<td>John Muir Home Health Care</td>
<td>Concord</td>
<td>63%</td>
<td>36%</td>
<td>42%</td>
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<tr>
<td>Kaiser Coord HHA</td>
<td>Novato</td>
<td>59%</td>
<td>33%</td>
<td>32%</td>
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<tr>
<td>Kaiser Hosp HH</td>
<td>San Francisco</td>
<td>58%</td>
<td>31%</td>
<td>36%</td>
</tr>
<tr>
<td>Kaiser Hosp HHA Martinez</td>
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<td>64%</td>
<td>36%</td>
<td>40%</td>
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<tr>
<td>Kaiser Hosp HHA Oakland</td>
<td>Oakland</td>
<td>59%</td>
<td>32%</td>
<td>36%</td>
</tr>
<tr>
<td>Kaiser Hospital HHA - Hayward</td>
<td>Union City</td>
<td>57%</td>
<td>37%</td>
<td>27%</td>
</tr>
<tr>
<td>Quality Measures</td>
<td>Percentage for ADVENTIST HEALTHCARE FAIRLAND NSG &amp; RE</td>
<td>State Average</td>
<td>Average for Six Pilot States</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>Residents Who Need More Help Doing Daily Activities</td>
<td>6%</td>
<td>15%</td>
<td>14%</td>
<td></td>
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<tr>
<td>Residents With Infections</td>
<td>9%</td>
<td>16%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Residents With Pain</td>
<td>13%</td>
<td>11%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Residents With Pressure (Bed) Sores</td>
<td>8%</td>
<td>9%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Residents in Physical Restraints</td>
<td>13%</td>
<td>7%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Residents Who Lost Too Much Weight</td>
<td>15%</td>
<td>8%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Short Stay Residents With Delirium</td>
<td>Not Available</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Short Stay Residents With Pain</td>
<td>Not Available</td>
<td>25%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Residents Who Improved in Walking</td>
<td>Not Available</td>
<td>29%</td>
<td>34%</td>
<td></td>
</tr>
</tbody>
</table>
HHA OBQI Quality Improvement Project

- Timeline – April 2000 through October 2002
- Participating States – Maryland, Michigan, New York, Rhode Island and Virginia
- Consultant – University of Colorado Center for Health Sciences Research
- Participating HHAs – 417 (68% recruitment rate)
- Training Program – 27 training sessions held; 877 HHA staff trained
- Retention of HHAs in pilot – greater than 90% implemented OBQI
OASIS Pain Outcomes in PPS Evaluation: Effect of Ability to Change

HHA OBQI Pilot Project Results

• HHAs had difficulty interpreting reports and reading Excel files
• Some Agencies selected inappropriate Target Outcomes for Improvement relative to their risk adjusted report
• Some misunderstood differences between Adverse Events Report and Risk Adjusted Outcomes
• Plans of Action (remediation) often late
• Bigger Challenge for QIOs than supposed
OBQI IMPACTS ON HEALTH STATUS OUTCOMES: QIO PILOT DEMONSTRATION

Percent Improvement in Risk-Adjusted Outcomes: Yr. 1 to Yr. 2

Entire Pilot
- Target Outcomes: +6.7%
- Comparison Outcomes: -0.9%

Michigan
- Target Outcomes: +10.2%
- Comparison Outcomes: -0.7%

Virginia
- Target Outcomes: +8.4%
- Comparison Outcomes: +0.9%
OBQI IMPACTS ON HEALTH STATUS OUTCOMES: QIO PILOT DEMONSTRATION

Percent Improvement in Risk-Adjusted Outcomes: Yr. 1 to Yr. 2

- **Entire Pilot**
  - Target Outcomes: +6.7%
  - Comparison Outcomes: -0.9%

- **New York**
  - Target Outcomes: +6.2%
  - Comparison Outcomes: -1.3%

- **Maryland**
  - Target Outcomes: +2.8%
  - Comparison Outcomes: -0.6%
QIO OBQI Pilot Project Results

The QIO analyzed the Maryland data and found that approximately 54% of the HHAs that received the 5-month outcome reports improved in their targeted outcomes. Of note, for those HHAs that selected surgical wounds (either number or status), 33% of them improved and 66% got worse. Upon further investigation, it was determined that the OASIS assessment was not coded correctly -- ostomies were being counted as open surgical wounds.
NH Quality Indicators in a Quality Improvement Context

• Identify Quality Improvement Projects
  – Care Areas
  – Residents
  – Facilities

• Identify “Role Model” Facilities

• Identify Training Areas

• Identify Curriculum Needs

• Evaluate Quality Improvement Projects

Center for Health Systems Research and Analysis, University of Wisconsin - Madison
Quality Improvement in the Nursing Home Setting

- **Approaches for QIO functioning**
  - Form partnerships with nursing home stakeholders
  - Establish relationship with State Survey Agency (SSA)
  - Promote the use of quality measures in quality improvement
  - Engage physicians and medical directors in quality improvement
  - Teach principles of quality improvement to all nursing home staff,
  - Facilitate sharing of successful strategies and practical tips
  - Provide one-on-one assistance to nursing homes
  - Convert the regulatory compliance culture to a quality improvement culture

Source: Baier, et al, JAMDA, 2003
Conflicts Between Regulatory Compliance and Quality Improvement

- Clinical documentation in record to justify treatment versus an improvement approach to documentation in the record
- Regulations require immediate problem resolution, rather than through small changes that lead to broader improvement in processes to avoid future problems
- Quality Improvement requires identifying and documenting problems in preparation for action, this “highlights” care problems for regulators
- Participating QI providers are cited for non-compliance with the regulations

Source: Baier, et al, JAMDA, 2003
Impact of Public Reporting

- No “hard” evidence for improvement in quality;
  - restraint use rates already declining;
  - RN Staffing shortages generalized
  - Data inconclusive on anti-psychotic use
  - BUT, no evidence of deterioration and Case Mix Severity increased dramatically
- Many “eyes” reach CMS “Compare” sites
- BUT, discharge planners do not use the data even though most admissions to NH and HHA are via an acute hospitalization
Reliance on Public Reports of Quality

• In spite of all the attention devoted to quality reporting to assist consumers in making choices of providers and health plans, little evidence that they are used.
• First source of information, even about physicians and hospitals is informal
• Only trusted public sources of information are viable in communicating information about quality
If they had to choose a new doctor, the percent saying that ratings or recommendations from each would have “a lot” of influence on their choice...

- **Friends or family members**: 65% (2000) vs. 51% (1996)
- **Regular doctor or other individual doctors**: 64% (2000) vs. 57% (1996)
- **Patients surveyed about the quality of care**: 41% (2000) vs. 37% (1996)
- **Employer**: 26% (2000) vs. 17% (1996)
- **Groups of doctors**: 24% (2000) vs. 19% (1996)
- **Consumer groups**: 16% (2000) vs. 13% (1996)
- **Government agencies**: 14% (2000) vs. 7% (1996)
- **Newspapers or magazines**: 7% (2000) vs. 7% (1996)

Finding Quality Information

Percent who say they would be “very likely” to do each to try to find information about quality

- Ask friends, family members, or co-workers: 70%
- Ask a doctor, nurse or other health professional: 65%
- Contact someone at or refer to materials from someone at your health plan: 37%
- Go online: 28%
- Order a printed booklet: 21%
- Contact a state agency: 20%
- Call a toll-free number to hear recorded information: 18%
- Refer to a section of a newspaper or magazine: 17%

Saw Information Comparing Quality in the Past Year

Saw any information comparing quality...

- Didn’t see any information: 2000 - 73%, 1996 - 61%
- Saw any information: 2000 - 27%, 1996 - 39%

Specifically saw information comparing quality among...

- Health Insurance Plans: 2000 - 23%, 1996 - 34%
- Hospitals: 2000 - 15%, 1996 - 21%
- Doctors: 2000 - 9%, 1996 - 11%

* Don’t know not shown

Why People Didn’t Use Quality Information

Percent who say each is a reason they didn’t use the information they saw about...

- You didn’t need to make any decisions at the time
  - Doctors: 67%
  - Hospitals: 71%
  - Health Plans: 65%

- The information you saw about the quality wasn’t specific to your personal health conditions or concerns
  - Doctors: 59%
  - Hospitals: 48%
  - Health Plans: 43%

- Factors other than quality, such as location or cost, were more important in your decision-making
  - Doctors: 44%
  - Hospitals: 40%
  - Health Plans: 39%

- The information you saw didn’t cover the specifics you need to know about
  - Doctors: 43%
  - Hospitals: 35%
  - Health Plans: 37%

- The information you saw about the quality was confusing or difficult to understand
  - Doctors: 22%
  - Hospitals: 15%
  - Health Plans: 25%

Gaps in Research & Knowledge

• Conceptually
  • What Quality do consumers & advocates value?
  • In what “format” should Information be?

• Technically
  • How to handle differential measurement error?
  • Should comparatives be national norms?

• Operationally
  • How is the Quality Information used, by whom, when at what point in decision?
  • Do providers have the ability to institute CQI processes?
Summary

The research community and the government must insure that technical issues in quality measurement do not bias provider comparisons being used both to stimulate the organizational changes needed to redesign care processes to improve care and to allow for legitimate and valid comparisons across providers.

The current crop of measures, while a major advance over the limited validity of the idiosyncratic survey and certification process, continue to leave much to be desired. While they appear to be reliably measuring quality in select areas, the validity of the measures in terms of capturing a global notion of quality most believe can be identified is questionable. Furthermore, it is likely that there exist fundamental problems with the consistency of measurement across providers that may serve to undermine the legitimacy of the comparisons for which these measures were created.

We should not stop public reporting or other uses of these quality measures simply because they continue to have significant deficits, rather we should treat them as merely one other product that should be continuously improved.