



U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy



FRONTLINE SUPERVISOR SURVEY REPORT

September 2008

Office of the Assistant Secretary for Planning and Evaluation

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This report was prepared under contract #HHSP23320044303EC between HHS's ASPE/DALTCP and Pennsylvania State University. For additional information about this subject, you can visit the DALTCP home page at http://aspe.hhs.gov/_/office_specific/daltcp.cfm or contact the ASPE Project Officer, Marie Squillace, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201. Her e-mail address is: Marie.Squillace@hhs.gov.

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September 9, 2008

Prepared for
Office of Disability, Aging and Long-Term Care Policy
Office of the Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
Contract #HHSP23320044303EC

The opinions and views expressed in this report are those of the authors. They do not necessarily reflect the views of the Department of Health and Human Services, the contractor or any other funding organization.

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ACKNOWLEDGMENTS

There are many people we would like to thank for their support of this project: Marie Squillace, our Project Officer at the Office of the Assistant Secretary for Planning and Evaluation who provided guidance and feedback throughout the project; Robyn Stone, the Executive Director of the Institute for the Future of Aging Services, who encouraged us to add a Supervisor Survey to the Better Jobs Better Care (BJBC) evaluation; the staff at PHI who provided technical assistance for the supervisor training interventions to the BJBC providers. We also would like to thank Nancy Fishman from the Robert Wood Johnson Foundation and Jacqueline Williams Kaye from the Atlantic Philanthropies, the Project Officers for the main BJBC project that provided funding and support for the collection of the Time 1 Supervisor Survey data in North Carolina. We appreciate the Project Directors and Practice Managers in the five BJBC states who provided encouragement and support to the participating providers to complete this survey. Finally, we thank the nearly 600 supervisors and the 120 providers who participated in the study.

EXECUTIVE SUMMARY

High turnover of direct care workers (DCWs) in long-term care increases labor costs and adversely affects quality of care. Poor supervision and work relationships are leading sources of reported dissatisfaction among DCWs and affect their turnover decision. Supervisors therefore play an essential role in changes designed to improve DCWs' jobs and reduce turnover.

Frontline supervisors are the individuals through whom organizational innovations are transferred from the idea stage to the reality of direct care work. Given the hierarchical nature and service intensity of long-term care, any changes in policy or managerial practice must be passed down through several layers, across shifts, and in some cases, across sub-units. Thus, supervisors can facilitate, slow, or completely block intended change. Supervisors of DCWs form a layer within the hierarchy that is hard to define and often ignored in research on job improvement. Because of their unique frontline position, supervisors' perspectives on management practices and their own jobs are important to understand for both policy and practice.

To develop an evidence base for high-quality supervision to inform long-term care policy, the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Planning and Evaluation funded a survey of supervisors from provider organizations participating in the Better Jobs Better Care (BJBC) demonstration (<http://www.bjbc.org>). BJBC was an initiative that tested innovative policies and practice models designed to improve the quality of DCW jobs and reduce turnover.

The survey of supervisors contributes to better understanding the nature and influence of long-term care supervision on the stability of the direct care workforce by providing information on supervisors' responsibilities and characteristics and comparing them across settings. This report addresses three sets of questions:

1. What are supervisors' roles and responsibilities? How do they differ across settings?
2. What are the characteristics of supervisors? How do they assess their jobs? Do they differ across settings?
3. Do supervisors and clinical managers agree about management practices where they work?

Methods

To identify the population of supervisors, we developed a Supervisor Identification Instrument. This instrument listed nine tasks, or supervisory responsibilities. Clinical

managers at each provider participating in BJBC were asked to identify staff members who were responsible for performing any of these supervisory tasks.

Each supervisor identified received a packet that included: (1) a cover letter explaining the survey and providing the information for informed consent; (2) an 11-page, paper-and-pencil survey with 132 items related to supervisory responsibilities; provider management practices; and job quality, satisfaction, problems, and rewards; (3) a \$2 cash incentive; and (4) a postage paid business reply envelope. Sixty percent responded to the survey.

Supervisors' Roles

Providers identified employees in multiple positions as playing a role in supervision of DCWs -- from administrative heads to DCWs themselves. Supervisors also shared many of the supervisory responsibilities, and most supervisors had some role in all responsibilities except scheduling and conducting on-the-job clinical training.

Supervision of DCWs differed across settings, particularly between home care and facility-based settings. Supervision in skilled nursing facilities was similar to that in assisted living facilities, except that supervisors in skilled nursing facilities more often recommended training, initiated discipline, and documented performance problems. Home care provider organizations, however, proved to be quite different from facility-based care providers in the positions supervisors held and the responsibilities they performed. These differences reflect home care's greater reliance on part-time and on-call workers, more complex scheduling requirements, and predominant use of telephone rather than in-person communication.

Supervisor Characteristics and Assessments of Their Jobs

The supervisors reported relatively high levels of education and clinical training, and they felt confident in their ability to do their jobs. This was most apparent in skilled nursing facilities, where wages, satisfaction with income, and health insurance enrollment were greatest. The opposite was true in assisted living facilities where supervisors had the least education and clinical training and the lowest wage, satisfaction level with salary, and health insurance enrollment. The vast majority of supervisors had experience as DCWs, suggesting that supervision is an opportunity for advancement for DCWs and that improving DCWs' jobs may also create a larger pool of potential supervisors.

Supervisors reported a high level of satisfaction with their jobs and found many aspects of the job rewarding. Overload and poor supervision were the most identified job problems, especially in skilled nursing facilities where supervisors were somewhat less satisfied with their jobs than supervisors in assisted living and home care.

Supervisors' and Managers' Perceptions of Management Practices, Commitment to BJBC, and Readiness for Change

In general, clinical managers had more favorable assessments of the organization's managerial practices and processes than did supervisors, particularly on scales measuring DCW training, management communication, and organizational readiness for change. Despite home care's geographically dispersed delivery mode, supervisors' and clinical managers' perceptions differed less than in the other settings.

Agreement among supervisors was relatively low. On most of the scales, assisted living facilities were characterized by lower levels of supervisor agreement than skilled nursing or home care providers.

In general, agreement between supervisors and their clinical managers was similar to that among supervisors. Across all types of providers levels of agreement were higher for communication about tasks and organizational readiness for change. Agreement was somewhat lower for scales measuring DCW participation in care planning, DCW training, and management communication.

Analysis of change in management practices and processes in North Carolina found that neither clinical managers nor supervisors identified substantial changes. The one exception was an increase in DCW training, reported by both clinical managers and supervisors.

Implications

Our experience conducting the Supervisor Survey demonstrated that, although challenging, identifying a population of supervisors from different settings and surveying them is feasible. Because job titles and the responsibilities associated with those titles vary across settings and within individual providers, researchers should define and identify supervisors based on the supervisory responsibilities they perform.

Our analysis found that many positions in long-term care organizations play some role in supervision of DCWs and that many supervisory responsibilities are shared among supervisors. This implies that efforts to improve supervision should target multiple levels within an organization and should be customized to the particular structure of the organization.

The consistent differences across settings found in this analysis, particularly differences between home care and facility-based settings, imply that policy and practice efforts to improve supervision should differ across settings. For example, supervisor training in home care should recognize the importance of scheduling and phone communication, and adapt training for those with primarily scheduling and formal supervision responsibilities and those who supervise the clinical care of individual

clients. More generally, policy, practice, and research on supervision in long-term care should take into account differences in the acuity of the residents being cared for and varying supervisory hierarchies across settings.

I. INTRODUCTION

High turnover of direct care workers (DCWs) in long-term care increases labor costs and adversely affects quality of care. Poor supervision and work relationships are leading sources of reported dissatisfaction among DCWs (Leon, Marainen & Marcotte, 2001; Harris-Kojetin, Lipson, Fielding, Keifer, & Stone, 2004; Kemper, et al., 2008b) and likely influence turnover decisions of direct care staff (Brannon, Barry, Kemper, Schreiner, & Vasey, 2007). Supervisors therefore play an essential role in changes designed to improve DCWs' jobs and reduce turnover.

Frontline supervisors are the individuals through whom organizational innovations are transferred from the idea stage to the reality of direct care work. The hierarchical nature and service intensity of long-term care suggests that any changes in policy or managerial practice must be passed down through several layers, across shifts, and in some cases, across lateral sub-units serving different populations. Thus, supervisors can facilitate, slow, or completely block intended change. Supervisors of DCWs form a layer within the hierarchy that is hard to define and often ignored in research on job improvement. Because of their unique frontline view, supervisors' perspectives on organizational readiness for change are important to understand.

To develop an evidence base for high-quality supervision in long-term care to inform policy, the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Planning and Evaluation (ASPE), funded a survey of supervisors from provider organizations participating in the Better Jobs Better Care (BJBC) demonstration. BJBC was an initiative that tested innovative policies and practice models designed to improve the quality of DCW jobs in an effort to improve recruitment and retention of these workers (Kemper, Brannon, Barry, Stott, & Heier, 2008a; <http://www.bjbc.org>).

The survey of supervisors contributes to better understanding the nature and influence of long-term care supervision on the stability of the direct care workforce by describing the supervisors' responsibilities and characteristics and comparing them across settings. This report addresses three sets of questions:

1. What are supervisors' roles and responsibilities? How do they differ across settings?
2. What are the characteristics of supervisors? How do they assess their jobs? Do they differ across settings?
3. Do supervisors and clinical managers agree about management practices where they work?

Previous Research

Previous research provides evidence that supervisors play an important role in implementation of changes designed to improve the jobs of DCWs. As middle managers in the organizational hierarchy, long-term care supervisors mediate implementation of management changes that organizations initiate to improve direct care work. Several innovative workforce initiatives preceding BJBC have demonstrated the critical role of frontline supervisors in improving DCW jobs (Deutschman, 2001). Evaluation of the Extended Care Career Ladders Initiative (Wilson, Eaton, & Kamanu, 2002) highlighted the importance of the support of nurse supervisors to the success of the project's implementation. The Yeatts, Cready, Ray, DeWitt, & Quenn (2004) pilot work in implementing self-managed work teams with nursing assistants makes clear that the "buy-in" of supervisors, not just senior management, is essential to empower direct care staff in meaningful ways.

The developers of another DCW empowerment initiative, LEAP, are so convinced that management's support is pivotal to achieving the program's goals that they begin each project with an organizational readiness for change assessment (Hollinger-Smith & Ortigara, 2004). They now require that all supervising staff complete the same training programs as the direct care staff as well as a program on supervision. Brannon & Dansky (2001) found that agencies with more developed and formalized structures were more likely to be engaged in continuous quality improvement related to improving the direct care workforce. Stone, et al., (2002) likewise observed that culture change, such as that promoted in the Wellspring project, is not sustainable without the commitment of staff nurses. They found that various components of the supervisory role were "stumbling blocks" to the success of the Wellspring project goals.

Supervisors also play a pivotal training reinforcement role and influence the extent to which investments in training of DCWs results in sustained practice improvements and self-efficacy in care giving tasks. Prior research showed that the effectiveness of training designed to provide DCWs with advanced skills, such as behavior management, is related to the reinforcement that workers receive when they attempt to use the skills (Brannon, Cohn, Smyer, Rovine, & Downs, 1993; Burgio & Stevens, 1998). This requires that frontline supervisors be comfortable not only with the clinical content but also with the coaching or teaching aspects of management (Schur, Noelker, Looman, Whitlach, & Ejaz, 1998; Stone, et al., 2002). Recent research in the hospital sector highlights the importance of middle managers' social networks and their unique ability to influence the knowledge transfer required for organizational performance improvement (Pappas, Flaherty, & Wooldridge, 2004; Pappas & Wooldridge, 2007).

The supervisor/DCW relationship is the most proximal social attachment between the provider organization and the direct care staff. The quality of the relationships between supervisors and their subordinates plays a large role in the attachment that individuals feel to their jobs (van Breukelen, Schyns, & LeBlanc, 2006). The supervisors' perceptions of their jobs -- as clinician and manager -- and how they envision the work of the direct care staff provide the cognitive structure for subordinates either to become

empowered or not (Beer & Walton, 1987). Eaton's (2001) ethnographic study of best management practices identified leadership at the unit level as critically important. In Leon's (2001) report on focus groups with DCWs in Pennsylvania, dissatisfaction with supervision was identified as a prime source of DCW job dissatisfaction important enough to influence turnover while Flynn & Deatruck (2003) reported that a major source of stress and job dissatisfaction among home care nurses was lack of access to their frontline managers. Similarly, Brannon & colleagues (2007) found that perceptions of supervisor quality rivaled perceptions of the availability of job alternatives as the most consistent predictor of turnover intention.

These frontline supervisors may feel the system does not make it easy for them to empower DCWs. Using the National Center for Health Statistics' (NCHS) 2000 National Sample of Registered Nurses, Spratley, Johnson, Sochalski, Fritz, & Spencer (2000) reported that nurses working as middle managers in nursing homes and home health agencies are less satisfied with their jobs than those in other health care settings.

Finally, two recent studies of nursing home staff found that perceptions of management practices and organizational processes related to teamwork, communication, and leadership differ among levels of staff (Corazzini-Gomez, Anderson, & McDaniel, 2002; Forbes-Thompson, Gajewski, Scott-Cawaiezell, & Dunton, 2006). Higher-level managers tended to view such practices and processes as more positive than middle managers or direct care staff. These gaps in perception suggest that frontline workers, their supervisors, and facility administrators view these practices and processes differently.

To better understand supervision and the role that supervisors play in implementing management practice changes, the ASPE Supervisor Survey was conducted at providers participating in the BJBC demonstration.

The BJBC Demonstration

The Robert Wood Johnson Foundation and the Atlantic Philanthropies funded BJBC in 2003 to test innovative policies and practice models designed to improve the quality of DCW jobs and reduce turnover. Five state-level projects in Iowa, North Carolina, Oregon, Pennsylvania, and Vermont, led by non-profit organizations were selected to participate. The three-year BJBC demonstration allowed the five projects considerable flexibility in the types of initiatives and interventions they pursued. Policy initiatives ranged from the development of a state licensure designation to the expansion of a nurse delegation law. Interventions within provider organizations introduced changes in management practices to improve DCWs' jobs. The Institute for the Future of Aging Services, the applied research arm of the American Association of Homes and Services for the Aging, served as the national program office for the demonstration, and PHI (formerly the Paraprofessional Healthcare Institute) provided technical assistance to the five projects (Kemper, et al., 2008a).

Management Practice Interventions

The five BJBC projects chose workforce development interventions designed to improve DCWs' jobs and recruited providers to implement the interventions. The interventions fell into six categories:

1. *Top management training* was designed to foster upper management buy-in and support for staff to complete these interventions.
2. *Supervisor training* was designed to improve the quality of supervision for DCWs.
3. *Team building* focused on improving relationships and communication among staff using proprietary training programs.
4. *Peer mentoring* was used to increase the quality of DCWs' jobs by increasing career mobility options and improving the orientation process for new employees by providing one-on-one support.
5. *Caregiving skill development* interventions sought to enhance clinical skills through curriculum-based programs, formal classroom-based training, and informal on-the-job training.
6. *Provider-specific projects* were an option for providers in all five projects. They varied across providers, focusing on areas such as diversity, staff instability, and workplace issues.

Characteristics of BJBC Providers

Four types of long-term care providers participated in BJBC: (1) Medicare-certified skilled nursing facilities; (2) assisted living facilities, which included assisted living facilities, residential care, and facilities that relied heavily on public funding; (3) home care agencies, which included both Medicare and non-certified home care agencies; and (4) adult day services providers.

Providers volunteered to participate in the three-year BJBC demonstration. Participation required a desire to change management practices and a willingness to commit time and resources to improving DCWs' jobs. Thus, in addition to being geographically limited to five states, providers that participated in BJBC were self-selected. To assess the representativeness of BJBC providers, where data is available, we compared their characteristics with providers nationally (Table I.1).

A majority of providers nationally are for-profit organizations, in contrast to the majority of BJBC providers, which are non-profit. Because some non-profits have sources of financial support other than patient revenue or have a resident mix less reliant on low Medicaid reimbursement rates, non-profits may be better able to commit resources to improving jobs than for-profit providers.

BJBC providers are about as likely to be part of a chain as providers nationally. (Chains here include both for-profits and non-profits.) As in the nation, a small majority of BJBC nursing facilities are part of a chain; assisted living facilities are about equally divided between chain-affiliated and free standing entities; and about three-fifths of home care agencies are free standing.

TABLE I.1. Characteristics of BJBC Providers								
Provider Characteristics	Nursing Facilities		Assisted Living		Home Care		Adult Day	
	BJBC	U.S.	BJBC	U.S.	BJBC	U.S.	BJBC	U.S.
Ownership (percent)								
For-profit	33	67 ^a	49	69 ^b	38	67 ^c	0	--
Non-profit	65	27 ^a	48	27 ^b	59	23 ^c	100	--
Public/government	2	6 ^a	3	1 ^b	3	10 ^c	0	--
Affiliation (percent)								
Free standing	45	47 ^d	50	54 ^e	80	82 ^f	86	--
Part of a chain	55	53 ^d	50	46 ^e	20	18 ^f	14	--
Average hourly wage (dollars)	10.63	10.33 ^g	9.22	10.21 ^h	8.97	9.43 ⁱ	9.85	9.31 ^j
Located in a MSA (percent)	83	85 ^j	94	--	84	--	86	--
Maximum sample size	45	--	34	--	32	--	7	--
<p>NOTE: BJBC data is from the BJBC Clinical Manager Survey except wage, which is from the BJBC Employee Information System, and location in an MSA, which is from U.S. Census Bureau Lists of Metropolitan and Micropolitan Statistical Areas, 2000.</p> <p>a. American Health Care Association. (2008). <i>Nursing Facility Ownership, June 2007</i>. Retrieved January 18, 2008, from http://www.ahcancal.org/research_data/oscar_data/Nursing%20Facility%20Operational%20Characteristics/Nursing_Facility_OwnershipJun2007.pdf. SOURCE: CMS OSCAR Form 671: F12.</p> <p>b. American Association of Homes and Services for the Aging, American Seniors Housing Association, Assisted Living Federation of America, National Center for Assisted Living, and the National Investment Center for the Seniors Housing & Care Industry. (2006, August). <i>2006 Overview of the Assisted Living</i>. Alexandria, VA: Stratton Publishing.</p> <p>c. Department of Health and Human Services, Centers for Medicare & Medicaid Services. (2008) <i>Home Health Compare Datasets</i>. [Data file]. Available from Centers for Medicare & Medicaid Services Web site, http://www.medicare.gov/download/downloaddb.asp.</p> <p>d. American Health Care Association. (2008). <i>Nursing Facility Control, June 2007</i>. Retrieved January 18, 2008, from http://www.ahcancal.org/research_data/oscar_data/Nursing%20Facility%20Operational%20Characteristics/Nursing_Facility_ControlJun2007.pdf. SOURCE: CMS OSCAR Form 671: F10, F13.</p> <p>e. Hawes, C., Phillips, C.D., Miriam Rose, M., Holan, S., & Sherman, M. (2003). "A national survey of assisted living facilities." <i>The Gerontologist</i>, 43:875-882.</p> <p>f. National Association for Home Care and Hospice, Carina T. Deans (personal communication, February 4, 2008).</p> <p>g. Squillace, M., Remsburg, R., Harris-Kojetin, L., Bercovitz, A., Rosenoff, E., and Han, B. (in press). "The National Nursing Assistant Survey: Improving the evidence base for policy initiatives to strengthen the certified nursing assistant workforce." <i>The Gerontologist</i>.</p> <p>h. Department of Labor, Bureau of Labor Statistics. (2006). <i>Occupational Employment and Wages -- SOC Code 31-1012 Nursing Aides, Orderlies, and Attendants, May 2006</i> [Data file]. Available from Bureau of Labor Statistics Web site, http://www.bls.gov/oes/current/oes311012.htm.</p> <p>i. Department of Labor, Bureau of Labor Statistics. (2006). <i>Occupational Employment and Wages -- SOC Code 31-1011 Home Health Aides, May 2006</i> [Data file]. Available from Bureau of Labor Statistics Web site, http://www.bls.gov/oes/current/oes311011.htm.</p> <p>j. <i>National Nursing Home Survey</i>. (2004) [Data file]. ICPSR04651-v1. Hyattsville, MD: U.S. Department of Health and Human Services, NCHS [producer], 2004. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2007-03-23.</p>								

As in the nation, DCW wages at BJBC providers are highest in nursing facilities and lowest in home care, with assisted living in between. (Comparison for adult day services may not be meaningful given that BJBC included only nine adult day providers.) Comparing BJBC wages with national data is difficult because the occupation classifications report DCW jobs in the aggregate. That said, BJBC provider average wages are close to the national average in all four long-term care settings; all differences are less than one dollar.

Finally, well over four-fifths of BJBC providers are located in urban areas (defined as Metropolitan Statistical Areas). Eighty-three percent of BJBC nursing facilities are located in an urban area compared with 85 percent of the nation's nursing facilities, the only provider type for which national information is available.

The Evaluation

An evaluation of BJBC assessed how management interventions were implemented and their impact on retention and job quality of DCWs. The research team at Penn State collected data from several sources: an Employee Information System, a Clinical Manager Survey, a Direct Care Worker Survey, site visits, and semi-structured telephone and in-person interviews. The information system tracked hiring, termination, and turnover of individual DCWs throughout the three-year demonstration. The Clinical Manager Survey and Direct Care Worker Survey were conducted at baseline and again toward the end of the demonstration to assess changes over the demonstration.

To expand the scope of the evaluation, ASPE contracted with the Penn State research team to conduct a survey of DCW supervisors in the BJBC provider organizations. The Supervisor Survey adds important information to that from the information system, clinical managers, and DCWs. The remainder of this report is devoted to the Supervisor Survey and its findings.

II. SURVEY METHODS AND SAMPLES

This chapter describes how we identified the population of supervisors, the survey instrument, and procedures for administering the survey. We also present response rates and discuss analytic samples. Heier, Brannon, & Kemper (2008) provide additional information on the survey, including the instruments used.¹

Definition and Identification of the Population

The population of interest for the survey was frontline supervisors who provide ongoing supervision through daily contact with DCWs in skilled nursing facilities, assisted living facilities, home care agencies, and adult day service providers participating in BJBC. Because job titles and roles of frontline supervisors vary across settings, defining and identifying this population consistently across the four major provider types posed a challenge for the survey. To identify the population, we identified responsibilities specific to frontline supervision, developed an instrument to identify the supervisors based on these responsibilities, and asked the clinical manager at each provider to use this instrument to list supervisors who performed these responsibilities.

To better understand supervisory responsibilities, we conducted a series of open-ended telephone interviews with either an administrator or director of nursing (DON) from organizations representing all five states (Iowa, North Carolina, Oregon, Pennsylvania, and Vermont) participating in the BJBC demonstration. Based on the information obtained from these interviews, we decided to identify supervisors based on their responsibilities. We recognized that, as a consequence, the population to be identified would include, but would not be limited to, frontline supervisors; further analysis would be necessary to distinguish “frontline” roles from other supervisory roles.

Using the information from the telephone interviews and subsequent cognitive testing of a draft process for identifying the population with clinical managers in local long-term care providers, we developed the Supervisor Identification Instrument and procedures for administering it. In addition to the person’s job title, the instrument included a list of nine tasks, or supervisory responsibilities, which were divided into primary and secondary responsibilities. A person qualified as a supervisor if he or she performed one or more of the following primary responsibilities:

- Ensure that DCWs are giving proper care to clients/residents;
- Initiate disciplinary action;

¹ The population identification procedures, survey instrument, and survey administration procedures received Institutional Review Board (IRB) approval at The Pennsylvania State University (IRB #16989) and clearance from the Office of Management and Budget (OMB #0990-0295). In addition, we obtained a National Institutes of Health Certificate on Confidentiality to strengthen respondent privacy.

- Document DCW performance problems;
- Provide feedback to DCWs on job performance;
- Directly respond to job concerns raised by DCWs.

or if he or she performed at least two of the following secondary responsibilities:

- Act as a mentor to DCWs;
- Schedule DCWs;
- Recommend training for DCWs;
- Conduct on-the-job training.

The Penn State Survey Research Center sent the Supervisor Identification Instrument and a recruitment letter via e-mail to the clinical manager at each BJBC provider. Those without e-mail were contacted by phone and faxed the instrument. The recruitment letter explained that we were planning to survey staff “who have a role in supervising DCWs” and asked them to “indicate the staff member(s) responsible for each task listed.” The clinical manager was asked to return the form via e-mail or fax to the project manager at the Survey Research Center. The project manager used the screening criteria to determine if individuals listed on the task list met our definition of a supervisor.

To obtain identification instruments from as many providers as possible, the project manager made anywhere from three to ten follow-up attempts using a variety of methods including phone, fax, e-mail, regular mail, and express mail. In addition, BJBC project directors in each state urged the participating providers to respond.

Supervisor Survey Instrument

The survey instrument is an 11-page, paper-and-pencil survey with 132 items related to supervisory responsibilities; provider management practices; and job quality, satisfaction, problems, and rewards. We chose a paper-and-pencil survey over a telephone survey for two reasons: (1) a telephone survey is costlier; and (2) obtaining individual supervisor telephone numbers is difficult. The survey is based on items adapted from the BJBC Clinical Manager Survey and BJBC Direct Care Worker Survey that were administered as part of the broader BJBC evaluation. Consistent wording was used in the Supervisor Survey so that comparisons could be made across surveys.

Based on the background telephone interviews, we anticipated that in smaller organizations respondents to the Clinical Manager Survey also might qualify as supervisors. (See Appendix A for a discussion of supervisors who were also respondents to the Clinical Manager Survey.) Because the Clinical Manager Survey and Supervisor Survey contained many common items, the Survey Research Center prepared a shorter version of the Supervisor Survey instrument to include only the items that were not in the Clinical Manager Survey.

Survey Administration Procedures

Each supervisor received a packet that included: (1) a cover letter explaining the survey and information for informed consent; (2) a survey; (3) a \$2 cash incentive; and (4) a postage paid business reply envelope. The Survey Research Center identified supervisors who also were clinical managers by comparing their names so that they could be sent the shortened version of the Supervisor Survey.

The Survey Research Center alerted its contact at each provider before sending the survey packets to be distributed to the supervisors. The contact chose one of three ways to distribute the surveys -- at staff meetings, with paychecks, or in employee mailboxes.

The cover letter informed respondents that their participation was voluntary and that their responses would be kept confidential. Respondents provided passive consent by completing and returning the survey. Respondents returned completed surveys directly to the Survey Research Center to ensure that their employers would not see their responses. The Survey Research Center tracked survey responses by an identification number on each survey.

Approximately a month after the first survey administration, follow-up packets were sent to each organization. Supervisors who had not completed a survey received a packet containing a follow-up cover letter, another copy of the survey, and another business reply envelope. To ensure that employers could not distinguish non-respondents from previous respondents, packets also were sent to supervisors who had completed the survey. These packets contained a cover letter expressing our thanks for completing the survey along with a copy of the BJBC newsletter.

As the surveys were returned, they were logged and scanned into the system using the identification number printed on the surveys. At the end of the fielding period, the Survey Research Center verified and cleaned the data and removed all identifying information before providing the data files to the research team.

Baseline in North Carolina

The ASPE Supervisor Survey project was designed to be cross-sectional, with a one-time administration scheduled toward the end of the BJBC demonstration. After the project's award, the Robert Wood Johnson Foundation and the Atlantic Philanthropies, the funding agencies for the evaluation of the BJBC demonstration, authorized us to use funding from that evaluation for a baseline (Time 1) administration of the survey. However, at this point in the project it was too late for four of the states to receive a baseline survey. Therefore, the Time 1 administration was conducted only in North Carolina, where the project enrolled providers later.

The Time 1 survey was fielded in North Carolina from November 2005 through March 2006. The second administration in North Carolina and the originally-planned administration in the other four BJBC states (Time 2) took place from July 2006 through June 2007. Because of the larger sample size, most analyses were conducted using the cross-sectional data from the Time 2 administration. However, when appropriate, we used the panel of supervisors in North Carolina who responded to the survey in both time periods.

Sample Size and Response Rates

Providers

Provider response rates to the Supervisor Identification Instrument that identified the population were high (Table II.1). Sixty-three out of 65 North Carolina providers returned the instrument at Time 1 and 120 out of 124 providers at Time 2. These providers identified a population of 421 supervisors at Time 1 and 705 at Time 2. From this population, 257 supervisors from 57 providers (not shown) responded to the survey at Time 1, and 424 from 115 providers (not shown) responded at Time 2.

TABLE II.1. Sample Sizes and Response Rates				
	Providers Identifying Population	Population Identified	Surveys Returned	Response Rates (percent)
Time 1 (NC Only)				
Skilled Nursing Facilities	21	189	101	53
Assisted Living Facilities	22	148	92	62
Home Care Agencies	20	90	64	71
All	63	421	257	61
Time 2 (IA, NC, OR, PA, VT)				
Skilled Nursing Facilities	46	359	204	57
Assisted Living Facilities	35	178	93	52
Home Care Agencies	32	149	114	77
Adult Day Service Providers	7	20	13	65
All	120	705	424	60
NOTE: The Supervisor Survey data file contains seven more observations than the Supervisor Identification Instrument data file (six more at Time 1 and one more at Time 2); therefore, the detail of the number of surveys administered does not sum to the total, and the response rates by provider type may be slightly understated. The reason for this discrepancy was that respondents removed identification numbers from their survey, which made it impossible to link that Supervisor Survey with the corresponding Supervisor Identification Instrument.				

Supervisors

The Supervisor Survey response rates were relatively high for a paper-and-pencil survey, especially since the Survey Research Center was unable to follow up directly with specific supervisors (Table II.1). The overall response rate was 61 percent at Time

1 in North Carolina and 60 percent in all five states at Time 2. At Time 1, home care agencies had the highest response rate (71 percent) and skilled nursing facilities had the lowest (53 percent), with assisted living facilities falling in between (62 percent). At Time 2, home care agencies still had the highest response rate (77 percent), but assisted living facilities had a slightly lower response rate (52 percent) than skilled nursing facilities (57 percent).

Surveys also were relatively complete. The median percentage of missing items in a survey was 7.5 percent; only 21 surveys were missing 30 percent of items or more.

Analytic Samples

The samples used for specific analyses varied in size depending on analytic objectives and data availability (Table II.2). All analyses of the Supervisor Survey exclude the 21 respondents that had 30 percent or more items missing. In addition, we excluded respondents from adult day service providers because their small sample size (20 supervisors from 7 providers) makes it impossible to make meaningful comparisons with the other provider types (Tables reporting data from supervisors in adult day service providers are in Appendix C). In addition, specific analyses exclude cases missing responses for a particular item when analyzing that item. Finally, samples were reduced in analyses that merged Supervisor Survey data with other BJBC data sources, such as the Clinical Manager Survey and the Employee Information System; typically, this meant deleting providers and their associated Supervisor Survey cases from the analysis. Except for an analysis of panel data in North Carolina at the end of Chapter V, Time 2 data is used throughout the report.

Chapter	Surveys	Analytic Sample	Maximum Sample	
			Provider	Supervisor
Chapter III	Identification Instrument	Population of supervisors identified	113	685
Chapter IV	Supervisor	Respondents	100	391
Chapter V				
Time 2	Supervisor Clinical Manager	Respondents at providers with at least one respondent to each survey	84	308
Panel	Supervisor Clinical Manager	Respondents at providers meeting above criteria at both Time 1 and Time 2	29	71

Chapter III analyzes the roles and responsibilities of supervisors using data from the Supervisor Identification Instrument for the population of supervisors identified, with the exception of supervisors from adult day service providers. The maximum sample is 685 supervisors from 113 providers. Smaller samples are used in specific analyses that use data from the Employee Information System, which is not available for all providers, or that exclude providers identified as not reporting frontline supervisors (see Appendix

B for a description of how we identified providers who did not report frontline supervisors).

Chapter IV describes supervisors' characteristics and job assessments using data from the Supervisor Survey. The maximum sample is all respondents to the Time 2 survey (except those with 30 percent or more items missing and supervisors from adult day service providers): 391 supervisors from 100 providers.

Chapter V compares supervisors' and clinical managers' perceptions of management practices. Because this analysis requires providers to have respondents to both the Clinical Manager Survey and Supervisor Survey, the maximum sample is smaller than that used in the previous chapter: 308 respondents to the Supervisor Survey and 84 respondents to the Clinical Manager Survey at 84 providers. A sub-analysis comparing changes in perceptions of management practices uses the panel of clinical managers from North Carolina.

III. SUPERVISORS' ROLES

This chapter describes the positions those identified as supervisors hold, their supervisory responsibilities, and the intensity of supervision in the long-term care provider organizations that participated in the BJBC demonstration. The analyses use data from the five-state Time 2 administration of the Supervisor Identification Instrument, the checklist that was completed by the clinical manager to identify employees who performed one or more supervisory responsibilities.

Supervisors' Positions

TABLE III.1. Positions Held by Supervisors	
Job Title Category	Supervisors' Most Common Job Titles
Administrative Head	Administrator, Director, Nursing Home Administrator
Clinical Head or Assistant	
Director of Nursing	DON, RN-DON, Clinical Manager
Clinical Coordinator	Resident Care Coordinator, Resident Care Director, RN Coordinator, Coordinator of Services
Assistant Director of Nursing	ADON, RN-ADON
Immediate Supervisors	
Charge Nurse	Charge Nurse, LPN, LPN-Charge Nurse
Supervisor in Charge	Supervisor in Charge, Med Tech/Supervisor in Charge, Supervisor, Nursing Supervisor
Registered Nurse	RN
Direct Care Worker	CNA, Preceptor CNA, PCA
Human Resources	
Staff Development	Staff Development, Staff Development Coordinator
Staffing Coordinator	Staffing Coordinator, Staffing Supervisor
Other	Case Manager, Director of Operations, Social Worker, Activity Director, Manager
NOTE: DON -- Director of Nursing; RN -- Registered Nurse; ADON -- Assistant Director of Nursing; LPN -- Licensed Practical Nurse; Med Tech -- Medical Technician; CNA -- Certified Nursing Assistant; PCA -- Personal Care Assistant.	

To understand the types of positions the clinical manager identified as supervisory within their organizations, we coded the job titles of the identified supervisors, grouping similar job titles into 11 categories, which were aggregated into six broad categories (Table III.1). Because the focus of study was on frontline supervisors, we paid particular attention to the category labeled "immediate" supervisors, which is intended to include job titles frequently used for frontline supervisors. This category included three subcategories: charge nurse (e.g., charge nurse, licensed practical nurse (LPN)); supervisor in charge (e.g., supervisor in charge, medical technician/supervisor in charge, supervisor, nursing supervisor); and registered nurse (RN). Supervisors identified as LPNs or RNs were included only if they did not have a more descriptive job title that would place them in another category. For example, an LPN/staff development

coordinator was classified under staff development, while an LPN was classified as a charge nurse.

From our preliminary work, we expected that the majority of the population would be immediate supervisors. However, we also recognized that supervisor responsibilities are to some extent shared between immediate supervisors and clinical heads or assistants, and therefore expected to have some clinical heads or assistants identified as supervisors.

As expected, a high proportion of job titles fell into the immediate supervisor category, making up almost three-fifths of the supervisors in our sample (Table III.2). The proportion varied by provider type. Skilled nursing facilities and assisted living facilities had higher percentages that were immediate supervisors (66 percent and 63 percent, respectively) than home care (37 percent). Fifteen percent of those identified as having some supervisory responsibilities fell into the clinical head or assistant category. Out of 113 providers, 65 had at least one supervisor in this category (not shown).

TABLE III.2. Supervisor Job Categories (percent)				
Job Category	Skilled Nursing	Assisted Living	Home Care	All
Administrative Head	2	5	6	4
Clinical Head or Assistant				
Director of Nursing	9	2	8	7
Clinical Coordinator	1	10	8	5
Assistant Director of Nursing	6	1	1	4
Sub-total	16	13	17	15
Immediate Supervisors				
Charge Nurse	35	9	1	20
Supervisor in Charge	18	52	26	29
Registered Nurse	13	2	9	9
Sub-total	66	63	37	57
Direct Care Worker	10	16	12	12
Human Resources				
Staff Development	3	0	3	2
Staffing Coordinator	1	1	13	3
Sub-total	4	1	16	5
Other	2	3	13	5
Total	100	100	100	100
Sample size				
Supervisors	346	174	144	664
Providers	46	35	32	113
NOTE: Top clinical managers were asked to report the job title of supervisors in their organization. One hundred and thirteen organizations responded to the Supervisor Identification Instrument and reported a total of 685 supervisors. Supervisors with missing job titles (n=21 supervisors) were excluded.				

Somewhat surprisingly, 4 percent of those identified as supervisors had job titles indicating they were the administrative heads of the organization. Although this is a

small share of the total supervisor sample, they represent 24 of the provider organizations (not shown). Administrative heads were identified in all provider types although their job titles varied.

Twelve percent of employees identified as having a role in DCW supervision had job titles indicating that they were themselves DCWs. They were identified consistently across all provider types. Finally, human resources job titles appeared 5 percent of the time and more often in home care.

Not surprisingly, the use of specific job titles varied across settings. For example, charge nurse is a common category for immediate supervisors in nursing facilities versus supervisor in charge in assisted living facilities. Staffing coordinator applied to 13 percent of supervisors in home care but rarely applied in other provider types. Similarly, the relative share of types of positions in home care differed from those in facility-based care. Home care had a smaller share of immediate supervisors and a larger share of human resources staff. Interestingly, few RNs were identified as supervisors in home care even though visiting nurses undoubtedly provide clinical supervision.

Supervisors' Responsibilities

Supervisors had a variety of supervisory responsibilities (Table III.3). Almost all responsibilities were performed by at least two-thirds of the supervisors, suggesting that these responsibilities are shared by multiple supervisors. The two exceptions were scheduling (25 percent) and conducting on-the-job clinical training (56 percent), indicating that they are more specialized responsibilities not shared among supervisors.

Overall, most supervisors had some responsibility for ensuring proper care (92 percent) and providing feedback (88 percent). These two responsibilities were more often performed in skilled nursing and assisted living facilities, than in home care, which is consistent with the more centralized nature of supervision in facility-based care.

Recommending training, documenting performance problems, directly responding to job concerns, and conducting on-the-job clinical training were more prevalent in skilled nursing and home care than in assisted living. These responsibilities may be more important in these two settings, where workers care for residents and clients who require medical care as well as personal care.

Scheduling was a responsibility of a higher proportion of supervisors in home care (37 percent) than in skilled nursing (19 percent) or assisted living (27 percent). This likely reflects the complexity of coordinating DCW schedules with client needs in dispersed locations as well as lower intensity of supervision.

TABLE III.3. Supervisor Responsibilities (percent)				
Responsibilities	Skilled Nursing	Assisted Living	Home Care	All
Ensure proper care	96 ^h	95 ^h	80 ^{s,a}	92
Provide feedback	95 ^{a,h}	84 ^s	78 ^s	88
Recommend training	86 ^a	67 ^s	78	79
Initiate discipline	79 ^{a,h}	62 ^s	56 ^s	69
Document performance problems	75 ^a	56 ^{s,h}	74 ^a	69
Directly respond to job concerns	84 ^a	67 ^s	76	77
Act as a mentor	71	74	61	69
Conduct on-the-job clinical training	58	51	58	56
Scheduling	19 ^h	27	37 ^s	25
Sample size				
Supervisors	310	178	148	636
Providers	30	35	32	97
<p>NOTE: One hundred and thirteen organizations responded to the Supervisor Identification Instrument and reported a total of 685 supervisors. Providers identified as not reporting any frontline supervisors (n=16 providers, 49 supervisors) were excluded.</p> <p>a = Difference from assisted living facilities is statistically significant at the 0.05 level. h = Difference from home care is statistically significant at the 0.05 level. s = Difference from skilled nursing facilities is statistically significant at the 0.05 level.</p>				

Supervisory Responsibilities in Different Positions

Supervisory responsibilities were shared up and down the hierarchy of supervisors but varied somewhat by position. Clinical heads or assistants and immediate supervisors performed the largest proportion of responsibilities (Table III.4). Administrative heads and clinical heads or assistants most often played a role in directly responding to job concerns, which was a responsibility of a smaller majority of immediate supervisors as well. Clinical heads or assistants, immediate supervisors, and DCWs were largely responsible for ensuring proper care, while administrative heads, clinical heads or assistants, and immediate supervisors were most often responsible for providing feedback. Compared with other positions, DCWs had the lowest proportion initiating discipline, documenting performance problems, conducting on-the-job clinical training, directly responding to job concerns, and scheduling

Responsibilities also differed in some cases by job title within categories (see Appendix D) Within the immediate supervisor category, charge nurses and RNs had similar proportions responsible for ensuring proper care, scheduling, and initiating discipline but had quite different percentages responsible for mentoring and documenting performance problems. Although we classified staff development and staffing coordinators both as human resources staff, their responsibilities differed. All staff development personnel conducted on-the-job training, and most recommended training; in contrast, a small proportion of staffing coordinators had these

responsibilities. In addition, a majority of staffing coordinators were responsible for scheduling, while only a small proportion of staff development supervisors scheduled.

TABLE III.4. Percent of Supervisors Performing Each Responsibility							
Responsibilities	Administrative Head	Clinical Head or Assistant	Immediate Supervisor	Direct Care Worker	Human Resources	Other	All
Ensure proper care	80	88	99	87	51	74	92
Provide feedback	80	86	94	76	66	74	87
Recommend training	75	88	83	62	63	58	79
Initiate discipline	85	73	82	12	46	48	69
Document performance problems	75	81	76	37	57	55	69
Directly respond to job concerns	95	95	84	33	71	48	77
Act as a mentor	55	68	72	76	71	32	69
Conduct on-the-job clinical training	50	77	60	29	57	29	56
Schedule	10	62	19	5	54	39	25
Percent of responsibilities performed	67	80	74	46	60	51	69
Sample size	20	74	390	76	35	31	626
NOTE: Providers identified as not reporting any frontline supervisors and supervisors with missing job titles were excluded (n=16 providers, 59 supervisors). Bold, italics percentages are greater than or equal to the percent of all supervisors who perform the responsibility.							

Intensity of Supervision

To better understand the intensity of supervision at the providers in our sample, we calculated the average number of DCWs per supervisor. The ratio includes all supervisors, not just those we considered to be immediate supervisors. We calculated two ratios: one includes all DCWs and the other, only full-time workers. The BJBC Employee Information System, which contains data on full-time, part-time, and on-call workers throughout the demonstration, provided data used to calculate the average number of full-time and part-time workers.

Number of Supervisors

Although all provider types had a similar median number of supervisors, skilled nursing facilities had a more skewed distribution reflected in the slightly higher mean and 75th percentile (Table III.5). Overall, providers identified an average of 6.6 supervisors, with a median of 4.0. Except in skilled nursing facilities, the interquartile ranges clustered around the median. Five of the 30 nursing facilities had more than 25 supervisors (not shown). Excluding these facilities, the mean and median number of supervisors fall to 6.9 and 5.0, respectively, which are closer to the other provider types.

	Skilled Nursing	Assisted Living	Home Care	All
Mean	10.1	5.3	4.6	6.6
Standard error	1.7	0.7	0.5	0.7
Median	5.5	4.0	4.0	4.0
Range	1-29	1-22	1-15	1-29
Interquartile range	4-16	2-6	3-5	3-7
Sample size (provider)	30	35	32	97
NOTE: One hundred and thirteen organizations responded to the Supervisor Identification Instrument and reported a total of 685 supervisors. We summed up number of supervisors to the organization level. Providers identified as not reporting any frontline supervisors (n=16 providers) were excluded.				

Average Number of Direct Care Workers

Providers employed an average of 52.3 DCWs (Table III.6). Overall, 43 percent of DCWs were full-time, 49 percent part-time and 7 percent on-call. Different provider types used different mixes of full-time, part-time, and on-call DCWs. Home care agencies relied heavily on part-time and on-call DCWs (74 percent) and had the highest average total number of DCWs (77.2). Skilled nursing and assisted living facilities relied heavily on full-time DCWs, with more than 60 percent each.

	Skilled Nursing	Assisted Living	Home Care	All
Number of workers	50.9	25.1	77.2	52.3
Distribution by status (percent)				
Full-time	63	64	26	43
Part-time	25	30	69	49
On-call	12	5	5	7
TOTAL	100	100	100	100
NOTE: Providers participating in the BJBC project were asked to report DCWs' quarterly employment and termination information during the participation period through the Employee Information System. Data on the number of DCWs and their status were extracted from that system for the 113 providers that responded to the Supervisor Identification Instrument. Providers identified as not reporting any frontline supervisors (n=16 providers) and providers that did not provide DCW data (n=11 providers) were excluded. Workers reported on leave of absence status were excluded. Averages were first calculated for each provider for each status and then averaged by provider type.				

Direct Care Workers per Supervisor

Overall, providers averaged 5.1 full-time and 11.5 total DCWs per supervisor² (Table III.7). However, the mean and median ratios of all DCWs to supervisors -- including full-time, part-time, and on-call DCWs -- differ across provider type. As expected, because of their heavy but varied reliance on part-time workers, home care

² These calculations include supervisors identified as having any role in supervision and do not represent staffing ratios.

has the highest average ratio (17.6), and largest interquartile range (7.8-28.7) of all provider types.

Conclusion

In the long-term care providers in BJBC, many levels in the organizational hierarchy supervised DCWs. Providers identified employees in multiple positions as playing a role in supervision -- from administrative heads to some DCWs themselves. Supervisors also shared many of the supervisory responsibilities. Indeed, most supervisors had some role in all responsibilities except scheduling and conducting on-the-job clinical training.

TABLE III.7. Direct Care Workers per Supervisor				
	Skilled Nursing	Assisted Living	Home Care	All
Full-time workers				
Mean	5.3	5.0	5.0	5.1
Median	3.9	3.1	3.3	3.2
Interquartile range	1.8-7.6	2.0-6.3	0.7-5.9	1.7-7.0
All workers				
Mean	8.3	7.8	17.6	11.5
Median	7.0	5.9	11.9	9.0
Interquartile range	3.1-13.1	4.3-9.6	7.8-28.7	4.2-13.6
Sample size (providers)	28	27	31	86
NOTE: Providers participating in the BJBC project were asked to report DCWs' quarterly employment and termination information during the participation period through the Employee Information System. Data on the number of DCWs and their status were extracted from that system for the 113 providers that responded to the Supervisor Identification Instrument and merged with the Supervisor Identification Instrument data to calculate ratios. Providers identified as not reporting any frontline supervisors (n=16 providers) and providers that did not provide DCW data (n=11 providers) were excluded. The ratio was calculated for each provider and then averaged by provider type.				

Supervision of DCWs also differed across setting, particularly between home care and facility-based settings. Supervision in skilled nursing facilities was similar to that in assisted living facilities, except that supervisors in skilled nursing facilities more often recommended training, initiated discipline, and documented performance problems. Home care providers, however, proved to be quite different from facility-based care providers in the positions supervisors held and the responsibilities they performed. These differences reflect home care's greater reliance on part-time and on-call workers, more complex scheduling requirements, and reliance primarily on telephone rather than in-person communication.

These findings underscore the complexity and challenge of improving supervision of DCWs. The breadth of involvement in supervision and the sharing of responsibilities imply that change must occur at multiple levels in the organization. Consequently, interventions to effect change must target multiple levels as well. Instead of limiting training to immediate supervisors, for example, a more comprehensive effort is needed

to engage all staff involved in supervision. Efforts to improve supervision also may require different approaches across long-term care settings. In home care, in particular, interventions must be adapted to home care's greater specialization of supervisory roles and provision of care in dispersed homes largely without in-person supervision.

IV. SUPERVISOR CHARACTERISTICS AND ASSESSMENTS OF THEIR JOBS

This chapter describes the characteristics and job perceptions of supervisors from the long-term care provider organizations participating in the BJBC demonstration. The analyses used data from the Time 2 survey in the five states (Iowa, North Carolina, Oregon, Pennsylvania, and Vermont).

Characteristics and Qualifications of Supervisors

TABLE IV.1. Demographic Characteristics of Supervisors (percent)				
	Skilled Nursing	Assisted Living	Home Care	All
Female	94	98	97	96
Age				
<25 yrs old	0 ^a	3 ^{h,s}	0 ^a	1
25-34 yrs old	14	16	10	13
35-44 yrs old	26	25	24	25
45-54 yrs old	33	35	31	33
55-64 yrs old	26	18	31	26
65 or older	2	2	4	23
Total	100	100	100	100
Education				
High school or less	11 ^a	29 ^{h,s}	13 ^a	16
Some college	26 ^a	51 ^{h,s}	31 ^a	33
College or graduate	63 ^a	20 ^{h,s}	56 ^a	52
Total	100	100	100	100
Professional background (percent)				
Not a nurse	14 ^{a,h}	78 ^{h,s}	58 ^{a,s}	41
Licensed Practical Nurse	26 ^{a,h}	12 ^s	0 ^s	16
Registered Nurse	28 ^{a,h}	2 ^s	15 ^s	19
Diploma Registered Nurse	16 ^a	1 ^s	11	11
Bachelor of Science in Nursing	11	4	11	9
Master of Science in Nursing	3	1	5	3
Advanced Practice Nurse	2	2	1	2
Total	100	100	100	100
Race/Ethnicity				
White	84 ^a	59 ^{h,s}	85 ^a	79
Black or African American	12 ^a	38 ^{h,s}	12 ^a	18
Hispanic or Latin origin	2	2	2	2
American Indian or Alaska Native	0	0	1	0
Asian	3	1	0	2
Total	100	100	100	100
Maximum sample size	194	88	109	391
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response. Detail may not sum to total due to rounding.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
h = Difference from home care is statistically significant at the 0.05 level.				
s = Difference from skilled nursing facility is statistically significant at the 0.05 level.				

Overall, the majority of supervisors were White women between the ages of 45 and 64 (59 percent) with college or graduate degrees [52 percent (Table IV.1)]. Assisted living facilities tended to have more non-White supervisors than skilled nursing and home care, and tended to rely on less educated workers: only 20 percent had a college or graduate education compared with 63 percent in skilled nursing and 56 percent in home care. Less than half of the sample (41 percent) indicated that they had a professional background other than nursing, with considerable variation by provider type. In skilled nursing facilities, only 14 percent reported a professional affiliation other than nursing, compared with 78 percent in assisted living facilities and 58 percent in home care agencies. Among those who were nurses, the majority were RNs or LPNs, particularly in skilled nursing facilities.

There was a high level of experience among supervisors, with an overall mean of 9.9 years as a supervisor (Table IV.2). Average years as a supervisor were greater than the number of years at the current supervisory position, indicating job movement among supervisors. Over four-fifths indicated that they had worked as a DCW suggesting that DCWs are a resource for recruiting supervisors and that supervisory positions provide opportunities for DCW career advancement.

TABLE IV.2. Employment Characteristics of Supervisors				
Characteristics	Skilled Nursing	Assisted Living	Home Care	All
Tenure (mean years)				
Years as a supervisor	11.6 ^h	8.8	7.6 ^s	9.9
Years at current employer	7.6	6.3 ^h	9.0 ^a	7.7
Years as supervisor at current employer	6.2	5.0	5.5	5.7
Ever worked as direct care worker (percent)	83	85	71	80
Number of direct reports (mean)	26.0 ^{a,h}	12.6 ^{s,h}	42.3 ^{a,s}	27.2
Health insurance (percent)				
Yes, through employer	73	54	57	64
Yes, but not enrolled	24	33	32	28
No	3	13	11	8
Total	100	100	100	100
Hourly wage (mean dollars)	23.1 ^{a,h}	13.3 ^{s,h}	18.5 ^{a,s}	19.9
Maximum sample size	194	88	109	384
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
h = Difference from home care is statistically significant at the 0.05 level.				
s = Difference from skilled nursing facility is statistically significant at the 0.05 level.				

Considerable variation was reported in span of control, defined as the number of DCWs who report to each supervisor. The mean number of DCWs supervised was 27.2. Supervisors in assisted living facilities reported the lowest average number of direct reports (12.6) followed by skilled nursing facilities (26) and home care agencies (42.3). As discussed in Chapter III, home care agencies rely more heavily on part-time

workers so it makes sense that they have more direct reports per supervisor than the other two provider types. The mean of these self-reported numbers are much higher than the ratios we calculated for both full-time and part-time workers using data from the BJBC Employee Information System (see Chapter III), but the variation by provider type is similar. This may be because some supervisors include indirect reports or it may indicate that supervisor hierarchies are different by provider type. For example, DCWs may report to different supervisors for different responsibilities and therefore several supervisors share responsibility for supervising aspects of a given DCW's job.

Health insurance enrollment rates and wages also varied across settings. Supervisors in skilled nursing facilities, where education and professional background were highest, were most likely to be enrolled in health insurance through their employer (73 percent) and had the highest mean hourly wage (\$23.10). Slightly over half of supervisors in the other two provider types were enrolled in employer sponsored health insurance and their mean hourly wage ranged from \$13.30 to \$18.50.

TABLE IV.3. Supervisor Self-Efficacy (percent)				
	Skilled Nursing	Assisted Living	Home Care	All
Learned skills needed¹				
Strongly agree	73	77	71	73
Somewhat agree	22	22	23	22
Disagree	6	1	6	5
Total	100	100	100	100
Confident in ability²				
Strongly agree	77 ^a	92 ^s	83	82
Somewhat agree	17	8	11	13
Disagree	6	0	6	5
Total	100	100	100	100
Maximum sample size	194	86	109	389
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response. Detail may not sum to total due to rounding.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
s = Difference from skilled nursing facility is statistically significant at the 0.05 level.				
1. I have learned the skills necessary to do my job well. "Disagree" combines "Strongly disagree" and "Somewhat disagree" categories.				
2. I am confident in my ability to do my job. "Disagree" combines "Strongly disagree" and "Somewhat disagree" categories.				

Most supervisors reported relatively high self-efficacy (Table IV.3). Overall, 73 percent of supervisors felt they had learned the skills necessary to do their jobs and 82 percent were confident in their ability to do their job. Despite their lower educational levels, supervisors in assisted living facilities expressed the greatest agreement that they had the skills necessary to do their job well and expressed the greatest confidence in their ability to do their job (77 percent and 92 percent, respectively). Overall, just 5 percent of supervisors did not believe they had learned the necessary skills for their job

and were not confident in their ability to do their job, which may be an indicator of training gaps.

Supervisors' Assessments of Their Jobs

Perceptions of job rewards and problems were measured using items adapted from the Job Role Quality Survey (Marshall, Barnett, Baruch, & Pleck, 1991). Four job rewards scales and four job problems scales were developed from these items:

Job rewards scales:

- helping others,
- challenge,
- decision authority,
- recognition.

Job problems scales:

- overload,
- dead-end job,
- hazard exposure,
- poor supervision.

TABLE IV.4. Supervisor Perceptions of Job Rewards and Problems (mean scale scores)				
	Skilled Nursing	Assisted Living	Home Care	All
Job rewards				
Helping others	2.46	2.52	2.51	2.49
Challenge	2.30	2.33	2.28	2.30
Decision authority	2.27	2.33	2.42	2.33
Recognition	2.38	2.42	2.46	2.41
Income (single item)	1.48	1.09	1.27	1.33
Job problems				
Overload	1.16 ^{a,h}	0.81 ^s	0.85 ^s	0.99
Dead end job	0.50	0.61	0.50	0.52
Hazard exposure	0.56	0.59	0.38	0.51
Poor supervision	0.71 ^h	0.63	0.49 ^s	0.63
Maximum sample size	194	88	109	391
NOTE: Response categories range from 0 to 3. For an explanation of the scales see Appendix E. Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
h = Difference from home care is statistically significant at the 0.05 level.				
s = Difference from skilled nursing facility is statistically significant at the .05 level.				

Response categories for job rewards scales range from not at all rewarding (0) to extremely rewarding (3). Response categories for job problems scales range from not at all a problem (0) to an extremely big problem (3). Item descriptions, response scales, and reliabilities are reported in Appendix E.

The job rewards scales show very high levels of reward with little difference across provider type (Table IV.4). As was the case with the DCWs from a baseline survey in these provider organizations, the supervisors reported the most rewarding part of their job to be helping others and the least rewarding part to be the income they earn (Brannon, et al., 2007).

The overall means of the job problems scales were relatively low, with work overload being rated the most problematic with a mean of 0.99 (somewhat of a problem). Supervisors in skilled nursing facilities reported higher levels of overload than those in either assisted living facilities or home care. Poor supervision was rated as the second highest job problem in skilled nursing facilities and assisted living facilities and the third highest in home care. Home care supervisors reported hazard exposure to be less of a problem than supervisors in the other two provider types.

TABLE IV.5. Supervisor Job Satisfaction and Intent to Quit (percent)				
	Skilled Nursing	Assisted Living	Home Care	All
Job satisfaction ¹				
Extremely satisfied	39	38	44	40
Somewhat satisfied	51	55	52	52
Dissatisfied	11	7	5	8
Total	100	100	100	100
Thinks about quitting ²				
Never	20	16	22	20
Rarely	31	41	35	34
Some of the time	39	33	39	38
All the time	11	11	4	9
Total	100	100	100	100
Intent to leave ³				
Not at all likely	66	66	69	66
Somewhat likely	29	26	26	27
Very likely	6	8	6	6
Total	100	100	100	100
Maximum sample size	192	86	108	384
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response. Detail may not sum to total due to rounding.				
1. Overall, how satisfied are you with your job? "Dissatisfied" combines "extremely" and "somewhat" dissatisfied categories.				
2. How often do you think about quitting?				
3. How likely is it that you will leave this job in the next year?				

There was little difference across provider types in job satisfaction and intent to leave items (Table IV.5). Overall, supervisors were somewhat or extremely satisfied with their jobs (92 percent).

Although nearly half thought about quitting some or all of the time, only 6 percent said they were very likely and 27 percent said they were somewhat likely to leave in the next year. Home care supervisors reported slightly higher levels of job satisfaction and lower levels of intention to quit.

Overall, half of supervisors strongly agreed that they had job alternatives (Table IV.6). Supervisors in assisted living were most likely to agree that they had job alternatives (91 percent), and supervisors in home care were least likely to agree (77 percent).

TABLE IV.6. Supervisors' Assessment of Job Alternatives (percent)				
	Skilled Nursing	Assisted Living	Home Care	All
Perception of job alternatives ¹				
Strongly agree	46	58	50	50
Somewhat agree	38	33	27	34
Somewhat disagree	10	6 ^h	17 ^a	11
Strongly disagree	6	4	7	5
Total	100	100	100	100
Maximum sample size	193	87	109	389
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response. Detail may not sum to total due to rounding.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
h = Difference from home care is statistically significant at the 0.05 level.				
1. I could get a job that paid more than this job.				

Almost all supervisors reported that they would definitely or probably recommend getting care from the place where they work (Table IV.7). Home care supervisors were more likely than the other provider types to report that they would definitely recommend the care provided by their agency (85 percent), and assisted living supervisors were more likely to report that they would not (8 percent).

Although smaller than the proportion that would recommend the employer as a place to receive care, a majority of supervisors would definitely recommend taking a DCW job at the place where they work [55 percent (Table IV.7)]. The provider type differences followed a similar pattern to recommending care.

TABLE IV.7. Supervisors' Willingness to Recommend the Place Where They Work (percent)				
	Skilled Nursing	Assisted Living	Home Care	All
Recommend care¹				
Definitely recommend	67 ^h	64 ^h	85 ^{s,a}	71
Probably recommend	28 ^h	28	14 ^s	24
Not recommend	5	8 ^h	1 ^a	4
Total	100	100	100	100
Recommend job²				
Definitely recommend	55	46	60	55
Probably recommend	37	42	38	38
Not recommend	8	12 ^a	2 ^h	7
Total	100	100	100	100
Maximum sample size	192	86	107	385
NOTE: Three hundred and ninety-one supervisors from 100 providers responded to the Time 2 survey. Sample size varies due to item non-response. Detail may not sum to total due to rounding.				
a = Difference from assisted living facility is statistically significant at the 0.05 level.				
h = Difference from home care is statistically significant at the 0.05 level.				
s = Difference from skilled nursing facility is statistically significant at the 0.05 level.				
1. If a friend or family member needs care and asked about getting care from the place you work, would you? "Not recommend it" combines "Definitely" and "Probably" not recommend categories.				
2. If you were asked for your advice about taking job as a DCW at the place you work, would you? "Not recommend it" combines "Definitely" and "Probably not recommend" categories.				

Conclusion

The supervisors in our sample reported relatively high levels of education and clinical training, and they felt confident in their ability to do their jobs. This was most apparent in skilled nursing facilities where wages, income reward, and health insurance enrollment were also greatest. The opposite is true in assisted living facilities where supervisors have the least education and clinical training and have the lowest wage, income reward, and health insurance enrollment. Many supervisors started as DCWs and then advanced to supervisory positions indicating that there is room for advancement for DCWs.

Supervisors reported a high level of satisfaction with their jobs and found many aspects of the job rewarding. Overload and poor supervision were the most identified job problems, especially in skilled nursing facilities where supervisors were somewhat less satisfied with their jobs than supervisors in the other two provider types. A substantial minority of supervisors (33 percent) were somewhat or very likely to quit within the next 12 months.

These differences across provider types may be directly related to the acuity of residents or clients or to the organizational structural setting in which care is managed. Understanding supervision in long-term care requires accounting for possible

differences across clients and organizations as well as across provider types. Given that 96 percent of supervisors in the sample were female, additional research that explores the factors influencing women in management may be warranted.

V. SUPERVISORS' AND MANAGERS' PERCEPTIONS OF MANAGEMENT PRACTICES, COMMITMENT TO BJBC, AND READINESS FOR CHANGE

Supervisors of direct care staff play a key role in the effective implementation and acceptance of organizational change efforts. Greater consensus among supervisors and top level managers about the nature and scope of change efforts is related to better implementation efforts. The BJBC demonstration involved the introduction of a number of change initiatives in management practices and training (Kemper, et al., 2008a). In this chapter, we describe the perceptions of the supervisors surveyed regarding management practices that impact DCWs, their organization's commitment to BJBC implementation, and the organization's readiness for change. A goal of the study of the demonstration was the assessment of the degree of consensus among supervisors and clinical managers regarding these practices and processes.

To assess the level of agreement in perspective between clinical managers and supervisors, we surveyed each regarding their perceptions of management practices, commitment to BJBC, and organizational readiness for change. First we describe the total supervisor sample's mean perceptions and examine differences by provider type. We then compare the mean perceptions of the supervisor sample with the corresponding sample of clinical managers, weighting to account for varying numbers of supervisors in provider organizations.

In addition, two rater consensus issues are addressed in this analysis: (1) To what extent do supervisors within organizations agree in terms of their perceptions of the use of all the measured management practices and those practices most related to the supervisors themselves; and (2) Are there discrepancies between top clinical managers and supervisors in their rating of management practices and if so, in what direction are the differences? We created an agreement coefficient to describe agreement among supervisors within organizations. We assessed the level of agreement between the clinical manager and each of the responding supervisors on each scale by comparing the clinical manager's perception with the average supervisor perception in the organization and by constructing an organizational level discrepancy index (see below). Additionally, we examined the Time 1 and Time 2 panel sample in North Carolina to assess whether there were any changes in these perceptions during the BJBC demonstration of the panel of supervisors surveyed in North Carolina and how these changes compared to those observed in the Clinical Manager Survey.

Supervisor Perceptions of Management Practices and Processes

Estimation Methods

We used five scales that reported use of management practices, one that indicated commitment to BJBC implementation and another that assessed organizational readiness for change in both the Clinical Manager and Supervisor Surveys. We asked supervisors how frequently the five management practices listed in Table V.1 were executed in their organization. We also asked for their assessment of management's commitment to BJBC and the organization's readiness for change. Means for the entire sample and provider type were computed; differences between provider types were assessed using one-way analysis of variance. (Scale response categories and reliabilities using Cronbach's alpha are reported in Appendix F.)

Findings

Overall, supervisors reported that the management practices were used between "occasionally=2" and "frequently=3." The exception was that DCW training beyond that which is required was reported as between "seldom=1" and "occasionally=2." This low assessment of training frequency held for all three provider types. Among the five management practice categories, "communication about tasks" was the most frequently reported. Supervisors' perceptions regarding organizational leaders' commitment to BJBC implementation and readiness for change averaged 2.79 and 2.41, respectively, out of the range of 0 (strongly disagree) to 4 (strongly agree) (Table V.1).

TABLE V.1. Supervisors' Perceptions of Management Practices, Commitment to BJBC, and Readiness for Change (mean scale scores)				
	Skilled Nursing	Assisted Living	Home Care	All
Management practices				
Direct care worker participation in care planning	2.44	2.37	2.49	2.44
Communication about tasks	2.94 ^{a,h}	3.21 ^{s,h}	2.52 ^{s,a}	2.87
Feedback	2.11 ^h	2.10 ^h	2.44 ^{s,h}	2.21
Direct care worker training	1.55	1.62	1.80	1.64
Management communication	1.76 ^{a,h}	2.26 ^s	2.24 ^s	2.02
Commitment to BJBC	2.74	2.65	2.95	2.79
Readiness for change	2.27 ^h	2.49	2.58 ^s	2.41
Maximum sample size (supervisors)	147	63	94	304
NOTES: Supervisors at providers that did not participate in both the Supervisor and Clinical Manager Survey were excluded (n=38). Supervisors who also completed the Clinical Manager Survey were excluded (n=49). The final common sample consists of 308 supervisors from 84 providers. Sample size varies due to item non-response. Response categories range from 0 to 4. For an explanation of the scales see Appendix F. a = Difference from assisted living facility is statistically significant at the 0.05 level. h = Difference from home care is statistically significant at the 0.05 level. s = Difference from skilled nursing facility is statistically significant at the 0.05 level.				

There were some significant differences across provider types on supervisors' ratings of management practices, commitment to BJBC, and readiness for change. Supervisors in assisted living facilities had the highest mean score on communication about tasks, while those in home care agencies had the lowest. Feedback, in contrast, was rated highest in home care. Supervisors in skilled nursing facilities reported significantly less management communication than the other settings. For each of the other scales, home care supervisors tended to give more positive ratings on average than those in either skilled nursing or assisted living facilities, though the differences are not significant. The only significant exception is the 2.58 home care mean compared with the lower 2.27 skilled nursing facility mean on readiness for change.

Comparison of Clinical Manager and Supervisor Samples: Mean Perceptions of Management Practices and Processes

Estimation Methods

We compared how similar the sampled clinical managers and supervisors were in their perceptions of how often these management practices and processes are executed. Table V.2 shows these comparisons of means weighted to account for variation in the number of supervisors across provider organizations. Scale means for both clinical managers and supervisors in each provider type and for the entire comparison sample are shown with significant contrasts indicated. Comparisons were made using independent sample t-tests and two-way analysis of variance to assess both main and interaction effects.

Findings

Overall, clinical managers report more positive perceptions than supervisors, and several of these differences are significant. Clinical managers are significantly more positive than supervisors with regard to DCW participation in care planning, DCW training, management communication, and organizational readiness for change (Table V.2).

Within the skilled nursing facility provider type category, clinical managers reported more positive perceptions than did supervisors on four out of five management practices (DCW participation in care planning, feedback, DCW training, and management communication) and on management's commitment to BJBC and readiness for change.

TABLE V.2. Comparison of Supervisors' and Clinical Managers' Perceptions of Management Practices, Commitment to BJBC, and Readiness for Change (weighted mean scale scores)

	Skilled Nursing			Assisted Living			Home Care			All		
	Sup	CM	Δ	Sup	CM	Δ	Sup	CM	Δ	Sup	CM	Δ
Management practices												
Direct care worker participation in care planning	2.44	2.77	-0.33	2.47	2.79	-0.31	2.44	2.62	-0.17	2.45	2.72	-0.27
Communication about tasks	2.95	2.95	0.00	3.28	3.38	-0.10	2.64	2.73	-0.08	2.93	2.98	-0.05
Feedback	2.12	2.38	-0.25	2.01	2.36	-0.35	2.38	2.38	0.00	2.18	2.37	-0.19
Direct care worker training	1.50	2.05	-0.55**	1.57	2.04	-0.47	1.84	1.99	-0.15	1.64	2.03	-0.38**
Management communication	1.83	2.39	-0.56*	2.21	2.83	-0.62*	2.12	2.38	-0.26	2.03	2.50	-0.47**
Commitment to BJBC	2.66	2.75	-0.09	2.68	2.93	-0.25	2.87	2.85	-0.01	2.74	2.83	-0.09
Readiness for change	2.30	2.77	-0.47**	2.44	2.88	-0.44*	2.58	2.64	-0.06	2.44	2.75	-0.31**
Sample size (provider)	32	32		22	22		30	30		84	84	
<p>NOTE: We used the weighted means by number of supervisors per provider only if the item has no missing values. To identify group differences, we used independent sample t-tests across all provider types and within provider types. Response categories range from 0 to 4. For an explanation of the scales see Appendix F.</p> <p>*p<.05; **p<.01</p>												

The differences in DCW training, management communication, and readiness for change were significant. Within the assisted living facility provider type, supervisor means were lower on all the scales: significantly lower on the management communication and the readiness for change scales. In home care samples, the differences between clinical managers and supervisors were smaller and not significant. Provider type by group (supervisor vs. clinical manager) interaction effects were observed in management communication and commitment to BJBC. Accordingly, while difference between supervisors' and clinical managers' ratings of management communication for the overall sample is significant, the effect is not spread evenly across provider types. The gap in perceptions of management communication practices was considerably smaller in home care (-0.26) compared with assisted living facility (-0.62) and skilled nursing facility (-0.56). With regard to commitment to BJBC implementation, while there was no significant difference between the overall samples of supervisors and clinical managers, the gap between assisted living clinical managers and supervisors was greater than in the skilled nursing and home care samples. Skilled nursing facility and home care supervisors and clinical managers, on average, were similar in their assessment of their organization's commitment to BJBC, with differences of only -0.09 and -0.01, respectively. In assisted living, however, the difference score was larger (-0.25). Again, in each case, the clinical managers' ratings were higher at the mean than those of the supervisors.

Agreement Among Supervisors Within Provider Organizations

Estimation Methods

In contrast with the previous sections analyzing the entire samples of clinical managers and supervisors, we now characterize the degree of agreement *within* provider organizations. Here agreement or consistency within organizations is the focus rather than the assessment of the direction of differences.

Supervisory agreement represents the degree to which a group of supervisors at a single organization concurs with one another with respect to single measures of management practices or across multiple measures or scales. It is measured as an agreement coefficient, an index that represents the level of agreement across all possible pairings of supervisors within a single provider organization (Gwet, 2001).

Agreement coefficients were calculated for every facility where there were two or more respondents to the Supervisor Survey. Among 100 facilities that participated in the survey, 24 had one participating supervisor, 32 had two supervisors, and 45 had three or more supervisors. Of the 77 facilities with two or more supervisors, data were available at 71 to calculate agreement coefficients for the following seven scales:

- DCW participation in care planning;
- Communication about tasks;
- Feedback;

- DCW training;
- Management communications;
- Commitment to the BJBC intervention;
- Organizational readiness for change.

In addition, we calculated agreement indices for two groupings of the scales:

- An aggregation of all seven scales; and
- An aggregation of the four management practice scales directly pertinent to supervisors (DCW participation in care planning, communication about tasks, feedback, and DCW training).

We did the two aggregations to examine whether those scales most directly relevant to and influenced by the frontline supervisors themselves would show differential levels of agreement in comparison with the total set of scales.

Each of the seven scales represents the mean of two or more survey items and is represented by a continuum of values ranging from 0 to 4 (low to high). Because these scores represent an infinite number of means, response values were re-coded into one of five categories: 0-0.5, 0.51-1.5, 1.51-2.5, 2.51-3.5, and 3.51-4.0. For each provider organization, frequency tabulations of these categories were carried out for each of the seven scales as well as for the two aggregations of scales (all scales and supervisory scales).

Organizational level agreement coefficients were then calculated for each of the seven scales and two scale aggregations. The agreement coefficient can take on a value in the range of 0 (total disagreement among raters) to 1 (total agreement among raters). Organizations with only two raters are a special case in that there are only two possible values for the agreement index: either both respondents agree (1) or they both disagree (0). Thus, for single scales the variability of the agreement coefficient reflects in part the presence of a substantial number of two-respondent facilities.

Findings

Table V.3 summarizes the level of supervisory agreement across scales and facility types. Overall agreement (i.e., across all scales) was relatively low (0.21). Assisted living facilities showed lower agreement levels than either skilled nursing or home care. Similarly, agreement about the aggregation of supervisor-relevant scales (DCW participation in care planning, communication about tasks, feedback and DCW training) showed the same relatively low levels of agreement overall (0.22). On the supervisor-relevant group of scales, assisted living facilities exhibited lower agreement levels among supervisors than those in skilled nursing or home care facilities.

Among single management practice dimensions, the highest mean levels of agreement were seen on communication about tasks (0.36) and feedback (0.32). Relative to overall agreement and agreement about management practices, higher

levels of supervisor agreement also were observed for organizational readiness for change (0.31) and commitment to the BJBC intervention (0.34).

Scale	Provider Type			All
	Skilled Nursing	Assisted Living	Home Care	
Supervisor-relevant management practices scales	0.23	0.09	0.30	0.22
Direct care worker participation in care planning	0.13	0.12	0.36	0.21
Communication about tasks	0.30	0.30	0.47	0.36
Feedback	0.40	0.10	0.38	0.32
Direct care worker training	0.32	0.05	0.24	0.23
Management communication	0.17	0.07	0.30	0.20
Commitment to BJBC	0.31	0.24	0.44	0.34
Organizational readiness for change	0.27	0.28	0.39	0.31
All scales	0.21	0.09	0.29	0.21
Maximum sample size (providers)	30	16	25	71
NOTE: None of the differences between provider types were statistically significant. The values of the agreement coefficient range from 0 (no agreement among supervisors) to 1 (complete agreement among supervisors). For an explanation of agreement coefficients, see text. We calculated agreement coefficients at the provider level. Providers that have only one supervisor were excluded. Sample size varies due to item non-response.				

Measuring Agreement Between Clinical Managers and Supervisors Within Provider Organizations

Estimation Methods

To assess the level of agreement about management practices, commitment to BJBC, and organizational readiness for change, we created for each measure a discrepancy index that represents the total or absolute amount of difference between supervisors and their clinical manager within each organization. In the present application it can range between 0 (indicating total agreement between the clinical manager and all supervisors) and 4 (indicating total disagreement between the clinical manager and all supervisors).

The sample for this analysis was 354 supervisors and 84 clinical managers from 84 long-term care providers for whom we had both sets of responses. At each provider there was one clinical manager who, on average, was responsible for 3.7 supervisors. The number of responding supervisors at each facility ranged from 1 to 20.

Findings

Table V.4 presents the findings on supervisor/clinical manager agreement. The table reports a mean provider-level discrepancy index for each of the seven management practice scales. In separate analyses not shown, we confirmed that as Table V.2 reports for the total sample comparisons, clinical managers rated the scales higher than the supervisors within the same organization.

The mean discrepancy index across all provider types ranged from 0.72 to 1.11 on the scales. Since potential index values range from 0 (complete agreement) to 4 (complete disagreement), this value suggests relatively good agreement in general between supervisors and their managers. Across all types of providers the lowest levels of discrepancy (i.e., higher levels of agreement) were observed for communication about tasks (0.72) and organizational readiness for change (0.78). Greater discrepancies were evident for DCW participation in care planning (1.00), DCW training (1.00), and management communication (1.11).

TABLE V.4. Measures of Agreement Between Clinical Managers and Supervisors				
Scale	Mean Discrepancy Index			
	Skilled Nursing	Assisted Living	Home Care	All
Management practices scales				
Direct care worker participation in care planning	1.13	0.88	0.93	1.00
Communication about tasks	0.79	0.61	0.73	0.72
Feedback	0.97	1.00	0.72	0.88
Direct care worker training	0.96	1.15	0.92	1.00
Management communication	1.22	1.27	0.87	1.11
Commitment to BJBC	1.03	0.98	0.90	0.97
Organizational readiness for change	0.91	0.79	0.63	0.78
All scales	1.00	0.95	0.81	0.92
Maximum sample size (providers)	32	22	30	84
NOTE: None of the differences between provider types were statistically significant. The values of the discrepancy index may range from 0 (complete agreement between the clinical manager and subordinates) to 4 (complete disagreement between the clinical manager and supervisors). For an explanation of the discrepancy index, see text. We calculated a discrepancy index at the provider level.				

Comparisons between provider types indicated that in general skilled nursing, assisted living, and home care facilities were similar to one another with regard to clinical manager/supervisor agreement levels on the various management practice scales. Across all seven management practices, home care agencies showed slightly lower discrepancy scores (0.81) than skilled nursing (1.00) or assisted living facilities (0.95), but this difference was not statistically significant. Differences between provider types were not statistically significant for DCW participation in care planning, communication about tasks, feedback, DCW training, and commitment to BJBC. Home care agencies differed from their counterparts on two scales: They showed lower

discrepancies between the frontline supervisors and the clinical manager than did assisted living facilities on management communications and organizational readiness for change.

Changes in Clinical Managers' and Supervisors' Perceptions in the North Carolina Panel Sample

Estimation Methods

Using the panel sample of supervisors and matched clinical managers, we compared supervisors' and clinical managers' perceptions of management practices, commitment to BJBC, and readiness for change before and after the intervention. Data were available for 71 supervisors and 29 clinical managers in the North Carolina sample. We used paired t-tests to identify the mean differences in both supervisors' and clinical managers' perceptions about their organizations' management practices, commitment to BJBC, and readiness for change. These same paired t-tests were repeated within each provider type: skilled nursing, assisted living, and home care (results not shown). We also conducted independent t-tests to see whether the changes in supervisors' perceptions are different from changes in clinical managers' perceptions.

Findings

As Table V.5 shows, the supervisors surveyed at both measurement events in North Carolina showed little change in perceptions of management practices, readiness for change, or commitment to BJBC. The largest, though not significant change, was in the extent of training for DCWs. The questions asked respondents to estimate (within categories 0-4) the percent of DCWs who received training beyond that required for certification and whether it covered specific topics such as communication and cultural awareness skills. A large increase in home care (0.74) accounted for most of sample increase in this scale, with skilled nursing facilities at 0.22 and assisted living facilities at -0.01 (data not shown). Clinical managers also perceived a significant increase (0.48) in "DCW training" during the intervention period. Commitment to BJBC decreased from 2.61 to 2.44.

Overall, supervisors and clinical managers both report positive changes in management practices, commitment to BJBC, and readiness for change, though the magnitude of changes was small and not significant, with the single exception of clinical managers' perception in DCW training. That none of the difference-in-differences comparisons was significant suggests that perceptions of change between clinical managers and supervisors were similar within this panel in 29 provider organizations in North Carolina.

TABLE V.5. Changes in Management Practices, Readiness for Change, and Commitment to BJBC in North Carolina Panel (weighted mean)							
Items	Supervisors			Clinical Managers			Difference-in-Differences Between Supervisors and Clinical Managers
	Sup	CM	Δ	Sup	CM	Δ	
Management Practices							
Direct care worker participation in care planning	2.56	2.56	0.00	2.74	2.60	0.14	-0.14
Communication about tasks	2.93	2.99	-0.05	2.97	2.91	0.06	-0.11
Feedback	2.69	2.60	0.09	2.45	2.29	0.16	-0.07
Direct care worker training	2.14	1.79	0.33	1.97	1.50	0.48*	-0.15
Management communication	2.27	2.19	0.08	2.81	2.70	0.11	-0.03
Commitment to BJBC	2.90	2.98	-0.07	2.44	2.61	-0.17	0.10
Readiness for change	2.66	2.47	0.19	2.68	2.31	0.37	-0.19
Maximum sample size							
Provider			29			29	29
Supervisor/Clinical Manager			71			29	100
<p>NOTES: We used a common sample of 29 providers to compare supervisors' and clinical managers' changes in perceptions about management practices, readiness for change, and commitment to BJBC. Since the number of supervisors varied by organization, we weighted the number of supervisors per provider only for the valid cases (i.e., items without missing values). We tested the mean differences for supervisors between baseline and follow-up, mean differences for clinical managers between baseline and follow-up, and mean difference-in-differences between supervisors and clinical managers. Item responses range from 0 to 4. For an explanation of the scales see Appendix F.</p>							
*p<0.05.							

Implications

The analyses reported here were designed to understand differences in perceptions between top clinical managers and those who provide supervision to DCWs. We pursued this approach in order to examine the extent to which discrepancies among managerial staff might make organizational change more difficult to implement. If, for example, top managers reflect enthusiasm for change programs that middle level managers are either unaware or skeptical of, it stands to reason that no one with direct access to the frontline workers is actually championing the desired change. Thus implementation will be short-circuited and lasting change may require other interventions.

In general, clinical managers in this study were found to have a more positive outlook on managerial practices than supervisors. It is not uncommon for individuals at different levels in a hierarchy to have different views. As middle managers, supervisors likely see more problems with changing the work of DCWs because they are closer to that work than are the clinical managers. Conversely, the clinical managers are more likely to be attentive to how the organization is viewed outside its boundaries and bear a particular pride in being part of the BJBC demonstration. This tendency could have resulted in a social desirability bias in response to survey items.

While it was generally true that clinical managers were more positive about management practices and process, there were some exceptions. In comparing perceptions of management communication and commitment to the BJBC project implementation, the difference between the top clinical manager and the supervisors was dependent on type of provider organization. Despite its geographically dispersed

delivery mode, the gap in home care perceptions of management communication was considerably less than in the other settings. The gap in perception regarding commitment to BJBC was much greater in assisted living facilities than in other provider types. The findings suggest that organizational structure or work context may influence the relative perceptions of both clinical managers and supervisors. Future analyses should examine whether these differences among provider types in levels of agreement are influenced by other factors such as the clusters of supervisory responsibilities or demographic characteristics of supervisors and/or the professional standing of clinical managers.

The effects of an organizational intervention are more likely to be noticeable and positive if there is unity or cohesiveness among supervisors who are often responsible for disseminating and carrying out the practical aspects of the intervention. Agreement among supervisors in the provider organizations participating in the BJBC intervention tended to be somewhat low. Supervisor agreement levels were found to vary across management practices as well as across facility types; in general, assisted living facilities tended to be characterized by lower levels of supervisor agreement than skilled nursing or home care facilities. This may be a reflection of the relatively less formal and regulated organizational structure of assisted living facilities in the context of three distinct work shifts in which work is supervised and carried out 24 hours each day. The assisted living supervisors also are less tenured in their jobs and are less likely to be nurses, both of which may affect agreement levels within the work place. Examining the role that variation in supervisors' responsibilities and demographics plays in their shared or divergent perceptions will be the subject of future analysis.

Finally, it should be noted that while the clinical managers and supervisors were asked the same questions about the management practices and processes related to BJBC, the surveys were not identical. The Supervisor Survey combined sections of the Direct Care Worker and Clinical Manager Surveys and this may have introduced some systematic differences in the two samples' responses.

"Buy-in" by supervisors is an important issue in the successful implementation of organizational change. To the extent that supervisors and managers agree on implementation features, the intervention will face fewer hurdles. The comparison of clinical managers and supervisors suggests that agreement is somewhat differential, varying by management practice or process scale.

The analysis of change in management practices and processes comparing the North Carolina clinical manager and supervisor panels suggests, however, that little change was noted by either group. The one exception was in an increase in DCW training, reported by both clinical managers and supervisors. This increase reportedly was related to policy changes in the state's Personal Care Services Program that resulted in major restructuring of training requirements for DCWs providing designated care levels. It is likely that the pace of implementation of organization changes in North Carolina related to BJBC simply precluded capturing any related perceived changes in practices. Deliberately slowed by an iterative coalition-based process of developing a

voluntary special license designation recognizing providers who are provide excellent workplaces, the implementation stage began much later than in the other states.

The fact that the two samples agreed about the lack of change where we have reason to believe it had not yet happened and agreed within home care when a pervasive change did occur, provides some evidence of validity of the measurement approach. Future analyses should assess the role of these types of agreement in perceptions on management practices in the BJBC providers. Future research also should investigate whether levels of agreement among supervisors and between supervisors and their clinical managers were a factor in implementing management changes in the BJBC organizations.

REFERENCES

- Beer, M., & Walton, A.E. (1987). "Organization change and development." *Annual Review of Psychology*, 38, 339-367.
- Brannon, D., Barry, T., Kemper, P., Schreiner, A., & Vasey, J. (2007). "Job perceptions and intent to leave among direct care workers: Evidence from the Better Jobs Better Care Demonstrations." *Gerontologist*, 47(6), 820-829.
- Brannon, D., Cohn, M., Smyer, M., Rovine, M., & Downs, M. (1993). *Moderating Effects of Individual and Organizational Factors on Training Effects with Nurse Aides*. Paper presented at the 46th Annual Scientific Meeting of the Gerontological Society of America, New Orleans, LA.
- Brannon, D., & Dansky, K.H. (2001). "Bureaucratic control mechanisms and the implementation of quality improvement programmes in home health agencies." *International Journal of Healthcare Technology and Management*, 3(2/3/4), 274-278.
- Burgio, L.D., & Stevens, A.B. (1998). "Behavioral interventions and motivational systems in the nursing home." *Annual Review of Gerontology and Geriatrics*, 18, 284-320.
- Corazzini-Gomez, K., Anderson, R., & McDaniel, R. (2002). *Quality of Care and Nurse Aide Participation in Decision Making About Resident Care*. Paper presented at the 55th Annual Scientific Meeting of the Gerontological Society of America, Washington, DC.
- Deutschman, M. (2001). "Interventions to nurture excellence in the nursing home culture." *Journal of Gerontological Nursing*, 27(8), 37-43.
- Eaton, S. (2001). "What a difference management makes! Nursing staff turnover variation within a single labor market." In Abt Associates, *Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes*, (Chapter 5, Phase II Final Report). Cambridge, MA.
- Flynn, L., & Deatrck, J.A. (2003). "Home care nurse's descriptions of important agency attributes." *Journal of Nursing Scholarship*, 35, 385-390.
- Forbes-Thompson, S., Byron Gajewski, B., Scott-Cawiezell, J., & Dunton, N. (2006). "An exploration of nursing home organizational processes." *Western Journal of Nursing Research*, 28, 935-954.
- Gwet, K. (2001). *Handbook of Inter-Rater Reliability*. Gaithersburg, MD: STATAXIS Publishing Co.

- Harris-Kojetin, L., Lipson, D., Fielding, J., Keifer, K., & Stone, R. I. (2004). *Recent Findings on Frontline Long-Term Care Workers: A Research Synthesis 1999-2003*. Retrieved May 29, 2008 from <http://aspe.hhs.gov/daltcp/reports/insight.htm>.
- Heier, B., Brannon, D., & Kemper, P. (2008). *Frontline Supervisor Survey Data Collection Report*. Available from <http://aspe.hhs.gov/daltcp/reports/2008/FSSdata.htm>.
- Hollinger-Smith, L., & Ortigara, A. (2004). "Changing culture: Creating a long-term impact for a quality long-term care workforce." *Alzheimer's Care Quarterly*, 5(1), 52-62.
- Kemper, P., Brannon, D., Barry, T., Stott, A., & Heier, B. (2008a). "Implementation of the Better Jobs Better Care Demonstration: Lessons for long term care workforce initiatives." *Gerontologist*, 48(1), 26-35.
- Kemper, P., Heier, B., Barry, T., Brannon, D., Angelelli, J. Vasey, J., & Anderson-Knott, M. (2008b). "What do direct care workers say would improve their jobs? Differences across settings." *Gerontologist*, 48(1), 17-25.
- Leon, J., Marainen, J., & Marcotte, J. (2001). *Pennsylvania's Frontline Workers in Long-Term Care: The Provider Organization Perspective*. Jenkintown, PA: Polisher Geriatric Institute at the Philadelphia Geriatric Center.
- Marshall, N., Barnett, R., Baruch, G., & Pleck, J. (1991). "More than a job: Women and stress in caregiving occupations." *Current Research on Occupations and Professions*, 6, 61-81.
- Pappas, J.M., Flaherty, K.E., & Wooldridge, W. (2004). "Tapping into hospital champions-strategic middle managers." *Health Care Management Review*, 29(1), 8-16.
- Pappas, J. M., & Wooldridge, B. (2007). "Middle managers' divergent strategic activity: An investigation of multiple measures of network centrality." *Journal of Management Studies*, 44(3), 323-341.
- Schur, D., Noelker, L.S., Looman, W.J., Whitlatch, C.J., & Ejaz, F.A. (1998). "4 steps to more committed nursing assistants." *Balance*, 2(1), 29-32.
- Spratley, E., Johnson, A., Sochalski, J., Fritz, M., & Spencer, W. (2000). *The Registered Nurse Population*. Rockville, MD: Health Resources and Services Administration.
- Stone, R., Reinhard, S., Bowers, B., Zimmerman, D., Phillips, C., Hawes, C. et al. (2002). *Evaluation of the Wellspring Model for Improving Nursing Home Quality*. The Commonwealth Fund. Retrieved on May 29, 2008 from <http://www.directcareclearinghouse.org/download/wellspring.pdf>.

Van Breukelen, W., Schyns, B., & Le Blanc, P. (2006). "Leader-member exchange theory and research: accomplishments and future challenges." *Leadership*, 2(3), 295-316.

Wilson, R., Eaton, S., & Kamanu, A. (2002). *Extended Care Career Ladder Initiative (ECCLI) Round 2: Evaluation Report*. Prepared for the Commonwealth Corporation by Weiner Center for Social Policy, Kennedy School of Government, Harvard University and Mauricio Gaston Institute, University of Massachusetts Boston.

Yeatts, D., Cready, C., Ray, B., DeWitt, A., & Quenn, C. (2004). "Self-managed work teams in nursing homes: Implementing and empowering nurse aide teams." *Gerontologist*, 44, 256-261.