



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



# **THE NATIONAL NURSING ASSISTANT SURVEY:**

**IMPROVING THE EVIDENCE BASE  
FOR POLICY INITIATIVES TO  
STRENGTHEN THE CERTIFIED NURSING  
ASSISTANT WORKFORCE**

April 2009

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This article appeared in ***The Gerontologist*** (2009, 49(2):185-197; doi:10.1093/geront/gnp024). It was prepared under contract #HHS-100-03-0025 between HHS's ASPE/DALTCP and the Research Triangle Institute. For additional information about this subject, you can visit the DALTCP home page at [http://aspe.hhs.gov/\\_/office\\_specific/daltcp.cfm](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](mailto:Marie.Squillace@hhs.gov).

# **THE NATIONAL NURSING ASSISTANT SURVEY: Improving the Evidence Base for Policy Initiatives to Strengthen the Certified Nursing Assistant Workforce**

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April 1, 2009

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 #HHS-100-03-0025

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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## **ACKNOWLEDGEMENT**

The authors thank the reviewers for their comments on an earlier version of this article. We also thank Drs. Sandra Decker and Jennifer Madans for their comments on an initial draft of this article. The opinions expressed in this article are those of the authors and do not necessarily reflect the views of nor should they be construed as representing the official views of the U.S. Department of Health and Human Services.

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# ABSTRACT

**Purpose:** This study introduces the first National Nursing Assistant Survey (NNAS), a major advance in the data available about certified nursing assistants (CNAs) and a rich resource for evidence-based policy, practice, and applied research initiatives. We highlight potential uses of this new survey using select population estimates as examples of how the NNAS can be used to inform new policy directions.

**Design and Methods:** The NNAS is a nationally representative survey of 3,017 CNAs working in nursing homes, who were interviewed by phone in 2004-2005. Key survey components are recruitment; education; training and licensure; job history; family life; management and supervision; client relations; organizational commitment and job satisfaction; workplace environment; work-related injuries; and demographics.

**Results:** One in three CNAs received some kind of means-tested public assistance. More than half of CNAs incurred at least 1 work-related injury within the past year and almost one quarter were unable to work for at least 1 day due to the injury. Forty-two percent of uninsured CNAs cite not participating in their employer-sponsored insurance plan because they could not afford the plan. Years of experience do not translate into higher wages; CNAs with 10 or more years of experience averaged just \$2/hr more than aides who started working in the field less than 1 year ago.

**Implications:** This study can be used to understand CNA workforce issues and challenges and to plan for sustainable solutions to stabilize this workforce. The NNAS can be linked to other existing data sets to examine more comprehensive and complex relationships among CNA, facility, resident, and community characteristics, thereby expanding its usefulness.

**Key Words:** *Certified nursing assistants, Direct care workers, Long-term care workforce, Nursing homes, National Nursing Assistant Survey.*



# INTRODUCTION

The direct care of 1.5 million nursing home residents in the United States is largely in the hands of certified nursing assistants (CNAs; Dawson & Surpin, 2001). Projections of a substantial workforce imbalance and a myriad of unresolved systemic issues have motivated policymakers, providers, private foundations, and others to seek immediate and sustainable solutions to stabilizing the long-term care workforce. There is growing concern that an economic downturn will not resolve this burgeoning problem. Current demographic, economic, and policy trends suggest that without serious intervention, the supply of CNAs could significantly worsen in the coming decades (American Health Care Association, 2003; U.S. Department of Health and Human Services & U.S. Department of Labor, 2003; General Accounting Office [GAO], 2001; Health Resources and Services Administration [HRSA], 2004).

The National Nursing Assistant Survey (NNAS) represents a major advance in the data available about CNAs in nursing homes and provides a rich resource for evidence-based policy, practice, and applied research initiatives to address the CNA workforce shortage and to improve recruitment and retention efforts. The NNAS was designed to produce a nationally representative sample that researchers can use to make comparisons by geographic region and tenure and to link NNAS data to other long-term care data sets to provide a comprehensive picture of CNAs in the United States. The purpose of this study is to introduce this new survey and highlight the potential uses of the NNAS using select population estimates -- wages, receipt of public benefits, access to health insurance, and worker injuries -- as examples of how the NNAS can be used to inform new policy directions, and to review other policy issues that can be informed by these data.

## THE CHALLENGE TO DEVELOPING A STRONG EVIDENCE BASE

Developing a strong evidence base for policy, practice, and applied research initiatives to improve CNA recruitment and retention efforts has been previously hindered on several fronts. Most notably, information intended to inform long-term care workforce planning has largely been based on data systems serving purposes other than characterizing specific types of long-term care industry workers in specific long-term care settings. In a review of eight key Federal data sets, including six maintained by the U.S. Bureau of Labor Statistics (BLS), one maintained by the Centers for Medicare and Medicaid Services, and 45 CNA registries maintained at the state level, the National Center for Health Workforce Analyses found that current data systems are limited in terms of data exclusions, inconsistency of definitions, and their use of broad worker categorizations (HRSA, 2004). Thus, there has been no previous national data source that has focused specifically on the views and perspectives of CNAs working in nursing homes.

The development of a strong evidence base has also been hindered by past policy initiatives (e.g., job training and education, recruitment, work environment and job design, compensation and benefits) being carried out with inadequate study designs and/or no evaluation components (Harris-Kojetin, Lipson, Fielding, Kiefer, & Stone, 2004). Evaluating outcomes before sufficient time passes to expect any difference or not determining if change is sustainable, for example, has impeded the development of a strong workforce evidence base. More recently, the Better Jobs Better Care (BJBC) state demonstrations are paving the way for the advancement of knowledge about which programs and policies “work best” to recruit and retain direct care workers (Brannon, Barry, Kemper, Schreiner, & Vasey, 2007). The BJBC demonstrations and smaller studies, however, are limited to particular geographic regions and thus have limited generalizability.

In contrast, a few studies have included national population estimates of long-term care workers (including nursing assistants working in nursing homes) to better understand worker characteristics and support efforts to identify, recruit, and retain these essential workers. Crown, Ahlburg, and MacAdam (1995; using Current Population Survey [CPS] data from 1987 to 1989); Yamada (2002; using CPS data from the late 1980s and 1990s); and Montgomery, Holley, Deichert, and Kosloski (2005; using data from the 2000 Census) have corroborated results of smaller, less representative studies in showing that nursing assistants are minority women who are disadvantaged economically, have lower educational attainment, live at or below the poverty level, and are low paid. In addition, CNAs are engaged in work that is physically and emotionally demanding and juggle multiple work and family responsibilities.

These national estimates suggest that nursing assistants make little more than the minimum wage. In the 1980s, the median earnings for nursing assistants were \$9,000, with a median hourly wage of \$5.29 (Crown et al., 1995). Population estimates reported nearly a decade ago suggest that the median CNA earnings were \$13,800, with a median hourly wage of \$8.17 (Montgomery et al., 2005). Although CPS provides information on nurse aides', orderlies', and attendants' access to public of benefits such as the Temporary Assistance for Needy Families (TANF) program; Food Stamps; the supplemental nutrition program for women, infants, and children (WIC); public housing; and/or government medical insurance, this information for CNAs as a separate group has previously been unavailable.

According to population estimates in the 1980s, Crown and colleagues (1995) and Yamada (2002) reported that 29% of nursing assistants had no health insurance coverage. Using 1998 data, Yamada reported that 28% of nursing home employers paid all health insurance premiums, 63% paid a portion, and 10% paid no premium. Yamada added that the full-time labor force participation rate was 58%, that 12% of nursing assistants reported that they could find only part-time jobs, and that the hours worked per week averaged 37. Information on the proportion of CNAs in nursing homes nationally with benefits such as sick leave has previously been unavailable.

The U.S. BLS (2006) estimated that over a 10-year period from 1995 to 2004, nearly 800,000 “nursing, psychiatric, and home health aides” were injured or became sick while on the job and more than half of these work-related injuries and illnesses were related to overexertion. In 2004, the subgroup “nursing aides, orderlies, and attendants” reported the third highest number of injuries and illnesses, second only to truck drivers and laborers (U.S. BLS).

A design challenge in these previous national studies, however, has been identifying the appropriate workers to be included in the sample. Past studies have combined industries and occupation classifications (e.g., nursing aides, orderlies, and attendants) that have differed by data set and varied over time. Additionally, some industry codes contain work settings that are irrelevant to the provision of direct care. Thus, inconsistencies have remained in using the CPS, Census, and BLS data sources to estimate the supply of CNAs working in nursing homes, including their numbers, locations, characteristics, and qualifications (HRSA, 2004). These inconsistencies make it difficult to develop targeted policy initiatives.

## **IMPROVING THE EVIDENCE BASE FOR POLICY INITIATIVES**

The NNAS is useful for improving data quality and bridging knowledge gaps. As the only national database on CNAs in nursing homes, the NNAS will improve our current understanding of a vital job; personal and work environment characteristics, such as why workers stay or leave; organizational commitment and job satisfaction; job quality enhancements; aspects of organizational and management practices; training; career development; and worker -- supervisor relations. To inform federal and state labor, welfare, and health policy discussions on expanding the pool of CNAs and on specific policies related to reimbursement, immigration, regulation, and program design, researchers are encouraged to explore these data using multivariate methods that involve linking NNAS data to existing large data sets in long-term care (e.g., National Nursing Home Survey [NNHS]; Minimum Data Set, Outcome Assessment and Information Set; and Area Resource File; Ryan, Stone, & Raynor, 2004). In this article, we introduce this new survey, highlight the potential uses of the NNAS using select population estimates -- wages, receipt of public benefits, access to health insurance, and worker injuries -- as examples of how the NNAS can be used to inform new policy directions, and review other policy issues that can be informed by these data.

## **METHODS**

The NNAS was conducted as a supplement to the 2004 NNHS. The NNHS is one in a continuing series of nationally representative sample surveys of United States nursing homes, their services, their staff, and their residents. Facilities that had at least

three beds and were either certified by Medicare or Medicaid or licensed as nursing homes by the state were eligible for inclusion in the survey.

Eligible to participate were CNAs working in nursing homes that participated in the NNHS who assisted residents with activities of daily living (ADLs), were paid to provide these services, were certified by the state to provide Medicare/Medicaid reimbursable services (includes those currently in the process of certification and those who started working as nurse aides prior to 1987 when the certification process was implemented), were employed by the nursing home (not contract workers), and spoke English or Spanish.

Nursing assistants were excluded from the study if they were not certified; provided assistance with only instrumental ADLs, such as transportation, shopping, housekeeping, meal preparation, or medication administration; were employed through contractual arrangements; worked fewer than 16 hr/week; or did not speak English or Spanish. The criterion “16 hr/week” was set to ensure that respondents would have had enough exposure and experience in the nursing home to accurately report on organizational culture and work policies.

## **Sample Design and Selection**

The NNHS is a national probability sample survey. The design includes two stages; nursing facilities are selected at the first stage and residents are selected at the second stage. For the 2004 NNHS, 1,500 nursing facilities were selected from a sampling frame of 16,628 nursing homes in the United States.

To ensure that the sample selected could be used to meet the analytic goals of comparing nursing homes of different sizes and geographical locations, facilities were stratified by bed-size category and Core Based Statistical Area geographical location (metropolitan, micropolitan, and neither). Facilities were selected using systematic sampling, with probability proportional to bed size. A random subsample ( $n = 790$ ) of these facilities was then selected to participate in the NNAS; among these facilities, 582 (75.7%) were eligible and participated in the NNAS. A total of 4,542 CNAs were sampled; among these CNAs, 4,274 were eligible to participate and 3,017 completed an interview (70.6%). The overall response rate was 53%. Approximately 3% refused to participate, and 22% were not able to be located.

During the on-site data collection for the NNHS, facilities provided a list of nursing assistants who met the eligibility criteria and were employed as of midnight the day of the NNHS interview. To ensure that the sample of CNAs with shorter tenure -- a group deemed more vulnerable to turnover -- was sufficient for the analytic goal of comparing short- and long-tenured CNAs, CNAs were stratified by tenure at the sampled facility (<1 year working at the sampled facility or  $\geq 1$  year working at the sampled facility), and a systematic random sample was selected.

The sample of nursing facilities that participated in the NNAS was selected to represent all U.S. nursing homes. A comparison of basic characteristics of the nursing homes that participated in the NNAS and all U.S. nursing homes is displayed in Table 1.

## **Survey Instrument**

To the extent possible, items from preexisting instruments were used (DesRoches, Santos, & Staphulonis, 2004). The survey administered by telephone via a computer-assisted telephone interview system averaged 40 minutes in duration and consisted of 11 primary sections: recruitment; education; training and licensure; job history; family life; management and supervision; client relations; organizational commitment and job satisfaction; workplace environment; work-related injuries; and demographics. Eligible nursing assistants who were no longer working at the facility when contacted completed a set of facility leaver questions (Squillace, Remsburg, Bercovitz, Rosenoff, & Branden, 2006).

## **Procedures**

All survey procedures were reviewed and approved by the National Center for Health Statistics (NCHS) institutional review board. During on-site interviews for the NNHS, facilities provided a list of CNAs who met the eligibility criteria. Field staff reviewed the list with the facility administrator or designee, added or removed any CNAs who did not meet eligibility criteria, and used a systematic random sampling algorithm located within the computer-assisted personal interviewing program to select a sample of CNAs within each sampled facility.

CNAs returned a postage-paid postcard or called a toll-free number to indicate their willingness to participate in the survey. Approximately 75% of participating facilities provided CNA contact information; therefore, many CNAs were contacted directly to solicit participation. When contact information did not include a telephone number, the number provided was wrong or not in service, or no one answered at the number, interviewers used directory assistance and Internet databases to locate the CNA or a relative. CNAs received a \$5 prepaid incentive, and those who participated in the survey received an additional \$30. Telephone interviews for the national survey began in September 2004 and ended in February 2005.

## **Measures**

For this study, we examined 28 NNAS variables that characterized CNAs and organized these variables thematically into three broad categories: worker characteristics (Table 2), receipt of public benefits (Table 3), and health benefits and injuries (Table 4). The twelve worker characteristics included age, gender, race, ethnicity, education, marital status, family income, number of children needing child care, tenure as a CNA, and tenure, number of hours worked per week, and hourly wage at the sampled facility.

| <b>TABLE 1. Characteristics of Facilities Participating in the 2004 National Nursing Assistant Survey</b> |   |                             |   |                             |
|---|---|-----------------------------|---|-----------------------------|
| <b>Facility Characteristic</b>  | <b>Number of Participating Facilities</b> | <b>Percent Distribution</b> | <b>Number of U.S. Nursing Homes<sup>a</sup></b> | <b>Percent Distribution</b> |
| Total   | 7,900 <sup>b</sup>                        | 100.0                       | 16,628  | 100.0                       |
| <b>Ownership</b>  |   |                             |   |                             |
| For profit  | 4,800                                     | 60.8                        | 10,804  | 64.9                        |
| Private nonprofit   | 2,400                                     | 30.8                        | 4,782   | 28.8                        |
| Government and other  | 700                                       | 8.5                         | 1,042   | 6.3                         |
| <b>Beds</b>   |   |                             |   |                             |
| Fewer than 50   | 1,100                                     | 14.4                        | 2,360   | 14.4                        |
| 50 - 99   | 2,900                                     | 37.0                        | 5,858   | 35.2                        |
| 100 - 149   | 2,300                                     | 29.4                        | 5,262   | 31.6                        |
| 150 or more   | 1,500                                     | 19.2                        | 3,148   | 18.9                        |
| <b>Geographic region</b>  |   |                             |   |                             |
| Northeast   | 1,300                                     | 17.1                        | 2,881   | 17.3                        |
| Midwest   | 2,600                                     | 33.7                        | 5,487   | 33.0                        |
| South   | 2,600                                     | 33.6                        | 5,631   | 33.9                        |
| West  | 1,200                                     | 15.4                        | 2,629   | 15.8                        |
| <b>Location</b>   |   |                             |   |                             |
| Metropolitan statistical area   | 5,300                                     | 67.2                        | 11,325  | 68.1                        |
| Micropolitan statistical area   | 1,400                                     | 17.3                        | 2,716   | 16.3                        |
| Non (metro/micro) politan statistical area  | 1,200                                     | 15.4                        | 2,587   | 15.6                        |
| <b>Affiliation</b>  |   |                             |   |                             |
| Chain   | 4,300                                     | 54.9                        | n/a <sup>c</sup>                                | n/a                         |
| Independent   | 3,500                                     | 45.1                        | n/a   | n/a                         |
| <b>SOURCE:</b> 2004 National Nursing Home Survey, National Center for Health Statistics.                  |   |                             |   |                             |
| <b>NOTES:</b> Percents are based on unrounded numbers.  |   |                             |   |                             |
| a. Distributions from the National Nursing Home Survey universe frame.                                    |   |                             |   |                             |
| b. Weighted number of facilities participating in the survey.   |   |                             |   |                             |
| c. Characteristic not available on the universe frame.  |   |                             |   |                             |

Three receipts of public benefit variables measured whether or not a CNA ever received TANF, Food Stamps, or WIC benefits, respectively. Four other public benefit variables measured whether or not a CNA was currently receiving Food Stamps, WIC, public housing or rental subsidy, and/or government programs that pay for medical care. A summary measure was created to indicate whether a CNA was currently receiving at least one of the above-mentioned four public benefits or TANF. The estimate of CNAs currently receiving TANF is not reported separately in Table 3 because the individual measure does not meet the standard of reliability or precision, as the unweighted sample size is too small. However, as noted previously, the measure is included in the summary measure of current receipt of public benefits.

Two of the six health benefit variables included whether or not paid sick leave or health insurance coverage, respectively, was offered to CNAs by the respondents' facility employers. Among those CNAs whose employers offered health insurance, respondents were asked whether or not they were participating in the employer-sponsored health insurance plan. Respondents not participating in the employer-sponsored health insurance plan were asked, using an open-ended question, why they were not participating, and their responses were field coded by interviewers using a set of standardized response categories. For that question, we report the percentage of those who said they did not participate because they could not afford the insurance.

The “uninsured” variable is calculated as the percentage of all CNAs who meet the following criteria based on their responses to survey questions: did not have government-paid medical care, did not have health insurance coverage through a spouse’s or partner’s job, did not purchase coverage on own, and either had no health insurance available from the sampled employer or did not participate in the health insurance offered by the sampled employer. Cases with data missing on any of these variables were excluded from the numerator.

Also reported are respondents’ answers to how many work-related injuries they received and number of missed workdays due to these injuries. For each injury type (back, including pulled back muscles; other strains or pulled muscles; human bites; scratches, open wounds, or cuts; black eyes or other bruising; other injuries), respondents were asked whether or not they had sustained any of these injuries in the past 12 months at the sampled facility or since starting, if they had worked less than 12 months at the facility. The findings on “types of injuries” are presented in the text but not in a table because the “select all that apply” response format of this variable often resulted in multiple responses per respondent.

| <b>TABLE 2. Worker Characteristics</b> |                      |                         |           |
|--|----------------------|-------------------------|-----------|
| <b>Characteristic</b>                  | <b>Weighted Size</b> | <b>Weighted Percent</b> | <b>SE</b> |
| <b>Age, years<sup>a</sup></b>          |                      |                         |           |
| <25                                    | 120,394              | 17.14                   | 0.93      |
| 25 - 34                                | 169,090              | 24.07                   | 1.03      |
| 35 - 44                                | 171,916              | 24.47                   | 1.03      |
| 45 - 54                                | 154,714              | 22.02                   | 1.01      |
| ≥55                                    | 86,368               | 12.29                   | 0.85      |
| <i>M</i> = 38.52                       |                      |                         | 0.34      |
| <i>Mdn</i> = 37.48                     |                      |                         | 0.43      |
| <b>Gender<sup>a</sup></b>              |                      |                         |           |
| Male                                   | 56,340               | 8.02                    | 0.70      |
| Female                                 | 646,142              | 91.98                   | 0.70      |
| <b>Race<sup>a</sup></b>                |                      |                         |           |
| White                                  | 375,416              | 53.44                   | 1.87      |
| Black                                  | 271,582              | 38.66                   | 1.89      |
| Other                                  | 55,484               | 7.90                    | 0.91      |
| <b>Ethnicity<sup>a</sup></b>           |                      |                         |           |
| Hispanic/Latino                        | 65,205               | 9.28                    | 0.89      |
| Not Hispanic/Latino                    | 631,162              | 89.85                   | 0.92      |
| <b>Education<sup>a</sup></b>           |                      |                         |           |
| <12 years                              | 86,984               | 12.38                   | 0.82      |
| GED                                    | 127,940              | 18.21                   | 0.99      |
| High school graduate                   | 307,795              | 43.82                   | 1.32      |
| 1 - 3 years college/trade              | 136,101              | 19.37                   | 1.02      |
| At least college graduate              | 32,875               | 4.68                    | 0.60      |
| <b>Marital status<sup>a</sup></b>      |                      |                         |           |
| Married/live with partner              | 356,196              | 50.71                   | 1.31      |
| Widowed/separated/divorced             | 155,625              | 22.15                   | 1.05      |
| Never married                          | 185,516              | 26.41                   | 1.07      |

| <b>TABLE 2 (continued)</b>                   |                      |                         |           |
|--|----------------------|-------------------------|-----------|
| <b>Characteristic</b>                        | <b>Weighted Size</b> | <b>Weighted Percent</b> | <b>SE</b> |
| <b>Family income, \$<sup>a</sup></b>         |                      |                         |           |
| <10,000                                      | 69,901               | 9.95                    | 0.71      |
| ≥10,000 to <20,000                           | 187,444              | 26.68                   | 1.15      |
| ≥20,000 to <30,000                           | 188,028              | 26.77                   | 1.10      |
| ≥30,000 to <40,000                           | 95,695               | 13.62                   | 0.90      |
| ≥40,000 to <50,000                           | 65,632               | 9.34                    | 0.78      |
| ≥50,000                                      | 67,701               | 9.64                    | 0.81      |
| <b>Number of children needing child care</b> |                      |                         |           |
| 0  | 188,016              | 27.62                   | 1.16      |
| 1  | 105,439              | 15.49                   | 0.91      |
| ≥2   | 83,885               | 12.32                   | 0.83      |
| Have no children                             | 279,707              | 41.08                   | 1.37      |
| <b>Total time worked as CNA</b>              |                      |                         |           |
| ≤6 months <sup>a</sup>                       | 43,079               | 6.13                    | 0.52      |
| >6 months to <1 year                         | 36,894               | 5.25                    | 0.49      |
| ≥1 year to <2 years                          | 58,671               | 8.35                    | 0.63      |
| 2 - 5 years                                  | 183,720              | 26.15                   | 1.15      |
| 6 - 10 years                                 | 135,101              | 19.23                   | 0.97      |
| 11 - 20 years                                | 156,665              | 22.30                   | 1.11      |
| >20 years                                    | 86,854               | 12.36                   | 0.87      |
| <b>Time worked at facility<sup>a</sup></b>   |                      |                         |           |
| <12 months                                   | 201,840              | 28.73                   | 0.86      |
| ≥1 year to <2 years                          | 97,094               | 13.82                   | 0.82      |
| ≥2 to <5 years                               | 181,040              | 25.77                   | 1.10      |
| ≥ 5 to <10 years                             | 92,052               | 13.10                   | 0.89      |
| ≥10 years                                    | 114,892              | 16.36                   | 1.02      |
| <i>M</i> = 4.88 years                        |                      |                         | 1.91      |
| <i>Mdn</i> = 2.44 years                      |                      |                         | 0.90      |
| <b>No. hours worked per week<sup>a</sup></b> |                      |                         |           |
| 16 - 20 <sup>b</sup>                         | 41,384               | 5.89                    | 0.57      |
| >20 to <32                                   | 72,653               | 10.34                   | 0.70      |
| 32   | 70,359               | 10.02                   | 0.86      |
| >32 to <36                                   | 39,482               | 5.62                    | 0.66      |
| 36   | 31,632               | 4.50                    | 0.53      |
| >36 to <40                                   | 81,947               | 11.67                   | 1.02      |
| 40   | 296,456              | 42.20                   | 1.48      |
| >40 to <50                                   | 29,881               | 4.25                    | 0.54      |
| ≥50  | 36,381               | 5.18                    | 0.56      |
| <i>M</i> = 36.81                             |                      |                         | 0.21      |
| <i>Mdn</i> = 39.04                           |                      |                         | 0.33      |



| TABLE 2 (continued)  |               |                  |      |
|--|---------------|------------------|------|
| Characteristic   | Weighted Size | Weighted Percent | SE   |
| <b>Hourly wage, \$<sup>a</sup></b>   |               |                  |      |
| ≤ 6  | 11,739        | 1.67             | 0.33 |
| >6 to ≤7   | 33,361        | 4.75             | 0.66 |
| >7 to ≤8   | 64,304        | 9.15             | 0.78 |
| >8 to ≤9   | 104,743       | 14.91            | 1.09 |
| >9 to ≤10  | 127,847       | 18.20            | 1.10 |
| >10 to ≤11   | 120,208       | 17.11            | 1.10 |
| >11 to ≤12   | 83,048        | 11.82            | 0.99 |
| >12 to ≤13   | 60,144        | 8.56             | 0.89 |
| >13 to ≤14   | 40,027        | 5.70             | 0.87 |
| >14  | 46,254        | 6.58             | 0.94 |
| <i>M</i> = 10.33   |               |                  | 0.31 |
| <i>Mdn</i> = 10.04   |               |                  | 0.34 |
| <b>NOTE:</b> CNA = certified nursing assistant.  |               |                  |      |
| a. Eligible CNAs who were sampled for the survey but were no longer working at the sampled facility when contacted (unweighted <i>n</i> = 120, weighted <i>N</i> = 21,636) were asked this survey question and were included in the results. |               |                  |      |
| b. CNAs had to work at least 16 hr/week at the sampled facility to be eligible for the survey.   |               |                  |      |

## Analysis

Weighted frequencies, percent distributions, and standard errors are presented for variables in the tables. Means and medians are presented for age, time worked at sampled facility, number of hours worked per week, hourly wage, number of injuries received, and days unable to work due to injury. Across the variables, most have some prevalence of item nonresponse, ranging from a low of 0.05% (ever received Food Stamps) to a high of 14% (reason not participating in employer-sponsored health insurance), with an average item nonresponse rate of 1.5%. For calculating percent distributions of variables reported in the tables, the denominator includes item nonresponse cases where they exist, but the item nonresponse rate is not reported.

Eligible CNAs who were sampled for the survey but were no longer working at the sampled facility when contacted (unweighted *n* = 120, weighted *N* = 21,636) were asked the questions given in Table 2, except for number of children needing child care. We include these “facility leavers” in the denominator for these questions.

## Analytic Considerations for Using NNAS Data

To create unbiased national estimates, all analyses presented are weighted estimates. As a sample survey, data collected will differ somewhat from data that would have been obtained if a complete census of all CNAs had been taken using the same instruments, instructions, and procedures. Therefore, the standard error of estimates is also presented, which measures the variability that occurs by chance because the results are based on a sample rather than the entire universe. Standard errors for these data were computed using SAS-callable SUDAAN, a statistical software program that

takes into account the complex survey design (Research Triangle Institute, 2005; SAS Institute, 2003). Additional details about sample design, methods, instrument development, survey procedures, analytic considerations, and procedures for data linking through the NCHS Research and Data Center for the NNAS are published elsewhere (Squillace, Remsburg, Bercovitz, Rosenoff & Branden, 2006).

| <b>TABLE 3. Receipt of Public Benefits</b>   |                      |                         |           |
|--|----------------------|-------------------------|-----------|
| <b>Characteristic</b>  | <b>Weighted Size</b> | <b>Weighted Percent</b> | <b>SE</b> |
| <b>Ever received TANF<sup>a</sup></b>  |                      |                         |           |
| Yes  | 159,596              | 23.44                   | 1.14      |
| No   | 518,841              | 76.21                   | 1.15      |
| <b>Ever received Food Stamps</b>   |                      |                         |           |
| Yes  | 290,965              | 42.74                   | 1.43      |
| No   | 389,552              | 57.21                   | 1.44      |
| <b>Receives Food Stamps</b>  |                      |                         |           |
| Yes  | 73,428               | 10.78                   | 0.80      |
| No   | 607,089              | 89.17                   | 0.80      |
| <b>Ever received WIC</b>   |                      |                         |           |
| Yes  | 290,930              | 42.73                   | 1.27      |
| No   | 389,770              | 57.25                   | 1.27      |
| <b>Receives WIC</b>  |                      |                         |           |
| Yes  | 63,181               | 8.99                    | 0.66      |
| No   | 639,301              | 91.01                   | 0.66      |
| <b>Lives in public housing or receives rental subsidy</b>  |                      |                         |           |
| Yes  | 50,911               | 7.48                    | 0.73      |
| No   | 629,044              | 92.39                   | 0.73      |
| <b>Receives government medical insurance (Medicaid or Medicare)</b>  |                      |                         |           |
| Yes  | 156,990              | 23.06                   | 1.10      |
| No   | 516,532              | 75.87                   | 1.10      |
| <b>Receives at least one public benefit</b>  |                      |                         |           |
| Yes  | 213,360              | 30.37                   | 1.16      |
| No   | 457,997              | 65.20                   | 1.15      |
| <b>NOTE:</b> TANF = Temporary Assistance for Needy Families; WIC = women, infants, and children.   |                      |                         |           |
| a. The estimate of certified nursing assistants currently receiving TANF is not reported separately because it does not meet the standard of reliability or precision as the unweighted sample size is too small. However, the measure is included in the summary measure, "Receives at least one public benefit." |                      |                         |           |

## FINDINGS

### Worker Characteristics

Almost half of CNAs were minority (Table 2). Similar to previous studies' findings, the vast majority of CNAs were female and most had no more than a high school diploma, or GED. CNAs on average had worked almost 5 years at their current facilities at the time of the interview, with a median hourly wage in 2004 of \$10.04. Additionally,

CNAs with 10 or more years experience averaged just \$2/hr more than aides who started working in the field less than 1 year ago (not shown).

| <b>TABLE 4. Health Benefits and Injuries</b>  |                      |                         |           |
|---|----------------------|-------------------------|-----------|
| <b>Characteristic</b>   | <b>Weighted Size</b> | <b>Weighted Percent</b> | <b>SE</b> |
| <b>Paid sick leave available</b>  |                      |                         |           |
| Yes   | 481,046              | 70.65                   | 1.40      |
| No  | 174,341              | 25.61                   | 1.34      |
| <b>Health insurance available from employer</b>   |                      |                         |           |
| Yes   | 610,646              | 89.69                   | 0.89      |
| No  | 60,996               | 8.96                    | 0.83      |
| <b>Participating in health insurance available from employer</b>  |                      |                         |           |
| Yes   | 329,935              | 54.03                   | 1.51      |
| No  | 280,332              | 45.91                   | 1.50      |
| <b>Uninsured<sup>a</sup></b>  |                      |                         |           |
| Yes   | 110,734              | 16.26                   | 0.96      |
| No  | 570,112              | 83.74                   | 0.96      |
| <b>Uninsured, not participating in employer-sponsored health insurance because cannot afford<sup>b</sup></b>  |                      |                         |           |
| Yes   | 46,366               | 41.87                   | 2.79      |
| No  | 62,677               | 57.48                   | 2.79      |
| <b>Not participating in health insurance available from employer and is uninsured<sup>c</sup></b>   |                      |                         |           |
| Yes   | 84,071               | 29.99                   | 1.66      |
| No  | 196,261              | 70.01                   | 1.66      |
| <b>Number of injuries past year</b>   |                      |                         |           |
| 0   | 278,336              | 40.88                   | 1.31      |
| 1   | 135,983              | 19.97                   | 0.98      |
| 2 - 4   | 165,122              | 24.25                   | 1.04      |
| ≥5  | 81,823               | 12.02                   | 0.79      |
| <i>M</i> = 2.63   |                      |                         | 0.17      |
| <i>Mdn</i> = 0.38   |                      |                         | 0.00      |
| <b>Days unable to work due to injury<sup>d</sup></b>  |                      |                         |           |
| 0   | 300,389              | 74.63                   | 2.23      |
| 1   | 18,362               | 4.56                    | 0.73      |
| 2   | 15,500               | 3.85                    | 0.59      |
| ≥3  | 61,831               | 15.36                   | 2.70      |
| <i>M</i> = 3.01   |                      |                         | 0.54      |
| <i>Mdn</i> = 0.00   |                      |                         | 0.00      |
| <b>NOTE:</b> CNA = certified nursing assistant.   |                      |                         |           |
| a. The “uninsured” variable is calculated as the percentage of all CNAs who meet the following criteria: did not have government-paid medical care, did not have health insurance coverage through a spouse’s or partner’s job, did not purchase coverage on own, and either health insurance was not available from sampled employer or sampled employer offered health insurance but CNA was not participating. |                      |                         |           |
| b. The denominator for this estimate is the number of uninsured CNAs.   |                      |                         |           |
| c. The denominator for this estimate is the number of CNAs not participating in health insurance available from employer.   |                      |                         |           |
| d. The denominator for this estimate is the number of CNAs who had at least one injury in the past year.  |                      |                         |           |

Almost half of the CNAs were likely living on a single income because they were separated, widowed, divorced, or never married. Although CNAs worked a mean full time 36.8 hr/week (similar to the 36.6-hr estimate from Yamada, 2002), almost two thirds lived on an annual family income of less than \$30,000. From that income, 28% of all CNAs had to support at least one child who required child care. Because CNAs had to work at least 16 hr/week to be eligible for this survey, it is likely that these findings underestimate the percentage of part-time workers relative to full-time workers.

## **Use of Public Benefits**

Between 20% and 40% of CNAs had at some point in their lives received public benefits, and almost one third were currently receiving at least one public benefit (Table 3).

## **Health Benefits and Injuries**

More than two thirds of CNAs' employers offered paid sick leave to CNAs, and most CNAs' employers offered health insurance (Table 4). About 16% of CNAs working in nursing homes were uninsured compared with the estimate of 29% of CNAs in the 1980s found by Crown and colleagues (1995) and Yamada (2002). Among the NNAS-estimated 16% uninsured CNAs, 42% did not participate in their employer-sponsored health insurance plan because they could not afford the plan. Among the 46% of CNAs who did not participate in their employer-offered health insurance plan, 3 in 10 went uninsured. By design, the survey excluded CNAs who worked less than 16 hr/week at the sampled facility to ensure that respondents would have had enough exposure and experience in the nursing home to accurately report on organizational culture and work policies. Because part-time workers are often ineligible for benefits, the survey may overestimate the percentage of employers offering health insurance to their CNA employees and, as a result, underestimate the percentage of uninsured CNAs.

More than half (56%) of CNAs incurred at least one injury on the job in the previous year. Among the CNAs injured, almost half (45%) sustained scratches, open wounds, or cuts; about one fifth had back injuries (18%), black eyes or other bruising (16%), or other strains or pulls (16%); and about one tenth had human bites (12%) or other injuries (7%; not shown). Of the CNAs who had been injured at least once in the previous year, almost one quarter were unable to work for at least 1 day due to the injury.

# **DISCUSSION**

Findings from the NNAS will allow policy-makers to assess and plan for sustainable solutions to stabilize the CNA nursing home workforce. To demonstrate the usefulness of the NNAS, this article focused on select population estimates on wages, receipt of public benefits, health benefits, and injuries. The following sections highlight how the NNAS can be used to inform new policy directions. We emphasize how the

NNAS can be linked to existing large data sets in long-term care to better meet the data needs of stakeholders working to ensure that quality long-term care will be available for the nation's growing senior population (Table 5).

## **Wages**

Our findings on CNA compensation corroborate results of smaller studies in showing that CNAs are low-income workers (GAO, 2001) and add that years of experience do not translate into substantially higher wages. Although the median hourly wage is above the federal minimum wage, total family incomes for CNAs nationally indicate that more than half are within the 200% poverty level. Previous studies indicate that low wages do contribute to turnover and the need to work additional jobs or overtime (Harris-Kojetin et al., 2004). Moreover, working long hours may contribute to mistakes, affecting resident safety and quality of care. Strategies that increase CNA income and also meet growing care demands, such as career ladders that enable CNAs to take on additional responsibilities and receive higher wages or career ladders through which CNAs can advance in a career path (e.g., pursuing a nursing degree), may help stabilize staffing and increase the supply of licensed nurses.

Additional data from the NNAS can provide greater insight into the role that wages play in workforce stability. For example, additional questions in the NNAS can be analyzed, with wages as an independent variable, to examine the magnitude of the association between average wages and CNAs' satisfaction with their pay, or their plans to leave their current position. Linkages between the NNAS and other data files can examine the role of wages by controlling for facility characteristics and local economic conditions, including other health resources that could be potential employers. For example, the NNAS may be linked with the 2004 NNHS to look at the entry-level wages for CNAs, licensed practical nurses, and other staff to assess differences between employees. Data may also be linked to area resource files to capture information on per capita and household income.

## **Receipt of Public Benefits**

A substantial proportion of CNAs are poor or near-poor. This study finds that one third of CNAs reported receiving some kind of means-tested public assistance. Moreover, our results indicate that CNAs access public assistance at higher rates than the general population: Food Stamps (11% vs. 8%), WIC benefits (9% vs. 3%), public housing assistance (7% vs. 6%), and government-paid medical care (23% vs. 9%; U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. Center for Financing, Access, and Cost Trends, Agency for Healthcare Research and Quality, 2004; U.S. Department of Agriculture, Food, and Nutritional Service, 2006; U.S. Department of Health and Human Services, 2006; U.S. Department of Housing and Urban Development, 2007). These findings may suggest that the use of public assistance is supplementing low wages for at least some working CNAs. Additional descriptive information from the NNAS allows for assessment of which CNAs

are receiving which types of public benefits. For example, controlling for age, children, and wages could provide greater insight into CNAs' receipt of benefits.

Because many individuals eligible for Food Stamps do not participate in the program, because either their eligibility may have lapsed or they choose not to participate due to negative stigma (Hanratty, 2006), it is also possible to assess the number of CNAs who would qualify for public benefits but do not participate in the program using the NNAS. Linking NNAS data with area resource files, for example, could provide local per capita income levels, poverty measures, and thresholds, and thus provide a more accurate picture of where CNAs fall in the compensation spectrum. Findings on receipt of public benefits and wages could inform what policy recommendation(s) would reach more CNAs. Examples include expanding wage pass-through legislation, incorporating rate enhancements linked to provider performance, implementing collective bargaining strategies or living wage ordinances and minimum wage increases, and expanding eligibility criteria for public benefits (Seavey & Salter, 2006). If the public benefits eligibility criteria are broadened, as one policy recommendation, consideration should also be given to its acceptability to the workers.

## **Health Insurance**

Uninsured workers can adversely affect nursing home staffing stability. More than 40% of the uninsured CNAs in this study did not participate in their employer's plan because they could not afford their share of the premium. Because provider decisions to offer health insurance and affordable premium rates depend largely on the characteristics of the population and the size of the workforce, nursing home employers may be disadvantaged from several perspectives: (a) the expected health-care use of a predominately female CNA workforce is greater than that of male CNAs, thus making anticipated service use costly for insurers; (b) small employers have less negotiating power when it comes to accessing competitive market rates than large employers; and (c) nursing homes that are heavily dependent on Medicaid revenues may find it more difficult to cover the cost of premium increases if their state has reduced its Medicaid reimbursement rates (Lipson, 2004). Policy options that involve subsidizing employer-based coverage, conducting outreach to enroll CNAs in plans offered through public-private partnerships, pooling together small employers to form employer purchasing pools, and/or increasing eligibility for publicly funded plans may help nursing homes provide affordable health insurance to a substantial number of uninsured CNAs (PHI, 2007).

Additional linkages with area resource files can provide local estimates of people with and without health insurance to provide a better picture of uninsured CNAs from the local perspective. NNAS data may also be linked with the NNHS to compare employer and employee responses to whether health insurance was offered.

## **Injuries**

Worker injuries reduce staffing, increase health-care costs, and affect the ability of staff to do their work. Our study and others have found that more than half of CNAs incurred at least one work-related injury within the past year, rates that exceed those for almost any other profession (Hoskins, 2006). Although three quarters of the injuries in this study did not result in loss of work time due to the injury, the difference in mean and median number of injuries and time lost suggest that there is a small subgroup of CNAs with a much higher injury rate and/or more severe injuries. High injury rates and insufficient or no health insurance and sick benefits may jeopardize CNAs' financial stability and commitment to their job or field; it may also adversely affect nursing home staffing stability.

Lack of equipment (e.g., for lifting and transferring residents), lack of training on the proper use of equipment, lack of training on managing resident behaviors (e.g., combative or aggressive residents), and working short staffed are some of the reasons for CNA injuries. Linking the NNAS and NNHS data could permit closer examination of and comparison between facility and CNA reports of when injuries occur, injury prevention training offered, availability of safety equipment such as lifts, frequency of working short staffed, and extent of vacancies and turnover. The relationship among injuries, equipment, training, and staffing, along with health insurance coverage and sick benefits and their relationship with CNAs' financial status, perceptions of their job, and intentions to stay or leave their jobs, could also be examined. Linking the NNAS, NNHS, and area resource files would enable analysts to explore the probability of receiving a work-related injury, specifically across important subgroups such as workers in facilities of different sizes and different staff-to-patient ratios, and to determine the effect of worker injuries on job satisfaction and tenure.

## **LIMITATIONS OF THE NNAS**

The nursing homes and nursing assistants that were selected and participated may be different from those that did not participate. Select facility characteristics (Table 1) of the nursing homes that participated and those from the universe from which the sample was selected are comparable, indicating that nursing homes that participated in the NNAS are representative of U.S. nursing homes. However, there may be other unmeasured characteristics and practices that are different from nonparticipating nursing homes that might affect CNAs' experiences. Because CNAs were selected based on a list provided by each participating NNHS facility, it is possible that nursing homes may have provided incomplete or selective lists. The CNA refusal rate was 3%. It is possible that CNAs who were not able to be located and did not participate in the survey are different from those CNAs who participated. Other limitations include the inability to create reliable estimates for response categories with low population prevalence and open-ended responses that could not be coded into meaningful categories. Finally, CNAs had to work at least 16 hr/week to be eligible for this survey.

Thus, it is likely that these findings underestimate the percentage of part-time workers relative to full-time workers.

In conclusion, this article presents results from select policy issues that can be examined by the NNAS separately or in combination with other large data sets in long-term care. This new national data source will provide a solid evidence base for policymakers to use in setting priorities for addressing factors influencing workforce stability and for other stakeholders in better understanding CNA workforce issues and challenges, and in establishing useful benchmarks as goals toward which improvement efforts may aspire. Forthcoming results will figure prominently in federal and state labor, welfare, and health policy discussions on expanding the pool of nursing assistants and on reimbursement policy, regulation policy, and program design.

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*Received January 8, 2008*

*Accepted April 9, 2008*

*Decision Editor: William J. McAuley, PhD*

**TABLE 5. Selected Policy-Relevant Topic Areas on the National Nursing Assistant Survey and Possible Linkages to Other Data Sources**

| CNA Characteristics <sup>a</sup>  | Facility Characteristic  | Area Characteristic  |
|---|--|--|
| Recruitment<br>Reasons for becoming a CNA, how learned about position   | Recruitment<br>Recruitment strategies offered by facility for non-CNA staff <sup>b</sup>   |  |
| Commitment to job<br>Likelihood of leaving current job in next year and reasons, reasons CNA continues to work in current job, perceived problems with job, perceived magnitude of CNA turnover, effect of perceived turnover, would CNA retake job and recommend to others | Commitment to job<br>Retention strategies offered by facility, <sup>b</sup> number of employed staff, number of vacancies, number of hires, number left: for CNA, RN, LPN, aide <sup>b,c</sup> |  |
| Commitment to field<br>Likelihood of becoming a CNA again, will next position be CNA or something else, would CNA recommend field, how important is CNA work  |  |  |
| Training and preparedness for work<br>How well did training prepare CNA for position, any continuing education, activities facility could take to encourage CNA to take more training   |  |  |
| Work history<br>Tenure as CNA and in facility<br>Number of jobs in past 2 and 5 years<br>Wages and hours worked for up to five current jobs   | Work history<br>CNA, LPN, RN, aides/orderlies entry-level hourly wage <sup>b</sup>   | Work history<br>Per capita and household income <sup>d</sup>                   |
| Job benefits<br>Benefits offered to CNAs<br>Health insurance coverage and source  | Job benefits<br>Benefits offered to CNAs, RNs, and LPNs <sup>b,a</sup><br>Is fully or partially paid health insurance available for RN, LPN, CNA/family <sup>a,b</sup>                         | Job benefits<br>Estimates of people with/without health insurance <sup>d</sup> |
| Supervision<br>Satisfaction with supervisor, respect from supervisor  | Supervision<br>Director of Nursing, medical director and administrator training/certification, tenure <sup>b</sup><br>24/7 on-site nurse supervision <sup>b</sup>                              |  |

| <b>TABLE 5 (continued)</b>   |   |   |
|--|---|---|
| <b>CNA Characteristics<sup>a</sup></b>   | <b>Facility Characteristic</b>  | <b>Area Characteristic</b>  |
| Workplace demands<br>Adequacy of time to perform job activities  | Workplace demands<br>Specialized services offered (e.g., dialysis, infusion), <sup>b,c</sup> survey certification results <sup>c</sup><br>Resident demographics, functional and cognitive status, current medications, admission and current diagnoses, length of stay, advance directives, quality indicators, receipt of formal care/treatments, payment sources, <sup>b,c</sup> discharge disposition, change over time <sup>e</sup>   | Workplace demands<br>Health-care utilization, <sup>d</sup> hospital expenditures, <sup>d</sup> supply of health professionals, hospitals, nursing facilities, HMOs, PPOs <sup>d</sup>                           |
| Perception of job<br>Job satisfaction--overall and by components, perceptions of respect from residents/residents families, supervisor, organization   |   |   |
| Nonworkplace demands<br>Caregiving for children/other dependents, travel time, and mode<br>Use of public benefits: TANF, WIC, Food Stamps, housing assistance<br>Caregiving for children/other dependents                                  |   | Nonworkplace demands<br>County poverty measures, housing data, health insurance utilization, <sup>d</sup> HHS poverty thresholds, <sup>f</sup> TANF, WIC, Food Stamps, housing assistance programs <sup>g</sup> |
| Workplace environment<br>Perceptions of facility policies about CNA's work structure, personnel sources for help with job-related problems, discrimination<br>Pattern of resident assignment<br>Number of mandatory overtime shifts worked | Workplace environment<br>Ownership; size <sup>a,b</sup> ; for profit status; specialized units/staff; contracts; reimbursement; accreditation <sup>b</sup> contracts with outside provides <sup>b</sup> ; facility use of electronic information systems, including for CNA notes <sup>b</sup> ; aspects of "person-centered care" <sup>b</sup><br>Pattern of resident assignment, <sup>b</sup> involvement of CNA in resident care meetings <sup>b</sup><br>Policy of mandatory CNA overtime, <sup>a</sup> number of CNA, nursing overtime shifts worked, <sup>b</sup> number of CNA overtime shifts worked <sup>a</sup><br>CNA, nurses, housekeeping, maintenance, food service, other staff belong to labor unions <sup>b</sup><br>Number of employed staff, number of vacancies, number of hires, number left: for can, RN, LPN, aide <sup>b,c</sup><br>Duties performed by volunteers <sup>b</sup> | Workplace environment<br>MSA/non-MSA, <sup>a,d</sup> urban/rural, county economic type (e.g., farming dependent or services dependent) <sup>d</sup>   |

| <b>TABLE 5 (continued)</b>   |   |  |
|--|---|--|
| <b>CNA Characteristics<sup>a</sup></b>   | <b>Facility Characteristic</b>  | <b>Area Characteristic</b>   |
| Work-related injuries<br>Total number of injuries, types and how they occurred<br>Received flu shot  | Work-related injuries<br>Availability, use and training for lifting devices, <sup>a</sup><br>lifting devices in facility? <sup>b</sup><br>Influenza, Pneumonia Vaccination policies, and<br>percent vaccinated <sup>b</sup> |  |
| Demographics<br>Age, gender, race, Hispanic ethnicity, marital status, education, income, citizenship, languages spoken  | Demographics<br>Percentage of CNAs with English as second language <sup>b</sup>   | Demographics<br>Population estimates/density, education, infant mortality rates, <sup>d</sup> per capita and household income <sup>d</sup> |
| <p><b>SOURCES:</b></p> <p>a. 2004 National Nursing Assistant Survey;<br/> b. 2004 National Nursing Home Survey;<br/> c. Online Survey and Certification Assessment Record;<br/> d. Area resource file;<br/> e. CMS minimum data set quality indicators;<br/> f. HHS poverty thresholds: <a href="http://aspe.hhs.gov/poverty/figures-fed-reg.shtml">http://aspe.hhs.gov/poverty/figures-fed-reg.shtml</a>;<br/> g. Federal assistance information (WIC, TANF, Food Stamps, housing assistance programs), links to state information <a href="http://www.hhs.gov/">http://www.hhs.gov/</a>.</p> <p><b>NOTE:</b> CNA = certified nursing assistant; HHS = Department of Health and Human Services; RN = registered nurse; TANF = Temporary Assistance for Needy Families; WIC = women, infants, and children; HMO = Health Maintenance Organization; PPO = Preferred Provider Organization; MSA = Metropolitan or Micropolitan Statistical Area.</p> |   |  |

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