Depression Among Maine Nursing Facility Residents

MaineCare Policy Cooperative Agreement Project

May 2007

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SOUTHERN MAINE

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Prepared for the Maine Department of Health and Human Services

Prepared by

Catherine McGuire
Karen Mauney
Institute for Health Policy
Muskie School of Public Service

Rhonda Webber
Division of Licensing and Regulatory Services
Maine Department of Health and Human Services

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About the Study

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Introduction

In 1989 the State of Maine and its nursing home industry were selected to participate in the Medicare and Medicaid Case Mix Payment and Quality Assurance Demonstration Project (Case Mix Demonstration) sponsored by the Center for Medicare and Medicaid Services (CMS, formerly the Health Care Financing Administration). Thus began the journey for Maine and its nursing home industry to develop information that would inform the resident's plan of care, provide measurements for internal quality improvement and external quality review, and define a structure for payment reflecting the intensity of resources required to care for a resident. Ultimately, this information would become available to consumers and their families to assist in the selection of a nursing facility. Key to this effort was the development of the Minimum Data Set (MDS) for nursing homes.

The MDS is part of the Resident Assessment Instrument (RAI)[1] that was developed by CMS to assist Medicare/Medicaid certified nursing homes to develop a comprehensive care plan for each resident. In 1986, the Institute of Medicine (IOM) report identified uniform resident assessment as essential to improvement in the quality of care delivered to residents and reform of the survey process. A key part of the Case Mix Demonstration Project was to test the use and reliability of the MDS with a broad spectrum of nursing home providers. Maine providers began using the MDS in 1990 and implemented the MDS2.0 (current version of the assessment) in 1998 when CMS issued the final rule for completion and submission of the MDS by facilities in all states (OBRA 87 final rule implementing the law was completed on December 22, 1997).

The RAI "provides a comprehensive assessment of each resident's functional capabilities and helps nursing home staff identify health problems. Resident Assessment Protocols (RAPs), are part of this process, and provide the foundation upon which a resident's individual care plan is formulated. The MDS assessment forms are completed for all residents in certified nursing homes, regardless of source of payment for the individual resident. MDS assessments are required for residents on admission to the nursing facility and then periodically, within specific guidelines and time frames. In most cases, participants in the assessment process are licensed health care professionals employed by the nursing home. MDS information is transmitted electronically by nursing homes to the MDS database in their respective States. MDS information from the State databases is captured into the national MDS database at CMS." [2]

Maine's use of MDS information for quality improvement began in 1992 with pilot testing of the quality indicators developed by the University of Wisconsin, Madison as part of the Case Mix Demonstration Project. Until early 2000, Maine was able to compare nursing homes to each other within the state on key quality indicators. In November 2002, CMS launched the national Nursing Home Quality Initiative (NHQI) that adopted a set of improved nursing home quality measures nationally referred to as Quality Indicators/Quality Measures (QI/QM). Developed in partnership with a broad stakeholder group, the goals of the NHQI are (1) to provide consumers with an additional source of information about the quality of nursing home care based on quality indicators and enforcement information; and (2) to help providers improve the quality of care for

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[1] For complete details on the RAI and MDS see the CMS website:
http://www.cms.hhs.gov/MinimumDataSets20/01_Overview.asp#TopOfPage
[2] CMS Website, 3/13/2005. http://www.cms.hhs.gov/NursingHomeQualityInits/20_NHQIMDS20.asp#TopOfPage.

their residents by providing them with complementary clinical resources, quality improvement materials, and assistance from the Quality Improvement Organizations (QIOs).

 In 1999, the Maine legislature authorized the Maine Department of Health and Human Services to form a Long Term Care Best Practice group. The group currently consists of a wide range of stakeholders including consumer advocates, providers, state survey and certification staff and staff from the New England QIO – North East Research. The group meets at least quarterly and provides a series of best practices forums, educational workshops and other opportunities to providers of long-term care services. Workshops and forums may be cosponsored by entities other than the Department. The group became concerned about recent QI/QM reports that show Maine ranking very high on several measures. They asked the Department to provide more information on these reports.

In early 2006, Maine survey staff presented comparative QI/QM information to the Best Practice Group and identified indicators where Maine ranks high relative to other states.   Many indicators were presented and prompted more questions than answers. The group selected key indicators to explore in depth. As a starting point, symptoms of depression and symptoms of depression without antidepressant therapy indicators were selected.

Table 1. QI/QM Residents Who Become More Depressed National Data as of 6/30/2005

	Prevalence			Ranking		
	2005	2004	2003	2005	2004	2003
National	**12.9%**	**12.6%**	**12.5%**			
Region 01	**13.1%**	**12.5%**	**12.3%**	**6**	**6**	**6**
Connecticut	8.7%	8.8%	9.6%	15	12	18
Massachusetts	9.4%	9.0%	9.2%	19	15	16
Maine	*34.7%*	*32.0%*	*28.4%*	*53*	*53*	*52*
New Hampshire	16.8%	15.9%	15.5%	38	36	35
Rhode Island	7.5%	7.5%	8.5%	8	7	11
Vermont	21.1%	20.4%	18.6%	47	43	42

As shown in Table 1 and 2 Maine has been one of the highest ranked states on these indicators for many years – higher than the national average and other states in our region. Maine currently ranks 53rd on both these measures (50 states, American Samoa, Guam, Commonwealth of North Mariana Islands, Washington D.C., Virgin Islands and Puerto Rico are included). Maine has been consistently high over the past three years for which data were available.

Table 2. QI/QM Symptoms of Depression without Antidepressant Therapy National Data as of 6/30/2005

	Prevalence			Ranking		
	2005	2004	2003	2005	2004	2003
National	**5.3%**	**5.3%**	**5.5%**			
Region 01	**4.8%**	**4.7%**	**4.9%**	**5**	**5**	**5**
Connecticut	3.4%	3.5%	4.1%	11	11	17
Massachusetts	3.1%	3.2%	3.2%	8	9	6
Maine	*13.7%*	*12.8%*	*12.4%*	*53*	*53*	*52*
New Hampshire	6.0%	6.0%	5.9%	32	31	30
Rhode Island	2.1%	2.3%	3.1%	4	3	5
Vermont	9.0%	8.2%	7.9%	48	45	42

Presentation of these data to the Best Practice group prompted much discussion and several questions:

1.) Is geography an issue?
2.) Is there an issue with coding information on the MDS? How many with symptoms also have a diagnosis of depression?
3.) Are there incentives for coding MDS items related to our Maine's case mix payment system?
4.) How do other resident characteristics influence symptoms?

The Best Practice group asked state staff in collaboration with the Muskie School to provide a more in depth examination of depression using the state's MDS data warehouse and to the extent possible answer these questions. This report presents the results of this effort. Preliminary data were presented to the Best Practice group at a meeting on March 15, 2006. This report provides a narrative summary of those findings. Specifically, this report looks at the various definitions of depression used in the QI/QM measures and selects one definition to further study the characteristics of these residents with symptoms of depression in an effort to examine the questions above.

Approach

To develop a profile of nursing facility residents with symptoms of depression the most recent roster used to establish MaineCare payment rates effective April 1, 2006 was selected. State staff does not have access to the specific information included in calculating the QI/QM reports presented to the Best Practice group, however, the measures are defined and can be calculated from the MDS data that is available to the state. To accomplish this, the most recent assessments for residents in Maine nursing facilities as of December 15, 2005 are used. This roster is distributed to facilities for review and correction prior to establishing the MaineCare payment rates for April 1, 2006. Given that most facilities will have reviewed the payment roster, it is generally a reliable source for a current profile of residents. Assessment data were pulled from the state data system as of March 6, 2006.   As the exact indicators are not available directly to the state, staff constructed the indicators based on the logic provided by CMS in QI/QM Reports

Technical Specifications: Version 1.0[3]. When available the previous assessment for these residents was pulled. Finally, for residents whose most recent assessment was not a full comprehensive assessment (i.e., annual, admission, significant change – assessment that requires complete of the care plan and triggers and raps), the last available comprehensive assessment was included.

Results

The study group consists of 6,486 residents and their most recent assessment as identified on the December 15, 2005, payment roster. The majority (59%) were quarterly assessments, 13% a Medicare Payment Assessment Form (MPAF), 14% annual, 10% admission and the remaining 3% of other types (significant change or correction). MaineCare was the source of payment on 68% of the assessments, with the remainder split between Medicare and other – 16% each. The average age was 81, however, 46% of residents were 85 years of age or older. Seventy-one percent of the residents were women. The average case mix index[4] was 1.512. Dementia was diagnosed for 64% of all residents – 25% with Alzheimer's disease, 41% with other types of dementia.

It is important to note the MDS contains an indicator for a <u>diagnosis</u> of depression or manic depression in the Disease section of the form (Section I). The disease section captures diseases that have a relationship to the resident's current status and are based on a physician's diagnosis. The majority of the study group (57%) has a diagnosis of depression indicated in the diagnosis section – 55% with Depression; 3% with Manic Depression[5].

When examined by the county the nursing home resides in, the prevalence of a depression diagnosis shows no clear geographic pattern. Chart 1 displays the prevalence of depression diagnosis by county. Prevalence ranges from a low of 48% in Washington County to a high of 63% in Sagadahoc.

Chart 1: Prevalence of Depression Diagnosis for Maine Nursing Facility Residents by County December 2005

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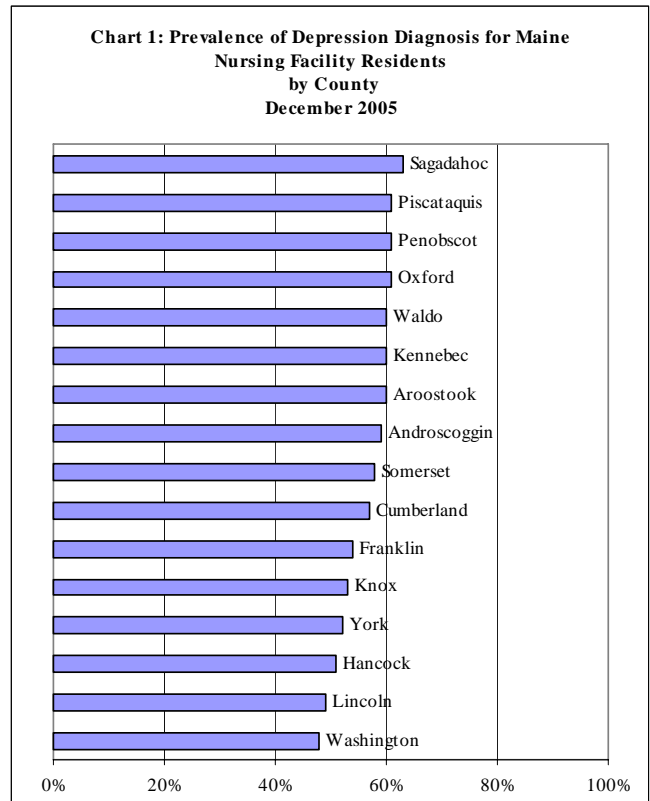
[3] Available at the CMS website
http://www.cms.hhs.gov/MinimumDataSets20/05_QualityIndicatorandResidentReports.asp.
[4] The Case Mix Index is a measure of intensity of resource use. MaineCare uses a case mix adjustment for reimbursement of the direct care component of nursing facilities' rates. For more details of calculating the case mix groups see http://muskie.usm.maine.edu/mds/.
[5] Both Depression and Manic Depression may be indicated for a resident. There is a slight overlap resulting in the final 57% prevalence.

The diagnosis of depression is <u>not</u> the indicator used in the QI/QM measures defined in table 1 and 2 above. The QI/QM measures depression in two ways:

1.) Residents who "become more depressed" defined by a change in the <u>mood scale</u>; and
2.) "Symptoms of depression" without antidepressant therapy defined by a <u>sad mood and two or more symptoms of functional depression.</u>

Both measures use items from the "Mood and Behavior Patterns" Section of the MDS (Section E) and a measure of appetite from the "Oral/Nutritional Status" section (Section K). Different scales are calculated with these items for each measure. The definition of these measures is examined in the next section.

Depression Measurement

The first measure "**Residents who become more depressed**" is determined by an increase in the <u>mood scale</u> on the most recent assessment (target assessment) as compared to the previous assessment. The <u>mood scale</u> contains the eight items identified in Table 3[6]. A count of the number of items present is calculated for a resident based on answers found on the MDS. The count ranges from no item present (0) to all items present (8). Chart 2 displays the percent of residents by their score on the mood scale. A score of zero (0) is observed on 27% of residents, one (1) for 20% of residents, and two through five each for 10% of residents. All eight items were present on 1% of residents.
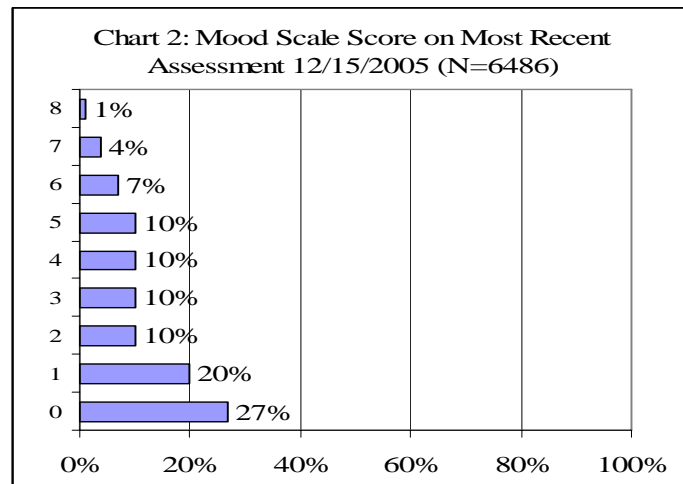

Chart 2: Mood Scale Score on Most Recent Assessment 12/15/2005 (N=6486)

Score	Percent
8	1%
7	4%
6	7%
5	10%
4	10%
3	10%
2	10%
1	20%
0	27%

Table 3: Residents Who Become More Depressed Measure

**Mood Scale (range 0-8) is a count of eight conditions:**
1.) Any verbal expression of distress *(E1a>0, E1c>0, E1e>0, E1f>0, E1g>0, or E1h>0)*.
2.) Shows signs of crying, tearfulness *(E1m>0)*.
3.) Motor agitation *(E1n>0)*.
4.) Leaves food uneaten *(K4c=checked)* on target or last full assessment. The K4c value from the last full assessment is only considered if the target assessment is a quarterly assessment and the state quarterly assessment does not include K4c.
5.) Repetitive health complaints *(E1h>0)*.
6.) Repetitive/recurrent verbalizations *(E1a>0, E1c>0, or E1g>0)*.
7.) Negative statements *(E1a>0, E1e>0, or E1f>0)*.
8.) Mood symptoms not easily altered *(E2=2)*.

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[6] Specific definitions for these measures can be found in "QM/QI Reports Technical Specifications: Version 1.0", CMS publication, available https://www.qtso.com/download/mds/MDS_QIQM_Tech_Specs.pdf. Parenthetical notations in Table 3 refer to the MDS section and item used in the definition.

The QI/QM measures residents who <u>become more depressed</u>. The QI/QM measure compares the value of the mood scale on the previous assessment to the most recent assessment. An increased score (i.e. more conditions are present) on the most recent assessment flags the resident as more depressed. Residents must have a valid mood score on both the most recent assessment (target) and the previous assessment. A resident can not be comatose on the most recent assessment to be considered in the measure. Also the score on the previous assessment can not be eight – all items present. These residents can <u>not</u> become more depressed as measured by the mood score, so they are excluded from the QI/QM calculation. For our study group 87% (5674 residents) meet the criteria for inclusion in the QI/QM measure.

Most residents (44%) exhibit no change in their mood scale as evident in Chart 3 – 29% become more depressed, while the remainder 26% become less depressed. A proportion of residents in all three groups that measured change in depression had a diagnosis of depression. As shown in Chart 3 over half (55%) of the residents with no change in mood had a diagnosis of depression, while just over 60% of those who either improved (61%) or declined (62%) had a diagnosis.
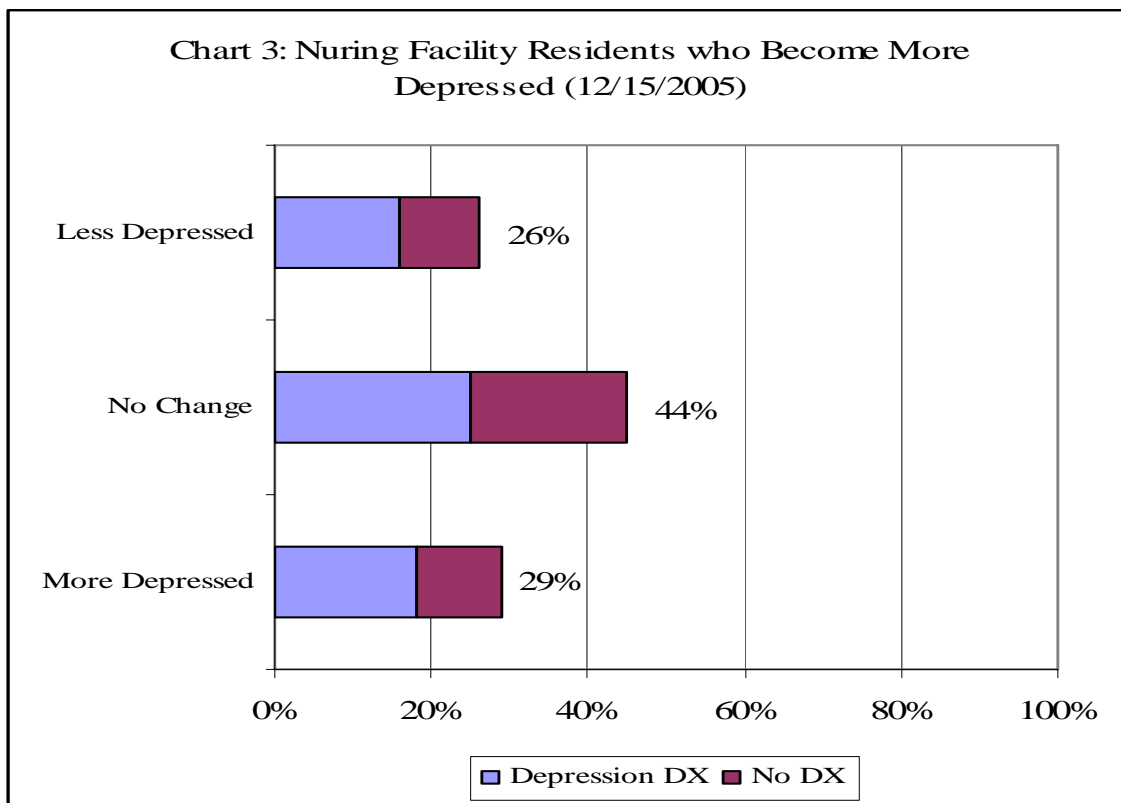
The second QI/QM measures prevalence of "**symptoms of depression without antidepressant therapy.**" This measure identifies residents with a "sad mood" as captured in the mood persistence question (MDS item E2 coded 1 or 2) and at least two symptoms of "functional depression." "Functional depression" is defined in Table 4 and includes distress, agitation or withdrawal, waking in unpleasant mood, suicidal or recurrent thoughts of death and weight loss. To be considered in the QI/QM measure the most recent assessment can not be an admission assessment and all items used to calculate the measure must be present. For our study group 33% of residents had "symptoms of depression". Of the residents with "symptoms of depression" 7% had admission assessments and 62% had a diagnosis of depression.

Table 4: Symptoms of Depression without Antidepressant Therapy

A Sad mood (E2 = 1 or 2)

AND

At least 2 of the following other symptoms of functional depression:

    1.) Symptom 1 distress (E1a = 1 or 2: resident made negative statements);
    2.) Symptom 2 agitation or withdrawal (E1n = 1 or 2: repetitive physical movements, or E4eA = 1, 2, or 3: resists care, or E1o = 1 or 2: withdrawal from activity, or E1p = 1 or 2: reduced social activity);
    3.) Symptom 3 wake with unpleasant mood (E1j = 1 or 2), or not awake most of the day (N1d is checked), or awake 1 period of the day or less and not comatose (N1a+N1b +N1c <= 1 and B1 = 0);
    4.) Symptom 4 suicidal or has recurrent thoughts of death (E1g = 1 or 2);
    5.) Symptom 5 weight loss (K3a = 1).

As evident in the results above and summarized in Table 5, the prevalence of depression varies depending on the measure used. As a reminder, the definitions are the same used in the QI/QM measures – although they will not exactly correspond to the data points shown in Tables 1 and 2 above. These measures identify residents with depression from current MDS data. Depending on the definition, prevalence can range from 57% based on diagnosis of depression to 29% based on residents who become more depressed. Symptoms of depression, as used in the QI/QM "prevalence of symptoms of depression without antidepressant therapy," are present for 33% of the study group – 62% of these individuals also has a diagnosis of depression. For the resident who becomes more depressed (29% of study group) – 62% also have a diagnosis of depression. Examining the overlap of the QI/QM measures finds that 49% of the study group has either of the QI/QM definitions. Finally, if one uses either of the QI/QM measures or diagnosis of depression the prevalence can be as high as 70% of study group residents.

Table 5. Comparison of Prevalence of Depression in Nursing Homes by Various Definition Resident's Most Current Assessment 12/15/2005 (N=6486)

	Prevalence	
Depression Measure	N	Percent
Diagnosis of Depression		
Depression Diagnosis	3597	55%
Manic Depression	184	3%
Any Depression Diagnosis	3707	57%
QI/QM Residents who become more depressed (N=5674)	1672	29%
With Diagnosis of Depression	1038	62%
QI/QM Symptoms of Depression	2163	33%
With Diagnosis of Depression	1341	62%
Any QI/QM Measure (N=5674)	2751	49%
Any of Above Diagnosis or QI/QM Symptom	4529	70%

To facilitate our discussion the QI/QM measure "symptoms of depression" as used in the "prevalence of symptoms of depression without antidepressant therapy" will be examined. As noted above 33% of our study group exhibited symptoms of depression using this definition. Depression as measured by this indicator is deemed severe enough to consider treatment with antidepressant therapy. This seemed a reasonable basis for identifying residents with a condition of depression that warrants attention by the facility.

Characteristics of Residents with Symptoms of Depression

Residents with symptoms of depression were older; 82.4 years versus 80.9 years of age, but in other characteristics – gender and case mix – there was little difference. Table 6 summarizes resident characteristics. Younger residents, less than 60, were less likely to show symptoms of depression 24% versus 33% or 35% in the older groups. A third of female and male residents exhibited symptoms of depression.

The average case mix index was identical for those with or without symptoms of depression. Indeed, while not shown in the table – only 597 (9.2%) of all residents classify into a payment group with a higher index of depression – of these 61% (363) have symptoms of depression. These 363 residents however only account for 17% of the residents with symptoms of depression.

The activities of daily living score (ADL score) indicates the level of assistance a resident requires with activities including bed mobility, transfer, dressing, eating, and toilet use. The ADL score ranges from independent (0) to total dependence (18). Residents with depression symptoms had a slightly higher ADL score than those without depression. Although the variation is slight it is statistically significant.

Table 6. Comparison of Prevalence of QI/QM Symptoms of Depression in Nursing Homes by Resident Characteristics Resident's Most Current Assessment as of 12/15/2005, N=6486

	Symptoms of Depression		No Symptoms of Depression	
Age	N	Percent	N	Percent
<60	94	24%	303	76%
60-84	1024	33%	2114	67%
85+	1045	35%	1906	65%
Average	82.4 yrs		80.9 yrs.	
Gender				
Male	610	33%	1240	67%
Female	1553	34%	3083	66%
Case Mix Index				
Average Index	1.512		1.513	
Average ADL Score	14.1		13.7	

Like the diagnosis of depression shown earlier, no clear geographic pattern emerges for the QI/QM symptoms of depression. Chart 4 displays prevalence of symptoms of depression by county. The prevalence of symptoms of depression ranges from a low of 22% in Penobscot county to a high of 48% in Franklin County. It is interesting to note that counties with high prevalence of diagnosis of depression are not necessarily high with symptoms (e.g., Penobscot has one of the highest prevalence of diagnosis of depression, but has the lowest prevalence of symptoms).

Residents with symptoms of depression have a longer length of residency in the nursing home; however, this difference is not statistically significant. Residents with symptoms of depression averaged 1.8 years (656 days) as compared to 1.7 years (622 days) for those without symptoms of depression. However, symptoms appear to develop with longer stays. Table 7 breaks down the length of residency by various groupings of days. While there is some variation for residents early in their stay and residents in the facility over a year – the distributions are very similar. Of the residents with symptoms of depression 23% were in the facility 100 days or less as compared to 30% of

Chart 4: Prevalence of Symptoms of Depression in Maine Nursing Homes by County
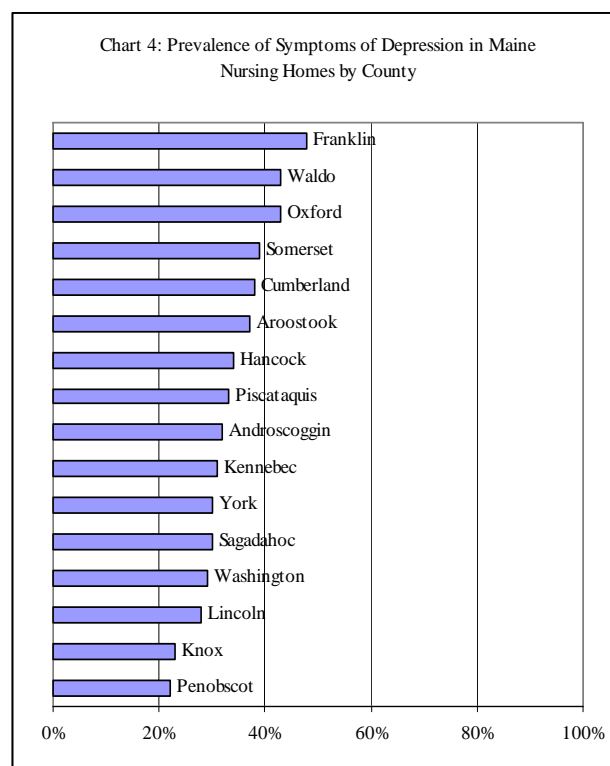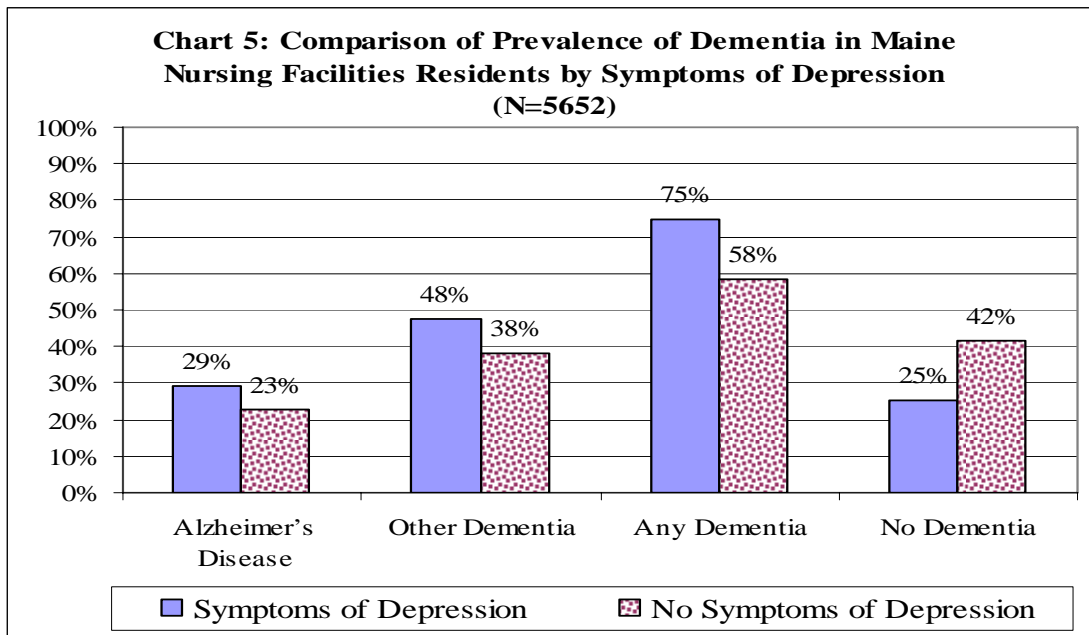
residents without symptoms. Conversely, 55% of residents with symptoms of depression were in the facility over a year as compared to 50% of those without depression.

Table 7. Comparison of Length of Residency by Prevalence of QI/QM Symptoms of Depression in Nursing Facility Resident's Most Current Assessment as of 12/15/2005 (N=6486)

Length of Residency (Days)	Symptoms of Depression		No Symptoms of Depression	
	N	Percent	N	Percent
0-100	490	23%	1236	30%
101-180	137	7%	251	6%
181-365	308	15%	592	14%
Over 1 year	1153	55%	2054	50%
Total	2088	100%	4133	100%
Average	656 days		622 days	

We examined the MDS items that assess discharge potential and found no variation existed – 11% of residents in both groups expressed a preference to return to the community, 7% in both groups had a support person in the community and 91% of both groups had stays projected to be longer than 90 days. Roughly a third of those whose care needs had declined, improved or stayed the same over the last 90 days showed symptoms of depression.

There is a higher prevalence of dementia in residents with symptoms of depression than those without symptoms. As noted above, dementia was diagnosed for 64% of all residents – 25% with Alzheimer's disease, 41% with other type of dementia. Chart 5 displays prevalence of dementia for residents with /without symptoms of depression. The majority of both groups have dementia; however, it is more prevalent in residents with symptoms of depression (75%) than those without (58%). This pattern is observed in both Alzheimer's disease and other dementia – those with symptoms of depression 29% and 48% respectively, without symptoms of depression – Alzheimer's disease 23% and other 38%.

Chart 5: Comparison of Prevalence of Dementia in Maine Nursing Facilities Residents by Symptoms of Depression (N=5652)

	Symptoms of Depression	No Symptoms of Depression
Alzheimer's Disease	29%	23%
Other Dementia	48%	38%
Any Dementia	75%	58%
No Dementia	25%	42%

Pain was identified as a characteristic that may impact symptoms of depression. Surprisingly no variation was found in those with or without symptoms of depression and the degree to which pain is experienced. Slightly more than a third of all residents (35%) experience pain (Table 8). This prevalence was virtually identical in both groups – 36% for those with symptoms of depression and 35% for those without. For the individuals that experience pain – most experience "moderate" pain (52%), while few (7%) experience horrible pain. The degree of pain experienced was somewhat higher in those with symptoms of depression however the difference was not statistically significant.

Table 8. Comparison of Pain Symptoms by Prevalence of QI/QM Symptoms of Depression in Nursing Facilities Resident's Most Current Assessment as of 12/15/2005, N=6486

	Symptoms of Depression		No Symptoms of Depression		Total	
						Percent of All
Pain Symptoms	N	Percent	N	Percent	N	Residents
No Pain	1374	64%	2825	65%	4199	65%
Pain	789	36%	1497	35%	2286	35%
Mild	312	40%	629	42%	941	41%
Moderate	417	53%	767	51%	1184	52%
Horrible	60	8%	98	7%	158	7%

Examining the mood and behavior items – items that are used in creating the symptoms of depression variable – reveals that residents with symptoms of depression exhibit several of these items. Residents with symptoms of depression had an average mood scale (used in the "Become more depressed" QI/QM and ranges from 0 to 8) of 4.4 as compared to those without symptoms of 1.4. There are 16 items in the indicators of depression, anxiety or sad mood (MDS Section E. question 1). A count of these items reveals residents with symptoms of depression average seven indicators present in the last 30 days – in contrast to those without symptoms of depression who averaged 1.6. Table 9 shows residents that exhibited each item and whether they had symptoms

of depression or not. Recurrent statements, unpleasant mood in morning, negative statements and self deprecation were more likely to occur in residents with symptoms of depression.

Table 9. Comparison of Mood Items for MDS (Section E) by Prevalence of QI/QM Symptoms of Depression in Nursing Facilities Resident's Most Current Assessment as of 12/15/2005, N=6486

Mood Items[7]	Symptoms of Depression		No Symptoms of Depression	
	N	Percent	N	Percent
Resident made negative statements	954	87%	145	13%
Repetitive questions	1087	65%	577	35%
Repetitive verbalizations	1130	67%	564	33%
Persistent anger with self or others	1385	69%	609	31%
Self deprecation	370	83%	77	17%
Expressions of what appear to be unrealistic fears	790	75%	269	25%
Recurrent statements that something terrible is about to happen	417	95%	21	5%
Repetitive health complaints	922	61%	599	39%
Repetitive anxious complaints/concerns	1278	61%	821	39%
Unpleasant mood in morning	1177	88.5%	153	11.5%
Insomnia/change in usual sleep pattern	746	64%	414	36%
Sad, pained, worried facial expressions	1664	56.5%	1280	43.5%
Crying, tearfulness	695	62%	419	38%
Repetitive physical movements	1445	65%	779	35%
Withdrawal from activities of interest	743	71%	298	29%
Reduced social interaction	710	70%	308	30%
Average Mood Item Scale (Scale ranges 0-8)	4.4		1.4	
Average Number of Mood Items Indicated (Count ranges from 0 to 16)	7.0		1.6	

To examine the persistence of the symptoms of depression the previous assessment for those with a diagnosis or with symptoms of depression was examined. As indicated in Table 10, the QI/QM symptoms of depression were present on 69% in the previous assessment, the diagnosis on 95%. The symptoms developed in 31% of the study group between the two assessment periods.

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[7] Prevalence for any indication of depression, anxiety or sad mood items observed in the last 30 days (MDS items coded with 1 - "exhibited up to 5 days a week" or 2 – "exhibited daily or almost daily" responses).

Table 10. Prevalence of Symptoms of Depression in Nursing Homes Comparison of 12/15/2005 Assessment with Prior Assessment

	Symptoms of Depression		No Symptoms of Depression	
Depression	N	Percent	N	Percent
Diagnosis of Depression Previous Assessment (N=3391) [8]	3211	95%	180[9]	5%
QI/QM Symptoms of Depression Previous Assessment (N=1999)	1382	69%	617	31%

The MDS contains information related to intervention programs for mood, behaviors and cognitive loss used in the last seven days. While 57% of residents with symptoms of depression had an intervention program for mood, behaviors and cognitive loss – the most commonly used was reorientation (47%) – primarily an intervention for people with dementia that orients an individual to persons, place and time. Evaluation by a mental health specialist occurred for 13.5% and a special behavior symptom program was developed for 11%. As shown in Table 11 no intervention program in the last seven days was noted for 43% of residents with symptoms of depression.

Table 11. Intervention Program Use of Residents with Symptoms of Depression in Nursing Homes, N=2163

	Received Treatment		No Treatment	
Program	N	Percent	N	Percent
Special behavior symptom evaluation program	214	11%	1712	89%
Evaluated by MH spec last 90 days	260	13.5%	1666	86.5%
Group therapy	0	-	1926	100%
Resident-spec changes in environment to address behavior	67	3.5%	1859	96.5%
Reorientation	913	47%	1013	53%
None of Above Services Used			827	43%
Used One of Above Services	1099	57%		

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[8] Prior assessments were found for 3391, 91% of the 3707 residents with a depression diagnosis captured in Section I of the most recent MDS assessment as of 12/15/2005. Similarly, 1999 or 92% of the 2163 residents with the QI/QM symptoms of Depression had a previous assessment on file.

[9] Of the 180 with no prior diagnosis of depression only one of these was for manic depression, 179 for depression.

The MDS also provides information related to specific medication use in the last seven days. Examining medication use for residents with and without symptoms of depression found those with symptoms to have a higher pattern of use for antipsychotic, antianxiety and antidepressant drugs. As shown in Chart 6, 38% with symptoms of depression used antipsychotic meds, 25% antianxiety and 62% antidepressant. In contrast, 23% of those without symptoms of depression used antipsychotics, 15% antianxiety and 56% used an antidepressant. Use of any one of the three drugs was indicated for 80% of residents; 68% for those without symptoms.
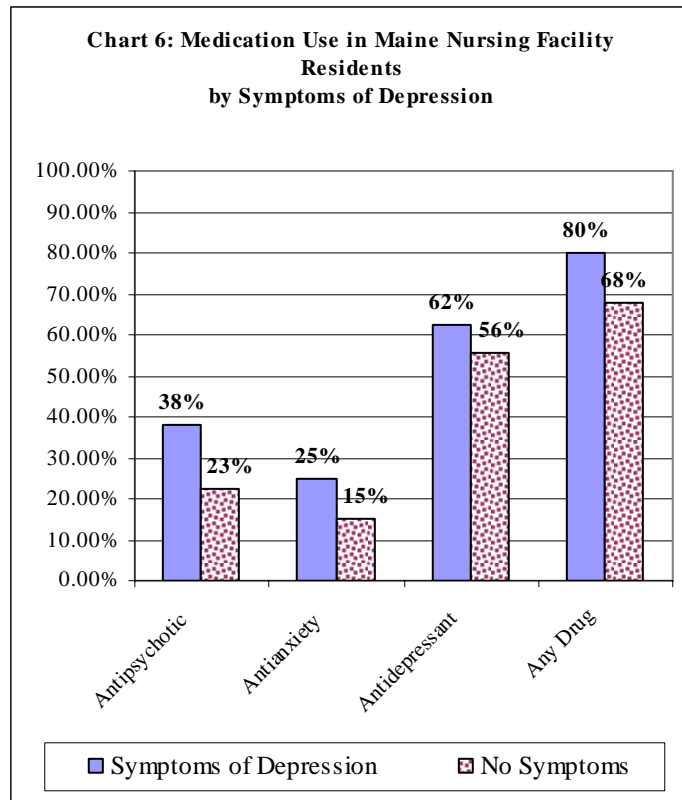
Selected Resident Assessment Protocols (RAPs)[10] were examined to identify areas where care planning may address areas related to depression. Chart 7 identifies the five RAPs examined – psychosocial well being, mood state, behavior symptoms, psychotropic drug use and delirium. In chart 7 the first bar on the RAP identifies the percent of those with symptoms of depression who trigger[11] on this item. For those who trigger, the second bar represents the percent with a care plan developed to address the issue. Clinical judgment is used to determine when a care plan should be developed or modified for a triggered RAP. The majority of residents with symptoms of depression triggered on these RAPS – with prevalence ranging from 93% on the mood state RAP to 52% on delirium. With the exception of delirium, the majority of those who trigger also have a care plan developed to address the issue. Only 9%

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[10] For complete details on the triggers and RAPs see the CSM website: http://www.cms.hhs.gov/MinimumDataSets20/01_Overview.asp#TopOfPage.
[11] The delirium RAP is triggered by one or more of the following items: easily distracted, periods of altered perceptions, episodes of disorganized speech, period of restlessness or lethargy, variation in mental functioning over the course of the day, decline in cognition, mood or behaviors.
   The Psychosocial RAP is triggered by one or more of the following items: withdrawal from care/activities; conflict with staff; unhappy roommate; conflict with family/friend; grief over lost status/roles; daily routine is different; establishes own goals; strong id with past; or withdrawal from care/activities.
    The Mood State RAP is triggered by one or more of the following: made negative statements; repetitive questions; repetitive verbalizations; persistent anger with self or others; self-deprecation; expressions of what appear to be unrealistic fears; recurrent thoughts that something terrible is about to happen; repetitive health complaints; unpleasant mood in morning; insomnia/change in usual sleep patterns; sad/pained, worried facial expressions; crying tearfulness; repetitive physical motions; withdrawal from activities of interest; reduced social interaction; or mood persistence.
    One or more of the following symptoms triggers the Behavioral Symptoms RAP: wandering, verbally abusive; physically abusive; socially inappropriate; resists care; or behavior improved.
    The Psychotropic Drug Use RAP is triggered by one or more of the following: hypotension; gait disturbance; repetitive physical movements; balance while sitting; dizziness/vertigo; syncope; unsteady gait; fell in past 30 days; fell in past 31-180 days; hip fracture; or swallowing problems.

of those triggering delirium had a care plan developed suggesting that although the items triggered the RAP, the assessing team determined the care plan did not need to address the issue. The high percentage of care plans addressing the mood, behavior symptoms and psychotropic drug use suggest the facilities have identified depression as an issue for the resident and are providing care to address the issue.

Chart 7: Triggers and RAPs for Residents with Symptoms of Depression (N=2163)
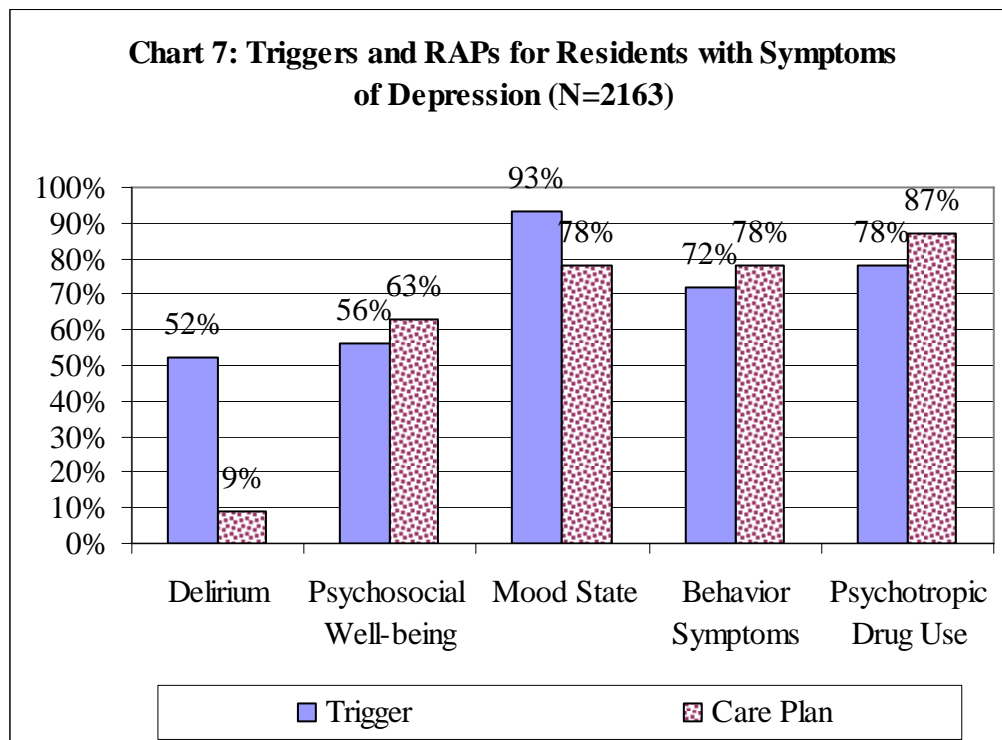
Summary

Availability of national level QI/QM measures using MDS data allows Maine to compare its nursing facility performance at the national, regional and individual state level. This information is valuable to consumers, providers and other stakeholders. It is particularly useful in identifying areas for Maine to target as a state for improvement activities. Access to state level data allows for further investigation of the particular areas of interest. Toward this end, the Best Practice Group chose to examine depression as an area for quality improvement. Maine has ranked high on QI/QM depression measures for several years. Maine is ranked 53rd on the measures "Residents who become more depressed" and "Symptoms of depression without treatment."

MDS data for a current profile of residents allows for further investigation of depression in nursing facility residents. However the QI/QM measures use different definitions of depression. Additionally the diagnosis of depression is available on the MDS form as well. Prevalence of depression varies depending on the measure used from a high of 57% based on the diagnosis of depression, 33% for prevalence of symptoms of depression and 29% for residents who become more depressed. In fact, 70% of residents have one or more of these measures of depression. For this study the symptoms of depression measure was used for further study.

Residents with symptoms of depression tended to be older, more likely to have dementia and have a longer length of residency in the nursing facility. No variation existed by gender or average case mix index. Depressed residents had a greater need for assistance with activities of daily living (ADL) as evidenced by a higher ADL score. Sixty-two percent of residents with symptoms also had a diagnosis of depression indicated.

No geographic pattern was observed by county the nursing home resides in, although counties with a high prevalence of the diagnosis of depression did not necessarily translate into a county with a high prevalence of symptoms of depression.

Residents with symptoms of depression had significantly more of the indicators of depression, anxiety and sad mood. On average, seven of the 16 items in this section were indicated for residents with symptoms of depression, as compared to 1.6 for those without symptoms. Similarly the average mood scale score (ranges from 0 to 8) was 4.4 as compared to 1.4 for those without symptoms. For 69% of the residents, the symptoms were present on the previous assessment. Conversely the symptoms were new for 31% of the residents.

Over 26 states now have case mix payment system for Medicaid that uses the case mix classification similar to MaineCare for payment. All Medicare stays nationally use this similar classification. Vermont and New Hampshire use this classification – Vermont for nearly as long as Maine. Maine's prevalence of symptoms of depression is high in comparison to any of these states. Very few residents actually classified into the case mix group with higher indices for payment – reducing the likelihood that depression coding may be driven by payment incentives.

Special intervention programs for mood, behavior and cognitive loss were used by 57% of residents with symptoms of depression in the last seven days. While this was primarily related to the 47% receiving reorientation, an intervention related to cognitive loss – 13.5% had been evaluated by a mental health specialist and 11% had a special behavioral evaluation.

Most importantly, information from the RAPs section of the MDS suggests that facilities are addressing the symptoms of depression in the care plans – with over 78% or more who triggered on mood state, behavior symptoms and psychotropic drug use having their care plans address the issue. In terms of drug therapy however, 62% of those with symptoms had treatment with an antidepressant, while 80% were treated with one of three drugs – antidepressant, antianxiety and antipsychotic.