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*UCSF Health Workforce Research Center  
on Long-Term Care*

## Research Report

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# How Do Long-Term Care Workers Spend Their Time? Answers from the American Time-Use Survey

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### **Executive Summary**

#### ***Introduction/Background***

Long-term care (LTC) workers provide day-to-day care to patients in residential facilities, community-based settings, and private homes. Over the next decade, the U.S. Bureau of Labor Statistics (BLS) projects much faster growth in LTC-related occupations than other occupations. The challenge of meeting future demand for LTC workers is exacerbated by high rates of turnover, which is frequently associated with burnout. We examined time spent on work-related and non-work related activities by the LTC workforce and compared their activities with those of workers with comparable education/skills from other health professions (OHPs) to better understand factors that might contribute to work stress, burnout, and retention among LTC workers.

#### ***Methods***

We examined 12 years of data from the American Time Use Survey (ATUS) conducted by the BLS to understand patterns of time use among LTC workers and compare their time use with that of workers in other sectors of the health care industry. We also categorized LTC occupations by higher-skill and lower-skill levels and compared workers in each of these groups with their counterparts in non-LTC health care occupations.

#### ***Findings***

The LTC workforce has a significantly larger share of non-White workers, has less education, and is living in poverty more often compared with OHPs. While LTC workers spent more time on leisure, much of this time difference was attributable to more time watching TV and less time exercising. Unskilled workers spent less time on activities likely to promote overall well-being and health, such as exercising and sleeping. This was consistent with findings of poorer health of LTC workers relative to OHPs. Despite differences in health and health-promoting activities, LTC workers reported similar levels of work/life satisfaction and quality of life compared with OHPs. LTC workers more often provided eldercare to family members or friends several times per month or even daily, suggesting they may be providing

such care both professionally and informally, potentially exacerbating the risk of burnout in this group of workers.

### ***Conclusions and Policy Implications***

Both skilled and unskilled LTC workers have lower education levels than their counterparts in other health care sectors, and they earn lower wages. Employers need to develop strategies to support career advancement and wage mobility for LTC workers. Employers should address the tendency toward sedentary lifestyle among LTC workers as obesity and hypertension are associated with higher costs to employers, both through greater health spending and lower productivity. The greater frequency of LTC workers providing care to elders outside their work warrants exploration. It is unknown whether this phenomenon reflects family decisions about how best to address care needs of aging family members or an unwanted burden that increases stress, or both. The value of informal care in the U.S. is estimated at over \$500 billion, and such care exacts a significant burden on households. It is possible that LTC workers are in the best position to take on this burden in their homes, but it also may increase pressure on an already strained workforce.

## **How Do Long-Term Care Workers Spend Their Time? Answers from the American Time-Use Survey**

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### **Background**

Long-term care (LTC) workers provide day-to-day care to patients in residential facilities, community-based settings, and private homes. A wide range of occupations falls into this sector, including physicians, registered nurses (RNs), certified nursing assistants (CNAs), home health aides (HHAs), personal care aides (PCAs), and licensed practical/vocational nurses (LPNs/LVNs). Over the next decade, the U.S. Bureau of Labor Statistics (BLS) projects much faster growth in LTC-related occupations than other occupations, with a 60% increase in employment in the home health care services sector, 30% increase in residential care facilities, and 20% increase in nursing care facilities.<sup>1</sup> This increase in demand, largely associated with the aging of more than 75 million baby boomers,<sup>2</sup> has raised concerns regarding the adequacy of workforce supply in LTC.<sup>3</sup>

The challenge of meeting future demand for LTC workers is exacerbated by high rates of turnover in the LTC sector<sup>4</sup> with more LTC workers leaving this sector of health care than entering it.<sup>5</sup> Turnover is frequently associated with burnout,<sup>6-8</sup> a syndrome characterized by emotional exhaustion and a decreased sense of personal accomplishment leading to both low job satisfaction and potentially serious negative effects on health. Among all of the health services environments in which health professionals practice, workers in the LTC sector are particularly susceptible to burnout due to emotionally demanding relationships with patients, time pressure, insufficient resources, inflexible work schedules, and, for some occupations, limited participation in health care decision making.<sup>9-11</sup> Stressors outside of the workplace may also play a contributing role, such as lack of time for leisure and family.<sup>12-13</sup>

The aim of this study was to examine time spent on work-related and non-work related activities by the LTC workforce and compare their activities with those of workers with comparable education/skills from other health professions to better understand factors that might contribute to work stress, burnout, and retention among LTC workers. Using the American Time Use Survey (ATUS) conducted by the U.S. Bureau of Labor Statistics, we examined time spent on activities such as caring for and helping household members, leisure, and worker well-being. In addition to comparing all LTC workers with other health industry workers, we also examined whether there were differences between those in high-skill occupations versus low-skill occupations.

## Methods

To understand patterns of time use among LTC workers and compare them with those of workers in other sectors of the health care industry, we examined 12 years of data from the ATUS. We also categorized LTC occupations by higher-skill and lower-skill levels and compared workers in each of these groups with their counterparts in non-LTC health care occupations.

## Data

We used the American Time Use survey from 2003 through 2014. The ATUS is conducted by the Bureau of Labor Statistics (BLS) and requests data from a subset of individuals sampled in the Current Population Survey (CPS). In each year, there is a total sample of approximately 13,000 individuals aged 15 years and older. Core survey elements include participants' demographic information and details on their daily activities during a 24-hour time period. Demographic data are collected at one point in time, while activity data are based on multiple data entry points. Activities are categorized into broader categories, such as work, leisure, and household, and include details regarding time spent in activities such as commuting, watching television, exercising, and socializing.

The ATUS includes special modules in some years, and we included 3 of these: eldercare (2011-2014), eating and health (2006, 2007, 2008, 2014), and well-being (2010, 2012, 2013). The eldercare module collects information related to the frequency of providing care for older individuals and time spent on activities related to such informal care. The eating and health module collects information about respondents' dietary habits, such as time spent preparing and consuming meals as well as health status, e.g., BMI. The well-being module focuses on health and quality of life, assessing how often respondents rested, how they feel in comparison with a typical day, use of pain medication, and whether respondents have high blood pressure.

We identified workers in LTC following Frogner and Spetz's (2015) approach using a combination of occupation and industry codes.<sup>5</sup> The occupations included were registered nurses (RNs), licensed practical/vocational nurses (LPN/LVNs), nursing, psychiatric, and home health aides (NPHHs), medical assistants and other support occupations (MAs), social workers, miscellaneous community and social service specialists, and physical therapists. Other health professionals (OHPs) with whom we compared LTC workers included those in the same occupations as found in LTC, as well as 36 other health professions. (See Appendix 1 for details about the

industries and occupations included in the analysis.) We excluded individuals with a Master's or higher degree because their work responsibilities and demographic characteristics are substantially different from those of workers who make up the majority of the LTC workforce.

### **Key Measures**

We analyzed minutes of time spent carrying out each ATUS activity related to work and leisure, including the special modules of eldercare, well-being, and eating and health, for years in which these latter modules were surveyed. We also examined demographic data of ATUS respondents for our worker categories.

### **Analysis**

Our statistical analysis consisted of 2 parts. We first examined activities of the LTC workforce compared with the activities of those in other health professions. We then explored whether skilled and unskilled LTC workers differ in their activities compared with skilled and unskilled workers from other health professions. To categorize workers into skilled and unskilled workers we used information on each worker's education level and hourly wage. We defined LTC workers who held an Associate or baccalaureate degree as "skilled." In addition to these educational criteria, we used hourly wage to define skilled and unskilled workers following research by Chari and colleagues.<sup>14</sup> Workers who earned  $\geq \$21$  per hour (adjusted for inflation) were considered skilled, even if they did not have an Associate degree. By these measures, we considered approximately 4% of the LTC workforce and about 20% of all other health professions to be skilled workers. Income was adjusted for inflation using the Consumer Price Index with base year 2012. We applied weights provided with the ATUS to produce statistics that represent the full U.S. population.<sup>15</sup>

### **Results**

#### ***Demographics of Long-term Care Workers and Other Health Professionals***

Our analytic sample consisted of 1,629 LTC workers and 4,788 OHP workers (Table 1). The typical worker in both LTC and OHP was a married white woman, 41 years of age. Among LTC workers, the share of women was significantly higher (88% LTC vs. 82% OHP), the share of married workers lower (45.3% LTC vs. 58.1% OHP), the share of white workers lower (55% LTC vs. 71% OHP), and the share of black workers higher (27% LTC vs. 13% OHP). Other significant differences were that 60% of LTC workers had a high school degree compared with

35% of OHP workers, while 28% of OHP workers had an Associate degree and 36% had a Bachelor's degree compared with 19% of LTC workers having an Associate degree and 21% having a Bachelor's degree. Hourly wage was significantly lower for LTC workers (\$16.57 LTC vs. \$24.03 OHP). A greater number of individuals in LTC reported an income below 185% of the poverty level (36% LTC vs. 18% OHP).

**Table 1. Demographics of long-term care (LTC) workers and other health professionals (OHPs)**

|                                      | <b>LTC<br/>N=1,629</b> | <b>OHP<br/>N=4,788</b> |
|--------------------------------------|------------------------|------------------------|
| <b>Age (average)</b>                 | 41.9                   | 41.3                   |
| <b>Male*</b>                         | 12.1%                  | 16.7%                  |
| <b>Race/ethnicity*</b>               |                        |                        |
| <b>White</b>                         | 55.4%                  | 70.6%                  |
| <b>Asian</b>                         | 2.8%                   | 5.3%                   |
| <b>Black</b>                         | 27.1%                  | 13.5%                  |
| <b>Hispanic</b>                      | 12.4%                  | 9.1%                   |
| <b>Other</b>                         | 2.3%                   | 1.6%                   |
| <b>Education*</b>                    |                        |                        |
| <b>High school</b>                   | 60.0%                  | 35.2%                  |
| <b>Associate degree</b>              | 18.8%                  | 28.2%                  |
| <b>Bachelor's degree</b>             | 21.2%                  | 36.6%                  |
| <b>Marital status*</b>               |                        |                        |
| <b>Married</b>                       | 58.5%                  | 45.3%                  |
| <b>Divorced/separated/widowed</b>    | 16.7%                  | 22.4%                  |
| <b>Single</b>                        | 24.8%                  | 32.3%                  |
| <b>Hourly wage (average)*</b>        | \$16.57                | \$24.03                |
| <b>Skilled worker*</b>               | 26.7%                  | 70.5%                  |
| <b>Income below 185% of poverty*</b> | 36.7%                  | 18.0%                  |

\* Difference between LTC workers and OHP is statistically significant with  $p \leq 0.05$ . Source: American Time Use Survey, years 2003-2014.

### ***Time Spent on Activities***

LTC workers, on average, spent 17 more minutes of their day on work-related activities compared with OHP workers, although this difference was not statistically significant. This difference can be attributed in part to LTC workers spending an average of 3 minutes more per day on work-related travel, which includes both commuting and travel that is part of the job, such as for home health nurses.

LTC workers spent more minutes each day on social activities (226.6 LTC vs. 215.4 OHP), socializing outside of social events (43.1 LTC vs. 37.9 OHP), and watching TV (127.5 LTC vs. 116.9 OHP). They spent less time on sport and recreational activities (9.9 LTC vs. 16.2 OHP). We found no significant differences between LTC and OHP workers in time spent on caring for children, household activities, education, and sleep.

**Table 2. Minutes per day spent on selected activities by long-term care (LTC) workers and other health professionals (OHPs)**

|                                  | <b>LTC<br/>N=1,629</b> | <b>OHP<br/>N=4,788</b> |
|----------------------------------|------------------------|------------------------|
| WORK                             | 293.9 (279.3)          | 276.0 (293.5)          |
| Working                          | 270.1 (260.8)          | 255.2 (275.0)          |
| Work related Travel*             | 21.9 (33.8)            | 18.9 (30.7)            |
| LEISURE                          | 250.5 (178.6)          | 245.4 (181.3)          |
| Social activities*               | 226.6 (165.1)          | 215.4 (165.8)          |
| Socializing except social events | 43.1 (86.3)            | 37.9 (82.4)            |
| Sports, activities, recreation*  | 9.9 (35.9)             | 16.2 (52.0)            |
| Watching TV*                     | 127.5 (134.7)          | 116.9 (125.8)          |
| Caring for children              | 28.8 (70.4)            | 31.0 (75.4)            |
| Education                        | 11.3 (62.5)            | 12.5 (66.3)            |
| Household activities             | 121.7 (132.0)          | 126.4 (140.4)          |
| Sleep                            | 505.7 (143.4)          | 510.2 (134.2)          |

\* Difference between LTC workers and OHP is statistically significant with  $p \leq 0.05$ .  
Source: American Time Use Survey, years 2003-2014.

### ***Eldercare, Well-being, Eating and Health***

We also analyzed selected items reported in the ATUS as part of the eldercare, well-being, and eating/health modules (Table 3).

The eldercare module included activities such as administering medications, keeping company, or watching TV with an elder recipient of care. There was no difference in the share of LTC and OHP workers documenting that they provided eldercare in the past 3 months (74% LTC vs. 73% OHP) nor in the number of people for whom they provided care. However, LTC workers reported providing eldercare more often. For example, 12% of LTC workers, compared with 9% of OHPs, documented providing eldercare several times a week or more.

Questions in the well-being module revealed no statistically significant differences in LTC and OHP feeling rested in the past day, having high blood pressure, or taking pain medications. There also was no significant difference in how workers reported they felt on the day they took the survey compared with a “typical” day, or in their overall rating of their quality of life. In the eating and health module, LTC workers had a significantly higher body mass index (BMI) than did OHPs (28.4 LTC vs. 26.6 OHP), and for both types of workers the average BMI was in the “overweight” range. They also spent significantly fewer minutes eating and drinking compared with OHPs (52.6 LTC vs. 65.5 OHP).

**Table 3. Provision of care for elders, well-being measures, and eating and health comparing long-term care (LTC) workers and other health professionals (OHP)**

| Module and time                                           | LTC         | OHP         |
|-----------------------------------------------------------|-------------|-------------|
| <b>ELDERCARE (2011-2014 SURVEY YEARS)</b>                 | N=539       | N=1,395     |
| Prior eldercare in the past 3 months                      | 25.7%       | 25.8%       |
| Frequency of providing eldercare*                         |             |             |
| Daily or several times a week                             | 11.8%       | 9.6%        |
| Few times a month                                         | 11.1%       | 9.5%        |
| Once or fewer times a month                               | 2.8%        | 6.7%        |
| Number of eldercare beneficiaries                         |             |             |
| 1                                                         | 15.6%       | 14.7%       |
| 2                                                         | 6.6%        | 6.4%        |
| ≥3                                                        | 2.5%        | 2.1%        |
| <b>WELL-BEING (2010, 2012-2013 SURVEY YEARS)</b>          | N=359       | N=1,044     |
| Rested in the last day                                    |             |             |
| Very                                                      | 32.3%       | 35.8%       |
| Somewhat                                                  | 40.1%       | 43.0%       |
| A little                                                  | 18.5%       | 15.3%       |
| Not at all                                                | 9.1%        | 5.9%        |
| Reported high blood pressure                              | 22.2%       | 20.9%       |
| Took pain medication                                      | 29.4%       | 26.9%       |
| Feels in comparison with a typical day                    |             |             |
| Better                                                    | 35.2%       | 26.6%       |
| The same                                                  | 56.0%       | 62.1%       |
| Worse                                                     | 8.8%        | 11.3%       |
| Quality of life on 1-10 scale [mean (sd)]                 | 7.0 (2.0)   | 7.1 (1.9)   |
| <b>EATING &amp; HEALTH (2006-2008, 2013 SURVEY YEARS)</b> | N=377       | N=1,119     |
| BMI* [mean (sd)]                                          | 28.4 (6.4)  | 26.6 (5.8)  |
| Time spent on eating and drinking* [min (sd)]             | 52.6 (37.9) | 65.5 (52.7) |

\* Difference between LTC workers and OHP is statistically significant with  $p \leq 0.05$ .  
Source: American Time Use Survey, years 2003-2014.

### ***Comparison of Skilled and Unskilled Workers' Activities, Eldercare, Well-being, Eating and Health***

We examined whether there were differences in the activities of skilled and unskilled LTC and OHP workers. Unskilled workers were defined as those whose highest level of education was below an Associate degree and whose hourly wage was below \$21. This classified the majority of LTC workers as unskilled (74%) and the majority of OHPs as skilled (70%). Table 4 presents demographic characteristics of skilled and unskilled workers in LTC and OHP. Among skilled workers, those in LTC jobs are slightly older, less often male, less often White, and less likely to have a Bachelor's degree. Skilled LTC workers earn less than skilled OHP workers (\$26 LTC vs. \$28.5 OHP).

Similar patterns are apparent for some of the demographic characteristics of unskilled LTC workers compared with OHP workers. Unskilled LTC workers are more often female and non-White, more likely to have only a high school education, and more often unmarried. Unskilled LTC workers also make less than do their OHP counterparts (\$12.35 LTC vs. \$13.56 OHP). Nearly half of all LTC unskilled workers had incomes  $\leq$ 185% of the federal poverty threshold, although the difference between LTC and OHP workers is not statistically significant (47% LTC vs. 33% OHP).

**Table 4. Demographics of long-term care (LTC) workers and other health professionals (OHPs), by skill level**

|                          | SKILLED |         | UNSKILLED |         |
|--------------------------|---------|---------|-----------|---------|
|                          | LTC     | OHP     | LTC       | OHP     |
| Age (average)*           | 44.0    | 42.5    | 41.0      | 38.6    |
| Male**                   | 12.4%   | 17.3%   | 12.0%     | 15.4%   |
| Race**                   |         |         |           |         |
| White                    | 67.3%   | 74.5%   | 51.1%     | 61.4%   |
| Asian                    | 2.9%    | 5.9%    | 2.8%      | 3.8%    |
| Black                    | 18.9%   | 11.5%   | 30.0%     | 18.1%   |
| Hispanic                 | 9.1%    | 6.8%    | 13.6%     | 14.5%   |
| Other                    | 1.8%    | 1.3%    | 2.5%      | 2.1%    |
| Education**              |         |         |           |         |
| High school              | 27.7%   | 24.2%   | 71.7%     | 61.7%   |
| Associate degree         | 37.1%   | 31.4%   | 12.1%     | 20.5%   |
| Bachelor                 | 35.2%   | 44.5%   | 16.1%     | 17.8%   |
| Marital status**         |         |         |           |         |
| Married                  | 59.1%   | 61.8%   | 40.3%     | 49.1%   |
| Divorced/ Separated/     | 24.5%   | 16.7%   | 21.6%     | 17.4%   |
| Single                   | 16.3%   | 21.5%   | 38.1%     | 33.4%   |
| Hourly wage (average)**  | \$26.36 | \$28.48 | \$12.35   | \$13.56 |
| Hourly income <= 185% of | 13.5%   | 11.6%   | 46.8%     | 33.1%   |

\* Difference between LTC workers and OHP is statistically significant with  $p \leq 0.05$  for skilled workers only.

\*\* Difference between LTC workers and OHP is statistically significant with  $p \leq 0.05$  for both skilled and unskilled workers.

Source: American Time Use Survey, years 2003-2014.

Differences in the use of time between LTC and OHP workers are mainly driven by differences in the activities of unskilled workers in each category of worker (Table 5). Unskilled LTC workers spent significantly more time at work (31 minutes), more time commuting to work (5 minutes), less time exercising (5 minutes), more time watching TV (8 minutes), and less time sleeping (16 minutes) than unskilled OHPs.

**Table 5. Minutes per day spent on selected activities by long-term care (LTC) workers and other health professionals (OHPs), and health measures, by skill level**

| Activity                                              | SKILLED     |             | UNSKILLED   |             |
|-------------------------------------------------------|-------------|-------------|-------------|-------------|
|                                                       | LTC         | OHP         | LTC         | OHP         |
| WORK*                                                 | 285.4       | 281.48      | 297.9       | 261.2       |
| Working*                                              | 262.7       | 260.0       | 273.6       | 242.1       |
| Work-related travel*                                  | 21.4 (33.7) | 19.6        | 22.1        | 16.8 (28.2) |
| LEISURE                                               | 243.0       | 239.1       | 254.1       | 262.6       |
| Social activities                                     | 215.1       | 209.7       | 232.0       | 230.9       |
| Socializing except social                             | 38.7 (79.0) | 36.5 (80.8) | 45.2        | 41.5        |
| Sports, activities,                                   | 10.9 (38.8) | 16.1 (50.9) | 9.4 (34.4)  | 16.5 (55.0) |
| Watching TV                                           | 117.9       | 113.9       | 132.1       | 125.0       |
| HOUSEHOLD / NON-HOUSEHOLD                             |             |             |             |             |
| Caring for children                                   | 27.2 (66.4) | 32.0 (77.1) | 29.5        | 28.4        |
| Education                                             | 9.1 (53.4)  | 12.6 (66.9) | 12.4        | 12.2 (64.8) |
| Household activities                                  | 131.5       | 129.8       | 117.2       | 117.3       |
| Sleep*                                                | 505.8       | 506.2       | 505.6       | 521.2       |
| BMI*** [mean (sd)]                                    | 27.7 (6.2)  | 26.2 (5.4)  | 28.7 (6.5)  | 27.4        |
| Time (min) spent on eating and drinking** [mean (sd)] | 55.0 (36.3) | 64.7 (45.0) | 51.5 (38.6) | 66.3 (68.7) |

\* Difference between LTC and OHP workers is statistically significant with  $p \leq 0.05$  for unskilled workers only.

\*\* Difference between LTC and OHP workers is statistically significant with  $p \leq 0.05$  for both skilled and unskilled workers.

\*\*\* Difference between LTC and OHP workers is statistically significant with  $p \leq 0.05$  for both skilled workers only.

Source: American Time Use Survey, years 2003-2014.

Analysis of activities spent on eldercare by skilled and unskilled workers reveals that a larger share of skilled LTC workers provided eldercare daily or several times a week than other skilled or unskilled workers (14% skilled LTC vs. 9% skilled OHP, 11% unskilled LTC, 11% unskilled OHP). There were no significant differences in the number of people for whom skilled and unskilled LTC and OHP workers provided eldercare.

There were no statistically significant differences between skilled LTC and skilled OHP workers, or between unskilled LTC and unskilled OHP workers. Skilled workers were more likely to report having high blood pressure. They also rated higher quality of life. Skilled LTC workers had a higher average BMI than did skilled OHP workers (27.7 LTC vs. 26.2 OHP) (Table 5). Unskilled LTC workers spent less time eating and drinking than did unskilled OHP workers (15 minute difference), and skilled LTC workers also spent less time eating and drinking than did skilled OHP workers (10 minute difference) (Table 5).

## Conclusions

This analysis revealed both key differences and notable similarities in the way time is spent by long-term care workers and other health professionals. Congruent with findings from previous research<sup>5</sup>, the LTC workforce identified in the ATUS differed from OHP workers in demographic and socio-economic characteristics, with LTC workers having a significantly larger share of non-White workers, less education, and living in poverty more often compared with OHPs.

While LTC workers reported more time spent on leisure, a breakdown of the types of leisure activities revealed that much of this time difference was attributable to more time watching TV and less time exercising. Analysis of the differences in time allocation by skill level of workers showed that time commitments to activities that are likely to promote overall well-being and health, such as exercising and sleeping, were engaged in less often by unskilled workers. This was consistent with findings from the well-being module that provided evidence of poorer health of LTC workers relative to OHPs, visible in the higher BMI of both skilled and unskilled workers, with average BMIs for all health care workers in the “Overweight” range.

Despite differences in health and health-promoting activities, LTC workers, both skilled and unskilled, reported similar levels of work/life satisfaction and similar levels of quality of life compared with OHPs. This finding is counterintuitive, given LTC workers’ poorer health, shorter time commitments towards health-promoting activities, and higher levels of poverty experienced by the LTC workforce.

Finally, we found that LTC workers more often provided eldercare several times per month or even daily. This may indicate that the LTC workforce provides care not only professionally but also informally to older adults, potentially exacerbating the risk of burnout in this group of workers. This was especially true for skilled workers and may suggest that the work schedules of skilled workers offer greater flexibility to take on additional caregiving tasks.

## ***Future Directions***

LTC workers are more diverse than other health workers, and diversity in this workforce is likely to rise as the demand for long-term care services grows<sup>16</sup>. However, both skilled and unskilled LTC workers have lower education levels than their counterparts in other health care sectors, and they earn lower wages. Prior research has found little evidence of a well-functioning career ladder through which unskilled LTC workers can move into higher-paying, high-skilled jobs (5). The data presented in this report reinforce the need for employers to develop strategies to support career advancement and wage mobility for LTC workers.

Employers also should be concerned about health-promoting behaviors for both skilled and unskilled LTC workers related to sedentary lifestyle and evidence of existing chronic conditions, such as high blood pressure and high BMI. Obesity and hypertension are associated with higher costs to employers, both through greater health spending and lower productivity<sup>17, 18</sup>.

Finally, the greater frequency of LTC workers – particularly skilled LTC workers – providing care to elders *outside their work* warrants exploration. It is not known whether this phenomenon reflects family decisions about how to best meet the care needs of aging family members or an unwanted burden that increases stress, or both. The value of informal care in the United States is estimated at over \$500 billion<sup>14</sup>, and such care exacts a significant burden on households. It is possible that LTC workers are in the best position to take on this burden in their homes, but it also may increase pressure on an already strained workforce.

## **Acronyms Used in This Report**

ATUS – American Time Use Survey

BLS – Bureau of Labor Statistics

CNA - Certified nursing assistant

HHA - Home health aide

LPN/LVN - Licensed practical/vocational nurses

LTC – Long-term care

OHPs – Other health professions (not long-term care workers)

PCA - Personal care aide

RN - Registered nurse

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## Appendix 1. Sample Selection and Analysis Details

Long-term care sectors were identified from industry codes: (1) home health care services [8170], (2) nursing care facilities [8270], (3) residential care services, without nursing [8290], (4) individual and family services [8370], (5) community food and housing/emergency services [8380], (6) private households [9290]. Within these sectors, we focused on specific occupations associated with long-term care services: (1) registered nurses (RNs) [3130; 3255], (2) licensed practical nurse/ licensed vocation nurse (LPN/LVN) [3500], (3) nursing, psychiatric, and home health aide (NPHH) [3600], (4) medical assistant and other health care support occupation (MA) [3645; 3650], (5) social worker [2010], (6) miscellaneous community and social service specialist [2020; 2025], and (7) physical therapist [3160].

**Table 6. Detailed list of occupations in long-term care (LTC) and other health professions (OHP)**

| Description                                            | BLS Code | % of the LTC | % of OHP |
|--------------------------------------------------------|----------|--------------|----------|
| Social and community service managers                  | 420      | 4.1          | 0.1      |
| Social workers                                         | 2010     | 11.2         | 4.7      |
| Miscellaneous community and social service specialists | 2020,    | 2.4          | 6.1      |
| Dietitians and nutritionists                           | 3030     |              | 0.02     |
| Registered nurses                                      | 3130;    | 11.5         | 3.3      |
| Physical therapists                                    | 3160     | 0.4          | 0.9      |
| Recreational therapists                                | 3210     |              | 1.8      |
| Respiratory therapists                                 | 3220     |              | 3.9      |
| Speech-language pathologists                           | 3230     |              | 0.1      |
| Therapists, all other                                  | 3240     |              | 2.5      |
| Other therapists, including exercise physiologists     | 3245     |              | 0.4      |
| Clinical laboratory technologists and technicians      | 3300     |              | 4.6      |
| Dental hygienists                                      | 3310     |              | 1.8      |
| Diagnostic related technologists and technicians       | 3320     |              | 7.7      |
| Emergency medical technicians and paramedics           | 3400     |              | 1.2      |

| <b>Description</b>                                        | <b>BLS Code</b> | <b>% of the LTC</b> | <b>% of OHP</b> |
|-----------------------------------------------------------|-----------------|---------------------|-----------------|
| Health diagnosing and treating practitioner support       | 3410            |                     | 0.2             |
| Health practitioner support technologists and technicians | 3420            |                     | 2.0             |
| Licensed practical and licensed vocational nurses         | 3500            | 6.8                 | 0.3             |
| Medical records and health information technicians        | 3510            |                     | 1.5             |
| Opticians, dispensing                                     | 3520            |                     | 0.1             |
| Miscellaneous health technologists and technicians        | 3530;           |                     | 9.1             |
| Other health care practitioners and technical occupations | 3540            |                     | 0.1             |
| Nursing, psychiatric, and home health aides               | 3600            | 40.4                | 1.1             |
| Occupational therapist assistants and aides               | 3610            |                     | 0.7             |
| Physical therapist assistants and aides                   | 3620            |                     | 0.7             |
| Massage therapists                                        | 3630            |                     | 0.2             |
| Dental assistants                                         | 3640            |                     | 1.7             |
| Medical assistants                                        | 3645;           | 1.2                 | 1.8             |
| Medical transcriptionists                                 | 3646            |                     | 0.2             |
| Pharmacy aides                                            | 3647            |                     | 0.4             |
| Phlebotomists                                             | 3649            |                     | 1.0             |
| Health care support workers, all other, including medical | 3655            | 1.4                 | 1.1             |
| Personal and home care aides                              | 4610            | 20.7                | 0.8             |

Source: Authors' analyses of the American Time Use Survey, 2003-2014.