

Nurse Care Coordination in Community-Based Long-Term Care

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Purpose: To evaluate the clinical outcomes of a nurse care coordination program for people receiving services from a state-funded home and community-based waiver program called Missouri Care Options (MCO).

Design: A quasi-experimental design was used to compare 55 MCO clients who received nurse care coordination (NCC) and 30 clients who received MCO services but no nurse care coordination.

Methods: Nurse care coordination consists of the assignment of a registered nurse who provides home care services for both the MCO program and Medicare home health services. Two standardized datasets, the Minimum Data Set (MDS) for resident care and planning and the Outcome Assessment Instrument and Data Set (OASIS) were collected at baseline, 6 months, and 12 months on both groups. Cognition was measured with the MDS Cognitive Performance Scale (CPS), activities of daily living (ADL) as the sum of five MDS ADL items, depression with the MDS-Depression Rating Scale, and incontinence and pressure ulcers with specific MDS items. Three OASIS items were used to measure pain, dyspnea, and medication management. The Cochran-Mantel-Haenszel (CMH) method was used to test the association between the NCC intervention and clinical outcomes.

Findings: At 12 months the NCC group scored significantly better statistically in the clinical outcomes of pain, dyspnea, and ADLs. No significant differences between groups were found in eight clinical outcome measures at 6 months.

Conclusions: Use of nurse care coordination for acute and chronic home care warrants further evaluation as a treatment approach for chronically ill older adults.

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Care for people with chronic illness accounts for over 75% of healthcare spending in the US and is the most common reason Americans seek healthcare (Anderson & Knickman, 2001). However, the healthcare system is poorly organized for its heaviest users to navigate disparate financing and delivery systems to obtain the services they need. Often care is separated into dichotomies such as acute versus chronic and medical versus social, and the acute and medical components receive the majority of funding and attention. Community-based care has been similarly separated into acute and chronic care resulting in lack of coordination of acute and chronic care services for people with chronic illness.

Nurses have a long tradition of combining acute and chronic care in community-based care provision, beginning with Lillian Wald and the Visiting Nurse Service in New York (Buhler-Wilkerson, 1993). In the 1920s nurses convinced Metropolitan Life Insurance Company that a nurse

visit to clients would improve their health status, lower the client death rate, and therefore save the company money. Visiting nurse organizations were established across the country to provide case finding and case management of

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vulnerable populations (Hamilton, 1988). However, over the past 40 years a dramatic change has occurred in community-based care. The creation of the Medicare program in 1965 resulted in a change from a chronic care or “nursing” focus to a disease-focused approach based on the medical model (Munding, 1983). In subsequent decades, more and more of the services needed in the management of chronic illness have been removed from the home health benefit. Further, prospective payment in Medicare home health care is an incentive to provide fewer visits and to limit the monitoring visits that are so important in the management of chronic illness (McCall, Korb, Petersons, & Moore, 2003).

Community-based care provides a needed dimension in care of the chronically ill, especially those with functional limitation. Over 15 million Americans experience some type of functional limitation, such as cognitive decline, that prevents them from following through with their often complex medical plans of care (Anderson & Knickman, 2001). The result is the characteristic cycle of acute exacerbation, stabilization, and repeat exacerbation. What chronically ill people need, especially frail older adults, is a program where they receive close monitoring for changes in their condition and close attention to their ability to comply with their health plan of care. Close monitoring of older adults in their home environments can prevent unnecessary exacerbations of their chronic illness by providing a link between physicians or other prescribing professionals care and the client’s self-care at home. The study was designed to evaluate the outcomes of such a program.

Background

Many studies have been conducted to evaluate the effectiveness of home visits for chronic care of frail older people. A systematic review of 15 studies conducted by van Haastregt and colleagues (2000) indicated no clear evidence to support use of preventive home visits. However, two subsequent meta-analyses showed support of home-visit programs for elderly clients. Elkan et al. (2001) examined 15 studies of home visiting programs and found that home visits significantly reduced mortality and admission to long-term institutional care, but the programs studied showed no significant effect on functional or health status of participants. A meta-analysis of 18 trials of home visitation programs (Stuck, Egger, Hammer, Minder, & Beck, 2002) indicated that clients who received more than nine visits were less likely to have nursing home admissions, and functional decline was significantly less in clients who received multidimensional geriatric assessments. Nurses provided the home visit intervention in 11 of 18 studies.

Programs focused on more acute care needs of older adults, especially posthospital discharge, have shown effectiveness in care of chronically ill clients. Congestive heart failure has been the focus of two studies in which nurses made posthospital follow-up home visits. In a study by Rich et al. (1995) a nurse-directed, multidisciplinary intervention that included supplemental nurse home visits and

phone contacts was conducted in a randomized controlled trial of high-risk congestive heart failure patients. The treatment group had significantly fewer hospital readmissions and higher quality-of-life scores at 90 days after admission to the study. In a different study a comprehensive transitional care intervention was used to provide care for older adults with heart failure (Naylor, 2004). Advanced practice nurses provided discharge planning and home follow-up. Clients in the intervention group had significantly lower hospital readmission rates and lower costs. However, only short-term differences were found in overall quality of life and patient satisfaction between the treatment and control groups.

Current federal initiatives, such as the Program for All-Inclusive Care for the Elderly (PACE) and Social Health Maintenance Organizations are designed to provide coordinated health care to people who are certified as nursing-home eligible but are able to live safely in the community at the time of enrollment. In PACE the entire continuum of care is available to eligible clients, including home health care, adult day care, physician and physician specialist visits, dental care, hospitalizations, and nursing home care. Providers are paid at a capitated rate based on Medicare and state Medicaid rates. Outcomes of PACE programs have been positive, including good consumer satisfaction and a reduction in use of institutional care. However, starting up a PACE program requires large amounts of time and capital. In addition, the lack of provider choice and strong emphasis on adult day care has made the program less attractive to some older adults (Eng, Pedulla, Eleazer, McCann, & Fox, 1997).

In the US, federal funds are designated to states for community-based waiver programs that vary from state to state. In Missouri, the Missouri Care Options (MCO) program is a state-funded program as part of the Division of Senior Services (DSS) to provide community-based long-term care. Eligibility for MCO is defined as a person who is “medically eligible” for nursing facility care, could reasonably have care needs met outside a nursing facility, and is qualified for Medicaid funding. Candidates are screened, and those meeting the criteria are assigned a level of care (LOC) score by a DSS case manager, who then authorizes services in the state service plan. Services include basic and advanced personal care, nurse visits, homemaker care, and respite care. A DSS caseworker authorizes a specified number of monthly units, and the provider is reimbursed retrospectively based on the authorized units provided.

Although the MCO program includes nurse visits, the major services are homemaking and personal care. MCO clients receive limited nursing visits, as few as one per year for some clients. In addition, the reimbursement for nurse visits is very low, often covering less than the labor cost of a visit, with no reimbursement for indirect care activities such as coordination activities. Such limited reimbursement results in lack of incentive to coordinate the care of frail, chronically ill older adults. Clients receive only those services that can be provided easily within a short visit, such as medication refills. In addition, DSS caseworkers have large caseloads and are

required to visit the MCO client only once a year. Thus, identification of appropriateness of authorized services is often delayed or absent.

The Aging-in-Place Program

In 1999, the University of Missouri Sinclair School of Nursing opened Senior Care, a home care agency designed to care for frail older adults (Marek & Rantz, 2000). The agency is Medicare certified and designated an MCO provider. From April 1, 2000 to December 31, 2002, an enhanced nursing intervention called Aging in Place was provided, including nurse care coordination to a total of 332 older adults. Ninety-three of these participants were MCO clients.

An evaluation was conducted to compare clinical outcomes between older adults who resided in nursing homes to a group of similar older adults who received nurse care coordination with MCO services (Marek et al., 2005). To provide a fair comparison, the nursing home comparison group was selected to be comparable to the nurse care coordination group with respect to age, ADL impairment, and cognitive deficits. The nurse care coordination group clinical outcomes were better at a statistically significant level ($p < .05$) for (a) cognition at 6, 12, and 18 months, (b) depression at 6 and 12 months, (c) ADL at 6, 12, and 24 months, and (d) incontinence at 24 months. In all four outcome measures the nurse care coordination group stabilized or improved outcome scores while the nursing home group's outcome scores deteriorated. Results of that study indicated that the combination of nurse care coordination and home based services led to more positive clinical outcomes. However, an unanswered question was whether nurse care coordination contributed to the positive outcomes or if the site of care was the major factor. Thus this study was designed to determine whether nurse care coordination makes a difference in MCO recipients' outcomes, compared to clients in the MCO program who do not receive nurse care coordination.

Methods

Aging-in-place participants who were also in the MCO program and therefore received nurse care coordination (NCC group) were compared to MCO clients who did not receive nurse care coordination (MCO group). To recruit the MCO group, MCO caseworkers contacted clients aged 64 and older from a similar neighboring community and invited them to participate in the study. To guarantee a 12-month follow-up period, participants in the NCC group had to be enrolled before 2002 to ensure the potential for 6- and 12-month follow up. To control for age differences, the NCC group participants also were age 64 or older.

The MCO program does not require a federally mandated standardized assessment similar to the Minimum Data Set (MDS) for resident care and planning required in nursing home care (Mor, 2004; Morris et al., 1990) or the Outcome

Assessment Instrument and Data Set (OASIS; Shaunnessy, Crisler, Hittle, & Schlenker, 2002) used in home health care. However, in the Aging in Place program both of these data sets were compiled on participants for program evaluation. The MDS has been tested in nursing homes (Hawes et al., 1995; Morris, et al., 1997), and a home care version, the MDS-HC (Landi et al., 2001) has been tested in community settings. We reviewed the MDS and MDS-HC data elements for appropriateness in the community setting, and found that a shorter version, the 1997 RUGS III Quarterly, had the data elements needed to measure five of the clinical outcomes of interest.

The OASIS instrument (OASIS) is a federally mandated assessment that is completed on all clients receiving Medicare home health services (Shaunnessy et al., 2002). Data from the OASIS assessment are used to determine home health payment and to create quality indicators that are used for benchmarking quality outcomes among home healthcare agencies. Reliability testing of each OASIS item has been conducted (Madigan & Fortinsky, 2004).

To distinguish clinical outcomes that would be sensitive to nurse care coordination, we first identified the top 10 nursing diagnoses, based on the Omaha System, in the care plans of the Aging in Place participants during the first year of the program (Martin & Scheet, 1992). We matched clinical outcome measures from the OASIS and MDS data sets for 8 of the 10 nursing diagnoses (Table 1). Circulation and nutrition were the only two nursing diagnoses that did not have sufficient measures in the OASIS or MDS data sets. The clinical outcomes measures of activities of daily living (ADL), incontinence, cognitive performance, depression, and pressure ulcers were chosen from the MDS data set and medication management, dyspnea, and pain were used from OASIS.

To measure the ADL outcome the sum of five MDS ADL items indicating the need for assistance with bed mobility, transfers, locomotion, eating, and toileting were used. Each of these items was scored 0 to 4 with zero indicating independent functioning ("no need for help or oversight") and 4 indicating total dependence ("full staff performance of the activity"). The summed scale thus has a range of 0-20 with

Table 1. Top Ten Nursing Diagnoses and Related MDS or OASIS Outcome Measure

Nursing diagnosis	Outcome measure
Circulation	No measure available
Neuro-musculo-skeletal	MDS ADL Scales
Pain	OASIS M00420
Emotional stability	MDS Depression Scale
Medication regimen	OASIS M0780
Cognition	MDS Cognitive Performance Scale
Integument	MDS M1a-d
Respiration	OASIS M0490
Nutrition	No measure available
Genito-urinary	MDS H1b

larger values corresponding to greater impairment in ADL functioning.

The MDS Cognitive Performance Scale (CPS) was used to measure cognition (Morris et al. 1994). The CPS is a 7-point ordinal scale; 0 indicates intact cognitive status and 6 indicates severely impaired. Five MDS cognitive items (comatose, short-term memory, ability to make decisions, making self understood, and eating performance) are used within a single hierarchical cognitive rating scale to create seven categories of cognitive impairment. The CPS has shown substantial consistency with the Mini-Mental State Exam in identifying cognitive impairment (Hartmaier, Sloane, Guess, & Koch, 1994; Hartmaier et al., 1995).

To measure depression the Minimum Data Set-based depression rating scale was used. Seven mood indicator items in the MDS are rated on a scale of 0-2 based on frequency of the observed item: (a) making negative statements, (b) persistent anger with self and others, (c) expressions of unrealistic fears, (d) repetitive health complaints, (e) repetitive anxious complaints, (f) sad, pained, or worried facial expressions, and (g) crying or tearfulness. The scale has been tested for construct validity and sensitivity. The MDS depression rating scale has compared favorably to the 15-item Geriatric Depression Scale (Burrows, Morris, Simon, Hirdes, & Phillips, 2000).

To measure incontinence one item in the MDS was used. In this item, a person scored 0 if always continent, 1 if usually continent (one or fewer times a week) or occasionally incontinent (2+times a week, but not daily), and 2 if frequently or always incontinent. The incontinence item in the MDS was tested and found to accurately identify incontinent nursing home residents (Crooks, 1995). Pressure ulcers were defined as a rating of stage one or higher on MDS item M2a.

In the OASIS data set, pain is measured by the frequency of pain with activity (Crisler et al., 2002). The rating ranged from 0 for no pain to the score of 3 for pain all the time. The outcome related to medication management is a measure of the ability of the person to prepare and take all prescribed medications. The participant scores 0 if no assistance is required, 1 if doses are prepared in advance, daily reminders are given, or if someone designs a drug diary or chart for the person. If the person is unable to take medication unless it is administered by someone else the score is 2. Dyspnea was rated from 0-4; 0 if never short of breath, 1 if dyspneic when walking more than 20 feet or climbing stairs, 2 if dyspneic with moderate exertion, 3 if dyspneic with mild exertion, and 4 if short of breath at rest.

Data were collected by registered nurses who were trained to use both the MDS and OASIS assessments by an advanced practice nurse with significant training, research, and consultation experience with standardized assessments. The MDS quarterly and OASIS data elements were collected on admission and every 6 months on all AIP program participants who were enrolled from April 1, 2000 to December 31, 2002. For the MCO participants, MDS and OASIS data were collected at baseline, 6 and 12 months from November 15, 2001 to December 31, 2002.

Analysis

Descriptive statistics were calculated on all study variables. Outcome variables in this study were all ordinal scaled measures and thus rank-based nonparametric methods were used. The Cochran-Mantel-Haenszel test (CMH) with modified ridit scores (Stokes, Davis, & Koch, 2000) was used to compare groups at each follow-up point. The CMH test in combination with the rank transformation provides a stratified version of the Kruskal-Wallis Test (Agresti, 1990). In the analysis of each outcome the baseline value of that outcome was used as the stratifying variable. This analysis further adjusted for individual differences in initial status. The Kruskal-Wallis Test was for baseline comparisons on each outcome variable.

Results

A total of 55 NCC clients were compared to 30 MCO clients from a similar neighboring community. The NCC group averaged 2.13 nurse visits per month with a range from 1-4. Attrition was lower in the NCC group at 14 (25%) versus 10 (37%) for the MCO group. As shown in Table 2, the MCO group had more nursing home admissions, but the NCC group had more participants who died during the 12-month follow-up period. The groups were similar in all basic demographic characteristics with the exception of race (Table 3). The NCC group was more racially diverse with 13 (24%) Black participants versus 100% White in the MCO group. In both groups, three-fourths of the participants lived alone.

At baseline the outcome variable of cognition ($p=.01$) was significantly different between groups. The NCC group CPS score was higher (more impaired) than the MCO group at baseline. The median CPS scores for the NCC and MCO groups were 1 (Borderline Intact) and 0 (Intact), respectively. Insufficient numbers of participants had pressure ulcers, so group differences for this clinical outcome could not be analyzed.

The remaining seven clinical outcomes were not significantly different between groups at the beginning of the study (Table 4). At 6 months the eight clinical outcome measures showed no significant difference. However, at 12 months the NCC group scored lower (better) than did the MCO group in the outcomes of pain, dyspnea, and ADL. Therefore, over a 12-month period the NCC group had less pain and dyspnea, and functioned at a higher ADL level than did the MCO comparison group.

Table 2. Reasons for Attrition From Study

Group	NCC (n = 55)	MCO (n = 30)
Nursing home admission	2	7
Moved	4	1
Declined	2	0
Died	6	2
Total	14 (25%)	10 (37%)

Variable	NCC (<i>n</i> =55)	MCO (<i>n</i> =30)
Age (<i>M</i> ± <i>SD</i>)	77.0 (± 8.1)	77.3 (± 7.9)
	<i>n</i> (%)	<i>n</i> (%)
Sex		
Female	45 (82)	23 (77)
Male	10 (18)	7 (23)
Race/Ethnicity		
Black	13 (24)	0 (0)
White	40 (73)	30 (100)
Hispanic	1 (01)	0 (0)
American Indian	1 (01)	0 (0)
Living arrangements		
Alone	41 (75)	23 (76)
Spouse or significant other	5 (09)	4 (13)
Other family member	9 (16)	3 (10)
Paid help	0 (0)	0 (0)

Discussion

The results of this study showed that the addition of nurse care coordination to the MCO program contributed to better clinical outcomes for participants. Studies have been mixed on the effectiveness of nurse case management in making a difference in clinical outcomes. One possible reason for the mixed results in some nurse case management programs could be that the clients targeted for the programs are not at the level of frailty needed to demonstrate effectiveness. For example, in the Community Nurse Organization (CNO) project no difference was found in the clinical outcome of its participants as compared to the control group (Abt Associates, Inc., 2000). However, the majority of the participants in the CNO were not at the level of frailty prevalent in home and community-based programs such as the MCO. Perhaps nurse care coordination is more likely to influence clinical outcomes with more frail clients. Additionally, the nurse care coordinator in this project also was the provider of the majority of skilled nursing care delivered to clients. This engagement in care provided the nurse care coordinator a more comprehensive perspective of each client's abilities and care needs.

Another interesting finding is that a significant difference in clinical outcome measures was not evident until 12 months. Demonstration of differences in clinical outcomes in nurse care coordination programs has been limited in past studies, possibly because of shorter times in which outcomes are measured. Chronically ill older adults might need a longer time to show the effectiveness of the nurse care coordination intervention.

Finally, the NCC group received both acute home care (such as Medicare home health care) and long-term care services from the same providers. The MCO group received home health services from different providers than those

	Nurse care coordination		Missouri care option		<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>	
ADL					
Baseline	2.8	5.2	1.1	2.7	.24
6 months	1.8	4.3	0.4	1.3	.65
12 months	2.1	4.7	3.3	4.7	.01
Cognition					
Baseline	1.2	1.2	0.6	0.9	.01
6 months	0.9	1.3	0.8	1.3	.63
12 months	0.9	1.3	0.7	1.2	.47
Depression					
Baseline	0.7	1.1	0.4	1.0	.14
6 months	0.6	1.0	0.3	0.6	.20
12 months	0.3	0.6	0.7	1.5	.94
Incontinence					
Baseline	1.3	1.6	1.2	1.3	.15
6 months	1.2	1.5	1.8	1.8	.15
12 months	0.8	1.3	0.5	1.0	.79
Medication management					
Baseline	0.7	0.7	0.8	0.7	.64
6 months	0.7	0.7	0.8	0.6	.53
12 months	0.8	0.7	0.8	0.6	.97
Dyspnea					
Baseline	1.3	1.1	1.5	1.3	.51
6 months	1.2	1.3	1.5	1.5	.52
12 months	1.1	1.1	1.7	1.2	.03
Pain					
Baseline	1.5	1.0	1.8	1.0	.25
6 months	1.3	1.0	1.9	0.9	.15
12 months	1.2	1.1	2.1	0.7	.00

who provided the long-term care services. The assignment of acute and long-term care services to different providers leads to discontinuity in the care process. The better outcomes related to pain and dyspnea could be related to the use of the same nurse providers for acute and long-term care services.

The medication management outcome measure from OASIS was not a useful measure. The standard of care for older adults with cognitive problems is use of some type of mediset, a pill box with compartments for specific days and times, to assist them in remembering to take medications. Therefore, clients scored as needing assistance at baseline scored the same at discharge even though they may have been using the mediset more appropriately at the 6 and 12 month intervals. A greater concern would be if a client did not have a mediset for medication management if that person had problems in the past with remembering to take medications.

State level programs are being created to provide care coordination of Medicare and Medicaid services. A promising program operated by the Visiting Nurse Service of New York is called VNS CHOICE. This program is a managed long-term care organization based on a capitated monthly

payment for Medicaid services. Unique to this program is the use of a nurse consultant who has overall responsibility for addressing the client's current needs. Care is coordinated through communication with all providers to effectively manage the person's medical and long-term care, including appropriate preventive services and medications (Fisher & Raphael, 2003). Nurse consultants provide a limited amount of home care services. Unlike PACE programs across the country, VNS choice has had no difficulty enrolling members, as indicated by an increase of over 2,500 members in 3 years.

This study was an addition to the evaluation of the Aging in Place program to test community-based care with nurse coordination. Although randomization of participants was not possible, with the exception of cognition, the NCC and MCO clients were similar on baseline clinical variables. The sample size for this study was small, and larger study with a randomized design is suggested.

Standardized data sets exist to provide information related to the quality of care in federally funded nursing home and home health care. However, no data are available on clinical quality of care delivered in state funded, community-based long term care programs such as MCO. Results from this study indicate the importance of a data set similar to the MDS to provide information related to the effectiveness of community-based, long-term care programs. Such a data base would provide valuable insights into the effectiveness of the many varieties of state community-based waiver programs. Given the large public investment in such programs, data should be available to determine the most effective methods of care delivery.

Conclusions

In this study, the addition of nurse care coordination was associated with less pain and dyspnea and higher client function in activities of daily living. Larger studies are needed across different states and programs to better understand what works best in community-based long-term care.

Community-based long-term care is not a new concept, but the many variations in focus and type of care provided complicates studying the results. In most state community-based waiver programs, the funding is low and the case managers of the service usually have very large case loads, making the process of managing care difficult. Use of nurse care coordinators to provide both acute and long-term care services to home-based clients is a viable option that merits further consideration to meet the needs of the rapidly growing population of chronically ill older adults.

References

Abt Associates, Inc. (2000, April 13). *Evaluation of the Community Nursing Demonstration: Final Report*. Washington, DC: US Department of Health and Human Services, Health Care Financing Administration.

Agresti, A. (1990). *Categorical data analysis*. New York: Wiley.

Anderson, G., & Knickman, J.R. (2001). Changing the chronic care system to meet people's needs. *Health Affairs*, 20(6), 146-160.

Burrows, A.B., Morris, J.N., Simon, S.E., Hirdes, J.R., & Phillips, C. (2000). Development of a Minimum Data Set-based depression rating scale for use in nursing homes. *Age and Ageing*, 29, 165-172.

Buhler-Wilkerson, K. (1993). Bringing care to the people: Lillian Wald and the legacy of public health nursing. *American Journal of Public Health*, 83, 1778-1786.

Crisler, K.S., Hittle, D.F., Conway, K.S., West, L.R., Shaughnessy, P.W., & Richard, A.A. (2002). OASIS and outcome-based quality improvement in home health care: Research and demonstration findings, policy implications, and considerations for future change (Vol. 3). *Research and clinical supporting documentation*. Denver, CO: Center for Health Services Research.

Crooks, V.C. (1995). Use of the Minimum Data Set to rate incontinence severity. *Journal of the American Geriatrics Society*, 43, 1363-1369.

Elkan, R., Kendrick, D., Dewey, M., Hewitt, M., Robinson, J., Blair, M., et al. (2001). Effectiveness of home based support for older people: Systematic review and meta-analysis. *British Medical Journal*, 323(7315), 719-725.

Eng, C., Pedulla, J., Eleazer, P., McCann, R., & Fox, N. (1997). Program of All-inclusive Care for the Elderly (PACE): An innovative model of integrated geriatric care and financing. *Journal of the American Geriatrics Society*, 45, 223-32.

Fisher, H.M., & Raphael, T.G. (2003). Managed long-term care: Care integration through care coordination. *Journal of Aging and Health*, 15(1), 223-245.

Hamilton, D. (1988). Faith and finance. *Image: Journal of Nursing Scholarship*, 20, 124-127.

Hartmaier, S.L., Sloane, P.D., Guess, H.A., & Koch, G.G. (1994). The MDS Cognition Scale: A valid instrument for identifying and staging nursing home residents with dementia using the minimum data set. *Journal of the American Geriatrics Society*, 42, 1173-1179.

Hartmaier, S.L., Sloane, P.D., Guess, H.A., Koch, G.G., Mitchell, C.M., & Phillips, C.D. (1995). Validation of the Minimum Data Set Cognitive Performance Scale: Agreement with the Mini-Mental State Examination. *Journal of Gerontology: Medical Sciences*, 50(2), M128-133.

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). *Gerontologist*, 35(2), 172-178.

Kane, R.L., Finch, M., Chen, Q., Blewett, L., Burns, R., & Moskowitz, M. (1994). Post-hospital home health care for medicare patients. *Health Care Financing Review*, 16(1), 131-153.

Landi, F., Onder, G., Tua, E., Carrara, B., Zuccala, G., Gambassi, G., et al. (2001). Impact of a new assessment system, the MDS-HC, on function and hospitalization of homebound older people: A controlled clinical trial. *Journal of the American Geriatrics Society*, 49, 1288-1293.

Madigan, E.A., & Fortinsky, R.H. (2004). Interrater Reliability of the outcomes and assessment information set: Results from the field. *Gerontologist*, 44(5), 689-93.

Marek, K.D., & Rantz, M.J. (2000). Aging in place: A new model for long-term care. *Nursing Administration Quarterly*, 24(3), 1-11.

Marek, K.D., Popejoy, L., Petroski, G., Mehr, D., Rantz, M., & Lin, W. (2005). Clinical outcomes of aging in place. *Nursing Research*, 54(3), 202-211.

Martin, K.S., & Scheet, N.J. (1992). *The Omaha system: Application for community health nursing*. Philadelphia: Saunders.

McCall, N., Korb, J., Petersons, A., & Moore, S. (2003). Reforming Medicare payment: Early effects of the 1997 Balanced Budget Act on post acute care. *Milbank Quarterly*, 81(2), 277-303, 172-173.

Mor, V. (2004). A comprehensive clinical assessment tool to inform policy and practice: Application of the Minimum Data Set. *Medical Care*, 42(4), III-50-58.

Morris, J.N., Fries, B.E., Mehr, D.R., Hawes, C., Phillips, C., Mor, V., et al. (1994). MDS cognitive performance scale. *Journal of Gerontology: Medical Sciences*, 49(4), M174-M182.

Morris, J.N., Fries, B.E., Steel, K., Ikegami, N., Bernabei, R., Carpenter, G.I., et al. (1997). Comprehensive clinical assessment in community setting: Applicability of the MDS-HC. *Journal of the American Geriatrics Society*, 45(8), 1017-1024.

- Morris, J.N., Hawes, C., Fries, B.E., Phillips, C.D., Mor, V., Katz, S., et al. (1990). Designing the national resident assessment instrument for nursing homes. *Gerontologist*, 30(3), 293–307.
- Munding, M.O. (1983). *Home care controversy: Too little, too late, too costly*. Rockville, MD: Aspen.
- Naylor, M.D., Brooten, D.A., Campbell, R.L., Maislin, G., McCauley, K.M., & Schwartz, J.S. (2004). Transitional care of older adults hospitalized with heart failure: A randomized controlled trial. *Journal of the American Geriatrics Society*, 52, 675–84.
- Rich, M.W., Beckham, V., Wittenberg, C., Leven, C.L., Freedland, K.E., & Carney, R.M. (1995). A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *The New England Journal of Medicine*, 333(18), 1190–1195.
- Shaunnessy, P.W., Crisler, K.S., Hittle, D.F., & Schlenker, R.E. (2002). *OASIS and outcome based quality improvement in home health care*. Denver, CO: Centers for Health Services Research.
- Stokes, M.E., Davis, C.S., & Koch, G.G. (2000). *Categorical data analysis using the SAS system*. Cary, NC: SAS Institute.
- Stuck, A.E., Egger, M., Hammer, A., Minder, C.E., & Beck, J.C. (2002). Home visits to prevent nursing home admission and functional decline in elderly people: Systematic review and meta-regression analysis. *JAMA*, 287(8), 1022–1028.
- van Haastregt, J.C., Diederiks, J.P., van Rossum, E., de Witte, L.P., & Crebolder, H.F. (2000). Effects of preventive home visits to elderly people living in the community: Systematic review. *British Medical journal*, 320(7237), 754–758.

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