

# A Facility Specialist Model for Improving Retention of Nursing Home Staff: Results From a Randomized, Controlled Study

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**Purpose:** This article reports on a randomized, controlled intervention study designed to reduce employee turnover by creating a retention specialist position in nursing homes. **Design and Methods:** We collected data three times over a 1-year period in 30 nursing homes, sampled in stratified random manner from facilities in New York State and Connecticut and randomly assigned to treatment and control conditions. Staff outcomes were measured through certified nursing assistant interviews, and turnover rates were measured over the course of the year. In the intervention condition, a staff member was selected to be the facility retention specialist, who would advocate for and implement programs to improve staff retention and commitment throughout the facility. Retention specialists received an intensive 3-day training in retention leadership and in a number of evidence-based retention programs. Ongoing support was provided throughout the project. **Results:** Treatment facilities experienced significant declines in turnover rates compared to control facilities. As predicted, we found

positive effects on certified nursing assistant assessments of the quality of retention efforts and of care provided in the facility; we did not find effects for job satisfaction or stress. **Implications:** The study provides evidence for the effectiveness of the retention specialist model. Findings from a detailed process evaluation suggest modifications of the program that may increase program effects.

*Key Words:* Long-term care, Staff retention, Employee turnover, Certified nursing assistants, Nurses

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## Background and Need for the Intervention

Employee turnover has long been a serious problem for nursing homes, leading to an extensive literature on the topic (Castle, 2006; Cohen-Mansfield, 1997a). Estimates of turnover among nursing home staff are quite high, with annual certified nursing assistant (CNA) turnover estimated at nearly 100%, nursing turnover at more than 50%, and overall staff turnover at close to 70% (Harrington et al., 2000). The high level of turnover among CNAs is particularly troubling because these workers provide most of the essential daily care for nursing home residents. Furthermore, both nursing home staff and residents report that CNA turnover negatively affects the quality of care (Bowers, Esmond, & Jacobson, 2003). From a policy perspective, high rates of turnover in nursing homes among all staff are becoming increasingly problematic as growing numbers of Americans depend on nursing homes for both their own care and that of family members.

There is therefore a pressing need for innovative employee retention programs that relieve long-term care staffing problems, are evidence-based, and are cost-effective. The intervention research project described in this article addressed these issues by

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conducting a randomized, controlled evaluation study of a promising model to improve retention of CNAs in nursing homes. Specifically, this evaluation tested the effects of training a retention specialist (RS) in a nursing home who has both the expertise and the ongoing support to address systematically facility problems that lead to turnover. We provided in-depth training and a portfolio of resources to facility RSs, who diagnosed and addressed retention problems using evidence-based practices.

## Conceptual Basis and Hypotheses

There were several conceptual and empirical bases for the Retention Specialist Program (RSP). In this section we briefly review the evidence for two major points: (a) A focus specifically on *retention* is necessary, and (b) research evidence justifies the *specialist* position.

### *Specific Focus on Addressing CNA Retention*

The literature clearly shows that CNA turnover has a negative impact on staff, including reduced employee efficiency and lower morale among employees (Cohen-Mansfield, 1995); severe pressure of working under chronic staff shortages, which in turn further increases stress and burnout (Castle & Engberg, 2005; Parsons, Simmons, Penn, & Furlough, 2003; Wilner, 1994); and poorer retention of new staff (Castle, 2005; Mueller & Price, 1989; Tai, Bame, & Robinson, 1998). Such staffing problems also lead to decreased quality of care for residents (Castle & Engberg, 2005; Harrington et al., 2000; Harrington & Swan, 2003; Monahan & McCarthy, 1992; Schaefer & Moos, 1996; Wunderlich, Sloan, & Davis, 1996).

Retention problems also create serious economic costs for facilities. Such costs include the direct expenses of advertising, recruiting, hiring, and training, as well as such indirect expenses as reduced productivity of other workers (Luecke, 2002). Although consensus does not exist on the precise cost of CNA turnover, experts generally agree that the expense of replacing a direct service worker typically amounts to 25% of annual compensation or more (O'Malley, 2000). Therefore, it is highly cost-effective for most employers, including nursing homes, to invest resources in retention (Armstrong, 2001; Denton, 1992; Evans, 2002).

The persistence of high rates of turnover is unfortunate, given that a number of well-documented reasons for CNA turnover have been described and are likely to be remediable. CNA turnover studies have found that compensation in wages, fringe benefits, and pay incentives are important but are not solely responsible for high rates of turnover (Cohen-Mansfield, 1997b; Remsburg, Armacost, & Bennett, 1999). The work environment has a signif-

icant effect on CNA turnover. Facilities that use team building to promote positive working relationships and coworker cohesion have less nursing assistant turnover (Cohen-Mansfield, 1997b; Friedman, Daub, Cresci, & Keyser, 1999). Several studies have provided evidence that support from supervisors and coworkers is important for CNA job satisfaction, which affects turnover rates (Hall et al., 2005; Harrison, 2002; Robison & Pillemer, 2007; Schaefer & Moos, 1996). Involvement in care planning is also a strong independent predictor of CNA turnover (Karner, Montgomery, Dobbs, & Wittmaier, 1998). In addition, positive interactions with family members lead to improved job satisfaction for CNAs (Gaugler & Ewen, 2005; Robison & Pillemer, 2007). We designed the RSP to address these causes of turnover.

### *Trained, Dedicated Retention Specialist*

This intervention identified an existing staff member in each nursing home to be specially trained and supported to function as an RS. We propose that a designated staff member is needed who can evaluate needs and resources and customize a CNA retention strategy for a facility. Even in facilities where there are human resources professionals, these individuals typically do not have the training and expertise to evaluate, implement, and sustain retention programs. There are three primary bases on which to argue that a specialized expert can have a positive impact on retention.

First, the diversity and range of potential solutions require specialized expertise. The RS position is critical because it is unlikely that a one-size-fits-all intervention or program exists that in itself brings about dramatic, long-term improvements in retention. A wide range of factors in addition to compensation affects retention (Pillemer, 1996; Proenca & Shewchuk, 1997; Robertson, Herth, & Cummings, 1994). The uncritical use of off-the-shelf retention programs, without the ability to determine specific facility and employee needs and preferences, can make retention practices unsuccessful.

Second, research on human resources management supports the RS concept. This literature suggests that a focus on specific programs is less effective than a continuous approach that is integrated with the ongoing operation of the organization (Brinkerhoff & Gill, 1994; Evans, 2002). Thus, experts have recommended the role of a "retention-oriented manager" (Luecke, 2002) or of an "internal consultant" who can most effectively act as a change agent (Armstrong, 2001). This specialist can play the roles of strategist, interventionist, and innovator on staffing issues (Armstrong, 2001); evaluate training needs and programs (Blanchard & Thacker, 1999); and create strategies to build organizational commitment around retention (O'Malley, 2000). Such

a designated specialist has the time resources to allow programs to be meaningfully supported.

Third, organizational research on innovation strongly supports the role an empowered individual (or champion) can play in organizational change. A growing body of research in organizational settings points to the critical importance of champions who sponsor and vigorously promote a particular type of change and make it successful. Indeed, reviews of the literature suggest that a single champion is one of the most crucial elements in the innovation process and that almost all successful internal ventures have at least one dedicated champion (Day, 1994). Howell and Shea (2001) showed that successful champions demonstrate three behaviors: communicating their confidence about the innovation, building support for the innovation, and persisting in the face of adversity as it arises. Furthermore, champions are distinguished by vigorously advocating for the project and overcoming opposition to it (Markham, 1998). Taken together, this body of research demonstrates that substantial performance gains result from championing activities. As Day noted, however, a principal champion must have the appropriate knowledge and expertise to achieve innovative results. Based on the combined evidence, the goal of the RSP was to develop and train internal retention champions who would use innovative strategies to reduce CNA turnover.

### *Hypotheses*

We hypothesized that the RSP would lead to positive changes in two domains. First, we expected that facilities in which the RSP took place would experience reduced rates of employee turnover relative to control facilities. That is, given the program's explicit focus on employee retention, reducing turnover is the logical primary indicator of success. Second, we anticipated that the RSP might have an impact on staff-level variables. It is possible that the organizational and programmatic changes effected by the RS in the facility could improve staff attitudes toward their jobs and the facility itself. We examined two types of staff-level variables, as follows.

*Attitudes Toward the Facility.*—We believed it was important to include proximal outcomes of the RS project; indeed, we expected the impact on these variables to be strongest. We hypothesized that respondents would perceive an increase in the facility's commitment to retain good staff members. The reason for this hypothesis was straightforward: If the RSP is successful, it seems likely that overall staff perceptions of retention efforts would increase.

We further hypothesized that the RSP would have a significant impact on staff perceptions of the facility as a good place to work, and in which good care is given to residents. These factors may have

significant effects on staff retention. Recent organizational theory and research on employee commitment and turnover has focused on the emotions and affect of workers toward the employing organization. In particular, Lawler's work (Lawler, 2001; Lawler & Yoon, 1996) has highlighted the importance of employees' emotional/affective responses to the organization as a social unit. This research suggests that turnover decisions are affected by the worker's assessment of the organization as a good place to work. In particular, providing high-quality care is important to many nursing home staff and the provision of this care is seen as a major benefit of the job (Bowers et al., 2003; Caudill & Patrick, 1991/1992). We therefore hypothesized that an improved culture of retention would affect the staff's perceived ability to provide high-quality care to residents and improve their global assessment of the nursing home as a positive environment for elder care.

*Satisfaction and Job Stress.*—We also included conventional outcome measures of staff experience, including job satisfaction, perceived intention to quit, and job stress. We expected, however, that the RSP would have a weak or no impact on these outcomes. The sources of job stress and satisfaction in nursing homes are manifold, and it is difficult for a single program to have a strong impact on these more global measures. Although we expected a greater impact on the proximal outcomes just described, we included these more distal measures because of their wide use in the nursing home staffing intervention literature.

### **Methods**

#### *Intervention Design*

The hallmark of the program model was that a staff person from each facility was designated as an RS. This individual received tools and ongoing support to conduct a needs assessment, to institute retention programs, and to evaluate the programs' success and modify them as needed. The specialist was designated as a retention champion, serving as the key internal consultant regarding retention programs. As a condition of participating in the program, the nursing home agreed to allow this individual to devote at least 20% of his or her time to retention activities over the course of one year. The three major components of the intervention were as follows.

*Component I: Specialized Retention Training.*—The RSs participating in the study attended an intensive three-day training institute focused on implementing a range of promising strategies aimed at building a stable, high-quality workforce. The training included the introduction of possible

Table 1. Major Components of the Retention Specialist Program Training

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Process for Promoting Retention Practices

- A. Introduction to retention issues: Introduces theoretical background and goals of the program. Includes current research and demographic overview.
- B. Creating and maintaining a favorable climate for retention: Brief survey of organizational development, change management, and team leadership for retention.
- C. Diagnosis of retention problems: An interactive session including discussion and reflection on facility organizational assessment, local labor pools, and turnover measurement.
- D. Implementing the Retention Specialist Program: Participants designate a retention team, establish retention goals, and develop individualized retention plans for their facilities.

Evidence-Based Retention Programs

- A. Respect and recognition: Explores respect for staff as a foundational concept and introduces ongoing informal recognition and formal recognition programs including best practices.
  - B. Management practices: Introduces management practices such as supervisory training and coaching, including examples of best practices.
  - C. Structured career development: Explores the characteristics and benefits of career ladder programs, with examples of existing programs.
  - D. Mentoring programs: Explores the characteristics and benefits of peer mentoring programs, with examples of existing programs.
  - E. Structured programs to improve interpersonal skills: Explores the characteristics and benefits of staff development programs to teach communication, conflict management, and partnership skills, with examples of existing programs.
  - F. Work and family support: Introduces theoretical background related to work and family balance, including descriptions of various best practices for promoting well-being for staff and their families.
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intervention strategies such as peer mentoring, career ladders, communication training, recognition, work-life balance, and improved supervision. In addition, training on needs assessment methodologies was provided, so that each specialist could select the most appropriate retention strategies for the facility. Table 1 summarizes the content of the training program.

In selecting programs for potential implementation by the RS, the focus was on programs for which some form of research evidence existed for their effectiveness. To be sure, evidence-based interventions to reduce turnover based on randomized, controlled trials are scarce. Nevertheless, it was possible to promote interventions based on two criteria. First, three programs have at least some degree of outcome data indicating that they have a positive effect on staffing issues: enhancing communication strategies (Pillemer et al., 2003; Robison et al., in press), CNA career ladders (cf. Remsberg et al., 2001), and peer mentoring (cf. Hegeman, 2003). Second, in several areas where evidence-based practices do not exist, we selected options based on empirical research on causes of turnover. This research evidence led to dissemination of programs on respect and recognition, improved management practices, and work and family support.

*Component II: Ongoing Technical Assistance.*—The project provided the RSs with an extensive portfolio of tested retention strategies. These strategies were evidence-based programs that had been evaluated and found to be effective by researchers at Cornell University and other long-term care research groups. Throughout the project, RSs accessed these and other resources through a Web site, telephone

contact, and print material provided by the project staff.

*Component III: Leveraging Community Resources.*—Some CNAs may leave the job because of personal problems unrelated to the job itself. Therefore, each of the participating nursing homes set up resource centers in the form of an information kiosk. These Living Well, Living Healthy resource centers consisted of educational materials to display and distribute to their staff on topics related to personal issues including financial well-being, healthy lifestyles, parenting, transportation, and child care. This information kiosk was easily available to the staff and served as a highly visible symbol of the RSP in the facility.

### *Program Implementation*

It is important to note that in the RSP the intervention is considered to be the appointment of a specialized RS in a facility and the training and resources that the RS receives. The specific activities performed by the RS to increase retention were allowed (and indeed expected) to vary. We assumed that change would occur both through direct implementation of formal programs as well as through less formal attempts to create an atmosphere of respect for and communication with employees. Throughout the project, we tracked the activities of the RSs to examine the types of efforts they spearheaded.

The 15 intervention facilities conducted a wide range of activities in implementing the RS project. In terms of specific program initiation, there were a total

of 40 formal programs or policies started or refined as a result of the project, an average of 2.7 per facility, with a range of 1 to 5 programs undertaken. In 80% of the facilities, two or more programs or policies were initiated or modified as a result of RS training. All facilities used the community kiosk. Of the major evidence-based retention programs introduced during training, peer mentoring was the most commonly used, with 9 of the 15 sites (60%) either starting a new peer mentoring program or upgrading an existing program. No facility started a career ladder as a result of the program. Eight of the 15 intervention nursing homes (53%) already had some form of a career ladder, whereas two facilities reported using the RS program training to enhance the existing career ladder programs. A number of RSs began two other less formal program initiatives in their facilities that responded to major themes in the RSP training: employee respect and recognition programs, and communication training programs.

### Sampling Design

The study used a pretest–posttest randomized trial design. We drew treatment and control participants in the study from staff members in 24 nursing homes in New York State and 8 nursing homes in Connecticut. The sampling frame for facilities was the memberships of the for-profit and not-for-profit nursing home organizations in both states: the New York Association of Homes and Services for the Aging (NYAHSA), the New York Health Facilities Association (NYSHFA), the Connecticut Association of Not for Profit Facilities for the Aged (CANPFA), and the Connecticut Association of Health Care Facilities (CAHCF).

There are 595 NYAHSA and NYSHFA facilities in New York State, and 252 facilities in CANPFA and CAHCF. All eligible facilities were stratified into four groups by the cross-classification of profit status (for profit vs not for profit) and size (fewer than 150 beds vs 150+ beds). For the sake of comparability we excluded facilities with fewer than 80 beds. In New York, type of location (metropolitan vs nonmetropolitan) was used as a third cross-classification in defining the strata, and three facilities were randomly selected by stratified random sampling from each of the eight groups. In Connecticut, two facilities were randomly selected from each of the four groups but attention was also given to location to ensure a good distribution by that factor as well. When a selected facility refused to participate, another was randomly sampled to replace it. Recruitment continued until 32 facilities were selected.

The RS program is a facility-wide intervention (all residents in a given facility received the same treatment condition—either intervention or control). Within each of the strata defined by profit status, size, and location, we randomly assigned the facil-

ities to the intervention and control conditions such that the numbers of treatments and controls had equal marginal totals. There were thus a total of 16 control facilities and 16 treatment facilities originally in the study. Over the course of the study, two facilities (one treatment and one control) were unable to complete the study, leaving a final sample of 30 facilities.

### Data Collection

We collected staff data on site, using a guided self-report methodology. In every facility, we made an attempt to collect data from all CNAs working in the facility in a 24-hr period. A research assistant visited the facility and assisted all CNAs in filling out a simple and easy-to-read questionnaire. The research assistant was available to help CNAs with any literacy problems and to clarify the items on the questionnaire as needed. The waves of data collection were as follows. *Pretest baseline assessment* (T1) took place in all facilities within 2 weeks prior to the beginning of the intervention in treatment facilities. *First posttest* (T2) took place approximately 6 months after the first assessment. *Second posttest* (T3) took place approximately 12 months after the first assessment. Collecting data at three time points over a year allowed us to evaluate program effects under scenarios in which it took up to a year for the RSP to have a significant impact or in which interest spiked early in the project but was not sustained.

Facility-level data collection also took place. Most relevant to this article, all facilities provided their CNA turnover rates for the preceding 6 months. Thus, it was possible to compare turnover rates in the 6 months prior to the project and then after 6 and 12 months while the project was underway.

In addition to the quantitative data collection, we conducted qualitative case studies in each of the intervention facilities to summarize project decisions, planning, activities, results, and implementation issues. Case studies involved gathering site-specific information about interventions, insights and opinions about these interventions, and the implementation process and perceived success of the interventions. We also gathered information on the individual nursing home environment and how RSs and administrators perceived the effect of the nursing home environment on the project, as well as what observations and recommendations each had. These data allowed us to carry out an implementation evaluation, detailing what types of actions RSs took as part of their new responsibilities.

Two of the project investigators conducted on-site Time 1 case studies approximately three months after the RSP training, using a guided interview protocol with the RS and the facility administrator, if possible. They conducted a second round of case

**Table 2. Selected Characteristics of Certified Nursing Assistants (N = 762)**

Characteristic	Treatment (n = 379)		Control (n = 383)		p
	n	%	n	%	
<b>Gender</b>					
Female	352	93.4	353	92.4	NS
Male	25	6.6	29	7.6	
<b>Education</b>					
Less than high school	56	14.9	78	20.4	NS
High school graduate	198	52.5	174	45.4	
Post high school education	101	26.8	102	26.6	
College graduate	22	5.8	29	7.6	
<b>Race</b>					
White	168	44.9	173	45.3	NS
Black	161	43.1	181	47.4	
Other	45	12.0	28	7.3	
<b>Age</b>					
18–30	78	20.9	68	18.0	NS
31–40	85	22.7	82	21.8	
41–50	119	31.8	127	33.7	
51+	92	24.6	100	26.5	

Note: NS = not significant.

study interviews by telephone 10 months after the training. In total, they conducted 29 interviews at Time 1 and 27 at Time 2. The interviews contained both quantitative measures addressing the actual programs implemented as well as subjective ratings, comments, and suggestions from the administrators and RSNs regarding various aspects of the RSP.

### Measures

Consistent with the conceptual framework, we hypothesized that the RSP would lead to positive outcomes on the following variables.

**Employee Turnover.**—We determined CNA turnover rates by dividing the number of all CNAs who had left a given facility during the preceding 6 months by the average number of CNAs on the payroll for that period and multiplying the result by 100.

**Perceived Facility Retention Effort.**—We measured CNAs' assessments of the quality of retention efforts in two ways. First, respondents were asked the following: "On a scale of 0 to 10, with 10 being the highest score, and zero being the lowest score, how would you rate the overall quality of efforts to retain good employees in this nursing home?" Second, staff completed a scale created for the current study that measured the facility's retention efforts. Respondents were asked the degree to which they agreed or disagreed with the following statements: "My supervisor recognizes my efforts on

a regular basis," "This nursing home recognizes and rewards good employees," "This nursing home does all it can to keep good employees from leaving," and "Someone on the administrative staff in this nursing home tries to keep good employees from leaving." The answer categories were 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree ( $M = 9.1$ ,  $SD = 3.0$ , Cronbach's  $\alpha = .84$ ).

**Attitudes Toward the Facility.**—Participants were asked to rate several dimensions of the quality of the facility in which they currently worked, as follows: "On a scale of 0 to 10, with 10 being the highest score, and zero being the lowest score, how would you rate: (a) The overall quality of care in the nursing home where you work now? (b) The overall quality of staff education and training provided at this nursing home? (c) The overall quality of the job your administration is doing?"

**Job Satisfaction.**—We measured job satisfaction using MacDonald and MacIntyre's (1997) Generic Job Satisfaction Scale. Participants responded to 11 items on a scale of 4 = strongly agree, 3 = agree, 2 = disagree, and 1 = strongly disagree. The items were: "I receive recognition for a job well done," "I feel secure about my job," "I believe management is concerned about me," "I believe my work is good for my physical health," "My wages are good," "All of my talents and skills are used at work," "I feel good about my job," "I have opportunities to advance in my job," "I get along with my supervisors," "I feel close to the people at work," and "I feel good about working for this nursing home" ( $M = 29.6$ ,  $SD = 5.5$ , Cronbach's  $\alpha = .82$ ).

**Likelihood of Quitting in the Next 12 Months.**—We measured job commitment using the item "How frequently in the past year have you thought seriously of quitting your job?" (4 = very often, 3 = sometimes, 2 = seldom, 1 = never).

**Stress.**—We measured job stress using one question: "How stressful would you say your job is these days?" (4 = very stressful, 3 = somewhat stressful, 2 = only a little stressful, 1 = not to stressful at all).

### Statistical Models and Methods for Analysis

**Sample for Analysis.**—The analyses presented in this article are based on 762 CNA respondents who could be identified as completing two or more data assessments (i.e., for at least two of the three waves of data collection). Table 2 provides descriptive data on the sample; no significant differences existed between the treatment and control groups for race, gender, age, or educational level.

Table 3. Treatment Effects on Turnover

	Within-Group Change Over Time						
	Baseline Mean	6-Month Mean	12-Month Mean	Baseline to 6-Month Mean ( <i>p</i> )	Baseline to 12-Month Mean ( <i>p</i> )	6-Month to 12-Month Mean ( <i>p</i> )	Baseline vs (6 Month + 12 Month)/2 Mean ( <i>p</i> )
Control (C)	13.13	13.27	10.50	0.137 (.959)	-2.630 (.350)	-2.767 (.326)	-1.247 (.596)
Treatment (T)	21.45	17.42	10.91	-4.033 (.134)	-10.543 (.0002)	-6.510 (.018)	-7.288 (.003)
Difference (T - C)	8.321	4.152	.409				
Treatment effect ( <i>p</i> )	.057	.336	.926	.271	.045	.335	.071

*Analysis of CNA Outcomes.*—The primary goal of the analysis is the evaluation of the RSP intervention by examining treatment group differences for the outcomes described previously, controlling for important influences on the retention process. We measured the outcome variables at baseline prior to the intervention and at follow-ups 6 and 12 months after the intervention. There were two treatment conditions (intervention vs control). A 2 × 3 repeated measures design (Treatment × Time) thus formed the core of the statistical models for evaluation of the intervention. The key tests in the examination of program effects were the test of the interaction of the factors for treatment and time and tests of preplanned single degree of freedom partitions of that interaction.

These tests are carried out in models that included, in addition to treatment and time, potential classification factors for state (New York vs Connecticut), profit status (for profit vs not for profit), size of facility (fewer than 150 beds vs 150 beds or more), facility setting (metropolitan vs nonmetropolitan), and characteristics of CNAs (e.g., length of time on job). The design also resulted in three potential random classification factors. Because of the repeated measurement on CNAs at three time points, CNAs are included as levels of a random factor. Facilities are regarded as having been sampled from a larger population of facilities and are regarded as random. The models were analyzed by general linear mixed model methods and their extensions. This allows generalization to the larger populations of facilities and units, a distinct advantage of our sampling design.

### Analysis of Staff Turnover

Turnover data are measured at the facility level, reported at each of the three assessment times (at baseline, 6 months, and 12 months). At each of these assessments, the average turnover was reported for the preceding 6-month period. A core mixed model was used to analyze the turnover data. It included facilities as levels of a random classification factor and fixed factors treatment (two levels) and time of assessment (three levels). Turnover rate in the preceding 6 months was the dependent variable.

Additional models included other classification factors such as facility size, facility region, and facility profit status. These variables are as described in the models for CNA outcomes.

### Interpreting the Results Tables

The primary examination of the effectiveness of the intervention was by testing the Treatment × Time interaction. The tables for each outcome variable in the results section (see Tables 3 and 4) are arrayed in four quadrants. The upper left quadrant gives the adjusted means for the Treatment × Time structure. The upper right quadrant gives the change in means for each treatment group over time and the probabilities associated with the test of these mean differences. The lower left quadrant shows the difference between treatment groups for each time point, with entries for both the mean differences and the probabilities for the test of those differences. The lower right quadrant gives the probabilities for the tests of treatment effects for partitioned interaction contrasts from the overall Treatment × Time interaction (defined by the row and column headings).

## Results

### Effect of Intervention on CNA Turnover

As Table 3 indicates, average CNA turnover rates in the preceding 6 months in treatment facilities decreased between baseline and the 12-month assessment by 10.54%, whereas the rate in control facilities decreased by 2.64%. This represents a significant treatment effect for turnover rates (*p* = .045). This effect took the full 12 months to manifest, although there is a trend (*p* = .071) when comparing baseline with the average of the 6- and 12-month rates. There are no qualifications of the result by size, region, or profit status of facilities.

### Effect of Intervention on CNA Outcomes

Significant treatment effects were observed on four of the proximal outcome variables (see Table 4). The item that asked CNAs to rate the degree to which the

Table 4. Treatment Effects for Staff Outcome Measures

	Within-Group Change Over Time						
	Baseline Mean	6-Month Mean	12-Month Mean	Baseline to 6-Month Mean ( <i>p</i> )	Baseline to 12-Month Mean ( <i>p</i> )	6-Month to 12-Month Mean ( <i>p</i> )	Baseline vs (6 Month + 12 Month)/2 Mean ( <i>p</i> )
Rating of Quality of Efforts to Retain Good Employees in Facility							
Control (C)	5.60	5.60	5.40	-.007 (.969)	-.207 (.305)	-.200 (.297)	-.107 (.528)
Treatment (T)	5.28	6.15	5.43	.876 (<.000)	.156 (.448)	-.720 (.000)	.516 (.002)
Difference (T - C)	-.325	.558	.038				
Treatment effect ( <i>p</i> )	.403	.147	.924	.001	.208	.062	.009
Positive Retention Efforts Scale							
Control (C)	9.15	9.22	9.07	.067 (.706)	-.086 (.650)	-.153 (.400)	-.010 (.952)
Treatment (T)	9.25	9.74	8.98	.488 (.004)	-.271 (.155)	-.759 (<.000)	.108 (.485)
Difference (T - C)	.098	.519	-.087				
Treatment effect ( <i>p</i> )	.805	.187	.829	.087	.490	.020	.595
Rating of Overall Quality of Care Provided in Facility							
Control (C)	7.75	7.75	7.55	.003 (.982)	-.199 (.166)	-.202 (.140)	-.098 (.417)
Treatment (T)	7.46	7.97	7.57	.506 (.000)	.108 (.458)	-.398 (.006)	.307 (.010)
Difference (T - C)	-.284	.219	.024				
Treatment effect ( <i>p</i> )	.347	.464	.938	.008	.133	.327	.017
Rating of Overall Quality of Staff Education Provided in Facility							
Control (C)	7.41	7.26	7.08	-.142 (.360)	-.325 (.050)	-.184 (.245)	-.233 (.094)
Treatment (T)	7.14	7.70	7.20	.557 (.000)	.058 (.732)	-.500 (.003)	.307 (.025)
Difference (T - C)	-.268	.431	.116				
Treatment effect ( <i>p</i> )	.395	.167	.720	.001	.105	.171	.006
Intention to Quit							
Control (C)	2.25	2.30	2.36	.045 (.487)	.117 (.097)	.071 (.289)	.081 (.170)
Treatment (T)	2.22	2.13	2.44	-.093 (.146)	.217 (.002)	.310 (<.000)	.062 (.281)
Difference (T - C)	-.025	-.164	.075				
Treatment effect ( <i>p</i> )	.777	.061	.429	.131	.316	.014	.821

facility attempts to keep good employees (on a 1–10 scale) improved between baseline and 6 months for the intervention group and declined for the control group. This effect was also significant when tested jointly over the two follow-up assessments. It is worth noting a possible drop-off effect that approached significance between 6 and 12 months. The initial highly significant gain diminished in the second 6 months (and was not significant between Time 1 and Time 3), although the overall effect averaging both time points remained significant. A similar effect was apparent for the Retention Efforts Scale: From baseline to 6 months a positive effect was evident that approached significance; however, this effect disappeared in the second 6 months of the program.

Two of the three ratings of overall quality of the facility showed a positive impact of the program. CNA ratings of the overall quality of care provided in the facility improved from baseline to 6 months. Although again a drop was evident from 6 to 12 months, the averaged posttest scores were still significant. We found an identical pattern for ratings of the quality of staff education and training in the facility.

For predicted likelihood of quitting the job in 12 months, a slight (but statistically insignificant) decline occurred in the treatment group between baseline and

6 months, whereas an increase occurred in the control group. However, intention to quit rebounded between Months 6 to 12 in the treatment group but increased only slightly in the control group, leading to a significant result for this variable. Similar to previous findings, it appears that gains in this variable were not sustained over the second 6 months of the project. We did not find significant differences for the job satisfaction scale or the job stress item.

One of the interaction analyses revealed fairly consistent differences by facility size (tables not shown). In general, positive effects of the program appeared to be somewhat stronger in larger facilities than smaller ones. Based on the qualitative data collected for the study, we can speculate that this difference may have been due to the greater resources available to the RS in larger facilities, including financial, staffing, and volunteer resources that allowed for new program development.

## Discussion

The RSP intervention was designed to improve the retention of CNAs in nursing homes. We based the intervention design on a clearly articulated conceptual framework derived from both theory

and empirical research on staff turnover and retention in work organizations. Specifically, the RSP provided development and training to a designated RS who implemented appropriate interventions in his or her facility with ongoing support from the project team. The study was conducted in a relatively large number of facilities, which allowed for examination of effectiveness across a range of settings. Furthermore, the study focused on clearly specified outcomes, including CNA turnover and CNA assessments of retention efforts, quality of the facility, job satisfaction, and intention to quit.

Overall, the results of the treatment–control comparisons are encouraging. We found positive effects for facility turnover, with significant reductions in treatment facilities. Furthermore, staff members in the treatment group improved in their assessments of the quality of retention efforts, as well as assessments of the overall quality of the facility in which they worked. It is worth noting that these findings are consistent with overwhelmingly positive subjective evaluations of the RSP intervention by participants. Illustrative comments from the RSs include the following:

Prior to the training, it had never dawned on me that part of my role as a human resource director was to help new staff feel at home, or that an employer should try to make them feel accepted. I was more concerned with finding people who could do the job. This knowledge has also been factored into what we now expect our mentors to do. This has made a big difference.

We have become more sympathetic to what the CNAs need. We are more flexible in meeting their scheduling needs. Through this program, our eyes have been opened as to how we can use a more humanistic approach to seeing what they need to stay with us.

The designation of an RS in the facility helps to make the CNAs know that we care about them.

I have become more aware of the importance of addressing retention and how responding to people's immediate needs is critical in terms of making them want to stay with the facility.

The results indicate several cautions that are worth noting. Most important, we did not find treatment effects on all outcome variables (e.g., job satisfaction and intention to quit), and in some cases the effect size was modest. It is therefore possible that a higher “dosage” may be necessary to bring about stronger effects. It should also be noted that the strongest effects generally were found on the first posttest, with diminishing strength at the 12-month posttest. The drop-off in program effects is particularly important to address. To better understand this phenomenon,

we reviewed the qualitative data collected from site visit interviews. This review suggested three reasons for the drop-off in that latter part of the project.

First, of the range of possible problems with implementing the RSP, it is clear that turnover in the RS position and among facility administrators was most closely linked to reduced project activity. Indeed, two facilities where the least RSP activity occurred had the highest RS and administrator turnover. In contrast, three of the four sites that attempted the most new retention-related programming had the least turnover in both administrative and RS positions. As one RS pointed out, “The changes and inconsistency at the top were a great impediment. Had the former administrator stayed in place, there would have been a world of difference in this project.”

Second, in some cases the level of effort required by the staff person in the RS position was difficult to maintain. Although a “honeymoon” period tended to exist in the early phases of the facility's participation, over time some RSs were increasingly pressured to return to normal duties, and carving out sufficient time for specific retention activities became more difficult.

Third, facilities varied in the degree that they could allocate resources for retention programs. Several of the evidence-based programs recommended to the RSs required an outlay of funds for materials and training; some facilities, and in particular smaller ones, found it difficult to invest in these programs. In particular, as noted earlier, larger facilities were generally able to implement more programs and to allow the RS to devote more time to the project. One RS in a smaller facility described her experience: “We have also been impeded by a lack of funding for activities. I had ideas for increasing respect for staff that we were not allowed to implement because of cost, even though other staff would volunteer time to make them happen. The administrator said there was no funding possible.” Due to time and funding limitations for this study, we were unable to gather more detailed data to investigate specific reasons for the drop-off in effects over time. Therefore, no evidence is available related to specific amounts of funding that were dedicated to retention efforts by participating facilities after the final wave of data collection. This lack of data points to the need for a longitudinal approach to subsequent research, and for careful attention to financial issues affecting the intervention.

Based on both the quantitative and qualitative findings, two program modifications are worthy of consideration and should be tested in future replications of the RSP. First, providing additional booster sessions for RSs following the initial training is likely to be useful. In fact, several of the RSs suggested that a redesigned RSP include scheduled opportunities for the RSs to come together for face-to-face meetings throughout the project to discuss problems and program ideas. Participation in an ongoing learning community of trained RSs who

meet at regular intervals to share successes and challenges may reduce the drop-off program effects after the first 6 months. It is possible that this type of ongoing support might allow RSs to troubleshoot more effectively problems that arise, develop common strategies for obtaining financial resources, and better cope with alternative time demands and administrator turnover.

Second, and most important, the findings suggest reconceptualizing the RSP as a *team* approach, rather than one focused on a single individual. Based on the literature on champions, as well as numerous anecdotal accounts of individual change-makers in nursing homes, we made the decision to focus on a single individual as the recipient of training. However, the combined evidence from this study suggests that training a *retention team* rather than an RS may be a more effective approach. A team approach involving several staff persons (perhaps including the administrator and a direct care worker) would spread the workload and lessen the impact of turnover in a single position. Given the promise of the RSP indicated by the findings of this study, efforts to refine and expand the model appear warranted.

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