

**To:** Illinois Department of Human Services

**From:** University of Chicago Harris Policy Lab

**Date:** December 14, 2018

**Re:** Analysis of Wages and Labor Supply for Direct Support Persons in Illinois

## **Executive Summary**

The Illinois Department of Human Services (DHS) reports a shortage of Direct Support Persons (DSPs)—workers caring for adults with intellectual disabilities in community residential settings—and seeks feasible strategies to improve DSP retention and recruitment. To determine appropriate recommendations to alleviate the DSP shortage in Illinois, we analyzed 10 years of wage data for individuals working for Community Integrated Living Arrangement (CILA) providers in order to determine DSPs' earnings before, during, and after their employment as DSPs. We used exploratory data analysis to understand the earnings conditions of DSPs, and regression analysis to determine the relationship between DSP supply and their earnings. We found that a large fraction of DSPs rely on one job at a time, and many work at a CILA for less than two full quarters. Our analysis revealed that increasing the wage by \$1 per hour is correlated with a 45-day extension of an employee's tenure. We also found that the state-determined wage increase in 2007 did not significantly impact recruitment.

In conclusion, increasing the hourly wage of DSPs can improve retention; however, investing in employee benefits may be more effective for attracting new workers. We therefore recommend that DHS focus on implementing a comprehensive, multi-intervention recruitment and retention plan that includes competitive employment packages, recruitment bonuses, developed toolkits, and targeted partnerships, and that it conduct a survey to collect accurate DSP specific workforce data.

## **Background**

DSPs provide professional assistance to people living with intellectual disabilities. People with intellectual disabilities and their families rely heavily on DSPs, as they provide essential assistance in feeding, bathing, and transport. The services provided by DSPs improve clients' quality of life and relieve stressors from family caregivers. Considering the demanding nature of the DSP role, it is not surprising that finding a sufficient number of quality DSPs is a challenge. Recent federal laws and rules that endorse client preference have made the task even more difficult.

In 1999, *Olmstead vs L.C. and E.W.* prohibited the segregation of people with disabilities on the grounds of discrimination and in 2009 further enforcement of integration was established. Following the case, the Home and Community-Based Settings Rule put forth by the Centers for Medicare and Medicaid Services (CMS) established guidelines that provided people with disabilities with more freedom in choice over the types of services they received. This rule built upon the Rehabilitation Act of 1973 and the Developmental Disabilities Assistance and Bill of Rights Act of 2000, which also provided and protected the rights of people living with disabilities to live independently within their preferred communities. While on their face these laws sound unproblematic, many states have severely struggled to comply. The main reason is that although laws have demanded more support for people living with intellectual disabilities, states have not been provided with supplementary funding to meet the rising demand. As the demand for DSPs increases, resources to recruit and retain a sufficient workforce have become more limited.

The inability of states to meet the increased demand for DSPs puts people with intellectual disabilities at a higher risk for harm and poorer quality of life. Recognizing the increased danger for Illinoisans living with intellectual disabilities, the DHS seeks to find feasible solutions to their DSP recruitment and retention challenges.

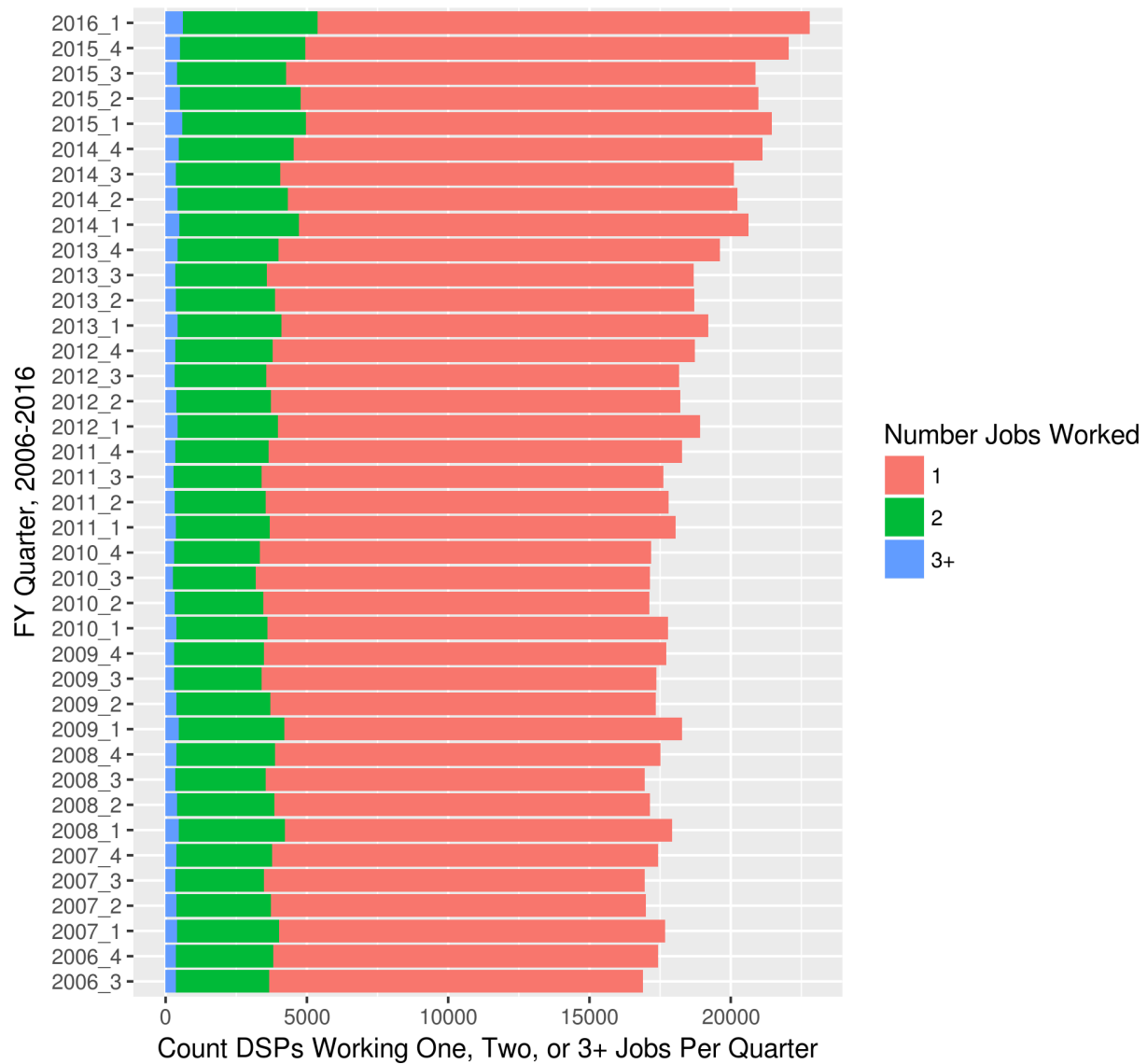
## **Results**

We conducted our analysis on the trimmed data set using R in Jupyter Notebooks within the secure Administrative Data Resource Facility environment.

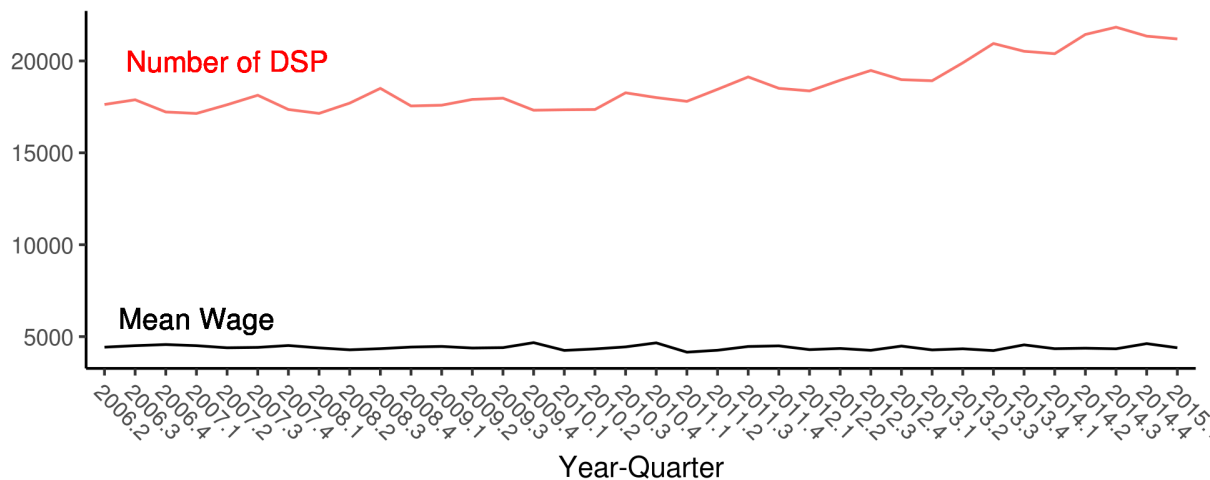
We found that mean annual earnings ranged from \$20,500 to \$21,500, including all possible jobs for each individual. Approximately 80% of employees held only one job at a time, and most employees earned most of their income from one job at a given time. Most employees in our data set earned under \$30,000 per year and under \$10,000 per quarter.

Nearly all DSPs 2006-2016 worked either one or two jobs.

Observations = 895432, Unique Individuals = 91637



We then ran two linear regressions to determine the relationship between DSP supply and earnings and the relationship between length of employment as a DSP and earnings.



The first regression showed a strong and statistically significant correlation between employee tenure (defined as number of total quarters employed in one job) and earnings.

$$\text{Tenure} \sim \text{Mean\_earning\_DSP} + \text{Mean\_earning\_after}$$

This regression revealed that higher earnings associated with the state-determined wage increase in 2007 improved retention. The mean\_earning\_DSP coefficient is 0.001340663 with a standard error of 0.001340663, and a p-value of less than 0.00000. Extrapolating from the linear regression, we see that an increase in wage of \$1/hour was associated with a significant likelihood that employees would remain in their jobs for an additional 9 weeks. This result is meaningful because this would increase the tenure of over 16% of employees by a multiple of 1.75.

Our second regression was designed to determine the correlation between earnings and the number of subsetting employees.

$$\text{DSP Number} \sim \text{Wage}(\text{Qt} > 2007 \text{ Q4})$$

We found that earnings were negatively correlated with the number of individuals in our data set with a coefficient of -332.5. The number of individuals increased nearly every quarter, even as earnings fell. We concluded that this was due to the fact that demand for DSPs in Illinois increased throughout our period of analysis. This correlation between earnings and number of employees was not statistically significant ( $\Pr(>|t|) = .49499$ ).

## Counterargument

Increasing wages will not fully eliminate the DSP shortage, due to the extra spending it will entail. While DSPs may remain in the workforce longer if they earn a higher wage, DHS will be able to fund fewer positions. This means that not only will DHS be unable to recruit more DSPs

to meet rising demand, but also they will have to decrease the current number of DSPs. According to a 2014 Congressional Budget Office report, an increase in federal minimum wage could eliminate between 100,000 and 500,000 jobs. Furthermore, due to the nature of services that DSPs offer, neither DHS nor community agencies can increase the cost of services to subsidize an increase in wage.

## **Conclusion**

Our research provides statistically significant support for increasing wages in order to retain current DSPs. Even with as little of an increase as \$1 DSPs stayed on the job for an extra 45 days. However, more data is needed to definitively determine a correlation between increasing wages and better recruitment outcomes. The necessary data does not exist in our data set, both because there is no wage variable in the IDES data, and because without a randomized control trial or a future wage increase of more than one dollar, there is no way to test what impact a large wage increase would have on recruitment. In addition, the analysis lacks a rigorous method for determining the appropriate amount to increase the wage, due to the fact that the single state-determined wage increase within the time frame of the data set was only 21 cents, and therefore we have inadequate information to construct a wage calculator with confidence.

## **Recommendations**

On the basis of current field literature and our data analysis, we recommend that DHS implement the following:

- Develop and publish a comprehensive, multi-intervention recruitment and retention plan.
- Adopt the DSP Workforce Development Toolkit created by the Training Center on Community Living at the University of Minnesota.
- Offer recruitment bonus incentives to current DSPs for each hired individual they recommend.
- Provide health benefits to full- and part-time employees.
- Develop partnerships with employment agencies, high schools, youth programs, community colleges, and returning citizen programs.
- Conduct survey of DSPs and managers in each Illinois CILA to determine accurate wage range, number of hours worked, and number of DSPs.

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Congressional Budget Office. (2014). *The Effects of a Minimum-Wage Increase on Employment and Family Income*. Washington D.C.

United States Department of Health and Human Services. (2018). *America's Direct Support Workforce Crisis: Effects on People with Intellectual Disabilities, Families, Communities and the U.S. Economy*. Washington D.C.: President's Committee for People with Intellectual Disabilities.

## **Appendix A: Analysis and Results Analysis**

### **Analysis**

The underlying goal of the analysis was to accomplish the following objectives:

1. Describe the state of the current DSP labor market in Illinois;
2. Determine the relationship between the supply of DSPs and their earnings;
3. Determine the relationship between DSPs' length of employment and their earnings; and
4. Provide an evidence-based recommendation related to wages and other incentives to improve DSP retention and recruitment.

To conduct our analysis, we used quarterly wage data from the Illinois Department of Employment Security (IDES). IDES data consists of individual earnings observations that employers report to the state of Illinois on behalf of their employees. An “observation” is a person-job combination; therefore, an individual who worked two jobs in a given quarter would have two observations in the data set for that quarter. Our data included anyone who worked for a CILA provider in Illinois at any time between the first quarter of CY 2005 and the third quarter of CY 2015, and it included any jobs that employees of CILA providers worked before, during, or after their employment with CILA providers. We determined which observations came from CILA providers by matching the employer identification number (EIN) to a list of EINs for CILA providers in Illinois.

We cleaned our data in two ways. First, we adjusted for inflation by converting all earnings to 2018 dollars, using multipliers based on the CPI index (see Table 1, below).

Table 1: CPI Index

2005	1.29
2006	1.25
2007	1.22
2008	1.17
2009	1.18

2010	1.16
2011	1.12
2012	1.1
2013	1.08
2014	1.07
2015	1.07

We also converted DHS's wage schedule to 2018 dollars using the same multipliers (see Table 2, below).

Table 2: DHS base wage for DSPs adjusted for inflation

	Nominal wage	Wage in 2018 dollars
July 2005–October 2007	\$10.50	\$13.54
October 2007–August 2017	\$10.71	\$13.07
August 2017–July 2018	\$11.46	\$11.80
July 2018–present	\$11.96	\$11.96

Second, because the IDES data did not include a variable for employee title, we did not know with certainty which observations came from individuals who in fact worked as DSPs. We attempted to isolate DSPs using the following methods:

1. First, we removed all quarterly observations of less than \$500. We assumed that these observations came from individuals who left a job at the beginning of the quarter or started a job at the end of the quarter, and did not help to provide an informative picture of earnings trends.



2. Second, we removed all observations for individuals who at any point earned more than \$9,342.33 per quarter at a CILA provider. We assumed that individuals earning more than this amount at CILA providers were likely higher-paid professionals such as nurses and administrators, not DSPs. We determined this figure by constructing hypothetical quarterly earnings amounts for workers earning the DSP base wage and working 20-, 32-, 40-, 50-, or 60-hour work weeks (see Table 3, below). We decided that capping CILA provider quarterly earnings at the amount that DSPs could earn working 50-hour work weeks represented a conservative estimate that minimized the number of true DSPs we inadvertently removed from the data set.

Table 3: Isolating DSPs based on a 50-hour work week

When we finished cleaning our data, we were left with 101,421 individuals and 2,661,741 observations. In our analysis, we assumed that any low-wage employees at CILA providers whom we inadvertently included in our trimmed data set would display similar trends as employees who were in fact DSPs. For this reason, our trimmed data set should yield analysis that reflects the DSP workforce.

## **Results Analysis**

We ran two linear regressions to determine the relationship between DSP supply and earnings and the relationship between length of employment as a DSP and earnings. A regression measures the correlation between two variables; we used regression analysis because we wanted to know whether increased earnings were correlated with certain characteristics of the individuals in our data set. In general the regression results supported the results of our descriptive statistics and data visualizations. Employees within the specified range of earnings tended to depend on one job at a time. Fifty percent of DSPs who left their jobs with CILA providers went on to earn higher wages.

## **Appendix B: Literature Review**

### **Literature Review: A national look at the DSP shortage**

#### **INTRODUCTION**

Many Illinoisans live with intellectual disabilities and need assistance with daily activities in order to maintain a positive quality of life. Critical to providing this professional assistance are Direct Support Persons (DSP). Despite the high demand for DSPs, national trends show high DSP turnover and low recruitment success. A 2017 report from the President's Committee for People with Intellectual Disabilities noted a 45% national turnover rate and a 9% vacancy rate for DSPs ("America's Direct Support Workforce Crisis: Effects on People with Intellectual Disabilities, Families, Communities and the U.S. Economy", 2017).

The Illinois Department of Human Services (DHS) is seeking evidence- and practice-based solutions to address their DSP shortage with a focus on improving worker recruitment and retention. This paper summarizes current field literature, highlighting key contributors to the DSP shortage and recommended solutions. The literature review accompanies research findings and a policy memo with recommendations for the DHS to improve the recruitment and retention of DSPs in a financially constrained environment.

#### **REVIEW OF LITERATURE**

##### **Contributors to Low Recruitment and Retention**

National analyses of the DSP shortage conducted by a federal agency, a community organization, and leading researchers offer insights regarding the DSP crisis. According to the 2017 Report to the President, the American Network of Community Operations and Resources (ANCOR), a national advocacy campaign for people living with disabilities, and leading researchers Hewitt and Larson, the nationwide DSP crisis is significantly influenced by a lack of public recognition; growing service demands; insufficient employment packages, training, and career opportunities; and changing US demographics and labor force characteristics.

Between 1991 and 2014 the need for intellectual disability services increased nearly 400%, but in 2011 the nation experienced its first reduction in total spending for services by .08%. Although a decrease in funding occurred, the need for services has continuously increased, causing the DSP workforce to become more burdened with fewer resources. While the popularized preference for community-based services has decreased the per-person cost of services, this has not led to an investment in the DSP workforce but instead to a re-investment in more services. It seems that this re-investment in services is to some degree benefiting the

intellectual disability community as their life expectancy has increased to 66 years. While it can be agreed that this is a good outcome for people living with disabilities, an increase in life expectancy creates additional need for assistance. This is challenging because older adults are aging out of the workforce and there are not enough young adults available to meet the growing demand.

The Report, ANCOR, and Hewitt and Larson all argue that federal requirements mandate more DSPs for community-based care but do not equip agencies with the necessary funds to meet new regulations. However, ANCOR further argues that the lack of data on DSP wages is responsible for policymakers passing ill-informed policies for an already suffering workforce. ANCOR therefore claims that insufficient access to technology for recruitment, employee safety, and streamlined documentation processes constitute additional influential factors. ANCOR highlights that the DSP workforce has not been able to fully access and implement technological developments. With access to technological advancements, administrative and physical burdens on DSPs may be reduced, creating improved opportunities for people with intellectual disabilities and alleviating the DSP workforce strain.

The Report to the President differs on factor emphasis by highlighting low wages and inadequate benefits as leading factors. While Hewitt and Larson argue “socialization and training practices, length of time that a service setting has been operating, the characteristics of the people served, supervisor tenure, and the extent to which DSPs perceive they are treated fairly” as reasons for high turnover.

## **RECOMMENDATIONS**

### National Association

All three sources support the National Alliance for Direct Support Professionals (NADSP), an awarded professional association for DSPs, in order to enhance DSP status and recognition, provide continuing education, create a national professional network, and advocate for public policy. ANCOR highlights that reduction in turnover of 30% or lower is considered best practice, and participants of the NADSP were able to reduce their turnover by 33%.

### Training

The Report to the President, ANCOR, and Hewitt and Larson stress the importance of offering competency-based training for DSPs, which is offered through NADSP and DirectCourse, a national online training program currently used by 34 states, and the Centers for Medicare and Medicaid Services (CMS). Medicaid administrators may access this training for DSPs since DSPs are funded through Medicaid.

## Technology

Both the Report to the President and ANCOR recommend technology services for DSPs and people with intellectual disabilities, because they lessen the physical and administrative burden on DSPs and allow for greater client independence. As ANCOR highlights, this saves agencies money and allows them to use the funding for additional recruitment.

## Targeted marketing

The Report and ANCOR both suggest targeting people with disabilities and high school students as possible applicants. ANCOR also suggests focusing on unemployed men, older workers, and immigrants who are able to obtain work visas. In essence they are encouraging agencies to think radically about who can provide the necessary assistance.

## Multi-pronged toolkits

Many of the previously mentioned recommendations appear in toolkits published by The Arc, the University of Illinois at Chicago (UIC), and CMS. The Arc and UIC's toolkits expand on seven core techniques for recruitment and retention of DSPs: 1) realistic job preview; 2) PSAs; 3) structured interview questions; 4) DSP targeted marketing; 5) turnover calculator, retention, wage and benefit electronic survey, 6) front-line supervisor competencies and DSP competency brochure; and 7) DirectCourse learning management system. During a 2.5-year timespan Kansas reduced its turnover by 49%–58%, on average, through a partnership with the University of Minnesota. Kansas incorporated four of the seven components and combined them with other interventions such as training on recruitment and retention strategies and establishing a NADSP chapter, which already exists in Illinois.

In collaboration with the University of Minnesota, UIC provides two targeted toolkits, titled *Find, Choose, and Keep Great DSPs*. However, one toolkit targets people with disabilities and the other targets families and service agencies. Each provides worksheets, checklists, strategies, guiding questions and prompts, and additional resources to aid in choosing and managing quality DSPs.

The CMS toolkit does not include the seventh technique because it offers its own training, which is mentioned above. It is designed with a heavy research approach, citing key field research for states to further investigate when deciding appropriate techniques to improve their DSP crisis, as well as research gaps to consider.

## Unique approaches

The Report highlights the use of independent providers, which has proven effective for community agencies in Arizona, California, Oregon, Minnesota and Washington because it allows DSPs to have more autonomy to control their own career paths and lessens agencies' overhead costs. Along the same path as the Report to the President, the Hewitt and Larson work suggests creating registries or matching services that allow families to select their own DSPs, or allowing for the hiring of family members.

ANCOR encourages community agencies to advocate for DSPs to be their own category recognized by the Bureau of Labor Statistics so more accurate data may be available for agencies and policymakers, so that policies may be created that support increased funding and allow for appropriate state rates setting. Parallel to increasing funding, both the ANCOR and Hewitt and Larson sources recommend that agencies provide health insurance to full- and part-time DSPs.

Hewitt and Larson argue that states have to provide a comprehensive strategy to improve recruitment and retention. They support this claim by providing preliminary evidence of four states that implemented multiple interventions such as providing health care, creating accurate job previews, executing socialization programs, offering enhanced training, launching recognition and recruitment programs and establishing worker registries, and reduced their turnover rates by as much 17.6% (North Carolina). They also argue that supporting front-line supervisors is critical in supporting DSPs and improving retention.

## **CONCLUSION**

The literature review documents the challenges and possible solutions of recruiting and retaining DSPs on a national level. Changes in public policy and preferred types of care are key drivers of the shortage but there are several organizational factors that influence the persistency of this issue. Leading overarching contributors are a lack of competitive employment packages, training, promotions, and recognition; lack of thorough understanding of the role; lack of access to technology; and a rapidly changing workforce demographic. DHS can improve recruitment with targeted marketing strategies and awareness campaigns. DHS can improve retention with realistic job previews, participation in national labor associations, and higher compensation for supervisors. Overall, given current budget constraints, Illinois should draw on the successes of other states to assemble a multi-pronged toolkit that creates an environment that supports employee growth.

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