Nursing Homes Outcomes Initiative

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Nursing homes operate in an environment that has become increasingly more challenging. Residents are admitted in a sicker condition, competition from other long-term care providers has increased, and reimbursement for many services may not be adequate. The changing health care marketplace is necessitating new levels of accountability from long-term care providers. Increasingly: (1) hospitals; (2) managed care plans; and, (3) residents / family members, want evidence that they are purchasing effective care.

Outcomes research is providing this evidence. Outcomes research also has implications for quality improvement and accreditation. As such, outcomes are assuming a higher priority for administrators of long-term care facilities. In this report, we present an Outcomes Report for you as the administrator of Nursing Centre, Inc. First we define outcomes; second, we show how outcomes can and are being used in long-term care; third, we present what outcomes are used; and, finally, we present the outcomes of your facility as compared to others in your Zip code area and state.

The information presented in this report comes from the On-line Survey, Certification and Recording (OSCAR) system, which is collected as part of the yearly Medicare / Medicaid certification process.
What Are Outcomes?

The meaning of outcomes is multifaceted, and outcomes are operationalized in many different ways; generally, however, they have some relation to the model popularized by a researcher called Donabedian. Donabedian stated that quality can be measured in terms of structures, processes, and outcomes. Structural measures are the professional and organizational aspects associated with the provision of care, such as staff credentials and facility operating capacities. Process refers to the things done to and for the resident. Outcomes are the status achieved by the resident, these include clinical symptoms, mortality, and quality of life.

Outcome measures are considered ideal quality indicators since deviations from proper care theoretically should affect residents' health status outcome. As Donabedian first hypothesized, good structure may promote good process and good process in turn may promote good outcomes. It is this application of outcomes research that has assumed greatest relevance. That is, outcomes research is linking the type of care received by a variety of patients with a particular condition to positive and negative outcomes in order to identify what works best for which patients.

Thus, as providers proceed with patient care redesign, centers of excellence, clinical pathway development, best practices, and the re-structuring of care services, as major developments in the effort to improve structures and processes of health care, outcomes research can determine the most effective patient care regimens.
How Are Outcomes Used in LTC?

In addition to the evaluation of major changes in structures and processes, outcomes can be used to compare quality of care. These quality comparisons can be either external or internal to the facility. For example, by using internal information, the quality of care delivered by physicians within a facility can be compared. Physicians may utilize different practice styles; for example, some physicians may prefer one diagnostic test over another, while some physicians may transfer an ill resident to the hospital that others would not. These differences in practice styles can result in different resident outcomes. Monitoring these practice styles can be used to determine the most effective resident care processes.

In some health care settings, outcomes information has been used to rank physicians by identifying them on outcomes reports. Thus, for example, mortality rates for each physician’s patient population may be presented. Clearly, no provider wants to be associated with a high mortality rate. Therefore, the underlying purpose of these reports is to change the practice styles of providers with the worst mortality rates to be more like those of providers with the best mortality rates. In a less threatening manner than openly releasing such reports, other providers have used blinded reports, and only each physician knows where he or she falls on the ranking scale. With the difficulty in attracting physicians to nursing homes, the latter route would seem to be an appropriate starting point for the administrator contemplating using such reports.
Outcomes can be used to provide external comparisons of quality of care. For instance, the facility administrator can use outcomes from other institutions as benchmarks. Benchmarks usually consist of indicators from "like" institutions recognized as leaders, or best performers. The benchmarks act as targets. Simply stated, the rationale behind the use of benchmarks is that if a like facility can produce a desired outcome, such as 5% restraint use, then so too should all facilities in that "like" class. The results for those institutions that achieve superior outcomes can and have been used in advertisements. For example, it is not uncommon to see bill-boards or newspaper advertisements touting nursing homes with zero deficiencies, restraint-free care, or best in class.

Outcomes can also provide external legitimacy. For example, insurers and purchasers of care needing to make allocation decisions can use outcomes results to select partners. That is, outcomes can be used to compare the quality of care delivered by facilities. For instance, "report cards" are formal summary mechanisms that can be used by purchasers to evaluate providers. These report cards simply rank providers across a spectrum of pre-defined outcome measures. As with managed care plans, in the form of the Health Plan Employer Data Information Set (HEDIS), it may not be long before we see report cards mandated for all health care providers, including long-term care facilities.

Thus, outcomes can be used to systematically track and assess factors that are important to administrators, purchasers, and hopefully residents. Moreover, the outcomes research process is not static, but ongoing. Providers are collecting outcomes data, altering care processes, and documenting changes in outcomes over time. This cycle may sound
familiar; this is because the outcomes process is the embodiment of continuous quality improvement (CQI) as applied to patient care.

There is also a regulatory imperative to use outcomes. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) new performance initiative will use outcomes as part of the accreditation process. This project, ORYX (not an acronym), will use outcomes data to monitor the performance of organizations on a quarterly basis. Eventually, the JCAHO will use this continuous monitoring process to supplant the three year accreditation format currently used by the JCAHO. Facilities that do not comply with ORYX risk loss of accreditation.

Long-term care facilities will be amongst the first to use the ORYX system. Prior to the end of 1997, facilities had to choose a measurement vendor sanctioned by the JCAHO. From this vendor the facility must select at least two outcome indicators calculated from data representing at least 20% of the resident population. The vendor then submits the data to the JCAHO. The number of indicators and the percent of the resident population included in these indicators will increase in subsequent years until 100% of residents are covered. In all cases, when an outcome measure is chosen by a facility the rationale for choosing the measure must be provided and improvements in subsequent evaluations must be evident.

The Health Care Financing Administration (HCFA) recently incorporated many outcome measures into its Health Care Quality Improvement Program (HCQIP). This program focuses on improving the outcomes of care for Medicare and Medicaid beneficiaries,
including those in nursing homes. Health care facilities will be required to improve their own resident care performances, not just meet quality assurance standards. The standards included in HCQIP will also focus on resident outcomes, rather than structure and process criteria.

The data collected from the HCQIP program will not only be used by HCFA in its certification process, but will also be used to provide each nursing home with an indicator of its performance. That is, each facility will be compared to other local, state, and national facilities. HCFA introduced such a system in Vermont in 1993. The results were encouraging these nursing homes have shown quality improvements (as compared to the national average) in many clinical areas.

**What Outcomes are Measured?**

In the long-term care setting outcomes of interest are well defined. For example, the Institute of Medicine (IOM) has recommended several key quality indicators, or outcomes, for use in long-term care settings. These indicators are: weight loss, urinary tract infections (associated with catheterization), pressure ulcers, physical restraint use, depression, number of medications, quality of diet, and quality of life (i.e., isolation). The Medicare/Medicaid annual survey process was also recently changed to emphasize similar resident outcomes. All of these conditions, which have significant impacts on the quality of residents' life can be prevented.
Using outcomes in health care has long been contentious. The crux of this debate is not outcomes themselves, but the implied correlation between outcomes and quality. For example, mortality is a well defined outcome, but as a measure of quality it can be limited. In the hospital setting, patients may be transferred to referral hospitals because they are close to death. In these cases, the mortality rates of the referral institutions may unfairly represent these hospitals as poor quality providers. The same is true for nursing homes. Residents may be transferred to some nursing homes because they are sick, or close to death, while other facilities care for residents in better health. Mortality may seem like a worst case scenario. However, the correlation of outcomes with quality for some of the specific long-term care outcomes measures listed above is also debatable. For example, pressure ulcers may not be the result of resident care in a long-term care facility. They may be the result of inappropriate hospital care. Clearly, for nursing homes that receive numerous residents from hospitals the long-term care outcome measures listed above could give an inaccurate picture of quality in these facilities.

Because of issues such as these, outcomes are often "adjusted" for differences among residents. The methodologies used to provide these adjustments “level the playing field” both between residents and facilities. This makes outcomes comparable across residents and facilities. The adjustment is a statistical process based on clinical knowledge. For example, again referring to our pressure ulcer example, because of the aging process older residents are more susceptible to pressure ulcers. Therefore, to compare the pressure ulcer rates between facilities, we have to account for the age differences of the residents in these facilities. Thus, age is a “leveling” factor. Transfers from a hospital may be a second leveling
factor. Using several of these leveling factors an expected pressure ulcer rate for a facility can be obtained. By comparing this rate to the actual pressure ulcer rate of the facility, a measure of quality (with respect to pressure ulcers) is obtained. Based on this clinical information, for example, a facility may be calculated to have an expected pressure ulcer rate of 4%, whereas, the actual pressure ulcer rate is 2%. In this case the facility is a high quality provider.

In the past the usefulness of resident outcomes was questioned because this adjustment process was not well-defined – this is no longer the case. Because of methodological advances outcome reports (and their association with quality) are quite accurate. There may still be some discrepancy or error with some measures. However, this is seldom problematic. That is, most measures have some “confidence limits.” For example, an expected pressure ulcer rate of 3% may be stipulated with a +/-1% confidence interval (CI). This confidence interval is small, and thus does not alter the interpretation of the results.

Clearly, not all facility administrators have the necessary time or expertise to create these outcome measures. However, numerous vendors can supply this information. Using readily available data, such as the Minimum Data Set (MDS) or the On-line Survey Certification of Automated Records (OSCAR), both internal and external outcome measures are available. In this report outcome measures are presented from the OSCAR data both as actual and expected rates.

Outcome Measures
**Physical Restraints**

Use of vests, wrist restraints, ankle restraints, and/or geri-chairs are included as physical restraints. The documented prevalence rates of physical restraint use vary widely. Recent studies have reported rates of 0% to 59% of residents restrained. They are an important quality indicator because they are associated with an increased risk of morbidity and mortality in nursing home residents. Lower levels of physical restraint use are generally regarded as beneficial.

**Catheters**

Rates of indwelling catheter use in nursing homes range from 1.5% to 21%. Research has shown that residents in facilities that had moderate to high use of urethral catheterization had twice the probability of functional decline, as did residents in low use facilities. So in general, high catheterization rates imply lower quality of resident care.

**Contractures**

Contractures are an abnormal shortening and stiffening of muscle tissue that can decrease the range of motion at a joint. This can produce a change in gait and decrease in walking velocity – which are major risk factors for falls - and may also limit mobility in daily life. Contractures are frequently used as proxy measures of care quality as they are effectively postponed and corrected by exercise programs, massage, and physical therapy.

**Pressure Ulcers**

Pressure ulcers affect both the comfort and the medical outcomes of nursing home
residents with impaired mobility. Even though guidelines for the prevention and treatment of pressure ulcers are well established, their prevalence in nursing homes varies widely. Nursing homes with the lowest prevalence of pressure ulcers have rates as low as 3%; whereas those with the highest prevalence have rates as high as 21%.

**Psychotropic Medications**

Psychoactive drugs are defined as medications that affect psychic function, behavior, or experience. They are generally classified as one of four types of medication: antianxiety, sedative/hypnotic, antipsychotic, or antidepressant. The general concern with these psychoactive drugs is that the rates of use may be excessive and/or clinically unjustified. In addition, there is also a concern that antidepressants may in some cases be underutilized in nursing homes. Because of this more complex relationship with antidepressants, in this report we focus only on the antianxiety, sedative/hypnotic, and antipsychotic psychoactive drugs.

**Survey Violations**

Finally, nursing home code violations (deficiencies) are departures from federal nursing home standards, as identified by state or federal nursing home inspectors. These are related to many nursing home processes of care, from care quality to fire safety. Only quality related deficiencies are used in this analysis. These include 19 deficiencies ranging from a “facility must provide appropriate treatment and services to maintain or improve resident’s abilities in the activities of daily living” to “residents have the right to be free from
unnecessary drugs.” Nursing home code violations are frequently used as proxy measures of care quality. Four recent government reports, for example, use code violations as quality measures.

**Your Outcomes Report:**

The facilities to which Nursing Centre, Inc. is being compared are located in the county of Anywhere. As of 1990 there were an estimated 200,000 persons 75 and over in this county. Based upon information obtained from the OSCAR data for the period 1998, there were a total of 200 Medicare/Medicaid certified nursing homes in the county (market) for this report constituting 38,000 beds. Thus, the number of Medicare/Medicaid nursing home beds per thousand elderly (75+) in the population is 147 (approximately 9% below the national average).

We present two tables summarizing quality indicators. Table 1 presents the observed and adjusted rates of quality indicators such as pressure ulcers, restraint use and psychotropic drug use. The second table gives the number of health related deficiencies and a quality ranking first based upon the number of deficiencies and second based upon combining all the data in Table 1.

Using the OSCAR data we calculated a series of charts, shown in the Figures. These show the adjusted and unadjusted outcome measures (restraint use, psychotrophic drug use, pressure ulcers, and contractures) and the number of health deficiencies. The
average adjusted scores for other facilities in the same Zip code and state are also plotted. How far away this facility is from the “average” is readily identifiable from these figures.
TABLE 1:
Resident Outcome Related Quality Indicators Comparison

<table>
<thead>
<tr>
<th>OUTCOME</th>
<th>NURSING CENTRE, INC.</th>
<th>OTHER FACILITIES IN ANYWHERE COUNTY</th>
<th>OTHER FACILITIES IN THIS STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of Pressure Ulcers</td>
<td>11%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Severity Adjusted Pressure Ulcer Rate</td>
<td>19%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Rate of Psychotropic Medications Use</td>
<td>11%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Severity Adjusted Psychotropic Medications Use</td>
<td>19%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Restraint Use Rate</td>
<td>11%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Severity Adjusted Restraint Use Rate</td>
<td>19%</td>
<td>12%</td>
<td>11%</td>
</tr>
</tbody>
</table>
## TABLE 2:

Quality Rankings Comparisons

<table>
<thead>
<tr>
<th>FACILITY FEATURE</th>
<th>NURSING CENTRE, INC.</th>
<th>OTHER FACILITIES IN ANYWHERE COUNTY</th>
<th>OTHER FACILITIES IN THIS STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Health Related Deficiencies</td>
<td>11</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Within State Quality Ranking for deficiencies [top rank is 100th percentile]</td>
<td>30&lt;sup&gt;rd&lt;/sup&gt; percentile</td>
<td>40&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>50&lt;sup&gt;th&lt;/sup&gt; percentile</td>
</tr>
<tr>
<td>Within State Quality Ranking for Quality Measures [top rank is 100th percentile]</td>
<td>33&lt;sup&gt;rd&lt;/sup&gt; percentile</td>
<td>40&lt;sup&gt;th&lt;/sup&gt; percentile</td>
<td>50&lt;sup&gt;th&lt;/sup&gt; percentile</td>
</tr>
</tbody>
</table>
Figure 1a: Pressure Ulcer Levels As Quality Outcome

Figure 1b: Risk Adjusted Pressure Ulcer Levels As Quality Outcome
Figure 2a: Physical Restraint Use Levels As Quality Outcomes

Figure 2b: Risk Adjusted Physical Restraint Use Levels As Quality Outcomes
Figure 3a: Psychotropic Medication Levels As Quality Outcome

Figure 3a: Psychotropic Medication Levels As Quality Outcome

Figure 3b: Risk Adjusted Psychotropic Medications Quality Outcome

Figure 3b: Risk Adjusted Psychotropic Medication Levels As Quality Outcome
Figure 4a: Levels of Contractures As Quality Outcome

Figure 4b: Risk Adjusted Levels of Contractures As Quality Outcome
Figure 5a: Number of Health related Deficiencies As Quality Outcome

![Bar chart showing percentages of Health related Deficiencies in 1998 for This Facility, Zip, and State.]

- **This Facility**: 11%
- **Zip**: 7%
- **State**: 9%