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

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

Marie R. Squillace, Ph.D.
Robin E. Remsburg, Ph.D.
Lauren D. Harris-Kojetin, Ph.D.
Anita Bercovitz, Ph.D.
Emily Rosenoff, M.P.A.
Beth Han, Ph.D., M.D.

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ACKNOWLEDGEMENT

AUTHORS

Marie R. Squillace, Ph.D., Disability, Aging and Long-Term Care Policy, Office of the Secretary/Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, Washington, District of Columbia.

Robin E. Remsburg, Ph.D., School of Nursing and College of Health and Human Services, George Mason University, Fairfax, Virginia (formerly with the National Center for Health Statistics).

Lauren D. Harris-Kojetin, Ph.D., School of Nursing and College of Health and Human Services, George Mason University, Fairfax, Virginia (formerly with the National Center for Health Statistics).

Anita Bercovitz, Ph.D., School of Nursing and College of Health and Human Services, George Mason University, Fairfax, Virginia (formerly with the National Center for Health Statistics).

Emily Rosenoff, M.P.A., Disability, Aging and Long-Term Care Policy, Office of the Secretary/Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, Washington, District of Columbia.

Beth Han, Ph.D., M.D., Office of Applied Studies, SAMHSA, U.S. Department of Health and Human Services, Rockville, Maryland.

Address correspondence to Marie R. Squillace, PhD, Disability, Aging and Long-Term Care Policy, Office of the Secretary/Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, 200 Independence Avenue, S.W., Room 424.E20, Washington, DC 20201, E-mail: marie.quillace@hhs.gov.

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 Sevices 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 ≥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.

Facility Characteristic	Number of Participating Facilities	Percent Distribution	Number of U.S. Nursing Homes[a]	Percent Distribution
TABLE 1. Characteristics of Facilities Participating in the 2004 National Nursing Assistant Survey				
Total	7,900[b]	100.0	16,628	100.0
Ownership				
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
Beds				
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
Geographic region				
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
Location				
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
Affiliation				
Chain	4,300	54.9	n/a[c]	n/a
Independent	3,500	45.1	n/a	n/a

SOURCE: 2004 National Nursing Home Survey, National Center for Health Statistics.
NOTES: 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.

TABLE 2. Worker Characteristics			
Characteristic	**Weighted Size**	**Weighted Percent**	*SE*
Age, years[a]			
<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
M = 38.52			0.34
Mdn = 37.48			0.43
Gender[a]			
Male	56,340	8.02	0.70
Female	646,142	91.98	0.70
Race[a]			
White	375,416	53.44	1.87
Black	271,582	38.66	1.89
Other	55,484	7.90	0.91
Ethnicity[a]			
Hispanic/Latino	65,205	9.28	0.89
Not Hispanic/Latino	631,162	89.85	0.92
Education[a]			
<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
Marital status[a]			
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

TABLE 2 (*continued*)			
Characteristic	**Weighted Size**	**Weighted Percent**	*SE*
Family income, $[a]			
<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
Number of children needing child care			
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
Total time worked as CNA			
≤6 months[a]	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
Time worked at facility[a]			
<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
M = 4.88 years			1.91
Mdn = 2.44 years			0.90
No. hours worked per week[a]			
16 - 20[b]	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
M = 36.81			0.21
Mdn = 39.04			0.33

TABLE 2 (*continued*)			
Characteristic	**Weighted Size**	**Weighted Percent**	*SE*
Hourly wage, $[a]			
≤ 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
M = 10.33			0.31
Mdn = 10.04			0.34

NOTE: 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 *n* = 120, weighted *N* = 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).

TABLE 3. Receipt of Public Benefits			
Characteristic	**Weighted Size**	**Weighted Percent**	*SE*
Ever received TANF[a]			
Yes	159,596	23.44	1.14
No	518,841	76.21	1.15
Ever received Food Stamps			
Yes	290,965	42.74	1.43
No	389,552	57.21	1.44
Receives Food Stamps			
Yes	73,428	10.78	0.80
No	607,089	89.17	0.80
Ever received WIC			
Yes	290,930	42.73	1.27
No	389,770	57.25	1.27
Receives WIC			
Yes	63,181	8.99	0.66
No	639,301	91.01	0.66
Lives in public housing or receives rental subsidy			
Yes	50,911	7.48	0.73
No	629,044	92.39	0.73
Receives government medical insurance (Medicaid or Medicare)			
Yes	156,990	23.06	1.10
No	516,532	75.87	1.10
Receives at least one public benefit			
Yes	213,360	30.37	1.16
No	457,997	65.20	1.15
NOTE: 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).

TABLE 4. Health Benefits and Injuries			
Characteristic	Weighted Size	Weighted Percent	*SE*
Paid sick leave available			
Yes	481,046	70.65	1.40
No	174,341	25.61	1.34
Health insurance available from employer			
Yes	610,646	89.69	0.89
No	60,996	8.96	0.83
Participating in health insurance available from employer			
Yes	329,935	54.03	1.51
No	280,332	45.91	1.50
Uninsured[a]			
Yes	110,734	16.26	0.96
No	570,112	83.74	0.96
Uninsured, not participating in employer-sponsored health insurance because cannot afford[b]			
Yes	46,366	41.87	2.79
No	62,677	57.48	2.79
Not participating in health insurance available from employer and is uninsured[c]			
Yes	84,071	29.99	1.66
No	196,261	70.01	1.66
Number of injuries past year			
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
M = 2.63			0.17
Mdn = 0.38			0.00
Days unable to work due to injury[d]			
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
M = 3.01			0.54
Mdn = 0.00			0.00

NOTE: 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 lattices 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 recom-mendation, 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 characteris-tics 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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TABLE 5. Selected Policy-Relevant Topic Areas on the National Nursing Assistant Survey and Possible Linkages to Other Data Sources		
CNA Characteristics[a]	Facility Characteristic	Area Characteristic

Recruitment
    Reasons for becoming a CNA, how learned about position
	Recruitment
	    Recruitment strategies offered by facility for non-CNA staff[b]	

Commitment to job
    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
	    Retention strategies offered by facility,[b] number of employed staff, number of vacancies, number of hires, number left: for CNA, RN, LPN, aide[b,c]	

Commitment to field 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 How well did training prepare CNA for position, any continuing education, activities facility could take to encourage CNA to take more training		

Work history
    Tenure as CNA and in facility
    Number of jobs in past 2 and 5 years
    Wages and hours worked for up to five current jobs
	Work history
	    CNA, LPN, RN, aides/orderlies entry-level hourly wage[b]
		Work history
		    Per capita and household income[d]

Job benefits
    Benefits offered to CNAs
    Health insurance coverage and source
	Job benefits
	    Benefits offered to CNAs, RNs, and LPNs[b,a]
	    Is fully or partially paid health insurance available for RN, LPN, CNA/family[a,b]
		Job benefits
		    Estimates of people with/without health insurance[d]

Supervision
    Satisfaction with supervisor, respect from supervisor
	Supervision
	    Director of Nursing, medical director and administrator training/certification, tenure[b]
	    24/7 on-site nurse supervision[b]	

TABLE 5 (*continued*)		
CNA Characteristics[a]	**Facility Characteristic**	**Area Characteristic**

Workplace demands
    Adequacy of time to perform job activities
	Workplace demands
	    Specialized services offered (e.g., dialysis, infusion),[b,c] survey certification results[c]
	    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,[b,c] discharge disposition, change over time[e]
		Workplace demands
		    Health-care utilization,[d] hospital expenditures,[d] supply of health professionals, hospitals, nursing facilities, HMOs, PPOs[d]

Perception of job Job satisfaction--ovreall and by components, perceptions of respect from residents/ residents families, supervisor, organization		

Nonworkplace demands
    Caregiving for children/other dependents, travel time, and mode
    Use of public benefits: TANF, WIC, Food Stamps, housing assistance
    Caregiving for children/other dependents
		Nonworkplace demands
		    County poverty measures, housing data, health insurance utilization,[d] HHS poverty thresholds,[f] TANF, WIC, Food Stamps, housing assistance programs[g]

Workplace environment
    Perceptions of facility policies about CNA's work structure, personnel sources for help with job-related problems, discrimination
    Pattern of resident assignment
    Number of mandatory overtime shifts worked
	Workplace environment
	    Ownership; size[a,b]; for profit status; specialized units/staff; contracts; reimbursement; accreditation[b] contracts with outside provides[b]; facility use of electronic information systems, including for CNA notes[b]; aspects of "person-centered care"[b]
	    Pattern of resident assignment,[b] involvement of CNA in resident care meetings[b]
	    Policy of mandatory CNA overtime,[a] number of CNA, nursing overtime shifts worked,[b] number of CNA overtime shifts worked[a]
	    CNA, nurses, housekeeping, maintenance, food service, other staff belong to labor unions[b]
	    Number of employed staff, number of vacancies, number of hires, number left: for can, RN, LPN, aide[b,c]
	    Duties performed by volunteers[b]
		Workplace environment
		    MSA/non-MSA,[a,d] urban/rural, county economic type (e.g., farming dependent or services dependent)[d]

TABLE 5 (*continued*)		
CNA Characteristics[a]	**Facility Characteristic**	**Area Characteristic**

Work-related injuries
    Total number of injuries, types and how they
       occurred
    Received flu shot
	Work-related injuries
	    Availability, use and training for lifting devices,[a]
	       lifting devices in facility?[b]
	    Influenza, Pneumonia Vaccination policies, and
	       percent vaccinated[b]	

Demographics
    Age, gender, race, Hispanic ethnicity, marital
       status, education, income, citizenship,
       languages spoken
	Demographics
	    Percentage of CNAs with English as second
	       language[b]
		Demographics
		    Population estimates/density, education, infant
		       mortality rates,[d] per capita and household
		       income[d]

SOURCES:
a. 2004 National Nursing Assistant Survey;
b. 2004 National Nursing Home Survey;
c. Online Survey and Certification Assessment Record;
d. Area resource file;
e. CMS minimum data set quality indicators;
f. HHS poverty thresholds: http://aspe.hhs.gov/poverty/figures-fed-reg.shtml;
g. Federal assistance information (WIC, TANF, Food Stamps, housing assistance programs), links to state information http://www.hhs.gov/.

NOTE: 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.

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