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California Caregivers: Final Labor Market Analysis

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***CALIFORNIA CAREGIVERS:  
FINAL LABOR MARKET  
ANALYSIS***

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	I
TABLE OF CONTENTS.....	II
TABLES .....	III
FIGURES .....	IV
EXECUTIVE SUMMARY .....	V
INTRODUCTION .....	1
Research Questions .....	1
Data and Methodology .....	2
Analysis Overview .....	4
SECTION 1: DESCRIPTION OF CAREGIVER OCCUPATIONS.....	6
Where do Caregivers Work? .....	6
Healthcare Worker Training Requirements and Programs.....	7
Demographic Profile of Caregivers.....	11
SECTION 2: CURRENT KNOWLEDGE OF THE CAREGIVER LABOR MARKET .....	18
Factors Affecting the Demand for Healthcare Workers.....	18
Factors Affecting the Supply of Healthcare Workforce.....	20
California’s Quest for Caregivers.....	21
Summary.....	25
SECTION 3: OVERALL LABOR MARKET CONDITIONS .....	26
Employment Levels for Caregivers.....	26
Wages for Caregivers .....	34
Job Benefits for Caregivers .....	41
The Caregiver Shortage.....	45
SECTION 4: JOB STABILITY IN THE CAREGIVER LABOR MARKET .....	48
Job Stability of Certified Nurse Assistants and IHSS Providers.....	48
Unemployment and Job Injuries among Caregivers.....	56
Employer-Side Estimate on Job Turnover.....	59
SECTION 5: MOBILITY IN THE CAREGIVER LABOR MARKET.....	62
Upward Mobility within Occupations .....	62
Mobility across Occupations .....	64
SUMMARY OF FINDINGS .....	66
BIBLIOGRAPHY.....	70
APPENDIX A: MEDICARE AND MEDICAID REGULATIONS .....	73
APPENDIX B: REGRESSION ANALYSIS RESULTS .....	76
APPENDIX C: INDUSTRY-WIDE JOB STABILITY ANALYSIS .....	80
APPENDIX D: COUNTY TABLES AND MAP OF CALIFORNIA .....	86

## TABLES

Table 1: Data Sources for Labor Market Analysis.....	3
Table 1.1: Training and Qualification Requirements for Caregivers in California.....	8
Table 1.2: Approved CNA Training Programs in California.....	9
Table 1.3: Demographic Profile of Certified Nurse Assistants.....	13
Table 1.4: Demographic Profile of In-Home Supportive Services Providers, by Current Status.....	14
Table 1.5: Demographic Profile of In-Home Supportive Services Providers, by Relationship to Client.....	15
Table 3.1: Employment Estimates for Caregivers Occupations.....	27
Table 3.2: Place of Employment for Certified Nurse Assistants, by Source of Training.....	30
Table 3.3: Industry of Primary Employment for Caregivers (First Quarter of 2001).....	31
Table 3.4: Average Hourly Wages for Certified Nurse Assistants.....	36
Table 3.5: Wages for Nurse Assistants in Long-Term Care Facilities.....	38
Table 3.6: Average Hourly Wages for In-Home Supportive Services Providers (1995-2001).....	40
Table 3.7: Percent of Certified Nurse Assistants with Employer-Provided Job Benefit.....	44
Table 3.8: Caregiver Shortage in the CalJOBS Electronic Database (July 2001-May 2002)...	46
Table A.1: Medicare and Medicaid Regulations and Changes.....	75
Table B.1: Multivariate Regression Analysis of Nurse Assistant Staffing (Demand-Side).....	76
Table B.2: Multivariate Regression Analysis of LTC Nurse Assistant Wages.....	76
Table B.3: Multivariate Regression Analysis of CNA Wages.....	77
Table B.4: Multivariate Regression Analysis of Employer Received Labor Shortage.....	78
Table B.5: Multivariate Regression Analysis of Leavers.....	79
Table D.1: Caregiver Employment Levels and Wages, by County (A thru M).....	86
Table D.2: Caregiver Employment Levels and Wages, by County (N thru Y).....	87

## FIGURES

Figure 1.1: Number of Community College CNA Graduates, 1992/93-2000/01.....	11
Figure 1.2: Percent of Certified Nurse Assistants Ever Received Welfare (1995-2000).....	16
Figure 1.3: Percent of IHSS Providers Ever Received Welfare (1995-2000).....	17
Figure 3.1: Number of New Certified Nurse Assistants from 1995 to 2000.....	28
Figure 3.2: Workforce Composition by Employment Type and Occupation.....	29
Figure 3.3: Geographic Distribution of Certified Nurse Assistants.....	32
Figure 3.4: Geographic Distribution of IHSS Providers.....	33
Figure 3.5: Nurse Assistant Staffing in Long-Term Care Facilities, by County.....	34
Figure 3.6: Average Hourly Wages and Wage Spread, by Caregiver Occupations.....	35
Figure 3.7: Hourly Wage of Long-Term Care Facility Nurse Assistants, by County.....	39
Figure 3.8: Vacation and Sick Leave Benefits for Caregivers.....	42
Figure 3.9: Medical, Dental and Retirement Benefits for Caregivers.....	43
Figure 3.10: Employer Perceived Difficulty Finding Qualified Applicants.....	47
Figure 4.1: Certified Nurse Assistant Employee Retention Rates.....	50
Figure 4.2: Certified Nurse Assistant Licensing Survival Rate (1995-2001).....	51
Figure 4.3: IHSS Provider Employee Retention Rates.....	52
Figure 4.4: Certified Nurse Assistant and IHSS Provider Job Stability Job Stability after Three Years.....	53
Figure 4.5: CNA and IHSS Industry Leavers' Industry of Employment after Three Years.....	54
Figure 4.6: CNA Quarterly Earnings by Employment Status after Three Years.....	55
Figure 4.7: IHSS Quarterly Earnings by Employment Status after Three Years.....	56
Figure 4.8: Length of Spell for Caregivers Collecting Unemployment Insurance (2000).....	57
Figure 4.9: Occupation at Time of Unemployment Claim (2000).....	58
Figure 4.10: Length of Spell for Caregivers Collecting Disability Insurance.....	59
Figure 4.11: Percent of Workforce Hired in Past Year, by Occupation and Reason for Hire...	60
Figure 4.12: Distribution of Firms by Their Occupational Turnover Rate.....	61
Figure 5.1: Wage Progression by Caregiver Occupations.....	63
Figure 5.2: New Hires to Replace Vacancies from Promotions, by Occupation.....	64
Figure C.1: Employee Retention Rates by Health Care Industry.....	81
Figure C.2: Employee Retention Rates by Income Level.....	82
Figure C.3: Employee Retention Rates after Three Years by Industry and Income.....	83
Figure C.4: Job Stability after Three Years by Industry and Type of Stability.....	83
Figure C.5: Caregiver Industry Leavers' Industry of Employment after Three Years.....	84
Figure C.6: Caregiver Industry Leavers' Industry of Employment after Three Years, by Income Status.....	84
Figure C.7: Quarterly Earnings by Employment Status after Three Years.....	85
Figure C.8: Quarterly Earnings for Caregiver Industry Leavers, by Income Status.....	85
Figure D.1: California County Identification Numbers.....	88

# **CALIFORNIA CAREGIVERS: FINAL LABOR MARKET ANALYSIS**

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## **EXECUTIVE SUMMARY**

The demand for healthcare workers is growing, but the supply of workers has not kept pace. California has responded to this worker shortage by funding the Caregiver Training Initiative (CTI), part of the Governor's Aging with Dignity Initiative. One focus of the initiative is on the labor market issues facing caregivers. In late 2000, California's Health and Human Services Agency and the Employment Development Department (EDD) solicited UCLA to conduct a labor market analysis of caregivers. The primary purpose of this labor market analysis is to develop a better understanding of the caregiver labor market and the dynamics associated with this market. To achieve this goal, we address the following questions, with a primary focus on Certified Nurse Assistant (CNA) and In-Home Supportive Services (IHSS) workers:

1. What is required to become a caregiver and who becomes a caregiver?
2. What is already known about the caregiver labor market?
3. What are the overall labor market conditions for caregivers? (i.e., employment levels, wages, and job benefits)
4. What is the degree of job stability and turnover in the caregiver labor market?
5. What is the degree of occupational mobility in the caregiver labor market?

The major findings from this report are highlighted below.

### ***What is required to become a caregiver and who becomes a caregiver?***

- Certified Nurse Assistants (CNAs) must receive 150 hours of training plus pass a certification exam, but there are no formal requirements for IHSS workers.
- Active CNAs are mostly female and have at least a high school education. Most have family responsibilities and only about half speak English as a primary language.
- IHSS providers are also mostly female. Over half of those reporting are related to the client. About one-third have been an IHSS provider for five or more years.
- About one-quarter of CNAs received welfare at some time during 1995-2000, and 10 percent received welfare in 2000. The proportions for IHSS providers who were welfare eligible were slightly higher.

### ***What is already known about the caregiver labor market?***

- Nationally, we know that the projected increase in demand, especially for the lower-end jobs such as home health aides, is very high.
- California differs from the rest of the country in the sense that there is more ethnic diversity, more consumer choice in terms of home care, a larger welfare and uninsured population, and a fast-growing elderly population.
- Turnover rates among workers are very high, and in terms of wages, benefits, opportunities for advancement and risk of injury, caregiver occupations fare less well than competing occupations.
- The current research is consistent with factors related to a labor shortage. However, the findings are not complete since they focus on the supply-side characteristics of caregiver occupations.

### ***What are the overall labor market conditions for caregivers?***

- The number of new Certified Nurse Assistants (CNAs) peaked in 1996 and declined from 1997 to 1999, despite rising demand.
- Over 60 percent of Home Health Aides and Personal and Home Care Aides are part-time or temporary employees, and over 30 percent of Nurse Aides are part-time or temporary employees.
- Benefits for caregivers are predominately available for full-time employees, and not part-time employees.
- About half of CNAs work in a convalescent or nursing home, while another quarter work in a hospital. Over 15 percent of CNAs work in more than one establishment.
- CNAs with employer-provided training are more likely to remain employed with that employer, but a significant number do leave for employment in another type of facility.
- On average, Long-Term Care (LTC) facilities in counties with a managed care plan and those with a greater reliance on Medicaid/Medicare revenues have lower nurse assistant staffing levels and lower nurse assistant wages, everything else equal.
- Earnings returns to experience and education for CNAs are low relative to most occupations.
- Unionized CNA wages are about 14 percent higher than non-unionized CNA wages.



- The hourly wage for nurse assistants in Long-Term Care facilities is about 10 percent lower than the prevailing wage for competing occupations in the area where the facility is located.

***What is the degree of job stability and turnover in the caregiver labor market?***

- Over a six year period (1995-2001), about half of Certified Nurse Assistants failed to renew their certificate within three years (1998-2001) and about 70 percent failed to renew within six years (1995-2001).
- Among IHSS providers from 1999 to 2001, about 54 percent of those who provided in-home care to a relative or friend still were providing care in 2001, while only 35 percent of non-related providers still were providing care.
- By the end of three years about 60 percent of CNAs in the caregiver industries, and 75 percent of CNAs in non-caregiver industries, no longer work at their initial firm.
- The caregiver industry loses a significant percentage of its workforce to other industries over time, but the industry leavers are not significantly clustered in any other specific industries.
- A significant percentage of CNAs and IHSS providers who collected unemployment insurance in 2000 experienced long unemployment spells. Over 25 percent of unemployed CNAs, and almost 35 percent of IHSS providers, were unemployed for more than six months.

***What is the degree of economic advancement in the caregiver labor market?***

- The wage premium increase for CNA experience averaged out to less than one percent per year (everything else equal), which is very low relative to most average annual increases in pay.
- Certified Nurse Assistants who left their primary industry in 1998 experienced a greater percentage increase in earnings by 2000 than those who stayed at the same firm (a 42 percent versus a 30 percent increase).
- Home Health Aides experience high rates of job promotion relative to competing occupations, but Nurse Aides and Personal and Home Care Aides have job promotion rates similar to those for competing occupations.
- About 30 percent of CNAs also acquire a Home Health Aide certificate.

- Rough estimates indicate that between 5 and 12 percent of CNAs/HHAs go on to become licensed vocational nurses (LVNs).

Findings from this report substantiate and expand upon findings from previous labor market studies of low-wage healthcare workers. Unlike previous reports based on aggregate data, we used micro-level worker data, and merged it with longitudinal data to track CNA and IHSS workers over time. Utilizing various data sources, we were able to integrate caregiver data with information about firms and information about regional economies. The report clearly quantifies wage dispersions, describes movements among occupations, and addresses issues of mobility.

To the best of our knowledge, there are no other studies in the country that have explored these areas to the same degree.

## INTRODUCTION

Today's newspapers, magazines, and journal articles devote much attention to the problems of inadequate numbers of workers in the health professions, particularly among the lower ranks of paraprofessionals. To illustrate, an entire recent issue of American Society on Aging's journal, *Generations* (Spring 2001), was entitled "Who will care for older people? Workforce issues in a changing society." The bottom line is that society is changing in ways that exacerbate the shortages of health care industry workers. These paraprofessionals receive some of the lowest wages, and as such, are at the bottom of the service industry hierarchy, but their work is crucial to the sustenance of several million Americans. It is estimated that health care workers providing long-term care, including certified nursing assistants, home health aides, and unskilled workers, supply between 75 and 90 percent of all paid direct care to consumers (Wilner and Wyatt, 1998).

California has responded to this worker shortage by funding the Caregiver Training Initiative (CTI), part of the Governor's Aging with Dignity Initiative. The goals of the CTI are to ensure that (1) California's communities have well-trained caregivers necessary for all levels of care for the elderly population, (2) communities have caregivers necessary for continuity of long-term care, and (3) caregivers have opportunities for entry-level employment, and for career advancement.

### *Research Questions*

One focus of the initiative is on the labor market issues facing caregivers. In late 2000, California's Health and Human Services Agency and the Employment Development Department (EDD) solicited UCLA to conduct a labor market analysis of caregivers. The primary purpose of this labor market analysis is to develop a better understanding of the caregiver labor market and the dynamics associated with this market. To achieve this goal, we address the following questions, with a primary focus on Certified Nurse Assistant (CNA) and In-Home Supportive Services (IHSS) workers:

1. What is required to become a caregiver and who becomes a caregiver?
2. What is already known about the caregiver labor market?
3. What are the overall labor market conditions for caregivers? (i.e., employment levels, wages, and job benefits)
4. What is the degree of job stability and turnover in the caregiver labor market?

5. What is the degree of occupational mobility in the caregiver labor market?

In November of 2001, UCLA submitted preliminary findings from the labor market analysis to the California Employment Development Department (EDD). The Preliminary Labor Market Report addressed questions two, three, and four. This Final Labor Market Report expands on the findings from the Preliminary Labor Market Report and includes an analysis of all five questions.

***Data and Methodology***

To answer the above questions, we utilize data from several sources and agencies. In addition, a number of different approaches are necessary to address the research questions. These approaches will be described in more detail for each section. Since multiple data sources, covering different time periods, are utilized throughout the analysis, one should be cautious in making direct comparisons and generalizations.

Data Sources

Some data cover aspects of labor market demand (i.e., employers) while other data sources cover aspects of labor market supply (i.e., employees). Ideally, an analysis of the caregiver labor market would rely on micro-level (individual workers and individual establishments) data with demand- and supply-side characteristics matched together; but such data are virtually non-existent. As a result, information from disparate data sources must be pieced together—and inferences made—to better understand the caregiver labor market. Table 1 below describes the data sources used in this report.

Two data sources from the California Department of Health Services (DHS) provide information on Certified Nurse Assistant (CNA). The CNA Registry Files track individuals receiving a CNA certificate, and a survey conducted in 2000 provides demographic, employment, and training information on CNAs. Data from the California Department of Social Services (CDSS) provides information on In-Home Supportive Services (IHSS) workers. The IHSS Administrative files maintained by CDSS contain demographic and employment information for most individuals who are IHSS providers. The data frameworks available for CNAs and IHSS providers are not identical; nonetheless, these data sets do provide important insights on caregiver employment and labor market dynamics.<sup>1</sup>

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<sup>1</sup> UCLA received an extract of all current CNAs as of August 2001 and all delinquent/expired CNAs between 1995 and 2001 from the CNA Registry Files. From the IHSS Administrative files, UCLA received all IHSS providers between 1999 and 2001, as well as current providers in 1995. The IHSS Administrative files do not cover a small

**Table 1: Data Sources for Labor Market Analysis**

<b>Database</b>	<b>Source</b>	<b>Period(s) Covered</b>	<b>Universe</b>	<b>Level of Analysis</b>	<b>Measures</b>
California Cooperative Occupational Information System (CCOIS)	EDD	1997-1999 (Annually)	Sample coverage of firms and specific occupations in California	Establishments (Demand-side)	Wages, Benefits, Job Vacancies, Job Promotions, Full-/ Part-Time Employment
CalJOBS	EDD	2001-2002 (Monthly)	Job openings and resume postings to CalJOBS electronic database	Individuals and Establishments	Job Openings, Resumes Posted, Occupation
Certified Nurse Assistant Registry Files	DHS	1995-2001	All current CNAs as of Aug. 2001 in California and all delinquent/ expired CNAs between 1995 and 2001 in California	Individuals (Supply-side)	Date of CNA Certification, HHA Certification, County
Certified Nurse Assistant Survey	DHS	2000	About 30,000 CNAs in California	Individuals (Supply-side)	Current CNA Status, Length of time with Certificate, Gender, Age, Education, Primary Language, Source of Training, Place of Employment
In-Home Supportive Services Administrative Files (IHSS)	CDSS	1995, 1999-2001	All current non-agency IHSS Providers and Clients in California	Individuals (Supply-side)	IHSS Provision, Wages, Race/ethnicity, Gender, Age, Primary Language, Relationship to Client, County
Long-Term Care Facility Financial Data (LTC)	OSHPD	2000 (Annually)	About 800 LTC Facilities in California	Establishments (Demand-side)	Licensed Beds, Patient Days, Revenues, Hours of Nurse Labor, Nursing Salaries
Medi-Cal Eligibility Determination System Files (MEDS)	DHS	1995-2000 (Monthly)	All individuals eligible for Medi-Cal in California	Individuals (Supply-side)	Welfare eligibility, Aid Type
Occupational Employment Statistics Survey (EDD/LMID)	EDD	1999 (Annually)	About 35,000 establishments in California	Industry (Demand-side)	Occupations, Employment, Wages
UI Base Wage/Covered Employment and Wages (ES-202)	EDD	1998-2000 (Quarterly)	Over 95% of all employees in California	Individuals (Supply-side)	Earnings, Employer (EAN), Industry (SIC)
Unemployment Insurance/Disability Insurance (UI/DI) Data	EDD	1998-2000 (Annually)	20% sample of individuals claiming Unemployment or Disability Insurance in California	Individuals (Supply-side)	Weeks of UI, UI Benefit Amount, Weeks of DI

percentage of individuals who are agency providers. The CNA Survey was mailed to all individuals with a current CNA license in 2000; it had about a 40% response rate. To make the survey more representative of the entire CNA population, the results presented in this report are weighted based on each respondent's age and length of license certification.

## Methodology

As already noted, the specific methodology employed varies depending on the question being assessed and the data being used. A large portion of the analysis is based on basic statistics generated from cross-sectional data. In general, the methods providing descriptive information are straightforward, and use basic frequency data obtained from surveys and/or administrative data sets. Other parts of the analysis use longitudinal data, and cohort analysis, to track specific characteristics over time.

In order to determine multiple predictors of continuous variables such as wages and staffing levels, we used multiple regression analysis. This technique shows which factors are significant predictors, when controlling for the effects of other predictor variables. Similarly, we used logistic regression to predict a dichotomous variable, employer hiring difficulty (difficult versus not difficult).

Because of the complexity of data used in this report, methods and data sets will be described in more detail within each section.

### ***Analysis Overview***

The analysis gives particular attention to Certified Nurse Assistants and In-Home Supportive Services providers, when available data permits. This focus on CNAs and IHSS workers reflects EDD's interest in these caregiver categories as well as CTI participant targets. Other aspects of the analysis are based on the caregiver occupations described in EDD's *Quest for Caregivers* report (California Employment Development Department, 2001). The EDD report identifies three caregiver occupations: home health aides; nurse aides, orderlies, and attendants; and personal and home care aides.<sup>2</sup> In addition, the EDD report highlights five health care industries where caregivers are concentrated: Nursing and Personal Care Facilities; Hospitals; Home Health Care Services; Individual and Family Social Services; and Residential Care.

This report is divided into five sections, corresponding to the five research questions listed above. Section 1 describes the overall demographic characteristics, as well as the training and certification/licensing requirements for the caregiver occupations. Section 2 reviews the current body of knowledge about the caregiver labor market, with an emphasis on the workforce in California. Section 3 presents findings regarding labor market conditions. This section

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<sup>2</sup> IHSS providers are generally classified under the Personal and Home Care Aides occupational category and CNAs are generally classified under the Nurse Aides occupational category.

examines how many workers are employed in the caregiver occupations, how much caregivers earn, and the availability of job benefits for caregivers. Section 4 documents the degree of job stability and turnover in the caregiver labor market. Section 5 discusses the degree of economic advancement, within and across occupations, for caregivers. The report concludes with a summary of the major findings and potential implications for future research.

This report, unlike previous reports based on aggregate data, uses micro-level worker data, and merges it with longitudinal data to track CNA and IHSS workers over time. We have been able to integrate caregiver data with information about firms, and information about regional economies. The report clearly quantifies wage dispersions, describes movements among occupations, and addresses issues of mobility. We use multivariate techniques to refine analysis to provide another level of confirmation of the impact of government regulations on wages and staffing levels.

To the best of our knowledge, there are no other studies in the country that have explored these research questions to the same degree.

## SECTION 1: DESCRIPTION OF CAREGIVER OCCUPATIONS

The federal government compiles data on three categories of entry-level healthcare workers: (1) home health aides; (2) nurse aides, orderlies and attendants; and (3) personal and home care aides. These three combined categories are often referred to as the paraprofessional workforce, allied healthcare workers, or direct care workers. Despite distinct definitions, there is considerable overlap among these jobs. These workers are employed in a variety of settings, ranging from hospitals to nursing and group homes, to private homes. Caregivers provide health, personal care, housekeeping and home-management-related tasks for people of all ages—particularly those with disabilities.

### *Where do Caregivers Work?*

#### Home care

The homecare element of the healthcare industry is its fastest growing segment. In 1999 there were more than 7,700 Medicare-certified home health agencies nationwide; over 670,000 people were employed in these agencies (excluding hospital-based, public agency workers and private workers), of whom 326,000 were home care aides (National Association of Home Care, 2000). These figures underestimate the total number of home care workers, since many are hired privately and thus not counted. Nationally, the June 2000 vacancy rate for nurse aides in home health care was 8 percent (U.S. General Accounting Office, 2001e).

In California, home healthcare services accounted for the employment of 34,400 people in 1998 (U.S. Department of Health and Human Services, 2000), similar to the 1998 state estimate of about 23,000 home health workers plus about 13,500 personal and home care aides (California Employment Development Department, 2001). An additional 200,000 people provide care under the auspices of California's In-Home Supportive Services (IHSS) program that offers care to low income people with disabilities.

#### Nursing homes

Nationally, nursing homes employ 1,855,000 healthcare workers. About 38 percent of nursing home workers (including non-health workers) are personal care, home health and nursing aides, 11 percent are Licensed Vocational Nurses (LVNs) and 9 percent are Registered Nurses (RNs) (U.S. Department of Health and Human Services, 2000). Certified Nurse Assistants (CNAs) are the principal caregivers in these homes. In 1997, CNAs held about 65



percent of all nursing home direct-care jobs; they averaged 40 minutes of patient care per resident per eight-hour shift, compared with only 14 minutes for LVNs and 10 minutes for RNs (Gregory, 2001). The June 2000 vacancy rate for nurse aides in nursing homes was 16 percent (U.S. General Accounting Office, 2001e).

In California, there are just under 125,000 nursing home workers (U.S. Department of Health and Human Services, 2000). If the California proportions are the same as national proportions, then about 47,500 workers are aides and 13,750 are LVNs. From 1988 to 1998, nursing and personal care facility employment in the state grew by 18 percent, and in 1998, California employed 0.93 workers per bed compared with the national average of 1.02 workers (U.S. Department of Health and Human Services, 2000). More recently, California legislators enacted a law requiring skilled nursing facilities (SNFs) to meet a 3.2 hours per patient day standard by April 2000; staffing levels have increased significantly, although 33 percent of SNFs surveyed in 2001 were not in compliance (California Department of Health Services, 2001).

### Hospitals

Nationally, there were almost five million hospital employees in 1998, with about 408,000 hospital employees in California (U.S. Department of Health and Human Services, 2000). This represents 40 percent of this state's health service workforce. Registered nurses comprise the largest proportion of hospital employees—26 percent of the hospital workforce. LVNs comprise 5 percent and direct care workers such as aides, orderlies and attendants represent 6 percent. The number of full-time equivalent hospital healthcare workers per capita in California declined between 1992 and 1998 by 3 percent, compared with no change nationally.

### ***Healthcare Worker Training Requirements and Programs***

Table 1.1 below summarizes the training and qualification requirements for caregiver occupations in the state. It includes the position title, required training, licensing mandates, and the necessary qualifications.

For some entry-level workers, such as home care workers, there are no training requirements while for other caregiver classifications there are specific requirements. CNAs must have 150 hours of training, compared to LVN training that typically takes 18 months. (Job category variations in training requirements are discussed in more detail below.) Future healthcare workers can choose from various training sites that include facility- or employer-

based training, regional occupational programs, adult education programs, and community and four-year colleges.

Personal and home care aides, including IHSS workers

In California, most home care workers are employed by In-Home Supportive Services (IHSS), an entitlement program for low-income people with disabilities. About 195,000 IHSS users in California receive support to hire someone to provide personal care and domestic services. Several counties in the state have established Public Authorities which then become the employer-of-record and assist the providers in obtaining access to training and education. For example, in Los Angeles County, this Public Authority and the Service Employees International Union have joined together to establish a provider skills training curriculum. In general, however, there is little or no training required for IHSS or other home care workers.

**Table 1.1: Training and Qualification Requirements for Caregivers in California**

Position	Training	Certification	Qualifications
Personal and home care aides (including IHSS)	No training required, except by some counties for IHSS workers registered under a Public Authority. Some counties offer voluntary basic caregiver training, usually 25-40 hours.	No certificate or license.	None specified, except for IHSS workers. IHSS workers must be at least 18 years old, or have a work permit. Some counties request a criminal background check.
Nurse Aides/Asst	A few employers (hospitals, nursing homes) require some training or some experience.	No certificate or license.	None specified.
Certified Nurse Assistant	150 hours total, 50 hours classroom +100 hours supervised clinical training.	Certificate only (no license). Must complete a competency exam conducted by a state department-approved vendor. Renewal every 2 years with 48 hours of in-service training.	-Must be at least 16 years old. -Health screening and TB test. -Criminal background check
Home health aides	65 hours of theory + 55 hours of supervised clinical training, or 40 hours total if combined with CNA.	Certificate only. Renewal every 2 years with 48 hours of in-service training, or automatically with CNA renewal.	-Must be at least 16 years old. -Health screening and TB test. -Criminal background check.

Sources: California Health and Human Services Agency, Department of Health Services, Nurse Assistants, Home Health Aides, Hemodialysis Technicians: Certification Facts, 2001; California Board of Vocational Nursing and Psychiatric Technicians, at <http://www/bvnpt.ca.gov/factvn.htm>; California Employment Development Department at <http://www.calmis.cahwnet.gov/file/occguid>;

Certified Nurse Assistant/ Home Health Aides

There are currently about 107,000 CNAs and 786 programs to train CNAs in California. Training is widely available in community colleges, adult education programs, private vocational

schools, and Regional Occupational Programs (ROPs). These are enumerated in Table 1.2 below. Over 38 percent of the CNA programs are offered through facilities such as nursing homes or hospitals, with about one-third of the programs offered through ROPs and adult education programs. The community college sector offers the smallest proportion of programs (9 percent) but has seen the largest growth, more than doubling in the past five years.

Most Home Health Aide (HHA) training programs are offered in conjunction with CNA training programs. In California, there are about 35,000 certified HHAs. Most of these, about 32,000, have both CNA and HHA certificates. Conversely, about one-third of CNAs also have HHA licenses.

**Table 1.2: Approved CNA Training Programs in California**

	1996	2001	% change over 5 years	% of total programs
Facility-based	323	300	-7%	38.2%
ROPs/Adult Ed	217	252	+16%	32.1%
Community Colleges	34	72	+112%	9.2%
Proprietary	121	162	+34%	20.6%
TOTAL	695	786	+13%	100.0%

Source: Licensing and Certification Program, California Department of Health Services, 4/01.

#### Facility-based (or employer-based) training

According to California's Licensing and Certification Program in the Department of Health Services, most training for CNAs is conducted through training facilities such as hospitals or long-term care facilities that employ or make an offer to employ a student during the training period. Based on federal nursing home regulations, these facilities are required to pay training costs and hourly wages while the person is in training. Also, trainees must complete training within four months, or else stop performing patient care duties.

#### Regional Occupational Programs

Regional Occupational Programs (ROPs, or ROCs, Regional Occupational Centers and Programs) are listed as partners in most of the CTI collaboratives. In California, there are 72 ROPs. They consolidate federal and state education funds to provide entry-level career technical training and workforce preparation for students 16 years and older. They offer comprehensive employment training, support services such as counseling and referrals, and placement for high school students and adults.

## Adult education

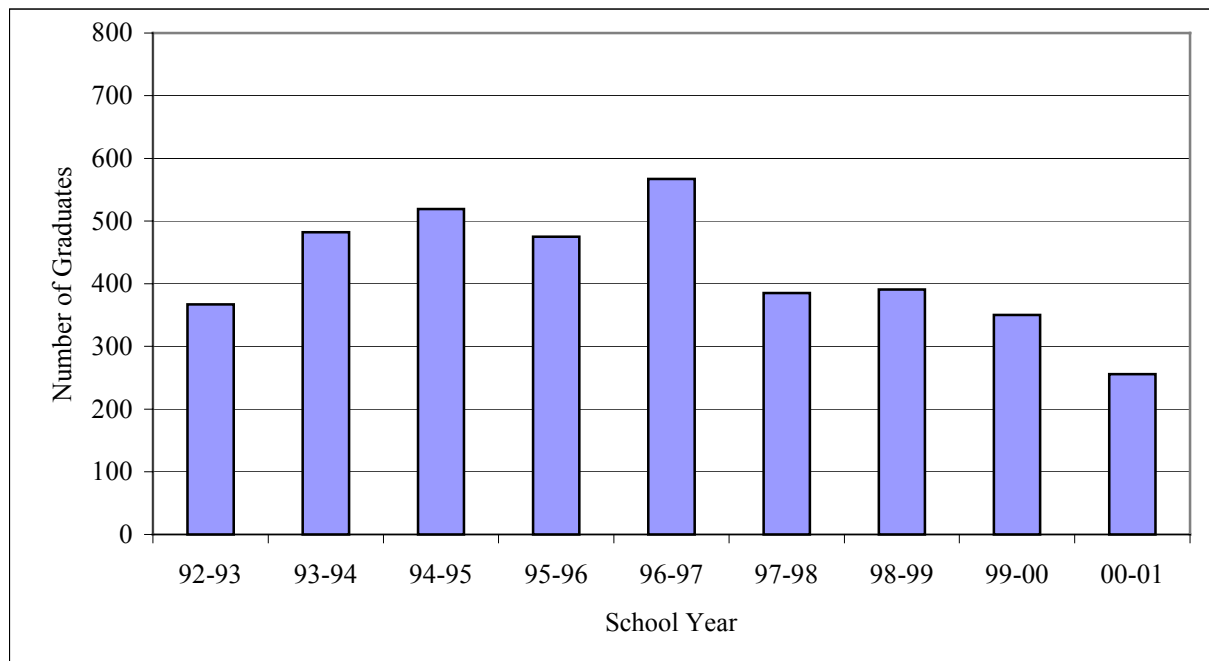
The California Public School Adult Education Program provides life-long educational opportunities and support services to adults. These programs provide adults with the knowledge and skills necessary to participate effectively as productive citizens, workers, and family members. Specific to the CTI project, these programs are the primary delivery system of a curriculum in the areas of basic reading, writing and math skills for adults, General Education Development (GED) certificates, and English as a Second Language (ESL). In the CTI program, the adult school partners function as main sources for supplemental education or training prerequisites. With ROPs, they also support many CNA training programs.

## Community colleges

With 2.5 million students, the California Community College system is the largest higher educational system in the world; it consists of 108 two-year public institutions. These schools offer academic and vocational education at the lower division level for both younger and older students, and provide education, training, and services that contribute to workforce improvement. Their functions include remedial instruction, instruction in English as a second language, adult noncredit instruction, and support services such as counseling and referrals to help students succeed at the post-secondary level. All of the CTI collaboratives include at least one community college as a partner. Most LVN training is through the community college system, but a relatively low percentage of CNAs are trained at a community college.

Figure 1.1 below shows the numbers of CNA graduates in all California community colleges as reported on the California Community College Chancellor's Office website. As shown, the number of CNAs trained at community colleges is very low, especially given the fact that the number of colleges offering CNA training has increased (see above). Over the past eight years, the numbers of trainees have generally remained steady, but have declined some in more recent years.

**Figure 1.1: Number of CNAs Trained at Community Colleges, 1992/93-2000/01**



Source: California Community College Chancellor's Office website.

### ***Demographic Profile of Caregivers***

Entry-level healthcare workers, mostly women, are ethnically and racially diverse. Nationally, about 51 percent of nursing aides, orderlies and attendants are non-Hispanic white (hereafter designated as white), 35 percent African American and 10 percent Hispanic; about 90 percent are women. For home health aides, 60 percent are white, 25 percent African American, and 10 percent Hispanic, and 79 percent are women (U.S. Department of Health and Human Services, 2000). Most workers are economically disadvantaged and have low levels of education. Many are coping with family responsibilities. Half of the nursing aides and a third of the home care workers have children under age 18 (Stone, 2000).

In California, Certified Nurse Assistants and IHSS Providers represent two of the Caregiver Training Initiative's primary targets. Understanding these caregiver characteristics is part of the groundwork for understanding the labor supply dynamics of California's low-wage healthcare worker labor market.

Two data sources from the California Department of Health Services, and one from CDSS, provide information on these workers. The CNA Registry Files track individuals receiving a CNA certificate, and a CNA workforce survey conducted in 2000 provides demographic, employment, and training information on CNAs. The IHSS Administrative files maintained by CDSS contain demographic and employment information for most individuals

who are IHSS providers. The data frameworks available for CNAs and IHSS Providers are not identical; nonetheless, these data sets do provide important insights on caregiver employment and labor market dynamics.<sup>3</sup>

#### Certified Nurse Assistant Characteristics

Demographic information on CNAs, presented below (Table 1.3), is obtained from the Certified Nurse Assistant Workforce survey results. The California Department of Health Services, Licensing and Certification Program, sent questionnaires to the approximately 100,000 CNAs in California with a current certificate in the spring of 2000; approximately 31,000 were completed. To account for certain response biases, results from the survey were weighted on the basis of age and number of years with a CNA certificate (certificate length).

Overall, individuals with a CNA license are predominately females with responsibility for a child or other family member, and most have at least a high school education. Over half are under 40 years of age. About half of CNAs are married and about half speak English as a second language. Those currently working as a Certified Nurse Assistant are more likely than those not currently working as a CNA to be responsible for a child/family member, be over the age of 30, and speak English as a second language.

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<sup>3</sup> UCLA received an extract of all current CNAs as of August 2001 and all delinquent/expired CNAs between 1995 and 2001 from the CNA Registry Files. From the IHSS Administrative files, UCLA received all IHSS providers between 1999 and 2001, as well as current providers in 1995. The IHSS Administrative files do not cover a small percentage of individuals who are agency providers.

**Table 1.3: Demographic Profile of Certified Nurse Assistants**

	Total	Currently Working as CNA	
		Yes	No
Number of CNAs Surveyed	30,575	26,139	4,436
Percent Female	88.3	87.7	90.8
Percent Married	53.2	54.2	48.2
Percent Responsible for Child/Family	68.5	70.2	60.2
Age (%):			
Under 30 years-old	29.4	27.4	39.7
30-39 years-old	27.1	27.9	23.2
40-49 years-old	24.7	25.6	20.2
50+ years-old	18.8	19.1	17.0
Education (%):			
Less than High School	13.3	14.2	8.5
High School/GED	61.9	62.0	62.0
Associates Degree	9.0	8.0	13.8
Bachelors Degree	9.1	9.2	8.2
Other	6.8	6.6	7.5
Primary Language (%):			
English	50.9	48.2	64.6
Spanish	22.3	23.9	14.9
Tagalog	17.2	18.5	10.8
Other	9.7	9.4	9.7

Source: CNA Survey, Department of Health Services, 2000. Survey results weighted.

### In-Home Support Services Provider Characteristics

Overall, IHSS providers are predominately females over the age of 30 and many are relatives or friends of their IHSS client (see Table 1.4). IHSS providers are older and are less likely to speak English as a second language than CNAs. However, current IHSS providers are more likely to speak Spanish as their primary language than those not currently providing in-home supportive services. Current IHSS providers are more likely, than past providers, to be related to the client, to speak Spanish or another language, and to be over the age of 30. According to a 1996 survey of IHSS providers, about one-third of providers do not have a high school diploma (Benjamin et al., 1998).

**Table 1.4: Demographic Profile of In-Home Supportive Services Providers, by Current Status**

	Total	Current IHSS Provider	
		Yes	No
Number of IHSS Providers	443,624	202,425	241,199
Percent Female	78.4	77.9	78.8
Relationship to Client (%):			
Relative	39.8	49.8	31.4
Friend/Neighbor	6.7	5.7	7.5
Other	41.1	31.7	49.0
Not Reported	12.5	12.9	12.1
Age (%):			
Under 30 years-old	18.4	17.0	19.5
30-39 years-old	21.8	21.3	22.3
40-49 years-old	26.7	27.6	26.0
50+ years-old	33.1	34.2	32.2
Race/Ethnicity (%):			
African American	10.4	9.7	10.9
Asian/Pacific Islander	9.9	12.3	8.0
Hispanic	24.4	24.6	24.3
White	35.2	33.7	36.5
Other	0.2	0.1	0.2
Not Reported	19.9	19.7	20.1
Primary Language (%):			
English	59.4	55.2	63.0
Spanish	7.4	8.6	6.4
Other	8.0	5.7	10.8
Not Reported	25.1	24.9	25.4

Source: IHSS Administrative Files, California Department of Social Services, 1999-2001.

The quality of the race/ethnicity and primary language information collected for the IHSS Administrative Files is questionable and not reported for about one-fourth of providers.<sup>4</sup> To get a more reliable estimate of the racial/ethnic distribution of IHSS providers we imputed race/ethnicity for some individuals based on the provider's surname. As a result, the percentages reported in Table 1.4 should be seen as broad estimate and not a precise description of IHSS providers. Despite the limitations of the IHSS Administrative Files, the data are generally consistent with provider demographics found in the 1996 survey of IHSS providers (Benjamin et

<sup>4</sup> CDSS reports that the race/ethnicity and language information may be unreliable because eligibility workers for the IHSS recipient fill in these fields on the provider records. Since the eligibility workers seldom meet the providers, their identification of the race/ethnicity and primary language of the provider is seldom more than an "educated guess."



al., 1998). For example, whites are the largest racial/ethnic group, but do not constitute a majority of IHSS providers, and Hispanics are the second largest racial/ethnic group.

Research from previous studies suggests that home care workers who are related to their clients are different from workers not related to their clients (Benjamin et al., 1998; Benjamin et al., 2000). When IHSS workers are divided into two groups, those who are a relative or friend of the client (as of 2001), and those who are not, there are few differences in terms of gender or age between the groups (See Table 1.5). There are, however, over twice as many Asian/Pacific Islanders who are in the relative/friend group as there are in the “other” group, and about twice as many with a primary language other than English or Spanish.

**Table 1.5: Demographic Profile of In-Home Supportive Services Providers, by Relationship to Client**

	Relationship to Client	
	Relative/Friend	Other
Number of IHSS Providers	206,036	182,314
Percent Female	76.6	80.6
Age (%):		
Under 30 years-old	18.5	17.4
30-39 years-old	21.7	22.0
40-49 years-old	25.9	27.7
50+ years-old	33.9	32.9
Race/Ethnicity (%):		
African American	10.3	11.4
Asian/Pacific Islander	13.7	5.9
Hispanic	26.2	24.2
White	34.0	40.8
Other	0.2	0.1
Not Reported	15.7	17.6
Primary Language (%):		
English	60.9	64.9
Spanish	8.4	7.2
Other	10.1	5.8
Not Reported	20.7	22.2

Note: IHSS providers with no client relationship status reported (55,274) are excluded from the calculations.  
Source: IHSS Administrative Files, California Department of Social Services, 1999-2001.

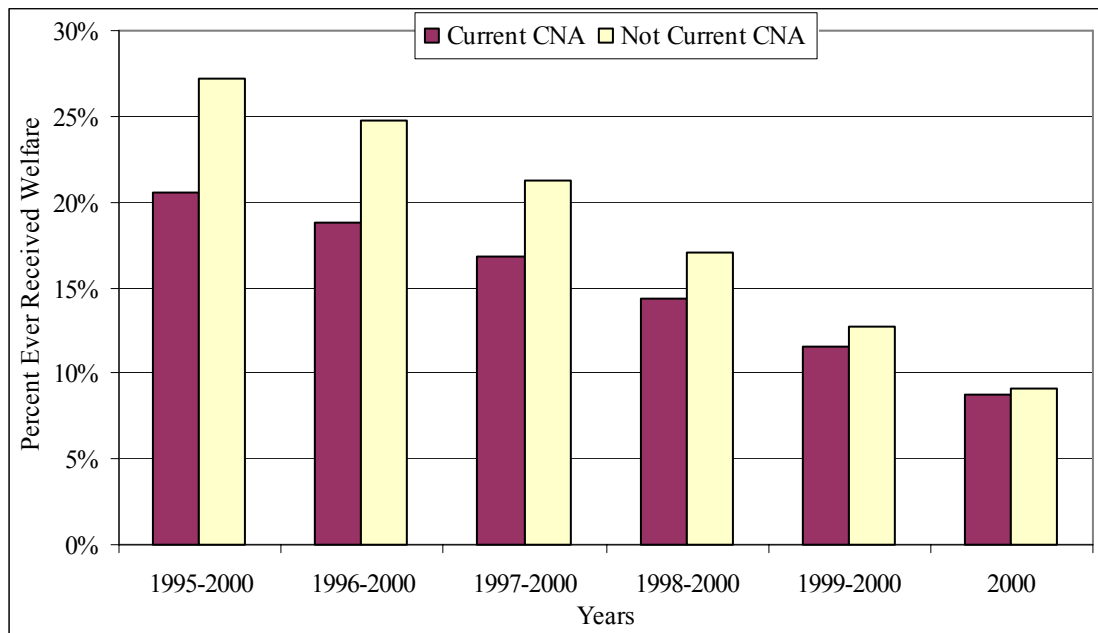
## Welfare Usage among Certified Nurse Assistants and IHSS Providers

As stated earlier, entry-level caregivers are a part of the low-wage sector. As part of the working poor, these caregivers are not exempt from that sector's reliance on welfare assistance. Oftentimes these workers move in and out of the Temporary Aid for Needy Families (TANF) welfare program. Detailing the use of TANF support for California's CNA and IHSS workers provides a more complete picture of these workers and highlights their financial challenges.

By linking CNA Registry files and IHSS Administrative files to the California Department of Social Services (CDSS) Medi-Cal Determination System (MEDS) files, it is possible to measure the degree of welfare usage for these caregivers. Welfare usage among Certified Nurse Assistants and IHSS Providers is summarized in Figures 1.2 and 1.3, respectively. About one-quarter of these caregivers received welfare at some point between 1995 and 2000. However, only about 10 percent of the caregivers received welfare during 2000.

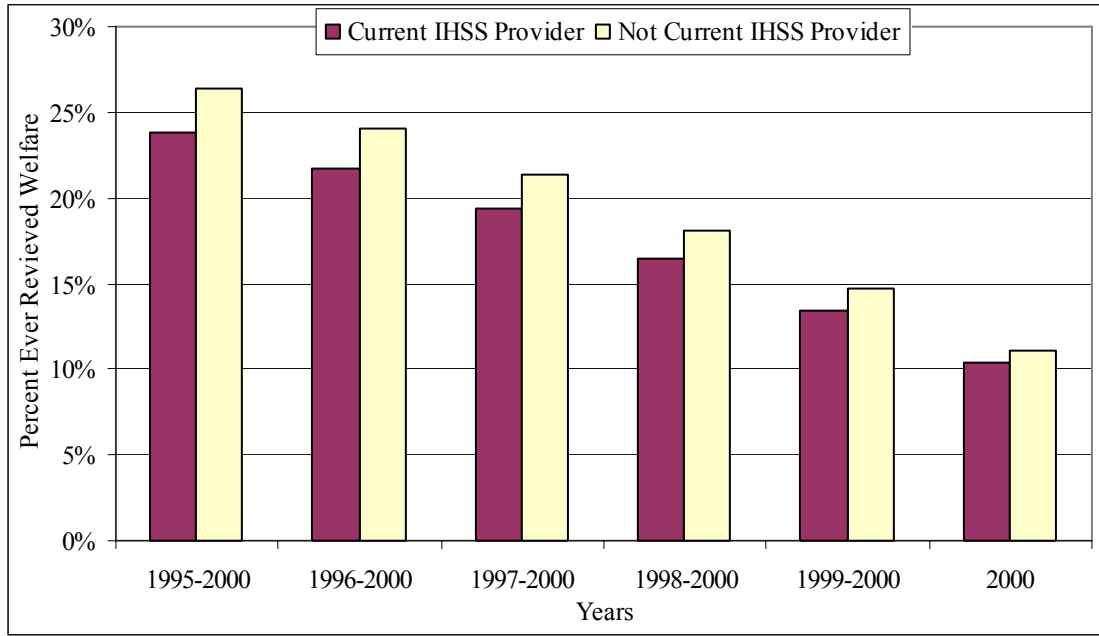
IHSS Providers have a higher rate of welfare usage than CNAs, but the difference may not be as large as expected. Somewhat encouraging for current and potential caregivers is the lower rate of welfare usage experienced by those currently working as a CNA or IHSS Provider—compared to those who are not currently working as a CNA or IHSS Provider.

**Figure 1.2: Percent of Certified Nurse Assistants Ever Received Welfare (1995-2000)**



Sources: CNA Registry Files, Department of Health Services, 1995-2001 and MEDS Files, Department of Health Services, 1995-2000.

**Figure 1.3: Percent of IHSS Providers Ever Received Welfare (1995-2000)**



Sources: IHSS Administrative Files, California Department of Social Services, 1999-2001, and MEDS Files, Department of Health Services, 1995-2000.

## **SECTION 2: CURRENT KNOWLEDGE OF THE CAREGIVER LABOR MARKET**

The key word to describe the caregiver labor market is “shortage” and it is this concept that dominates the recent labor market literature. A recent press release from the U.S. Department of Health and Human Services states that 90 percent of nursing homes lack adequate staffing, and that this shortage is expected to worsen in the future (Pear, 2002). Media reports frequently reference the “health care crisis” in the United States and even globally, and one part of this crisis is the shortage of entry-level workers. The extent of the problem varies, depending on who is reporting, but overall it ranges from “a serious problem” to “a very serious problem.” How did this crisis come about? Put simply, the demand for health care is rapidly growing, while the supply of workers is not keeping pace. These changes are due to a confluence of factors, some of which have emerged over the past two decades.

### ***Factors Affecting the Demand for Healthcare Workers***

The elderly population is growing, and health care delivery is changing, adding to the demand for workers. For example, care of elderly people often was the responsibility of family members; today, families are burdened with additional employment responsibilities, resulting in limitations on family capacity to provide informal care. Add to this formula the fact that estimates for the numbers of those 85 and older will more than triple by the year 2040 (U.S. General Accounting Office, 2002). With expanded Medicare and Medicaid benefits, more people are able to rely on formal as well as informal care supports. In the past couple of decades, we have seen constraints on hospital inpatient and nursing home payments and lengths of stay. Patients discharged while still in various stages of recovery now need more post-hospital care. Finally, technological developments have allowed more sophisticated treatment in outpatient settings and at home.

Other external factors affect the demand for healthcare workers. These include government regulations and the growing role of managed health care. One part of the demand-supply equation relates to the variability among worker reimbursement rates depending on the funding source (e.g., Medicare and Medicaid) and on the setting (home health care, nursing home, hospital). Wages are much higher, for example, in hospitals than in nursing homes, despite similar services and comparable required skills. According to a very recent report from

the EDD (2002), healthcare industry worker wage increases over time indicate the industry is responding to shortage problems, particularly in nursing facilities and hospitals.

### Government Regulations

Compared to other sectors of the workforce, the healthcare workforce is more influenced by state and federal regulations. Labor is a derived demand; factors that affect the prevailing price for services also affect wages and labor input. For example, Feldman (1997) describes the home-care labor market in terms of its heavy reliance on Medicare and Medicaid funds. Because of this, the industry's performance is dependent on government eligibility rules and payment policies. The impact of government is particularly profound in an era when cost-containment is the major goal. Appendix A provides descriptions of Medicare and Medicaid, and recent policy changes, all of which affect the healthcare labor market.

In summary, the late 1990s saw many changes in both Medicare and Medicaid regulations. Welfare reform resulted in reductions in the numbers of Medicaid-covered children, but the 1997 Balanced Budget Act tried to compensate by increasing Medicaid health care coverage for low-income children. Overall, the Act was geared to reducing health care costs by initiating the Prospective Payment System (PPS) to establish payment levels for home health agencies and by reducing hospital and long-term care Medicare payments over time. Needless to say, the response from the health care industry was that these reimbursement rates were far from adequate. The consequence could be lower wages and fewer workers applying for positions in health care.

Recently, California has enacted wage pass-through legislation designed to ensure that a certain portion of long-term care payments end up in the pockets of the direct care workers. The overall effect here could be higher wages resulting in more workers applying for positions. Similarly, legislation to improve staff-to-patient ratios in nursing homes and hospitals took effect in 2000 and 2001, with the intent of improving working conditions as well as increasing the demand for workers.

### Managed Care

Managed care has played an important role in the delivery of health care services, and will likely play a more important role in the future. Managed care plans, such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs), use contracts that fix payment levels prior to the provision of medical care. As of 1997, 19 California counties

were to enroll TANF-related beneficiaries in HMOs (Leibowitz and DuPlessis, 1996). Managed care plans have attempted to provide incentives to physicians to reduce the use of medical care, including both inpatient and outpatient services. Hospital services have been altered drastically with fewer admissions, more outpatient procedures, and more seriously ill patients. As a result, the needs for healthcare personnel also have shifted.

In terms of overall need, California may be more vulnerable than other states. While it is one of the fastest growing states in the nation, its elderly population is expected to grow more than twice as fast as the total population (U.S. Department of Health and Human Services, 2000). More specifically, between 1990 and 2020, the projections are that the elderly age group will have an overall increase of 112 percent; the oldest age group, over 85, is projected to increase even faster, by 143 percent.

### ***Factors Affecting the Supply of Healthcare Workforce***

While health services demand increases, the relative supply of workers remains too small. There is a “critical shortage of registered nurses” (U.S. General Accounting Office, 2001a; U.S. General Accounting Office, 2001c; U.S. Department of Health and Human Services, 2002), and there is a current shortage of Certified Nurse Assistants (CNAs) nationally and in California (Center for California Health Workforce Studies, 2001; California Department of Health Services, 2001). The shortage is a result of several trends, including low wages and benefits and competing occupations. Because so many competing jobs have higher salaries and lower demands (VanKleunen and Wilner, 2000), the population available for healthcare work is not keeping pace. While wages are not the only element in attracting and retaining workers, it is understood both implicitly and explicitly that it is most significant. For example, several studies have shown that providing competitive salaries (among other things) would improve recruitment and retention of providers (Feldman, 1994; Banaszak-Holl and Hines, 1996). Much of the crisis can be attributed to the fact that nursing homes and home care agencies are in competition with other employers like fast food restaurants that pay higher wages and better benefits (Stone, 2000).

Younger women, who had very limited career choices in the past, now have many more choices (Carrier, et al., 2000). The labor pool has not grown because interest in nursing as a career is decreasing as the nursing labor force is aging (U.S. General Accounting Office, 2001c). Working conditions are poor too. Workers are exposed to infections, back injuries, and physical violence from residents (Gregory, 2001). As a result, turnover is high, with rates for nurse aides

ranging from 38 percent to 143 percent, and for LVNs ranging from 27 to 61 percent (Decker, Dollard and Kraditor, 2001). The large ranges are due in part to different study samples and different formulas for calculating turnover. A recent Employment Development Department report (2002) states that all of California's healthcare industries experience high levels of turnover, with separation rates for all health services industries as a whole ranging from about 12 percent to 21 percent per quarter between 1992 and 1999. The study found turnover for nursing homes to be higher than that for hospitals.

Furthermore, caregivers are not likely to experience upward job mobility. Based on a recent Urban Institute report on low-wage worker mobility (Pindus et al., 1997), most of the workers interviewed lacked well thought out plans about moving up the career ladder. Because workers were overwhelmed with meeting basic needs, they had little time or energy for upward mobility. Even when employer benefits supporting further education were available, the workers found it difficult to take advantage of them.

Other factors more specific to health care workers in California have a large impact on both supply and demand (Ruzek, Bloor, Anderson, Ngo, and UCSF Center for the Health Professions, 1999). These include:

- Managed care system consolidation shifting workers out of hospitals;
- Workplace changes requiring more flexibility and knowledge;
- Ethnic diversity;
- Licensing/certification agencies with non-standardized criteria;
- Increasing levels of consumer choice, competition and accountability;
- Technological advancement requiring new training pathways; and
- Larger uninsured and welfare populations in California.

In summary, California is one state where educators are having problems preparing future workers with adequate skills, and where care delivery organizations are struggling to control costs and improve quality at the same time. At the core of this fluid environment, workers are required to be more flexible and more tolerant of uncertainty while coping with low wages and difficult working conditions.

### ***California's Quest for Caregivers***

Statistics on California caregivers confirm that California will face special challenges in meeting future needs. Among all states, California ranks 47<sup>th</sup> in the number of nursing aides, orderlies and attendants, and 48<sup>th</sup> in the number of home health aides per 100,000 people (Bureau of

Health Professions, 2000). Despite the low ratios, health outcomes are not nearly as bad because California has a relatively healthy population, with some exceptions. Regarding long-term care, nursing and personal care facility employment in California declined by two percent between 1988 and 1998, while the national average increased by 23 percent (based on the over-65 population) (Bureau of Health Professions, 2000).

The most comprehensive study of California's caregiver workforce is the Employment Development Department's *The Quest for Caregivers: Helping Seniors Age with Dignity* (2001). The table below includes a summary of that report. It is included here because the intent of UCLA's report is to build and expand on this earlier EDD report and its findings.

### **Summary of "The Quest for Caregivers" (What we know about California)**

*(Source: California Employment Development Department, 2001)*

The "Quest for Caregivers" report develops a comparative analysis between entry-level caregiver occupations and competing occupations from the point of view of job seekers and the employment and training staff assisting them. This report analyzes the alternatives that a potential caregiver faces when choosing a job, in order to identify and better understand the issues related with caregiver recruitment, training and retention.

It focuses on the caregiver occupations of Nursing Aides, Home Health Aides and Personal and Home Care Aides. In order to compare caregiving with competing occupations, the authors selected nineteen occupations based on comparable expected California job growth, training requirements, and similar opportunities to provide services to others.

#### ***Skills, Knowledge and Abilities Comparison***

Competing occupations share eight of caregiving occupation's ten most important skills. While skill level is moderate, caregiver occupations require slightly higher levels in some skills than competing occupations.

Caregivers and competing occupations share six of the ten most important areas of knowledge, all of which are general application areas. The remaining four caregiver occupation-specific knowledge areas (biology, chemistry, medicine and dentistry, and therapy and counseling), are mostly acquired in classrooms or off-the-job training.

Caregivers and competing occupations share six of the ten most important abilities (manual dexterity, oral comprehension, oral expression, speech clarity, static strength, and written expression). The required ability levels are similar, but caregiver occupations require more static strength ability.

#### ***Wages***

Wages for caregiver occupations vary depending on geographic location, health care setting and experience level. In California, the average hourly wage for Nurse Aides in 1999 was \$8.78, for Home Health Aides \$9.73, and for Personal & Home Care Aides \$8.23. These entry-level earnings for caregiver occupations fall under the federal poverty levels.



In comparison with large growth occupations requiring similar lengths of training, entry caregivers earn less, with wages in the 35-45<sup>th</sup> percentile of the group. The opportunity to earn more with experience is not as good for caregiver occupations as for most of the competing occupations. Nurse Aides and Personal and Home Care Aides can increase hourly salaries, with experience, by \$2.61 and \$2.68, respectively. Home Health Aides can expect to earn an average of \$4.85 more per hour.

### ***Benefits and Hours***

There are big differences in pay level and benefits offered to caregivers by hospitals and private skilled nursing facilities. Government-sponsored and large privately run hospitals are most likely to offer benefits. Long-term care facilities and home health agencies very often don't offer medical benefits. Even when medical plans are available, caregivers frequently can't afford the premiums.

Surveys suggest that an average of 65% of the competing occupations offer medical insurance, compared to 44% of Personal and Home Care Aides, 54% of Home Health Aides and 77% of Nurse Aides and Orderlies. About 57% of the competing occupations offer sick leave, compared to 40% of Personal and Home Care Aides, 46% of Home Health Aides, and 69% of Nurse Aides and Orderlies (these figures may be inflated due to biases from response rates). A higher percentage of employers for 14 of the 19 competing occupations offer health insurance benefits than employers for Personal and Home Care Aides, and Home Health Aides.

In general, individual Home Health Aides employed through California's publicly funded In-Home Supportive Services program earn minimum wages without benefits of any kind.

Regarding work hours, most of the competing occupations offer full-time and part-time jobs that can accommodate employee preference and business needs. Most caregiver occupations and some competing occupations offer work shifts Monday to Friday and weekends and holidays. There is little information about flextime regarding caregiver and competing occupations.

### ***Physical Requirements***

There are several differences related to physical requirements between caregiver and competing occupations, but in general, it seems to be more important for Nursing Aides, Orderlies and Attendants, than for the rest of the caregiver occupations.

### ***Interests***

Often, if an individual's interests were satisfied by caregiver occupations, those interests would also be satisfied by the competing occupations. Caregiver occupations are described in Holland Codes (Holland work environment and Personality Types), as Social, Realistic and Enterprising occupations. Competing occupations as a group are described as Social, Conventional and Realistic.

### ***Industrial Injury and Workplace Violence***

Nationally, injury and illness rates were consistently higher in Health Services Industries than All Private Sector Industries for 1992 through 1998. However, health services industry injury

and illness rates have decreased over 24% during the same period. In California, annual injury and illness rates in Nursing and Personal Care Industry from 1996 to 1999 were almost double the All Private Sector Industry rate.

There is little information about non-fatal assaults in nursing home industry. Nursing home assaults comprised 27% of the workplace assaults in 1992. In 45% of the cases, injury was caused by a health care patient.

### ***Stressors***

A comparison was made of eight job characteristics based on three of the six stressors defined by the National Institute for Occupational Safety and Health. In all of them the level of potentially stressful job characteristics for caregiver occupations was higher than for the competing occupations.

Indicators of stress include absenteeism and illness, higher turnover and performance problems. The turnover for caregiver occupations has been reported as 42%, 67.8% or over 100% by different studies. There is no information about the reasons for the turnover.

Nationally, Nurse Aides and Orderlies have the third highest number of occupational injuries or illness requiring days away from work compared with other occupations. Health Aides have a much lower injury rate.

### ***Career Ladders for Caregiver***

Most current career ladders efforts for caregivers are directed toward nursing. Traditionally, nursing programs accept students who can attend full time, so many are excluded. Alternative career ladder opportunities can be in non-patient jobs, like billing and record keeping, reception, etc. However, the availability of these positions is not very high.

### ***Recommendations for Recruitment and Retention***

The authors of the report suggest steps to recruit more workers and retain them in the caregiver occupations:

- Exit interviews – to develop data on patterns and reasons for turnover;
- Best practices – of employers who have lower turnover and injury rates;
- Marketing – to recruit workers based on the value of relationship that would attract those who want to server others;
- Improve assessment – to ensure a better person-job match;
- Tutoring programs – in remedial skills to increase pass rate for licensing exam;
- Identify core competencies – for career paths within health care occupations;
- Financial incentives – to bolster recruitment and retention (retention bonus, paid leave, employee ownership, etc.)
- Workplace reengineering – to make the occupations more appealing.

## ***Summary***

What do we know from existing studies about the job outlook for healthcare workers in California? And what are the issues that still should be addressed? How much will we be able to predict about the next ten or twenty years? The shortage of health care workers is a recurring theme, heard from many sources, but to what extent is this shortage real?

Nationally, we know that the projected increase, especially for the lower-end jobs such as home health aides, is very high. In California, there are more sources of variation. California differs from the rest of the country in the sense that there is more ethnic diversity, more consumer choice in terms of home care, a larger welfare and uninsured population, and a faster-growing elderly population. We also know that the turnover rates among workers are very high, and that in terms of wages, benefits, opportunities for advancement and risk of injury, caregiver occupations fare less well than competing occupations. There is also a lower growth rate among certain segments of the caregiver workforce. Finally, the economic boom experienced in the late-1990s appears to have ended.

Taken together, these findings are all consistent with factors related to a labor shortage. However, the findings are not complete since they pertain to the supply-side characteristics of caregiver occupations. Currently we do not know enough about the demand side to understand the true degree of this shortage.

Factors affecting demand are varied and generally tenuous. These include changing trends in health care administration (most reflecting a need for cost-reduction), and fluctuations in the economy, and more specifically, in employment levels. The bottom line is that in order to understand current needs, we have to consider demand as well as supply. This is difficult but not impossible, and we already know a lot about the supply issue. In order to understand future needs, we have to depend on trends in both the supply and the demand side. This is much more challenging, and more than ever, we are aware of the tenuous nature of the economy, our institutions, and the evolving roles of government.

## SECTION 3: OVERALL LABOR MARKET CONDITIONS

This section examines the underlying state of California’s caregiver labor market by analyzing caregiver employment levels, wages, and job benefits. EDD’s *Quest for Caregivers* report outlines some of the major labor market conditions for caregivers, particularly average wages and job benefits. The analysis below expands on the *Quest for Caregiver* findings by incorporating data from additional sources focusing on Certified Nurse Assistants and IHSS providers, as well as by using multivariate analysis to test for the potential influence of firm and worker characteristics, and other factors, on labor market conditions.

One challenge in describing overall labor market conditions for caregivers is that no comprehensive time-series data source is readily available to address all questions. The best that can be done is to use the information from several different sources, which makes definitive conclusions and implications difficult. Furthermore, individuals providing care in the informal labor market—such as those paid privately—are not included in this analysis.

### ***Employment Levels for Caregivers***

Data inconsistencies and a non-static labor market make simple reporting of the current number of caregivers in California a challenge. One can focus on the number of people employed in the EDD-designated caregiver occupations at any given point in time, or one can focus on the potential supply of caregivers based on administrative records. Looking at multiple data sources can provide valuable insight into caregiver employment levels.

Table 3.1 reports the number of jobs, or people, in each of the caregiver occupations from different sources of data. The table compares employment estimates from the Occupational Employment Statistics Survey (OES) with the estimates from the CNA and IHSS administrative files. Two caveats should be considered when estimating employment levels for caregivers: temporal differences and differences in definitions across data sources.

**Table 3.1: Employment Estimates for Caregiver Occupations**

Occupation	Data Source			
	OES (1998)	OES (2000)	CNA Files (2001)	IHSS Files (2001)
Home Health Aides	23,210	33,190	na	na
Nursing Aides, Orderlies, and Attendants	88,320	91,600	na	na
Personal and Home Care Aides	13,510	30,900	na	na
Home Health Aides				
Total Pool of Current HHAs	na	na	34,599	na
Number in UI Covered Employment (2001Q1)	na	na	27,592	na
Certified Nurse Assistants				
Total Pool of Current CNAs	na	na	107,281	na
Number in UI Covered Employment (2001Q1)	na	na	62,144	na
In-Home Support Services Providers				
Total Pool of Current IHSS Providers	na	na	na	202,425
Number in UI Covered Employment (2001Q1)	na	na	na	132,702

Sources: OES Survey, Employment Development Department, 1998 and 2000; CNA Registry Files, Department of Health Services, 2001; and IHSS Administrative Files, California Department of Social Services, 2001.

Employment levels are likely to change over time as a result of a changing economy or simply random fluctuations in data collection and sampling. Temporal differences emerge between the 1998 OES estimates and the 2000 OES estimates. The increase in employment between 1998 and 2000 for Home Health Aides and Nursing Aides, Orderlies, and Attendants seem consistent with economic expansion over this time period. The large jump in the employment estimates for Personal and Home Care Aides, however, is difficult to justify through economic expansion alone. As a result, the exact number of Personal and Home Care Aides employed in California’s workforce is unclear.

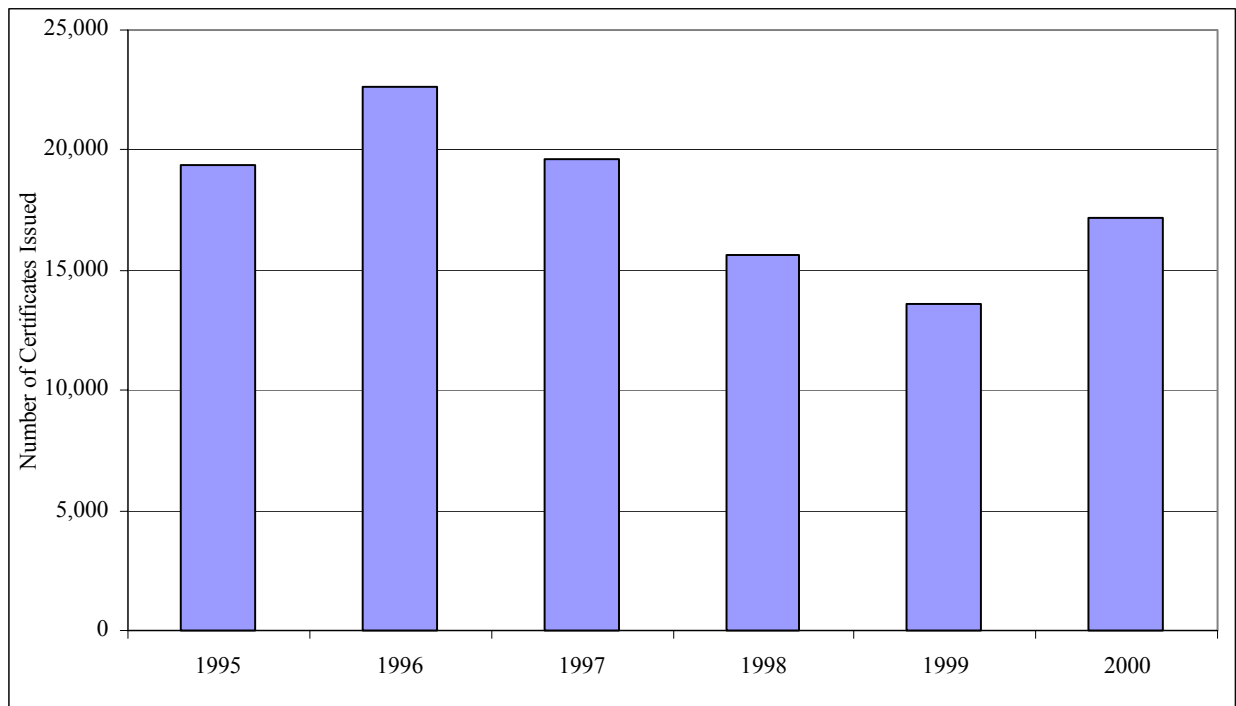
The statewide administrative files are another source for estimating the number of caregivers in the economy, but they capture a slightly different population from the OES. As stated earlier, CNAs generally fall under the Nursing Aides, Orderlies, and Attendants occupational category and IHSS providers generally fall under the Personal and Home Care Aides occupational category, but these are far from comprehensive rules. The CNA registry files contain data on all individuals in California with nursing assistant certificates and/or home health aide certificate, regardless of whether they are currently working as a CNA or HHA. As a result, the CNA files are likely to over-estimate the number of working CNAs/HHAs and are not directly comparable to the OES nursing aide occupational category because the OES includes non-certified nursing aides, orderlies, and attendants who are employed in that occupation. The IHSS files include individuals providing home care services under California’s IHSS program,

whereas the OES Personal and Home Care Aides occupational category includes primarily people providing care through formal agency suppliers.

The administrative files alone provide an estimate of the total pool, or supply, of individuals for those caregiver occupations. To get a better reflection of employment using the administrative files, we merged the CNA and IHSS administrative files with the UI Base Wage files. As expected, the number of caregivers in UI covered employment (in the first quarter of 2001) is less than the entire pool of caregivers—and more comparable to the OES estimates.

The CNA administrative files also allow for a longitudinal examination of new additions to the CNA workforce between 1995 and 2000. Figure 3.1 shows the number of nurse assistant certificates issued each year. Over 100,000 certificates were issued during this period. The number of new CNAs peaked in 1996 and declined from 1997 to 1999. This decline is likely to have contributed to the caregiver shortage.

**Figure 3.1: Number of New Certified Nurse Assistants from 1995 to 2000**

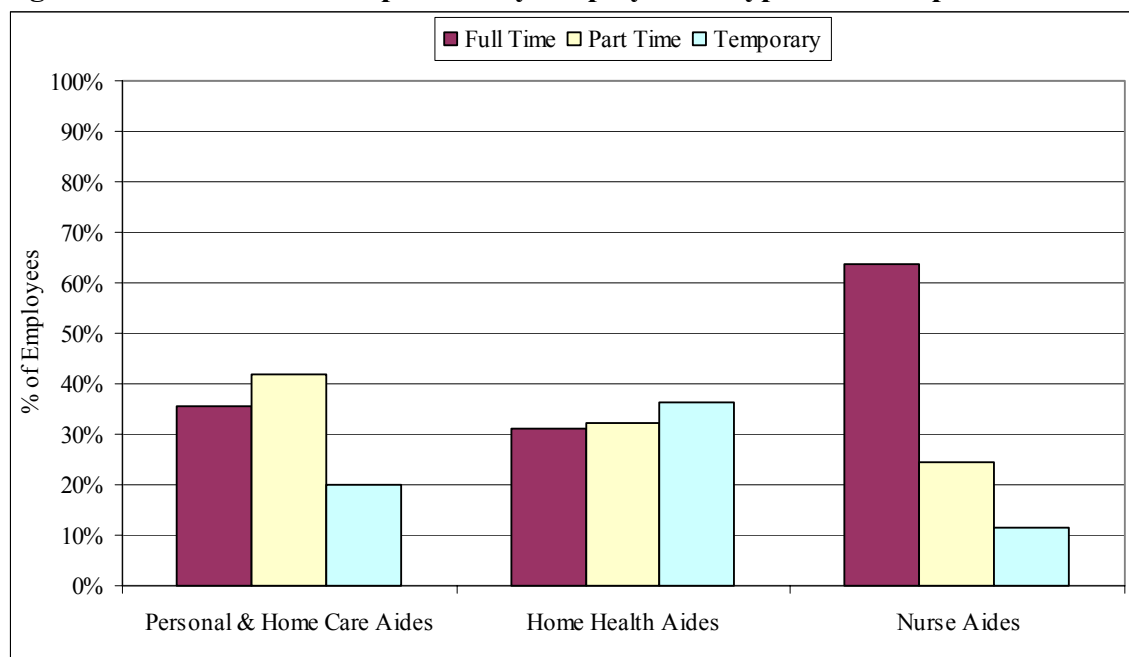


Source: CNA Registry Files, Department of Health Services, 1995-2001.

The California Cooperative Occupational Information System (CCOIS) also compiles employment information for specific occupations.<sup>5</sup> While the CCOIS represents a sample of occupations in select California counties, it provides information on employment levels, beyond sheer number of employees. The data suggest that a high percentage of caregivers do not work full-time.

Figure 3.2 shows the percent of full-time, part-time, and temporary employees in the three caregiver occupations. Over 60 percent of the Home Health Aides and Personal and Home Care Aides are part-time or temporary employees, and over 30 percent of Nurse Aides are part-time or temporary employees.

**Figure 3.2: Workforce Composition by Employment Type and Occupation**



Note: Percentages may not total to 100% because seasonal and “other” employees are excluded.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

### Where Caregivers are Employed

The survey of 30,575 CNAs in 2000 provides information on where caregivers work. Of those currently working as a Certified Nurse Assistant and reporting their place of employment (25,667 or 84 percent), about half work in a convalescent or nursing home, while another quarter

<sup>5</sup> The CCOIS data are collected by sampling firms in selected California counties. Each year the occupations and firms surveyed change. As a result, the data are not necessarily representative of the state as a whole, and comparisons across years should be made with caution. This makes it very difficult to examine temporal trends in

work in a hospital (see Table 3.2). Over 15 percent of CNAs work in more than one establishment.

A CNA’s place of employment differs by where the individual received CNA training.<sup>6</sup> Over 60 percent of CNAs trained in a nursing home currently work in a convalescent or nursing home, while CNAs trained at a school-based facility are less likely to work at a convalescent or nursing home. This suggests that those with employer-provided training are more likely to remain employed with that employer, but a significant number do leave for employment in another type of facility.

**Table 3.2: Place of Employment for Certified Nurse Assistants, by Source of Training**

	All CNAs	Source of Training		
		Nursing Home	School-Based	Other
Number of Current CNAs <sup>a</sup>	25,667	10,853	13,667	1,147
Place of Employment (%):				
Convalescent/Nursing Home	53.3	64.2	47.8	40.5
Nurse Aid Registry	8.9	6.9	10.0	11.2
Home Health Agency	13.2	8.3	16.1	12.0
Hospital	24.7	22.1	25.4	33.6
Residential Care Facility	10.9	9.6	11.8	9.5
Other	8.1	6.2	8.9	12.7
Multiple Employment	15.5	14.3	16.2	16.3

Source: CNA Survey, Department of Health Services, 2000. Survey results weighted.

Notes: Column percentages may not total to 100 percent because respondents can be employed in more than one location.

<sup>a</sup> Only individuals currently working as a CNA recorded their place of employment, with 472 not reporting a place of employment and/or source of training.

By matching the CNA and IHSS administrative files with EDD’s UI Base Wage files, one can estimate the distribution of caregivers across different industries. Table 3.3 reports the distribution of current CNAs, Home Health Aides, and IHSS providers across industries (the five industries listed at the top-left are the caregiver industries designated by EDD). Of current CNAs (as of 2001), 48 percent were primarily employed by a nursing or personal care facility during the first quarter of 2001, while almost 21 percent were employed by a hospital. These percentages are consistent with those found with the CNA survey data. Among current Home

wages, benefits, and hours of work using the CCOIS data. We pooled CCOIS data from 1997, 1998, and 1999 to improve generalizability.

<sup>6</sup> There were three training site choices on the questionnaire: convalescent home/nursing home, school-based training program and other/challenge. The last option includes people approved to take the exam without attending state-approved CNA classes, such as military medics or those receiving training outside the state, who can “challenge” to take the certification exam.



Health Aides, 28 percent were employed by a nursing or personal care facility and 25 percent were employed by a hospital. Almost one-fourth of current CNAs and about one-third of HHAs were not employed in one of the EDD-designated caregiver industries—which suggests they were not working as a caregiver despite having a current certificate. The majority of IHSS providers were not employed in one of the caregiver industries, largely because they are predominately employed by private households.

**Table 3.3: Industry of Primary Employment for Caregivers (First Quarter of 2001)**

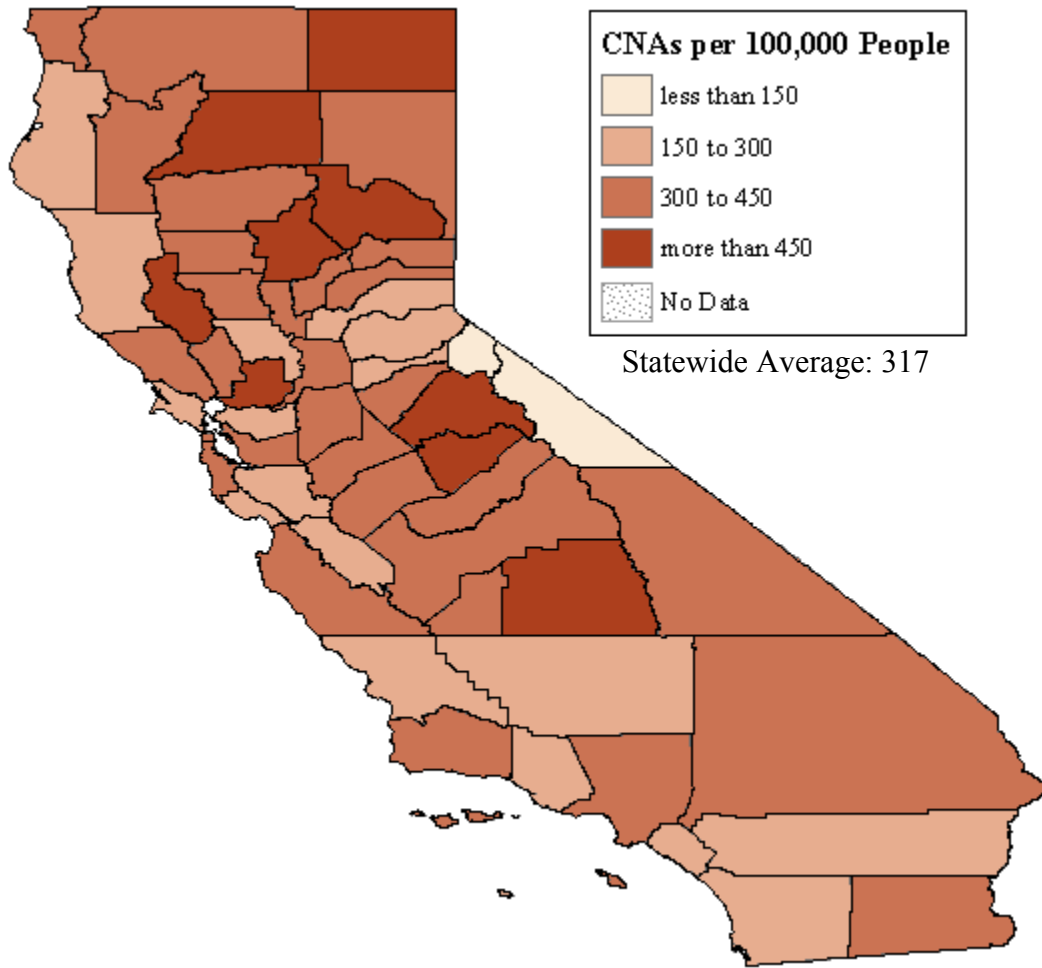
Industry	Current CNAs	Current HHAs	Current IHSS
Nursing and Personal Care Facilities	48.1%	28.0%	1.3%
Hospitals	20.9%	24.8%	2.0%
Home Health Care Services	1.7%	8.8%	0.4%
Individual and Family Social Services	0.9%	1.9%	1.1%
Residential Care	4.2%	4.8%	1.1%
Other Health Services	2.2%	2.5%	2.3%
Personnel Supply Services	4.7%	7.5%	2.7%
Educational Services	1.7%	2.6%	5.2%
Public Sector/Government	2.7%	3.0%	2.3%
Private Households	2.1%	5.2%	48.2%
Other	10.8%	10.8%	33.5%
Number in UI Covered Employment	62,144	27,592	132,702

Source: UI Base Wage, Employment Development Department, 1998-2001 matched with CNA Registry Files, Department of Health Services, 2001, and IHSS Administrative Files, California Department of Social Services, 2001.

### Geographic Distribution of Certified Nurse Assistants and IHSS Providers

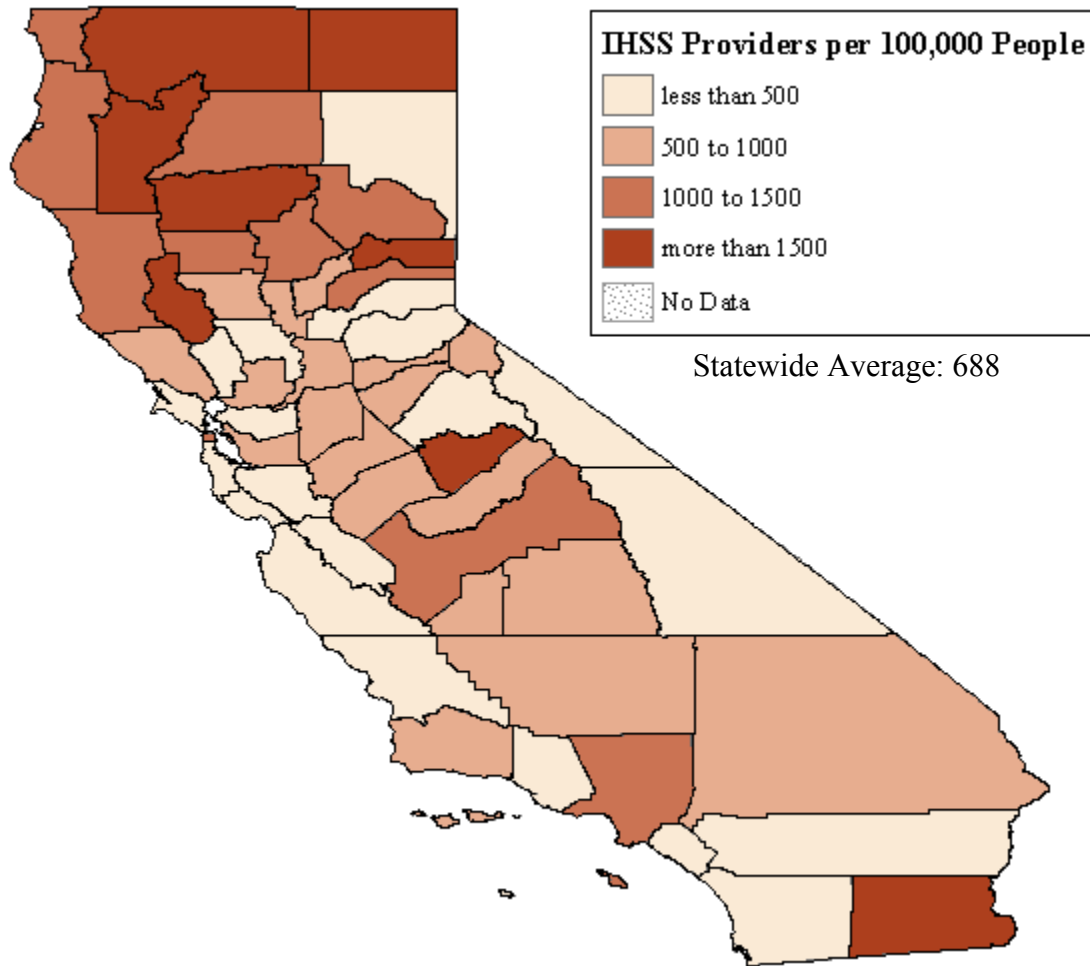
Certified Nurse Assistants and IHSS providers are not equally distributed across California. Figures 3.3 and 3.4 reveal the geographic clustering of caregivers in California, normalized by each county's total population. The distribution of CNAs and IHSS providers are significantly correlated (correlation coefficient of 0.44, p-value<.01)—meaning counties with a relatively low number of CNAs tend to have a relatively low number of IHSS providers—but the relationship is far from perfect. It is not simple to find patterns of shortages based on geographic characteristics, however. For example, Orange County and San Diego County, both urban, have a relatively low number of caregivers, but El Dorado, Mono, and Placer Counties, all rural, also have a relatively low number of caregivers. County-level numbers are provided in Appendix D, with a map to identify each county.

**Figure 3.3. Geographic Distribution of Certified Nurse Assistants**



Source: CNA Registry Files, Department of Health Services, 2001 and 2000 Census.

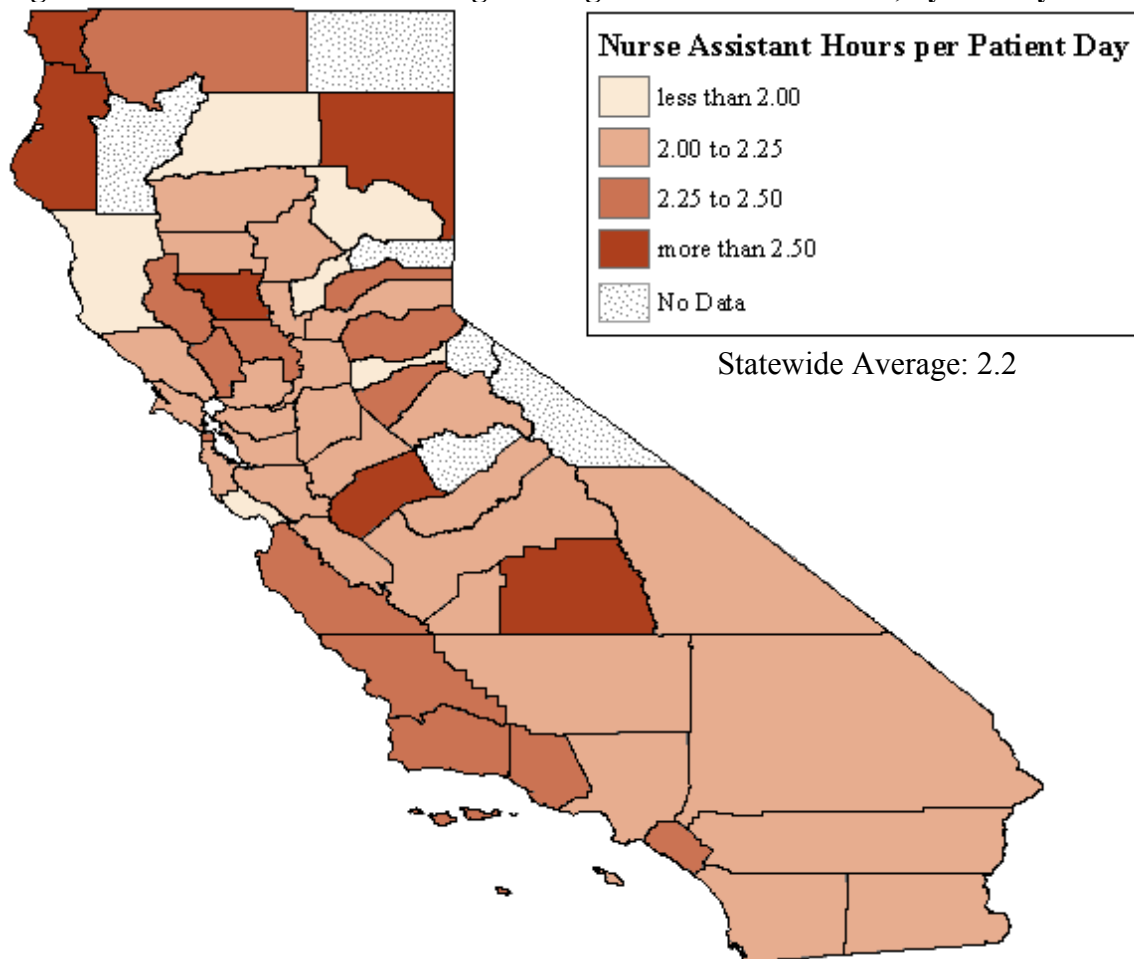
**Figure 3.4. Geographic Distribution of IHSS Providers**



Source: IHSS Administrative Files, California Department of Social Services, 2001 and 2000 Census.

Geographic differences can also be seen in staffing levels. The Long-Term Care (LTC) facility data collected by Office of Statewide Health Planning and Development (OSHPD) allows for the calculation of nurse assistant hours per patient day at LTC facilities. Figure 3.5 displays the variation in nurse assistant staffing levels across California counties. Statewide, LTC facilities had an average staffing level of 2.2 nurse assistant hours per patient day in 2000. Again, no clear, systematic geographic clustering is apparent. Multivariate analysis of LTC facility staffing levels indicates facilities in counties with a managed care plan and those with a greater reliance on Medicaid/Medicare revenues have lower staffing levels, everything else equal. These findings are consistent with the earlier discussion of the hypothesized impact of government regulations on the provision of long-term care. Table B.1 in Appendix B reports the full regression model used to analyze staffing levels.

**Figure 3.5. Nurse Assistant Staffing in Long-Term Care Facilities, by County**



Source: Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000.

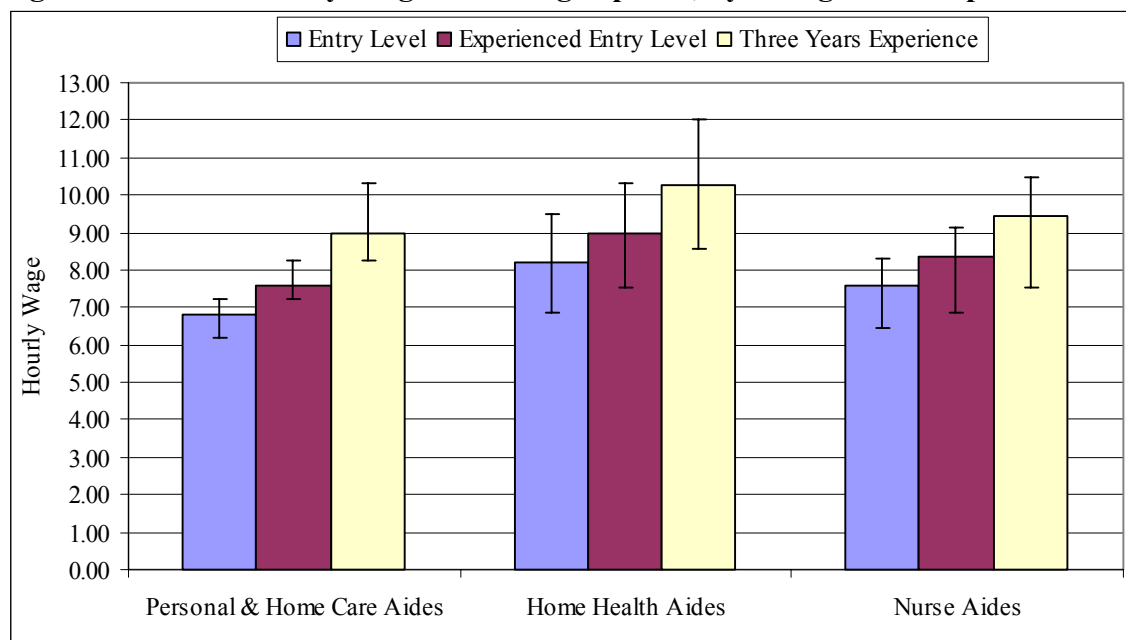
### ***Wages for Caregivers***

A number of data sources provide information on caregiver wages. As with the above examination of employment levels, data sources vary in scope and coverage.

The CCOIS allows for an examination of average wages for each caregiver occupation, as well as the wage spread across employers. We pooled three years of employer-level CCOIS data (1997, 1998, and 1999) to look at the “across-employer” spread around the mean entry-level base wage, mean entry-level base wage for workers with experience, and the mean base wage for an employee with three years or more of experience. All reported wages are adjusted to year 2000 dollars. In addition, we weight the analysis by the number of employees in each industry/firm so the reported numbers reflect the mean base wage received by employees and not the mean across industries/firms.

Figure 3.6 shows mean base wages reported in the CCOIS, and the wage spread (vertical bars) for the 25<sup>th</sup> to the 75<sup>th</sup> percentile range. On average, Home Health Aides receive the highest average hourly wages at all three levels of progression (with an entry level wage of about \$8.00), while Personal and Home Care Aides receive the lowest (with an entry level wage of just under \$7.00). Nurse Aides receive an average entry level wage of about \$7.50. All three occupations have modest increases (about \$2.00) in the hourly wage from entry to experienced.<sup>7</sup>

**Figure 3.6: Mean Hourly Wages and Wage Spread, by Caregiver Occupations**



Notes: Hourly wages represent the mean base wage across firms in the Health Care industries and are weighted by the number of employees in each firm. The vertical bars indicate the 25<sup>th</sup> to 75<sup>th</sup> percentile range. Wages are adjusted to 2000 dollars.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

Wages differ not only by experience, but also by employer. The inter-firm wage spread for a given experience category is greatest for Home Health Aides and least for Personal and Home Care Aides. This suggests Personal and Home Care Aides have less opportunity to seek higher wages within their occupation relative to the other caregiver occupations. For example, an individual looking for an entry level job as a Nurse Aide is likely to receive a wage between about \$6.50 and \$8.00, while a similar person looking for an entry level job as a Personal or Home Care Aide is likely to earn between \$6.25 and \$7.25.

<sup>7</sup> While the CCOIS sampling framework means results may not be representative of the state as a whole, the average wages reported in the CCOIS are similar to average wages found in the OES. This indicates some level of reliability in the CCOIS findings.

A few hypothesized characteristics of the labor market for entry level Personal and Home Care Aides might explain the small wage spread for this occupation. These positions may have a relative lack of occupation-specific training and skills that generally warrant higher wages in a competitive labor market. Also, if this occupation is much more open to competitive pressures, wages would be stabilized around an equilibrium point. However, the tight wage spread for Personal and Home Care Aides could be the result of regulations—which is particularly pertinent for IHSS providers in this occupational category.

For caregivers, overall, the size of the spread and the resulting degree of overlap between entry level, experienced entry level, and three years experience wages also suggests that many factors may produce compensating wage differentials within the same occupation. An examination of other data sources provides some insight into possible factors.

### Wages for Nurse Assistants

The CNA Survey data suggests that Certified Nurse Assistants receive slightly higher wages, on average, than those in the broader Nurse Aides, Orderlies, and Attendants occupational category. On average, CNAs receive an hourly wage of about \$9.00, with half of CNAs getting between \$7.50 to \$10.00 an hour (see Table 3.4). This wage range provides further evidence of possible wage progression within the CNA occupation.

**Table 3.4: Average Hourly Wages for Certified Nurse Assistants**

	Mean	Range		
		25th Percentile	50th Percentile	75th Percentile
All Current CNAs	9.07	7.50	8.50	10.00
<i>Place of Employment:</i>				
Convalescent/Nursing Home	8.40	7.30	8.00	9.00
Nurse Aid Registry	10.04	8.25	10.00	12.00
Home Health Agency	9.21	8.00	9.00	10.00
Hospital	10.45	8.50	9.87	12.00
Residential Care Facility	8.62	7.34	8.03	9.49
Other	9.61	7.75	9.10	11.00
Multiple Employment	9.27	7.70	8.85	10.00
<i>Length of License Certification:</i>				
Certified less than 4 yrs	8.60	7.28	8.00	9.25
Certified 4 to 9 yrs	9.30	7.74	8.76	10.00
Certified 10+ yrs	9.67	8.00	9.02	10.56

Source: CNA Survey, Department of Health Services, 2000. Survey results weighted.

The variation in wages across places of employment and years of experience is one reason for wage progression to exist. Certified Nurse Assistants employed by hospitals receive higher wages on average than other CNAs. Conversely, CNAs employed by convalescent or nursing homes receive lower wages, on average. Some wage progression appears to exist for individuals the longer they have a CNA certificate, although the monetary value is small (about 60 cents every five years).

After controlling for certain individual and employment characteristics, the wage discrepancy between place of employment and length of certification still persists. A multivariate analysis reveals that, everything else equal, CNAs employed by hospitals earn about 15 percent more than CNAs employed by convalescent/nursing homes. (See Appendix B, Table B.3 for the multivariate results.) Also, CNAs experience about a four percent increase in their hourly wage for every five years since certification. Another finding is that CNAs with Associates Degrees earn about five percent more than those with no high school diploma—but receiving a degree beyond an A.A. does not generate any additional earnings as a CNA. Earnings returns to experience and education of these magnitudes are very low relative to most occupations, and could induce high turnover and a disincentive for continued education.

Also, CNAs whose primary language is Tagalog earn about 2.5 percent more than English speakers, while those whose primary language is Spanish earn about 1.5 percent less than English speakers. Those with family responsibilities and multiple jobs also are more apt to experience reduced wages. In addition, union worker wages are about 14 percent higher than non-union workers. These findings suggest that Certified Nurse Assistant earnings vary by numerous labor supply (employee) and demand (employer) characteristics, as well as outside factors like unionization.

The Long-Term Care facilities data collected by OSHPD in 2000 allows for an assessment of nurse assistant wages from employer-based data (see Table 3.5).<sup>8</sup> On average, LTC facilities pay an hourly wage of about \$9.00 for nurse assistants—consistent with the average wage reported from the CNA survey results. The hourly wage for nurse assistants is about half that paid to licensed vocational nurses (LVNs) at the same facilities, and about 10

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<sup>8</sup> The LTC facility data reports total productive hours for nurse assistants (aides and orderlies), total temporary hours for nurse assistants (aides and orderlies), and total salaries/wages for nurse assistants (aides and orderlies). To calculate an hourly wage for each facility, we divided total salaries/wages for nurse assistants by the sum of productive and temporary hours.

percent lower than the prevailing wage for competing occupations in the area where the facility is located.<sup>9</sup>

**Table 3.5. Wages for Nurse Assistants in Long-Term Care Facilities**

Hourly Wage	Median	Mean	Std. Dev.
Average Wage	\$8.80	\$9.09	\$1.58
As Percent of LVN Wages	52.4%	53.4%	7.3%
As Percent of Competing Occupations	90.0%	91.1%	13.3%

Note: The prevailing wage for competing occupations was estimated by averaging the mean wage reported in the 2001 OES for each of the occupations identified by EDD as a competing occupation for caregivers. By dividing each facility's average nurse assistant wage by the prevailing wage for each geographic area distinguished in the OES, we were able to calculate the nurse assistant wage as a percent of competing occupations.

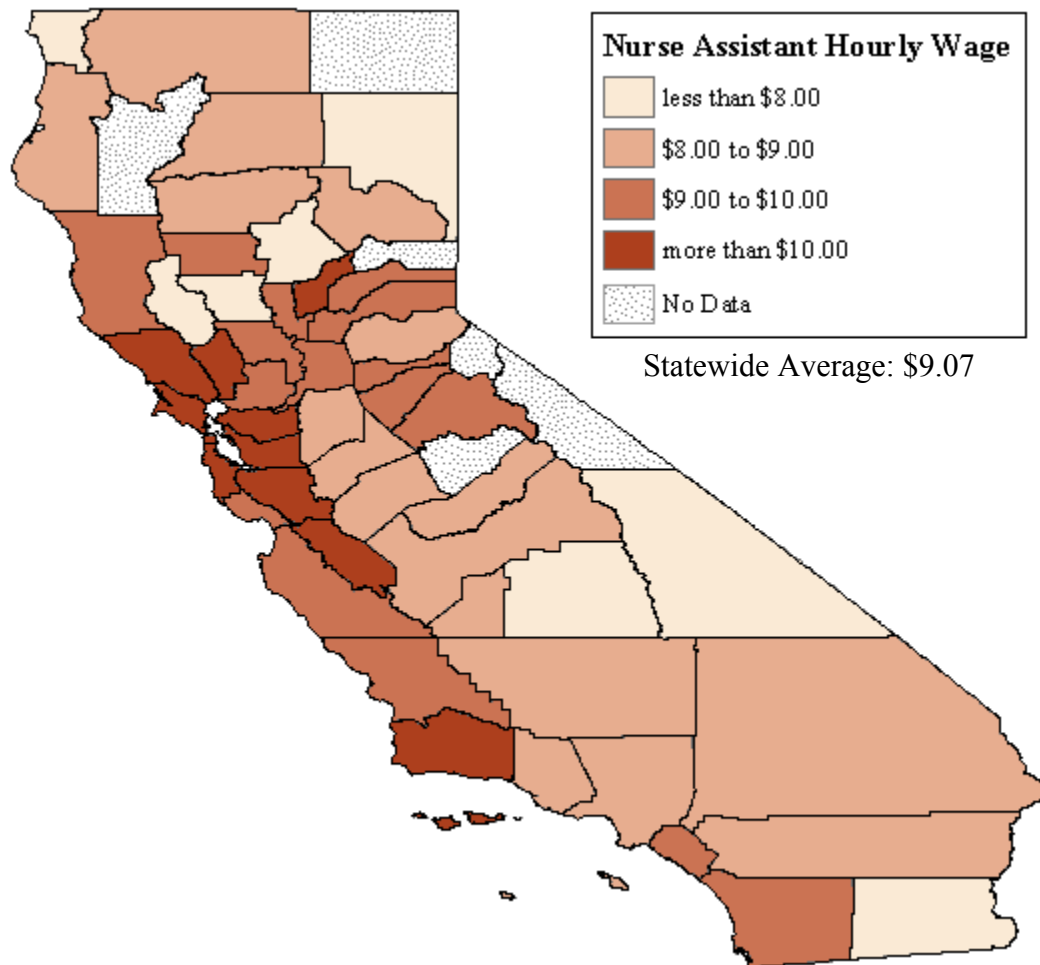
Source: Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000, OSHPD (N=1,197)

The data are useful in testing for the impact of competition from competing occupations. If competition is extensive, then nurse assistant wages should be impacted by the prevailing wages of competing occupations, which in turn are tied to the regional-specific cost-of-living. When county-level LTC facility nurse assistant wages are displayed graphically, one can see a general pattern of higher wages in regions with higher costs-of-living (see Figure 3.7). For example, LTC facilities located in the Bay Area pay, on average, over \$10.00 per hour to nurse assistants.

<sup>9</sup> The prevailing wage for competing occupations was estimated by averaging the mean wage reported in the 2001 OES for each of the occupations identified by EDD as a competing occupation for caregivers. The prevailing wage was calculated for each geographic area distinguished in the OES.



**Figure 3.7. Hourly Wage of Long-Term Care Facility Nurse Assistants, by County**



Source: Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000.

The results from a multivariate analysis (detailed in Table B.2 of Appendix B) are consistent with the geographic pattern described above: the higher the area wage for competing occupations, the higher the wage received by nurse assistants. The results also identify other factors affecting wages. On average, Intermediate Care Facilities offer lower wages than Skilled Nursing Facilities while Congregate Living Health Facilities offer higher wages. Large facilities (measure by number of beds) provide higher wages, while those relying more on temporary nursing assistant staff have lower wages. Facilities located in counties with a managed care plan, and those with a higher reliance on Medicaid/Medicare revenues, provide lower wages. This last finding reinforces the implications from the previous analysis of staffing levels—that is, government reimbursement policy and regulations affect the nurse assistant labor market.

### Wages for In-Home Supportive Services Providers

On average, IHSS providers received an hourly wage of about \$6.75 in 2001, with very little variation in the wage received (see Table 3.6). This average wage is similar to that found for entry-level Personal and Home Care Aides based on CCOIS data. The average wage for IHSS providers has increased over time—from about \$4.25 in 1995 to \$6.75 in 2001—but this increase is probably a reflection of the increase in California’s minimum wage, and not of the increase in demand. The minimum wage rate has increased gradually from \$4.25 in 1996 to \$5.25 and \$5.75 in each subsequent year. The rate increased by 50 cents in 2001, and again in 2002, to \$6.75. Thus, IHSS providers have made little wage progression beyond minimum wage—which is consistent with the findings for Personal and Home Care Aides.

**Table 3.6: Average Hourly Wages for In-Home Supportive Services Providers (1995-2001)**

Year	Mean	Range		
		25th Percentile	50th Percentile	75th Percentile
1995	4.26	4.25	4.25	4.25
1996	4.44	4.38	4.38	4.43
1997	5.05	5.01	5.01	5.07
1998	5.71	5.65	5.66	5.75
1999	5.90	5.75	5.75	5.88
2000	6.23	5.75	6.25	6.34
2001	6.85	6.44	6.75	6.75

Source: IHSS Administrative Files, California Department of Social Services, 1999-2001.

The lack of data on IHSS providers precludes a detailed analysis of IHSS wages, although the absence of variation in the wage rate, and the strong connection to minimum wage laws, suggests a small likelihood of significant associations. In general, counties are quite homogeneous in terms of IHSS wages because state regulations and cost-sharing formulas influence the narrow spread. There are several exceptional counties where wages for independent IHSS providers are (and have been historically) about one or two dollars higher than the other counties. For example, San Francisco, San Mateo and Alameda counties have set higher wages for their IHSS workers.

In addition, the low IHSS worker wages are being challenged since 1995 in Sacramento and statewide unions. The most notable of these is the Service Employees International Union (SEIU) that worked to organize home care workers in Los Angeles County, as well as several Bay Area counties. In Los Angeles, the IHSS worker wages are now supplemented with benefits

for those workers working at least 112 hours per month. This indicates that the county governments can, and do, influence these worker wages. Also, as the unions become more influential, they will have some impact on salaries that could result in somewhat more variation.

### ***Job Benefits for Caregivers***

Analysis of job benefits available to caregivers, using CCOIS data, suggests that most full-time employees, but only a small percentage of part-time employees, are offered benefits.<sup>10</sup> Figures 3.8 and 3.9 report the percent of full-time and part-time employees offered specific types of job benefits. Over 50 percent of full-time employees are offered vacation and sick leave benefits, but less than 40 percent of part-time employees are offered these benefits. Vacation benefits are slightly more prevalent than sick leave benefits for both full- and part-time employees. Similarly, over half of full-time employees are offered medical and dental insurance, but less than 25 percent of part-time employees are offered these benefits. Retirement benefits are slightly less prevalent than the other benefits examined, but the disparity between full- and part-time employees still exists.

Nurse Aides are more likely to receive job benefits than other caregivers. Vacation time, sick leave, medical insurance, and dental insurance are offered to over 80 percent of full-time Nurse Aides, while the percent of full-time Personal and Home Care Aides offered these benefits ranges between 40 percent and 70 percent. The trend across occupations is somewhat different for retirement benefits. The percent of employees offered retirement benefits is almost identical for Nurse Aides and Personal and Home Care Aides, and is lowest for Home Health Aides.

The analysis of job benefits indicates that benefits for caregivers are predominately available for full-time employees, and not part-time employees—which is particularly relevant given the high percentage of part-time/temporary caregivers discussed at the beginning of this section.<sup>11</sup> In addition, Nurse Aides are more likely than the other caregivers to receive benefits. One possible explanation for this is that Nurse Aides are more likely to work in large, established

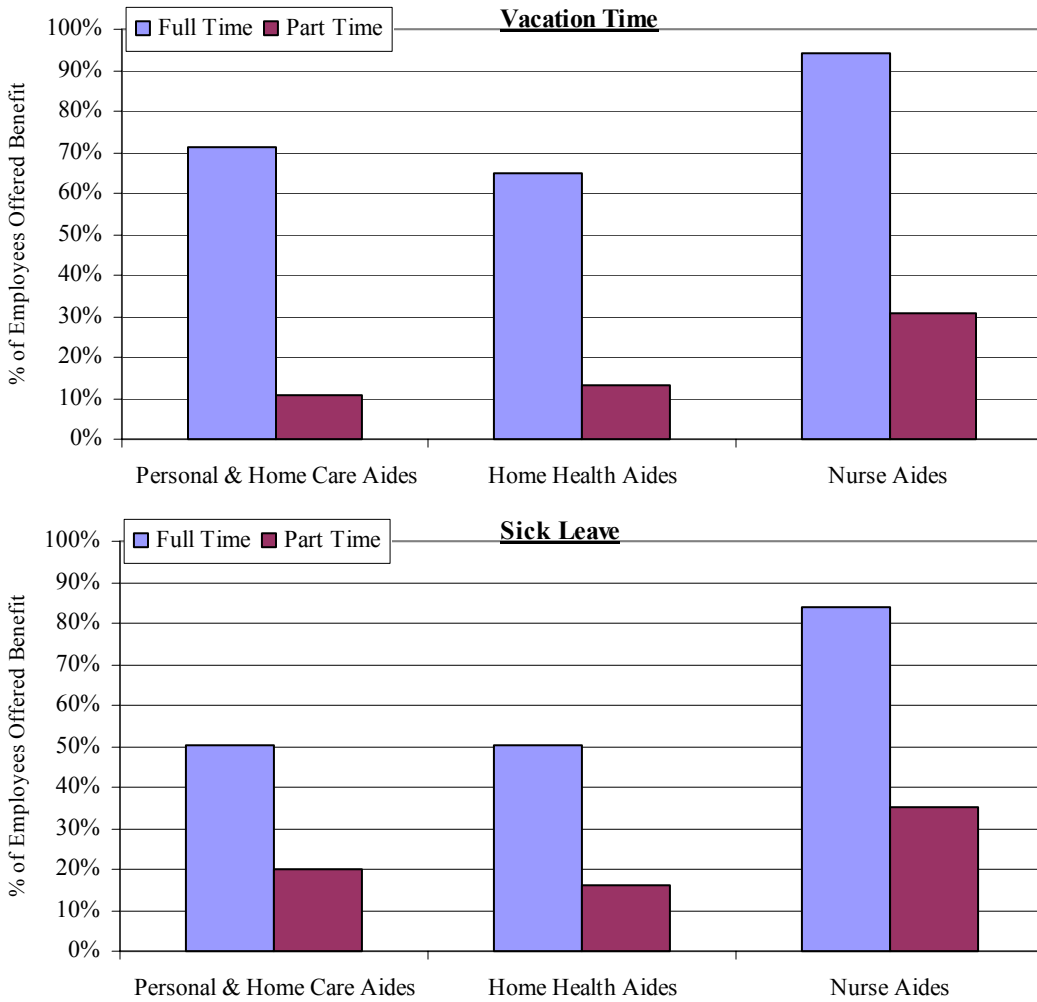
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<sup>10</sup> The CCOIS data only allow us to examine benefits *offered* to employees, and not how many employees actually use the benefits (take-up rates). Other research on IHSS suggests that the latter may be much lower than the former (Benjamin et al, 1998). Also, the data do not allow us to identify which firms offer benefits to the worker's family.

<sup>11</sup> After completion of our analysis more recent CCOIS data became available. Initial exploration of the more recent CCOIS data (1999, 2000, and 2001 pooled) indicates a similar discrepancy between full-time and part-time caregivers. Most of the benefit rates are very similar across the two periods (1997-1999 vs. 1999-2001). For Personal and Home Care Aides two noticeable differences exist: a higher percentage of full-time workers are offered medical insurance (63 percent in 1999-2001 vs. 47 percent in 1997-1999) and fewer full-time workers are offered retirement benefits (47 percent in 1999-2001 vs. 59 percent in 1997-1999). However, variations in the CCOIS sample across years, in addition to changes in the economic business cycle, make direct comparisons difficult.

firms (particularly hospitals), which are more likely to offer benefits (see discussion of CNAs below).

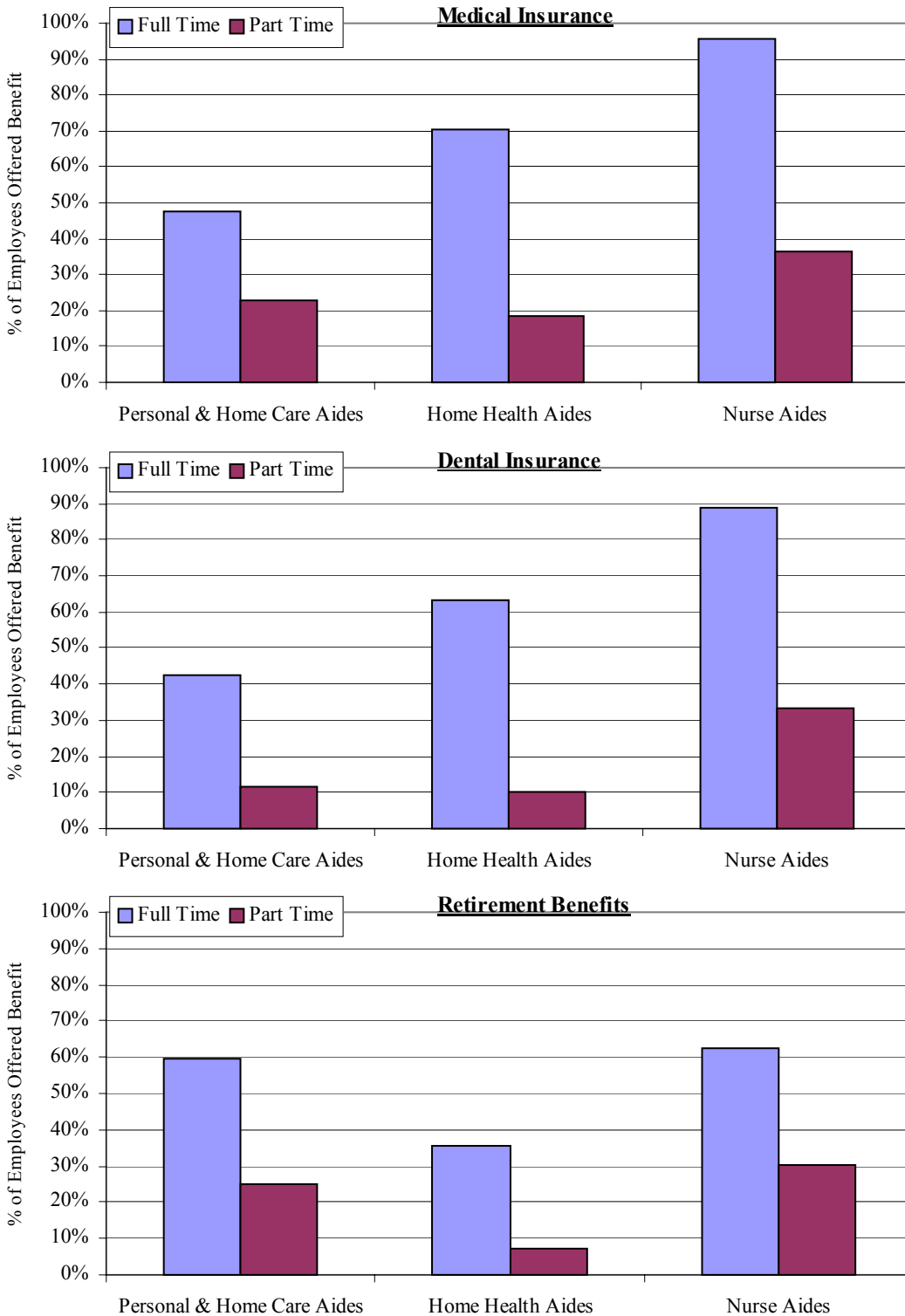
**Figure 3.8: Vacation and Sick Leave Benefits for Caregivers**



Note: Percentages for full time and part time employees are weighted by the number of full time and part time employees, respectively, in each firm.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

**Figure 3.9: Medical, Dental and Retirement Benefits for Caregivers**



Note: Percentages for full time and part time employees are weighted by the number of full time and part time employees, respectively, in each firm.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

## Benefits for Certified Nurse Assistants

The above analysis suggests that the availability of job benefits greatly depends on whether an employee is full-time or part-time. Unfortunately, it is not possible to identify full-time and part-time CNAs from the information available in the CNA Survey.<sup>12</sup> However, the CNA Survey can provide additional insight into variations in job benefit availability by place of employment.

Table 3.7 reports the percent of current CNAs offered job benefits by the place of employment. CNAs working in Hospitals are the most likely to have job benefits, in general, while CNAs working for a Home Health Agency or Nurse Aid Registry are least likely to have job benefits. This may be because Home Health Agency and Nurse Aid Registry employees are generally hired as temporary employees.

**Table 3.7: Percent of Certified Nurse Assistants with Employer-Provided Job Benefit**

	Healthcare Insurance		
	Self-Coverage	Family-Coverage	Dental Insurance
All Current CNAs	57.3	42.8	50.8
<i>Place of Employment:</i>			
Convalescent/Nursing Home	57.7	40.1	48.5
Nurse Aid Registry	34.6	25.8	28.4
Home Health Agency	36.7	23.4	30.7
Hospital	76.2	66.7	74.0
Residential Care Facility	57.4	37.6	50.7
Other	46.9	33.9	41.1
Multiple Employment	54.5	40.0	48.9
	Paid Vacation Time	Paid Sick Leave	Retirement Benefit
All Current CNAs	68.6	54.5	35.0
<i>Place of Employment:</i>			
Convalescent/Nursing Home	75.2	55.7	27.9
Nurse Aid Registry	34.3	26.9	19.5
Home Health Agency	36.8	28.4	22.5
Hospital	79.6	73.7	62.7
Residential Care Facility	67.8	51.2	32.0
Other	55.2	45.1	31.4
Multiple Employment	61.3	48.9	34.0

Source: CNA Survey, Department of Health Services, 2000. Survey results weighted (N=25,818).

### Benefits for IHSS Providers

Most (about 94 percent) of California's In-Home Supportive Services workforce are employed as independent providers, with the remainder employed by home care agencies. Based on a statewide survey of IHSS workers in 1997 (Benjamin et al., 1998), few of the independent provider workers received benefits. Only 2.4 percent received health insurance and fewer, only 0.4 percent, received life insurance and vacation leave. This group of workers functions as independent contractors, but unlike many other independent contractors, they are low-wage workers and, as such, cannot afford to purchase their own health insurance. No one received paid sick leave. Benefits were somewhat better for the small group of agency workers. For those employed by agencies, just fewer than 40 percent received health insurance, paid sick leave, and paid vacation leave.

Some workers may face a probationary period before becoming eligible for health insurance, and other agency workers may choose to forego the added costs of having insurance. Whatever the true absolute figures are, the difference between the agency providers and the independent providers in all benefit categories is stark. As unions continue to exert their efforts, however, the picture promises to change. For example, about 75,000 Los Angeles County workers recently became unionized so efforts are underway to provide better wages and benefits.

### ***The Caregiver Shortage***

A discussion of the overall labor market conditions of caregivers would not be complete without addressing the much publicized discussion of the caregiver labor shortage. The shortage has been documented by many sources described earlier in this report. The discrepancy between the number of openings and resumes posted on the CalJOBS Electronic Database provides a clear example of the potential shortage (see Table 3.8).

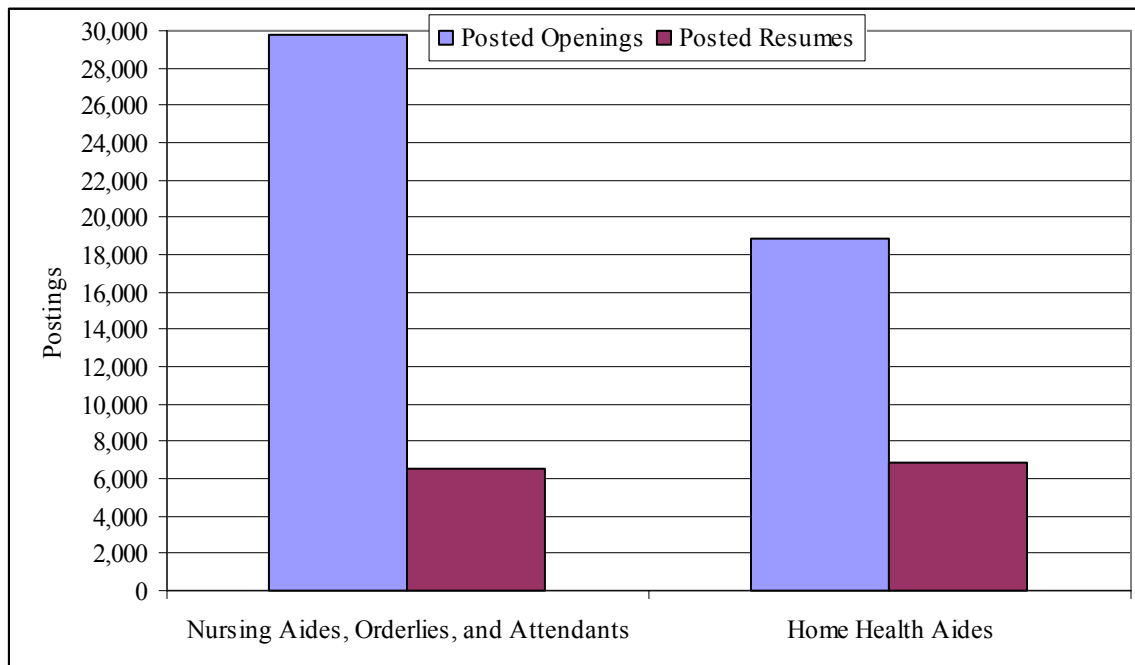
The number of job openings posted on CalJOBS between July of 2001 and May of 2002 is almost five times greater than the number of resumes posted to fill those positions for Nursing Aides, and about three times greater for Home Health Aides.<sup>13</sup> While these discrepancies could simply be the result of disparate use of the CalJOBS system (i.e., potential workers are less likely to use the database than potential employers), it nevertheless documents a mismatch between demand and supply.

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<sup>12</sup> The CNA Registry Files and IHSS Administrative Files do not contain any information on job benefits.

<sup>13</sup> Similar data on Personal and Home Care Aides were not available.

**Table 3.8: Caregiver Shortage in the CalJOBS Electronic Database (July 2001 – May 2002)**

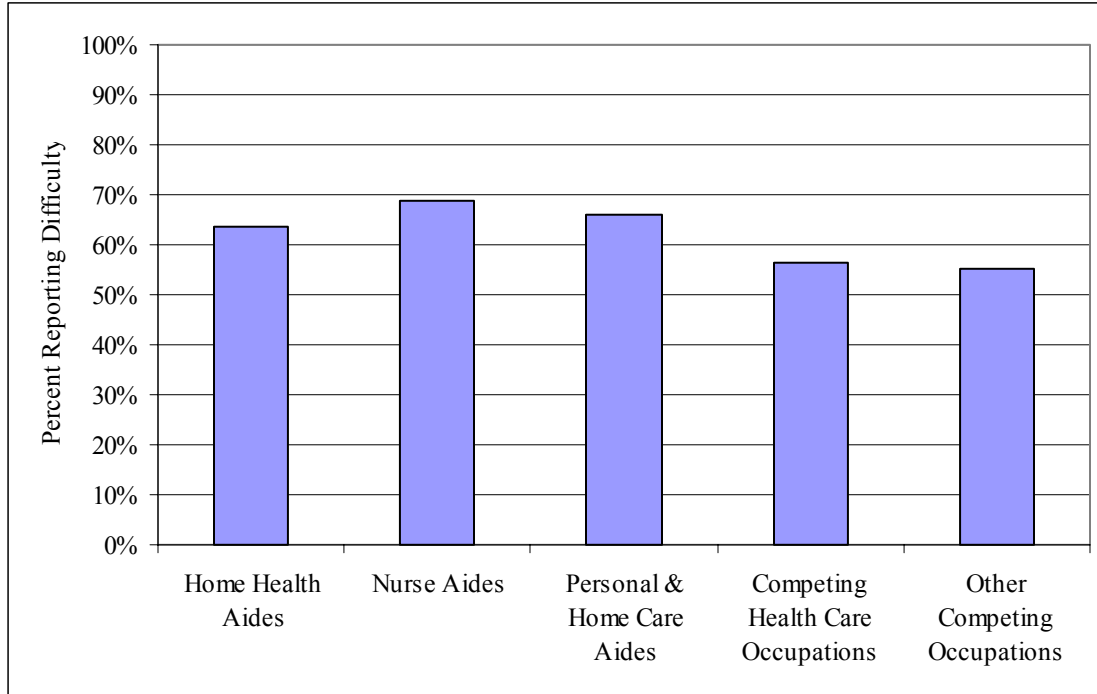


Source: CalJOBS Database, Employment Development Department, 2001-2002.

Data from the CCOIS also documents a potential shortage of caregivers. Over 60 percent of employers reported difficulty finding qualified applicants for caregiver occupations (see Figure 3.10). This rate is significantly higher for caregivers than for competing occupations. Multivariate regression techniques were used to identify factors associated with this employer perceived shortage. Few factors were found to be associated with the perceived difficulty, however. Of note, everything else equal, employers who offered medical benefits were less likely to report difficulty finding caregivers, but those offering higher wages (relative to competing occupations in the area) were not less likely to report difficulty. The insignificance of wages may be due to the correlation between benefits and wage offers, which makes it statistically difficult to pull apart the independent affects of the two factors. Table B.4 in Appendix B reports detailed regression analysis findings. The high percentage of employers reporting difficulty finding qualified caregivers, and the insignificant effect of some factors on this difficulty, further substantiates the shortage dilemma.



**Figure 3.10. Employer Perceived Difficulty Finding Qualified Applicants**



Note: Percentages for the caregiver occupations are statistically greater than the competing occupations based on a Chi-Square test ( $p < 0.0001$ )

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

## SECTION 4: JOB STABILITY IN THE CAREGIVER LABOR MARKET

Previous studies indicate a high degree of turnover among the caregiver workforce, but differ on the actual extent of the problem. Nationally, one study estimates an average turnover rate of about 45 percent for nursing homes and about ten percent for home health care programs (Hoechst Marion Roussel, 1996), while another study estimates an average rate over 100 percent for nursing homes (Wilner and Wyatt, 1998). A report by Ruzek et al. (1999) suggests a turnover rate of 68 percent for nursing homes in California. Findings from our Preliminary Labor Market Report (November 2001) also suggests extensive job turnover in the caregiver industries, as well as significant differences across industries. The majority of workers who leave their initial industry of employment are not exiting the workforce, but are becoming employed in a different industry. The Preliminary Labor Market analysis examined all employees in five “caregiver” industries identified by EDD.<sup>14</sup> For this report we focus on Certified Nurse Assistants and IHSS providers for a clearer picture of caregiver stability. Results from the industry-wide analysis are presented in Appendix C as a reference.

### *Job Stability of Certified Nurse Assistants and IHSS Providers*

To measure job stability among CNA and IHSS providers, we linked the CNA Registry Files and the IHSS Administrative Files to the UI Base Wage and BEL Files maintained by the California Employment Development Department. We then tracked a cohort of employees from first quarter (Q1) 1998 through fourth quarter (Q4) 2000 based on two different selection criteria:

1. All CNA and IHSS providers identified in the Base Wage as employed in one of the caregiver industries in 1998Q1 were selected as the base cohort.<sup>15</sup>
2. We then identified each worker’s “primary job” in each industry. The primary job is defined as the job producing the most earnings in a given industry for that individual in 1998Q1. We excluded all non-primary jobs from the analysis.<sup>16</sup>

The resulting cohort is unique by industry and worker, so the cohort can contain multiple observations for some individuals, but no individual represents more than one observation in any

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<sup>14</sup> Throughout the analysis we use three-digit Standard Industrial Classification (SIC) codes to define industries. The caregiver industries included in our base cohort are: Nursing and Personal Care Facilities (SIC 805); Hospitals (SIC 806); Home Health Care Services (SIC 808); Individual and Family Social Services (SIC 832); and Residential Care (SIC 836).

<sup>15</sup> The base cohort used for the analysis of CNA job turnover is actually all individuals in the CNA Registry Files who received a CNA license prior to 1998, not all CNAs as of 2001.

specific industry. We then used the quarterly UI Base Wage files to track the cohort over three years (1998Q1 to 2000Q4) to measure three types of job stability:

- Employee retention rates – did the worker stay with the same employer as in 1998Q1?
- Industry stability – did the worker stay in the same industry as in 1998Q1?
- Employment stability – did the worker remain in the workforce?

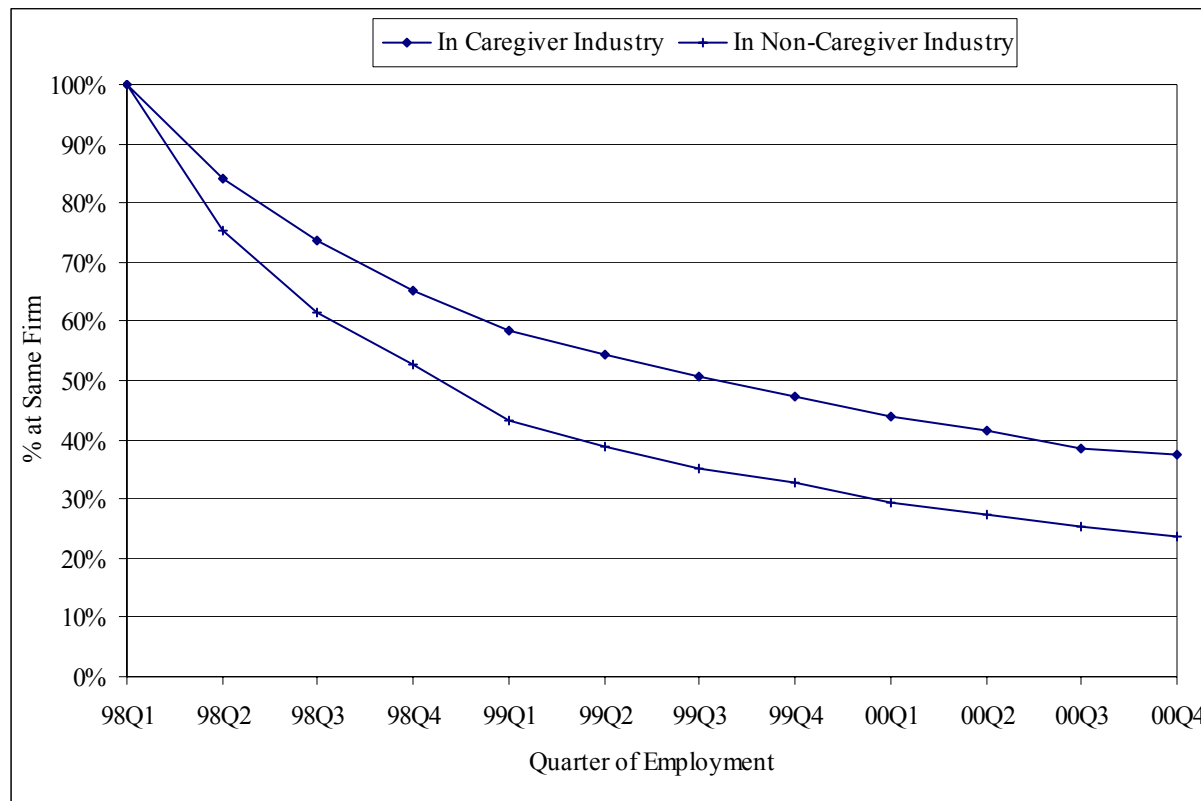
One potential problem with this approach is that the CNA Registry Files and IHSS Administrative Files include only individuals who have/had a CNA certificate or have been an IHSS provider; these people are not necessarily working as a CNA or IHSS provider at any given point of time. Despite this limitation, this approach provides a basic understanding of caregiver job stability.

When CNA employee retention rates (or inversely job turnover) are examined, a distinct pattern of decaying retention rates emerges (see Figure 4.1). Since an individual can hold a CNA certificate and not currently work as a CNA, the results presented in Figure 4.1 are separated by those who were employed primarily in one of the caregiver industries in 1998Q1 (72,314 CNAs) and those who were employed primarily in a non-caregiver industry (39,133 CNAs). The former best represents those actually working as a CNA at the time. As reported in the Preliminary Labor Market Analysis of all employees in the caregiver industries, the greatest rates of job turnover occur during the first year. About 40 percent of CNAs in the caregiver industries, and 50 percent of CNAs in non-caregiver industries, no longer work at their initial firm after one year. Over time, a general decline in the turnover rates emerges. By the end of three years about 60 percent of CNAs in the caregiver industries, and 75 percent of CNAs in non-caregiver industries, no longer work at their initial firm. While very low, the employee retention rates for CNAs are greater than those for low-income caregiver industry employees in general.

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<sup>16</sup> In the Preliminary Labor Market Report, workers with multiple employers in the same industry were eliminated from the analysis. By selecting each worker's "primary job" we are able to include those with multiple employers and therefore get a more representative sample of employees.

**Figure 4.1: Certified Nurse Assistant Employee Retention Rates**

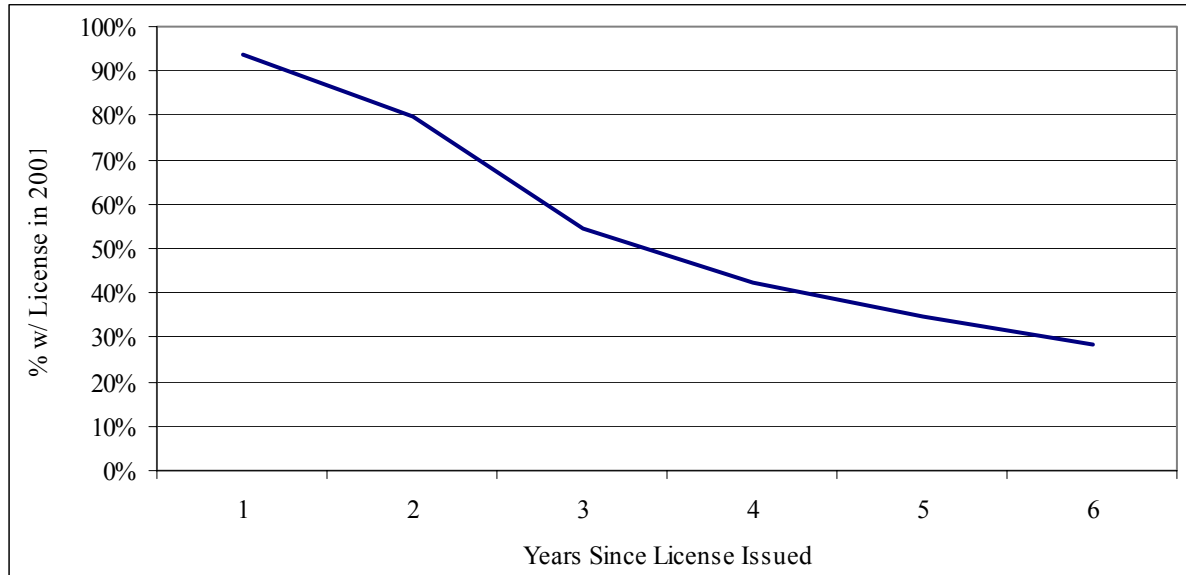


Sources: CNA Registry Files, Department of Health Services, 1995-2001 and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Another indicator of the dramatic exit rate of CNAs is based on analysis of the CNA Registry Files, tracking over time the number of individuals with current and expired/delinquent CNA certificate. Figure 4.2 graphs the CNA survival rates between 1995 and 2001—or the percent of CNAs with a current certificate in 2001 based on the number of years since a certificate was first issued. The survival rate exhibits a similar decline over time. Only about 30 percent of CNAs certified six year ago (in 1995) still have a CNA certificate in 2001, whereas over 90 percent of CNAs certified just one year ago (in 2000) still have a certificate. In general, about half of CNAs fail to renew their certificate within three years (1998-2001) and about 70 percent fail to renew within six years (1995-2001).<sup>17</sup>

<sup>17</sup> A brief comparison of the 1995 and 2001 IHSS Administrative Files shows that about one quarter of current 2001 IHSS providers were also providers in 1995.

**Figure 4.2: Certified Nurse Assistant Licensing Survival Rate (1995-2001)**

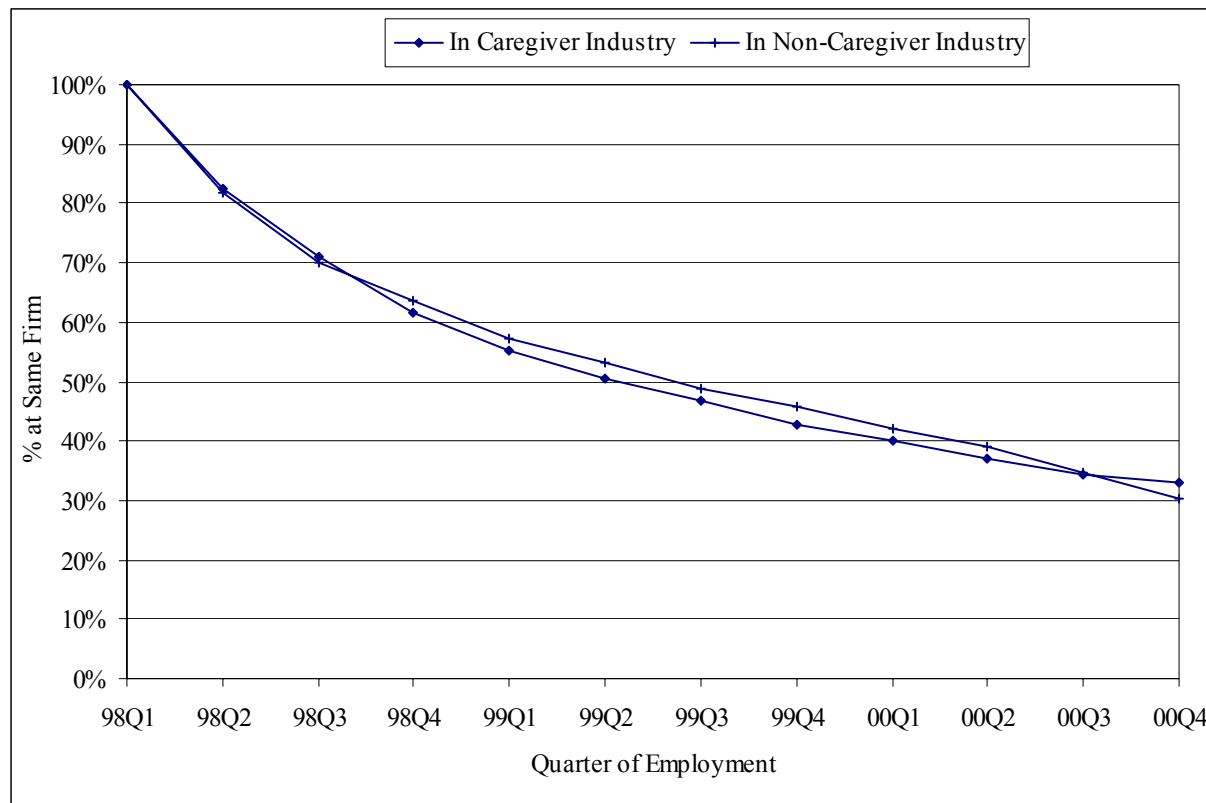


Source: CNA Registry Files, Department of Health Services, 1995-2001.

Notes: The survival rate equals the percent of CNAs issued a license in a given year that still has a license in 2001.

IHSS providers experience the same low employee retention rate trends as CNAs (see Figure 4.3). Unlike CNAs, however, virtually no difference exists between those IHSS providers who worked in a caregiver industry (24,203 providers) and those who worked in a non-caregiver industry (266,920 providers). Note that the number of IHSS providers *working in one of the caregiver industries* is similar to the number of people reported in the 2000 OES working in the Personal and Home Care Aides occupational classification (see Table 3.1), but at any given time there should be roughly 200,000 providers in California. The discrepancy reveals the difficulty in classifying IHSS providers into general industrial and occupational categories. The UI Base Wage and BEL 202 files (as well as the OES) are most likely capturing IHSS providers who work through agencies and other “structured” employment mechanisms as opposed to those working directly for an individual in their home. With this limitation in mind, about 40 percent of IHSS providers no longer work for their initial employer after one year, and by the end of three years about 70 percent no longer work for their initial employer. The employee retention rates for IHSS providers are similar to those for CNAs, but greater than those found for low-income caregiver industry employees in general.

**Figure 4.3: IHSS Provider Employee Retention Rates**



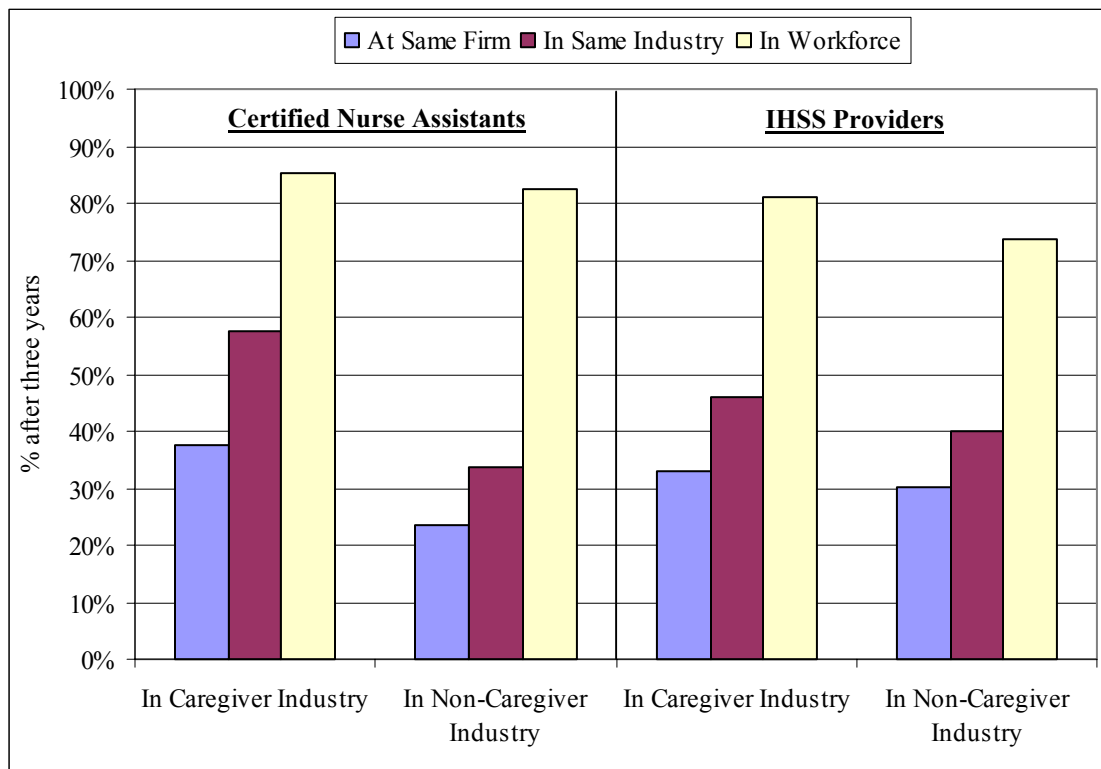
Sources: IHSS Administrative Files, California Department of Social Services, 1999-2001, and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Research from previous studies shows more stability among IHSS workers who are related or previously known to their clients. An examination of the IHSS Administrative data for those providing in-home care to relatives/friends versus “other” clients, between 1995 and 2001, shows no significant difference in the number of years providing care. However, among those whose client was a relative/friend, about 54 percent were currently providing care, while only 35 percent of non-related providers were currently providing care. This supports other evidence that providers related to their client have strong ties to that client—and therefore more job stability.

Certified Nurse Assistants and IHSS providers who worked in caregiver industries are more likely to be with the same employer and/or work in the same industry after three years, compared to CNAs and IHSS providers, respectively, who worked in non-caregiver industries (see Figure 4.4). The job stability rates for CNAs who worked in caregiver industries are also higher than the rates found for employees of the caregiver industries in general. For example, while about 45 percent of caregiver industry employees were in the same industry after three years, almost 60 percent of CNAs in caregiver industries remained in the same industry. The job

stability rates for IHSS providers who worked in a caregiver industry are slightly higher than the rates for caregiver industry employees in general.

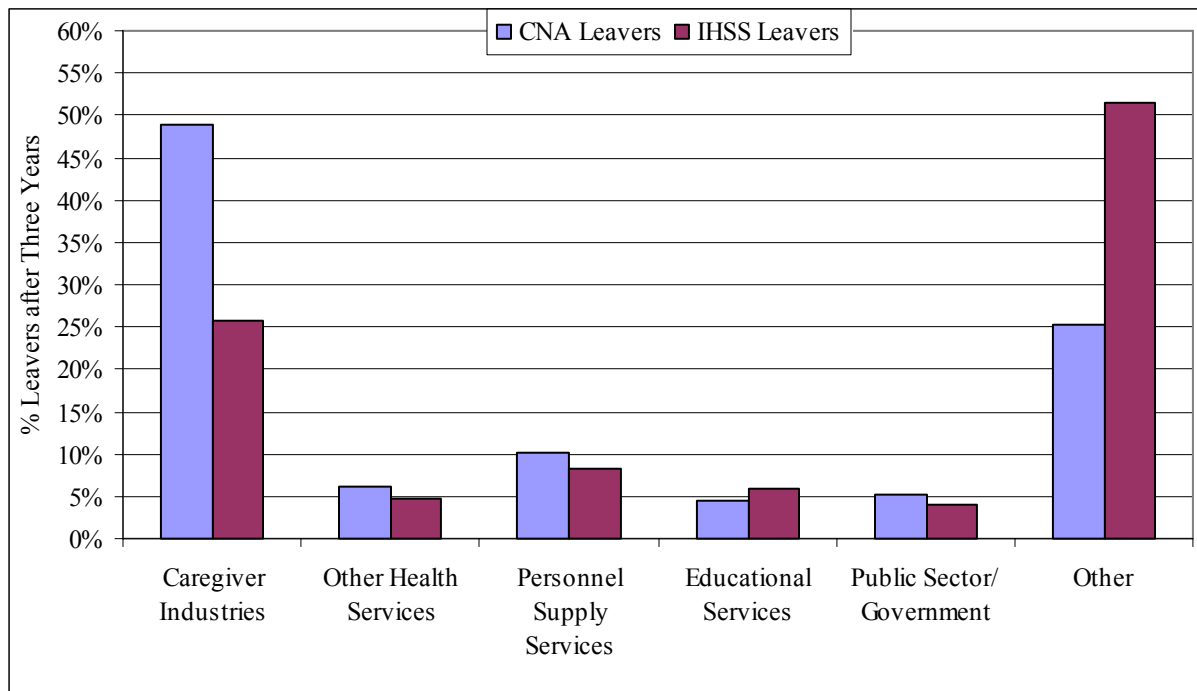
**Figure 4.4: Certified Nurse Assistant and IHSS Provider Job Stability after Three Years**



Sources: CNA Registry Files, Department of Health Services, 1995-2001 and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

While more CNAs and IHSS providers remain in a caregiver industry than the average caregiver industry employee, a significant number of these caregivers are leaving the industry yet remaining in the workforce. Most CNA and IHSS leavers are not employed in a caregiver industry after three years (see Figure 4.5). Almost 50 percent of CNA leavers, and 25 percent of IHSS leavers, remain in one of the caregiver industries—with another approximately 5 percent remaining in another health services industry. This suggests that the caregiver industry loses a significant percentage of its workforce to other industries over time. Outside of the caregiver industries, the leavers are not significantly clustered in specific industries.

**Figure 4.5: CNA and IHSS Industry Leavers' Industry of Employment after Three Years**



Sources: CNA Registry Files, Department of Health Services, 1995-2001 and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

With such a high percentage of employees leaving caregiver industries within three years, it is important to know whether they are leaving for higher earnings elsewhere. Rudimentary analysis of leaver earnings suggests that overall earnings increased between 1998 and 2000 for all CNAs and IHSS providers (Figures 4.6 and 4.7, respectively).<sup>18</sup> Job stability appears to be a function of earnings. On average, those who left their primary industry had the lowest earnings in 1998 and those who stayed with the same employer had the highest earnings. This may be due partly to creaming and self-selection. Employers keep the best workers and award them accordingly, while workers who are awarded for their productivity tend to stay (particularly if the productivity, or the recognition of the productivity, is firm-specific).

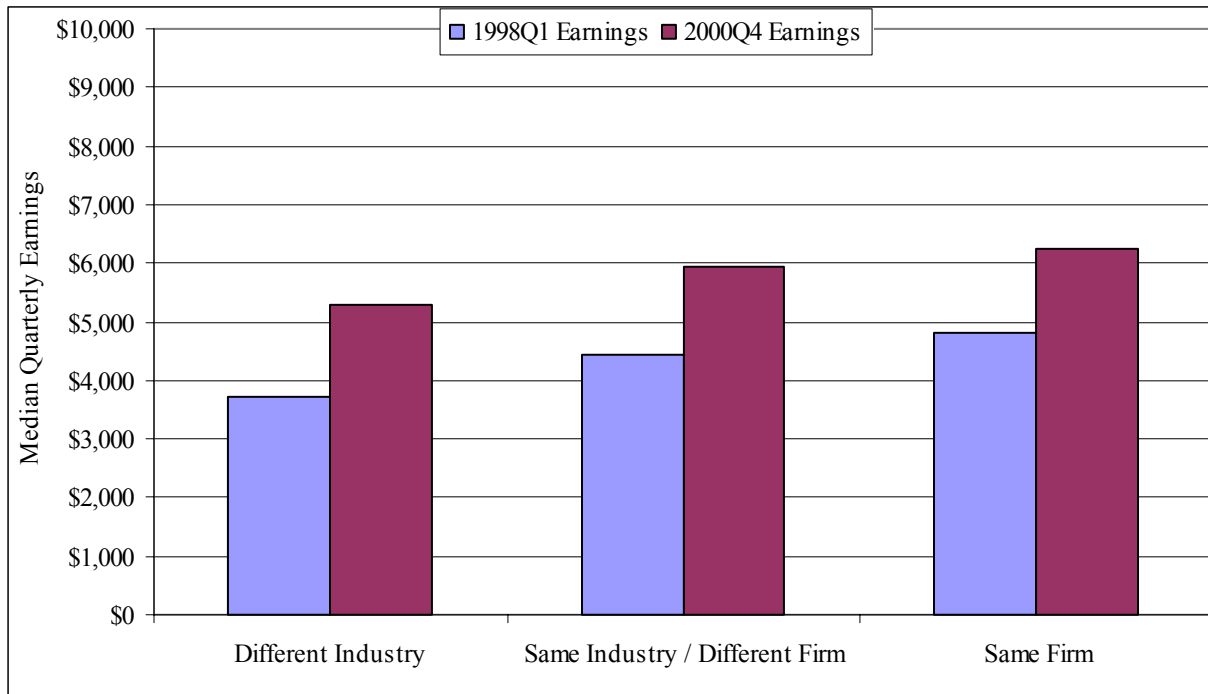
On the other hand, the high exit rate from firms and industries may be due in part to better opportunities elsewhere. In this case, we would see greater wage growth for those opting to find better pay (leavers). In fact, CNAs who left their primary industry in 1998 did experience a greater percentage increase in earnings by 2000 than those who stayed at the same firm (a 42 percent versus a 30 percent increase). However, the absolute change in earnings from 1998 to 2000 (about \$1,500) was not significantly different between CNAs who left their primary

<sup>18</sup> “Leavers” are defined as those in the 1998Q1 cohort who were not in their initial caregiver industry in 2000Q4, but were employed. They could be temporary or permanent leavers.



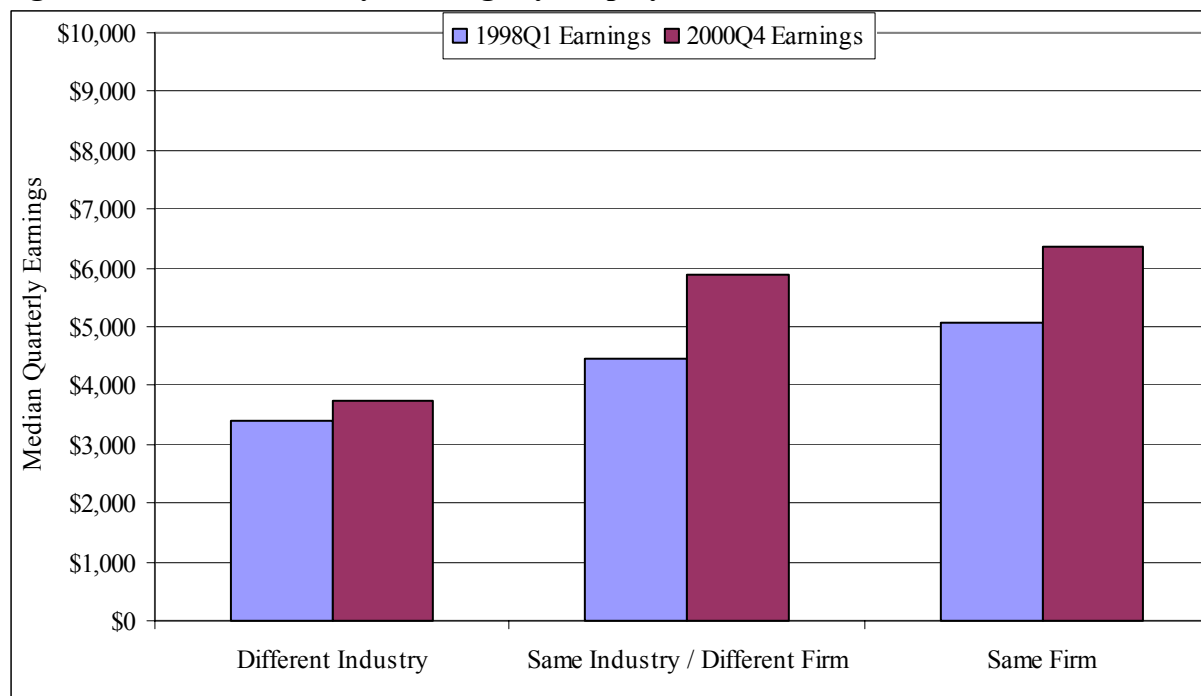
industry and those who remained at the same firm. IHSS “leavers” did not experience the same type of percentage (or absolute) increase in earnings, however.

**Figure 4.6: CNA Quarterly Earnings by Employment Status after Three Years**



Sources: CNA Registry Files, Department of Health Services, 1995-2001 and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

**Figure 4.7: IHSS Quarterly Earnings by Employment Status after Three Years**



Sources: IHSS Administrative Files, California Department of Social Services, 1999-2001, and UI Base Wage and BEL files, Employment Development Department, 1998-2000.

### ***Unemployment and Job Injuries among Caregivers***

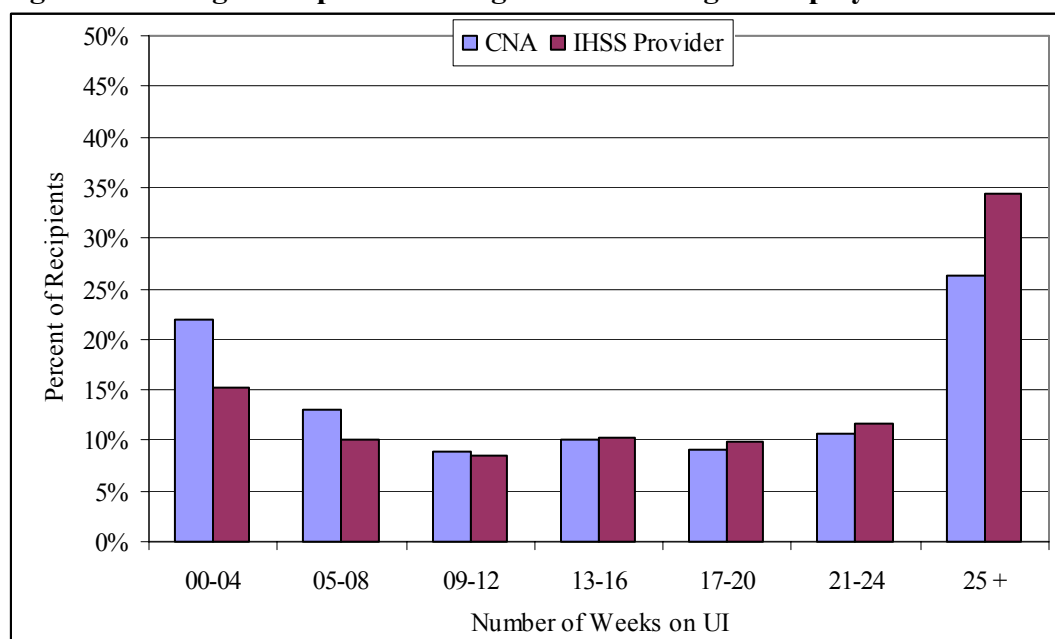
Not all job leavers immediately move into a new job. Administrative data show that many experience periods off the job. Some experience unemployment spells and others could be off the job due to injuries. It is difficult to accurately quantify the extent of unemployment and work-inhibiting injuries from available data sources. The Unemployment Insurance and Disability Insurance (UI/DI) data files collected by EDD provide one indication of unemployment and off-the-job injury.<sup>19</sup>

We matched a 20 percent random sample of CNAs and IHSS providers with the UI/DI data files maintained by the EDD for 2000 to identify unemployment and disability insurance usage by caregivers. The UI/DI files include only workers who file a claim, and are eligible to claim, unemployment insurance or disability insurance. As a result, the data cover only a subset of unemployed and/or disabled caregivers and the results should be interpreted with some caution. Of CNAs in the 20 percent sample, about four percent received unemployment insurance and about six percent received disability insurance in 2000. Of IHSS providers in the sample, about six percent received unemployment insurance and only about three percent

received disability insurance in 2000. These percentages are not directly comparable to the standard unemployment and disability rates regularly reported by the state and federal government.

A significant percentage of CNAs and IHSS providers collecting unemployment insurance experience long unemployment spells (see Figure 4.8). Over 25 percent of unemployed CNAs, and almost 35 percent of unemployed IHSS providers, were unemployed for more than six months (over 24 weeks) in 2000. Over half of unemployed CNAs and IHSS providers were unemployed for more than three months in 2000. If a labor shortage actually exists for caregivers, these long unemployment spells suggest unemployed CNAs and IHSS providers are either choosing not to return to work as caregivers or are facing barriers in their job hunt (such as a spatial mismatch between willing employers and job seekers).

**Figure 4.8: Length of Spell for Caregivers Collecting Unemployment Insurance (2000)**



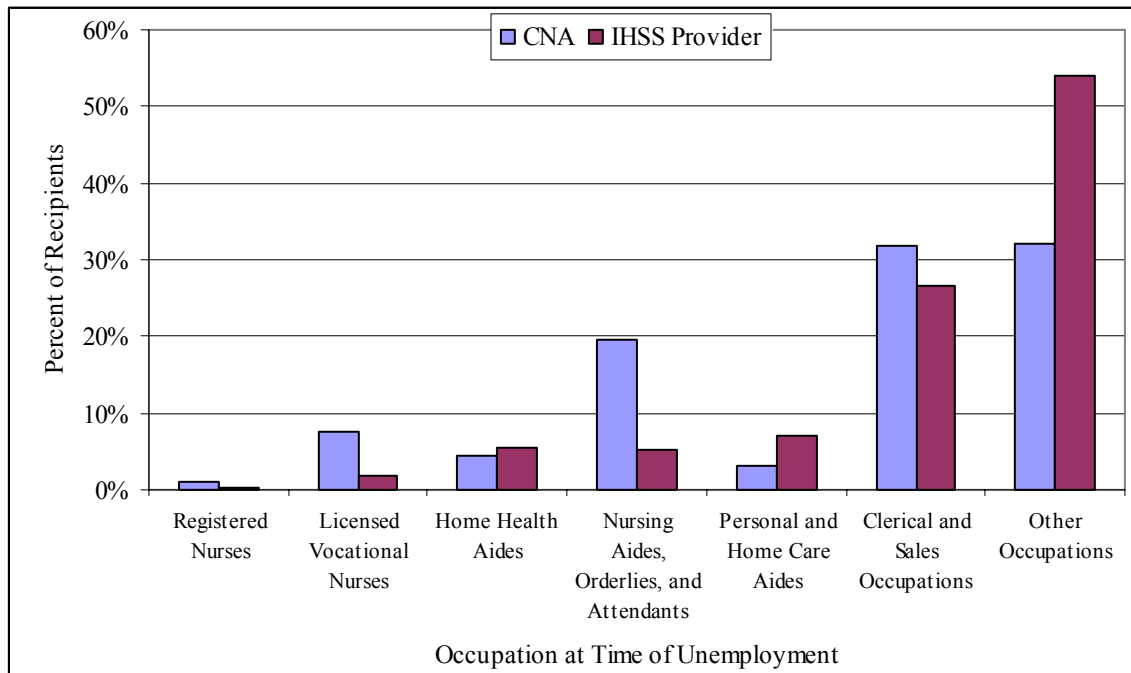
Sources: UI Base Wage, Department of Health Services, 1998-2000; CNA Registry Files, Department of Health Services, 1995-2001 and IHSS Administrative Files, California Department of Social Services, 1999-2001.

The degree of inter-occupational movement (a unique form of job turnover discussed in the next section) is apparent when the UI/DI files are examined. This contributes to the difficulties encountered by employers seeking caregiver workers in a tight labor market. Figure 4.9 displays the occupations CNAs and IHSS providers claimed to have held at the time of

<sup>19</sup> Unfortunately we did not get data for on-the-job injuries, so we cannot directly assess the extent of on-the-job injuries. However, we can rely on past studies to document on-the-job injuries.

unemployment. Of the CNAs who became unemployed at some point in 2000, only about 20 percent worked as a nurse assistant at the time of unemployment. Of IHSS providers, less than ten percent worked as a personal or home care aide. Some of the unemployed caregivers showed some sign of upward occupational movement (to LVN and RN occupations), but most were not in any health-related occupation upon unemployment. Therefore, the unemployment spells may be a reflection of other occupational characteristics and not caregiver occupational characteristics.

**Figure 4.9: Occupation at Time of Unemployment Claim (2000)**



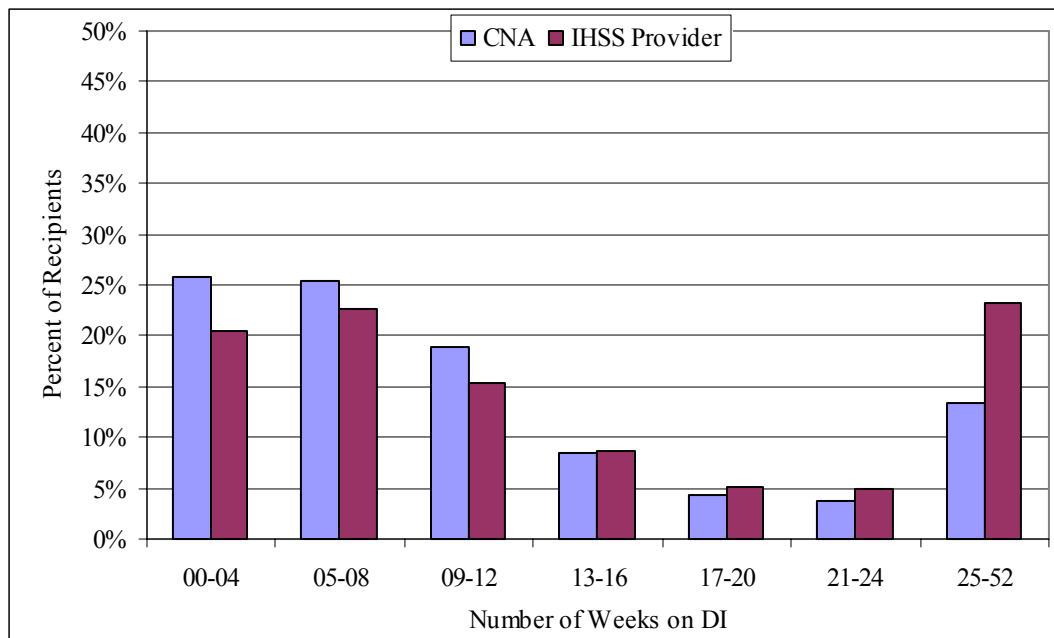
Sources: UI Base Wage, Department of Health Services, 1998-2000; CNA Registry Files, Department of Health Services, 1995-2001 and IHSS Administrative Files, California Department of Social Services, 1999-2001.

Caregivers can also be temporarily out of the workforce because of injuries. The job site is one injury source (on-the-job injuries). For example, past studies indicate that nursing homes have high rates of workplace injury—even higher than the construction industry. In 1999, 13 out of every 100 nursing home employees suffered from a workplace injury (U.S. General Accounting Office, 2001e). If on-the-job injuries are more prevalent and severe among the caregiver occupations, as EDD’s *Quest for Caregivers* report indicates, then this work hazard could influence caregivers to leave for safer jobs—particularly in the absence of higher wages.

Off-the-job injury and illness can also keep employees from working. The UI/DI data provide information on off-the-job injuries. The data indicate that disability insurance spells are

not as pronounced as unemployment insurance spells, but job stability for some caregivers is clearly affected by off-the-job injuries. Figure 4.10 shows the distribution of CNA and IHSS providers who collected disability insurance in 2000 by the length of time they were on disability insurance. A majority of injured CNA and IHSS providers were on disability for less than three months, but a significant percentage of these caregivers were on disability (and off the job) for more than six months (14 and 23 percent respectively).

**Figure 4.10: Length of Spell for Caregivers Collecting Disability Insurance**



Sources: UI/DI Data, Employment Development Department, 1998-2000; CNA Registry Files, Department of Health Services, 1995-2001 and IHSS Administrative Files, California Department of Social Services, 1999-2001.

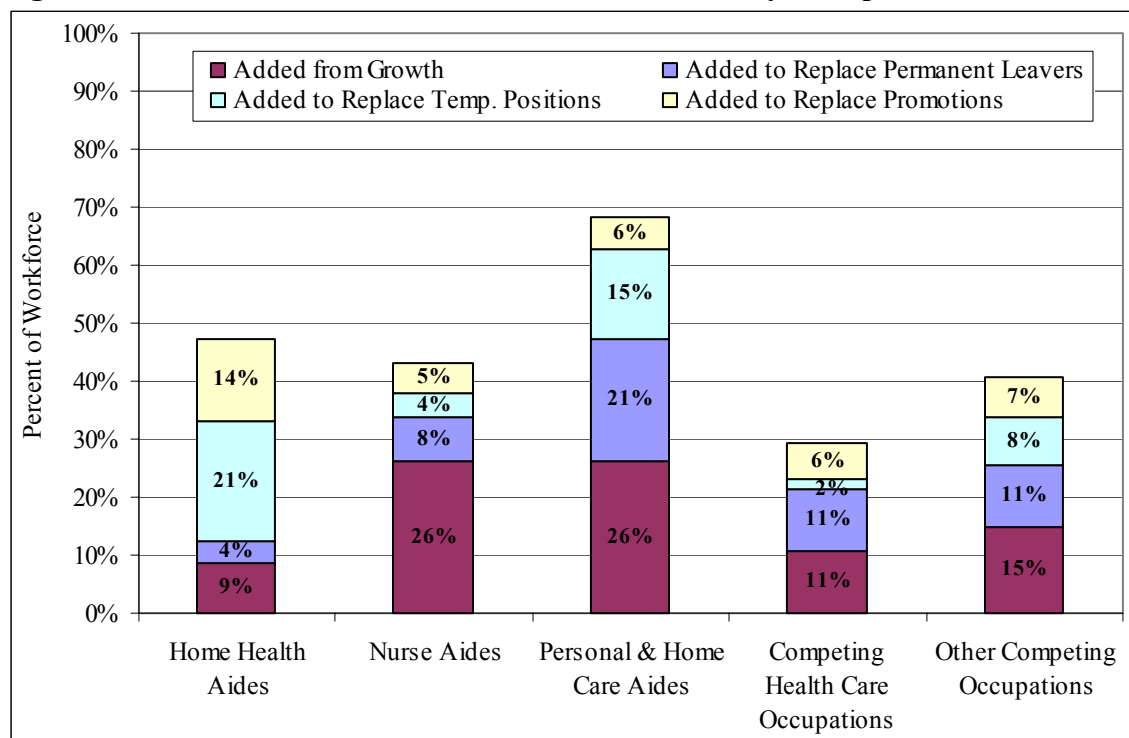
### ***Employer-Side Estimate on Job Turnover***

The above analysis utilizes longitudinal, individual-level data to examine job stability from the perspective of caregivers. Another piece of the job stability picture is filled-in by cross-sectional, employer-level data. The EDD’s California Cooperative Occupational Information System (CCOIS) data files enable analysis of new hires—another indication of job stability.

Figure 4.11 reports the percent of an employer’s workforce that was hired within the past year. Overall, caregivers are more likely to be new hires than those in competing occupations. This is particularly true for Personal and Home Care Aides, where 70 percent of the workforce was new to the firm within the past year. The dominant reason for hiring Personal and Home Care Aides and Nurse Aides was growing demand for their services. Job turnover, however, was

also a major reason for the need to hire new employees. This is particularly true for Home Health Aides and Personal and Home Care Aides, where 25 percent and 36 percent, respectively, of the workforce was hired to replace employees who left permanent or temporary positions.

**Figure 4.11. Percent of Workforce Hired in Past Year, by Occupation and Reason for Hire**



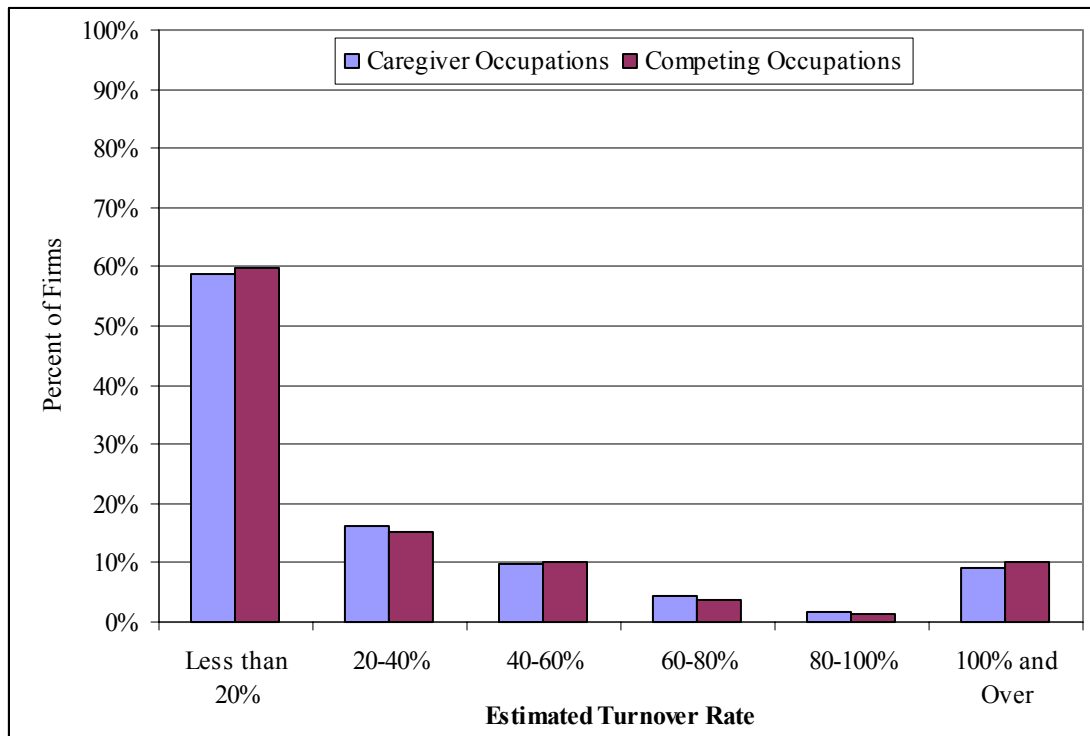
Source: CCOIS, Employment Development Department, 1997-1999 (pooled). Results weighted by number of employees at each firm.

The relatively high percentage of new hires for job replacement further documents the degree of job turnover among the caregiver workforce. Figure 4.12 displays the distribution of firms by their estimated turnover rate (based on the CCOIS data) for the caregiver occupations and the competing occupations.<sup>20</sup> While no statistically significant difference exists between caregiver occupations and competing occupations, high turnover rates are prevalent for a substantial percentage of employers. About 15 percent of employers experience turnover rates greater than 60 percent and about ten percent experience turnover rates of 100 percent or more. However, most firms do not experience such extreme turnover rates; about 60 percent have turnover rates less than 20 percent. The median turnover rate for the caregiver occupations is

<sup>20</sup> To estimate the turnover rate for each firm in the CCOIS data we summed the number of employees hired within the last year to replace permanent leavers, temporary position leavers, and promotional vacancies then divided that sum by the total number of employees minus the number of employees hired within the last year due to growth.

about ten percent and the median turnover rate for the competing occupations is about eight percent.

**Figure 4.12. Distribution of Firms by Their Occupational Turnover Rate**



Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

A multivariate analysis of the percent of an employer’s workforce hired to replace permanent leavers in the past year does not identify many reasons for variation in turnover rates across employers (see Table B.5 in Appendix B). The most relevant finding is that, on average, firms paying a wage relatively higher than the area average for competing occupations are less likely to experience job turnover (although this result is statistically significant only at a 90 percent level of confidence, and is not significant when the analysis is restricted to nurse assistants). More research into why some firms have high turnover rates while others do not would further improve the understanding of the caregiver labor market and the caregiver shortage.

## SECTION 5: MOBILITY IN THE CAREGIVER LABOR MARKET

One objective of the Caregiver Training Initiative is to provide entry-level caregivers assistance in moving up the career ladder. The previous section discusses job mobility in terms of stability and turnover. This section addresses the extent of positive upward mobility within occupations and across occupations.

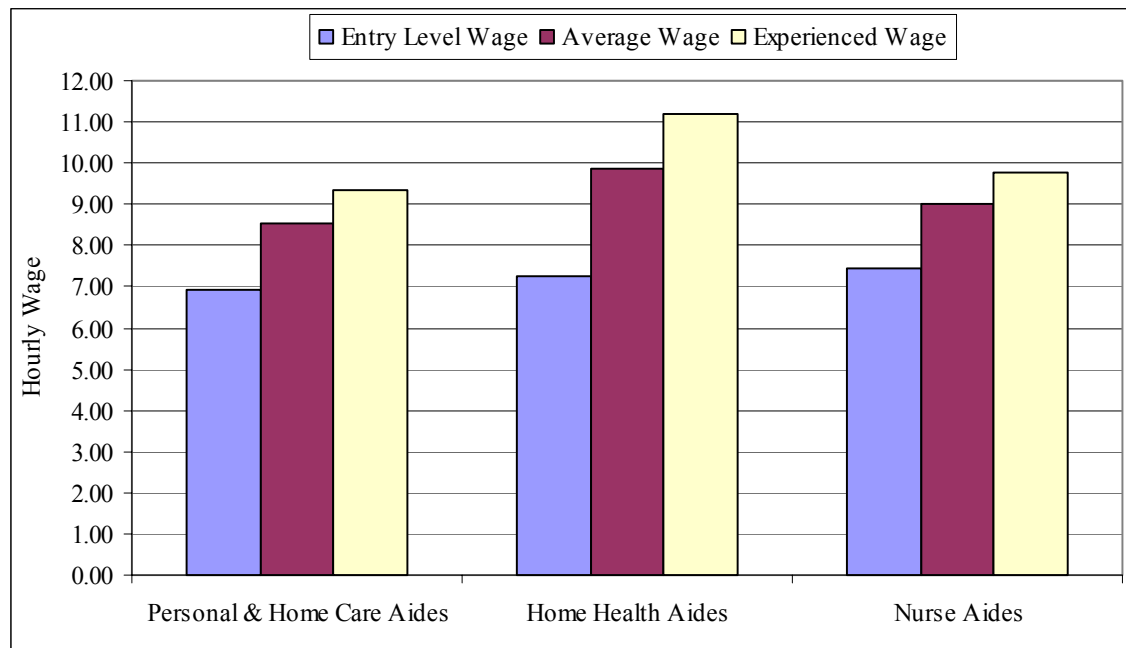
### *Upward Mobility within Occupations*

Analysis of average wages for the three caregiver occupations suggests possible wage progression within the occupations. Figure 5.1 displays the average hourly wages for entry level, average, and experienced caregivers. The entry level wage for all three occupations is about the same, although Nurse Aides receive a slightly higher hourly wage of \$7.45, and all three occupations have modest increases in the hourly wage from entry to experienced. Home Health Aides experience the greatest wage progression from their entry level wage to the average and experienced level wage.

More experienced Certified Nurse Assistants also report higher wages. As discussed in Section 3 (see Table 3.4), CNAs certified less than four years ago receive a median wage of \$8.00 per hour while CNAs certified more than ten years ago receive a median wage of just over \$9.00 per hour. When other factors are controlled for, the hourly wage of CNAs certified more than ten years ago is 8.6 percent higher than the hourly wage for CNAs certified less than four years ago (see Table B.3 in Appendix B). This wage increase for experience, averaged out to less than one percent per year, is very low relative to most average annual increases in pay.



**Figure 5.1: Wage Progression by Caregiver Occupations**



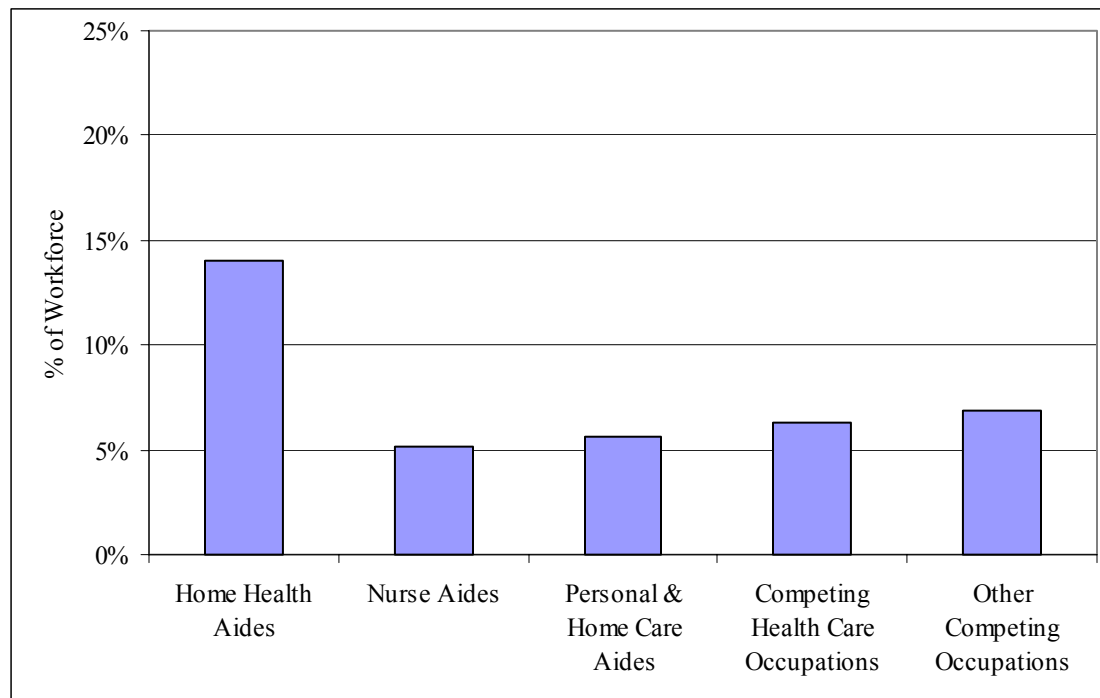
Notes: Hourly wages represent the average across the Health Care industries and are weighted by the number of employees in each industry. Wages are adjusted to 2000 dollars.

Source: OES Survey, Employment Development Department, 1998-2000.

While wages tend to rise with experience for all caregivers, data from the CCOIS suggest only Home Health Aides experience high rates of job promotion (see Figure 5.2). Almost 15 percent of the Home Health Aide workforce was hired in the past year to replace individuals promoted within the same firm. For the other two caregiver occupations, only about five percent of the workforce was hired to replace promotions. This rate is similar to that for competing occupations.

Overall, some degree of economic advancement seems to exist for caregivers, but it is limited. As discussed in Section 3, earnings returns to experience and education are very low relative to most occupations. To significantly improve their economic well-being, most caregivers need to leave the entry-level caregiver occupations and seek advancement in a different occupation. The analysis of caregiver industry leavers presented in Section 4 suggests some caregivers are doing just that.

**Figure 5.2: New Hires to Replace Vacancies from Promotions, by Occupation**



Source: CCOIS, Employment Development Department, 1997-1999 (pooled). Results weighted by number of employees at each firm.

### ***Mobility across Occupations***

Results presented in the earlier sections suggest significant movement across occupations for caregivers. For example, among CNAs who started in a caregiver industry and then changed employers, about half are no longer in a caregiver industry after three years. About 75 percent of IHSS provider leavers, originally in a caregiver industry, work in a non-caregiver industry after three years (see Figure 4.5). Of unemployed CNAs and IHSS providers, a majority were in a non-healthcare related occupation at the time of unemployment (see Figure 4.9).

In addition, initial cross-tabulations of the IHSS Administrative Files and the CNA Registry Files show some (albeit fairly limited) mobility between these two caregiver occupations. Within the roughly six-year span examined (1995-2001), just under three percent of those who were ever IHSS providers were also Certified Nurse Assistants at some point during that period. Conversely, about seven percent of those who were ever a CNA were also an IHSS Provider at some point during that period.

The occupational transitions just described address lateral occupational mobility rather than upward movement on a “career ladder.” An exploration of the available data suggests that some caregivers do climb the rungs of a career ladder. Of those currently in the CNA Registry

files, about 30 percent went on to acquire a Home Health Aide certificate. Furthermore, preliminary estimates suggest that between 5 and 12 percent of CNAs/HHAs go on to become licensed vocational nurses.<sup>21</sup> Another indication of upward mobility is that about ten percent of unemployed CNAs and IHSS providers reported being an RN, LVN, or HHA at the time of unemployment. Unfortunately, current data limitations restrict the ability to make more precise estimates of vertical occupational mobility, or to examine these movements in detail (for example, describing just who these “movers” are compared with others).

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<sup>21</sup> Ideally, we would like to directly match the CNA database with the LVN database but the LVN data was not made available to us. To estimate the percent of CNAs/HHAs who continue on to become LVNs, we selected a random sample of 300 CNAs or HHAs in the CNA Registry files and manually looked their names up on the Board of Vocational Nursing and Psychiatric Technicians (BVNPT) on-line Vocational Nurses License Verification database. Since this method is far from exact, we estimated a match rate of 5 to 12 percent depending on our confidence in each match.

## SUMMARY OF FINDINGS

Findings from this report substantiate and expand upon findings from previous labor market studies of low-wage healthcare workers. Unlike previous reports based on aggregate data, we used micro-level worker data, and merged it with longitudinal data to track CNA and IHSS workers over time. We have been able to integrate caregiver data with information about firms, and information about regional economies. The report clearly quantifies wage dispersions, describes movements among occupations, and addresses issues of mobility.

To the best of our knowledge, there are no other studies in the country that have explored these areas to the same degree. Unfortunately, we cannot determine the extent that our findings could be generalized to other states, nor can we predict how useful they could be outside California. The major findings of this caregiver labor market analysis are outlined below.

### ***What is required to become a caregiver and who becomes a caregiver?***

- Certified Nurse Assistants (CNAs) must receive 150 hours of training plus pass a certification exam, but there are no formal requirements for IHSS workers.
- Active CNAs are mostly female and have at least a high school education. Most have family responsibilities and only about half speak English as a primary language.
- IHSS providers are also mostly female. Over half of those reporting are related to the client. About one-third have been an IHSS Provider for five or more years.
- About one-quarter of CNAs received welfare at some time during 1995-2000, and 10 percent received welfare in 2000. The proportions for IHSS Providers who were welfare eligible were slightly higher.

### ***What is already known about the caregiver labor market?***

- Nationally, we know that the projected increase in demand, especially for the lower-end jobs such as home health aides, is very high.
- California differs from the rest of the country in the sense that there is more ethnic diversity, more consumer choice in terms of home care, a larger welfare and uninsured population, and a faster-growing elderly population.
- Turnover rates among workers are very high, and in terms of wages, benefits, opportunities for advancement and risk of injury, caregiver occupations fare less well than competing occupations.

- The current research is consistent with factors related to a labor shortage. However, the findings are not complete since they focus on the supply-side characteristics of caregiver occupations.

***What are the overall labor market conditions for caregivers?***

- The number of new Certified Nurse Assistants (CNAs) peaked in 1996 and declined from 1997 to 1999, despite rising demand.
- Over 60 percent of Home Health Aides and Personal and Home Care Aides are part-time or temporary employees, and over 30 percent of Nurse Aides are part-time or temporary employees.
- However, benefits for caregivers are predominately available for full-time employees, and not part-time employees.
- About half of CNAs work in a convalescent or nursing home, while another quarter work in a hospital. Over 15 percent of CNAs work in more than one establishment.
- CNAs with employer-provided training are more likely to remain employed with that employer, but a significant number do leave for employment in another type of facility.
- On average, Long-Term Care (LTC) facilities in counties with a managed care plan and those with a greater reliance on Medicaid/Medicare revenues have lower nurse assistant staffing levels and lower nurse assistant wages, everything else equal.
- Earnings returns to experience and education for CNAs are low relative to most occupations.
- Unionized CNA wages are about 14 percent higher than non-unionized CNAs.
- The hourly wage for nurse assistants in Long-Term Care facilities is about 10 percent lower than the prevailing wage for competing occupations in the area where the facility is located.

***What is the degree of job stability and turnover in the caregiver labor market?***

- Over a six year period (1995-2001), about half of Certified Nurse Assistants failed to renew their certificate within three years (1998-2001) and about 70 percent failed to renew within six years (1995-2001).

- Among IHSS providers from 1999 to 2001, about 54 percent of those who provided in-home care to a relative or friend were currently providing care in 2001, while only 35 percent of non-related providers were currently providing care.
- By the end of three years, about 60 percent of CNAs in the caregiver industries and 75 percent of CNAs in non-caregiver industries no longer work at their initial firm.
- The caregiver industry loses a significant percentage of its workforce to other industries over time, but the industry leavers are not significantly clustered in any other specific industries.
- A significant percentage of CNAs and IHSS providers who collected unemployment insurance in 2000 experienced long unemployment spells. Over 25 percent of unemployed CNAs, and almost 35 percent of IHSS providers, were unemployed for more than six months.

***What is the degree of economic advancement in the caregiver labor market?***

- The wage premium increase for CNA experience, which averaged out to less than one percent per year (everything else equal), is very low relative to most average annual increases in pay.
- Certified Nurse Assistants who left their primary industry in 1998 experienced a greater percentage increase in earnings by 2000 than those who stayed at the same firm (a 42 percent versus a 30 percent increase).
- Home Health Aides experience high rates of job promotion relative to competing occupations, but Nurse Aides and Personal and Home Care Aides have job promotion rates similar to those for competing occupations.
- About 30 percent of CNAs also acquire a Home Health Aide certificate.
- Rough estimates indicate that between 5 and 12 percent of CNAs/HHAs go on to become licensed vocational nurses (LVNs).

***What Are The Next Steps For Labor Market Analyses?***

A vast amount of data relevant to the study of California's caregiver labor market exists. Unfortunately, the data are collected and maintained by various departments for various reasons. Bringing these data sources together and/or synchronizing data collection efforts would greatly

expand our ability to understand the labor market dynamics of caregivers. There is limited longitudinal and cross-sectional data about discrete groups of healthcare workers.

For example, future labor market analyses in California could attempt to merge demographic data for all major healthcare worker categories (such as CNAs, LVNs and RNs) with statewide earnings data, facilitating a more comprehensive analysis of worker earnings and mobility over time. This would enable analysis of characteristics associated with different job trajectories, identify patterns of stability, and suggest leverage points for reform aimed at increasing supply and improving quality. Linking administrative data with survey data and facility-based data would also greatly expand the depth of analysis. As such, it could influence how the state confronts the healthcare worker crisis, and could provide a rich source of information for government agencies and policymakers.

The cyclical nature of the economy and supply-demand workforce issues complicates policy responses to the healthcare workforce shortage. Efforts to increase labor supply could dampen the shortage in the short run, but in the long run the shortage could continue as the projected major demographic shifts continue to increase the demand for health care workers. Until we know more about California's healthcare workers, such as who are the new entrants, who stays in healthcare, who leaves, and where they go, it will be difficult to solve problems related to the much-publicized healthcare workforce shortage.

Multiple forces in our society influence the recruitment and retention of healthcare workers. These include economic climate, regulatory and reimbursement policy, labor policies, including unionization and welfare-to-work, education and training, and immigration policy (Stone, 2001). Thus, the problem is multi-faceted, and possible solutions must address and incorporate multiple dimensions of influence if possible. The key to these multiple forces, however, is understanding the true extent of the problem, since this problem is constantly in flux. This highlights the importance of continuing analyses of healthcare workforce supply and demand. With accurate analyses of workforce needs, it is possible to better adapt and adjust to meeting those needs, even as they change over time.

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## **APPENDIX A: MEDICARE AND MEDICAID REGULATIONS**

### Medicare Background

Medicare was first implemented in 1966 for those 65 and older. Also known as Title XVIII of the Social Security Act, it was a health insurance program for elderly people, meant to complement the retirement, survivors and disability insurance under the Social Security Act, Title II. Coverage includes in-patient hospital care, and 30 days of Skilled Nursing Facility (SNF) care following hospitalization.

It consists of two parts. Hospital Insurance (HI), or Part A, is provided automatically and free of premiums to elderly who are Social Security-eligible. Supplementary Medical Insurance (SMI), or Part B, requires a monthly premium (\$50 per month per beneficiary in 2001), and covers physician and other medical services, including non-HI covered home health care, emergency services, lab tests, most physical therapy, outpatient rehabilitation services, radiation therapy, and medical equipment at home.

Services not covered under Medicare include long-term nursing care, dental care, eyeglasses, hearing aids, and prescription drugs.

Most beneficiaries can choose to participate in a Medicare+Choice plan instead of the original fee-for-service program. Of 40 million enrolled in 2001, about 5.7 million have chosen Medicare+Choice plans. These plans include health maintenance organizations, provider sponsored organizations, or preferred provider organizations.

### Medicaid Background

Title XIX of the Social Security Act established a federal/state entitlement program paying for medical assistance for certain low-income individuals and families. Medicaid became law in 1965, funded jointly by the federal and state governments. Each state establishes its own eligibility standards, determines type and scope of services, sets payment rates, and administers its own policies. Federal funds are available for “categorically needy” groups including individuals eligible for AFDC, children under age 6 and pregnant women whose family income is below 133% of the federal poverty level (FPL), SSI recipients, and children under age 19 in families at or below FPL.

States have the option of providing coverage for other “categorically related” groups, based on income and disability status, as well as “medically needy” groups.

As part of the Omnibus Reconciliation Act of 1980, the “Boren amendment” required that Medicaid nursing home rates be “reasonable and adequate” to provide services in conformity with laws, regulations, and quality and safety standards. State Medicaid officials opposed the amendment as impossible to operationalize, believing that they were forced to spend too much on nursing homes at the expense of other services. The federal Balanced Budget Act of 1997 repealed the Boren amendment, giving states far greater freedom in setting nursing home payment rates. It established a case-mix-adjusted prospective payment system for Medicare skilled nursing facilities (effective July 1998) that should bring major cost savings.

Effective January 1, 2000, California nursing homes were required to adhere to staffing ratios based on 3.2 hours per patient, as well as to offer 5% pay raises to direct care staff. Effective August 1, 2000, Section 88 of Assembly Bill (AB) 2877 required the Department of Health Services (DHS) to increase rates to all long term care facilities, except acute transitional care facilities, to include a wage pass-through (WPT) for employees who provide direct patient care. The August 1, 2000, WPT is in addition to the August 1, 1999, WPT (AB 1107). The intent is to improve quality of care by requiring affected nursing homes to increase the wages, salaries and benefits of employees providing direct patient care. AB 2877 increases wages for registered nurses, licensed vocational nurses, nurse assistants, and others. The total pass-through amount for each facility is based on its number of Medi-Cal patient days.

**Table A.1: Medicare and Medicaid Regulations and Changes**

<b>Year</b>	<b>Medicare</b>	<b>Medicaid</b>
1965	Established through Title XX of Social Security Act.	Established through Title XIX of Social Security Act.
1966	Implemented.	Implemented.
1980	Unlimited home health visits; requirement for prior hospitalization eliminated.	
1983	Payments to providers for HI changed from “reasonable cost” to prospective payment system (PPS), where a specific predetermined amount is paid for each hospital stay, based on diagnosis-related group classification.	
1990	Hospice care extended beyond 210 days when beneficiary is terminally ill.	
1992	Allowed charges on SMI changed from “reasonable charge” to the lesser of (1) submitted charges or (2) amount determined by a fee schedule based on a relative value scale.	
1996	The Health Insurance Portability and Accountability Act created the Medicare Integrity Program, intensifying efforts to combat monetary fraud and abuse in the program.	--“Welfare reform” bill made restrictive changes regarding SSI coverage for aliens and disabled children. --Mandatory enrollment in HMOs for all AFDC-related beneficiaries in 19 counties.
1997	The Balanced Budget Act (BBA) expanded beneficiaries’ options for participation in private-sector health care plans. Also established a third program, Part C, called Medicare+Choice program. PPS hospital payments will be reduced 17.7% from FY 1998 through 2002, and by 15% for psychiatric, rehab, and long-term care hospitals. Initiates PPS system for home health agencies starting 10/99.	The BBA of 1997 established the State Children’s Health Insurance Program (SCHIP) under Title XXI for low-income children currently not insured. Repeals Boren amendment, and replaces it with a public notice requirement for determining rates for payment of hospital, nursing facilities and intermediate care facilities for the mental retarded.
1997	Home health services not associated with a hospital or SNF stay are transferred from the HI program to the SMI program, effective 1-98.	
1999		Ticket to Work and Work Incentives Improvement Act provide coverage to certain beneficiaries who work despite disabilities. (August) Wage pass-through (WPT) for long-term care facilities.
2000		(August) WPT for long-term care facilities.

## APPENDIX B: REGRESSION ANALYSIS RESULTS

**Table B.1: Multivariate Regression Analysis of Nurse Assistant Staffing (Demand-Side)**

Factor	Marginal Effect	Std. Error	P-value
Type of Long-Term Care Facility:			
Residential Care Facility	-0.23	0.33	0.48
Intermediate Care Facility	0.16	0.69	0.82
Congregate Living Health Facility (Skilled Nursing Facility Omitted)	8.70	0.94	<.01
Average Number of Beds (log)	0.11	0.19	0.54
Temporary Nurse Assistant Staff (%)	-0.41	1.74	0.81
Revenue from Medicaid/Medicare (%)	-1.44	0.36	<.01
In Managed Care County (1/0)	-0.70	0.30	0.02
NA Wage Relative to LVN Wage	-1.22	1.28	0.34

Note: The dependent variable is the number of nurse assistant hours per patient day. Adjusted R-squared=0.11  
Source: Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000, OSHPD, (N=1,194)

**Table B.2: Multivariate Regression Analysis of LTC Nurse Assistant Wages**

Factor	Percent Change	Std. Error	P-value
Type of Long-Term Care Facility:			
Residential Care Facility	-0.34%	1.39%	0.81
Intermediate Care Facility	-7.51%	2.95%	0.01
Congregate Living Health Facility (Skilled Nursing Facility Omitted)	11.85%	3.91%	<.01
Average Number of Beds (log)	4.29%	0.80%	<.01
Beds per Patient Day	13.24%	39.33%	0.74
Temporary Nurse Assistant Staff (%)	-81.10%	7.48%	<.01
Revenue from Medicaid/Medicare (%)	-10.41%	1.53%	<.01
In Managed Care County (1/0)	-5.97%	1.29%	<.01
Area Wage for Competing Occupations	11.71%	0.52%	<.01

Note: The dependent variable is the natural log of average nurse assistant hourly wage. Adjusted R-squared=0.37  
Source: Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000, OSHPD, (N=1,197)

**Table B.3: Multivariate Regression Analysis of CNA Wages**

Factor	Percent Change	Std. Error	P-value
Male	0.42%	0.41%	0.30
Married	0.81%	0.28%	0.00
Responsible for Child/Family	-2.41%	0.30%	<.0001
Age	0.07%	0.01%	<.0001
Educational Status:			
High School/GED	2.20%	0.41%	<.0001
Associates Degree	5.37%	0.60%	<.0001
Bachelors Degree	5.36%	0.61%	<.0001
Other (Less than HS Omitted)	3.60%	0.64%	<.0001
Primary Language:			
Spanish	-1.55%	0.35%	<.0001
Tagalog	2.57%	0.40%	<.0001
Other (English Omitted)	2.10%	0.47%	<.0001
CNA Training Location:			
Nursing Home	0.29%	0.28%	0.30
Other (School-based Omitted)	2.30%	0.67%	0.00
Length of License Certification:			
Certified 4 to 9 yrs	4.47%	0.31%	<.0001
Certified 10+ yrs (Less Than 4 yrs Omitted)	8.63%	0.39%	<.0001
Place of Employment:			
Nurse Aid Registry	12.25%	0.48%	<.0001
Home Health Agency	3.41%	0.42%	<.0001
Hospital	15.34%	0.32%	<.0001
Residential Care Facility	-1.54%	0.44%	0.00
Other (Nursing Home Omitted)	8.21%	0.51%	<.0001
Multiple Jobs	-2.88%	0.29%	<.0001
Unionized Job	14.16%	0.35%	<.0001

Source: CNA Survey (N=21,011), Department of Health Services, 2000. Survey results weighted.

Notes: The dependent variable is the log of hourly wages for CNAs currently working as a CNA. Adjusted R-squared=27.16

**Tables B.4: Multivariate Regression Analysis of Employer Perceived Labor Shortage**

Factor	All Caregiver Occupations			Nurse Assistant Occupation		
	Estimate	Std. Error	P-value	Estimate	Std. Error	P-value
Staff Characteristics:						
Total Employment	0.01	0.00	<.01	0.01	0.00	0.03
Full-Time Employees (%)	0.83	0.39	0.04	1.13	0.57	0.05
New Hires (%)	1.44	0.37	<.01	1.49	0.50	<.01
Compensation:						
Relative Wage	-0.23	0.45	0.60	-0.38	0.66	0.57
Wage Growth	0.28	0.60	0.65	0.32	0.85	0.71
Medical Benefits Offered	-0.79	0.31	0.01	-0.06	0.53	0.91
Year:						
1997	0.39	0.30	0.19	0.58	0.41	0.16
1998	0.40	0.31	0.19	0.69	0.43	0.11
(1999 Omitted)						
Geographic Area:						
Bay Area	0.39	0.30	0.20	0.87	0.52	0.09
So. California	-0.10	0.25	0.68	-0.10	0.29	0.74
(Rest of CA Omitted)						
Occupation						
Home Health Aides	0.65	0.52	0.21	na	na	na
Nurse Assistants	0.58	0.52	0.26	na	na	na
(Personal/Home Care Omitted)						
Number of Observations	493			271		
Likelihood Ratio	58.3			25.9		

Notes: The dependent variable is an indicator of employer perceived hiring difficulty (1=difficult, 0=not difficult). Survey results weighted by the square root of total employment.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).



**Tables B.5: Multivariate Regression Analysis of Leavers**

Factor	All Caregiver Occupations			Nurse Assistant Occupation		
	Estimate	Std. Error	P-value	Estimate	Std. Error	P-value
<b>Staff Characteristics:</b>						
Total Employment	0.00	0.00	0.19	0.00	0.00	0.05
Full-Time Employees (%)	0.01	0.02	0.57	-0.02	0.03	0.52
New Hires (%)	0.11	0.02	<.01	0.12	0.02	<.01
<b>Compensation:</b>						
Relative Wage	-0.04	0.03	0.09	-0.02	0.04	0.61
Wage Growth	-0.02	0.03	0.64	0.01	0.05	0.80
Medical Benefits Offered	0.01	0.02	0.64	0.02	0.04	0.57
<b>Year:</b>						
1997	-0.20	0.02	<.01	-0.22	0.02	<.01
1998	-0.21	0.02	<.01	-0.24	0.02	<.01
(1999 Omitted)						
<b>Geographic Area:</b>						
Bay Area	-0.03	0.02	0.06	-0.10	0.03	<.01
So. California	0.01	0.01	0.49	0.01	0.02	0.69
(Rest of CA Omitted)						
<b>Occupation</b>						
Home Health Aides	-0.01	0.03	0.76	na	na	na
Nurse Assistants	0.00	0.03	0.95	na	na	na
(Personal/Home Care Omitted)						
Number of Observations	420			225		
Adjusted R-square	0.40			0.39		

Notes: The dependent variable is the percent of the workforce hired to replace permanent leavers in the past year. Survey results weighted by the square root of total employment.

Source: CCOIS, Employment Development Department, 1997-1999 (pooled).

## APPENDIX C: INDUSTRY-WIDE JOB STABILITY ANALYSIS

To measure job stability among workers in the health care industries, we followed a cohort of employees from first quarter (Q1) 1998 through fourth quarter (Q4) 2000 using EDD's UI Base Wage and Business Establishment List (BEL) files. Two different selections were made to create the cohort:

- All individuals identified in the Base Wage as employed in one of the caregiver industries in 1998Q1 were selected as the base cohort.<sup>22</sup> For the analysis of CNA and IHSS Provider job stability the base cohorts are, respectively, all CNAs and all IHSS providers employed in 1998Q1.
- We then identify each worker's "primary job" in each industry. The primary job is defined as the job producing the most earnings in a given industry for that individual in 1998Q1. All non-primary jobs are then excluded from the analysis.<sup>23</sup>

The resulting cohort is unique by industry and worker, so the cohort contains multiple observations for some individuals, but no individual represents more than one observation in any specific industry.

We then used the quarterly Base Wage files to track the cohort over three years (1998Q1 to 2000Q4) to measure three types of job stability:

- Employee retention rates – did the worker stay with the same employer as in 1998Q1?
- Industry stability – did the worker stay in the same industry as in 1998Q1?
- Employment stability – did the worker remain in the workforce?

Section 4 of this report presents the comparable job stability analysis for Certified Nurse Assistants and IHSS providers. The figures below present the job stability analysis for all employees in the caregiver industries identified by EDD. Figures C-1 through C-4 are revised versions of figures previously presented in the Preliminary Labor Market Report. Figures C-5

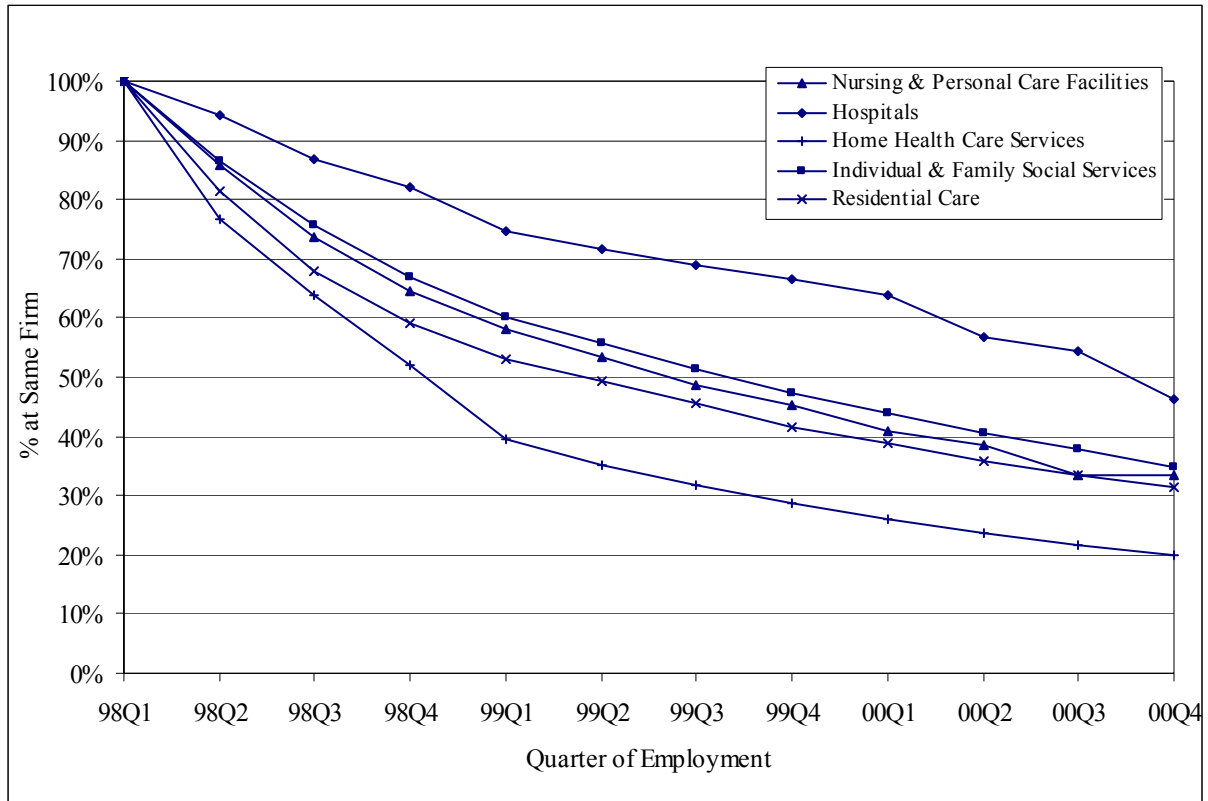
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<sup>22</sup> Throughout the analysis we use three-digit Standard Industrial Classification (SIC) codes to define industries. The caregiver industries included in our base cohort are: Nursing and Personal Care Facilities (SIC 805); Hospitals (SIC 806); Home Health Care Services (SIC 808); Individual and Family Social Services (SIC 832); and Residential Care (SIC 836).

<sup>23</sup> In the Preliminary Labor Market Report, workers with multiple employers in the same industry were eliminated from the analysis. By selecting each worker's "primary job" we are able to include those with multiple employers and therefore get a more representative sample of employees.

through C-8 examine the “caregiver industry leavers” to see which industries they go into and whether they earn more after leaving.<sup>24</sup>

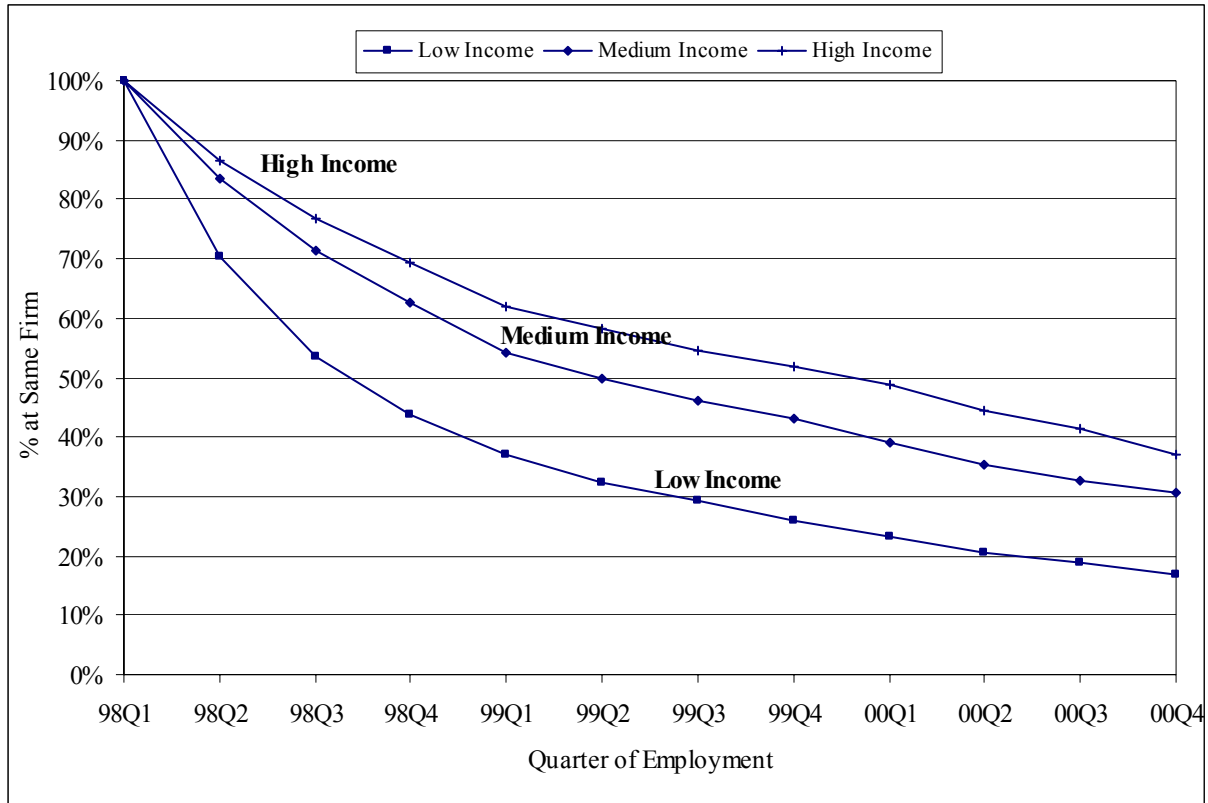
**Figure C.1: Employee Retention Rates by Health Care Industry**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

<sup>24</sup> “Leavers” are defined as those in the 1998Q1 cohort who were not in their initial caregiver industry in 2000Q4, but were employed.

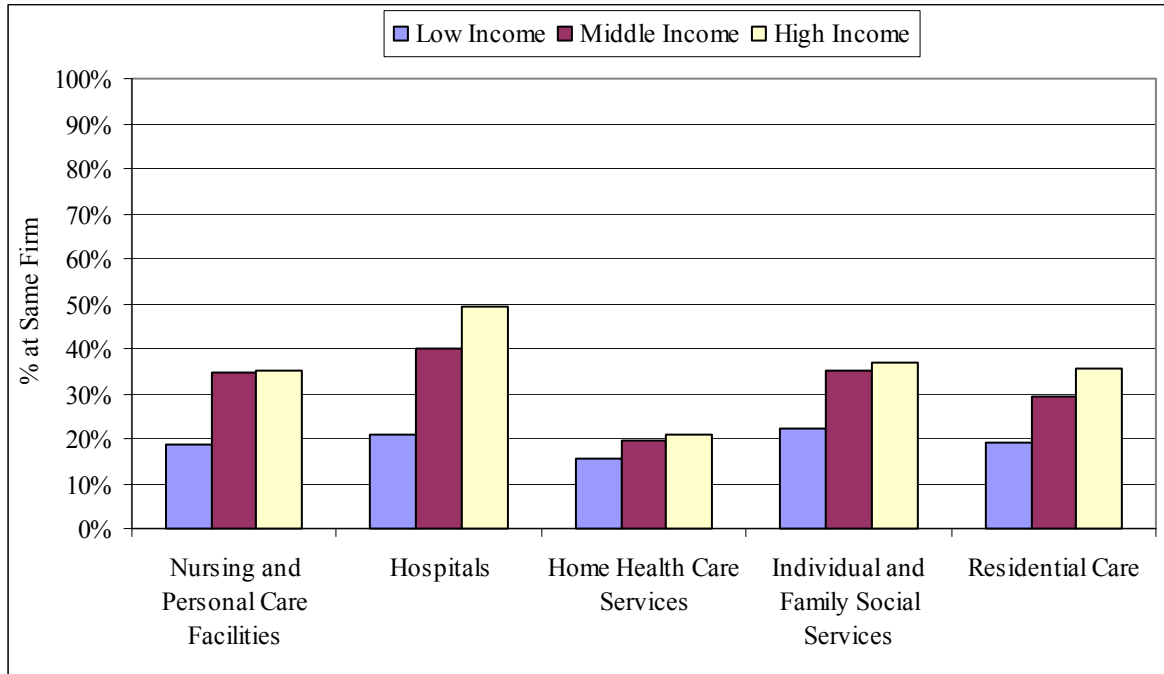
**Figure C.2: Employee Retention Rates by Income Level**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: Low Income = less than \$3,000 in 1998Q1; Middle Income = \$3,000 - \$15,000 in 1998Q1; High Income = more than \$15,000 in 1998Q1.

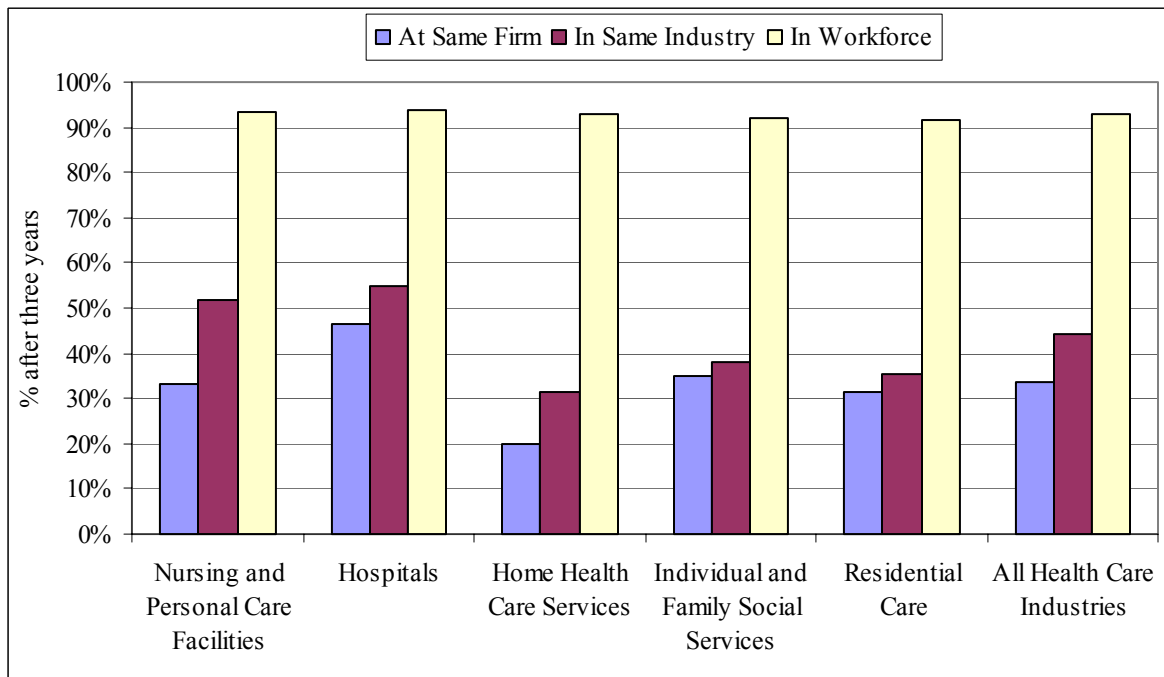
**Figure C.3: Employee Retention Rates after Three Years by Industry and Income**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: Low Income = less than \$3,000 in 1998Q1; Middle Income = \$3,000 - \$15,000 in 1998Q1; High Income = more than \$15,000 in 1998Q1.

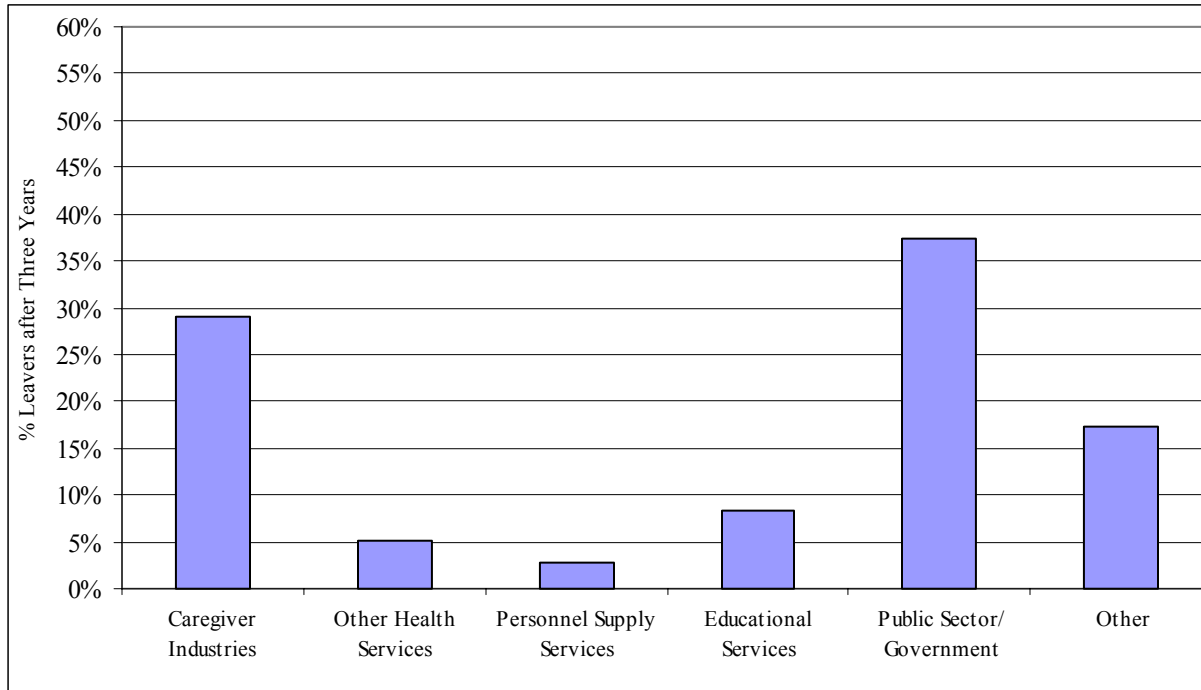
**Figure C.4: Job Stability after Three Years by Industry and Type of Stability**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: Stability status determined after three years (2000Q4).

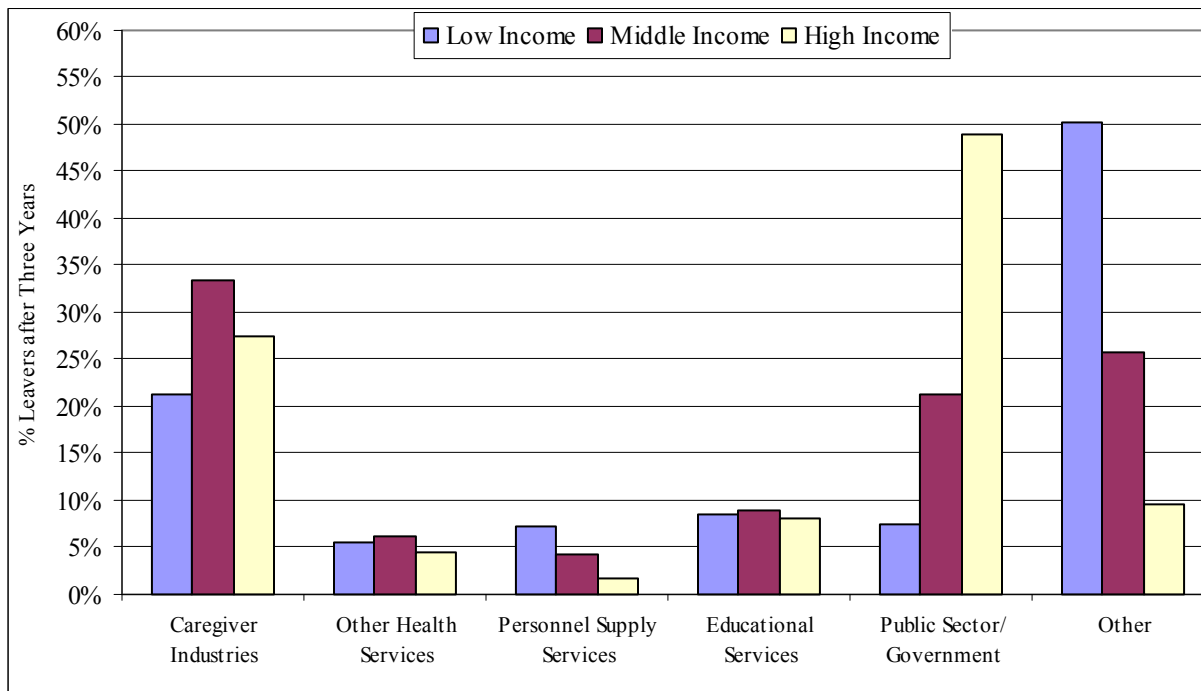
**Figure C.5: Caregiver Industry Leavers' Industry of Employment after Three Years**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: "Leavers" are defined as those in the 1998Q1 cohort who were not in their initial caregiver industry in 2000Q4, but were employed.

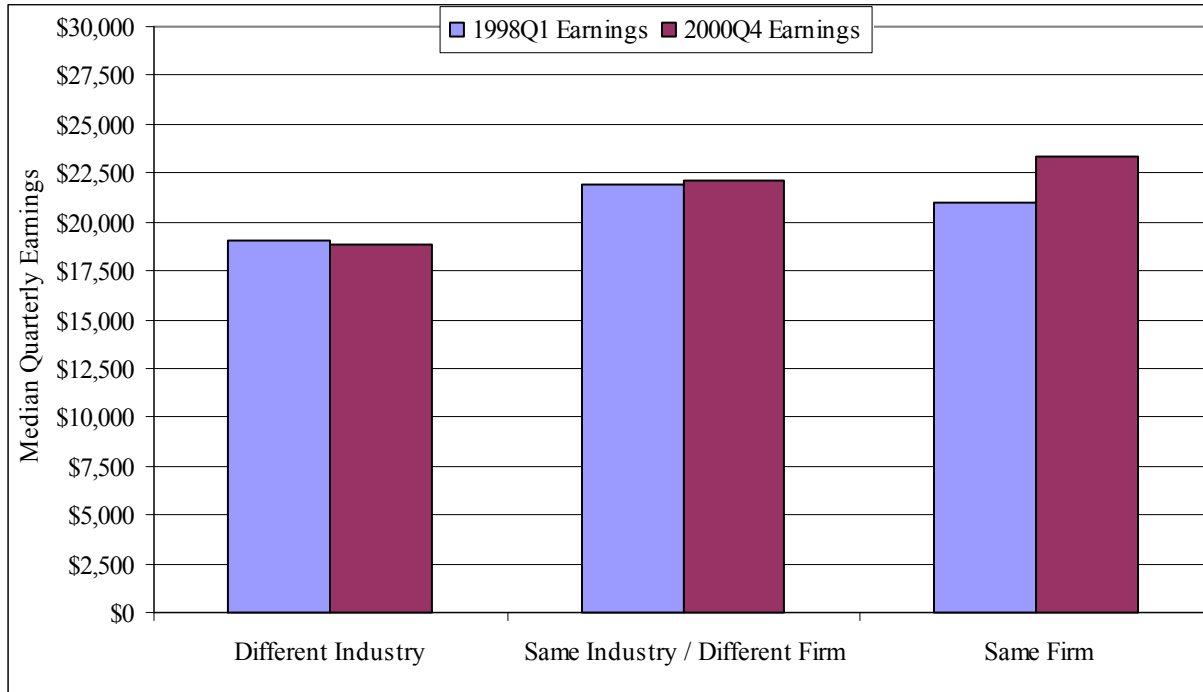
**Figure C.6: Caregiver Industry Leavers' Industry of Employment after Three Years, by Income Status**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: "Leavers" are defined as those in the 1998Q1 cohort who were not in their initial caregiver industry in 2000Q4, but were employed. Low Income = less than \$3,000 in 1998Q1; Middle Income = \$3,000 - \$15,000 in 1998Q1; High Income = more than \$15,000 in 1998Q1.

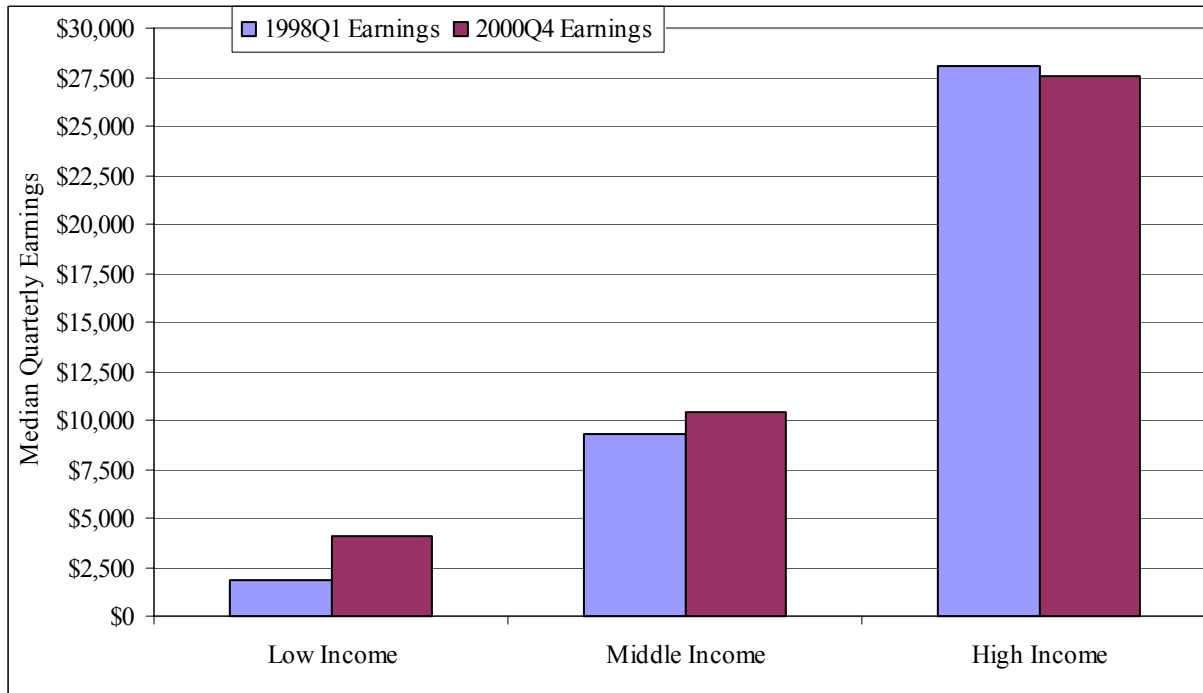
**Figure C.7: Quarterly Earnings by Employment Status after Three Years**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: Employment status determined after three years (2000Q4).

**Figure C.8: Quarterly Earnings for Caregiver Industry Leavers, by Income Status**



Source: UI Base Wage and BEL files, Employment Development Department, 1998-2000.

Notes: "Leavers" are defined as those in the 1998Q1 cohort who were not in their initial caregiver industry in 2000Q4, but were employed. Low Income = less than \$3,000 in 1998Q1; Middle Income = \$3,000 - \$15,000 in 1998Q1; High Income = more than \$15,000 in 1998Q1.

## APPENDIX D: COUNTY TABLES AND MAP OF CALIFORNIA

**Table D.1: Caregiver Employment Levels and Wages, by County (A thru M)**

#	County Name	Total Population	Certified Nurse Assistants		IHSS Providers		LTC Nurse Assistants	
			Total Number	Per 100,000	Total Number	Per 100,000	Average Hourly Wage	Hrs per Patient Day
1	Alameda	1,443,741	4,562	316.0	9,642	667.9	\$10.52	2.2
2	Alpine	1,208	1	82.8	9	745.0	na	na
3	Amador	35,100	87	247.9	284	809.1	\$9.81	1.8
4	Butte	203,171	1,170	575.9	2,182	1,074.0	\$7.86	2.2
5	Calaveras	40,554	143	352.6	317	781.7	\$9.51	2.4
6	Colusa	18,804	64	340.4	125	664.8	\$7.48	2.5
7	Contra Costa	948,816	2,576	271.5	4,701	495.5	\$10.99	2.2
8	Del Norte	27,507	99	359.9	326	1,185.2	\$7.18	3.1
9	El Dorado	156,299	340	217.5	495	316.7	\$8.13	2.3
10	Fresno	799,407	2,849	356.4	10,080	1,260.9	\$8.19	2.2
11	Glenn	26,453	108	408.3	322	1,217.3	\$9.29	2.2
12	Humboldt	126,518	310	245.0	1,675	1,323.9	\$8.58	2.5
13	Imperial	142,361	516	362.5	2,435	1,710.4	\$7.36	2.2
14	Inyo	17,945	60	334.4	71	395.7	\$7.53	2.1
15	Kern	661,645	1,955	295.5	3,502	529.3	\$8.14	2.2
16	Kings	129,461	492	380.0	1,012	781.7	\$8.07	2.2
17	Lake	58,309	293	502.5	1,611	2,762.9	\$7.53	2.4
18	Lassen	33,828	108	319.3	159	470.0	\$7.53	2.5
19	Los Angeles	9,519,338	32,728	343.8	97,346	1,022.6	\$8.19	2.2
20	Madera	123,109	390	316.8	985	800.1	\$8.66	2.1
21	Marin	247,289	399	161.4	943	381.3	\$10.40	2.2
22	Mariposa	17,130	79	461.2	334	1,949.8	na	na
23	Mendocino	86,265	236	273.6	1,175	1,362.1	\$9.46	2.0
24	Merced	210,554	731	347.2	1,738	825.4	\$8.00	2.5
25	Modoc	9,449	77	814.9	244	2,582.3	na	na
26	Mono	12,853	2	15.6	27	210.1	na	na
27	Monterey	401,762	1,417	352.7	1,949	485.1	\$9.48	2.3

Sources: 2000 Census; CNA Registry Files, Department of Health Services, 2001; IHSS Administrative Files, California Department of Social Services, 2001; and Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000.



**Table D.2: Caregiver Employment Levels and Wages, by County (N thru Y)**

#	County Name	Total Population	Certified Nurse Assistants		IHSS Providers		LTC Nurse Assistants	
			Total Number	Per 100,000	Total Number	Per 100,000	Average Hourly Wage	Hrs per Patient Day
28	Napa	124,279	373	300.1	456	366.9	\$10.23	2.4
29	Nevada	92,033	382	415.1	1,291	1,402.8	\$9.64	2.4
30	Orange	2,846,289	5,957	209.3	6,147	216.0	\$9.45	2.3
31	Placer	248,399	502	202.1	769	309.6	\$9.43	2.1
32	Plumas	20,824	105	504.2	216	1,037.3	\$8.82	2.0
33	Riverside	1,545,387	4,425	286.3	6,658	430.8	\$8.59	2.2
34	Sacramento	1,223,499	3,862	315.7	10,481	856.6	\$9.88	2.2
35	San Benito	53,234	120	225.4	211	396.4	\$10.86	2.1
36	San Bernardino	1,709,434	5,529	323.4	9,926	580.7	\$8.23	2.2
37	San Diego	2,813,833	8,317	295.6	12,827	455.9	\$9.31	2.1
38	San Francisco	776,733	2,374	305.6	8,893	1,144.9	\$11.00	2.3
39	San Joaquin	563,598	2,086	370.1	3,201	568.0	\$8.96	2.0
40	San Luis Obispo	246,681	634	257.0	1,042	422.4	\$9.01	2.3
41	San Mateo	707,161	2,450	346.5	1,942	274.6	\$11.25	2.1
42	Santa Barbara	399,347	1,422	356.1	2,159	540.6	\$10.75	2.4
43	Santa Clara	1,682,585	4,002	237.9	4,187	248.8	\$11.33	2.2
44	Santa Cruz	255,602	658	257.4	1,184	463.2	\$9.61	2.0
45	Shasta	163,256	747	457.6	1,827	1,119.1	\$8.94	2.0
46	Sierra	3,555	14	393.8	120	3,375.5	na	na
47	Siskiyou	44,301	187	422.1	795	1,794.5	\$8.79	2.3
48	Solano	394,542	2,684	680.3	2,087	529.0	\$9.71	2.0
49	Sonoma	458,614	1,452	316.6	2,402	523.8	\$10.98	2.2
50	Stanislaus	446,997	1,668	373.2	3,611	807.8	\$8.70	2.2
51	Sutter	78,930	302	382.6	458	580.3	\$9.20	2.1
52	Tehama	56,039	179	319.4	853	1,522.2	\$8.54	2.2
53	Trinity	13,022	45	345.6	284	2,180.9	na	na
54	Tulare	368,021	2,207	599.7	2,067	561.7	\$7.90	2.5
55	Tuolumne	54,501	314	576.1	178	326.6	\$9.36	2.1
56	Ventura	753,197	1,834	243.5	1,713	227.4	\$8.85	2.3
57	Yolo	168,660	425	252.0	830	492.1	\$9.27	2.4
58	Yuba	60,219	233	386.9	591	981.4	\$11.81	1.6

Sources: 2000 Census; CNA Registry Files, Department of Health Services, 2001; IHSS Administrative Files, California Department of Social Services, 2001; and Long-Term Care Facility Financial Data, Office of Statewide Health Planning and Development, 2000.

Figure D.1: California County Identification Numbers

