Bibliography of Utilization of Minimum Data Set (MDS)

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This bibliography was prepared during Summer 2005 as part of a practicum under the direction of Margaret Kraft, PhD, RN, Research Associate at the VA Information Resource Center.

Methodology: "Minimum Data Set Long Term Care" was entered into OVID (YourJournals@ovid,CINAHL, Ovid Medline), EBSCO (Health Source: Nursing/Academic Edition), and PubMed databases. *The Journal of the American Geriatric Society* was searched directly. In addition, the names of certain authors who appeared on search results very frequently, such as Mor and Buchanan, were entered as search criteria. Finally, reference lists of some of the articles were 'perled".

Suggestions for additions to the bibliography are welcomed. Please send information to Margaret Kraft at VIReC or at margaret.kraft.va.gov.

Note: "Keyword" entries are used as Bookmarks for navigation of the bibliography.

Year	Key Words	Reference	Annotation
2005	Anti-epileptics	Harms, S.L., Eberly, L.E., Garrard, J.M., Hardie, N.A., Bland, P.C. & Lepik, I.E. (2005). Prevalence of appropriate and problematic antiepileptic combination therapy in older people in the nursing home. *Journal of the American Geriatrics Society,53,*1023-1028.	Methods: Retrospective, point prevalence study. Selected all residents in NHs owned/managed by a particular private company who had orders for antiepileptic drug (AED) therapy. Results: The overall prevalence of poly-AED-therapy is less than 10% in NHs. However, 72% of the residents receiving poly-AEDs were receiving problematic combinations, exposing them to potential risk of adverse reactions and toxicity.
2001	Antiplatelet	Quilliam, B.J., LaPane, K.L., Eaton, C.B. & Mor, V. (2001). Effect of antiplatelet and anticoagulant agents on risk of hospitalization for bleeding among a population of elderly nursing home survivors. *Stroke,32,* 2299-2304.	Methods: Used a case-control design and identified first hospitalizations for bleeds as potential cases. Participants had at least one MDS assessment within the 6 months prior to hospitalization and a diagnosis of stroke. Identified up to 5 controls cases residing in the same facility with a diagnosis of stroke. The sample consisted of 3433 cases and 13 506 controls. Using the MDS, identified standing orders for aspirin, dipyridamole, ticlopidine, or warfarin and used conditional logistic regression modeling to estimate the effect of these agents on risk of hospitalization for a bleed. Results: After adjustment, use of warfarin and combination therapy was associated with an increased risk of hospitalization for a bleed compared with nonusers. The odds of aspirin use were greater among cases than controls. However, the risk associated with use of these agents is small. The numbers needed to treat to harm 1 resident with aspirin and warfarin were 467 and 126, respectively.
2005	Antipsychotics	Briesacher, B.A., Limcangco, M.R., Simoni-Wastila, L., Doshi. J.A., Levens, S.R., Shea, D.G., et al. (2005). The quality of antipsychotic drug use in nursing homes. *Archives of Internal Medicine, 165,* 1280-1285.	Methods: Retrospective analysis of use of antipsychotic medications in 1096 residents. Results: 27.6% of all residents in NHs received at least 1 antipsychotic. Atypical antipsychotics prescribed outside of clinical guidelines. No positive relationship between behavioral symptom stability and antipsychotic use.
2000	Antipsychotics	Hughes, C.M., Lapane, K.L., Mor, V., Ikegami, N., Jonsson, P.V. Ljunggren, G.L., et al. (2000). The impact of legislation on psychotropic drug use in nursing homes: a cross-national perspective. *Journal of the American*	Methods: Retrospective cross-sectional study of residents in 5 NHs in the US and NHs in 5 other countries. Analyzed use of antipsychotics, legislation on their use, and falls. Results: Policy impacts prescribing but use of antipsychotics does not correlate with prevalence of falls.

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		Geriatrics Society, 48(8), 931-937.	
1998	Antipsychotics	Zisselman, M.H., Allen, G.D., Cutillo-Schmitter, T., & Denman, S.J. (1998). The Minimum Data Set and psychotropic use in nursing home residents. *Annals of Long Term Care, 6*(6).	Methods: Tried to correlate the computerized pharmacy database of psychotropic drug use and MDS mood and behavior subscales on 513 residents of a SNF. Results: (1) there were weak correlations between psychotropic drug use and mood and behavior subscales of the MDS among nursing home residents; and (2) the vast majority of residents with documented persistently sad or anxious mood were not receiving antidepressant therapy and were just as likely to receive antipsychotic medications.
2000	CHD	Gambassi, G., Forman, D.E., Lapane, K.L., Mor, V., Sgadari, A., Lipsitz, L., et al. (2000). Management of heart failure among very old persons living in long-term care: Has the voice of trials spread? *American Heart Journal, 139(*1, Part 1), 85-93.	Methods: Studied 86,094 residents with congestive heart failure (CHF) admitted to NHs in five states. Results: ACE inhibitors were administered in only 26% of the cases despite evidence supporting their effectiveness. The use was correlated to characteristics of the facility, not the residents.
2000	CHD	Gambassi, G., Lapane, K.L., Sgadari, A., Carbonin, P., Gatsonis, C. Lipsitz, L., et al. (2000). Effects of angiotensin-converting enzyme inhibitors and digoxin on health outcomes of very old patients with heart failure. *Archives of Internal Medicine,160*(1), 53-60.	Methods: Retrospective cohort study of 64,637 residents of LCTFs in five states with CHF. Results: The mortality rate of those receiving ACE inhibitors was 10% less than those who received digoxin.
1999	CHD	Lapane, K.L., Barbour, M.M., Van Haaren, A., & Gambassi, G. (1999). Antiischemic therapy in patients with coronary heart disease living in long-term care.,*Pharmacotherapy,19*(5), 627-634.	Methods: Identified 72,236 NH residents who had a dx of coronary heart disease (CHD). Results: The pattern of antiischemic therapy in elderly residents of LTCFs is not optimal. B-adrenergic blockers were administered less frequently than nitrates or calcium channel blockers, despite evidence supporting their effectiveness.
2004	Dementia	Mitchell, S.L., Kiely, D.K., Hamel, M.B., Park, P.S., Morris, J.N., Fries, B.E., et al. (2004). Estimating prognosis for nursing home residents with advanced dementia. *Journal of the American Medical Association, 291,* 2734-2740.	Methods: Identified 1609 residents who died with dx of advanced dementia and analyzed MDS assessments. Results: Residents dying with advanced dementia did not receive optimal palliative care.

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2001	Dementia	Lapane, K.L., Gambassi, G., Sgadari, A., Mor, V., & Bernabei, R. (2001). Gender differences in predictors of mortality in nursing home residents with AD. *Neurology, 56,* 650-654.	Methods: Studied 2,838 men and 6,385 women with AD admitted to NH in 5 states. Followed up 23 months later. Results: Men had increased risk of mortality. Severity of dementia associated with death among men. Death among women associated with measures of disability; impairment of ADLs, presence of pus, and malnutirition.
2000	Dementia	Giovanni, G., Landi, F., Lapane, K., Sgadari, A., Mor, V., & Bernabei, R. (1999). Predictors of mortality in patients with Alzheimer's disease living in nursing homes. *Journal of Neurology, Neurosurgery, & Psychiatry, 67,* 59-65. Graney, M.J., & Engle, V. F. (2000). Stability of performance of activities of daily living using the MDS. *The Gerontologist, 4*(5), 582-285.	Methods: Longitudinal follow-up study on 9264 residents with dx of Alzheimer's. Results: Age, sex, functional limitations, and malnutrition are strongest predictors of death in Alzheimer's paitients, not severity of dementia.
1999	Dementia	Gambassi, G., Lapane, K.L., Landi, F., Sgadari, A., Mor, V., & Bernabei, R. (1999). Gender differences in the relation between comorbidity and mortality of patients with Alzheimer's disease. *Neurology, 53,*508-516.	Methods: Retrospective cohort study of 5,831 men and 17,018 women with dx of AD. Compared demographics, severity of dementia, behavioral symptoms, physical disability, general health, and comorbid conditions. Results: Women less likely to be hospitalized, have fewer comorbid conditions, and lower mortality.
1999	Dementia	Gifford, D.R., Lapane, K.L., Gambassi, G., Landi, F., Mor, V., & Bernabei, R. (1999). Tacrine use in nursing homes: Implications for prescribing new cholinesterase inhibitors. *Neurology, 52*(2), 238-244.	Methods: Investigated use of tacrine in 1640 NH residents. Results: Only 38% of those taking tacrine actually had dx of Alzheimer's. Wandering and physical abuse were strongest predictors of use. Many received subtherapeutic doses of the medication
2001	Dementia,	Hopper, T. (2001). Relationship between Minimum Data Set ratings and scores on measures of communication and hearing among nursing home residents with dementia. *American Journal of Speech-Language Pathology*. Retrieved July 14, 2005, from www.findarticles.com database	Methods: Analyzed 57 residents with dx of dementia, from 5 nursing homes in Arizona. Tested participants hearing & communication skills and compared to MDS assessments. Results: MDS was able to distinguish between residents with mild-moderate & moderate-severe communication deficits associated with dementia, but referrals were not made for these residents with both dementia and communication deficits. Nurses said that people with dementia are unable to learn & would not

Year	Key Words	Reference	Annotation
		(/p/articles/mi_qa3856/is_200111/ai_n9 014333).	benefit from structured therapeutic interventions.
2005	Depression	Koehler, M., Rabinowitz, T., Hirdes, J., Stones, G., Carpenter, I., Fries, B.E., et al. (2005). Measuring depression in nursing home residents with the MDS and GDS: an observational psychometric study. *BMC Geriatrics*. Retrieved July 10, 2005, from www.biomedcentral.com database (1471-2318/5/1).	Methods: Trained nurses assessed 704 NH residents using both the MDS and the Geriatric Depression Scale (GDS) scales. Results: The MDS depression and GDS scales measure were not correlated. Each scale had internal reliability. They measure different aspects of depression.
2004	Depression	Lapane, K.L. & Hughes, C.M. (2004). An evaluation of the impact of the Prospective Payment System on antidepressant use in nursing home residents. *Medical Care, 42*(1), 48-58.	Methods: Quasi-experimental study comparing antidepressant use before and after the implementation of PPS. Results: No difference in prescribing of anti-depressants.
2004	Depression	Lapane, K.L. & Hughes, C.M. (2004). Which organizational characteristics are associated with increased management of depression using antidepressants in US nursing homes? *Medical Care, 42*(10),992-1000.	Methods: Cross-sectional study of 87,907 residents in 2,128 states. Analyzed MDS information on antidepressant use & resident factors and facility characteristics from On-line Survey and Certification of Automated Records (OSCAR). Results: Characteristics of the facility, not of the residents, influence the type of antidepressant prescribed.
2004	Depression	Simmons, F.J., Cadogan, M.P., Cabrera, G.R., Al-Samarrai, N.R., Jorge, J.S., Levy-Storms, L., et al. (2004). The Minimum Data Set depression quality indicator: Does it reflect differences in care processes?. *Journal of the American Geriatrics Society, 44,*554-564.	Methods: Cross-sectional study of 396 residents in 14 SNFs. Compared MDS depression indicators, scores on GDS, and 10 care processes by staff. Results: MDS underestimates prevalence of depression. Even when depression detected, care interventions not implemented.
2003	Depression	Anderson,R.L., Buckwalter,K.C., Buchanan, R.J., Maas,M.L., Imhof,S.L.(2003).Validity and reliability of the Minimum Data Set Depression Rating Scale (MDSDRS) for older adults in nursing homes. *Age and*	Methods: interviewed 145 elderly residents in three nursing homes to complete the Hamilton Depression Rating Scale and the Geriatric Depression Rating Scale. These data were compared to the Minimum Data Set Depression Rating Scale (MDSDRS). Findings: The MDSDRS did not correlate strongly with the other

Year	Key Words	Reference	Annotation
		Ageing, 32, 435-438	two depression scales. Consequently, it may be of limited value in identifying depression in nursing home patients. Limitations of study: small, homogeneous population.
2005	Development	Streim, J.E. (2005). Unique tools of the trade: nursing homes and research in geriatric psychiatry. *American Journal of Geriatric Psychiatry, 13*(6), 437-440.	Editorial about value of nursing homes as populations appropriate for study of factors leading to disability. Value of MDS designed for reimbursement purposes & to identify SNF non-compliance to be used as tool for clinical research.
2005	Development	Swagerty, D.L., Lee, R.H., & Smith, B. (2005).The Context for nursing home resident care. *Journal of Gerontological Nursing. 31*(2):40-48.	Methods: Qualitative emergent case study. In 3 facilities in the Midwest, 17 incontinent residents were selected. In addition, the participants included 16 family members, 66 staff and 9 managers. Data was collected by observation, semi-structured interviews, and chart abstraction. Results: Integration of care depends on role of the MDS coordinator in conjunction with shared values, role of other leaders, family influence, competing demands on staff, task orientation, and external accountability.
2004	Development	Scott, J.C., Elstein, P.(2004). Research in long-term care. *Medical Care,42*(4 suppl),III-11-III18.	Methods: Descriptive summary of research & strategic issues that would influence decision-making in quality & outcomes research in long-term care. Results: Five categories: measurement methods & tools, uses of quality data, organizational & cultural factors, information & informatics, and impact evaluation and research.
2003	Development	Zimmerman, D.R. (2003). Improving nursing home quality of care through outcomes data: the MDS quality indicators. *International Journal of Geriatric Psychiatry, 18,* 250-257.	Methods: MDS QIs developed at University Wisconsin at Madison, at Center for Health Systems Research & Analysis (CHSRA). Used framework of Structure, Process, Outcomes. Results: 24 QIs which include both process & outcomes of care, and prevalence & incidence measures.
2002	Development	Harris, Y., & Clauser, S.B. (2002). Achieving improvement through nursing home quality measurement. *Health Care Financing Review, 23*(4), 5-18. Retrieved July 15, 2005, from Centers for Medicare and Medicaid Services Web Site: http://www.cms.hhs.gov/review/02summer/02Summerpg5.pdf	Methods: Describes CMS's initiative to use NH performance measures as tool to share info on quality of care.

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2001	Development	Littlehale, S. (2001).Focus on caregiving: Learning to love the MDS. *Provider 27*(5),51-53	Even veteran users of the MDS may need MDS education. MDS is reliable & valid only when correctly applied.
2000	Development	Rantz, M.J., Petroski, G.F., Madsen, R.W., Mehr, D.R., Popejoy, L., Hicks, L.L., et al. (2000). Setting thresholds of quality indicators derived from MDS data for nursing home quality improvement reports: an update. *Journal of Quality Improvement, 26*(2), 101-110.	Described process used to set thresholds of QIs to indicate good & poor resident outcomes. Panel of experts was convened to determine the thresholds for each QI, review statewide distributions of MDS QIs & complete follow-up Delphi of final results.
2005	Falls	Avidan, A.Y., Fries, B.E., James, M.L., Szafara, K.L., Wright, G.T., Chervin, R.D. (2005). Insomnia and hypnotic use, recorded in the Minimum Data Set, as predictors of falls and hip fractures in Michigan nursing homes. *Journal of the American Geriatrics Society,53,*955-962	Methods: The MDS data for 34,163 residents in 437 nursing homes in Michigan were analyzed to examine the relationship between insomnia, hypnotic use, falls, and hip fractures. A baseline assessment and a follow-up at 160-210 days were examined. Adjustments were made for other confounding and demographic variables. Findings: Insomnia was more of a predictor of falls and hip fractures than use of hypnotics. Limitations of the study: This was not a prospective randomized clinical trial, but rather a two-wave observational design. The MDS variable insomnia has weak reliability. The exact MDS definition of insomnia is, "difficulties in falling asleep, waking up too early and being unable to fall back asleep." In addition, not all medications prescribed for sleep are coded in the MDS as hypnotics, such as trazodone and diphenhydramine. Assessments for both insomnia and hypnotic use were coded only on the initial MDS and not on the follow-ups. Consequently, a resident's insomnia or use of hypnotics could have changed.
2005	Falls	Hill-Westmoreland, E.E., & Gruber-Baldini, A.L. (2005). Falls documentation in nursing homes: agreement between the Minimum Data Set and chart abstractions of medical and nursing documentation. *Journal of the American Geriatrics Society, 53*(2),	Methods: Analyzed fall data from charts of 462 NH residents & compared them to MDS. Results: MDS underreported falls. Chart abstractions showed 49% of sample fell, but MDS only showed 28% fell. Those missed had significantly more ADL impairment.

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		268-273.	
2004	Falls	Fletcher, P.C. & Hirdes, J.P. (2004). Restriction in activity associated with fear of falling among community-based seniors using home care services. *Age and Ageing, 33*(3), 273-279.	Methods: Cross-sectional study of 2,300 seniors receiving home care services using MDS for Home Care assessments. Results: 41.2% of participants restrict activity due to fear of falling.
2003	Falls	van Doorn, C., Gruber-Baldini, A.L., Zimmerman, S., Hebel, J.R., Port, C.L., Baumgarten, M., et al. (2003). Dementia as a risk factor for falls and injuries among nursing home residents. *Journal of the American Geriatrics Society, 51,*1213-1218.	Methods: Prospective cohort study. Followed 2,015 residents newly admitted to SNFs in Maryland and compared fall rate for residents with dementia to those of residents without dementia. Results: Residents with dementia have more falls (4.05 per year) than those without dementia (2.33). (P<.0001).
2000	Falls	Sgadari, A., Lapane, K.L., Mor, V., Landi, F., Bernabei, R., Gambassi, G. et al. (2000). Oxidative and nonoxidative benzodiazepines and the risk of femur fracture. *Journal of Clinical Psychopharmacology.20*(2), 234-239.	Methods: Nested case-control study of 9,752 residents hospitalized for femur fractures compared to 38,564 control patients Results: clear age-related increase in risk of femur fracture when oxidative benzodiazepines were given at high doses or PRN.
2003	Feeding tubes	Mitchell, S. L., Teno, J.M., Roy, J., Kabumoto, G. & Mor, V. (2003). Clinical and organizational factors associated with feeding tube use among nursing home residents with advanced cognitive impairment. *Journal of the American Medical Association,290*(1),73-80.	Methods: Cross-sectional study of all residents (186,835) with advanced cognitive impairment who had MDS assessments within 60 days of April, 1999. Results: More than 1/3 of severely cognitively impaired residents in US nursing homes have feeding tubes. Those living in larger NHs that are in urban areas and that lack dementia special care unit have a greater likelihood of using feeding tubes. Facilities with either a nurse practitioner or physician assistant on staff were less likely to have impaired residents on feeding tubes.
2002	Feeding tubes	Teno, J.M., Mor, V., DeSilva, D., Kabumoto, G., Roy, J., & Wetle, T. (2002). Use of feeding tubes in nursing home residents with severe cognitive impairment. *Journal of the American Medical Association, 287*(4), 3211-3212.	Methods: Compared use of feeding tubes nationwide to rate of DNR orders in residents with severe cognitive impairment. Results: For each 10 percentage point increase in use of DNR orders, there was a 4.5 percentage point decrease in use of feeding tubes.
2003	Finance	Weech-Maldonado, R., Neff, G., & Mor, V. (2003) The relationship between	Methods: Examined relationship between quality of care (using MDS), with revenues, private-pay market share, & costs in NHs &

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		quality of care and financial performance in nursing homes. *Journal of Health Care Finance, 29*(3),48-60	how these dynamics affect financial performance. Results: Total effects of quality to financial performance were positive.
2003	Finance	Weech-Maldonado, R., Neff, G., & Mor, V. (2003). Does quality of care lead to better financial performance? The case of the nursing home industry. *Health Care Management Review, 28*(3), 201-216.	Methods: Examined relationship between quality of care (as measured by MDS) and financial performance in NHs. Results: Nursing homes that produce better outcomes of care achieved lower patient care costs.
2001	HIV	Buchanan, R.J., Wang, S. & Huang, C. (2001). Analyses of nursing home residents with HIV and dementia using the Minimum Data Set. *Journal of Acquired Immune Deficiency Syndrome, 26*(3), 246-255.	Methods: Used MDS data to compare 1,074 admission assessments for HIV residents with dementia to 4,040 admission assessments for HIV residents without dementia. Results: HIV residents without dementia were twice as likely to be physically independent. 60% of HIV residents without dementia were independent in cognitive skills for daily decision-making, compared to only 20% or HIV residents with dementia. Significantly greater percentages of the HIV residents with dementia also had comorbidities of anemia, depression, schizophrenia, cognitive and memory problems, hepatitis, renal failure, and cancer than other residents with HIV.
2000	Hospitalization	Saliba, D., Kington, R., Buchanan, J., Bell, R., Wang, M., Lee, M., at al. (2000). Appropriateness of the decision to transfer nursing facility residents to the hospital. *Journal of the American Geriatrics Society, 48*(2), 154-163.	Methods: Nested random sampling in eight community SNFs, analyzing SNF and hospital records of 100 unscheduled transfers to hospitals. Results: Inappropriate transfers are associated with poor quality of care in the SNF. Many of these hospitalizations were for services available in outpatient settings, and the chief complaint did not warrant hospitalization.
1999	Hospitalization	Intrator, O., Castle, N.G., & Mor, V. (1999). Facility characteristics associated with hospitalization of nursing home residents: results of a national study. *Medical Care, 37*(3), 228-237.	Methods: Analyzed MDS data of 2080 residents in 253 nursing homes. Results: SNFs in which over 3.6% of the residents received respiratory treatments were more likely to hospitalize the residents. SNFs with special care units, more physicians, more NPs or Pas were less likely to hospitalize their residents.
1998	Hypertension	Gambassi, G., Lapane, K., Sgadari, A., Landi, F., Carbonin, P., Hume, A., et al. (1998). Prevalence, clinical correlates, and treatment of hypertension in elderly	Methods: Used the Systematic Assessment of Geriatric Drug Use via Epidemiology database (SAGE), which contains MDS data to study over 300,000 residents of long-term care facilities. Results: 80,206 residents (over 32%) were diagnosed as

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		nursing home residents. *Archives of Internal Medicine,185,*2377-2385.	hypertensive. The prevalence was higher in women and in African-Americans. Over ¼ of these residents had 6 or more comorbid conditions. The pattern of treatment did not appear to follow recommended guidelines. Limitations: Only included residents of nursing homes, may not be generalizable to all elderly people. The researchers did not have access to blood pressure measurements and could not assess severity and control of HTN.
2005	Incontinence	Sŏrbye, L.W., Finne-Soveri, H., Ljunggren, Toponkova & Bernabei, R. (2005). Indwelling catheter use in home care: Elderly, aged 65+, in 11 different countries in Europe. *Age and Ageing, 34,*377-381.	Methods: Prospective, population-based, assessment study of a random sample of 4,455 residents receiving home care in eleven countries. Results: Use of indwelling catheters among home care clients in Europe was most frequent in older males with advanced dementia and poor physical function. A dx of ms, cancer, or pressure ulcers increased the risk of a catheter. Catheter use was associated with increased care-giver burden.
2003	Incontinence	Landi, F., Cesari, M., Russo, A., Onder, G., Lattanzio, F., Bernabei, R., et al. (2003). Potentially reversible risk factors and urinary incontinence in frail older people living in the community. *Age and Ageing, 32*(2), 194-199.	Methods: Observational study of 22 Home Health Agencies using the MDS for Home Care instrument (MDSHC). Results: Three potentially reversible factors were strongly associated with urinary incontinence: UTIs, physical restraints, and environmental barriers.
2003	Incontinence	Schnelle, J.F., Cadogan, M.P., Yoshi, J., Samari, N.R., Osterweil, D., Bates-Jensen, B.M., et al. (2003). The Minimum Data Set urinary incontinence quality indicators: Do they reflect differences in care processes related to incontinence. *Medical Care, 41*(8),909-922.	Methods: Cross-sectional study of 347 residents in 14 SNFs who had "prevalence of incontinence" indicator and 432 residents in 16 SNFs who had the "prevalence of incontinence without a plan" indicator. Results: The MDS incontinence indicators were not associated with important differences in care processes. Chart documentation of toileting program did not correlate to resident reports on the frequency of assistance. The quality of documentation of incontinence assessment and treatment was poor across all NHs in the study.
2005	Infection	Boockvar, K.S., Gruber-Baldini, A.L., Burton, L., Zimmerman, S., May, C., & Magaziner, J. (2005). Outcomes of infection in nursing home residents with and without early hospital transfer. *Journal of the American Geriatrics*	Methods: Observational cohort study of 2,153 residents of nursing homes. Analyzed 4,990 infections in 1,301 of the residents and compared the survival rates for those who were transferred to hospitals within the first 3 days of infection to those residents who remained in the NH. Results: Outcomes were worse in those who were transferred to

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		*Society, 53,*590-596.	hospitals than in those who remained in the NH.
2005	Infection	Goldrick, B.A. (2005). Infection in the older adult: Long-term care poses particular risk. *Amercian Journal of Nursing,105*(6),31-34.	Description of other studies which show that functional status in nursing home residents is associated with pneumonia and UTIs.
2005	Infection	High, K., Bradley, S., Loeb, M., Palmer, R., Quagliarello, V., & Yoshikawa, T. (2005). A new paradigm for clinical investigation of infectious syndromes in older adults: Assessing functional status as a risk factor and outcome measure. *Journal of the American Geriatrics Society,53,*528-535.	Methods: Literature review on functional status and respiratory tract infection in older adults. Conclusions: Relationship between infection/inflammation and age-associated functional decline.
2004	Infection	Stevenson, K.B., Moore, J.W., & Sleeper, B. (2004). Validity of the Minimum Data Set in identifying urinary tract infections in residents of long-term care facilities. *Journal of the American Geriatrics Society, 52*(5), 707-711.	Methods: Prospective surveillance study. 16 LTCFs in Idaho performed active surveillance of their residents by collecting information on all signs & symptoms of infection, micro culture results, & antimicrobial therapy for each resident. UTIs were confirmed using evidence-based algorithms for dx & tx of UTIs. Data was compared to MDS indication of whether there had been a UTI in the last 30 days. Results: The MDS had high sensitivity and did not miss any cases. However, it was not specific enough and identified many false positives.
2004	Infection	Zweig, S. Z., Kruse, R.L., Binder, E.F., Szafara, K.L., & Mehr, D.R. (2004) Effect of do-not-resuscitate orders on hospitalization of nursing home residents evaluated for lower respiratory infections. *Journal of the American Geriatrics Society,52,*51-58	Methods: Analyzed associations between resident, MD & facility characteristics, presence of DNR order, and hospitalization within 30 days from evaluation for lower respiratory infection of 1031 nursing home residents with an LRI. Results: Residents with a DNR were less likely to be hospitalized.
2005	Misc	Aud,M.A., Rantz,M.J.(2005). Admissions to skilled nursing facilities from assisted living facilities. *Journal of Nursing Care Quality, 20(1),* 16-25.	Methods: Analyzed 15,977 residents newly admitted to long-term care in Missouri using data from Missouri's MDS (version 20) database to discern reasons for entering skilled nursing facilities (SNF). The residents were divided into four groups, according to responses to section AB 2 of the MDS admission form: Group 1-admitted to SNF from assisted living facilities; Group 2-admitted to SNF from private homes; Group 3-admitted to SNF from acute care hospitals, Group 4-admitted to SNF from hospitals, but had

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			been residing in assisted living facilities. Findings: The most common Group 1 diagnoses were dementia, depression, arthritis, and Alzheimer's. The most common Groups 3 & 4 diagnoses were CVA, UTIs, hip fracture, pneumonia, and wound infection. Placement in Alzheimer's SCU was proportionately higher in Group 1 and Group 2 residents that from Groups 3 & 4. The number of residents, from all groups, receiving antidepressant medications was higher than the number of residents diagnosed with depression. Five clinically significant issues that could be focus of interventions to reduce admissions to SNF were identified: cognitive impairment, depression, mobility, ADL independence, and continence. Limitations of study: Only data source was Missouri MDS with no control by investigators. Statistical tests of between-group differences were not conducted. Reasons for discharge from assisted living facilities were limited to existing values.
2005	Misc	Marek, K. D., Popejoy, L., Petroski, G., Mehr, D., Rantz, M. & Lin, Wen-Chieh, L. (2005). Clinical outcomes of ageing in place. *Nursing Research, 54*(3). 202-211.	Methods: Used MDS assessment to assess 78 participants in a program called Aging in Place (AIP). They were matched to 78 NH residents. Results: The AIP group had statistically significant better outcomes.
2004	Misc	Buchanan, R.J., Bolin, J., Want, S., Zhu, L. & Kim, M. (2004). Urban/rural differences in decision making and use of advance directives among nursing home residents at admission. *The Journal of Rural Health, 20*(2),131-135.	Methods: Analyzed MDS admission assessments for 551,208 residents admitted to NHs in 2001 & classified residents into rural and urban. Results: 60% of residents in rural areas had some form of advance directives compared to only 40% of those in urban areas.
1999	Misc	Jensdottir, A.B., Rantz, M., Hjaltadottir, Guomundsdottir, H., Rook, M. & Grando, V. (1999). International comparison of quality indicators in United States, Icelandic and Canadian nursing facilities. *International Nursing Review, 50,*79-84.	Methods: Compared results of MDS based QIs for residents in SNFs in three countries (Iceland, Canada, and U.S.). Results: Similarities included use of nine or more medications, weight loss, UTIs, dehydration, and behavioral symptoms. Differences included, among others, incontinence, catheter use, fecal impaction, tube feeding, and development of pressure ulcers,
2005	Morbidity,	van Dijk, P.T., Mehr, D.R., Ooms, M.E.,	Methods: Retrospective cohort study using MDS data and

Year	Key Words	Reference	Annotation
	mortality	Madsen, R., Petroski, G., Frijters, D.H., et al. (2005). Comorbidity and 1-year mortalitiy risks in nursing homes. *Journal of the American Geriatrics Society,53,*660-665.	Missouri death certificate data. Results: Eight variables predictive for 1 year: dementia, cancer, heart failure, renal failure, COPD, diabetes, anemia, and a variable which was a combination of age & cancer.
2004	MS	Buchanan, R.J., Wang, S., Zhu, L, & Kim, M. (2004). Rural-urban comparisons of nursing home residents with multiple sclerosis. *The Journal of Rural Health, 20*(1), 85-91.	Methods: Analyzed all MDS admission assessments for residents with MS between 6/23/1998 and 12/31/2000. Results: Nursing home residents with MS from rural areas receive fewer therapies and less mental health care than residents with MS from other areas.
2002	MS	Buchanan, R.J., Wang, S. & Ju, H. (2002). Analyses of the minimum data set: Comparisons of nursing home residents with multiple sclerosis to other nursing home residents. *Multiple Sclrerosis,8,*512-522.	Methods: Used MDS data to compare 14,009 residents admitted with MS to 440,642 residents without a dx of MS. Results: Residents with MS were younger at admission, significantly more physically disabled, and less cognitively impaired than other residents
2004	Nurse staffing	Bates-Jensen, B.M., Schnelle, J.F., Alessi, C.A., Al-Samarrai, N.R., & Levy-Storms, L. (2004). The effects of staffing on in-bed times of nursing home residents. *Journal of the American Geriatrics Society, 52,* 931-938.	Methods: Analyzed 882 nursing home residents in 34 Southern California nursing homes, comparing time in bed to nurse staffing levels. Results: Staffing level predictor of time in bed, with low staffing levels correlated to more time in bed.
2005	Nurse staffing	Castle, N.G., & Engberg, J. (2005). Staff turnover and quality of care in nursing homes. *Medical Care, 43*(6), 616-626.	Methods: Analyzed Quality Indicators and turnover data for NA's, LPN's, and RNs in 354 facilities in 4 states. Results: For RNs there was a negative relationship between turnover & quality for all 6 Qis. Increases in turnover > 50% were associated with more urinary catheters, contractures and pressure ulcers.
2004	Nurse staffing	Intrator, O., Zinn, J. & Mor, V. (2004). Nursing home characteristics and potentially preventable hospitalizations of long-stay residents. *Journal of the American Geriatrics Society, 52,*1730-1736.	Methods: Cross-sectional prospective study using MDS assessments of residents of 663 facilities. Results: Facilities with nurse practitioners or physician assistants had lower hospitalization rates for Ambulatory care-sensitive (ACS) conditions. Facilities with more physicians were associated with higher ACS hospitalizations. Facilities providing IV therapy and those that operated nurse' aid training programs also were associated with fewer ACS hospitalizations.
2004	Nurse staffing	Weech-Maldonado, R., Meret-Hanke, L., Neff, M.C., & Mor, V. (2004). Nurse	Methods: Used Donabedian's structure-process-outcome (SPO) framework.

Year	Key Words	Reference	Annotation
		staffing patterns and quality of care in nursing home. *Health Care Management Review, 29*(2), 107-116.	Analyzed 1135 nursing homes in five states, comparing 5 measures from the MDS, (physical restraints, antipsychotics, pressure ulcers, cognitive status, & mood) and nurse staffing patterns. Results: Full-time RNs directly affect quality of outcomes in NH, especially reducing pressure ulcers and preventing cognitive decline.
2005	Nutrition	Posthauer, M.E. (2005), Hydration: An essential nutrient. *Advances in Skin & Wound Care,18*(1), 32-33.	Discusses how the MDS can be used to flag residents for dehydration and other nutritional deficiencies.
2002	Nutrition	Crogan, N.L., Corbett, C.F., Short, R.A. (2002). The Minimum Data Set. *Clinical Nursing Research, 11*(3), 341-353.	Methods: Cross-sectional, secondary data analysis of 306 NH residents from 3 NHs in Washington State. Used the Economic, Clinical, Humanistic, and Outcome (ECHO) model to assess protein calorie malnutrition (PCN). BMI was calculated based on values in the MDS. There were no specific criteria for being selected to participate. Results: 73% of the residents had normal or subnormal BMI (<=27). The MDS variables found to be significant predictors of PCN were: weight loss, leaves 25% or more of food uneaten at most meals, psychiatric/mood diagnoses, change in ability to participate in ADLs from morning to evening, and older age. Variables found to be protective were antidepressant use, diuretic use and therapeutic diet.
2003	Osteoporosis	Elliot, M.E., Binkley, N.C., Carnes, M., Zimmerman, D.R., Petersen, K., Knapp, K., et al. (2003), Fracture risks for women in long-term care, *Pharmacotherapy, 23*(6), 702-710.	Methods: Analyzed 49 women aged 68-100 years old residing in a SNF in Madison, WI. Reviewed MDS data and measured Bone Mineral Density of the participants using dual-energy x-ray absorptiometry (DXA). Results: Osteoporosis as assessed by DXA was prevalent in women in NHs, as was vitamin D deficiency. However, osteoporosis was not documented as a diagnosis.
2005	Pain	Molony, S.L., Kobayashi, M., Holleran, E.A., & Mezey, M. (2005). Assessing pain as a fifth vital sign in long term care facilities. *Journal of Gerontological Nursing, March ,* 16-24.	Methods: Study to determine how to implement pain as a 5th vital sign in LTCFs. 3 round Delphi approach in 60 NHs in New York State. Results: Emerging awareness of need to systematically assess for pain in residents who are cognitively impaired. Need to work to achieve best practices.
2004	Pain	Baier, R.R., Gifford, D.R., Patry, G., Banks, S.M., Rochon, T. DeSilva, D., et	Methods: Quasi-experimental study. 21 nursing homes in Rhode Island were selected to test a pain intervention, although only 17

Year	Key Words	Reference	Annotation
		al. (2004). Ameliorating pain in nursing homes: a collaborative quality improvement project. *Journal of the American Geriatrics Society,52,* 1988-1995.	were able to implement the intervention. The intervention was based on guidelines developed by the American Medical Directors Association (AMDA). It was a multi-faceted, multi-disciplinary approach. 20 residents from each of the facilities were selected for the study. The prevalence of pain measure on the MDS was examined both pre & post intervention for all participants to determine if the prevalence of pain measure had decreased. Findings: The proportion of residents with pain decreased by 41%. Limitations: This was a short-term study; there is no evidence the results will remain the same over time. In addition, it is not known which parts of the intervention most influenced the outcomes. Since this was quasi-experimental, more randomized studies are needed to validate the results.
2004	Pain	Chu, L., Schnelle, J.F., Cadogan, M.P., & Simmons, S.F. (2004). Using the Minimum Data Set to select nursing home residents for interview about pain. *Journal of the American Geriatrics Society, 52,* 2057-2061.	Methods: Cross-sectional descriptive study of 895 residents in 33 nursing homes in California. Researchers interviewed participants by asking 4 questions about pain from modified Geriatric Pain Measure. Compared results to MDS items related to pain. Results: Only 37.2% of residents identified as having chronic pain on interview had recent MDS documentation of chronic pain. However, there was good correlation between denial of chronic between the interviews and MDS data. The recommendation is that N.H. staff should ask all residents directly if they have pain.
2004	Pain	Cohen-Mansfield, J. (2004). The adequacy of the Minimum Data Set assessment of pain in cognitively impaired nursing home residents. *Journal of Pain and Symptom Management, 27*(4), 343-351.	Methods: Geriatricians assessed the pain levels of 80 residents and these assessments were compared to three indicators of pain in the MDS. Results: The 3 MDS indicators were highly correlated. The correlations between the geriatricians' assessments and the MDS were significant for the higher functioning residents, but not for the more cognitively impaired.
2004	Pain	Teno, J.M., Kabumoto, G., Wetle, T., Roy, J.R., & Mor, V. (2004). Daily pain that was excruciating at some time in the previous week: prevalence, characteristics, and outcomes in	Methods: Cross-sectional study of 2.2 million residents of US NHs, analyzing MDS data of reports of excruciating pain. Results: 3.7% of residents had daily pain that was excruciating in previous week. Those with daily pain were younger, had more functional decline, weight loss, and remained at this level.

Year	Key Words	Reference	Annotation
		nursing home residents. *Journal of the American Geriatrics Society, 52*(3), 762-767.	
2004	Pain	Won, A.B., Lapane, K.L., Vallow, S., Schein, J., Morris, J.N., & Lipsitz, L.A. (2004). Persistent nonmalignant pain and analgesic prescribing patterns in elderly nursing home residents. *Journal of the American Geriatrics Society, 52,* 867-874.	Methods: Cross-sectional study of 21,380 residents with persistent pain. Results: Pain is highly prevalent and undertreated.
2002	Pain	Buchanan, R.J., Choi, M., Wang, S., & Huang, C. (2002). Analysis of nursing home residents in hospice care using the Minimum Data Set. *Palliative Medicine,16,*465-480.	Methods: Analyzed MDS assessments of 40,622 residents receiving hospice care. Results: Need to improve pain management, advanced directives, & mental health services for dying residents in nursing homes: 80% of dying residents had DNR orders, only 27% had advanced directives, over 70% had pain, 57% had cancer, 21% had CHF, 20% had COPD, & 18% were depressed.
2002	Pain	Miller, S.C., Mor, V., Wu, N., Gozalo, P., & Lapane, K. (2002). Does receipt of hospice care in nursing homes improve the management of pain at the end of life. *Journal of the American Geriatrics Society, 50*(3), 507-515.	Methods: Retrospective, comparative cohort study of 800 NHs in 4 states. Compared MDS pain assessments of 709 hospice patients and 1,326 non-hospice patients who died. Results: Pain management is better for residents in hospice.
2001	Pain	Teno, J.M., Weitzen, S., Wetle, T., & Mor, V. (2001). Persistent pain in nursing home residents. Journal of the American Medical Association, 285, 2081.	Methods: Analyzed MDS data among all 2.2 million residents of US NHs in April, 1999 for rate of persistent pain. Results: 14.7% of residents had persistent pain as reported by staff. Nearly half of residents did receive adequate treatment.
1998	Pain	Bernabei, R., Gambassi, G., Lapane, K., Landi, F., Gatsonis, C., Dunlop, R., et al. (1998). Management of pain in elderly patients with cancer. *Journal of the American Medical Association, 17,*	Methods: Retrospective cross-sectional study of 13,625 cancer patients in NHs in 5 states. Assessed prevalence and predictors of daily pain and analgesic treatment. Results: Daily pain prevalent and often undertreated.

Year	Key Words	Reference	Annotation
		1877-1882.	
1999	Parkinson's	Lapane, K.L., Fernandez, H.H. & Friedman, J.H., (1999), Prevalence, clinical characteristics, and pharmacologic treatment of Parkinson's disease in residents in long-term care facilities. *Pharmacotherapy, 19*(11), 1321-1327.	Methods: Cross-section study using MDS data to analyze 24,402 residents who had a diagnosis of Parkinson's disease (PD) in 1,492 NHs in 5 states. Results: The prevalence of PD was 5.2%, with 7.1% of men and 4.4% of women living in LTCFs. Only 59% of residents with PD were women, although 71% of the general NH population is female. 70% of residents with PD refused invitations to group activities, were unable to adjust to changes in routine, did not establish their goals, did not participate in activities, and were unable to make friends. Only 44% of residents with PD were taking an anti-Parkinsonian drug. Only 3% had active hallucinations and delusions, but 15% were taking antipsychotics. 40% of residents with PD were incontinent of bowel and 50% had bladder incontinence.
2005	Pressure ulcers	Meehan, M. (2005). Prevalence of wounds among the frail elderly: A look at its value. *Wounds, 17*(4), 80-83.	Methods: Literature review of wound prevalence studies on frail elderly. Results: 14.7% of frail elderly with advanced dementia die with pressure ulcers. 6% of frail elderly with terminal cancer die with pressure ulcers.
2005	Pressure ulcers	Narayanan, S., Van Vleet, J., Strunk, B., Ross, R.N., & Gray, M. (2005). Comparison of pressure ulcer treatment in long-term care facilities. *Wound Care 32*(3), 163-170.	Methods: Compared electronic records of residents with Stage 1 or Stage 2 ulcers drawn from population of 40,000 residents in SNFs admitted between 1/2001 and 5/2004. Compared 3 treatment regimens looking at healing time and treatment-related nursing labor costs. Results: Treatment of Stage 1 or Stage 2 ulcers with balsam Peru, hydrogenated castor oil and trypsin (BCT) ointment achieved healing in less time with lower nursing costs.
2004	Pressure ulcers	Horn, S.D., Bender, S.A., Ferguson, M.L., Smout, R.J., Bergstrom, N., Taler, G. et al. (2004). The national pressure ulcer development in long-term care residents. *Journal of the American Geriatrics Society 52*, 359-367.	Methods: Retrospective cohort study of 1524 residents who did not have a pressure ulcer (PU) but were at risk as defined by Braden scale. Results: 29% of the residents (443) developed a new PU. Characteristics associated with a PU were higher severity of illness, hx of recent PU, significant weight loss, oral eating problems, use of catheters, use of positioning devices, RN hours of less than 0.25 hours per resident per day, nurse' aid hours of less than 2 hours per resident per day, and LPN turnover rate >

Year	Key Words	Reference	Annotation
			25%.
2003	Pressure ulcers	Bates-Jensen, B.M., Cadogan, M., Jorge, J. & Schnelle, J.F. (2003). Standardized quality-assessment system to evaluate pressure ulcer care in nursing homes. *Journal of the American Geriatrics Society, 51,*1195-1202.	Methods: Descriptive study of 198 NH residents assessed for PUs. Results: 9 PU indicators are reliable. Care more consistent once PU detected than before detection.
2001	Pressure ulcers	Bates-Jensen, B.M. (2001). Quality indicators for prevention and management of pressure ulcers in vulnerable elders. *Annals of Internal Medicine, 135*(8),744-751.	Methods: QIs for pressure ulcers developed by literature review and panels of experts. Results: 10 QIs for pressure ulcers developed.
2005	QI	Dyck, M.J. (2005). Evidence-based administrative guidelines. *Journal of Gerontological Nursing, Feb. 2005,* 4-8.	Describes an evidence-based administrative guideline that can be used to implement quality improvement processes based on the QIs in the MDS.
2005	QI	Scott-Cawiezell, J. (2005). Are nursing homes ready to create sustainable improvement? *Journal of Nursing Care Quality, 20*(5),203-207.	Methods: Randomized controlled trial (n=113) to test benefit of feedback in QI model. Results: Simply providing NHs with QI data & education is not sufficient to improve outcomes. Stronger intervention of expert clinical consultation is needed.
2000	QI	How to use the MDS quality indicators to improve patient care. *National Report on Subacute Care. 8*(8), 10-12.	Recommendations to LTCFs to use quality indicator reports from MDS to improve their facilities.
2005	Reliability	Sangl, J., Saliba, D., Gifford, D.R., & Hittle, D.F. (2005). Challenges in measuring nursing home and home health quality. *Medical Care, 43*(3 supplement), I24-I32.	Methods: Examined methodological issues in MDS and other datasets used to report on nursing home quality. Results: Data elements in MDS are reliable, but the quality measures themselves need more work. Detection bias can affect the QI measures.
2004	Reliability	Mor, V. (2004). A comprehensive clinical assessment tool to inform policy and practice. *Medical Care, 42*(4 supplement), III-50-III-59.	Methods: Literature review to document variety of different applications of MDS in research & policy arena. Results: Creation of the MDS as a clinical tool for care planning provides an example of how assessment tools with clinical use can be used in administrative databases for research & policy applications.
2004	Reliability	Parmalee, P.A. (2004).Quality	Editorial: Data supporting MDS reliability & validity usually comes

Year	Key Words	Reference	Annotation
		improvement in nursing homes: The elephants in the room. *Journal of the American Geriatrics Society, 52,* 2138-2004	from studies where the NH staff received special training in use of the MDS. Studies under more general circumstances yielded less favorable results.
2003	Reliability	Mor, V., Angelellli, J., Jones, R., Roy, J., Moore, T., & Morris, J. (2003). Inter-rater reliability of nursing home quality indicators in the U.S. *BMC Health Services Research.* Retrieved July 7, 2003, from www.biomedcentral.com database (1472-6963/3/20).	Methods: Analyzed 100 data elements in 22 QIs in MDS on 5758 residents in 219 facilities in 6 states. Research nurses assessed the residents & compared to MDS assessment by RNs in facilities in order to measure inter-rater reliability. Results: Average to high inter-rater reliability on almost all QI indicators in most facilities. Tried to identify characteristics in facilities related to reliability, but could not. Suggest that organizational factors, leadership practices & assessment processes affect reliability rather than more quantifiable factors.
2000	Reliability	Graney, M.J. & Engle, V.F. (2000). Stability of performance of activities of daily living using the MDS. *The Gerontologist,40*(5),582-586.	Methods: Evaluated within-subject equivalence of multiple assessments of admission ADL performance of 42 residents. Results: Friedman 2-way analysis of variance for ranks documented no significant within-subject differences among repeated measurements for all 13 MDS ADL variables. Fewer than 21 assessments may accurately assess ADL performance.
2000	Reliability	Harris, C.J. (2000). Focus on caregiving: Self-audits ensure MDS accuracy	Recommendations to create a self-auditing tool to ensure MDS accuracy.
2000	Reliability	Landi, F., Tua, E., Onder, G., Carrara, B., Sgadari, A., Rinaldi, C., et al.(2000). Minimum Data Set for home Care: A valid instrument to assess frail older people living in the community. *Medical Care,38*,1184-1190.	Methods: Cross-sectional correlation study of 95 patients admitted to home care services in Italy comparing MDS-HC scores to research rating scales. Results: Agreement between MDS-HC scales and Barthel Activities of Daily Living Index, Instrumental Activities of Daily Living of Lawton and Mini-Mental State Examination.
1998	Reliability	Casten, R., Lawton, M.P., Parmelee, P.A. & Kleban, M.H. (1998). Psychometric characteristics of the Minimum Data Set I: confirmatory factor analysis. *Journal of the American Geriatrics Society, 46*, 726-735.	Methods: 733 residents of the Philadelphia Geriatric Center. MDS completed by nurse care coordinators in domains of cognition, ADLs, time use, social quality, depression & problem behaviors. Results: except for social quality, all domains were confirmed for higher functioning residents. None were confirmed for the more severely cognitively impaired.
1998	Reliability	Lawton, M.P., Casten, R., Parmalee, P.A., Van Haitsma, K.,Corn, J., Kleban, M.H. (1998). Psychometric	Methods: Correlated MDS scores with independently obtained measures of behavioral and mental health functions of 513 nursing home residents.

Year	Key Words	Reference	Annotation
		characteristics of the Minimum Data Set II: validity. *Journal of the American Geriatrics Society, 1998,* 736-744.	Results: Mixed results as to reliability & validity in the most severely cognitively impaired residents. Recommends using MDS for research purposes while being "appropriately cautious."
1996	Reliability	Frederiksen, K., Tariot, P., & De Jonghe, E. (1996). Minimum Data Set Plus (MDS+) Scores compared with scores from five rating scales. *Journal of the American Geriatric Society, 44*(3305-309).	Methods: Compared scores on MDS from NH staff to that of researchers using Mini-Mental State Exam (MMSE), Brief Psychiatric Rating Scale (BPRS), Dementia Mood Assessment Scale (DMAS), Psychogeriatric Dependency Rating Scale (PGDRS), and Physical Signs & Symptom Scale of 52 residents in 3 nursing homes in Rochester, NY. Results: Marked agreement between measures of functional status, cognitive impairment, and communication. Behavior and mood scores not as highly correlated.
1995	Reliability	Hawes, C., Morris, J.N., Phillips, C.D., Mor, V., Fries, B.E., & Nonemaker, S. (1995). Reliability estimates for the Minimum Data Set for nursing home resident assessment and care screening (MDS). *The Gerontologist, 35*(2), 172-178.	Methods: Two inter-rater reliability trials in 13 facilities in 5 states. All assessors were trained by researchers. Two nurses independently assessed the same residents the same week and were prohibited from discussing findings until debriefing. Conclusions: 89% of items achieved an intra-class correlation of >=.4, 63% of items had correlation of >=.6%. Data can be applied to both research and clinical use. Assessment of delirium was the one exception.
2002	Restraints	Mor, V. (2002). Persistent restraints: A performance marker and a call for action. *Medical Care,40*(10), 851-852.	Methods: Analyzed MDS data for all certified facilities in 1999 and 2000. Results: Prevalence of restraint use varies by state. 75% of facilities in Louisiana have more than 15% of their long-stay residents in restraints, while fewer than 5% of facilities in Nebraska do. Over 75% of Nebraska facilities are restraint free, while fewer than 5% of facilities in Louisiana are.
2004	Rural	Phillips, C.D., Holan, S., Sherman, M., Williams, M.L., & Hawes, C. (2004). Rurality and nursing home quality: Results from a national sample of nursing home admissions.	Methods: Analyzed 198,613 MDS records of NH admissions in year 2000, for 12 months past admission. Results: In chronic care, 6 significant differences were identified between rural and urban facilities. In acute care, 7 significant differences were found.
2004	Time in bed	Bates-Jensen, B.M., Alessi, C.A., Cadogan, M. Levy-Storms, L., Jorge, J., Yoshii, J., et al. (2004). The Minimum Data Set Bedfast Quality Indicator. *Nursing Research, 53*(4), 260-272.	Methods: Cohort design comparing 15 NHs with 451 residents. Results: All nursing homes underestimated the number of bedfast residents. Most residents spend at least 17 hours a day in bed. The residents of NH with higher prevalence of bedfast residents showed more activity episodes and reported receiving more

Year	Key Words	Reference	Annotation
			walking assistance than residents of NHs with lower prevalence of bedfast residents.
2005	VA	Berlowitz, D.R., Rosen, A.K., Wang, F., Tsilmingras, D., Tariot, P.N., Englehardt, J., et al. (2005). Purchasing or providing nursing home care: Can quality of care data provide guidance? *Journal of the American Geriatrics Society,53,*603-608.	Methods: Observational study using MDS data comparing 4,763 veteran residents and 195,438 non-veteran residents in10 VA facilities and 650 community nursing homes in New York State. Results: Veterans in VA nursing homes were less like to develop pressure ulcers than veterans in community nursing homes. Residents in community NHs with VA contracts were less likely to develop a pressure ulcer than residents in non-contract homes. 16.1% of veterans in VA NHs experienced functional decline, compared with 10.5% of vets in community nursing homes. Veterans in VA homes were less likely to die. NHs performing well on one QI may perform poorly on another.
2004	VA	Buchanan, R.J., Johnson, C., Wang, S., Cowper, D.C., Kim, M.S. & Reker, D. (2004). Analyses of male residents in community nursing facilities: Comparisons of Veterans Health Administration residents to other residents. *Journal of Rehabilitation Research & Development, 41*(6A),847-860.	Methods: Descriptive study comparing 7,296 male VHA residents and 159,203 male residents in community nursing homes. Results: VHA residents more independent in ADLs, less physically disabled, more likely to have comorbidities. Community residents were more likely to receive special treatments and procedures. VHA residents received more psychotropic medications. VHA residents were more often depressed, less cognitively impaired, more hx of mental illness. More VHA residents used wheelchairs.
2004	VA	Hynes, D. M., Perrin, R.A., Rappaport, S., Stevens, J.M., & Demakis, J.G. (2004). Informatics resources to support health care quality improvement in the Veterans Health Administration. *Journal of the American Medical Informatics Association, 11*(5), 344-350.	Described role of information systems in the VHA Query process.
2004	VA	Nichols, C.L., Willis, L.A. (2004). The paired RAI/MDS Specialist Model: Improving outcomes in Veterans Affairs nursing home care units. *Journal of Gerontological Nursing, 30*(10), 6-11.	Methods: Assessed using a Paired RAI/MDS model, where teams of paired nurses were trained to do the assessments, for process improvement in a VA NH, rather than every nurse assessing their own residents or having one MDS coordinator. These RNs continued to do direct patient care. Results: Interdisciplinary team members paid more heed to RAI/MDS specialists. CMS time frames met. Easier to train fewer nurses. Increased RN satisfaction.

Year	Key Words	Reference	Annotation
2003	VA	Campbell, K.E., Keast, D., Woodbury, G. & Houghton, P. (2003). Wear time in two hydrocolloid dressings using a novel in-vivo model. *Wounds, 15*(2), 40-48.	Methods: Compared wear time of 2 dressings on intact skin of 20 participants. Results: Hydrocolloid B absorbed more fluid and had longer wear time.
1997	VA	Berlowitz, D.R., Brandeis, G.H., & Moskowitz, M.A. (1997). Using administrative databases to evaluate long term care. *Journal of the American Geriatrics Society, 45*(5), 618-623.	Discussed use of administrative databases in research; problems and advantages.
2003	Venous thromboem-bolic	Gomes, J.P., Shaeen, W.H., Truong, S.V., Brown, E.F., Beasley, B.W. & Gajewski, B.J. (2003). Incidence of venous thromboembolic events among nursing home residents. *Journal of General Internal Medicine,18,*934-936.	Methods: Retrospective cohort study of all NH residents in Kansas from 7/1/97 through 7/1/98 who had no recent or remote past history of venous thromboembolic events (VTE) or anticoagulant therapy (18,661 residents). The next 2 quarterly MDS assessments were reviewed. Results: 155 residents developed a VTE during the study, 1.30 events per 100 person-years. The mean age of those having a VTE was 84 years and 77% were female.
2000	Venous ulcer	Wipke-Tevis, D.D., Rantz, M.J., Mehir, D.R., Popejoy, L., Petroski, G., Madsen, R., et al. (2000). Prevalence, incidence, management and predictors of venous ulcers in the long-term-care population using the MDS. *Advances in Skin & Wound Care,13*(5), 218-224.	Methods: Retrospective cohort study of 32,221 residents admitted to long-term-care facilities in Missouri, 1/31/96-10/30/98 using MDS data. Results: Prevalence of venous ulcers on admission was 2.5%. After 365 days, the prevalence of venous ulcers for those residents who did not have one at admission was 2.2%. Prevalence is greater in long-term-care facilities than in the general community. Risk factors are hx of leg ulcers, recent edema, diabetes, CHF, and peripheral vascular disease.
2004	Violence	Shinoda-Tagawa, T., Leonard, R., Pontikas, J., McDonough, J.E., Allen, D. & Dreyer, P.I.(2004). Resident-to-resident violent incidents in nursing homes. *Journal of the American Medical Association, 291*(5), 591-598.	Methods: Case-control study using MDS data and data from the Massachusetts Department of Public Health's Complaint and Incident Reporting System. The cases selected had an injury from an incident with another resident which left visible evidence in the year 2000. The controls were selected randomly from all residents who had an MDS assessment in 2000. Results: Injured residents were more likely to "put themselves in harm's way," be verbally aggressive, and cognitively impaired.