Contingent Workers in Long-Term Care

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Abstract

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Background: The rise of contingent work arrangements in the U.S. has generated unease about the American workforce. A recent study estimated that healthcare now accounts for more than one in five contingent workers. Unfortunately, little is known about the extent contingent work arrangements may be occurring in fast-growing, low-wage supportive health occupations in long-term care such as, home health aides and home care aides. As the U.S. population ages and the healthcare sector becomes the largest employment, it is important to understand how these employment arrangements may jeopardize or support the health workforce

Objective: This descriptive study focuses on identifying occupations in long-term care with the highest proportion of contingent workers. We compare home health aides and home care aides in contingent and traditional work arrangements to determine predictors of being in a contingent work arrangement.

Methods: We used data from the Current Population Survey (CPS) March 2016 Annual Social and Economic Supplement (ASEC). Two occupational categories (nursing, psychiatric, and home health aides and personal and home care aides) were restricted by work setting (home health care services) to identify home health aides and home care aides. We identified workers in

contingent work arrangements as those who identified as self-employed. Other responses were coded as workers in traditional employment. Descriptive and regression analyses were conducted to compare workers in different employment arrangements within the same occupation. Population weights provided by the U.S. Census Bureau and Bureau of Labor Statistics were used to extrapolate the findings.

Results: Of the estimated 564,528 home health aides, 11.18% were in contingent work arrangements. Similarly, 11.22% of the estimated 385,973 home care aides are in contingent work arrangements 11.22% were contingent workers. Home health aides were 15.4% ($p < 0.05$) less likely to be in a contingent work arrangement if they had a child in the household and 20.9% ($p < 0.01$) and 15.6% ($p < 0.05$) less likely to be in a contingent work arrangement if they were between the ages of 35 and 44 or between the ages of 55 and 64. In contrast, home care aides were 28.5% ($p < 0.01$) more likely to be in a contingent work arrangement if they were between the ages of 55 and 64.

Conclusion: This study identified home health aides and home care aides as occupations in long-term care settings with the highest proportion of contingent workers. Our results contribute to a growing body of evidence describing contingent workers in specific industries and occupations and what characteristics influence entry into alternative work arrangements. Our focus on two of the fastest growing occupations in the U.S. labor force show that contingent work arrangements affect workers who are already vulnerable to low wages and limited benefits. Our findings warrant future research on these types of arrangements among long-term care occupations.

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INTRODUCTION

The rise of contingent work arrangements in the U.S. has generated unease about the American workforce (J. Benach et al., 2014; Katz & Krueger, 2016; Ostry & Spiegel, 2004; U.S. Government Accountability Office, 2015). Contingent work arrangements are multidimensional and describe a range of non-permanent employment arrangements including, independent contractors, subcontracted workers, temporary workers, or the self-employed (J. Benach et al., 2014; Bureau of Labor Statistics, 2005; Liu & Kolenda, 2012). A recent study found that the percentage of workers in these arrangements increased from 10.1 percent to 15.8 percent between 2005 and 2015, affecting over 23 million workers (Katz & Krueger, 2016). This growth suggests that traditional work arrangements characterized by permanent positions and employer-provided benefits such as, health insurance and pensions, are being replaced by contingent work arrangements that do not guarantee job security or the same employer-provided benefits (J. Benach et al., 2014; Foley, Ruser, Shor, Shuford, & Sygnatur, 2014; Liu & Kolenda, 2012; U.S. Government Accountability Office, 2015). The absence of employer-provided benefits for contingent workers describes an employer-employee relationship based on flexibility and limited commitment to long-term employment (J. Benach et al., 2014; Lewchuk, Clarke, & De Wolff, 2008; Nollen & Axel, 1998).

The changing landscape of employment relationships is particularly relevant for the healthcare sector, which accounts for more than one in five contingent workers and is projected to become the largest employment sector by 2024 (Katz & Krueger, 2016; U.S. Bureau of Labor Statistics, 2015). Much of this employment growth will occur in low-wage supportive healthcare occupations working in long-term care settings such as, home health aides and personal care aides (Grabowski et al., 2010; R. I. Stone & Bryant, 2012). Workers in these occupations already

experience limited benefits and financial instability and it's unclear how contingent work arrangements may affect their livelihood (Bercovitz et al., 2011a; R. Stone, Sutton, Bryant, Adams, & Squillace, 2013).

Given the growing evidence that contingent work arrangements are associated with poorer health outcomes than those in traditional work arrangements, there is interest among researchers and policymakers to understand the context in which workers enter these work arrangements to ensure workforce stability and protections (J. Benach et al., 2014; Quinlan & Bohle, 2009; Virtanen, 2004). Unfortunately, limited consensus on how best to define (or distinguish) contingent work coupled with a lack of sufficient labor force data makes it difficult to estimate the prevalence of workers experiencing these arrangements in the U.S. Moreover, little is known about the extent of these arrangements in fast-growing supportive healthcare occupations. This descriptive study identifies occupations in long-term care with the highest proportion of contingent workers and compares workers in contingent and traditional work arrangements in these occupations using data from the Current Population Survey (CPS) March 2016 Annual Social and Economic Supplement (ASEC). Specifically, we examine sociodemographic characteristics and factors that may increase the likelihood of experiencing a contingent work arrangement. This study will extend previous work on contingent work arrangements by examining specific supportive healthcare occupations in long-term care settings and provide useful information to policymakers and employers as they develop policies to meet workforce demand and development

Background

During the second half of the twentieth century, global economic trends began to alter the relationship between employers and employees (Artazcoz, Benach, Borrell, & Cortès, 2005;

Avendano & Berkman, 2014; Joan Benach, Benavides, Platt, Diez-Roux, & Muntaner, 2000; Benavides, 2006; Ostry & Spiegel, 2004; Smith, 1997; von Hippel et al., 2006). Facing greater competition and new technological advances, employers sought ways to "downsize" or reduce labor costs by subcontracting certain tasks and responsibilities to smaller, external organizations. This restructuring created wage flexibility and obviated the responsibility of hiring and firing workers (J. Benach et al., 2014; Kalleberg, 2009; Smith, 1997). Other factors occurring during this period also facilitated the rise of contingent work arrangements. Weakened unions and government deregulations loosened employment protections and shifted risk toward employees (Kalleberg, 2009; Smith, 1997). Finally, the shift from a manufacturing to service sector economy spurred growth in high and low-wage occupations and widened economic inequality (Kalleberg, 2009).

The altered relationship between employer and employee is particularly worrisome for the economic stability of workers in low-wage occupations. Numerous studies have shown that contingent work arrangements are associated with lower wages, limited benefits, less stability, and greater reliance on public assistance than workers in traditional work arrangements (Cohany, Hipple, Nardone, Polivka, & Stewart, 1998; Kalleberg, Reskin, & Hudson, 2000; Katz & Krueger, 2016; Spalter-Roth & Hartmann, 1998; U.S. Government Accountability Office, 2015; von Hippel et al., 2006). A GAO report found that contingent workers earn 10.6 percent less per hour and 12.9 percent less per year than workers in traditional work arrangements (U.S. Government Accountability Office, 2015). Moreover, some groups are more likely to experience these types of arrangements than others. A recent study found that the percentage of women in contingent work arrangements grew faster than the percentage for men, more than doubling between 2005 and 2015. Increases were also observed among Hispanics over the same period

(Katz & Krueger, 2016). Other studies had similar findings that women and minorities were more likely to experience contingent work than white men (Kalleberg et al., 2000; U.S. Government Accountability Office, 2015). However, some researchers suggest that the impact of contingent employment varies by industry, occupation, education, and demographics of the worker (Polivka & Nardone, 1989; von Hippel et al., 2006). Furthermore, as the U.S. labor force becomes increasingly more diverse, it is important to understand the characteristics and contextual factors associated with workers who enter contingent work arrangements in low-wage occupations in specific industries.

Health Workforce

Although descriptive analyses on the contingent workforce have focused on national assessments across all industries, we know that differences between contingent and non-contingent workers vary by industry and occupation (U.S. Government Accountability Office, 2015). Until recently, most contingent workers were found in construction and professional/business occupations; however, the healthcare industry now employs the highest proportion of contingent workers (Katz & Krueger, 2016). Moreover, the healthcare industry is projected to be the largest employment sector by 2024 (U.S. Bureau of Labor Statistics, 2015). Most of this growth will occur in low-wage, supportive healthcare occupations such as, personal care aides and home health aides, as more older adults require care at home and in the community (Grabowski et al., 2010; R. I. Stone & Bryant, 2012). Workers in these occupations already observe poor working conditions, high turnover, financial vulnerability, and few opportunities for professional advancement (Bercovitz et al., 2011a; R. Stone et al., 2013). It is unknown to what extent they also experience contingent work arrangements. For this reason, this

study focuses on home health aides and home care aides to understand the prevalence of contingent work arrangements in these fast-growing occupations.

Home Health Aides and Home Care Aides—What's the Difference?

Home health aides (HHA) and home care aides (HCA) are often perceived as the same occupation under the umbrella of home health workers providing home and community-based services to older adults and younger people with disabilities. However, while workers in both occupations provide similar services, certain responsibilities and certifications distinguish workers in these occupations (R. Stone et al., 2013). HHA often work under the supervision of a registered nurse and only care for individuals with short-term needs following acute care in a hospital. HHA assist patients at home with activities of daily living (ADLs) and also provide some medical-related services including, cleaning catheters, administering medication, and changing wound dressings (Seavey & Marquand, 2011; R. Stone et al., 2013). To provide these services to Medicare and Medicaid patients, HHA must meet federal and state mandated training requirements and obtain certification (R. Stone et al., 2013). By comparison, HCA assist chronically ill or permanently disabled patients with ADLs, household chores, meal preparation, and medication management. HCA do not perform any medical-related services. HCA may work under the supervision of a registered nurse, but unlike HHA, they do not have to meet federal training requirements (R. Stone et al., 2013).

Defining Contingent Work

As mentioned earlier, there is little consensus in the literature on how best to define contingent work. Contingent work describes multiple employment arrangements—such as temporary, part-time, on-call, seasonal and contract work as well as self-employment—each with its own unique attributes and experiences (Katz & Krueger, 2016; Polivka & Nardone, 1989;

Smith, 1997; von Hippel et al., 2006). Polivka & Nardone's (1989) seminal definition described contingent work as "any job in which an individual does not have an explicit or implicit contract for long-term employment or one in which the minimum hours worked can vary in a nonsystematic manner." Conceptually, this definition emphasized two aspects of contingent work: job insecurity and variability of working hours. Polivka & Nardone (1989) argued that describing contingent work this way limits misclassification arising from other definitions of contingent work that emphasize the absence of employer benefits.

Nevertheless, operationalizing both aspects of this definition is difficult. While variable working hours are relatively easy to measure, characterizing and measuring job insecurity is challenging; few surveys capture sufficient information regarding employment agreements or expectations of employment longevity (Spalter-Roth & Hartmann, 1998). Studying workers in these arrangements became more accessible after the Bureau of Labor Statistics (BLS) introduced the Contingent and Alternative Employment Arrangements Supplement or Contingent Work Supplement (CWS) to the Current Population Survey in 1995. The supplemental survey allowed researchers to distinguish and analyze information about different employment arrangements. The CWS described the contingent workforce in terms of eight mutually exclusive employment categories: temporary agency workers, on-call workers, contract company workers, directly hired company workers, independent contractors, regular self-employed workers, regular part-time workers, and regular full-time workers (Liu & Kolenda, 2012). It also included specific survey questions capturing worker perceptions and employment expectations, which the BLS used to create three definitions to estimate the size of the contingent labor force.

(1) Wage and salary workers who expect their jobs will last for an additional year or less and who had worked in their jobs for 1 year or less (excluding self-employed workers and independent contractors).

(2) Wage and salary workers who expect their jobs will last for an additional year or less and who had worked in their jobs (or been self-employed) for 1 year or less.

(3) Workers who do not expect their jobs to last (including those expecting to retire in the next year) (Bureau of Labor Statistics, 2005).

Although the BLS definitions capture worker perceptions and expectations of employment stability, the discontinuation of the CWS after 2005[1] has made it challenging for researchers to monitor these work arrangements in recent years.

In the absence of adequate and current data sources, researchers have adapted the definition of contingent work based on study questions and available data sources. Contingent work arrangements are multidimensional and definitions can vary across studies and disciplines (J. Benach et al., 2014). One study defined contingent work by constructing a typology of work relations based on three factors: (1) whether the worker held one job with a single employer or multiple jobs with multiple employers, (2) whether the worker is employed full-time or part-time, and (3) whether the worker is employed a full or part calendar year (Spalter-Roth & Hartmann, 1998). Their typology categorized self-employed workers as permanent only if they report holding one job. Self-employed workers who reported multiple jobs were considered contingent. Another study conducted its own survey among workers Toronto, Canada and classified "less permanent" or contingent workers as anyone employed by a temporary

[1] The Bureau of Labor Statistics and U.S. Census Bureau announced in January 2016 that the CWS would be revived with data collection starting in May 2017.

employment agency, employed on a short-term contract, self-employed without employees, or employed on a fixed-term contract lasting more than one year (Lewchuk et al., 2008). In contrast to Polivka and Nardone's (1989) definition, this study defined some work arrangements as permanent even if the employee experienced variable working hours that were sometimes less than thirty hours per week. More recently, Katz and Krueger (2016) defined workers as contingent if they reported working as an independent contractor, on-call worker, temporary help agency worker, contract company worker, or freelancer. Self-employment was gathered but not included in their definition because self-employed workers were overrepresented in the survey sample.

METHODS

Data

We used data from the Current Population Survey (CPS) March 2016 Annual Social and Economic Supplement (ASEC). The CPS and March 2016 ASEC data are gathered and distributed by the United States Census Bureau and Bureau of Labor Statistics. A dataset with select variables was downloaded from the Integrated Public Use Microdata Series website (Flood, King, Ruggles, & Warren, 2015). The CPS 2016 ASEC universe includes over 94,000 households with civilian, non-institutional survey respondents living in a housing unit as well as Armed Forces personnel living on or off military bases (CPS ASEC, 2016). The CPS 2016 ASEC is gathered from 826 sample areas across 1,328 counties in all fifty states and the District of Columbia (CPS ASEC, 2016). The purpose of the CPS ASEC is to gather monthly data on employment, demographics, and labor force characteristics of persons and households. The ASEC also gathers detailed information on work experience, income, noncash benefits, and migration (CPS ASEC, 2016). We used the CPS ASEC for our study in the absence of better and

available datasets as well as in preparation for analyzing the CWS. Because the CPS ASEC does not capture all contingent work arrangement types, our analysis will generate an underestimate of contingent workers in these occupations.

Contingent Work Definition

For this study, we identified workers in contingent arrangements as those who responded to the following survey question as self-employed: "Were you employed by government, by a private company, a non-profit organization, or were you self-employed or working in a family business?" Other responses to this question were recoded by the researchers as not self-employed or traditional employment. Respondents reporting self-employment were further differentiated as "incorporated" or "unincorporated" based on responses to a follow-up question asking if their employer's business was incorporated. However, because few workers in our occupations of interest responded as "self-employed, incorporated" we combined these self-employment groups and created a binary variable to describe employment arrangements for each survey respondent: (1) Traditional Employment and (2) Self-Employed.

Sample

We derived our final sample of occupations with the highest prevalence of contingent workers through an iterative process that examined both occupations and work settings. Occupations are based on the 2010 Standard Occupational Classification (SOC) system and work settings are based on industry codes directly aligned with the North American Industry Classification System (NAICS). A description of our approach to refine the set of occupations and work settings is detailed in the Appendix. HHA were identified as respondents whose occupation was nursing, psychiatric, and home health aides and work setting was home health care services. Similarly, home care aides were identified as respondents whose occupation was

personal and home care aides and work setting was home health care services. Population weights provided by the U.S. Census Bureau and Bureau of Labor Statistics were used to extrapolate the findings.

Other Variables

Key sociodemographic characteristics considered in our analysis included age, race, gender, ethnicity, marital status, U.S. citizenship, any child in the household, working in the same occupation last year[2], location, insurance status, and covered by Medicaid in the previous year. The age variable has six categories (18-34, 35-44, 45-54, 55-64, 65-74, 75 and above). Race has five categories (White, Black, Asian/Pacific Islander, American Indian/Aleutian/Eskimo, and Mixed Race). For the regression analysis, we recoded the race variable as binary—white and non-white—due to the small sample size among Asian/Pacific Islander, American Indian/Aleutian/Eskimo, and Mixed Race in our sample. The ethnicity variable refers to whether a person is Hispanic or non-Hispanic; respondents were coded "1" if they were Hispanic and "0" if they were not Hispanic. Similarly, the variables for any child in the household (coded "1" if any child in household and "0" if no child in household), insurance status (coded "0" if they had health insurance and "1" if respondent verified they were uninsured), and covered by Medicaid in the previous year (coded "1" if they were not covered by Medicaid in previous year and "0" if they were covered by Medicaid in previous year) elicited yes/no responses from survey respondents. Marital status, same occupation last year, U.S. citizenship, and location were recoded as binary variables. Marital status was coded "0" or not

[2] This is a binary variable. Respondents working in the "same occupation last year" were coded as "1" if the occupation reported at the time of the survey matched the occupation they reported working in the previous year. Respondents who reported a different occupation in the previous year were coded as "0".

married if the respondent was separated, divorced, widowed, or never married/sing. For U.S. citizenship, respondents were coded as "0" if they had U.S. citizenship and "1" if they did not. Location refers to whether the respondent was located in a metropolitan area or in a non-metropolitan area as designated by the U.S. Census Bureau. Respondents living in a metropolitan area were coded as "1" and those living in a non-metropolitan area were coded as "0".

Analysis

Summary statistics for HHA and HCA were calculated using survey commands in STATA 14/MP? for the sociodemographic variables. The summary statistics compare self-employed and not self-employed workers in each occupation. To examine which factors influence the likelihood of experiencing a contingent work arrangement in each occupation, we conducted a probit regression model to separately estimate for HHA and HCA the probability of being self-employed or not.

$$\phi^{-1}(p_i) = \sum_{k=0}^{k=n} \hat{\beta}_k x_{ki} \qquad (1)$$

In the model, self-employment is the dependent variable and predictors (x_{ki}) include age, race, ethnicity, gender, marital status, location, any child in the household, same occupation, and citizenship. The age variable had six categories (18-34, 35-44, 45-54, 55-64, 65-74, 75 and above) and the youngest group was used as the reference category. Coefficient estimates (β_k) and standard errors were calculated and statistical significance was set at alpha equal to 0.05. To interpret the coefficients, we calculated marginal effects at the means and standard errors with statistical significance set at alpha equal to 0.05.

RESULTS

Contingent Work in Healthcare Occupations and Long-Term Care Settings

Of the estimated 17,235,302 individuals working in healthcare occupations in the U.S., roughly 6% were in contingent work arrangement. Among the 3,081,745 individuals working in long-term care settings, approximately 4% were contingent. Although the prevalence of contingent workers was lower in long-term care settings compared to other settings, this was not the case for all occupations. Three occupational codes (Nursing, Psychiatric, and Home Health Aides [NPHHA], Personal Care Aides and Home Care Aides [PCAHCA], and medical and health services managers) observed a higher proportion of contingent workers in long-term care settings in comparison to other settings. Nearly 5% of NPHHA, 8% of PCAHCA, and 6.5% of medical and health services managers were contingent in long-term care settings. This is compared to 3%, 6.5%, and 4.8% of all workers in the same occupations. As detailed in the Appendix, we found that nearly all self-employed NPHHA and PCAHCA worked in a home health care services setting and our descriptive analysis focused on HHA and HCA. The final sample of HHA and HCA included 534 respondents, with 310 HHA and 224 HCA. (See the Appendix for further detail on the prevalence of contingent employment across healthcare occupations and healthcare occupations working in long-term care settings).

Home Health Aides

Table 1 summarizes the weighted estimates of the number and percentage of HHA in contingent work arrangements. Of the estimated 564,528 HHA, 11.18% were in a contingent work arrangement. Table 2 summarizes sociodemographic characteristics for contingent workers and traditionally-employed HHA. Among contingently-employed HHA, 54.54% were white, 34.47% were black, and approximately 11% were Asian/Pacific Islander. Among the

traditionally-employed, 45.73% were white, 45.14% were black, and 6.70% were Asian/Pacific Islander. Although the majority of HHA were female, the proportion of females was lower among those who were in contingent work arrangements (86.22%) compared to those who were in traditional work arrangements (94.43%). The median age for contingent workers was older than traditionally employed workers. Nearly one-third of HHA in contingent employment arrangements were over the age of 55.

A higher proportion of contingent workers were married compared to traditionally-employed workers. However, contingent workers were less likely to have a child in their household. Most HHA lived in metro areas, but a higher proportion of contingent HHA were located in non-metro areas. Those who were in contingent work arrangements were less likely to have been covered by Medicaid in the past year or uninsured compared to those who were employed in traditional work arrangements.

Home Care Aides

Table 1 summarizes the weighted estimates of the number and percentage of HCA in contingent work arrangements. Of the estimated 385,973 home care aides, 11.22% were contingent. Table 2 summarizes sociodemographic characteristics for home care aides by contingent employment status. Among those who were in contingent work arrangements, 53.41% were white, 34.14% were black, and 4.98% were Asian/Pacific Islander. Among those who were in traditional work arrangements, 60.72% were white, 28.67% were black, and 6.75% were Asian/Pacific Islander. In contrast to contingent home health aides, contingent home care aides were less likely to be white. The median age for contingent home care aides was older (55 years old) compared to home care aides who were traditionally-employed (46 years old). The majority of contingent home care aides were between the ages of 55 and 64.

The proportion of home care aides who were married did not appear to differ by contingent employment status; however, a lower proportion of contingent home care aides had a child in the household. There was very little variation between workers in different employment arrangements with regard to being in the same occupation last year or working full time. Nevertheless, it is noteworthy that nearly one-fifth of home care aides changed occupations in the past year and that nearly 40% work part time. In terms of location, nearly all home care aides in a contingent work arrangement lived in a metro area. This differed from those who were in traditional work arrangements, where approximately 20% did not lived in a metro area. Although a lower proportion of contingent home care aides were covered by Medicaid in the past year compared to home care aides who were traditionally-employed, over 20% of them reported being uninsured at the time of the survey.

Table 1. Sample of Occupations by Contingent Employment Status

	Traditional Employment	Contingent Employment
Home Health Aides		
Counts	501,389	63,138
Proportion (%)	88.82	11.18
Home Care Aides		
Counts	342,683	43,289
Proportion (%)	88.78	11.22

Predictors of Contingent Employment

Table 3 summarizes the estimated marginal effects and standard errors for variables included in the models for each occupation. We ran the same models for each occupation to evaluate predictors of being in a contingent employment arrangement. The model included

demographic (race, ethnicity, gender, age, and citizenship), social (marital status, child in household, and location), and occupational (same occupation as last year) variables. For both models, the reference group for age was the youngest category (ages 18-34). Home health aides were 15.4% ($p < 0.05$) less likely to be in a contingent work arrangement if they had a child in the household and 20.9% ($p < 0.01$) less likely to be in a contingent work arrangement if they were between the ages of 35 and 44. Home health aides were also 15.6% ($p < 0.05$) less likely to be in a contingent work arrangement if they were between the ages of 55 and 64. In contrast, home care aides were 28.5% ($p < 0.01$) more likely to be in a contingent work arrangement if they were between the ages of 55 and 64. The marginal effect for those 75 and over was omitted because the sample did not have any home care aides in this age category.

Table 2. Sociodemographics of Home Health Aides & Home Care Aides by Contingent Employment Status

	Home Health Aides		Home Care Aides	
	Traditional Employment	**Contingent Employment**	**Traditional Employment**	**Contingent Employment**
Race				
White	45.73%	54.54%	60.72%	53.41%
Black	45.14%	34.47%	28.67%	34.14%
Asian/Pacific Islander	6.70%	10.99%	6.75%	4.98%
American Indian/Aleut/Eskimo	0.71%	0.00%	2.45%	5.52%
Mixed Race	1.73%	0.00%	1.41%	1.96%
Hispanic	17.21%	6.88%	18.69%	9.45%
Female	94.43%	86.22%	87.87%	83.80%
Not U.S. Citizen	17.46%	20.52%	10.08%	12.71%
Age				
Median	41	47	46	55
18 to 34	29.49%	41.28%	26.94%	9.10%
35 to 44	23.59%	2.15%	19.54%	10.63%
45 to 54	22.92%	25.88%	23.84%	21.45%
55 to 64	18.75%	11.92%	19.05%	53.93%
65 to 74	4.81%	15.06%	10.63%	4.88%
75 and over	0.43%	3.70%	0.00%	0.00%
Married	35.95%	52.35%	38.31%	38.90%
Child in the Household	62.15%	27.12%	54.30%	44.10%
Same Occupation Last Year	90.39%	87.80%	83.90%	80.95%
Working Full time	64.59%	62.39%	58.67%	60.50%
Location				
Does not live in a metro area	9.85%	27.91%	19.49%	2.34%
Lives in a metro area	90.15%	72.09%	80.51%	97.66%
Health Insurance				
Covered by Medicaid last year	32.40%	25.23%	24.58%	16.06%
Uninsured	12.20%	9.56%	14.53%	21.15%

Table 3. Probit Estimates for Home Health Aides & Home Care Aides

	Home Health Aides		Home Care Aides	
Variable	**dy/dx**	**SE**	**dy/dx**	**SE**
Race	-0.036	0.0707	-0.001	0.043
Ethnicity	-0.095	0.1038	-0.038	0.062
Gender	-0.092	0.1253	0.0104	0.0553
Marital Status	0.104	0.0623	-0.017	0.0407
Child in Household	-0.154*	0.0683	-0.048	0.0452
Citizenship	0.082	0.0754	-0.032	0.0565
Same Occupation	-0.042	0.1023	-0.1004	0.412
Location	-0.143	0.0792	0.1707	0.0967
Age				
35-44	-0.209**	0.0779	0.061	0.0595
45-54	-0.036	0.1003	0.103	0.0704
55-64	-0.156*	0.0796	0.285**	0.1048
65-74	0.051	0.1759	0.021	0.0373
75 and over	0.329	0.4419	[a]	[a]

Note: dy/dx - marginal effects; SE - standard error
**, * indicates significance at 1% and 5% level
[a] Sample did not include any respondent for this category; estimates were omitted

DISCUSSION

The purpose of this study was to identify occupations in long-term care settings with the highest proportion of contingent workers and describe similarities and differences by employment arrangement in each occupation. HHA and HCA are two occupations in long-term care with the highest proportion of workers employed in contingent work arrangements. Approximately 11% of workers in each occupation reported being in a contingent work arrangement in 2016. This is double the proportion of contingent workers estimated by Katz and Krueger (2016) for the health services, social services, and personal care industries. It is important to note, however, that their study defined and measured contingent work differently, excluding self-employed workers altogether (Katz & Krueger, 2016). Moreover, their analyses

focused on contingent workers at the industry level, which includes workers across multiple occupations. Consequently, it is difficult to compare our results to previous studies on contingent workers in long-term care settings. However, because our study focused on individual occupations with the highest proportion of contingent workers, we would expect a higher proportion than one derived at the industry level. Also, given that our measure for contingent work did not capture all types of contingent work arrangements, we believe our results could be underestimates of the actual proportion of workers experiencing these arrangements

HHA and HCA in contingent employment arrangements differed along certain sociodemographic characteristics from workers who were traditionally employed in the same occupations. First, contingent workers were older. The median age for contingent HHA was six years older than home health aides who were traditionally employed. The age gap was even wider among HCA, where the median age for contingent workers was nine years older. These results are fairly consistent with previous research regarding contingent workers and the direct care workforce (Bercovitz et al., 2011b; Butler, 2013; Katz & Krueger, 2016; R. Stone et al., 2013). HHA and HCA are known to be comprised of older workers and studies indicate that workers in contingent employment arrangements are also older. Our results extend these findings by emphasizing age as an important factor influencing employment arrangements in these occupations albeit in different ways. Among HHA, workers aged 35-44 and 55-64 were 20% and 15% less likely to report being a contingent worker. However, among HCA, workers aged 55-64 were more likely to report being a contingent worker. These results suggest that age may influence contingent employment status in these occupations differently. Being in a contingent work arrangement may offer flexibility for older workers seeking extra income as well as an occupation that provides social interaction (Butler, 2013). Benefits associated with more

traditional work arrangements may not be as important for older workers who may already qualify for Medicare. On the other hand, contingent employment may reflect workplace discrimination against older workers in other low-wage sectors, forcing them into home health occupations that are more accepting of older workers.

Second, our results found that males comprised a larger share of contingent workers in both occupations, while Hispanics were less common among the those who were contingent. Our probit model estimates and marginal effects did not show that these factors predicted whether a worker was in a contingent work arrangement or not. These findings are contrary to previous research which suggest women and Hispanics are more likely to experience alternative work arrangements, particularly in lower wage occupations (Katz & Krueger, 2016; U.S. Government Accountability Office, 2015). However, these results could be influenced by small sample size and were observed across multiple industry sectors.

Third, our results found that having a child in the household influenced employment arrangement. For both occupations, a smaller proportion of contingent workers had a child in the household, but it only predicted being in a contingent work arrangement for HHA. HHA were 15% less likely to be employed in a contingent arrangement if they had a child in the household. Although a contingent work arrangement may offer schedule flexibility that is convenient for raising children, this finding may suggest that contingent work creates too much financial instability for workers providing for a family. This finding may also be a reflection of the previously described finding where workers during child bearing and rearing age (35-44) were less likely to be in a contingent arrangement. In terms of employment characteristics, the proportion of workers who were employed full-time did not differ much across both occupations

and employment arrangements. Roughly 60% of all groups worked full-time. A slightly larger share of contingent workers was employed in a different occupation in the previous year.

Fourth, contingent workers also differed between the two occupations. Among HHA, whites comprised a higher percentage of those who were in contingent work arrangements. The opposite was observed among HCA, where whites comprised a smaller share of workers in contingent arrangements than traditionally-employed workers. Among contingent HHA, more than half were married compared to 36% of those who were in traditional employment arrangements. Among HCA, the proportion of workers who were married did not differ much by employment arrangement (both approximately 38%). Being married is considered to provide financial stability and our results suggest that it may influence contingent work arrangements in these occupations differently. With regard to location, nearly 30% of contingent HHA live in a non-metropolitan area. The opposite is true for contingent home care aides, where nearly all are located in a metropolitan area. This trend among HHA may reflect the instability of home health agencies in rural areas and susceptibility of abrupt staffing shifts (McAuley, Spector, Nostrand, & Shaffer, 2004; Skillman, Patterson, Coulthard, & Mroz, 2016). HHA may prefer or be forced to enter contingent employment as a result of this organizational instability.

Implications

As the U.S. population ages, there is a growing demand for home health aides and home care aides to support the needs of elderly individuals living at home and in the community (Bercovitz et al., 2011b; R. Stone et al., 2013; Swartz, Miake, & Farag, 2012; U.S. Government Accountability Office, 2016). Unfortunately, while preferences to age independently at home fuel the growth and demand for these occupations, low wages, limited fringe benefits, heavy workloads, inadequate training, and few opportunities for professional advancement associated

with these occupations jeopardize a stable and adequate workforce (Bercovitz et al., 2011b; Palazzo, Skillman, Basye, & Morrison, 2013). Moreover, the rise of contingent work arrangements in healthcare occupations and settings may further impact this vulnerable workforce, particularly since these occupations will continue to be among the fastest-growing over the coming decades.

Future studies should monitor the proportion of contingent workers in these occupations over time as well as understand why or how workers in these occupations enter these employment arrangements. The data source and study did not permit an examination of whether the employment arrangement was voluntary or involuntary. The revived CWS in May 2017 will facilitate more detailed analyses of these factors. Qualitative studies should also be conducted among HHA and HCA to understand why and how workers enter contingent employment arrangements. Without this information, it is difficult to know whether workers enter contingent work arrangements willingly for more flexibility or because other options are limited.

Limitations

This study has several limitations. First, our definition for contingent work is based on self-report data regarding self-employment status. As described previously, self-employment is only one type of contingent work arrangement and our study does not identify or distinguish other forms of contingent work, such as temporary or part time workers. Self-employment also does not capture employee perceptions of job security or variable working hours, core aspects of contingent work. Even further, while self-employed workers by definition do not have any commitment to an employer, they may have a long-term commitment to the occupation or agencies through which they acquire work opportunities. Some researchers have even excluded self-employed workers for this very reason (Liu & Kolenda, 2012). Furthermore, using self-

employment as a proxy for all contingent work arrangements may overestimate the proportion of contingent workers in each occupation. Second, our study did not examine whether survey respondents entered contingent work arrangements voluntarily or involuntarily so it is difficult to interpret whether contingent arrangements benefit or harm older workers. Future studies will need to consider how sociodemographic at the individual or household levels influence voluntary or involuntary entry into these employment arrangements. Third, despite the fact that this study utilized a large national dataset, our study did not have a large enough sample of home health aides or home care aides to adequately examine differences between incorporated and unincorporated self-employed workers. Although we are unsure to what extent sociodemographic and economic characteristics would differ by these self-employment subcategories, it is possible that combining them may have affected our results and interpretations.

CONCLUSION

This study identified home health aides and home care aides as occupations in long-term care settings with the highest proportion of contingent workers. Our results contribute to a growing body of evidence describing contingent workers in specific industries and occupations and what characteristics influence entry into contingent work arrangements. Our focus on two of the fastest growing occupations in the U.S. labor force show that contingent work arrangements affect workers who are already vulnerable to low wages and limited benefits. Although our study did not examine the extent that contingent work arrangements affect economic stability or health, our findings warrant future research on these types of arrangements among long-term care occupations.

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APPENDIX

Our approach for identifying the final sample of workers in this study involved an exploration of employment arrangements across many healthcare occupations and specific work settings. As described in the methods section, we identified workers in contingent arrangements as those who responded to a survey question regarding their employer, "Were you employed by government, by a private company, a non-profit organization, or were you self-employed or working in a family business?" as self-employed. Other responses to this question were recoded as not self-employed. Self-employed respondents were further differentiated as "incorporated" or "unincorporated" based on responses to a follow-up question asking if their employer's business was incorporated. This created three categories to describe employment arrangements for each worker: (1) Not Self-Employed, (2) Self-Employed, unincorporated, and (3) Self-Employed, incorporated. We used these categories to describe the prevalence of contingent workers in each occupation. Findings from this descriptive analysis are detailed in the sections and tables below.

Healthcare Occupations

We first examined the prevalence of contingent work arrangements among individual healthcare and supportive healthcare occupations. Occupations were grouped under six occupational categories: (1) Diagnosing and Treating Practitioners (e.g., dentists, physicians, registered nurses), (2) Technicians and Technologists (e.g., dental hygienists, diagnostics technologists), (3) Aides and Assistants (e.g., physical therapy aides, massage therapists), (4) Long-Term Care (e.g., nursing aides, personal care aides), (5) Miscellaneous Community and Social Service Specialists (e.g., social service assistants), and (6) Medical Assistants and Other Health Care Supporting Occupations (e.g., phlebotomists, medical transcriptionists). Table 1 lists each occupation and includes the percentage of workers in each of the three employment

arrangements. Table 2 includes weighted estimates for the number of workers in each employment arrangement category in the U.S.

Among the other occupational categories, diagnosing and treating practitioners observed the highest prevalence of contingent work arrangements with the majority of chiropractors (78.6%), dentists (61.7%), and other health diagnosing and treating practitioners (56.8%) reporting some form of self-employment. Other occupations with high prevalence of contingent work arrangements included, physicians and surgeons, optometrists, audiologists, occupational therapists, physical therapists, radiation therapists, other therapists, nurse anesthetists, and speech language pathologists. The prevalence of contingent work arrangements among registered nurses, the occupation with the most workers, was very small (0.5%). Within the aides and assistants occupational category, massage therapists observed a high prevalence (44.6%) of contingent workers as well as medical transcriptionists (22%). Contingent work arrangements were less common among technologists and technicians, miscellaneous community and social service specialists, and medical assistants and other health care supporting occupations. Within the long-term care occupational category, nursing, psychiatric and home health aides (NPHHA) and personal and home care aides (PCA/HCA) observed the highest prevalence of contingent work arrangements (3.3% and 6.43%).

Table 1. Healthcare Occupations by Self-Employment Arrangement (Proportion)

Healthcare Occupations	Not Self-Employed	Self-Employed, unincorporated	Self-Employed, incorporated
Miscellaneous Community and Social Service Specialists			
2015 Probation Officers and Correctional Treatment Specialists	100.00%	0.00%	0.00%
2016 Social and Human Service Assistants	100.00%	0.00%	0.00%
2025 Misc Comm Soc Svc Spe inc hlth educ & CHW	100.00%	0.00%	0.00%
Diagnosing and Treating Practitioners			
3000 Chiropractors	21.39%	34.50%	44.11%
3010 Dentists	38.34%	27.47%	34.19%
3030 Dietitians and nutritionists	90.21%	3.14%	6.65%
3040 Optometrists	79.72%	11.55%	8.74%
3050 Pharmacists	95.12%	0.00%	4.88%
3060 Physicians and surgeons	81.84%	6.49%	11.67%
3110 Physician assistants	100.00%	0.00%	0.00%
3140 Audiologists	67.23%	18.29%	14.48%
3150 Occupational therapists	85.40%	11.69%	2.91%
3160 Physical therapists	88.96%	5.11%	5.93%
3200 Radiation therapists	81.31%	18.69%	0.00%
3210 Recreational therapists	100.00%	0.00%	0.00%
3220 Respiratory therapists	100.00%	0.00%	0.00%
3230 Speech-language pathologists	91.58%	6.45%	1.97%
3245 Therapists, all other	75.60%	15.23%	9.16%
3250 Veterinarians	81.72%	11.77%	6.51%
3255 Registered nurses	99.48%	0.33%	0.20%
3256 Nurse anesthetists	75.90%	10.80%	13.31%
3258 Nurse Practitioner	98.59%	0.00%	1.41%
3260 Health diagnosing and treating practitioners, all other	43.15%	47.49%	9.36%
Technicians and Technologists			
3300 Clinical laboratory technologists and technicians	99.20%	0.00%	0.80%
3310 Dental hygienists	97.32%	0.00%	2.68%
3320 Diagnostic related technologists and technicians	100.00%	0.00%	0.00%
3400 Emergency medical technicians and paramedics	100.00%	0.00%	0.00%
3420 Health practitioner support technologists and technicians	99.75%	0.25%	0.00%
3510 Medical records and health information technicians	98.91%	1.09%	0.00%
3520 Opticians, dispensing	89.00%	11.00%	0.00%
3535 Miscellaneous health technologists and technicians	100.00%	0.00%	0.00%
3540 Other healthcare practitioners and technical occupations	77.62%	16.18%	6.20%
8760 Medical, dental, and ophthalmic laboratory technicians	86.49%	2.09%	11.42%
Aides and Assistants			
3610 Occupational therapist assistants and aides	100.00%	0.00%	0.00%
3620 Physical therapist assistants and aides	98.95%	1.05%	0.00%
3630 Massage therapists	55.36%	40.17%	4.46%
3640 Dental assistants	100.00%	0.00%	0.00%
Medical Assistants & Other Health Care Supporting Occupations			
3645 Medical assistants	100.00%	0.00%	0.00%
3646 Medical transcriptionists	77.96%	16.32%	5.72%
3647 Pharmacy aides	100.00%	0.00%	0.00%
3648 Veterinary assistants and laboratory animal caretakers	100.00%	0.00%	0.00%
3649 Phlebotomists	100.00%	0.00%	0.00%
3655 Misc healthcare support occupations	97.83%	0.33%	1.84%
Long-Term Care			
0350 Medical and health services managers	95.23%	1.93%	2.84%
0420 Social and community service managers	96.63%	1.97%	1.40%
2010 Social workers	96.86%	2.22%	0.92%
3500 Licensed practical and licensed vocational nurses	98.47%	1.53%	0.00%
3600 Nursing, psychiatric, and home health aides	96.73%	3.06%	0.21%
4610 Personal and home care aides	93.56%	5.84%	0.59%

Table 2. Healthcare Occupations by Self-Employment Arrangement (Counts)

Healthcare Occupations	Not Self-Employed	Self-Employed, unincorporated	Self-Employed, incorporated	Total
Miscellaneous Community and Social Service Specialists				
2015 Probation Officers and Correctional Treatment Specialists	99,251	0	0	99,251
2016 Social and Human Service Assistants	201,359	0	0	201,359
2025 Misc Comm Soc Svc Spe inc hlth educ & CHW	55,441	0	0	55,441
Diagnosing and Treating Practitioners				
3000 Chiropractors	10,110	16,309	20,850	47,269
3010 Dentists	60,764	43,528	54,176	158,469
3030 Dietitians and nutritionists	85,312	2,965	6,290	94,567
3040 Optometrists	25,834	3,743	2,831	32,407
3050 Pharmacists	278,170	0	14,269	292,439
3060 Physicians and surgeons	944,249	74,861	134,610	1,153,720
3110 Physician assistants	84,504	0	0	84,504
3140 Audiologists	10,369	2,821	2,234	15,423
3150 Occupational therapists	110,297	15,101	3,762	129,160
3160 Physical therapists	246,696	14,176	16,454	277,326
3200 Radiation therapists	17,893	4,113	0	22,006
3210 Recreational therapists	10,254	0	0	10,254
3220 Respiratory therapists	61,093	0	0	61,093
3230 Speech-language pathologists	178,124	12,544	3,841	194,509
3245 Therapists, all other (2010 code, former 3245)	162,788	32,796	19,732	215,316
3250 Veterinarians	97,016	13,972	7,726	118,713
3255 Registered nurses (2010 code, former 3130)	3,030,331	9,964	5,945	3,046,239
3256 Nurse anesthetists (2010 code, former 3130)	23,235	3,306	4,073	30,614
3258 Nurse Practitioner (2010 code, former 3130)	160,680	0	2,302	162,981
3260 Health diagnosing and treating practitioners, all other	8,054	8,863	1,747	18,665
Technicians and Technologists				
3300 Clinical laboratory technologists and technicians	353,321	0	2,863	356,184
3310 Dental hygienists	204,944	0	5,634	210,578
3320 Diagnostic related technologists and technicians	299,007	0	0	299,007
3400 Emergency medical technicians and paramedics	201,812	0	0	201,812
3420 Health practitioner support technologists and technicians	632,127	1,558	0	633,685
3500 Licensed practical and licensed vocational nurses	706,650	10,983	0	717,633
3510 Medical records and health information technicians	163,012	1,804	0	164,816
3520 Opticians, dispensing	53,060	6,558	0	59,618
3535 Miscellaneous health technologists and technicians	103,155	0	0	103,155
3540 Other healthcare practitioners and technical occupations	75,679	15,776	6,044	97,499
8760 Medical, dental, and ophthalmic laboratory technicians	68,518	1,657	9,050	79,225
Aides and Assistants				
3610 Occupational therapist assistants and aides	22,809	0	0	22,809
3620 Physical therapist assistants and aides	69,286	738	0	70,025
3630 Massage therapists	88,400	64,148	7,126	159,674
3640 Dental assistants	294,346	0	0	294,346
Medical Assistants & Other Health Care Supporting Occupations				
3645 Medical assistants (2010 code, former 3650)	544,193	0	0	544,193
3646 Medical transcriptionists (2010 code, former 3650)	32,245	6,751	2,364	41,360
3647 Pharmacy aides (2010 code, former 3650)	37,707	0	0	37,707
3648 Veterinary assistants and laboratory animal caretakers	40,349	0	0	40,349
3649 Phlebotomists (2010 code; former 3650)	107,562	0	0	107,562
3655 Misc healthcare support occupations	115,428	387	2,172	117,988
Long-Term Care				
0350 Medical and health services managers	594,112	12,032	17,742	623,886
0420 Social and community service managers	421,814	8,618	6,092	436,524
2010 Social workers	808,398	18,510	7,658	834,566
3600 Nursing, psychiatric, and home health aides	1,974,048	62,548	4,283	2,040,879
4610 Personal and home care aides	1,252,844	78,263	7,915	1,339,022

Occupations By Work Setting

Because our study wanted to focus on workers in long-term care settings, we examined occupational categories and occupations by work setting to see if workers in self-employment arrangements were distributed differently than not self-employed workers across work settings. We created three categories of work settings: (1) Hospital, (2) Ambulatory, and (3) Long-Term Care. The ambulatory category included offices of physicians, dentists, chiropractors, optometrists, and other health practitioners as well as outpatient care centers and other health care services. The long-term care category included nursing care facilities, home health care services, and residential care facilities, without nursing. Based on the findings in the previous section and knowledge regarding occupations most likely to be found working in long-term care settings, we examined the following occupational categories and occupations: diagnosing and treating practitioners, aides and assistants, registered nurses, physical therapists, medical assistants and other health care supporting occupations, NPHHA, and PCA/HCA. Table 3 below shows the percentage of workers for each occupational category or occupation in each work setting by self-employment arrangement.

From this descriptive analysis, we determined that physical therapists, NPHHA, and PCA/HCA in self-employed employment arrangements were more prevalent in long-term care settings. Because physical therapists differed from the other two occupations by education and wages, we decided to focus our comparison of employment arrangements on just two occupations: NPHHA and PCA/HCA.

Table 3. Select Occupations by Work Setting

Occupations	Not Self-Employed	Self-Employed, unincorporated	Self-Employed, Incorporated
Diagnosing & Treating Practitioners			
Hospitals	50.59%	0.00%	1.99%
Ambulatory	45.14%	100.00%	98.01%
LTC	4.27%	0.00%	0.00%
Aides & Assistants			
Hospitals	49.02%	7.01%	0.00%
Ambulatory	48.30%	92.99%	100.00%
LTC	2.68%	0.00%	0.00%
Registered Nurses			
Hospitals	70.63%	0.00%	0.00%
Ambulatory	15.93%	95.85%	89.70%
LTC	13.44%	4.15%	10.30%
Physical Therapists			
Hospitals	38.87%	0.00%	0.00%
Ambulatory	42.57%	74.04%	100.00%
LTC	18.57%	25.96%	0.00%
Nursing, Psychiatric & Home Health Aides			
Hospitals	21.67%	0.00%	0.00%
Ambulatory	11.17%	5.90%	0.00%
LTC	67.15%	94.10%	100.00%
Medical Assistants & Other			
Hospitals	28.50%	0.00%	0.00%
Ambulatory	62.96%	100.00%	0.00%
LTC	8.54%	0.00%	0.00%
Personal & Home Care Aides			
Hospitals	2.64%	4.71%	0.00%
Ambulatory	8.42%	18.78%	0.00%
LTC	88.94%	76.50%	100.00%

Identify Occupations by Specific Long-Term Care Work Settings

Although the CPS ASEC uses single occupation codes for NPHHA and PCA/HCA, different occupations are nestled within each code and classified as the same. For example, nursing aides and home health aides are assigned the same code even though they may vary by work environments and other sociodemographic characteristics. To identify different occupations

within single occupation codes, we examined NPHHA and PCA/HCA for the following three long-term care work settings: (1) nursing care facilities, (2) home health care services, and (3) residential care facilities, without nursing. Our assumption was that nursing aides would be those who worked in nursing care facilities and home health aides would be those who worked in home health care services. After restricting each occupation by specific work setting, we examined the prevalence of self-employment arrangements to identify any differences. The primary objectives for this step were to identify more specific occupations and how these occupations vary by employment arrangement. Table 4 and Table 5 show the distribution of each occupation by work setting and self-employment arrangement.

We found that self-employed NPHHA were only found in home health care services and not in any of the other long-term care settings. Among self-employed PCA/HCA, more than half worked in home health care services. A small percentage of self-employed PCA/HCA worked in nursing care facilities or residential care facilities, without nursing. The findings suggested that self-employment arrangements were more common in the home health care services setting. Furthermore, to study how workers in self-employment arrangements may differ from workers in the same occupation and setting, we decided to restrict our sample to NPHHA and PCA/HCA in home health care services. The restriction to home health care services permitted us to distinguish home health aides within the NPHHA occupational code from nursing and psychiatric aides, and home care aide within the PCAHCA occupational code from the personal care aides.

Table 4. Nursing, Psychiatric, & Home Health Aides by Specific Long-Term Care Setting

Work Setting	Not Self-Employed	Self-Employed, unincorporated	Self-Employed, Incorporated	Total
Nursing Care Facilities				
Weighted	668,876	0	0	668,876
Percent	100.00%	0.00%	0.00%	100.00%
Home Health Care Services				
Weighted	501,389	58,855	4,283	564,528
Percent	88.82%	10.43%	0.76%	100.00%
Residential Care Facilities, not nursing				
Weighted	51,872	0	0	51,872
Percent	100.00%	0.00%	0.00%	100.00%

Table 5. Personal and Home Care Aides

Work Setting	Not Self-Employed	Self-Employed, unincorporated	Self-Employed, Incorporated	Total
Nursing Care Facilities				
Weighted	66,908	348	0	67,256
Percent	99.48%	0.52%	0.00%	100.00%
Home Health Care Services				
Weighted	342,683	37,137	6,153	385,973
Percent	88.78%	9.62%	1.59%	100.00%
Residential Care Facilities, not nursing				
Weighted	143,270	4,740	0	148,010
Percent	96.80%	3.20%	0.00%	100.00%