VARIATIONS IN OUTCOMES OF CARE IN URBAN AND RURAL NURSING FACILITIES IN MAINE

MUSKIE SCHOOL

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Andrew F. Coburn, PhD
Julie T. Fralich, MBA
Catherine McGuire, BS
Richard H. Fortinsky, PhD*

Maine Rural Health Research Center
Edmund S. Muskie Institute of Public Affairs
University of Southern Maine
96 Falmouth Street
Portland, Maine 04103

* Division of Internal Medicine, Department of Medicine
Case Western Reserve University

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EXECUTIVE SUMMARY

Widespread concern among policymakers, consumers and advocates over the quality of nursing home care led to a 1986 report by the Institute of Medicine (IOM) calling for sweeping changes in federal and state nursing home quality assurance systems. The federal Nursing Home Reform Act of 1987 (OBRA '87) adopted many of the key recommendations of the IOM report, including the development and implementation of a national uniform assessment instrument (RAI), the mandated use of resident assessment protocols (RAPs) by nursing facilities and the reorientation of the regulatory process to emphasize a resident-centered and outcome-oriented approach.

Federal and state regulators and the nursing home industry have accelerated efforts to improve care practices in response to OBRA '87. For those interested in rural health, very little is known about the quality of care in rural nursing facilities compared to their urban counterparts. On the one hand, rural facilities may have greater problems recruiting and retaining qualified professional staff, particularly in the rehabilitation fields, which could negatively affect quality. Similarly, rural facilities may have difficulties recruiting and retaining qualified nursing staff needed as nursing care in the nursing home becomes more "technical" with the increasing debility and medical fragility of nursing home residents in many states. On the other hand, the quality of life for residents in rural facilities may be enhanced by the highly familiar and personal nature of life in smaller communities and nursing facilities.

This study describes variations in facility and resident characteristics of urban and rural nursing facilities in Maine and examines differences in conditions and outcomes of care. The outcome and resident status measures used for this study were developed as a set of "Quality Indicators" by the Center for Health Systems Research and Analysis at the University of Wisconsin-Madison as part of a national Medicaid and Medicare Case Mix and Quality

Assurance Demonstration funded by the Health Care Financing Administration. Ordinary least square regression equations are used to estimate the relationship between 57 Quality Indicators (measured at the facility level) and rural or urban location of the facility, controlling for resident, facility and market characteristics and other factors that may affect quality.

Study results reveal few significant differences among rural and urban nursing facilities in Maine in the incidence or prevalence of a wide range of conditions and outcomes encompassed by the quality indicators employed in this study. These results suggest that there is little basis for assuming, a priori, that rural and urban facilities differ with respect to nursing home quality. Although these findings provide some reassurance that the quality of nursing home care for rural and urban residents is comparable, our understanding of quality variations and their determinants remains quite limited and caution should be exercised in interpreting the results of this study. Information about whether and how rural and urban nursing facilities differ in their patterns and outcomes of care will be increasingly important as states and the federal government move toward a more targeted nursing home quality assurance process. While there is nothing in the findings from this study to suggest that rural or urban location, per Se, should merit special attention in the survey process, further research is needed to understand more fully how differences in the characteristics of rural and urban facilities not measured in this study may affect quality and care outcomes.

I. INTRODUCTION

Policymakers, consumers and advocates have been concerned with the quality of nursing home care since the mid-i 970s when investigative reports and state-specific studies uncovered widespread evidence of inadequate care (Vladeck, 1980). Interest in the quality of care delivered in nursing homes grew rapidly following a i 986 report by the Institute of Medicine (IOM) which called for sweeping changes in nursing home quality assurance. A year later, the federal Nursing Home Reform Act of 1987 (included as part of the Omnibus Budget Reconciliation Act of 1987, P.L. 100-203) adopted many of the key recommendations of the IOM report, including the development and implementation of a national uniform resident assessment instrument (RAI), the mandated use of resident assessment protocols (RAPs) by nursing facilities, and the reorientation of the regulatory process to emphasize a resident-centered and outcome-oriented approach.

Federal and state regulators and the nursing home industry have accelerated efforts to improve care practices in response to OBRA '87. Among the major quality problems identified in the IOM report were inadequate resident assessment and care planning, particularly for residents with the potential for rehabilitation, inadequate staff training and supervision, and lack of attention to resident rights. The new OBRA '87 provisions include a national, uniform resident assessment instrument, new requirements for staff training and significant modifications of the nursing home quality assurance survey and inspection process administered by the states.

In spite of these significant policy and regulatory responses to the problem of assuring nursing home quality, there remain significant shortcomings in our ability to define, measure and interpret variations in nursing facility quality. Although there has been substantial progress in the development of quality measures, we still do not fully understand how and why quality

differs from one facility to another (Center for Health Systems Research and Analysis, University of Wisconsin 1993, Davis 1991, Shaughnessy 1990, Spector 1991, Zinn 1993).

Understanding more about whether and how quality of care may vary among urban and rural communities is particularly important since nursing facilities tend to be the dominant providers of long term care services in many rural areas (Shaughnessy 1994). Concerns about the quality of rural health services generally but particularly, hospital services, have tended to focus on the difficulties rural facilities may have in maintaining standards of care for certain services due to the low volume of such services or to the availability of specialized, technical support personnel or services (Hart, et al. 1990). Similar concerns may apply to nursing homes which are increasingly caring for sicker, more frail populations as a result of changes in hospital and nursing home care practices and payment policies (Ireland 1991). On the one hand, the quality of services provided in rural nursing facilities may be compromised by limitations in the availability of new technologies and the greater difficulty in rural areas of educating, attracting and retaining nursing staff as well as consultative and/or ancillary staff such as rehabilitation therapists or mental health professionals. On the other hand, the quality of life for residents in rural facilities may be enhanced by the highly familiar and personal nature of life in smaller communities and nursing facilities (Rowles 1 994). While the scarcity of professionals such as physicians and nurses in rural areas is well documented (Frenzen 1994, Kindig and Movassaghi 1 989), less is known about the availability of long term care professionals (rehabilitation, occupational, and physical therapists) and the potential effect of their supply on the amount and quality of services provided in nursing facilities. Nor do we have research providing empirical support for hypotheses of quality of life differences among urban and rural facilities.

This study examines differences in the conditions and outcomes of care among urban and rural facilities in Maine. The study builds on two recent developments in nursing home care and quality assessment --- the implementation of a uniform resident assessment instrument (Appendix A) and the development of "quality indicators" for use in examining differences in care between facilities (Appendix B). Uniform resident assessment data have been collected in Maine sinbe 1 990 as part of the national, Multi-state Medicaid and Medicare Case Mix Payment and Quality Assurance Demonstration (Case Mix Demonstration) sponsored by the Health Care Financing Administration (HCFA). This demonstration includes the use of a set of "quality indicators" developed by researchers at the University of Wisconsin-Madison which are currently being field tested for use by the demonstration states in the nursing facility survey and inspection process.

Section II of this paper reviews the research related to nursing home quality. The methodology for this study is described in Section III. The final two sections discuss our findings and their implications for policy and practice.

II. BACKGROUND: PRIOR STUDIES

In spite of the expanding and changing role that states and the federal government are playing in regulating nursing facility quality, our understanding of the factors that influence differences in care outcomes, including urban-rural location, is quite limited. In general, studies examining the relationship between nursing facility quality and other facility and resident level variables have produced inconsistent and inconclusive findings.

As in other areas of health care, the quality of nursing home care is typically conceptualized and measured along three major dimensions: structure, process, and outcome. Structural variables refer to those facility or market characteristics that affect the provider's ability or willingness to deliver quality care. Structural measures include characteristics of the

physical plant, staff to patient-ratios, professional background of nurses and aides, and facility policy and procedures (Davis 1991; Spector 1991). There is, in addition, a growing literature on the relationship of competition in nursing home market areas to quality (Nyman 1 988a, 1988b). Process variables, which until the recent passage of OBRA 87 were the focus of most regulatory policies, refer to the manner in which care is delivered and the adequacy of the staff available to deliver the service. Practices such as catheter care, restorative nursing techniques, skin care and organized activities are considered process variables (Spector 1991). Standards of care such as meal ratings, diet plans, and adequacy of nursing services, care plans, and rehabilitative services are also viewed as process measures (Davis 1991).

Outcomes of care are typically measured by changes in health status and may include discharge and survival rates, recovery and cure rates, and rates of functional improvement and decline. Other outcome measures, which do not indicate a change in health status, but suggest a high likelihood that substandard care is being provided, include certain preventable treatments or conditions, such as high prevalence of decubitus ulcers and high catheterization rates. Since nursing homes, by definition, provide care to individuals with chronic conditions and significant impairments, the use of outcomes, while generally preferred, must be approached cautiously. Outcome measures used in the long term care setting must take into consideration severity of functional and health impairment, co-morbidities and the potential for staff intervention to prevent or minimize a negative outcome.

Improving our knowledge and understanding of the factors that influence the quality of nursing home care is particularly important to those interested in rural long term care. Rural communities typically have a higher proportion of elderly than urban areas and thus, a greater per capita need for long term care services (Shaughnessy 1992). Nursing facilities have been one of the major providers available to meet the long term care needs of rural elders. Access

to services is often limited in rural areas by travel distances to receive services, reliance on public funding, cultural factors that may either favor or lead to resistance of certain types of services, and improper continuity and care coordination (Shaughnessy 1992).

It is well documented that rural areas generally have fewer physicians, nurses, nurse practitioners and other health care professionals available to them than urban areas (Coward et al. 1994, Coward et al. 1993, Frenzen 1994). Metropolitan areas had 2.3 times as many physicians per capita as nonmetropolitan areas in 1987 and the supply of physicians declines as the population of an area decreases (Coward et al 1994). Registered nurses are also under represented in rural areas, and nursing homes in particular may face shortages (Coward et al. 1994). While less is known about the availability of other health professionals, such as nurses aides, therapists (e.g. physical and occupational), social workers, mental health workers, etc, it is likely that geographic maldistributions exist with these professions as well, given the reliance of these professions on large populations to make practice economically feasible.

To date, the published literature on urban-rural differences in nursing home quality is minimal. Studies of long term care quality provided in rural hospital swing beds and research on hospital quality provide some insights, however, into the relationship between location of service and quality of care.

Swing Beds: In a comprehensive study of the quality of care in rural nursing homes and swing beds, Shaughnessy et al. (1990) found that swing bed care is more effective in enhancing functional outcomes, discharge to independent living and in reducing hospitalization for long term care patients. Swing bed patients were discharged more frequently, hospitalized less frequently and rehabilitated more quickly than patients in rural nursing homes. On the other hand, nursing home care appears more desirable than swing bed care for long stay chronic care patients with no rehabilitation potential. Based on visits to 50-100 rural nursing homes

throughout the country, Shaughnessy (1994) observed that rural nursing home staff appear to be more attentive to the functional and support needs of their residents and that this may be due to the culture of rural communities. Often, nursing home staff know the families of residents apart from the nursing home and it is not uncommon for the staff to have known the resident prior to admission (Rowles 1994). These findings point to the importance of understanding the mix of residents in a facility and the different patient care philosophies (rehabilitation versus maintenance care) that underlie the care practices in the facility (Shaughnessy et al. 1990).

Hospital Quality: Research into the role and performance of rural hospitals in the delivery of health care services is useful to examine as we further our understanding of rural nursing home quality. Many of the challenges facing rural hospitals are similar to those facing rural nursing facilities (Hart et al. 1990). These include a declining economic base, changes in Medicare and Medicaid payment systems, inability to keep pace with advances in technology, and availability of medical and professional staff (Shortell 1 989). Whether these challenges and other related factors influence the quality of care in hospitals or nursing homes is still an open question, however. In a study of multi-hospital systems in the 1980's, Shortell found that rural hospitals were less likely to be fully accredited and generally had fewer registered nurses per occupied bed than hospitals located in other areas. The ratio of actual to predicted death rates in rural hospitals was generally lower than in non-rural areas. The author cautions, however, that more refined adjustments for severity are needed.

In another study of physician and hospital factors associated with the mortality of patients, Kelly et al. (1986) examined hospital mortality rates for patients with certain conditions. Geographic location was not found to be a strong indicator of mortality rates in this analysis. Other studies in this area have shown mixed results (Kelly 1 986). In general,

however, lower mortality rates are generally associated with hospitals that provide large volumes of similar surgical procedures (Kelly 1986).

As with the literature on nursing home quality, research on the relationship between hospital quality and urban-rural location is limited. Furthermore, the hospital quality literature tends to focus on mortality rates related to specialized procedures, especially surgery. While some analogies may be possible, our ability to draw too heavily from research in this area is limited by the differences in the mix of patients served, type of care provided and environmental milieu of hospitals and nursing facilities.

Determinants of Nursing Home Quality: Beyond the question of urban-rural location, studies have examined the effects of a variety of facility and resident characteristics and market factors on nursing facility quality (Davis 1991, Zinn 1993, Shaughnessy et al. 1990, Riportella-Muller 1982, Greene 1981, Spector 1991). Studies indicate that rural facilities are more likely to be not-for-profit and smallerthan their urban counterparts (Shaughnessy 1994). The effect of for-profit status and profit-seeking behavior on nursing home quality has been the subject of widespread debate and extensive research over the last two decades. Despite concerns that for-profit facilities have an incentive to reduce costs as a way to achieve profits and that such behavior may be inconsistent with quality care, most studies using process and outcome measures of care have found no relationship between type of ownership and quality (Davis 1991).

Economies of scale and greater efficiency are generally associated with an increase in facility size. Other positive benefits that potentially accompany an increase in size may include an ability to attract and retain a broader range of quality staff, a capacity to provide inservice education, and greater administrative support of staff activities. On the other hand, smaller facilities may be able to provide more home-like care emphasizing quality of life and

comfort of residents. Like other studies of this complex subject, conclusions are difficult. In a study of code violations and complaints, Riportella-Muller et al. (1982) found that small homes had fewer violations and fewer complaints. Outcome measures such as discharges, mortality, patient functioning, life satisfaction and quality of life have been found to be unrelated to facility size; other studies have found lower patient ratings and greater resident isolation in larger facilities (Davis 1991). Zinn (1993) found large size to be associated with higher than expected pressure ulcer and restraint use in Pennsylvania nursing homes.

While staff to patient ratios are commonly used as structural measures of quality, few studies have examined the relationship of this input variable with outcomes of care. One study found a weak, negative relationship between staffing levels and likelihood of resident improvement (Spector, 1991). In a study by Linn et al. (1977), LPN and nurse aide hours were unrelated to patient outcomes. RN hours were negatively related to mortality rates and positively related to patient functioning and discharge rates.

Studies have generally shown that the proportion of public pay (Medicaid) residents is negatively related to nursing home costs; the relationship with quality of care has not been clearly established, however (Davis 1991). Nyman's studies (1988a, 1988b) found more frequent regulatory violations in homes with more Medicaid residents, but no consistent relationship with resident care or quality of life measures. Nyman's research (1 988a, 1 988b) has shown, however, that the competition for higher paying private residents may increase facility quality in markets with excess demand for beds. He notes that the relationship between the proportion of Medicaid residents and quality generally disappears when one controls for the degree of competition for beds in the area/market.

The study discussed in this paper breaks new ground in the area of nursing home quality research and the influence of urban-rural location on quality. While we can look to the

literature for analogies, this is one of the first studies to systematically examine quality differences in urban-rural location using both process and outcome measures of quality. The literature suggests that facility characteristics such as ownership control, size, and staffing, have a bearing on quality of care. Environmental factors such as supply of nursing home beds, availability of medical professionals and other staff may also influence quality and outcomes. The cultural environment or philosophy of care that permeates a nursing facility may also be critical but is difficult to measure. These are important factors to the extent that they influence the quality of life that residents experience in the nursing facility. They may be especially important in understanding quality differences between smaller and larger facilities and/or homes located in urban or rural locales. The reliance on the use of secondary data sources in this study precluded the development of data and measures on these admittedly critical dimensions of quality.

III. STUDY METHODS

Data Sources

The data for this study were obtained from four sources: a statewide, 100 percent resident assessment database, a nursing facility characteristics file, a health resources inventory file, and a nurse staffing survey. Unless otherwise indicated, analyses are based on data from 145 nursing facilities. Two-thirds (n = 100) of these facilities are classified as rural in this study; the remainder (n=45) are defined as urban facilities. Excluded facilities included state mental health facilities (n =2) and specialized head injury treatment centers (n=2).

Resident Assessment Data: The resident assessment data were obtained from the MDS + (minimum data set, plus), the designated uniform resident assessment instrument for nursing facilities in Maine. The MDS + includes the minimum assessment information required

by OBRA'87 as well as additional information, such as use of medications and rehabilitation services, that were included for purposes of the Case Mix Demonstration (Appendix A). The MDS + is completed by facility nursing staff for each resident upon admission to a facility, whenever a resident is readmitted to a facility, whenever a significant change in resident status occurs, and quarterly and annually after admission.

Facility staff have been using the MDS + as part of the resident assessment process since October 1990 when they were trained on the use of the instrument as part of the implementation of OBRA'87. Ongoing training has been provided to the facilities and their staff since that time in support of the Case Mix Demonstration.

The resident assessment data used to construct the quality indicators were obtained from the most recent assessment of all Maine nursing facility residents (private, Medicaid, Medicare and other) as of April 30,1993. All initial assessments for newly admitted residents were excluded from the calculation of the quality indicators as it may be inappropriate to attribute observed conditions for these residents to nursing facility quality. Several of the quality indicators used in this study measure change in a resident's condition. The two most recent assessments for each resident as of April 30, 1993 were used in constructing these indicators.

Nursing Facility File: The nursing facility file includes data on the characteristics of all Maine nursing facilities (n = 145) such as size, ownership, chain affiliation, Medicaid share, occupancy, hospital affiliation and location obtained from the Divisions of Audit and Licensure within the Maine Department of Human Services.

Health Resources Inventory: The Maine Rural Health Research Center has developed a statewide inventory of health facilities, personnel, and services which can be linked with

Census and other population data for multiple geographic units. These data were used to construct nursing home bed supply rates for each of Maine's 31 hospital service areas.

Nurse Staffing Survey: In 1 993, the researchers conducted a survey of all nursing facilities to obtain information on the number of hours of licensed professional staff, certified nurses aides and medication aides employed by the facility as of the fourth quarter of 1 992. A total of 106 facilities (73.0 percent) responded to this survey.

Variable Definitions

Quality Indicators

The quality indicators were developed through a systematic process involving clinical input and empirical analysis (Center for Health Systems Research and Analysis 1993) [Appendix BI. Expert clinical panels were established covering the major disciplines in long term care, including nursing, medicine, social work, physical and occupational therapy, pharmacy, nutrition, speech pathology and medical records. The clinical panels reviewed the indicators for validity and clinical meaningfulness. Advocates and nursing home administrators were also included in the review process. Subsequent empirical analysis was conducted to narrow the list of possible indicators.

The quality indicators are grouped into 11 clinical domains and include both measures of prevalence (the proportion of residents in a facility with a particular condition) and incidence (those conditions that developed from one assessment to another). There are 31 core indicators. A subset of 26 of these core indicators are adjusted for the risk of developing certain conditions, bringing the total number of indicators to 57. For example, the prevalence of falls is a core quality indicator representing the proportion of residents in a facility who had a fall in the last 30 days. This core indicator has been further divided into a high risk and a low risk adjusted indicator. The high risk adjusted indicator includes only residents who have

conditions that increase the probability of falling (e.g., balance problems, unsteady gait, use of a cane or walker, the presence of dizziness or vertigo). The low risk adjusted indicator includes residents with none of the risk conditions. The purpose of the risk adjusted indicators is to take into consideration variations in the underlying functional and health status of residents with a particular outcome.

The unit of analysis for this study was the nursing facility. For each facility, we calculated the proportion of residents flagged for that indicator.

Independent Variables

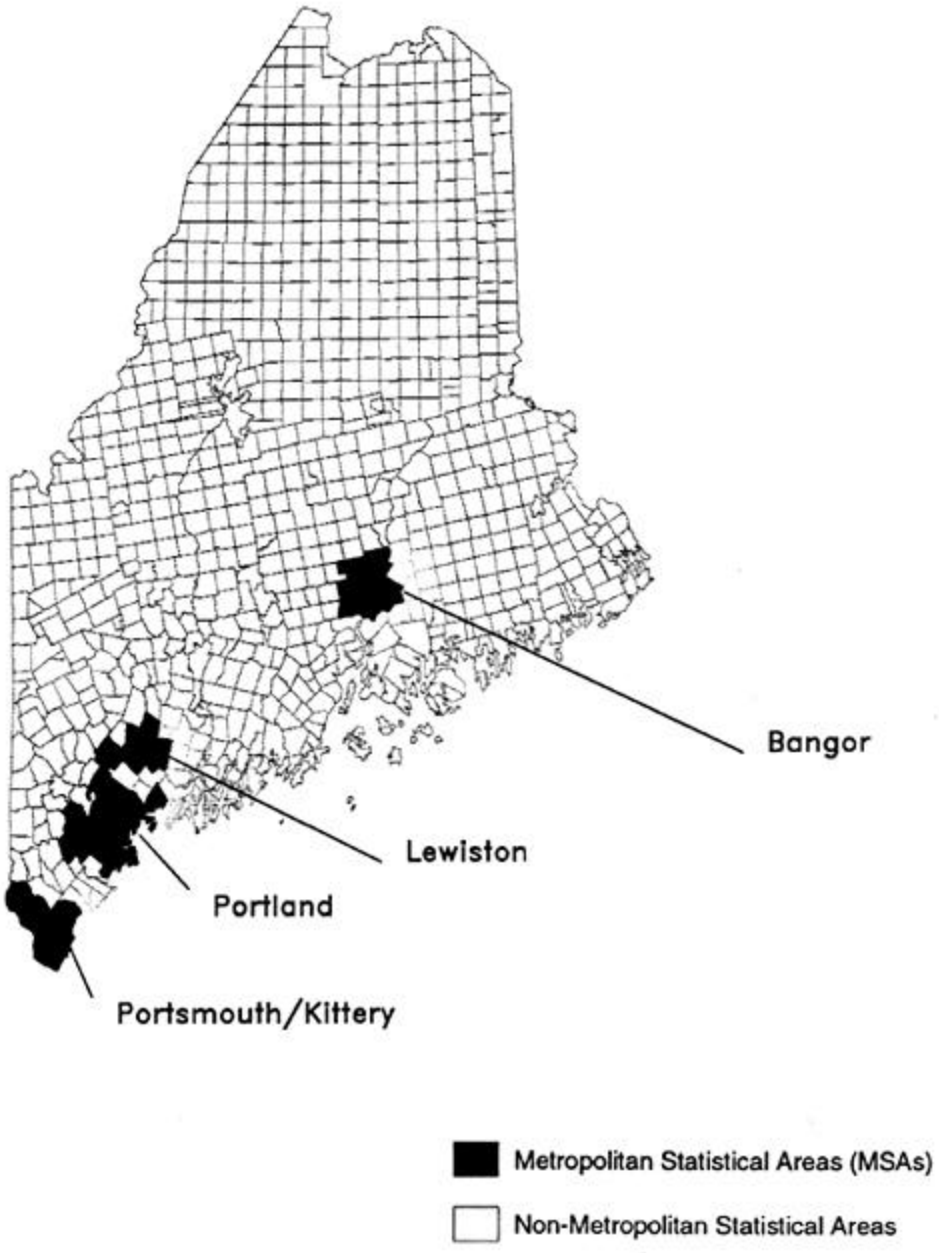
Table 1 describes the definition, measurement and source of the independent variables used in this study. The location of nursing facilities as either "rural" or "urban" is the central variable of interest in this analysis. This study utilizes the Standard Metropolitan Statistical Area (MSA-Non-MSA) designation to define urban and rural location. Although population density and other alternative measures were tested to obtain a more diverse categorization of facility location, the resulting reductions in the number of facilities in each category made these approaches impractical. In Maine, MSAs include the cities of Bangor and Brewer, Lewiston and Auburn, Portland, and the Maine portion of the Portsmouth N.H. MSA (Figure1). Facilities located in all other areas are considered rural. It is important to note that while "urban" in Maine does not mean the same thing as in New York or other more urbanized states, the rural-urban distinction, as defined by MSA and Non-MSA location, are nevertheless meaningful descriptors of places that vary significantly in terms of population density, travel distances and times, and health resource and service availability and accessibility.

Table 1
Independent Variable Definitions

Variable	Description/Measurement	Source
Facility Characteristics		
Urban/Rural Location	MSA-Non-MSA designations: 0= Non-MSA (Rural); 1 =MSA (Urban)	Nursing Facility File
Number of Beds	Total number of Medicare and Medicaid certified beds	Maine DHS, Licensing and Certification Division
Hospital Affiliation	A nursing facility that is physically attached to a hospital 0= Non-hospital; 1 **=** Hospital	Maine DHS, Licensing and Certification Division
Chain Affiliation	More than one facility owned by common owner: 0=Non-chain 1 =Chain	Maine DHS, Division of Audit
Profit Status	For profit and not-for-profit [501 can(3)] status: 0 **=** Not-for-profit 1 **=** For-profit	Maine DHS, Licensing and Certification Division
Occupancy	Total patient days divided by total available patient days (beds ***** total days in cost reporting period) ***** 100	Maine DHS, Division of Audit
Medicaid Share	Medicaid patient days divided by total patient days ***** 100	Maine DHS, Division of Audit
Inputs		
Nursing Hours Per Patient Day	Total nursing hours (RN, LPN and CAN) per patient day	Survey of 107 Maine nursing facilities – October-December 1992
Facility Case Mix		
Case Mix Index	Mean Case Mix Index based on RUG-Ill groupings with Maine weights	Maine MDS + dataset as of 3/30/93
Market Factors		
Nursing Home Bed Supply	Nursing home beds per 1,000 Supply population 65 and over in market area	Maine DHS, Division of Audit L

Figure 1

Metropolitan and Non-Metropolitan Statistical Areas in Maine



Other facility characteristics used in this analysis include the number of Medicare and Medicaid certified beds (a measure of facility size), hospital affiliation (i.e., physically attached to a hospital), and facility ownership (profit or not-for-profit). Hospital-based swing beds are not included in this study as these represent a very small number of beds in Maine (n=37). In Maine, two or more facilities owned by a common owner are considered part of a chain. No distinctions are made between individual or corporate ownership or in-state or out-of-state control.

The variable, total nursing hours per day, is included as a measure of clinical inputs. This measure represents the sum of licensed hours per day (RN and LPN) and aide hours per day. Information on nursing hours was only available for 106 of the 145 facilities in the state. This reduced the number of facilities in our multivariate analyses. Because we found no significant differences in our multivariate analyses with and without the nurse hours per day variable, we only report findings from models with this variable included.

The mean case mix index for each facility was computed using the RUG-III classification system (Fries et al. 1994). This index uses case mix resource weights developed for use in the Case Mix Demonstration. These resource weights have been modified to reflect the salary scales for RNs, LPNs and aides in Maine nursing facilities. The statewide average case mix weight has been standardized to 1 .00 with every facility's case mix index expressed using this scale. The case mix index for each facility was computed as of March 30, 1993.

Analysis

This study uses single, point-in-time measures of the incidence or prevalence of specific quality indicators to estimate quality differences among rural and urban nursing

facilities. Two sets of analyses were conducted. First, ordinary least squares regression models were estimated that take the following general form:

> p(quality indicators) = *f*(geographic location, facility size, hospital affiliation, chain affiliation, profit/non-profit status, occupancy, Medicaid Share, nursing hours, facility case mix, and bed supply)

Differences in quality may not be detectable across the full range of quality indicator scores; they may only be apparent at the extreme. To test for this possibility, we estimated a second set of equations in which facilities were identified as having quality indicator scores above or below the 75th percentile. Logistic regression was then used to estimate the effects of location on these re-grouped quality indicator scores with the other variables in the linear model above included as covariates.

In constructing these models, we were concerned with potential multicollinearity between facility size and urban-rural location and hospital affiliation and profit-non-profit status. In both cases, the correlation coefficients, though significant, were not sufficiently large (<.40) to warrant exclusion from our analyses. As indicated above, regression models were estimated for all 57 quality indicators.

The small number of cases (n = 145) may be a limiting factor in this study. As noted, information on nursing hours was available on only 106 of the 145 facilities in the study. To maximize our cases, we ran our regression models with and without this variable. Because the results of these models were nearly identical with respect to the effects of the geographic location variable, we have only reported here the results of the more specified models. Only significance levels at the .01 and .05 levels are reported.

IV. FINDINGS

Characteristics of Rural and Urban Nursing Facilities

As indicated in Table 2, over two-thirds (n = 100) of Maine's nursing facilities are located outside of an MSA. Only facility size, as measured by the number of beds, distinguishes rural facilities from their urban counterparts. Rural facilities are more likely to be smaller, with 38 percent having fewer than 50 beds compared with 27 percent for urban homes. Although a slightly higher proportion of rural facilities are hospital-based and operate as non-profit entities, these differences were not statistically significant. Rural and urban facilities do not differ significantly in occupancy levels or the percentage of Medicaid residents. Total nursing and licensed nursing (R.N. and LPN hours) hours per patient day were slightly less in rural facilities, though the differences were not significant. CNA hours per day were identical. There were no significant differences in mean case mix between rural and urban facilities. Although rural facilities are located in regions with slightly larger nursing home bed supplies, these differences are not statistically significant.

Outcome Differences: Urban-Rural Facilities

Appendix Table 1 provides descriptive statistics for the 57 Quality Indicators (Qis) for rural and urban facilities. The bivariate results show significant differences ($p < .05$) among rural and urban facilities on only three of the 57 indicators: the Prevalence of Daily Physical Restraints (QI 27) and Incidence of Pressure Ulcer (QI 30) [Overall and High Risk]. The prevalence of daily physical restraints was 1 5.4 percent in rural facilities compared with 11 .9 percent in urban homes. In contrast, the incidence of pressure ulcer development was lower in rural than urban facilities (3.8 versus 5.5 percent overall and 4.6 versus 6.6 percent for high risk residents).

TABLE 2
Nursing Facility Characteristics By Urban-Rural Location

Facility Characteristic	**Urban** (N=45)		**Rural** (N=100)		**Statewide** (N=145)	
	N		N		N	
Chain Affiliation	22	48.9%	51	51.0%	73	50.3%
Non-Chain	23	51.1	49	49.0	72	49.7
Chain						
Hospital Affiliation	44	97.8%	92	93.0%	136	94.5%
Non-Hospital	1	2.2	8	7.0	10	5.5
Hospital						
Profit Status	6	13.3%	26	26.0%	32	22.1%
Non-Profit	39	86.7	74	74.0	113	77.9
For Profit						
Average Number of Beds *	13	26.7%	38	38.0%	51	34.5%
0-50	19	44.4	52	53.0	71	50.3
51-100	14	28.9	10	9.0	24	15.2
101+						
Total Nursing Hours Per Patient Day	31	4.1	75	3.7	106	3.8
CNA Hours Per Patient Day	31	2.9	75	2.9	106	2.9
Licensed Hours Per Patient Day	31	1.2	75	0.9	106	1.0
Case Mix Index (3/9 3)	45	1.007	100	1.004	145	1.005
Hospital Affiliated	1	1 .570	8	1.139	9	1 .193
Non-Hospital Affiliated	44	0.994	92	0.994	136	0.994
Bed Supply (NFBeds/1000 pop 65+)	31	67.4	75	69.3	136	68.7
Occupancy	31	95.1%	75	94.7%	136	94.8%
Medicaid Share	31	76.7%	75	79.4%	136	78.6%

* Chi-Square = $\leq$ .01

In spite of the limited number of significant relationships at the bivariate level between facility location and the QIs, multiple regression equations were run for all 57 QIs on the outside chance that the effects of of facility location could be suppressed by one or more of the other variables in our analytic models. The results of these regression analyses, shown in Appendix Table 2, reveal few significant urban-rural differences. The majority of the 57 equations perform poorly and do not achieve overall significance. None of the significant bivariate relationships noted above proved significant when other variables are controlled for in our multivariate equations. R-square values for the equations range from 0.03 for Prevalence of Fecal Impaction (QI 11) and Low Risk of Bowel/Bladder Incontinence (QI 8) to 0.33 for Prevalence of Antibiotic-Anti-Infective Use (Ql 13).

The effects of rural-urban location are significant in four of these models-Prevalence of Weight Loss (Ql 14), Prevalence of Bedfast Residents (QI 16), and Incidence of Contractures (Q119) - Overall and Low Risk (Table 3). In three of these models--Prevalence of Weight Loss and Incidence of Contractures(Overall and Low Risk)--rural facilities have lower rates than urban homes; the prevalence of bedfast residents is higher in rural than urban facilities. Overall, our confidence in these findings must be discounted by the lack of consistency between the bivariate and multivariate results and the failure of these models to achieve statistical significance.

To test the proposition that rural-urban differences may only be detectable at the extreme of the distribution of quality scores, we ran logistic regression models (not shown) in which we evaluated the effects of rural-urban location and other covariates used in the linear models on the probability that a facility would have QI rates above or below the 75th percentile. The results of these analyses were similar to those obtained from the linear models and showed no consistent pattern of urban-rural differences.

Table 3
Summary of Ordinary Least Squares Regression
Estimates of Difference in Observed and Expected Outcomes

	Ql 14 Prevalence of Weight Loss	Ql 16 Prevalence of Bedfast (HR)	Ql 19 Incidence of Contractures	Ql 19 Incidence of Contractures (LR)
Intercept	-7.45	-0.38	18.72	15.02
Case Mix Index	21.42*	7.59	10.79	5.90
Nursing Hrs/Day	-0.56	0.77	0.88	0.91
Chain	-2.03	2.89	1.25	1.12
Hasp Affiliation	-1.77	-5.92	-17.25*	-11.75
Profit Status	2.28	-4.75	-6.67	-3.07
NF Beds	0.04	-0.03	-0.00	-0.00
Bed Supply	-0.06	-0.07	0.04	0.03
Occupancy	-1.35	-4.69	-2.59	3.10
Medicaid Share	2.08	17.61	-18.57	-20.18
MSA	-3.58*	4.03*	-5.90*	-5.92*
R Square	0.13	0.17	0.11	0.08
F Value	1.34	1.89	1.18	0.76
Prob of F	0.22	0.06	0.31	0.66

* $p < .05$

Study Limitations

Studies of health care quality are rarely definitive and this research is no exception. There are several inherent limitations in the data and approach used in this study that warrant noting. First, the Quality Indicators used in this study are still being field-tested as part of the Case Mix Demonstration. Although their reliability and validity have not yet been established empirically, there are few, if any, nursing home quality measures for which these methodological properties have been established.

It is clear from the performance of many of our empirical models that our understanding of the factors that affect nursing home quality is limited. Studies evidence very inconsistent findings regarding the effects of facility and resident characteristics and environmental factors on nursing home quality. In the absence of empirical guidance from prior work, we have chosen to be inclusive rather than exclusive in constructing our multivariate models. Although we have been largely consistent with prior studies in doing so, our analytical models do not capture many of the environmental and contextual factors, such as nursing philosophy, turnover, training, communication, and staff attitudes, which are difficult to measure but which may be particularly important in determining nursing home quality.

Finally, our results are the product of a relatively small number of facilities in one state, and, hence, should not be overinterpreted. Notwithstanding these limitations, this study represents one of the first efforts to examine empirically the relationship between rural and urban location and nursing facility quality. As such, the study is intended to help establish a framework for future research on this important topic.

V. DISCUSSION

The question of how rural health care providers and facilities perform relative to their urban counterparts has become increasingly important as rural health systems face increasing financial pressure and as continuing shortages in health professional supply threaten the viability of some providers (Hart et al. 1990). Although many of the quality concerns have been directed to rural hospitals (Shortell 1989; Keeler et al. 1992), there is growing interest in research and policy circles in rural nursing facilities (Ireland 1991; Davis 1991).

As noted earlier, many of the hypotheses that have guided research on quality differences between rural and urban hospitals are likely to be inappropriate when used in comparing nursing facility quality. The two sectors differ markedly in the nature of care they provide. The care provided in nursing facilities involves considerably more nursing and custodial care in which the personal dimension of caregiving becomes a more critical factor in determining quality.

In the absence of research in this area, it is extremely hard to posit firm hypotheses regarding quality differences between rural and urban facilities. The results of this study suggest that there is little basis for assuming, a priori, that rural or urban location affects nursing home quality. Notwithstanding the caveats noted earlier, this study reveals no systematic differences among nursing facilities in Maine in the incidence or prevalence of a wide range of conditions and outcomes encompassed by the quality indicators employed in this study. Where significant differences were detected, rural facilities evidenced lower rates of weight loss and contractures among residents but higher rates of bedfast residents.

In a related study, Zinn et al. (1993) demonstrated in a sample of Pennsylvania nursing homes that larger facilities have greater than expected rates of restraint use and pressure ulcers. They argue that smaller facility size may enhance managerial control over care

processes and may promote a more personalized approach to care. The results of this study do not indicate any consistent relationship between facility size and the quality indicators.

Beyond size, however, there are other qualities of rural facilities and communities not captured in this study, that may be important in distinguishing rural and urban facilities and the quality of the care they provide. Factors such as the philosophy of care, and the involvement of family, friends and neighbors in the care provided in the nursing facility, which may differ in rural and urban homes, may contribute to more personalized care and improved quality of life (Rowles 1994). There is a need for further research on the contributions of these more qualitative factors to the quality of care in nursing homes in both urban and rural areas.

Implications for Policy and Research

Information about whether and how rural and urban nursing facilities differ in their patterns and outcomes of care will be increasingly important as states and the federal government move toward more targeted nursing home quality assurance processes. While there is nothing in the findings from this study to suggest that rural or urban location, per se, should merit special attention in the survey process, further research is needed to understand more fully how differences in rural and urban facilities may affect quality and care outcomes.

Changes in hospital admission and discharge patterns, together with the implementation of case mix-based payment systems and other nursing home policies designed to restrict the use of nursing homes to higher acuity residents, are all likely to affect nursing home case mix and the ability of homes to provide appropriate care. The difficulties of recruiting and retaining qualified staff may become a more critical problem for rural facilities, as an increasing proportion of nursing facility residents become medically complex or require more intensive therapy or rehabilitative services as a result of these policy changes. This

suggests the importance of continued research to monitor the impact of these trends on nursing home quality and outcomes. In addition, more work is needed to define and measure the qualitative dimensions of nursing home care and quality that are most likely to be related to the quality of life for nursing home residents and which may be particularly important in distinguishing between rural and urban facilities.

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APPENDICES

		Rural (N=100)			Urban (N=45)		
	Quality Indicator	Mean	Standard Deviation	Range	Mean	Standard Deviation	Range
1.	Prevalence of Any Injury	12.1	9.8	0 - 50.0	9.4	9.0	0 - 41.3
2.	Prevalence of Falls High Risk	11 .0	6.2	0 - 32.5	11 .8	7.8	0 - 38.5
	Low Risk	12.3	7.4	0- 38.5	13.2	10.0	0- 55.6
		8.9	8.1	0 - 33.3	9.0	8.4	0 - 40.0
3.	Prevalence of Problem Behaviors Towards Others	29.0	14.4	0-61.4	31.8	14.9	2.7-62.7
	High Risk	36.8	17.2	0-75.0	38.3	16.8	0-71.4
	Low Risk	14.7	15.6	0-100.0	17.2	13.6	0-45.5
4.	Prevalence of Symptoms of Depression	16.7	12.1	0-53.3	16.8	15.2	0-70.9
	High Risk	17.6	13.8	0-59.1	18.1	16.2	0-71.1
	Low Risk	14.2	11.9	0-50.0	14.1	15.3	0-70.0
5.	Use of 9+ Scheduled Medications	18.2	9.6	0-59.1	15.6	7.6	0- 34.5
6.	Prevalence of cognitive Impairment	51.4	13.5	16.4 -100.0	53.8	10.1	25.0-76.7
7.	Incidence of Decline in cognitive Status	8.4	8.0	0 - 50.0	8.1	7.5	0 - 30.0
8.	Incidence of Bladder/Bowel Incontinence	10.5	7.8	0 -40.0	11 .3	7.9	0 - 40.0
	High Risk	15.6	12.7	0 -50.0	15.7	11.0	0 - 45.7
	Low Risk	5.2	7.9	0 -50.0	5.8	8.8	0 - 44.4
9.	Bladder/Bowel Incontinence without a Toileting Plan	46.0	31.5	0 - 100.0	39.0	30.7	0 - 100.0
10	Incidence of Indwelling catheter	0.7	1.5	0 - 7.7	1.2	2.1	0- 10.0
11	Prevalence of Fecal Impaction	0.9	1 .8	0 - 9.7	0.6	1 .1	0 - 5.3
12	Prevalence of Urinary Tract Infection	5.5	4.1	0-18.3	5.9	6.1	0- 28.8
13	Prevalence of Antibiotic/Anti-infective Use	9.9	6.9	0-33.3	7.9	5.6	0 - 19.6
14.	Prevalence of Weight Loss	10.7	8.8	0-48.0	9.8	8.1	0- 35.0
15	Prevalence of Tube Feeding	3.5	13.4	0 -100.0	2.4	5.4	0-28.6
	High Risk	4.2	15.2	0 -100.0	3.2	7.5	0-40.0
	Low Risk	0.2	1.4	0 -12.5	0.1	0.7	0-4.3
16	Prevalence of Bedfast Residents	8.2	7.9	0 - 50.0	8.1	7.8	0 - 42.9
	High Risk	11.0	9.5	0 - 35.1	12.1	10.6	0 - 40.0
	Low Risk	3.1	10.9	0- 100.0	3.7	8.0	0 -50.0
17	Incidence of Decline in Late Loss ADLs	17.4	12.1	0- 55.6	16.1	9.7	0 - 39.3
	High Risk	19.4	16.8	0- 100.0	16.6	11.2	0 - 50.0
	Low Risk	16.1	16.3	0-100.0	14.3	12.8	0- 55.6

Appendix Table 1
Quality Indicators in Urban/Rural Nursing Facilities in Maine

		Rural (N= 100)			**Urban** (N =45)		
18.	Incidence of Improvement in Late Loss ADLs	11.0	10.3	0 - 45.5	11.9	7.4	0- 30.8
	High Risk	8.6	9.9	0 - 50.0	10.8	9.2	0 - 37.9
	Low Risk	13.5	14.8	0 - 66.7	13.5	10.0	0- 37.5
19.	Incidence of Contractures	12.2	13.9	0 - 66.0	8.5	8.8	0-32.6
	HighRisk	12.7	14.2	0 - 66.7	10.0	12.4	0-50.0
	Low Risk	11.2	16.6	0 - 100.0	7.8	9.4	0-35.4
20.	Decline in Late Loss AOL Function Among Unimpaired/Moderately Impaired Residents	19.0	12.7	0 -63.6	18.5	12.6	0-53.8
21.	Antipsychotic Use in the Absence of a Psychiatric Diagnosis	14.3	8.1	0 - 40.0	14.9	10.3	0 - 55.6
	High Risk	19.9	14.3	0 - 100.0	19.8	13.4	0 - 60.0
	Low Risk	10.3	12.6	0 - 100.0	10.5	11.5	0 - 66.7
22.	No Antipsychotic Use on Admission/Readmission, but Used on Subsequent Assessment	3.9	14.0	0 - 100.0	3.3	7.0	0 - 28.6
	High Risk	3.7	15.8	0 - 100.0	3.9	11.3	0 - 50.0
	Low Risk	2.3	9.3	0 - 50.0	2.8	8.9	0 - 50.0
23.	Anti-psychotic Daily Dose in Excess of Surveyor Guidelines Among Residents w/Organic Mental Syndromes	21.6	21.7	0 - 100.0	27.2	30.1	0 - 100.0
24.	Prevalence of Antianxiety/Hypnotic Use	5.3	5.0	0 - 20.0	5.9	4.8	0 - 15.4
25.	Hypnotic Use on a Scheduled Basis or PRN More Than 2 Times inLastWeek	2.2	2.8	0 -11.8	2.4	3.0	0 - 14.3
26.	Prevalence of Use of Long-Acting Benzodiazepine	0.1	0.7	0 - 5.3	0.2	0.6	0 - 3.3
27.	Prevalence of Daily Physical Restraints*	15.4	10.3	0 - 44.4	11.9	9.9	0 - 37.3
28.	Prevalence of Little or No Activity	34.0	20.0	0 - 100.0	36.8	22.1	0 - 100
29.	Prevalence of Stage 1-4 Pressure Ulcers	9.1	6.7	0 - 33.3	9.7	5.6	0 - 28.8
	HighRisk	10.7	7.5	0 - 36.5	11.6	7.0	0 - 38.5
	Low Risk	1.7	4.8	0 - 25.0	1.9	3.8	0 - 14.3
30.	Incidence of Pressure Ulcer Development*	3.8	3.7	0 - 21.1	5.5	4.2	0 - 16.7
	High Risk*	4.6	4.3	0 - 22.0	6.6	5.1	0 - 20.6
	Low Risk	1.1	3.4	0 - 18.8	0.9	2.8	0 - 15.0
31.	Insulin Dependent Diabetes With No Footcare	15.2	29.5	0 - 100.0	18.8	30.7	0 - 100.0

• $p \leq .05$

Appendix Table 2
Results of Ordinary Least squares Regression
Estimates of Difference in Observed and Expected Outcomes

Domain/Quality Indicator (Dependent Variable)	Dependent Variables / Parameter Estimate													
	Intercept	R Square	F Value	Probability of F	Case Mix Index	Nursing Hrs/Day	Chain Non-Chain = 0 Chain = 1	Hospital Non-Hospital = 0 Hospital = 1	Profit Status Not for profit = 0 Profit = 1	NF Beds	MSA Non-MSA = O MSA = I	Bed Supply NFBeds/100 pop 65+	Occupancy Rate	Medicaid Share (% of Actual days)
Domain 1: Accidents	-22.27	0.19	2.23	0.02	35.72**	1.46	-2.93	-10.57	-0.03	0.02	4.11	-0.00	11.64	10.45
QI 1 - Prevalence of Injuries	6.66	0.25	3.08	0.00	26.14**	-0.65	-2.66	-2.00	2.66	0.00	-1.64	0.05	-11.29	-13.26*
QI 2 - Prevalence of Falls	42.66	0.13	1.36	0.21	2.45	-0.77	-2.08	-2.84	1.96	0.00	-1.78	0.06	-18.89	-16.80*
High Risk	-43.88	0.30	3.92	0.00	54.41**	0.10	-2.98	-1.21	6.37	0.02	-2.01	0.03	-3.11	-2.79
Low Risk														
Domain 2: Behavioral /Emotional														
QI 3 - Prevalence of Problem Behavior														
Towards Others	-47.70	0.19	2.25	0.02	44.05*	0.79	3.39	-25.67*	-9.11	-0.02	1.86	0.13	9.81	23.04
High Risk	-45.23	0.10	2.02	0.04	43.68*	1.14	2.11	-30.44*	-11.46'	-0.02	0.68	0.17	14.83	22.09
Low Risk	-63.97	0.19	2.19	0.02	39.63*	0.38	2.53	-13 13	-3.34	0.00	188	0.14	-0.97	23.44*
QI4 - Symptoms of Depression	-13.19	0.13	1.40	0.19	31.99*	0.41	3.47	-19.09*	-7.33	-0.02	-093	-0.04	5.21	0.42
High Risk	-48.91	0.21	2.47	0.01	61.35**	-0.01	3.79	-14.40	-6.20	-0.03	0.96	0.00	13.07	-2.26
Low Risk	26.32	0.12	1.28	0.26	7.56	0.60	0.98	-17.41*	-9.63'	-0.02	.258	-0.07	-7.14	-0.63
Domain 3: Clinical Management	19.17	0.18	2.03	0.04	-7.31	1.26	0 65	-7.27	-6 78	-0.01	-2.63	0.11•	-0.93	0.42
QI 5 - Use of 9 + Medications														
Domain 4: Cognitive Patterns	9.63	0.26	3.28	0.00	26.45	-0.24	3.35	-31.47*	0.20	-002	1.29	-0.13	9.33	18.79
QI 6 - Prevalence of Cognitive Impairment	8.12	0.04	0.42	0.93	1.27	0.50	-0.62	-5.16	1.55	0.00	1.42	0.02	2.M	3.26
QI 7 - Incidence of Decline Cognitive Status														
Domain 5:: Elimination/Continence														
QI 8- Incidence of Bladder/Bowel Incontinence	0.37	0.07	0.65	0.76	13.93	-0.20	0.43	-8 83	1.85	0.01	0.04	-0.01	-4.07	-0.12
High Risk	-14.97	0.08	0.78	0.64	27.44	0.23	-0.06	-20.79*	-1.29	0.01	0.88	-0.00	6.33	0.12
Low Risk	2.77	0.03	0.30	0.98	8.07	-0.76	1.18	-0.17	0.85	0.01	-0.16	0.01	-8.03	3.88
QI 9 - Bladder/Bowel Incontinence without Toilet Plan	177.46	0.12	1.25	0.27	-113.44**	-1.03	-1.96	0.43	-11.82	-0.04	-2.10	-0.19	7.89	4.54
QI 10 - Incidence of Indwelling Catheter	5.35	0.08	0.86	0.57	-0.26	0.69	-0.45	-1.63	.0.10	0.01	0.23	0.06'	.2.86	1.13
QI 11 - Prevalence of Fecal Impaction	-0.47	0.03	0.26	0.99	-0.42	0.00	-0.13	-0.70	-0.10	-0.00	-036	0.00	1.33	0.68
Domain 6: Infection Control														
QI 12 – Prevalence of UTI	6.68	0.16	1.76	0.08	11.59	0.58	-1.11	-399	-1.04	-0.00	-0.69	-0.03	-3.26	-7.93
QI 13 - Prevalence of Antibiotic/Anti-Infective Use	-16.67	0.33	4.51	0.00	32.89**	0.37	-3.27**	-0,92	-1.71	-0.00	-2.51	0.02	-5.41	-0.03

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Results of Ordinary Least Squares Regression
Estimates of Difference in Observed and Expected Outcomes

Domain/Quality Indicator (Dependent Variable)	Dependent Variables / Parameter Estimate													
	Intercept	R Square	F Value	Probability of F	Case Mix Index	Nursing Hrs/Day	Chain Non Chain = 0 Chain = 1	Hospital Non-Hospital = 0 Hospital = 1	Profit Status Not for Profit = 0 Profit = 1	NF Beds	MSA Non-MSA = 0 MSA = 1	Bed Supply NFBeds /1000 pop 65+	Occupancy Rate	Medicaid Share (% of Actual Days)
Domain 7: Nutrition /Eating														
QI 14 - Prevalence of Weight Loss	-7.46	0.13	1.34	0.22	21.42*	-0.66	-2.03	-1.77	2.28	0.04	-3.68°	-0.06	-1.35	2.08
QI 15 – Prevalence of Feeding Tube	-9.22	0.22	2.6	0.01	4.22	1.04**	-0.28	3.22	0.00	0.01	0.36	-0.01	-1.82	4.89°
High Risk	-10.67	0.22	2.6	0.01	6.05	1.47**	-0.69	7.72**	0.10	0.02	0.20	-0.01	-2.97	5.12
Low Risk	-0.67	0.16	1.79	0.07	0.20	0.00	0.03	0.10	-0.01	0.00**	0.09	-0.00	0.11	0.26
Domain 8: Physical Functioning														
QI 16 - Prevalence of Bedfast Residents	-14.17	0.15	1.65	0.10	18.62**	0.23	0.22	-6.75	-2.22	-0.02	1.46	4.04	0.18	10.61*
High Risk	-0.38	0.17	1.89	0.06	7.59	0.77	2.89	-5 93	-4.75	-0.03	4.03*	-0.07	-4.69	17.61*
Low Risk	-7.02	0.16	1.67	0.10	11.07*	-0.63	-0.81	1.93	1.44	-0.01	1.62	-0.02	-0.46	2.82
QI 17 - Incidence of Decline In Late Loss ADLs	47.69	0.08	0.77	0.66	-4.00	0.39	068	-13.49	-6.94	-0.07	-2.43	-0.09	-11.11	2.21
High Risk	76.28	0.07	0.70	0.72	-29.15	1.82	-1.51	-3.51	-4.97	-0.08	-3.24	-0.06	-13.38	-5.16
Low Risk	6.62	0.16	1.59	0.12	32.00	-2.27	1.30	-24.28*	-12.53*	-0.06	-1.01	-0.12	-7.19	20.81
QI 18 - Incidence of Improvement In Late Loss ADLs	62.93	0.11	1.19	0.31	-28.55*	0.73	-0.28	0.09	-5.96	-0.02	0.40	0.04	-12.37	-2.24
High Risk	37.73	0.08	0.62	0.61	-26.98*	0.62	-0.25	5.04	-3.66	0.02	-0.62	-0.02	-1.24	0.37
Low Risk	62.54	0.11	1.11	0.36	-20.74	0.84	-1.22	-4.82	-7.42	-0.00	0.66	0.12	-21.81	-0.19
QI 19 - Incidence of Contractures	18.72	0.11	1.18	0.31	10.79	0.66	1.25	-17.25*	-6.67	-0.00	-6.90’	0.04	-2.69	-18.57
High Risk	37.02	0.06	0.79	0.64	4.32	0.78	2.44	-18.35	-8.69	-0.00	-3.67	0.04	-11.01	-19.97
Low Risk	16.02	0.08	0.76	0.86	5.90	0.91	1.12	-11.75	-3.07	-0.00	-5.92	0.03	3.10	-20.18
QI 20 - Decline In Late Loss ADL Function Among Unimpaired or Moderately Impaired	19.46	0.07	0.65	0.77	19.16	-0.01	0.60	-19.60	-2.37	-0.04	-3.93	-0.06	-11.26	4.73

Domain/Quality Indicator (Dependent Variable)	Dependent Variables/ Parameter Estimate													
	Intercept	R Square	F Value	Probability of F	Case Mix Index	Nursing Hrs/Day	Chain Non Chain = 0 Chain = 1	Hospital Non Hospital = 0 Hospital = 1	Profit Status Not for profit = 0 Profit = 1	NF Beds	MSA Non-MSA = 0 MSA = 1	Bed Supply NFBeds/ 1000 pop 65 +	Occupancy Rate	Medicaid Share (%of Actual Days)
Domain 9: Psychotropic Drug use														
QI 21 - Psychotropic Drug Use														
No Diagnosis	-4.54	0.07	0.75	0.67	-2.35	0.35	2.50	-0 23	-3.34	-0.02	1.79	0.08	16.35	0.49
High Risk	9.43	0.18	1.99	0.04	-25.55	1.68	4.94*	14.79	-2.97	-0.01	0.41	0.17*	20.85	-6.15
Low Risk	-4.46	0.04	0.41	0.94	3.99	-0.63	0.10	-3.35	-3.20	-0.04	2.20	0.01	10.49	7.71
QI 22 - No Anti-psychotic Drug use on Admission	-2.18	0.08	0.84	0.59	0.54	-0.78	2.22	-17.33	.11.64*	-0.02	0.59	0.05	22.64	-7.37
High Risk	-16.27	0.08	0.84	0.59	5.65	0.32	3.23	-16.21	-12.31*	-0.00	0.48	0.10	22.20	-7.20
Low Risk	-2.84	0.16	1.72	0.09	3.46	-1.81	3.52	-13.68*	-10.51*	-0.00	2.44	-0.02	16.19	3.25
QI 23 - Anti-psychotic Drug Use in Excess of Surveyor Guidelines	41.22	0.09	0.95	0.49	-69.30	1.93	-4.87	21.76	7.23	0.03	4.32	-0.03	29.20	15.79
QI 24 - Prevalence of Antianxiety/Hypnotic Use	16.20	0.14	1.56	0.13	-8.71	0.12	-1.38	7.37*	0.31	0.01	1.30	0.05	0.26	-7.75
QI 25 - Hypnotic Use on a Scheduled Basis more Than 2 Times per Week	2.26	0.13	1.41	0.19	0.07	0.08	-1.09	2.31	-0.54	0.01	0.57	0.02	0.01	2.-03
QI 26 - Prevalence of Long-acting Benzodiazepine	0.16	0.05	0.49	0.89	0.01	0.00	-0.09	-0.05	0.06	0.00	0.07	-0.00	0.00	-0.09
Domain 10: Quality of Life														
QI 27 - Prevalence of Daily Physical restraints	-0.05	0.15	1.61	0.11	21.41	-1.04	1.42	0.29	2.07	0.05*	-3-92	-0.03	-17.88	13.21
QI 28 - Prevalence Little/No Activity	64.64	0.11	1.20	0.30	-15.01	-2.12	8.06*	17.69	6.31	0.08	1.58	0.01	-36.82	12.27
Domain 11: Skin Care														
QI 29 - Prevalence of Stage 1- 4 Pressure Ulcers	-11.38	0.20	2.27	0.02	16.83*	0.65	0.61	4 21	-0.64	0.04*	-0.57	0.05	-8.23	3.60
High Risk	.10.83	0.22	2.63	0.01	14.88	1.03	0.96	10.13*	-0.41	0.06*	-0.49	0.07	-8.75	4.49
Low Risk	-5.40	0.08	0.79	0.64	2.98	0.36	-1.29	-0.21	0 18	0.01	-0.61	0.03	-2.55	3.48
QI 30 - Incidence of Pressure Ulcer Development	-6.88	0.10	1.03	0.42	8.18	0.53	0.32	-1.75	-0.52	001	0.44	002	-3.96	4.20
High Risk	-6.30	0.08	0.80	0.63	4.86	0.71	0.44	0.84	-0 63	002	0.78	0.01	-1 84	5.85
Low Risk	0.23	0.21	2.43	0.01	3.41	0.21	-0.49	0.04	0.16	0.02*	-0.59	0.05*	-8.85*	0.79
QI 31 - Insulin Dependent Diabetes With No Foot Care	73.53	0.07	0.72	0.70	-62.25	-1.91	6.45	-7.63	-0.29	0.04	6.17	0.00	22.02	-19.98

APPENDIX A

MDS + RESIDENT ASSESSMENT DESCRIPTION AND FORMS

III. Purpose and Use of the minimum Data Set Plus or MDS+

The Omnibus Reconciliation Act of 1987 (OBRA'87) requires all nursing facilities in the country to conduct a comprehensive, accurate, standardized, reproducible assessment on all residents beginning October 1, 1990. This comprehensive assessment must describe a resident's capability to perform daily life functions and significant impairments in functional capacity. It must also include at least the following information:

1. Medically defined conditions and prior medical history
2. Medical status measurement
3. Functional status
4. Sensory and physical impairments
5. Nutritional status and requirements
6. Special treatments and procedures
7. Psychosocial status
8. Discharge potential
9. Dental condition
10. Activities potential
11. Rehabilitation potential
12. Cognitive status
13. Drug therapy

The Health Care Financing Administration (HCFA) contracted in 1988 with the Research Triangle Institute to develop an instrument that would include this minimum data set and that could be used as a tool for developing a patient's plan of care. The form that has been developed to assist facilities in conducting a comprehensive assessment is commonly referred to as the MDS or Minimum Data Set.

As a participant in the Multistate Case Mix Demonstration Project, the Maine Department of Human Services has sought approval from HCFA to use an instrument that is being referred to as the Minimum Data Set Plus, or MDS+, as an alternative instrument for conducting comprehensive resident assessments in Maine. This instrument is called the MDS+ because it includes all the information contained on the MDS *plus* certain additional information that meet the needs and specifications for the Case Mix Demonstration Project. An item-by-item description of the differences between the MDS and the MDS+ is attached in Appendix A.

The major difference between the MDS and the MDS+ is the inclusion of a page for medications on the MDS+. Other differences are primarily wording differences or modifications that were made to the MDS+ as a result of the collection of the sample assessment data in the demonstration states last spring.

The designation of the MDS+ as an alternative instrument in Maine will serve a number of functions. First, the use of the MDS+ will serve as a common assessment form for all nursing facilities that can then be used as a tool for patient care planning. Second, the use and completion of this form by nursing facilities in the state can be used to satisfy the OBRA'87 requirement that a comprehensive assessment be conducted on all nursing facility residents. Third, the information contained on the MDS+ will provide a data base that will be used to design and develop a case mix payment and quality assurance system in Maine. Under a case mix payment system, rates for the Medicaid and Medicare program would be established based on the amount of resources required to care for nursing facility residents. Typically, residents are classified into "groups" which reflect the staff time required to care for residents and/or their medical or psychosocial conditions. Payment rates are then developed which reflect those different groupings. The MDS+ Will be the common assessment tool to provide the data base to establish these groupings.

Minimum Data Set Plus for Nursing Home Resident Assessment and Care Screening (MDS+)
BACKGROUND INFORMATION AT INTAKE/ADMISSION

I. IDENTIFICATION INFORMATION

1.	RESIDENT NAME	First: _____ (MI) ____ Last: _____	
2.	DATE OF CURRENT ADMISSION	Month ___ Day ___ Year ____	
3.	MEDICARE NO. (SOC. SEC. or comparable if no Medicare No.)		
4.	FACILITY PROVIDER NO.	FEDERAL NO.	
5.	GENDER	1. Male 2. Female	
6.	RACE/ ETHNICITY	1. American Indian/Alaska Native 2. Asian/Pacific Islander 3. Black, not of Hispanic origin 4. Hispanic 5. White, not of Hispanic origin	
7.	BIRTHDATE	Month ___ Day ___ Year ____	
8.	LIFETIME OCCUPATION		
9.	PRIMARY LANGUAGE	Resident's primary language is language other than English. 0. No 1. Yes _____ (Specify)	
10.	RESIDENTIAL HISTORY PAST 5 YEARS	*(Check all settings resident lived in during 5 years prior to admission.)* Prior stay at this nursing home — a. Other nursing home/residential facility — b. MH/psychiatric setting — c. MR/DD setting — d. NONE OF ABOVE — e.	
11.	MENTAL HEALTH HISTORY	Does resident's RECORD indicate any history of mental retardation, mental illness, or any other mental health problem? 0. No 1. Yes	
12.	CONDITIONS RELATED TO MR/DD STATUS	*Check all conditions that are related to MR/DD status that were manifested before age 22, and are likely to continue indefinitely.* Not applicable—no MR/DD *(Skip to item 13)* — a. MR/DD with Organic Condition Cerebral Palsy — b. Down's Syndrome — c. Autism — d. Epilepsy — e. Other organic condition related to MR/DD — f. MR/DD with no organic condition — g. Unknown — h.	
13.	MARITAL STATUS	1. Never married 3. Widowed 5. Divorced 2. Married 4. Separated	
14.	ADMITTED FROM	1. Private home or apt. 3. Acute care hospital 2. Nursing home 4. Other	
15.	LIVED ALONE	0. No 1. Yes 2. In other facility	
16.	ADMISSION INFORMATION AMENDED	*(Check all that apply.)* Accurate information unavailable earlier — a. Observation revealed additional information — b. Resident unstable at admission — c.	

II. BACKGROUND INFORMATION AT RETURN/READMISSION

1.	DATE OF CURRENT READMISSION	Month ___ Day ___ Year ____	
2.	MARITAL STATUS	1. Never married 3. Widowed 5. Divorced 2. Married 4. Separated	
3.	ADMITTED FROM	1. Private home or apt. 3. Acute care hospital 2. Nursing home 4. Other	
4.	LIVED ALONE	0. No 1. Yes 2. In other facility	

III. CUSTOMARY ROUTINE (ONLY AT FIRST ADMISSION)

CUSTOMARY ROUTINE (year prior to first admission to a nursing home)

(Check all that apply. If all information is UNKNOWN, check last box only.)

1. CYCLE OF DAILY EVENTS

- Stays up late at night (e.g., after 9 pm) — a.
- Naps regularly during day (at least 1 hour) — b.
- Goes out 1+ days a week — c.
- Stays busy with hobbies, reading, or fixed daily routine — d.
- Spends most time alone or watching TV — e.
- Moves independently indoors (with appliances, if used) — f.
- Use of tobacco products at least daily — g.
- NONE OF ABOVE — h.

2. EATING PATTERNS

- Distinct food preferences — i.
- Eats between meals all or most days — j.
- Use of alcoholic beverage(s) at least weekly — k.
- NONE OF ABOVE — l.

3. ADL PATTERNS

- In bedclothes much of day — m.
- Wakens to toilet all or most nights — n.
- Has irregular bowel movement pattern — o.
- Prefers showers for bathing — p.
- Prefers bathing in P.M. — q.
- NONE OF ABOVE — r.

4. INVOLVEMENT PATTERNS

- Daily contact with relatives/close friends — s.
- Usually attends church, temple, synagogue (etc.) — t.
- Finds strength in faith — u.
- Daily animal companion/presence — v.
- Involved in group activities — w.
- NONE OF ABOVE — x.

- UNKNOWN—Resident/family unable to provide information — y.

END

Signature of RN Assessment Coordinator:

_____

Signatures of Others Who Completed Part of the Assessment:

_____

_____

_____

_____

_____

_____

Resident _____ Date: _____ Facility: _____ Prov. No. _____

Minimum Data Set Plus for Nursing Home Resident Assessment and Care Screening (MDS+)

(Status in last 7 days, unless other time frame indicated)

Assessment Start Date ☐☐-☐☐-☐☐☐☐ (Month - Day - Year)

Original (0) or Corrections (#) ☐

Signature of RN Assessment Coordinator _____

SECTION A. IDENTIFICATION AND BACKGROUND INFORMATION

1. RESIDENT NAME
First: _____ (MI) _____
Last: _____

2. SOCIAL SECURITY NO. ☐☐☐☐☐☐☐☐☐

3. MEDICAID NO. (if applicable) ☐☐☐☐☐☐☐☐☐☐☐☐

4. MEDICAL RECORD NO. ☐☐☐☐☐☐☐☐☐☐

5. REASON FOR ASSESSMENT
1. Initial admission assess.
2. Hosp./Medicare reassess.
3. Readmission, not Medicare
4. Annual assessment
5. Significant change in status
6. Quarterly
7. Other (e.g., UR)

6. CURRENT PAYMENT SOURCE(S) FOR NH STAY
(Billing Office to code payment sources)
0. Not used
1. Per diem
2. Ancillary
3. Both

Medicaid	☐	VA	☐
Medicare	☐	Self pay/Private Insur.	☐
CHAMPUS	☐	Other	☐

7. RESPONSIBILITY/ LEGAL GUARDIAN
(Check all that apply.)
a. ☐ Legal guardian
b. ☐ Other legal oversight
c. ☐ Durable power attrny./ health care proxy
d. ☐ Family member responsible
e. ☐ Resident responsible
f. ☐ NONE OF ABOVE

8. ADVANCED DIRECTIVES
(For those items with supporting documentation in the medical record, check all that apply.)
a. ☐ Living will
b. ☐ Do not resuscitate
c. ☐ Do not hospitalize
d. ☐ Organ donation
e. ☐ Autopsy request
f. ☐ Feeding restrictions
g. ☐ Medication restrictions
h. ☐ Other treatment restrictions
i. ☐ NONE OF ABOVE

9. DISCHARGE PLANNED WITHIN 3 MOS.
(Does not include discharge due to death)
0. No 1. Yes 2. Unknown/uncertain

10. MARITAL STATUS
1. Never married
2. Married
3. Widowed
4. Separated
5. Divorced

SECTION B. COGNITIVE PATTERNS

1. COMATOSE
(Persistent vegetative state/no discernible consciousness)
0. No 1. Yes (Skip to SECTION G.)

2. MEMORY
(Recall of what was learned or known; code correct response)
a. Short-term memory OK — seems/appears to recall after 5 minutes
0. Memory OK 1. Memory problems (P)2
b. Long-term memory OK — seems/appears to recall long past
0. Memory OK 1. Memory problems (P)2

3. MEMORY/ RECALL ABILITY
(Check all that resident normally able to recall during last 7 days) **Fewer than 3 ✓ =** (P)2
a. ☐ Current season
b. ☐ Location of own room
c. ☐ Staff names/faces
d. ☐ That he/she is in a nursing home
e. ☐ NONE OF ABOVE are recalled

4. COGNITIVE SKILLS FOR DAILY DECISION-MAKING
Made decisions regarding tasks of daily life
(Code responses)
0. Independent — decisions consistent/reasonable (P)4
1. Modified independence — some difficulty in new situations only (P)2 (P)4
2. Moderately impaired — decisions poor; cues/ supervision required (P)2 (P)4
3. Severely impaired — never/rarely made decisions (P)2

5. INDICATORS OF DELIRIUM-PERIODIC DISORDERED THINKING/ AWARENESS
(Check if condition over last 7 days appears different from usual functioning.)
a. ☐ Less alert, easily distracted (A)1
b. ☐ Changing awareness of environment (A)1
c. ☐ Episodes of incoherent speech (A)1
d. ☐ Periods of motor restlessness or lethargy (A)1
e. ☐ Cognitive ability varies over course of day (A)1
f. ☐ NONE OF ABOVE

6. CHANGE IN COGNITIVE STATUS
Change in resident's cognitive status, skills, or abilities — in last 90 days
0. No change 1. Improved 2. Deteriorated (A)1 (P)14

SECTION C. COMMUNICATION / HEARING PATTERNS

1. HEARING
(With hearing appliance, if used)
0. Hears adequately — normal talk, TV, phone
1. Minimal difficulty when not in quiet setting
2. Hears in special situation only — speaker has to adjust tonal quality and speak distinctly
3. Highly impaired/absence of useful hearing

2. COMMUNICATION DEVICES/ TECHNIQUES
(Check all that apply during last 7 days.)
a. ☐ Hearing aid, present and used
b. ☐ Hearing aid, present and not used
c. ☐ Other receptive comm. technique used (e.g., lip read)
d. ☐ NONE OF ABOVE

3. MODES OF EXPRESSION
(Check all used by resident to make needs known.)
a. ☐ Speech
b. ☐ Writing messages to express or clarify needs
c. ☐ Signs/gestures/sounds
d. ☐ Communication board
e. ☐ American Sign Language or Braille
f. ☐ Other
g. ☐ NONE OF ABOVE

4. MAKING SELF UNDERSTOOD
(Expressing information content — however able)
0. Understood
1. Usually understood — difficulty finding words or finishing thoughts
2. Sometimes understood — ability is limited to making concrete requests (P)4
3. Rarely/never understood (P)4

5. SPEECH CLARITY
Speech unclear
0. No 1. Yes (P)4

6. ABILITY TO UNDERSTAND OTHERS
(Understanding verbal information content — however able)
0. Understands
1. Usually understands — may miss some part/intent of message (P)2
2. Sometimes understands — responds adequately to simple, direct communication (P)2 (P)4 (P)5
3. Rarely/never understands (P)2 (P)4 (P)5

7. CHANGE IN COMMUNICATION/HEARING
Resident's ability to express, understand or hear information has changed over last 90 days
0. No Change 1. Improved 2. Deteriorated (A)1

☐ = Code the appropriate response. ☐* = Check all the responses that apply.
(A) = Automatic Trigger (P) = Potential Trigger

1- Delirium
2 - Cognitive Loss/Dementia
3 - Visual Function
4 - Communication
5 - ADL Functional/Rehabilitation Potential
6 - Urinary Incontinence and Indwelling Catheter
7 - Psychosocial Well-Being
8 - Mood State
9 - Behavior Problems
10 - Activities
11 - Falls
12 - Nutritional Status
13 - Feeding Tubes
14 - Dehydration/Fluid Maintenance
15 - Dental Care
16 - Pressure Ulcers
17 - Psychotropic Drug Use
18 - Physical Restraints

Resident _____ Date: _____ Facility: _____ Prov. No. _____

SECTION D. VISION PATTERNS

1.	VISION	*(Able to see in adequate light and with glasses, if used)* 0. Adequate — sees fine detail, including regular print in newspapers/books 1. Impaired — sees large print, but not regular print in newspapers/books A3 2. Highly impaired — limited vision, not able to see newspaper headlines, appears to follow objects with eyes A3 3. Severely impaired — no vision or appears to see only light, color, or shapes A3	
2.	VISUAL LIMITATIONS/ DIFFICULTIES	Side vision problems — decreased peripheral vision (e.g., leaves food on one side of tray, difficulty traveling, bumps into people and objects, misjudges placement of chair when seating self) A3	a.
		Experiences any of following: sees halos or rings around lights, sees flashes of light; sees "curtains" over eyes	b.
		NONE OF ABOVE	c.
3.	VISUAL APPLIANCES	Glasses; contact lenses; lens implant; magnifying glass 0. No 1. Yes	

SECTION E. MOOD AND BEHAVIOR PATTERNS

1.	SAD OR ANXIOUS MOOD	*(Check all that apply during last 30 days.)* VERBAL EXPRESSIONS OF DISTRESS by resident (sadness, sense that nothing matters, hopelessness, worthlessness, unrealistic fears, vocal expressions of anxiety or grief) A8	a.
		DEMONSTRATED (OBSERVABLE) SIGNS OF MENTAL DISTRESS	
		- Tearfulness, emotional groaning, sighing, breathlessness A8	b.
		- Motor agitation such as pacing, handwringing or picking A8	c.
		- Pervasive concern with health A8	d.
		- Recurrent thoughts of death — e.g., believes he/she about to die, have a heart attack A8	e.
		- Suicidal thoughts/actions A8	f.
		- Failure to eat or take medications A8 P14	g.
		- Withdrawal from self-care, or leisure activities A8	h.
		- Reduced communications A8	i.
		- Early morning awakening with unpleasant mood A8	j.
		NONE OF ABOVE	k.
2.	MOOD PERSISTENCE	Sad or anxious mood intrudes on daily life over last 7 days — not easily altered, doesn't "cheer up" 0. No 1. Yes A8	
3.	PROBLEM BEHAVIOR	*(Code for behavior in last 7 days)* 0. Behavior not exhibited in last 7 days 1. Behavior of this type occurred less than daily 2. Behavior of this type occurred daily or more frequently	
		a. WANDERING (moved with no rational purpose; seemingly oblivious to needs or safety) 1 or 2 = A9	
		b. VERBALLY ABUSIVE (others were threatened, screamed at, cursed at) 1 or 2 = A9	
		c. PHYSICALLY ABUSIVE (others were hit, shoved, scratched, sexually abused) 1 or 2 = A9	
		d. SOCIALLY INAPPROPRIATE/DISRUPTIVE BEHAVIOR (made disrupting sounds, noisy, screams, self-abusive acts, sexual behavior or disrobing in public, smeared/ threw food/feces, hoarding, rummaged through others' belongings) 1 or 2 = A9	
4.	RESIDENT RESISTS CARE	*(Check all types of resistance that occurred in the last 7 days.)* Resisted taking medications/injection	a.
		Resisted ADL assistance	b.
		Resisted eating	c.
		NONE OF ABOVE	d.

5.	BEHAVIOR MANAGEMENT PROGRAM	Behavior problem has been addressed by clinically developed behavior management program. (Note: do not include programs that involve only physical restraints or psychotropic medications in this category.) 0. No behavior problem 1. Yes, addressed 2. No, not addressed	
6.	CHANGE IN MOOD	Change in mood in last 90 days 0. No change 1. Improved 2. Deteriorated P1	
7.	CHANGE IN PROBLEM BEHAVIOR	Change in problem behavioral signs in last 90 days 0. No change 1. Improved 2. Deteriorated P1	

SECTION F. PSYCHOSOCIAL WELL-BEING

1.	SENSE OF INITIATIVE/ INVOLVEMENT	At ease interacting with others	a.
		At ease doing planned or structured activities	b.
		At ease doing self-initiated activities	c.
		Establishes own goals	d.
		Pursues involvement in life of facility (e.g., makes/keeps friends; involved in group activities; responds positively to new activities; assists at religious services)	e.
		Accepts invitations into most group activities	f.
		Adjusts easily to changes in routine	g.
		NONE OF ABOVE	h.
2.	UNSETTLED RELATIONSHIPS	Covert/open conflict with and/or repeated criticism of staff A7	a.
		Unhappy with roommate A7	b.
		Unhappy with residents other than roommate A7	c.
		Openly expresses conflict/anger with family or friends A7	d.
		Absence of personal contact with family/friends	e.
		Recent loss of close family member/friend A7	f.
		Avoids interactions with others A7	g.
		NONE OF ABOVE	h.
3.	PAST ROLES	Strong identification with past roles and life status	a.
		Expresses sadness/anger/empty feeling over lost roles/status A7	b.
		NONE OF ABOVE	c.

SECTION G. ACTIVITY PURSUIT PATTERNS

1.	TIME AWAKE	*(Check appropriate time periods over last 7 days.)* Resident awake most or all of the time (i.e., naps no more than one hour per time period) in the:	
		Morning a. Evening	c.
		Afternoon b. NONE OF ABOVE	d.
2.	AVERAGE TIME INVOLVED IN ACTIVITIES	0. Most (more than ⅔ of time) P10 1. Some (between ⅓ and ⅔ of time) 2. Little (less than ⅓ of time) P10 3. None P10	
3.	PREFERRED ACTIVITY SETTINGS	*(Check all settings in which activities are preferred.)* Own room a.	
		Day/activities room b. Outside facility	d.
		Inside NH/off unit c. NONE OF ABOVE	e.
4.	GENERAL ACTIVITIES PREFERENCES (Adapted to resident's current abilities)	*(Check all PREFERENCES whether or not activity is currently available to resident.)*	
		Cards/other games a. Trips/shopping	g.
		Crafts/arts b. Walking/wheeling outdoors	h.
		Exercise/sports c. Watch TV	i.
		Music d. Gardening/plants	j.
		Read/write e. Talking/conversing	k.
		Spiritual/religious activities f. Helping others	l.
		NONE OF ABOVE	m.

☐ = Code the appropriate response. [a.] = Check all the responses that apply.

A = Automatic Trigger P = Potential Trigger

1 - Delirium
2 - Cognitive Loss/Dementia
3 - Visual Function
4 - Communication
5 - ADL Functional/Rehabilitation Potential
6 - Urinary Incontinence and Indwelling Catheter
7 - Psychosocial Well-Being
8 - Mood State
9 - Behavior Problems
10 - Activities
11 - Falls
12 - Nutritional Status
13 - Feeding Tubes
14 - Dehydration/Fluid Maintenance
15 - Dental Care
16 - Pressure Ulcers
17 - Psychotropic Drug Use
18 - Physical Restraints

Resident _____ Date: _____ Facility: _____ Prov. No. _____

SECTION G. CONTINUED

5.	PREFERS MORE OR DIFFERENT ACTIVITIES	Resident expresses/indicates preferences for other activities/choices. 0. No 1. Yes ⓟ10	
6.	ISOLATION ORDERS	Resident is under medical orders for isolation which prohibits participation in group activities 0. No 1. Yes ⓟ10	

SECTION H. PHYSICAL FUNCTIONING AND STRUCTURAL PROBLEMS

1. ADL SELF-PERFORMANCE
(Code for resident's PERFORMANCE OVER ALL SHIFTS during last 7 days — not including setup.)
0. INDEPENDENT — No help or oversight — OR — Help/oversight provided only 1 or 2 times during last 7 days.
1. SUPERVISION — Oversight, encouragement or cueing provided 3+ times during last 7 days — OR — Supervision plus physical assistance provided only 1 or 2 times during last 7 days.
2. LIMITED ASSISTANCE — Resident highly involved in activity; received physical help in guided maneuvering of limbs, or other nonweight-bearing assistance 3+ times — OR — More help provided only 1 or 2 times during last 7 days.
3. EXTENSIVE ASSISTANCE — While resident performed part of activity, over last 7-day period, help of following type(s) provided 3 or more times:
— Weight-bearing support
— Full staff performance during part (but not all) of last 7 days
4. TOTAL DEPENDENCE — Full staff performance of activity during ENTIRE 7 days.

2. ADL SUPPORT PROVIDED — *(Code for MOST SUPPORT PROVIDED OVER ALL SHIFTS during last 7 days; code regardless of resident's self-performance classification.)*
0. No setup or physical help from staff
1. Setup help only
2. One-person physical assist
3. Two+ persons physical assist

			1 SELF-PERFORMANCE	2 SUPPORT
a.	BED MOBILITY	How resident moves to and from lying position, turns side to side, and positions body while in bed 3,4 for SP= ⓟ5		
b.	TRANSFER	How resident moves between surfaces — to/from: bed, chair, wheelchair, standing position (EXCLUDE to/from bath/toilet) 3,4 for SP= ⓟ5		
c.	LOCOMOTION	How resident moves between locations in his/her room and adjacent corridor on same floor. If in wheelchair, self-sufficiency once in chair 3,4 for SP= ⓟ5		
d.	DRESSING	How resident puts on, fastens, and takes off all items of street clothing, including donning/removing prosthesis 3,4 for SP= ⓟ5		
e.	EATING	How resident eats and drinks (regardless of skill) 3,4 for SP= ⓟ5		
f.	TOILET USE	How resident uses the toilet room (or commode, bedpan, urinal); transfers on/off toilet, cleanses, changes pad, manages ostomy or catheter, adjusts clothes 3,4 for SP= ⓟ5		
g.	PERSONAL HYGIENE	How resident maintains personal hygiene, including combing hair, brushing teeth, shaving, applying makeup, washing/drying face, hands, and perineum (EXCLUDE baths and showers)		

			3 SELF-PERFORMANCE	2 SUPPORT
3.	BATHING	a. How resident takes full-body bath/shower, sponge bath, and transfers in/out of tub/shower (EXCLUDE washing of back and hair.) (Code for most dependent in self performance and support. Bathing Self-Performance codes appear below.) 0. Independent — No help provided 1. Supervision — Oversight help only 2. Physical help limited to transfer only 3. Physical help in part of bathing activity 4. Total dependence 3,4 for SP= ⓟ5		

b. Tub/whirlpool bath [a.] Bed bath [c.]
Shower [b.] Bath lift [d.]
NONE OF ABOVE [e.]

4.	BODY CONTROL PROBLEMS	Balance — partial or total loss of ability to balance self while standing ⓟ11 [a.] Bedfast all or most of the time ⓟ11 [b.] Hemiplegia/ hemiparesis ⓟ11 [c.] Quadriplegia ⓟ11 [d.] Arm — partial or total loss of voluntary movement ⓟ11 [e.] Hand — lack of dexterity (e.g., problem using toothbrush or adjusting hearing aid) [f.] Leg — partial or total loss of voluntary movement ⓟ11 [g.] Leg — unsteady gait ⓟ11 [h.] Trunk — partial or total loss of ability to position, balance, or turn body ⓟ11 [i.] Amputation ⓟ11 [j.] NONE OF ABOVE [k.]	
5.	CONTRACTURES	Contractures — None [a.] Contractures — Face/neck [b.] Contractures — Shoulder/elbow [c.] Contractures — Hand/wrist [d.] Contractures — Hip/knee [e.] Contractures — Foot/ankle [f.]	
6.	MOBILITY APPLIANCES/ DEVICES	Cane/walker [a.] Brace/prosthesis [b.] Wheeled self [c.] Other person wheeled [d.] Lifted (manually/ mechanically) [e.] Transfer aid (slide brd) [f.] Trapeze [g.] NONE OF ABOVE [h.]	
7.	TASK SEGMENTATION	Resident requires that some or all of ADL activities be broken into a series of sub-tasks so that resident can perform them. 0. No 1. Yes	
8.	CHANGE IN ADL SELF-PERFORMANCE	Change in ADL Self-Performance in last 90 days 0. No change 1. Improved 2. Deteriorated ⓟ14	
9.	ADL FUNCTIONAL REHAB. POTENTIAL	Resident believes he/she capable of increased independence in at least some ADLs ⓟ5 [a.] Direct care staff believe resident capable of increased independence in at least some ADLs ⓟ5 [b.] Resident able to perform tasks/activity but is very slow [c.] Major difference in ADL self-performance or ADL support in mornings and evenings (at least a one category change in self-performance or support in any ADL) [d.] Self-performance restricted due to absence of assistive devices (e.g., brace or wheelchair) ⓟ5 [e.] Tires noticeably during most days ⓟ5 [f.] Active avoidance of activity for which resident is physically/cognitively capable (e.g., fear of falling) ⓟ5 [g.] NONE OF ABOVE [h.]	

SECTION I. CONTINENCE IN LAST 14 DAYS

1. CONTINENCE SELF-CONTROL CATEGORIES
(Code for resident performance over all shifts.)
0. CONTINENT — Complete control
1. USUALLY CONTINENT — BLADDER, incontinent episodes once a week or less; BOWEL, less than weekly
2. OCCASIONALLY INCONTINENT — BLADDER, 2 + times a week but not daily; BOWEL, once a week
3. FREQUENTLY INCONTINENT — BLADDER, tended to be incontinent daily, but some control present (e.g., on day shift); BOWEL, 2-3 times a week
4. INCONTINENT — Had inadequate control. BLADDER, multiple daily episodes; BOWEL, all (or almost all) of the time

a.	BOWEL CONTINENCE	Control of bowel movement, with appliance or bowel continence programs, if employed	
b.	BLADDER CONTINENCE	Control of urinary bladder function (if dribbles, volume insufficient to soak through underpants), with appliances (e.g., foley) or continence programs, if employed 2,3,4 = ⓟ6	
2.	INCONTINENCE RELATED TESTING	*(Skip if resident's bladder and bowel continence codes equal 0 or 1 and no catheter is used.)* Resident has been tested for a urinary tract infection [a.] Resident has been checked for presence of fecal impaction [b.] There is adequate bowel elimination [c.] NONE OF ABOVE [d.]	

☐ = Code the appropriate response. [*] = Check all the responses that apply.

Ⓐ = Automatic Trigger Ⓟ = Potential Trigger

1 - Delirium
2 - Cognitive Loss/Dementia
3 - Visual Function
4 - Communication
5 - ADL Functional/Rehabilitation Potential
6 - Urinary Incontinence and Indwelling Catheter
7 - Psychosocial Well-Being
8 - Mood State
9 - Behavior Problems
10 - Activities
11 - Falls
12 - Nutritional Status
13 - Feeding Tubes
14 - Dehydration/Fluid Maintenance
15 - Dental Care
16 - Pressure Ulcers
17 - Psychotropic Drug Use
18 - Physical Restraints

Resident _____ Date: _____ Facility: _____ Prov. No. _____

SECTION I. CONTINUED

3.	APPLIANCES AND PROGRAMS	Any scheduled toileting plan	a.	Did not use toilet room/ commode/urinal	a.
		External (condom) catheter P6	b.	Pads/briefs used P6	b.
		Indwelling catheter P6		Enemas/irrigation	c.
		Intermittent catheter P6	c.	Ostomy	d.
			d.	NONE OF ABOVE	e.
4.	CHANGE IN URINARY CONTINENCE	Change in urinary continence/appliances or programs in last 90 days 0. No change 1. Improved 2. Deteriorated			

SECTION J. SKIN CONDITION AND FOOT CARE

1.	STASIS ULCER	Open lesion caused by poor venous circulation to lower extremities 0. No 1. Yes	
2.	PRESSURE ULCERS	*(Record the number of sites for presence of each stage of pressure ulcers. If none are present at the stage stated, record "0" (zero) in the space provided. Code all that apply to resident during last 7 days.)*	No. at Stage
		a. Stage 1. A persistent area of skin redness (without a break in the skin) that does not disappear when pressure is relieved. If >0 = P12 P16	
		b. Stage 2. A partial thickness loss of skin layers that presents clinically as an abrasion, blister, or shallow crater. If >0 = P12 P16	
		c. Stage 3. A full thickness of skin is lost, exposing the subcutaneous tissues — presents as a deep crater with or without undermining adjacent tissue. If >0 = P12 P16	
		d. Stage 4. A full thickness of skin and subcutaneous tissue is lost, exposing muscle and/or bone. If >0 = P12 P16	
3.	HISTORY OF RESOLVED/ CURED PRESSURE ULCERS	Resident has had a pressure ulcer that was resolved/ cured in last 90 days. 0. No 1. Yes P16	
4.	OTHER SKIN PROBLEMS OR LESIONS PRESENT	Skin desensitized to pain, pressure, discomfort P16	a.
		Abrasions, bruises	b.
		Burns (second or third degree)	c.
		Surgical wounds	d.
		Cuts (other than surgery)	e.
		Open lesions other than stasis/pressure ulcers, or cuts	f.
		Rashes	g.
		NONE OF ABOVE	h.
5.	ACTIVE SKIN CARE PROGRAM,	Preventive/Protective Skin Care Not ✓ = P16	a.
		Turning/repositioning program Not ✓ = P16	b.
		Pressure relieving beds, bed/chair pads (e.g., egg crate pads)	c.
		Surgical wound or pressure ulcer care Not ✓ = P16	d.
		Other skin care/treatment Not ✓ = P16	e.
		Special nutrition/hydration program Not ✓ = P16	f.
		Special application/ointments/medications	g.
		Ostomy care (e.g., trach) (routine/stable)	h.
		NONE OF ABOVE P16	i.
6.	SPECIAL STOCKINGS	During the last 7 days has the resident used TED or similar stockings? 0. No 1. Yes	
7.	FOOT CARE	*(Check all that apply to resident during LAST 30 DAYS.)*	
		Preventive/Protective Foot Care (e.g., special shoes, inserts, pads, toe separators, nail/callus trimming, etc.)	a.
		Active Foot Care Treatments : Foot soaks	b.
		Dressing with and without topical medications, etc.	c.
		NONE OF ABOVE	d.

SECTION K. DISEASE DIAGNOSES/HEALTH CONDITIONS

Check only those diseases present that have a relationship to current ADL status, cognitive status, behavior status, medical treatments, or risk of death. (Do not list old/inactive diagnoses.)

1. DISEASES *(If none apply, CHECK the NONE OF ABOVE box)*

HEART/CIRCULATION		**PSYCHIATRIC/MOOD**	
Arteriosclerotic heart disease (ASHD)	a.	Anxiety disorder	g.
Cardiac dysrhythmia	b.	Depression	h.
Congestive heart failure	c.	Manic depressive (bipolar disease)	i.
Hypertension	d.	**SENSORY**	
Hypotension	e.	Cataracts	x.
Peripheral vascular disease	f.	Glaucoma	y.
Other cardiovascular disease	g.	**OTHER**	
NEUROLOGICAL		Allergies	w.
Alzheimer's	h.	Anemia	x.
Dementia other than Alzheimer's	i.	Arthritis	y.
Aphasia	j.	Cancer	z.
Cerebrovascular accident (stroke)	k.	Diabetes mellitus	aa.
Multiple Sclerosis	l.	Osteoporosis	bb.
Parkinson's disease	m.	Seizure disorder	cc.
PULMONARY		Septicemia	dd.
Emphysema/Asthma/COPD	n.	Urinary tract infection – in last 30 days P14	ee.
Pneumonia	o.	**NONE OF ABOVE**	ff.

2. OTHER CURRENT DIAGNOSES AND ICD-9 CODES 260-263.9 = P12 276.5 = P14 291.0, 292.81, 293.0, 293.1 = A1

a. _____
b. _____
c. _____
d. _____
e. _____
f. _____

3. PROBLEMS/ CONDITIONS AND SIGNS/ SYMPTOMS *(Check all that are present in last 7 days, UNLESS OTHER TIME FRAME INDICATED)*

Constipation	a.	Recurrent lung aspirations in last 90 days	j.
Diarrhea P14	b.	Shortness of breath (Dyspnea)	k.
Dizziness/vertigo P14	c.	Syncope (fainting)	l.
Fecal Impaction	d.	Vomiting P14	m.
Fever P14	e.	Respiratory infection	n.
Hallucinations/ delusions	f.	Chest Pain	o.
Internal bleeding P14	g.	NONE OF ABOVE	p.
Joint Pain	h.		
Pain — Resident complains or shows evidence of pain daily or almost daily	i.		

4. EDEMA *(Check all that apply in the last 7 days.)*

Edema — none	a.	Edema — localized not pitting	c.
Edema — generalized	b.	Edema — pitting	d.
		Edema — other	e.

5. ACCIDENTS

Fell — past 30 days A11	a.
Fell — past 31-180 days A11	b.
Hip fracture in last 180 days A11	c.
Other fractures in last 180 days A11	d.
NONE OF ABOVE	e.

6. STABILITY OF CONDITIONS

Conditions/diseases make resident's cognitive, ADL, or behavior status unstable-fluctuating, precarious, or deteriorating.	a.
Resident experiencing an acute episode or a flare-up of a recurrent/chronic problem.	b.
NONE OF ABOVE	c.

☐ = Code the appropriate response. [a.] = Check all the responses that apply.

A = Automatic Trigger **P = Potential Trigger**

1 - Delirium
2 - Cognitive Loss/Dementia
3 - Visual Function
4 - Communication
5 - ADL, Functional/Rehabilitation Potential
6 - Urinary Incontinence and Indwelling Catheter
7 - Psychosocial Well-Being
8 - Mood State
9 - Behavior Problems
10 - Activities
11 - Falls
12 - Nutritional Status
13 - Feeding Tubes
14 - Dehydration/Fluid Maintenance
15 - Dental Care
16 - Pressure Ulcers
17 - Psychotropic Drug Use
18 - Physical Restraints

Resident _____ Date: _____ Facility: _____ Prov. No. _____

SECTION L. ORAL / NUTRITIONAL STATUS

1.	ORAL PROBLEMS	Chewing problem	a.
		Swallowing problem	b.
		Mouth pain (A)15	c.
		NONE OF ABOVE	d.
2.	HEIGHT AND WEIGHT	a. Record height in inches HT (in.)	
		b. Record weight in pounds WT (lb.)	
		Weight based on most recent status in last 30 days; measure weight consistently in accord with standard facility practice — e.g., in a.m. after voiding before meal, with shoes off, and in nightclothes.	
12		c. Weight loss (i.e., 5% plus IN THE PAST 30 DAYS or 10% IN THE PAST 180 DAYS.) 0. No 1. Yes (A)12 (P)14	
3.	NUTRITIONAL PROBLEMS	Complains about the taste of many foods (A)12	a.
		Insufficient fluid; dehydrated (A)14	b.
		Did NOT consume all/ almost all liquids provided during last 3 days (P)14	c.
		Regular complaint of hunger (A)12	d.
		Leaves 25%+ food uneaten at most meals (A)12 (P)14	e.
		NONE OF ABOVE	f.
4.	NUTRITIONAL APPROACHES	Parenteral/IV (A)12 (P)14	a.
		Feeding tube (A)12, (A)13 (P)14	b.
		Mechanically altered diet (A)12	c.
		Syringe (oral feeding) (A)12 (P)14	d.
		Therapeutic diet (A)12	e.
		Dietary supplement between meals (A)12	f.
		Plate guard, stabilized built-up utensil, etc.	g.
		NONE OF ABOVE	h.

SECTION M. ORAL / DENTAL STATUS

1.	ORAL STATUS AND DISEASE PREVENTION	Debris (soft, easily movable substances) present in mouth prior to going to bed at night (A)15	a.
		Has dentures and/or removable bridge	b.
		Some/all natural teeth lost — does not have or does not use dentures (or partial plates) (A)15	c.
		Broken, loose, or carious teeth (A)15	d.
		Inflamed gums (gingiva); swollen or bleeding gums; oral abscesses, ulcers, or rashes (A)15	e.
		Daily cleaning of teeth/dentures Not ✓ = (A)15	f.
		NONE OF ABOVE	g.

SECTION N. SPECIAL TREATMENTS, DEVICES, PROCEDURES & SUPPLIES

1.	SPECIAL TREATMENTS AND PROCEDURES	a. *SPECIAL CARE — (Check treatments received during the last 14 days.)*	
		Chemotherapy	a.
		Radiation	b.
		Dialysis	c.
		Suctioning	d.
		Trach care	e.
		IV meds.	f.
		Transfusions	g.
		O2	h.
		Intake/Output	i.
		Ventilator/Respirator	j.
		Other _____	k.
		NONE OF ABOVE	l.

*b. THERAPIES — Enter the **number of days** and **total minutes** each of these therapies was administered (for at least 10 minutes) in the last 7 days: (Enter 0 if none)*

Box A = **# of days** administered for 10 minutes or more
Box B = **total # of minutes** provided in last 7 days

	A	B
a. Speech — language pathology, audiology services		
b. Occupational therapy		
c. Physical therapy		
d. Psychological therapy (any licensed prof.)		
e. Respiratory therapy		
f. Recreation therapy		

2.	REHABILITATION/ RESTORATIVE CARE	Record the NUMBER OF DAYS each of the following rehabilitation/restorative technique/practice was provided for more than or equal to 15 minutes per day to the resident in the last 7 days. (Enter 0 if none.)	
		a. Range of Motion (passive)	
		b. Range of Motion (active)	
		c. Splint/Brace Assistance	
		d. Reality Orientation	
		e. Remotivation	
		Training and Skill Practice in:	
		f. Locomotion/Mobility	
		g. Dressing/Grooming	
		h. Eating/Swallowing	
		i. Transfer	
		j. Amputation care	
3.	DEVICES AND RESTRAINTS	Use the following code for last 7 days: 0. Not used 1. Used less than daily 2. Used daily	
		a. Bed rails	
		b. Trunk restraint 1 or 2 = (A)8 (P)9	
		c. Limb restraint 1 or 2 = (A)8 (P)9	
		d. Chair prevents rising 1 or 2 = (A)18 (P)9	
4.	SUPPLIES	*Record the number of units of the supply listed that have been used or consumed by the resident in the past 7 days. (Enter 0 if none.)*	
		a. Sterile Dressings	
		b. Unique/Special Decubitus Care Supplies	
		c. Peritoneal Dialysis Supplies	
5.	PHYSICIAN VISITS/ORDERS	IN THE PRIOR 30-DAY PERIOD/ since the resident was admitted, how many times has the physician (authorized assistant/practitioner) changed the resident's orders? (Do not include order renewals without change.)	
6.	NO LAB TEST	*Check if no laboratory tests performed in the last 90 days. (Skip to Section O.)*	a.
7.	LABORATORY TEST	How many lab samples (blood/urine/etc.) have been collected IN THE PAST 30 DAYS?	
8.	ABNORMAL LAB RESULTS	a. How many laboratory tests were returned with abnormal values during the past 90 days?	
		b. How many abnormal values resulted in treatment or care planning in the past 30 days?	

SECTION O. MEDICATION USE

1.	NUMBER OF MEDICATIONS	*Record the number of different medications used in the last 7 days; (enter "0" if none used. Skip to item 5.)*	
2.	NEW MEDICATIONS	Resident has received new medication during the last 90 days. 0. No 1. Yes	
3.	INJECTIONS	*Record the number of days injections of any type received during the last 7 days.*	
4.	DAYS RECEIVED THE FOLLOWING MEDICATION	*Record the NUMBER OF DAYS during the last 7 days; enter "0" if not used; enter "1" if long-acting meds. used less than weekly.*	
		a. Antipsychotics 1-7 = (P)9, (P)11, (P)17	
		b. Antianxiety/hypnotics 1-7 = (P)9, (P)11, (P)17	
		c. Antidepressants 1-7 = (P)9, (P)11, (P)17	

☐ = Code the appropriate response. ☐* = Check all the responses that apply.

(A) = Automatic Trigger **(P) = Potential Trigger**

1- Delirium
2- Cognitive Loss/Dementia
3- Visual Function
4- Communication
5- ADL Functional/Rehabilitation Potential
6- Urinary Incontinence and Indwelling Catheter
7- Psychosocial Well-Being
8- Mood State
9- Behavior Problems
10- Activities
11- Falls
12- Nutritional Status
13- Feeding Tubes
14- Dehydration/Fluid Maintenance
15- Dental Care
16- Pressure Ulcers
17- Psychotropic Drug Use
18- Physical Restraints

Resident _____ Date: _____ Facility: _____ Prov. No. _____

SECTION O. CONTINUED

5.	PREVIOUS MEDICATION RESULTS	*Skip this question if resident currently receiving antipsychotics, antidepressants, or antianxiety/hypnotics — otherwise code correct response for last 90 days.* Resident has previously received psychoactive medications for a mood or behavior problem, and these medications were effective (without undue adverse consequences). 0. No, drugs not used 1. Drugs were effective 2. Drugs were not effective 3. Drug effectiveness unknown	

SECTION P. PARTICIPATION IN ASSESSMENT

1.	PARTICIPATION IN ASSESSMENT	Resident:	0. No	1. Yes		
		Family:	0. No	1. Yes	2. No family	
		Significant Other:	0. No	1. Yes	2. None	

P.2. SIGNATURES OF THOSE COMPLETING THE ASSESSMENT:

a. Signature of RN Assessment Coordinator — b. End Date

	Signature	Title	Sections	Date
c.				
d.				
e.				
f.				
g.				
h.				

P.3. CASE MIX GROUP

Medicare ☐☐☐☐ State ☐☐☐☐

☐ = Code the appropriate response. ☐* = Check all the responses that apply.

SECTION Q. MEDICATIONS LIST

List all medications given during the last 7 days. Include medications used regularly less than weekly as part of the resident's treatment regimen.

1. List the medication name and the dosage
2. RA (Route of Administration). Use the appropriate code from the following list:

1 = by mouth (PO)	3 = intramuscular (IM)	5 = subcutaneous (SubQ)	7 = topical	9 = enteral tube
2 = sublingual (SL)	4 = intravenous (IV)	6 = rectally	8 = inhalation	10 = other

3. FREQ (Frequency): Use the appropriate frequency code to show the number of times per day that the medication was given.

PR = (PRN) as necessary	8H = (q8h) every eight hours	5D = five times a day	5W = five times every week
1H = (qh) every hour	1D = (qd or hs) once daily	1W = (QWeek) once every week	6W = six times every week
2H = (q2h) every two hours	2D = (BID) two times daily (includes every 12 hours)	2W = twice every week	1M = (QMonth) once every month
3H = (q3h) every three hours	3D = (TID) three times daily	3W = three times every week	2M = twice every month
4H = (q4h) every four hours	4D = (QID) four times daily	QO = every other day	C = continuous
6H = (q6h) every six hours		4W = four times every week	

4. PRN-n (prn — number of doses): If the frequency code is "PR", record the number of times during the past 7 days that each PRN medication was given. Do not use this column for scheduled medications.

5. DRUG CODE: Enter the National Drug Code (NDC). The last two digits of the 11-digit NDC define package size and have been omitted from the codes listed in the manual Appendix E. If using this Appendix, the NDC should be entered left-justified (the first digit of the code should be entered in the space farthest to the left of the NDC code column). This should result in the last two spaces being left blank.

1. Medication Name and Dosage	2. RA	3. Freq	4. PRN-n	5. NDC Codes
EXAMPLE: Coumadin 2.5 mg	1	1W		
Digoxin 0.125 mg	1	1D		
Humulin R 25 Units	5	1D		
Robitussin 15cc	1	PR	2	

APPENDIX B
DESCRIPTION OF QUALITY INDICATORS

	Description	
	Numerator	**Denominator**
Domain 1: Accidents		
1. Prevalence of Any Injury	Residents with any injury (fracture or abrasions/bruises or burns) on most recent assessment	All residents on most recent assessment
2. Prevalence of Falls	Residents who had falls on most recent assessment	All residents on most recent assessment
Domain 2: Behavioral/Emotional Patterns		
3. Prevalence of Problem Behavior Toward Others	Residents with problem behavior toward others on most recent assessment	All residents on most recent assessment
4. Prevalence of Symptoms of Depression	Residents with diagnosis or symptoms of depression on most recent assessment	All residents on most recent assessment
Domain 3: Clinical Management		
5. Use of 9 or More Scheduled Medications	Residents who received 9 or more scheduled medications on most recent assessment	All residents on most recent assessment except those whose most recent assessment is an initial admission or re-admission
Domain 4: Cognitive Patterns		
6. Prevalence of Cognitive Impairment	Residents with cognitive impairment on most recent assessment	All residents on most recent assessment
7. Incidence of Decline in Cognitive Status	Residents who were cognitively impaired on most recent assessment	Residents who were not cognitively impaired on previous assessment

APPENDIX B
DESCRIPTION OF QUALITY INDICATORS

	Description	
	Numerator	**Denominator**
Domain 5: Elimination/Continence		
8. Incidence of Bladder or Bowel Incontinence	Residents who were frequently incontinent or incontinent on most recent assessment	Residents who are continent or only occasionally incontinent on previous assessment
9. Bladder or Bowel Incontinence Without a Toileting Plan	Residents without toileting plan on most recent assessment	Residents with frequent incontinence or occasionally incontinent in either bladder or bowel on most recent assessment
10. Incidence of Indwelling Catheters	Catheter on most recent assessment	No catheter on previous assessment
11. Prevalence of Fecal Impaction	Residents with fecal impaction on most recent assessment	All residents on most recent assessment
Domain 6: Infection Control		
12. Prevalence of Urinary Tract Infections	Residents with urinary tract infections on most recent assessment	All residents on most recent assessment
13. Prevalence of Antibiotic/Anti-infective Use	Residents receiving any antibiotic/anti-infective on most recent assessment	All residents on most recent assessment
Domain 7: Nutrition/Eating		
14. Prevalence of Weight Loss	Proportion of residents with weight loss - 5% in 30 days or 10% in 6 months on most recent assessment	All residents on most recent assessment
15. Prevalence of Tube Feeding	Residents with tube feeding on most recent assessment	All residents on most recent assessment

	Numerator	Denominator
Domain 8: Physical Functioning		
16. Prevalence of Bedfast Residents	Residents who are bedfast on most recent assessment	All residents on most recent assessment
17. Incidence of Decline in Late Loss ADLs	Residents showing ADL decline between previous and most recent assessment a. One level decline in two or more late loss ADLs OR b. Two level decline in one or more late loss ADLs	All residents who have most recent and previous assessments (Excluding those who cannot decline because they are already totally dependent or who are comatose on the previous assessment)
18. Incidence of Improvement in Late Loss ADLs	Residents showing improvement between previous and most recent assessment a. One level improvement in 2 or more ADLs OR b. Two level improvement in at least one ADL	All residents who have previous and most recent assessments (Excluding those who are either independent or require only supervision in all ADLs on previous assessment
1 9. Incidence of Contractures	Residents with increase in number of areas with contractures between previous and most recent assessments	All residents with previous and most recent assessments
20. Decline in Late Loss ADL Function Among Unimpaired or Moderately Impaired Residents	Residents whose M^3PI AOL score declines by 2 or more between previous and most recent assessments	Residents with ADL score of 10 or less on previous assessment

	Description	
	Numerator	**Denominator**
21. Antipsychotic Use, in the Absence of a Psychiatric Diagnosis	Residents receiving anti-psychotics on most recent assessment	All residents without a psychiatric diagnosis on most recent assessment
22. No Anti-psychotic Use on Admission or Re-Admission, but With Anti-psychotics on subsequent asssessment (Exclude residents with a psychiatric diagnosis/symptom at most recent assessment)	Residents receiving antipsychotics on most recent assessment	Residents not receiving antipsychotics on previous assessment, and previous assessment is admission or re-admission (Excluding residents with psychiatric diagnosis/symptoms on most recent assessment)
Domain 9: Psychotropic Drug Use		
23. Antipsychotic Daily Dose in Excess of Surveyor Guidelines Among Residents With Organic Mental Syndromes	Residents with an average daily antipsychotic dose in excess of the surveyor guidelines on most recent assessment	Residents with antipsychotics and organic mental syndromes on most recent assessment
24. Antianxiety/hypnotic Use	Residents who received antianxiety or hypnotics on most recent assessment	All residents on most recent assessment
25. Hypnotic Use on a Scheduled Basis or PRN More Than Two Times in Last Week	Residents who received hypnotics on a scheduled basis, or who received hypnotics on a PRN basis more than 2 times in last week on most recent assessment	All residents on most recent assessment
26. Use of Any Long-acting Benzodiazepine	Residents who received long-acting benzodiazepines on most recent assessment	All residents on most recent assessment

	Numerator	Denominator
Domain 10: Quality of Life		
27. Prevalence of Daily Physical Restraints	Residents who were physically restrained daily on most recent assessment	All residents on most recent assessment
28. Prevalence of Little or No Activity	Residents with little or no activity on most recent assessment	All residents (excluding comatose or acutely ill) on most recent assessment
Domain 12: Skin Care		
29. Prevalence of Stage 1-4 Pressure Ulcers	Residents with pressure ulcers (Stage 1-4) on most recent assessment	All residents on most recent assessment
30. Incidence of Pressure Ulcer Development	Residents who had pressure ulcers (Stage 1-4) present on most recent assessment	Residents who had no pressure ulcer on previous assessment
31. Insulin-dependent Diabetes With No Foot Care	Residents that do not have a foot care program on most recent assessment	Residents with a diagnosis of insulin-dependent diabetes on most recent assessment

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EDMUND S. MUSKIE SCHOOL OF PUBLIC SERVICE
96 Falmouth Street
PO Box 9300
Portland, ME 04101-9300

TELEPHONE (207) 780-4430
TTY (207) 780-5646
FAX (207) 780-4417
www.muskie.usm.maine.edu