Special Topics Report:

Selected Health Care Support and Direct Care Occupations in Massachusetts

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Executive Summary

Efforts to reduce health care costs while maintaining high quality patient outcomes and satisfaction are at the heart of the nation's shift toward providing health care and social services to people in their homes rather than in nursing homes or hospitals. At the frontline of this effort are a large and growing number of low skill, low wage workers tasked with meeting the needs of an aging and increasingly infirm population. This paper summarizes publicly available data and information gathered through interviews and focus groups with employers, workers, labor leaders and state officials in order to understand the labor market context of three already large and fast growing health care support and direct care occupations: home health aides, personal care aides, and community health workers (CHWs)/social and human service assistants. Some of our key findings include:

- These occupations require very similar proficiencies in terms of abilities, knowledge, skills, and behavioral traits. They require minimal formal training or education. This means that these occupations are very substitutable for one another and that small differences in wages, hours, and work setting can pull workers from one occupation to another. This is a challenge for employers dependent on external systems of reimbursement.
- Employment in these three occupations accounted for 1 percent of total Massachusetts payroll employment in 2004, but 11 years later accounted for 1 out of every 7 new jobs created in the Commonwealth.
- Real hourly earnings for home health aides, personal care aides and community health worker/social and human service assistants have remained flat between 2004 and 2015, while overall mean real hourly wages for workers in the Commonwealth have increased 8 percent.
- The median pay for home health aides and personal care aides places these workers in the bottom quarter of the state's overall hourly wage distribution. The narrow wage distribution for these workers partially reflects the dependence on externally set third-party reimbursement rates.
- The U.S. Bureau of Labor Statistics employment projections to 2024 anticipate the home health aide occupation will be the 5th fastest growing occupation and the personal care aide occupation will be the 25th fastest growing occupation in the nation's labor market.

- National occupational projections combined with demographic and population projections for Massachusetts and other factors lead us to believe that demand for home health care services will continue to increase and be among the most important sources of new job creation in Massachusetts over the next decade.
- Those who supply labor in these key health care support and direct care occupations are overwhelmingly female, primarily in the 25 to 54 year age range, more likely to be African-American or Hispanic than all workers in the Massachusetts labor market and substantially more likely to be foreign-born, as well.
- The educational attainment of home health aides and personal care aides is well below the state average--about one-fifth were never awarded a high school diploma. These workers are slightly more likely to have children and less likely to be married.
- About 4 in 10 of these home health workers we study live in low-income households where the household income is less than 200 percent of the poverty threshold. Using a relatively conservative measure of public assistance receipt by the U.S. Census Bureau American Community Survey, an estimated 40 percent of health aides and 50 percent of personal care aides received some kind public assistance benefit transfer program in 2012-2014.
- The health care support and direct care occupations that we examine show fewer average weekly and annual hours than all workers in Massachusetts. This, combined with low wages leads to significantly lower average annual earnings for these workers.
- Home health agency employers we interviewed stated that many of their workers made very careful decisions regarding the hours of work they could supply in order to not lose public assistance benefits that they otherwise could not afford to lose, even with additional income from working more hours. These employers cited housing subsidies, MassHealth/Medicaid, child care subsidies, SNAP (food stamps) and fuel assistance – in that order – as the most critical supports their workers relied on to care for themselves and their families. Indeed, we found that workers in these health care support/direct care occupations who received public assistance benefits were more likely to work fewer hours per year than other health care support/direct care workers.
- There is evidence to suggest that labor supply shortages in the home health aide and personal care aide occupations in the state will continue in the future. An increasingly

aging population, coupled with the incidence of disability that rises with age, means that demand for the services these workers provide will continue to increase. Additionally, the fact that these occupations share many proficiencies with other soft skill dependent occupations in non-health industries, along with the limited opportunity for wage increases in these home care fields which are dependent on state/federal reimbursements, means that it will continue to be a challenge for employers to recruit and retain the workers they need to provide the services increasingly in demand.

Introduction

The health care and social services sector has emerged as perhaps the Commonwealth's single most important source of employment stability during times of economic recession and of job growth during periods of recovery.[1] The health care and social services sector itself has undergone a dramatic transformation over the past decade with a much closer integration between social service providers and the medical system. Sharp increases in the need for health care services, efforts to contain costs and rapid technological advancement have altered some of the basic features of the state's health care delivery system. The Massachusetts health care delivery system has shifted substantial resources away from service delivery in hospitals and nursing homes toward providing services in ambulatory care settings including physician offices and outpatient clinics and especially toward efforts to serve patients in their homes.

The rapid expansions in the provision of health care services at home is of special importance to those seeking health care, those providing health care and those financing health care services. Indeed, the most rapidly growing components of the state's health care delivery system are those designed to keep patients out of hospitals and nursing homes and instead provide support services to patients/consumers in their home. This shift in the provision of health care services has given rise to very rapid growth in certain health care support and direct care occupations.[2] The purpose of this paper is to explore some of the labor market related aspects of this change in the Commonwealth's health care and related social service delivery system.

We explore the rise in employment in home-based health and social services by focusing on three occupational areas—home health aides, personal care aides/attendants, and community health workers/social and human service assistants.[3] These three occupational areas are a critical component of a strategic response by the financiers—both private and public—of the health care

[1] Commonwealth Corporation and Center for Labor Markets and Policy, Drexel University *Health Care Employment, Structure and Trends in Massachusetts,* Office of the Auditor, Commonwealth of Massachusetts, July 2014

[2] Direct care occupations are often defined to include certified nursing assistants (CNAs), as well as the other occupations we are looking at in this paper. However, CNAs most often work in institutional settings such as hospitals or nursing homes, and our focus is on those occupations whose setting is primarily in the home. We discuss later in this paper the substitutability of many of these occupations. In fact, in many of our interviews we heard of workers who work across these occupations, including CNAs, following the wage, hours and setting that best fit their needs.

[3] The occupational title "personal care attendant" is used specifically by the MassHealth Personal Care Attendant program. Publicly available datasets title this occupation "personal care aide." We will try to use the term "personal care attendant" when referring specifically to the MassHealth PCA Program, though in practice, these titles are interchangeable in terms of the work done in these occupations and are simply reflective of a variety of alternative titles that are employed in various settings regarding this kind of work.

delivery system in the Commonwealth to providing care and services to rapidly growing population groups characterized by very high rates of illness and disability. This aging population requires a rapid increase in access to productive resources that are devoted to their short term medical needs and longer-term chronic care requirements. Employment in these occupations in Massachusetts has grown at an extraordinary pace over the last decade and our review of the evidence concludes that health care support and direct care occupations will account for a considerable share of all new jobs created in the state over the next decade.

This paper explores these issues based on a series of interviews we conducted with state officials responsible for these programs, owners and managers of home health care businesses as well as hospital system executives that operate home health care businesses. We spoke with non-profit community providers of in-home services and organizations that coordinate the provision of a variety of services to the elderly and persons with disabilities. We met with leaders of organized labor who represent parts of this workforce. We also had the opportunity to meet with some persons who had substantial experience working in these occupations. We collected documents and data on vacancy rates in some of these occupations, as well.

These meetings and discussions provided us with important insights into the nature of work in these occupations and institutional, legal and organizational forces that influence the demand for and supply of workers in these occupations. We also rely quite heavily on quantitative data from three statistical survey programs: the U.S. Department of Labor, Employment and Training Administration's Occupational Information Network (O*NET) program that provides systematic measures of a variety of ability, knowledge, skill, and behavioral proficiency requirements for occupations based on a large scale sample survey of incumbent workers and managers in a variety of industries; the U.S. Bureau of Labor Statistics Occupational Employment Statistics (OES) Survey that provides systematic measures of employment levels and hourly wages in occupations based on a large sample survey of employers across all industries; and finally we utilize data derived from the U.S. Bureau of the Census American Community Survey (ACS), a survey of households that measures demographic, social, economic and housing characteristics of the population.

We begin by providing a discussion of the nature of work as measured by the proficiencies required for successful employment in these fields. This is followed by a review of employment and wage developments in the home health aide, personal care aide and social and

human service assistant occupations between 2004 and 2015—more than a decade of rapid job growth in these occupations, but little gain in wages. The next section of the paper examines the employment outlook for these health care support/direct care occupations including employment projections and a discussion of some of the most important forces at work in Massachusetts that will influence the future of new job creation in these occupations.

The second half of the paper focuses on the workers who are employed in the health care support and direct care fields using data from a very large scale household survey, the ACS. We examine the personal characteristics of these workers including gender, age, race/ethnicity and immigration status as well as educational attainment, marital status and presence of children. The analysis reveals that this workforce is heavily female, middle aged, disproportionately minority and foreign born with relatively low levels of educational attainment. Workers in these occupations are somewhat less likely to be married, but slightly more likely to live with children under age 18, reflecting some work-life trade-offs that our interviews with employers and workers revealed.

This discussion is followed by a review of the relative income status of persons employed in these occupations and a measure of their participation in selected public assistance programs. A disproportionate share of persons employed in the health care support and direct care occupations are categorized as either poor or near poor. The result is a very high participation rate in public assistance transfer programs. Participation in benefit transfer programs is mostly connected with in-kind benefits (related to food and medical care) with very limited participation in cash transfer programs.

A key issue confronting workers and employers is that of determining hours of work each week as well as the number of weeks that are worked over the course of the year. These determinations are particularly constrained for these occupations by home and life responsibilities for the worker and by continuous change in client/patient needs for the provision of services, as well as by the availability of workers to meet the needs of the employer in a "just in time" world of service demand. We explore the impact of participation in public assistance programs on the number of hours of work supplied each year by those employed in the health care support/direct care occupations. The "benefit cliff" is an important factor that influences the decisions about work that are made by both workers and employers in the home health care and

social services industries. This discussion is followed by a review of additional barriers that limit labor supply to this rapidly expanding set of occupations.

Health Care Support and Direct Care Occupations

Home health aides, personal care aides and community health workers/social and human service assistants are the backbone of the newly emerging system of home and community-based care. These workers will shoulder an increasing share of responsibilities for the provision of health care in the state. The services they provide are largely delivered at a client's home with the specific intent of helping both acutely and chronically ill individuals as well as persons with disabilities remain in their residences.

Home health aides and personal care aides are part of a broader health care support occupational grouping, but the common characteristic of these jobs is that they require little or no formal medical or health education.[4] This is the distinguishing feature of these occupations. Most other entry-level health care support occupations do require formal classroom training and some on-the-job training. Occupational and physical therapy assistants and aides, pharmacy technicians, certified nursing assistants and medical assistants all must engage in a course of study that leads to a certification in the field. Often these certifications are offered by area colleges and universities with courses taught by their faculty.

Workers in these kinds of certified health care support occupations most often work under the direct supervision and usually in the physical proximity of a professional who has a certification and license as well as some post-secondary education (most often a college degree). Registered nurses and licensed practical or vocational nurses, physical and occupational therapists, pharmacists, and physicians frequently supervise the activities of health support staff. In contrast, home health aides, personal care aides, and community health workers are, in large part, delivering services at a client or patient's home, by themselves, with no health professional in attendance (though in many cases a nurse care manager has been involved in determining the services required by individuals). Their duties largely focus on supporting patients in activities of

[4] Home health aides are required to complete a minimum of 75 hours of training, including a practicum of 16 hours covering specific topics per federal Centers for Medicare and Medicaid Services regulation and certification of home care agencies. For more detail:
http://c.ymcdn.com/sites/hcacouncil.org/resource/resmgr/2013mhcaidecareerladder.pdf

daily living that might include feeding, toileting, bathing, walking and transferring (e.g. moving from a sitting to standing position), putting on clothes, and grooming.

In some cases, especially in the case of personal care aides who are not employed by a health care agency, duties may go well beyond these activities of daily living and could involve managing finances, shopping, preparing meals, managing and administering medications, and maintaining medical equipment. The MassHealth funded personal care attendant (PCA) program has the unique feature of a direct employer-employee relationship between the client and the attendant. While MassHealth is responsible for setting the rate of compensation and making the wage payment, the patient/consumer/employer is responsible for all other aspects of the relationship, including determining specific job duties and tasks, as well as recruitment, training, hiring, and dismissal.

The specific proficiencies required for employment as a home health aide or personal care aide are not medically oriented. We analyzed data from the U.S. Department of Labor's Occupational Information Network (O*NET) system that measure the relative importance and level of difficulty for the cognitive abilities, kinds of knowledge, workplace skills and behavioral characteristics of home health aides, personal care aides and nursing assistants.[5] We also include the proficiency requirements for the nursing assistant occupation in order to illustrate that the occupational requirements of home health aide and personal care aide occupations are largely the same as those of nursing aides. The findings in Table 1 present a summary of our analysis of the proficiency requirements of O*NET.

These occupations are all categorized by the O*NET system as part of Job Zone 2, a designation that indicates that in each of these occupations workers' job duties require that employees have a high school diploma and a few months of mostly on the job training to become productive workers. A closer look at the most important proficiency elements shows that these traits are quite similar across all three occupations. The cognitive ability requirement scores for these occupations indicate that oral expression and oral comprehension are the most important abilities needed to be effective in all three occupations. Problem sensitivity, or the ability to determine that something is wrong or likely to go wrong, is also a key ability requirement for workers in these occupations.

[5] For a more detailed discussion of the measures we use in table 1 see: Neeta Fogg, Paul Harrington and Anja Petrovich, *Building Blocks of Labor Market Success,* Commonwealth Corporation, Boston, April, 2013.

Table 1:
Top Ability, Knowledge, Skill and Behavioral Requirements for Employment in Home Health Aide, Personal Care Aide and Nursing Assistant Occupations

Home Health Aides (SOC 31-1011.00)		Personal Care Aides (SOC 39-9021.00)		Nursing Assistants (SOC 31-1014.00)	
Abilities (Scale 1-35)					
Elements	IMLV	Elements	IMLV	Elements	IMLV
Oral Expression	15.1	Oral Comprehension	13.6	Oral Comprehension	14.0
Oral Comprehension	14.1	Oral Expression	12.2	Oral Expression	13.1
Problem Sensitivity	13.1	Problem Sensitivity	10.5	Problem Sensitivity	12.7
Near Vision	12.3	Written Comprehension	9.4	Near Vision	11.8
Inductive Reasoning	10.5	Deductive Reasoning	9.4	Speech Recognition	11.8
Knowledge (Scale 1-35)					
Elements	IMLV	Elements	IMLV	Elements	IMLV
Customer and Personal Service	14.5	Customer and Personal Service	16.3	Customer and Personal Service	19.0
English Language	10.0	Psychology	10.1	Psychology	15.7
Psychology	7.5	English Language	9.0	English Language	12.8
Education and Training	5.8	Education and Training	6.2	Medicine and Dentistry	10.7
Administration and Management	5.8	Administration and Management	5.8	Education and Training	9.3
Skills (Scale 1-35)					
Elements	IMLV	Elements	IMLV	Elements	IMLV
Active Listening	13.6	Service Orientation	14.6	Service Orientation	14.0
Service Orientation	12.2	Social Perceptiveness	11.3	Social Perceptiveness	11.3
Social Perceptiveness	11.4	Active Listening	10.1	Active Listening	10.9
Critical Thinking	11.0	Monitoring	9.7	Speaking	10.6
Reading Comprehension	10.6	Speaking	9.4	Monitoring	9.8
Behavioral Characteristics (Scale 1-5)					
Elements	IM Only	Elements	IM Only	Elements	IM Only
Integrity	4.6	Dependability	4.5	Dependability	4.8
Self Control	4.6	Integrity	4.5	Concern for Others	4.7
Dependability	4.6	Concern for Others	4.5	Cooperation	4.6
Concern for Others	4.5	Cooperation	4.4	Stress Tolerance	4.6
Attention to Detail	4.5	Self Control	4.4	Self Control	4.6

Source: U.S. Department of Labor O*NET Database, calculations by Center for Labor Markets and Policy, Drexel University

The knowledge requirements also appear somewhat similar, with customer service and psychology among the most important areas of knowledge required for employment in these occupations. The nursing assistant occupation does include knowledge of medicine as an important knowledge proficiency, however, medical knowledge is not a top requirement for home health aides or personal care aides.

Skill requirements are also quite similar across all three of these health care support occupations. Active listening, the skill of giving full attention to what other people are saying and asking appropriate questions, is a key skill requirement. Service orientation, another important skill across these occupations, is simply the act of looking for ways of helping people and anticipating their needs. Social perceptiveness, or understanding of a client's/patient's reactions to a situation or development, is also important for this work.

The character traits of integrity or honesty in dealings as well as dependability in fulfilling obligations are important traits for these three health care support occupations. Concern for others, that is the sensitivity to others' needs and being responsive to them, is also an important behavioral requirement for these health care support positions.

We discuss the community health worker occupation separately since it is a new and emerging field, but one that, based on extensive discussions with workers, employers and insurance providers, is closely associated with the social and human services assistant occupation.[6] The community health workers and social and human service assistants are engaged in set of social service related activities designed to provide support to elderly, infirm and disabled residents increasingly as part of a larger strategy to help individuals remain at home and avoid hospitalization or admittance into nursing homes or other kinds of residential support facilities. These individuals are heavily engaged in assisting clients in accessing the range of social, community and public assistance services that are available to them. They also work to help individuals overcome sometimes seemingly minimal barriers to health care (such as transportation to or even remembering a medical appointment), access social and community supports that are available and more effectively utilize those resources. Community health

[6] The Commonwealth of Massachusetts Department of Public Health is working on issuing regulations for certification and training of community health workers. For more information: www.mass.gov/dph/communityhealthworkers and http://www.machw.org/index.php?option=com_content&view=article&id=4&Itemid=104

workers primarily deliver their services in patient's homes; cultural competency is seen as perhaps the single most important proficiency for employment in this occupation. Indeed the American Public Health Association defines community health workers in part as:

> (A) Frontline worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables workers to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services to improve the quality and cultural competence of service delivery.[7]

Social and human service assistants also engage in assisting their clients in identifying and obtaining health, social and community services and also assist social workers in their efforts to resolve a range of problems that confront individuals. Social and human service assistants work in a broader range of settings including community-based residential facilities and increasingly in patient homes. In our interviews with employers we found that community health worker and social and human service assistant were often used interchangeably. A comparison of the proficiencies required to work in these occupations makes clear why these two job titles are closely connected to one another.

The abilities requirements for workers in both of these occupations are quite similar with oral comprehension, oral expression and problem sensitivity among the most important cognitive ability requirements for employment.

Customer service knowledge and psychology are important areas of knowledge required for these occupations, but the proficiency score requirement for psychology is much higher for those employed as social and human service assistants compared to community health workers. Social and human service assistants differ in knowledge requirements that emphasize therapy and counseling, English language, sociology and anthropology. In contrast, community health worker knowledge requirements are focused on education and training, administration and management, and clerical functions.

The skill requirements for these occupations are quite similar with social perceptiveness, active listening, as well as speaking skills (conveying information effectively) topping the skill requirements for both community health workers and social and human service assistants.

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[7] *Community Health Workers*, American Public Health Association. https://www.apha.org/apha-communities/member-sections/community-health-workers

The behavioral traits required for both community health workers and social and human service assistants focus on the character traits of integrity, dependability and cooperative attitude in the work setting. Community health worker behavioral requirements also emphasize flexibility and independence, since these workers must depend on their own judgement as they work largely outside the purview of a supervisor.

Table 2:
Top Ability, Knowledge, Skill and Behavioral Requirements for Employment in Community Health Worker and Social and Human Service Assistant Occupations

Community Health Workers (SOC 21-1094)		Social and Human Service Assistants (SOC 21-1093)	
Abilities (Scale 1-35)			
Elements	IMLV	Elements	IMLV
Oral Comprehension	16.5	Oral Expression	16.5
Oral Expression	16.0	Oral Comprehension	15.5
Written Comprehension	14.6	Problem Sensitivity	15.1
Speech Clarity	14.6	Written Expression	14.6
Problem Sensitivity	14.1	Speech Clarity	14.6
Knowledge (Scale 1-35)			
Elements	IMLV	Elements	IMLV
Customer Personal Service	24.2	Psychology	23.2
Education and Training	17.4	Customer Personal Service	21.3
Clerical	16.1	Therapy and Counseling	19.5
Psychology	15.5	English Language	15.7
Administration Management	14.9	Sociology and Anthropology	14.3
Skills (Scale 1-35)			
Elements	IMLV	Elements	IMLV
Social Perceptiveness	17.5	Social Perceptiveness	17.5
Active Listening	16.5	Active Listening	16.0
Speaking	16.5	Speaking	16.0
Reading Comprehension	15.5	Service Orientation	16.0
Writing	15.5	Writing	14.1
Behavioral Characteristics (Scale 1-5)			
Elements	IM	Elements	IMLV
Dependability	4.7	Integrity	4.9
Integrity	4.7	Dependability	4.7
Cooperation	4.6	Self-Control	4.7
Independence	4.5	Concern for Others	4.6
Adaptability/Flexibility	4.5	Cooperation	4.6

Source: U.S. Department of Labor O*NET Database, calculations by Center for Labor Markets and Policy, Drexel University

It is quite likely that most any reader of this paper could be hired as a home health aide, personal care aide or community health worker/social and human service assistant.
Little formal specific occupational knowledge is required to be an effective worker in these positions. Instead, these jobs require workers with a set of proficiencies that are sometimes referred to as "soft skills." Our analysis of employment developments in these occupations in the past decade as well as the future outlook for employment in these occupations suggests that the demand for labor in the health and social services sector will increasingly seek workers with these soft skills, but employment in these fields will not require high levels of educational attainment or extensive classroom preparation prior to employment.

Indeed our assessment of labor market conditions suggests an inadequate labor supply for these occupations at the prevailing wage rate. Moreover, the available evidence suggests that if some of the current trends continue these occupations will emerge as among the most important sources of new job creation in the Commonwealth over the next decade.

A Word about the Data

The measures of employment and wage trends in health care occupations used in our study of health care support and direct care labor markets are derived from the OES program, a federal-state co-operative statistical survey conducted by the U.S. Bureau of Labor Statistics (BLS) and the Massachusetts Department of Labor and Workforce Development (DLWD). The OES program measures employment levels in occupations with associated wage rates through a probability sample survey of business establishments across most non-agricultural industries in Massachusetts. OES uses the Standard Occupational Classification (SOC) system developed by the Office of Management & Budget as the basic framework to measure employment by occupation. Because of its singular focus on occupations the OES survey taxonomy includes more than 800 occupational titles and definitions.

The OES sample survey responses are used to prepare a set of ratio estimates of the distribution of employment across occupations among responding firms. Business establishment responses are aggregated into industry totals and appropriate weights are applied to produce industry wide estimates of employment by occupation. These findings are then benchmarked to Quarterly Census of Employment and Wages (QCEW) employment data at the appropriate industry and geographic level to produce an estimate of total employment levels for each

occupation in a given industry. These occupational estimates are then summed across all industries to provide estimates of total wage and salary employment in a given occupation. BLS publishes estimates of total occupational employment for states in May of each year.

In the following section we use the findings from the OES survey of Massachusetts business establishments to measure trends in employment levels and hourly wages between 2004 and 2015 in selected health care support and direct care occupations across all industries.[8] In subsequent sections of this report we rely on occupational data derived from the American Community Survey (ACS), a monthly survey of households conducted by the U.S. Bureau of the Census that produces data on a variety of demographic, social, economic and housing traits of individuals, families and households. The ACS survey also uses the SOC system as the framework to collect occupational information. However, the level of occupational aggregation employed in the ACS is quite different since the ACS's data collection objectives are far broader than those of the OES program. Occupational employment estimates can differ considerably between the OES program and the ACS program since employer classifications of jobs by occupation used in the OES program may differ from those of household respondents in the ACS program and the occupational level of aggregation that is available from each program differs considerably.

We use the OES survey to provide us with the basic measure of trends in labor demand in health care support and direct care occupations, but rely on ACS based measures to examine the characteristics of persons who are supplying labor to these occupations. It is important to note that this is not an effort to conduct a supply-demand matching process. Rather our more modest ambition in this paper is to examine trends in the demand for workers in these occupations and develop some insight into the characteristics and behavior of persons who supply labor in these same occupations.

Finally, the reader should know that the measure of personal care aides available from the OES survey appears to have a very large downward bias. Personal care attendants funded under the Commonwealth's MassHealth Office of Long Term Services and Supports were not included

[8] Elsewhere in our study of the health care workforce we have focused on employment only in the industries we define as health care: ambulatory health care services (NAICS 621), hospitals (NAICS 622), nursing and residential care facilities (NAICS 623) and individual and family services (NAICS 6241). Here, we look at the home health and direct care worker occupations across any industry. While most would be captured within our health care industry definition, we want a complete occupational picture and so include any occupational employment for these fields that may be identified in non-health industry sectors.

within the scope of regular wage and salary workers in any BLS establishment survey, including the OES program, until the beginning of 2013.[9] Prior to that time, MassHealth funded PCAs were classified as domestic household workers (similar to live-in maids or nannies) and not included in the scope of any BLS payroll survey.

Changes in the interpretation of the Fair Labor Standards Act (FLSA) by the U.S. Secretary of Labor have resulted in a series of legal battles that ended in a U.S. Supreme Court decision that had important effects for publicly funded PCA and home health workers regarding wage, hour, and overtime protections under the FLSA. One side effect of the re-classification of these workers from FLSA exempt to FLSA covered status is that PCAs were shifted to within the scope of all BLS establishment surveys. At the state level this meant that MassHealth funded PCAs would be included in the monthly sample survey jobs measures published by DLWD as well as its quarterly census of jobs counts. However, while other BLS business establishment survey programs have made modifications that have brought PCA jobs within the scope of the program, the OES program has not yet been able to include MassHealth funded PCAs in its survey scope.[10]

The omission of the MassHealth PCA jobs from the scope of the OES survey means that the OES data on the personal care aide employment we rely on in this report substantially understates the number of PCA jobs in the state. The size of this bias may be quite large. We estimate that the MassHealth PCA program financed about 34,000 PCA jobs each month during 2014.[11] It is likely that a substantial portion, if not all, of this employment is excluded from the OES estimates we rely on in this paper. In an effort to adjust the OES time trend data we requested information about PCA employment and wage trends from several state agencies, but

[9] For a description of the MassHealth Personal Care Attendant Program see: The Personal Care Attendant Quality Home Care Workforce Council, *2014 Performance Review Report to the Governor and the General Court,* undated. http://www.mass.gov/pca/docs/annual-review-report-2014.pdf

[10] Occupational Employment Statistics Survey Program, *Survey Methods and Reliability Statement of the May 2015 Occupational Employment Statistics Survey,* U.S. Bureau of Labor Statistics, http://www.bls.gov/oes/current/methods_statement.pdf

[11] This estimate is based on our analysis of the month to month change of employment in the individual and family services industry from the Quarterly Census of Employment and Wages as the MassHealth PCAs were brought into the scope of the QCEW between 2012 and 2013. See: Commonwealth Corporation and the Center for Labor Markets and Policy, Drexel University, *Health Care Employment, Structure and Trends in Massachusetts: Chapter 224 Baseline Study,* Office of the State Auditor, Commonwealth of Massachusetts, July 2014. Also see: Op Cit. "2014 Performance Review…" that estimates about 34,000 PCA jobs were financed by MassHealth during 2014.

at the time of the preparation of this study have not been able to secure any usable data from these organizations.[12]

Occupational Employment Developments in Massachusetts 2004–2015

The Massachusetts labor market has experienced considerable turmoil over the last decade with a slow recovery following the dot.com bust at the end of 2000, followed by the Great Recession with a weak national recovery. In this section we examine trends in employment by occupation for four specific time periods:

- 2004 to 2008, jobs recovery from the dot.com recession
- 2008 to 2010, Great Recession jobs decline
- 2010 to 2012, early stages of jobs recovery
- 2012 to 2015, continuing recovery, post Chapter 224 enactment period

The findings in Table 3 examine the first time period of recovery from the dot.com recession, 2004 to 2008. Payroll employment levels in Massachusetts grew quite slowly over this period of time increasing by just 109,000 jobs or 3 percent. A closer look at these data reveal very sharp differences in the pattern of job growth and loss across major occupational groups in the Commonwealth. Blue collar jobs including construction and production occupations as well as material moving jobs continued to post large job losses as the state's overall employment levels grew. Together, these blue collar occupations lost an additional 30,000 jobs between 2004 and 2008. A second and surprising area of employment decline was across a wide spectrum of management positions; collectively, employment in these occupations fell by more than 31,600 jobs or 15 percent.

Job losses in these major occupations were more than offset by gains in other occupational fields, with strong gains in computer, engineering, and life & physical science occupations. These STEM occupations grew quite rapidly (between 14 and 34 percent) increasing employment levels by 32,400 over the period. Health and social service related occupations along with personal care and service occupations all grew at a pace well above the state average between 2004 and 2008. The health care practitioner and technician occupation,[13]

[12] Our final report on the impact of Chapter 224 will include data on health care *industry* employment trends that do include MassHealth financed PCA jobs, however, similar occupational data are not available as of this writing.
[13] For more information about occupations included in this major group, see http://www.bls.gov/oes/current/oes290000.htm

which generally requires a post-secondary credential and a third party certification/license to practice, added 23,600 jobs, growing by 13 percent during the first four year period of recovery years. The range of occupations that are included in the health care support grouping[14] collectively experienced a net employment increase of about 8,300 jobs, an increase of about 9 percent. The personal care and service grouping which includes the personal care aide occupation added 10,200 jobs, a rise of 14 percent between 2004 and 2008.

Table 3:
Trends in Payroll Employment in Massachusetts
by Major Occupational Group, 2004 to 2008

	2004	2008	Absolute Change	Relative Change
Management occupations	217,610	185,940	-31,670	-15%
Business and financial operations occupations	140,490	171,590	31,100	22%
Computer and mathematical occupations	106,690	121,680	14,990	14%
Architecture and engineering occupations	73,160	77,030	3,870	5%
Life, physical, and social science occupations	40,340	53,900	13,560	34%
Community and social services occupations	55,690	65,800	10,110	18%
Legal occupations	24,260	25,550	1,290	5%
Education, training, and library occupations	201,400	215,880	14,480	7%
Arts, design, entertainment, sports & media occ	43,490	51,830	8,340	19%
Health care practitioners and technical occ	184,890	208,500	23,610	13%
Health care support occupations	91,670	100,040	8,370	9%
Protective service occupations	71,650	72,220	570	1%
Food preparation and serving related occ	253,990	267,360	13,370	5%
Building, grounds & maintenance occupations	106,170	104,090	-2,080	-2%
Personal care and service occupations	72,440	82,680	10,240	14%
Sales and related occupations	318,260	334,150	15,890	5%
Office and administrative support occupations	546,150	547,620	1,470	0%
Construction and extraction occupations	116,050	108,160	-7,890	-7%
Installation, maintenance, and repair occupations	102,380	103,220	840	1%
Production occupations	184,300	173,110	-11,190	-6%
Transportation and material moving occupations	172,620	161,800	-10,820	-6%
Total	3,125,930	3,234,850	108,920	3%

Source: OES, May 2004, May 2008

[14] For more information about occupations included in this major group, see http://www.bls.gov/oes/current/oes310000.htm

The pace of new job creation in these three health care support occupations was among the most rapid of any occupation in Massachusetts. Social and human service assistants' payroll employment increased from 12,800 in 2004 to 17,300 jobs by 2008, an increase of more than one third in just four years. Data on community health worker employment is not available for any years before 2012. As we have discussed elsewhere, the social and human service assistant occupation is very similar in character and duties to the community health worker occupation. Indeed, a number of employers of these workers argue that the two job titles are a distinction without a difference.

Payroll employment in the home health aide occupation also grew very rapidly during the dot.com recovery. The home health aide occupation added more than 4,700 jobs, a 39 percent increase between 2004 and 2008. Personal care aide employment in the state skyrocketed between 2004 and 2008 adding more than 8,800 jobs and doubling in size in just four years.

Table 4:
Trends in Payroll Employment in Social/Community Health Support,
Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2004 to 2008

	2004	2008	Absolute Change	Relative Change
Social and Human Service Assistants	12,810	17,350	4,540	35%
Community Health Workers	NA	NA	NA	NA
Home Health Aides	12,300	17,060	4,760	39%
Personal Care Aides	8,550	17,380	8,830	103%

Source: OES, May 2004, May 2008

These three occupations combined added more than 21,700 payroll jobs between 2004 and 2008. The job gains in these three health care support/direct care occupations accounted for one out of five net new jobs created in Massachusetts during the dot.com recovery, a very important source of job growth in the state, but as we shall see in a subsequent section of this paper, a relatively low paying group of occupations.

The Great Recession that began at the end of 2007 was characterized by relative job losses not seen in the United States since the early 1980s. Every state in the nation experienced substantial job losses, with a number of states experiencing net job losses in excess of 10 percent. Job losses in Massachusetts, although substantial, were below average. Between May of 2008

and 2010, we find that total payroll employment declined by 115,700, a relative decline of 4 percent. Losses occurred in a majority of the major occupational groupings over this period of time. Especially substantial declines in payroll employment occurred in administrative support and clerical occupations (-45,000) as well as blue collar occupations where employment for construction, installation/repair, production and material moving jobs fell by more than 48,000 in just two years.

Within the health and social service related occupations a more mixed pattern of growth and loss occurred. Employment in community and social service occupations increased by 6,100 a robust 9 percent increase during this period of overall job market decline. Similarly, employment levels in the health care practitioner occupation increased from 208,500 in 2008 to 222,830 by 2010, a gain of 14,300 jobs or a 7 percent increase. However employment levels in the health care support occupational group fell substantially during the Great Recession. Employment in health care support fields declined from 100,000 in 2008 to 94,400 by 2010, a 6 percent decline in two years.

Table 5:
Trends in Payroll Employment in Massachusetts
by Major Occupational Group, 2008 to 2010

	2008	2010	Absolute Change	Relative Change
Management occupations	185,940	183,900	-2040	-1%
Business and financial operations occupations	171,590	172,320	730	0%
Computer and mathematical occupations	121,680	125,010	3,330	3%
Architecture and engineering occupations	77,030	70,840	-6,190	-8%
Life, physical, and social science occupations	53,900	43,590	-10,310	-19%
Community and social services occupations	65,800	71,890	6,090	9%
Legal occupations	25,550	24,770	-780	-3%
Education, training, and library occupations	215,880	219,940	4,060	2%
Arts, design, entertainment, sports & media occ	51,830	55,990	4,160	8%
Health care practitioners and technical occ	208,500	222,830	14,330	7%
Health care support occupations	100,040	94,430	-5,610	-6%
Protective service occupations	72,220	75,000	2,780	4%
Food preparation and serving related occupations	267,360	261,630	-5730	-2%
Building and grounds cleaning maintenance occ	104,090	97,170	-6920	-7%
Personal care and service occupations	82,680	81,170	-1,510	-2%
Sales and related occupations	334,150	316,770	-17,380	-5%
Office and administrative support occupations	547,620	502,190	-45,430	-8%
Construction and extraction occupations	108,160	91,120	-17,040	-16%
Installation, maintenance, and repair occupations	103,220	97,460	-5,760	-6%
Production occupations	173,110	157,480	-15,630	-9%
Transportation and material moving occupations	161,800	152,110	-9,690	-6%
Total	3,234,850	3,119,120	-115,730	-4%

Source: OES, May 2008, May 2010

Payroll employment trends in the three health care support/direct care occupations were generally negative during the 2008 to 2010 period of jobs losses in the state. The findings in Table 6 reveal that employment in the social and human service assistant occupation declined modestly by about 300 positions, a 2 percent loss during the downturn. Home health aide employment remained unchanged between 2008 and 2010, but employment in the personal care

aide occupation declined by more than 1,300 positions, a loss of about 8 percent of the occupation's 2008 payroll employment over the course of the downturn.

Table 6:
Trends in Payroll Employment in Social/Community Health Support,
Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2008 to 2010

	2008	2010	Absolute Change	Relative Change
Social and Human Service Assistants	17,350	17,060	-290	-2%
Community Health Workers	NA	NA	NA	NA
Home Health Aides	17,060	17,080	20	0%
Personal Care Aides	17,380	16,030	-1,350	-8%

Source: OES, May 2008, May 2010

These losses in health care support/direct care occurred at the same time that employment levels in community and social service and health care practitioner occupations posted substantial employment gains. These findings suggest that as health care and social service delivery system finances came under increased financial strain associated with the economic recession, priorities shifted to retaining better educated workers in the health and social service professions who are more likely to provide services in medical and health care facilities at the expense of workers who provide home patient care and support services.

The early stages of the recovery from the economic recession were characterized by a slow pace of new job creation in both Massachusetts and the nation as a whole. Between 2010 and 2012 Massachusetts payroll employment levels expanded by about 83,000 jobs, a 3 percent increase. During these early years of recovery, administrative support and clerical occupations continued to shed jobs with this occupational group posting a further loss of more than 10,000 jobs over the period. The arts, design, recreation sports, and media occupational group posted an 11 percent decline during this recovery. Computer related professional jobs grew very rapidly as did life and physical science occupations. Business professions also recovered robustly from the economic downturn in the first two years of recovery.

The pace of job growth in the social service and health care professions actually slowed during the early stages of the recovery relative to the period of recession. Community and social service occupations increased employment by just 1 percent, adding just under 500 jobs during 2010-2012, but in the prior two recession years, employment in these fields increased by 6,100

positions, a 9 percent rise. Employment in the health care practitioner and technician occupational group also experienced a slowdown in its pace of new job creation. Between 2010 and 2012 employment in these health professional and technical fields increased by about 5,000 positions, a 2 percent increase over the two year recovery period, representing a marked slowdown from prior years. Indeed, even during the Great Recession years of 2008-2010 payroll employment in these fields increased at a more rapid 7 percent adding 14,300 during the two year downturn.

Table 7:
Trends in Payroll Employment in Massachusetts
by Major Occupational Group, 2010 to 2012

	2010	2012	Absolute Change	Relative Change
Management occupations	183,900	211,860	27,960	15%
Business and financial operations occupations	172,320	186,920	14,600	8%
Computer and mathematical occupations	125,010	138,710	13,700	11%
Architecture and engineering occupations	70,840	71,320	480	1%
Life, physical, and social science occupations	43,590	47,680	4,090	9%
Community and social services occupations	71,890	72,920	1,030	1%
Legal occupations	24,770	25,590	820	3%
Education, training, and library occupations	219,940	218,940	-1,000	0%
Arts, design, entertainment, sports & media occ	55,990	49,870	-6,120	-11%
Health care practitioners and technical occ	222,830	227,840	5,010	2%
Health care support occupations	94,430	100,950	6,520	7%
Protective service occupations	75,000	73,460	-1,540	-2%
Food preparation and serving related occupations	261,630	275,120	13,490	5%
Building & grounds cleaning 4 maintenance occ	97,170	99,060	1,890	2%
Personal care and service occupations	81,170	90,050	8,880	11%
Sales and related occupations	316,770	317,450	680	0%
Office and administrative support occupations	502,190	491,990	-10,200	-2%
Construction and extraction occupations	91,120	94,390	3,270	4%
Installation, maintenance, and repair occupations	97,460	96,500	-960	-1%
Production occupations	157,480	157,570	90	0%
Transportation and material moving occupations	152,110	152,380	270	0%
Total	3,119,120	3,202,100	82,980	3%

Source: OES, May 2010, May 2012

Health care support occupations posted a strong rebound after two years of recession when more than 5,600 jobs were lost in these occupations. Payroll employment in these health care support occupations grew by more than 6,500 jobs, a relative increase of 7 percent over the 2010 to 2012 period. Personal care and services occupations experienced even more rapid growth during the early stages of the state's job market rebound. This occupational group added more than 8,800 positions, an increase of 11 percent between 2010 and 2012.

The findings in Table 8 examine payroll employment trends in the three key health care support/direct care occupations in Massachusetts during the early stages of the recovery. The findings reveal that the social and human service assistant occupation added over 1,000 jobs between 2010 and 2012, more than recovering the 300 jobs lost during the recession. Home health aide employment grew quite rapidly during the initial phase of the states' job recovery, increasing by 11 percent in just two years.

Table 8:
Trends in Payroll Employment in Social/Community Health Support,
Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2010 to 2012

	2010	2012	Absolute Change	Relative Change
Social and Human Service Assistants	17,060	18,090	1,030	6%
Community Health Workers	NA	NA	NA	NA
Home Health Aides	17,080	18,900	1,820	11%
Personal Care Aides	16,030	20,180	4,150	26%

Source: OES, May 2010, May 2012

The personal care aide occupation experienced a dramatic employment rise during the first two years of the jobs rebound. During 2010, payroll employment in the personal care aide occupation was 16,000 according to the OES estimation. By 2012, employment in this occupation had increased to 20,200, an increase of more than 4,100 jobs, a 26 percent rise in just two years. This gain represents a sharp reversal in developments in this occupation as personal care payroll employment had dropped by a substantial 8 percent in the previous two year period.

The three health care support/direct care occupations together increased employment by 7,000 jobs, a rise of 14 percent in just two years, largely fueled by growth in the home health aide and personal care aide occupations. These health care support/direct care occupations accounted for 1 out of 12 new jobs created in the state between 2010 and 2012.

The 2012 to 2015 period is notable for two reasons: first, during the last three years labor market conditions in the state have improved considerably, with the annual pace of new job creation reaching levels not seen since the 1990s, and second, Chapter 224 health care cost containment legislation was enacted by the General Court and signed into law by Governor Deval Patrick in 2012.

Massachusetts employers added nearly 195,000 jobs to their payroll between 2012 and 2016 increasing statewide employment levels by 6 percent in the three year period. Gains were especially large in managerial occupations (+43,100, +20 percent) construction occupations (16,300, +17 percent) and material moving occupations (17,900, +12 percent). With the exception of computer related professions as well as art, design, entertainment, sports and media occupations, all of the major occupational groups in the state's job market posted payroll employment gains over the most recent last three years.

Table 9:
Trends in Payroll Employment in Massachusetts
by Major Occupational Group, 2012 to 2015

	2012	2015	Absolute Change	Relative Change
Management occupations	211,860	255,000	43,140	20%
Business and financial operations occupations	186,920	195,790	8,870	5%
Computer and mathematical occupations	138,710	134,790	-3,920	-3%
Architecture and engineering occupations	71,320	75,750	4,430	6%
Life, physical, and social science occupations	47,680	49,240	1,560	3%
Community and social services occupations	72,920	80,590	7,670	11%
Legal occupations	25,590	27,920	2,330	9%
Education, training, and library occupations	218940	230430	11,490	5%
Arts, design, entertainment, sports & media occ	49,870	48,330	-1,540	-3%
Health care practitioners & technical occupations	227,840	233,920	6,080	3%
Health care support occupations	100,950	106,280	5,330	5%
Protective service occupations	73,460	79,640	6,180	8%
Food preparation and serving related occupations	275,120	291,130	16,010	6%
Building & grounds cleaning & maintenance occ	99,060	106,900	7,840	8%
Personal care and service occupations	90,050	109,340	19,290	21%
Sales and related occupations	317,450	325,760	8,310	3%
Office and administrative support occupations	491,990	500,460	8,470	2%
Farming, fishing, and forestry occupations	1,530	1,870	340	22%
Construction and extraction occupations	94,390	110,710	16,320	17%
Installation, maintenance, and repair occupations	96,500	101,760	5,260	5%
Production occupations	157,570	160,970	3,400	2%
Transportation and material moving occupations	152,380	170,250	17,870	12%
Total	3,202,100	3,396,830	194,730	6%

Source: OES, May 2012, May 2015

The community and social service occupations together saw employment rise from 72,900 during 2012 to 80,600 by 2015, a substantial 11 percent employment gain over the period. The health care practitioner fields continued their slowdown in employment growth expanding payroll employment levels in these professional and technical health care provider positions by just 3 percent over the three year period. Health care support occupations

employment grew by 5 percent adding 5,300 jobs in the last three years, but personal care and service occupations added 19,200 jobs, a 21 percent rise between 2012 and 2015.

Beginning in 2012 the Bureau of Labor Statistics began to separately measure employment trends in a newly emerging community health worker occupation. The health care imperative of providing patients care at home, along with trying to reduce the incidence of avoidable hospitalizations, among other objectives, has led hospitals, insurance providers, and social service agencies to deploy community health workers to provide a range of support services to patients in essentially the same way as social and human service assistants have done for many years. Indeed, in organizations we have met with the community health worker and social or human service assistant job titles and duties are essentially the same. Moreover, persons employed in the community health worker occupation see their jobs largely as that of providing social and human service support to elderly, disabled (including those with a developmental disability or suffering from mental illness) and chronically ill clients.[15]

The BLS occupational taxonomy broke out the community health worker occupational employment that had previously been reported in the social and human service assistant occupation. The findings in Table 10 reveal that community health worker employment has nearly doubled in size in the last three years, growing from about 1,300 jobs statewide in 2012 to 2,500 by 2015. During the same time period social and human service employment remained unchanged.

Employment in the home health aide occupation has increased very rapidly over the last three years with employment rising from 18,900 to 23,500, a rise of 24 percent between 2012 and 2015. The 8 percent annual average rate of new job creation in the home health aide occupation over the last three years represents acceleration in the rate of new home health aide job creation from the 6.5 percent annual rate of increase during the early stages of the job recovery in the state.

[15] Paul Harrington and Laura Knoll. *The Community Health Worker: The Changing Nature of Social and Human Service Assistants and their Connections to the Medical System,* Center for Labor Markets and Policy, Drexel University, Forthcoming.

Table 10:
Trends in Payroll Employment in Social/Community Health Support,
Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2012 to 2015

	2012	2015	Absolute Change	Relative Change
Social and Human Service Assistants	18,090	18,090	0	0%
Community Health Workers	1,290	2,530	1,240	96%
Home Health Aides	18,900	23,520	4,620	24%
Personal Care Aides	20,180	31,020	10,840	54%

Source: OES, May 2012, May 2015

Employment in the personal care aide occupation continued its explosive pace of expansion as social service providers and home health agencies responded to rapid increases in demand for their services. The number of personal care aide jobs in Massachusetts increased from 20,200 in 2012 to 31,000 positions by 2015, an increase of 10,800 positions and a relative increase of 54 percent in just three years.

The pace of growth in overall payroll employment levels in Massachusetts has averaged less than 1 percent per year since the beginning of the jobs recovery from the dot.com recession. Large absolute losses in administrative/clerical positions and blue collar occupations have inhibited the overall pace of sometimes very rapid growth in other sectors and occupational areas of the state's economy. Occupations that generally require a post-secondary degree or diploma and are relatively high paying have expanded at a robust pace in the state, while at the same time low-skill, low wage, service occupations have also grown quite rapidly. Overall payroll employment levels rose by just 271,000 jobs, a 9 percent increase in 11 years.

Health care and social assistance occupations have become a very important source of new job creation in the Commonwealth. Employment in community and social service occupations increased by 24,900 between 2004 and 2015, health care practitioner and technician payroll employment increased by more than 49,000 jobs and health care support occupations added an additional 14,600 positions.

The three specific health care support/direct care occupations all expanded their payroll employment levels at rates that were vastly higher than the overall pace of new job creation.

Table 11:
Trends in Payroll Employment in Massachusetts
by Major Occupational Group, 2004 to 2015

	2004	2015	Absolute Change	Relative Change
Management occupations	217,610	255,000	37,390	17%
Business and financial operations occupations	140,490	195,790	55,300	39%
Computer and mathematical occupations	106,690	134,790	28,100	26%
Architecture and engineering occupations	73,160	75,750	2,590	4%
Life, physical, and social science occupations	40,340	49,240	8,900	22%
Community and social services occupations	55,690	80,590	24,900	45%
Legal occupations	24,260	27,920	3,660	15%
Education, training, and library occupations	201,400	230,430	29,030	14%
Arts, design, entertainment, sports, and media occ	43,490	483,30	4,840	11%
Health care practitioners and technical occupations	184,890	233,920	49,030	27%
Health care support occupations	91,670	106,280	14,610	16%
Protective service occupations	71,650	79,640	7,990	11%
Food preparation and serving related occupations	253,990	291,130	37,140	15%
Building & grounds cleaning & maintenance occ	106,170	106,900	730	1%
Personal care and service occupations	72,440	109,340	36,900	51%
Sales and related occupations	318,260	325,760	7,500	2%
Office and administrative support occupations	546,150	500,460	-45,690	-8%
Farming, fishing, and forestry occupations	2,230	1,870	-360	-16%
Construction and extraction occupations	116,050	110,710	-5,340	-5%
Installation, maintenance, and repair occupations	102,380	101,760	-620	-1%
Production occupations	184,300	160,970	-23,330	-13%
Transportation and material moving occupations	172,620	170,250	-2,370	-1%
Total	3,125,930	3,396,830	270,900	9%

Source: OES, May 2004, May 2015

The community health and social and human service assistant occupation added nearly 5,300 jobs growing by 41 percent between 2004 and 2015. Home health aide employment increased by more than 90 percent adding 11,200 since 2004, but personal care employment growth has been quite extraordinary and by far the most rapidly growing occupation in the Commonwealth. Payroll employment in the personal care aide occupation has increased from 8,500 jobs during 2004 to 31,000 positions by 2015, adding 22,500 new jobs growing at an annualized rate of 24

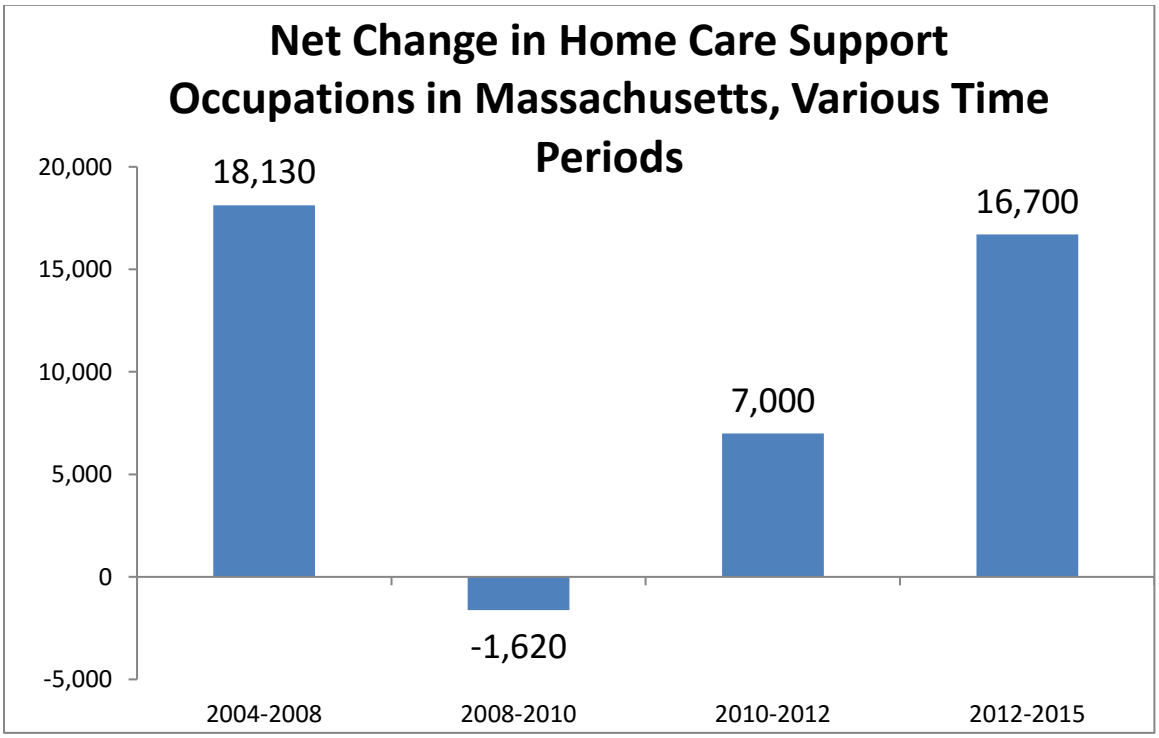
percent per year. Together these three occupations accounted for just 1 percent of total payroll employment during 2004, yet over the next 11 years they accounted for *1 of every 7 jobs created in the Commonwealth*.

Table 12:
Trends in Payroll Employment in Social/Community Health Support,
Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2004 to 2015

	2004	2015	Absolute Change	Relative Change
Community Health and Social & Human Services Assistant, Combined	12,810	18,090	5,280	41%
Home Health Aides	12,300	23,520	11,220	91%
Personal Care Aides	8,550	31,020	22,470	263%
Total, All Industry Employment	3,125,930	3,396,830	270,900	9%

Source: OES, May 2004, May 2015

The large and rapid increase in employment in home care support occupations in Massachusetts was substantially influenced by business cycle conditions. During the recovery from the dot.com downturn between 2004 and 2008 employment growth was very rapid, with payroll employment increasing by 13 percent per year. Yet during the Great Recession between



Source: OES, multiple years

2008 and 2010, payroll employment in these occupations fell by about 3 percent - even as health care professional and technical occupations saw payroll employment levels rise by 7 percent over the same period of overall job losses in the Commonwealth. The "triple aim" of health care reform at both the state and federal levels has compelled health care providers to seek ways to provide better care outcomes for populations and improve the patient experience of care, all while reducing costs. The pace of employment growth in these three home care support occupations has rebounded sharply since implementation of the federal Affordable Care Act and the state's Chapter 224. Massachusetts payroll employment in these fields has grown by a very rapid 9 percent per year, signaling a renewed acceleration in the pace of employment gains in occupations that serve patients in community and home settings.

Trends in Real Hourly Wages

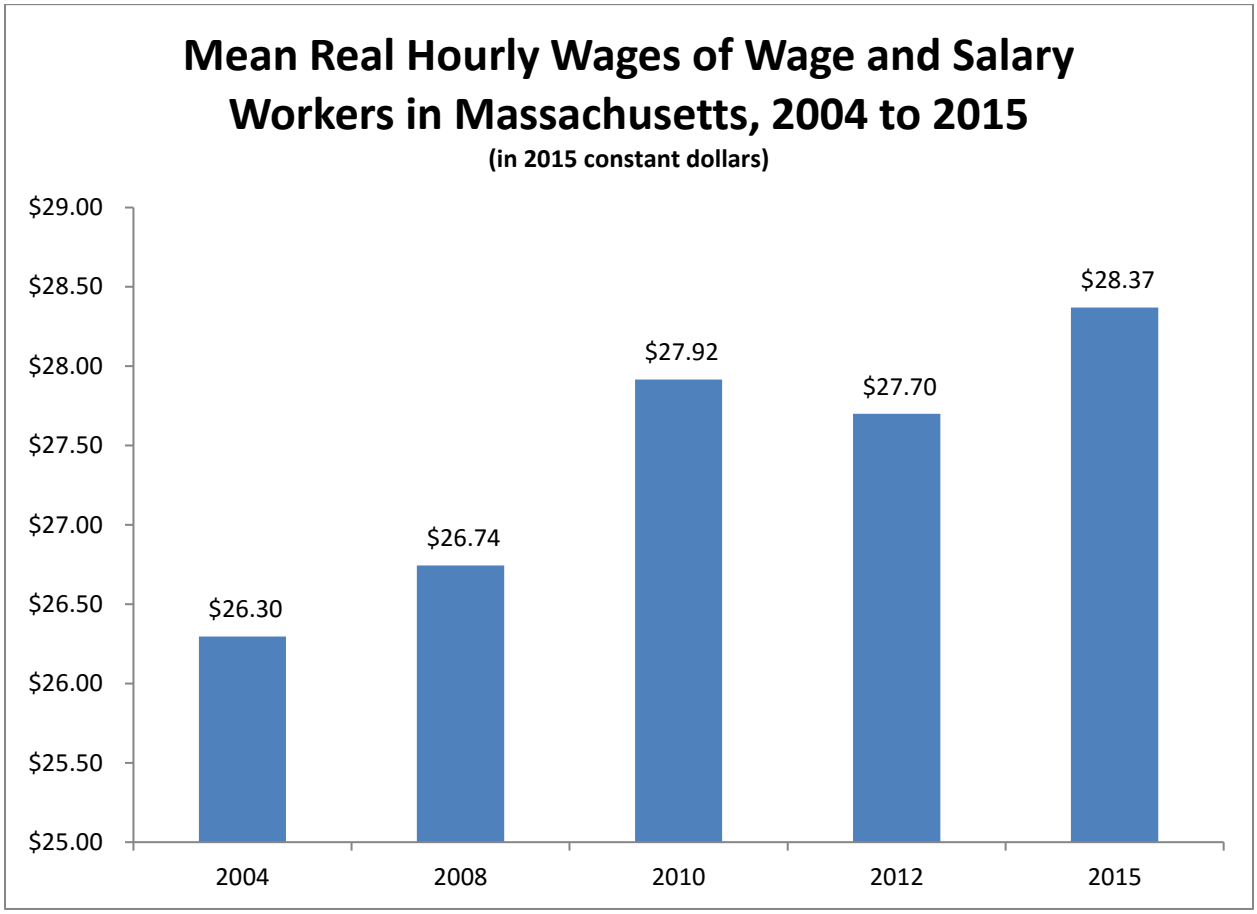
The real (inflation adjusted) earnings of American workers has increased only very slowly for an extended period of time. Part of the reason for the slow pace of real wage growth in the nation was associated with rising real non-wage compensation costs that employers pay as part of the overall compensation package. Measures of non-wage benefit costs are not included in most wage measures available from reliable statistical organizations.

Real *total* compensation costs of an hour of labor have increased considerably over time. This rise is primarily the product of sharp increases in the cost to employers of providing non-wage benefits to employees, including medical insurance premium costs. Indeed, between 1979 and 2003 total wage and salary compensation costs increased by just 0.7 percent per year. In contrast, the inflation adjusted annual average rate of increase of non-wage compensation costs was 2.3 percent, a rate of increase in benefit costs that was more than 3 times the rate of increase in real wage gains.[16]

Real hourly wages of workers in Massachusetts have increased only modestly since the beginning of the state's recovery from the dot.com recession in 2004. At that time the average hourly wage of wage and salary employees in Massachusetts was $26.30 in real (inflation adjusted) 2015 dollars. Hourly wages crept up slowly over the next four years rising by just cents to $26.74 by 2008. Accompanying the payroll employment declines that occurred during the

[16] Joseph Meisenheimer II, "Real Compensation, 1979 to 2003: Analysis from Several Data Sources", *Monthly Labor Review,* May 2005

Great Recession, real wages actually increased by $1.18 in just two years. This rise is the result of lay-offs concentrated in lower paying occupations (especially in clerical and blue collar jobs) with fewer losses in higher paying professional technical and managerial occupations, including higher wage health professions where the reader will recall employment increased during the economic downturn.[17]



Source: OES, multiple years

During the early stages of the recovery real wages fell slightly as employment levels rebounded in some lower wage occupations, most notably in food preparation, personal care

[17] For a useful discussion of the way that the composition of employed persons can influence wage measures over time see: Mary C, Daly, Bart Hobjin and Benjamin Pyle, "What's Up with Wage Growth", *FRBSF Economic Letter,* Federal Reserve Bank of San Francisco, March, 2016

services, and transportation and material moving occupations. In the last three years real wages increased by about $0.70 per hour for all workers.

Overall real hourly wages increased by just 0.7 percent per year between 2004 when hourly pay averaged $26.30 to $28.37 by 2015 for all wage and salary workers in the state. This rate of increase is similar to that observed for the nation as a whole since the late 1970s.[18] The pace of mean hourly wage increases in Massachusetts did vary modestly among the major occupational groups. Workers in some occupations have had no net real wage increase over the past 11 years. Several major occupational groups have experienced net declines in workers real hourly wage rates since 2004. Occupational groups with little or no wage growth generally (but not always) required lower levels of educational attainment and associated skill proficiencies.

The findings in Table 13 below examine trends in the real hourly wages of payroll workers in major occupational groups in Massachusetts over the entire 2004 to 2015 period. These data reveal that even in higher level college labor market occupations real hourly wages have not increased very rapidly over the past decade. Management, business and finance professions, computer and engineering occupations all had real mean hourly wage growth of less than 1 percent. Workers employed in blue collar production and transportation and material occupations had no real wage gains over the period. More skilled blue collar installation and repair workers also saw their real hourly wages remain unchanged over the 11 year period. Average hourly pay in low-level service occupations, including food services and personal care services positions, fell slightly over the period.

[18] Drew DeSilver, "For Most Workers, Real Wages have Barely Budged for Decades", *Factank* Pew Research Center, October 2014

Table 13:
Trends in Real Mean Hourly Wages of Wage and Salary Workers in Massachusetts, by Major Occupational Group, 2004 to 2015
(in 2015 constant dollars)

	2004	2015	Annual Average Rate of Change
Management occupations	$55.48	$60.23	0.8%
Business and financial operations occupations	37.47	39.87	0.6%
Computer and mathematical occupations	44.42	46.14	0.4%
Architecture and engineering occupations	39.64	42.6	0.7%
Life, physical, and social science occupations	37.01	36.5	-0.1%
Community and social services occupations	23.22	21.93	-0.5%
Legal occupations	51.93	57.13	0.9%
Education, training, and library occupations	28.75	30.63	0.6%
Arts, design, entertainment, sports & media occ	28.99	29.16	0.1%
Health care practitioners and technical occupations	36.81	43.53	1.7%
Health care support occupations	16.15	16.24	0.1%
Protective service occupations	23.00	25.2	0.9%
Food preparation and serving related occupations	12.85	12.59	-0.2%
Building and grounds cleaning and maintenance occ	15.33	16.32	0.6%
Personal care and service occupations	15.00	14.65	-0.2%
Sales and related occupations	21.70	22.15	0.2%
Office and administrative support occupations	19.79	20.18	0.2%
Farming, fishing, and forestry occupations	14.68	14.96	0.2%
Construction and extraction occupations	28.17	28.67	0.2%
Installation, maintenance, and repair occupations	25.35	25.48	0.0%
Production occupations	18.97	18.99	0.0%
Transportation and material moving occupations	17.83	17.81	0.0%

Source: OES, May 2004, May 2015

Health care and social service occupations had a very different pattern of real wage change. Health care practitioners and technicians had the largest real hourly wage increases that averaged 1.7 percent per year over the 11 year period. In contrast, health care support workers saw their wages rise by just 0.1 percent per year over that period of time. Those employed in community and social service occupations saw their real wages fall by 0.5 percent between 2004 and 2015.

The earnings in health care support and direct care occupations barely changed between 2004 and 2015. The real hourly pay of social and human service assistants remained unchanged at $17.27. Similarly, home health aide hourly wages remained at about $13.74 in inflation

adjusted terms over this period. Personal care aides' earnings gains were little better, rising by just $0.30 over 11 years. In our interviews, home health agencies, hospitals and other home health care providers indicated that they were considerably constrained in their ability to raise wages for these workers by the amount of reimbursement they were provided for these services. The floors for these reimbursement amounts are primarily set by the Centers for Medicare and Medicaid Services which set the reimbursement rates for the providers who serve publicly insured elderly, disabled and/or poor individuals. The margins that the home care providers work with are very small. Each eligible home care service that a patient requires may have a separate reimbursement rate, so that while in practice one home health aide may be providing the services, the rate that the agency can charge Medicare may be higher or lower depending on the service. This also makes it difficult to set stable wage rates or provide raises as incentives. The state reimbursed rate for personal care attendants under the MassHealth PCA program is a collectively bargained wage rate. In 2016, Governor Charlie Baker signed a contract with 1199SEIU that would lead to a $15 per hour wage for PCAs by 2018.[19]

Table 14:
Trends in Real Mean Hourly Wages of Wage and Salary Workers, Social/Community Health Support, Home Health Aide and Personal Care Aide Occupations, Massachusetts 2004 to 2015
(in 2015 constant dollars)

Occupation	2004	2015	Annual Average Rate of Change
Combined Community Health Worker and Social & Human Services Assistant	$17.27	$17.26	0.0%
Home Health Aides	13.74	13.78	0.0%
Personal Care Aides	12.77	13.05	0.2%

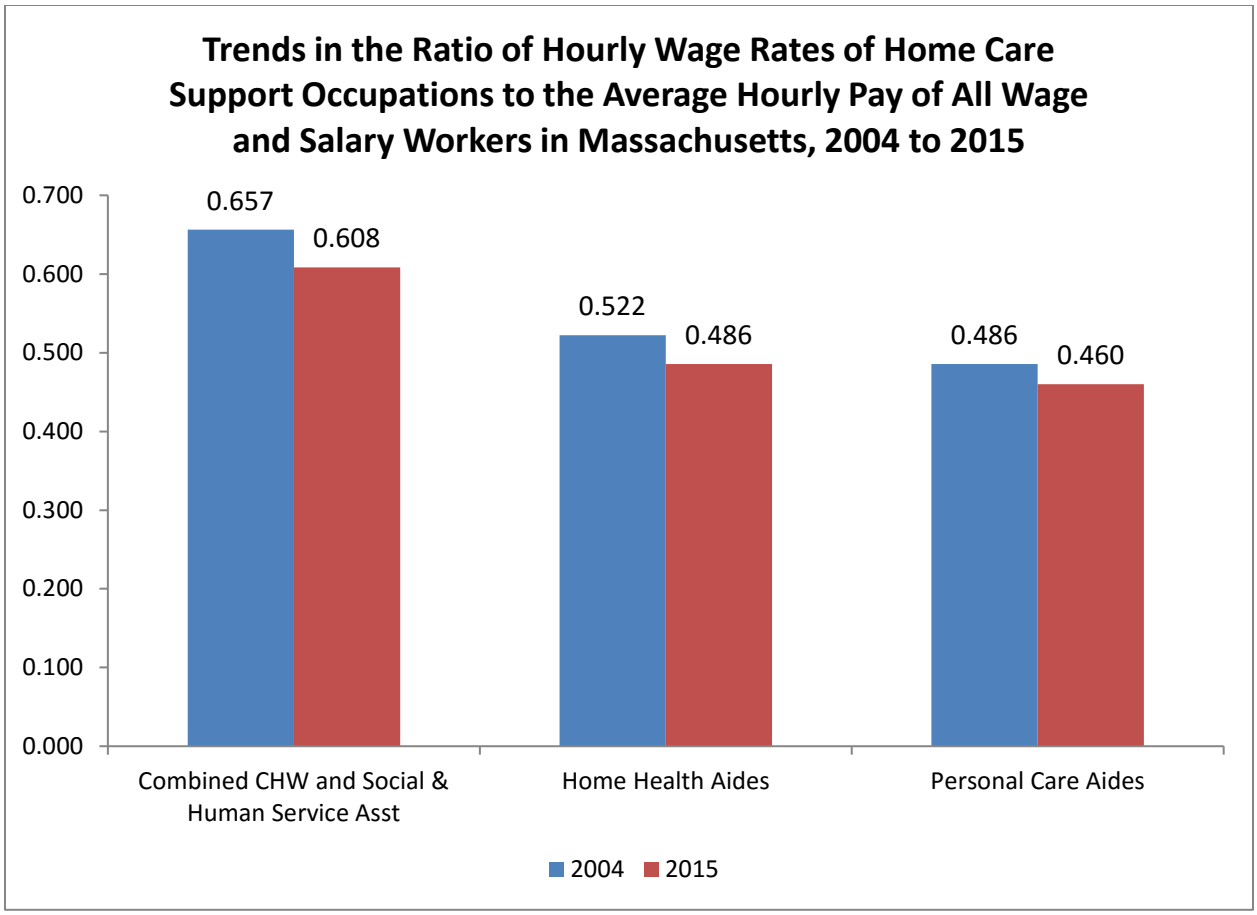
Source: OES, May 2004, May 2015

Overall real hourly wages levels in Massachusetts increased by about 8 percent on average over the entire 8 year period, yet the mean real hourly wages in the home care support occupations mostly remained unchanged. This means that the relative earnings of these caregivers has fallen between 2004 and 2015. The hourly wages of combined community health

[19] http://www.1199seiu.org/pcas_settle_new_contract_securing_pathway_to_15_hour#sthash.ptNtIB4G.7M4qHPHY.dpbs

worker/social and human service assistant workers of $17.27 were equal to about two-thirds of the hourly wages of all wage and salary workers in the state at that time ($26.29). By 2015 the earnings of workers providing social assistance to patients in the community had fallen to just 60 percent of the statewide wage rate. Home health aides in 2004 had mean hourly wages that were equal to 52 percent of the statewide mean, but this ratio fell to about 48 percent as their wages failed to increase. Personal care aides had mean hourly wage rates that were less than half that of the state mean. This ratio fell even further by 2015, when personal care aide hourly wages fell to just 46 percent of the mean wage for the state.

There are two implications of these similar and low wage rates for home health aides and personal care aides that we will discuss in more detail later in this paper. First, the low average wages for these workers, along with other factors that constrain hours worked, leads to a higher than average incidence of public assistance receipt among workers in these occupations. Second, the fact that wages and duties for these occupations are so similar leads to increased substitutability among these occupations. We heard from many home care providers and home health trade associations that workers in home health care often work across similar occupations and will work for different agencies in different capacities in order to maximize hours, schedules and wages to meet their specific needs.



Source: OES, May 2004, May 2015

The findings in Table 15 below examine the distribution of wages across workers in each of the health care support/direct care occupations and for all wage and salary workers in the Commonwealth during 2015. The table is constructed by ranking each worker employed in a given occupation from the lowest paid worker to the highest paid worker and then finding the hourly wage percentile cutoffs.

The table identifies the pay of workers at different points along the wage ranking. For example, the data reveal that workers in the bottom 10 percent of the earnings distribution earn $9.87 or less per hour. At the next level we see that 25 percent of all employed persons in the state had earnings less than $13.67 per hour and that 15 percent of workers statewide had hourly earnings between $9.87 (the 10th percentile boundary) and $13.67 (the 25th percentile boundary).

The findings reveal that the wage distribution in the home health and personal care aide occupations is quite narrow, further evidence that wages for these occupations are primarily dependent on externally-set third-party reimbursement rates. Home health aides, who had hourly

wage rates at the top (90th percentile) of the occupation's wage distribution, earned $17.61 per hour during 2015, a rate of pay that was just 1.58 times greater than the wage paid to home health aides in the bottom of the wage distribution of the occupation. The median wage rate of home health aides of $13.47 would place the median home health care worker in the bottom quarter of the state's overall earnings distribution.

Table 15:
The Distribution of Employment by Earnings Levels in Combined Community Health Worker & Social & Human Service Assistant, Home Health Aide and Personal Care Aide Occupations, Massachusetts, 2015

Percentile	All Wage & Salary Workers	Combined CHW & Social & Human Service Assistants	Home Health Aides	Personal Care Aides
10th	$9.87	$10.12	$11.14	$10.28
25th	13.67	12.54	12.17	11.76
Median	21.91	15.21	13.47	13.01
75th	35.58	20.32	14.77	14.24
90th	54.22	28.14	17.61	15.37
90/10 Ratio	5.49	2.78	1.58	1.50

Source: OES May 2015, calculations by authors

The wage distribution among personal care aides was even narrower with high wage workers at the 90th percentile earning $15.37 per hour about 1.5 times the hourly pay ($10.28) of those at the 10th percentile. Like home health aides the median pay of the personal care aides ($13.01) would place the median worker in the bottom quarter of the state's overall hourly wage distribution.

The wage distribution of the combined CHW and social and human service assistant occupation is much broader than that observed for either home health aides or personal care aides. The CHW and social and human service assistant occupation has a much wider gap, a multiple of 2.78, between the earnings of workers at the 90th percentile of the distribution (hourly pay of $28.14 or higher) compared to the earnings of lower wage workers at the 10th percentile (hourly pay of $10.12 or lower). The earnings of the 10th percentile of CHW/social and human service assistants are comparable to those of their counterparts in the home health aide and personal care occupations at the bottom of their respective earnings distributions. This wider

hourly wage range can be the product of a number of influences including the work setting, class of worker (government, non-profit, for profit), as well as level of responsibilities of the worker.

Employment Outlook

The pace of new job creation in the health care support and direct care occupations has been extraordinary in recent years with all of this growth occurring as the leading edge of the aging baby boom cohort turns 70 years of age. The incidence of diminished physical, mental and emotional ability that limits activities of daily living like walking, dressing, bathing or running errands is closely associated with age, with rates of disability skyrocketing for those over the age of 65.[20] In Massachusetts, more than one in three persons aged 65 and older have such a limitation. The size of this population is growing quite rapidly. Does this mean that the pace of new job creation over the next decade will be similar to that of the last, or even possibly accelerate, as the number of persons with physical, cognitive and emotional limitations increases to levels never seen in the state over the next twenty years? In this section of the report we explore the potential future growth path of employment in these occupations by examining two sets of projections including:

- National employment projections for home health care/direct care support occupations prepared in 2015 by the U.S. Bureau of Labor Statistics,
- Massachusetts population projections by age, prepared by Henry Renski, University of Massachusetts, Amherst, and Susan Strate, UMass Donahue Institute, Population Estimates Program.

The U.S. Bureau of Labor Statistics occupational projections rely in part on the data derived from the occupational staffing patterns of industries produced by the federal-state OES program that we used in the prior section to discuss recent occupational employment trends.[21] It is important to note that the basic constraint on economic activity in a state or region is population and labor force growth. The overall pace of new job creation forecast for both the U.S. and Massachusetts is quite slow. This is a result of the slow projected rate of growth in the

[20] Wan He and Luke J. Larsen, *Older Americans with a Disability: 2008-2012,* U.S. Bureau of the Census, American Community Survey Reports, ACS-29, U.S. Government Printing Office, Washington, DC, 2014

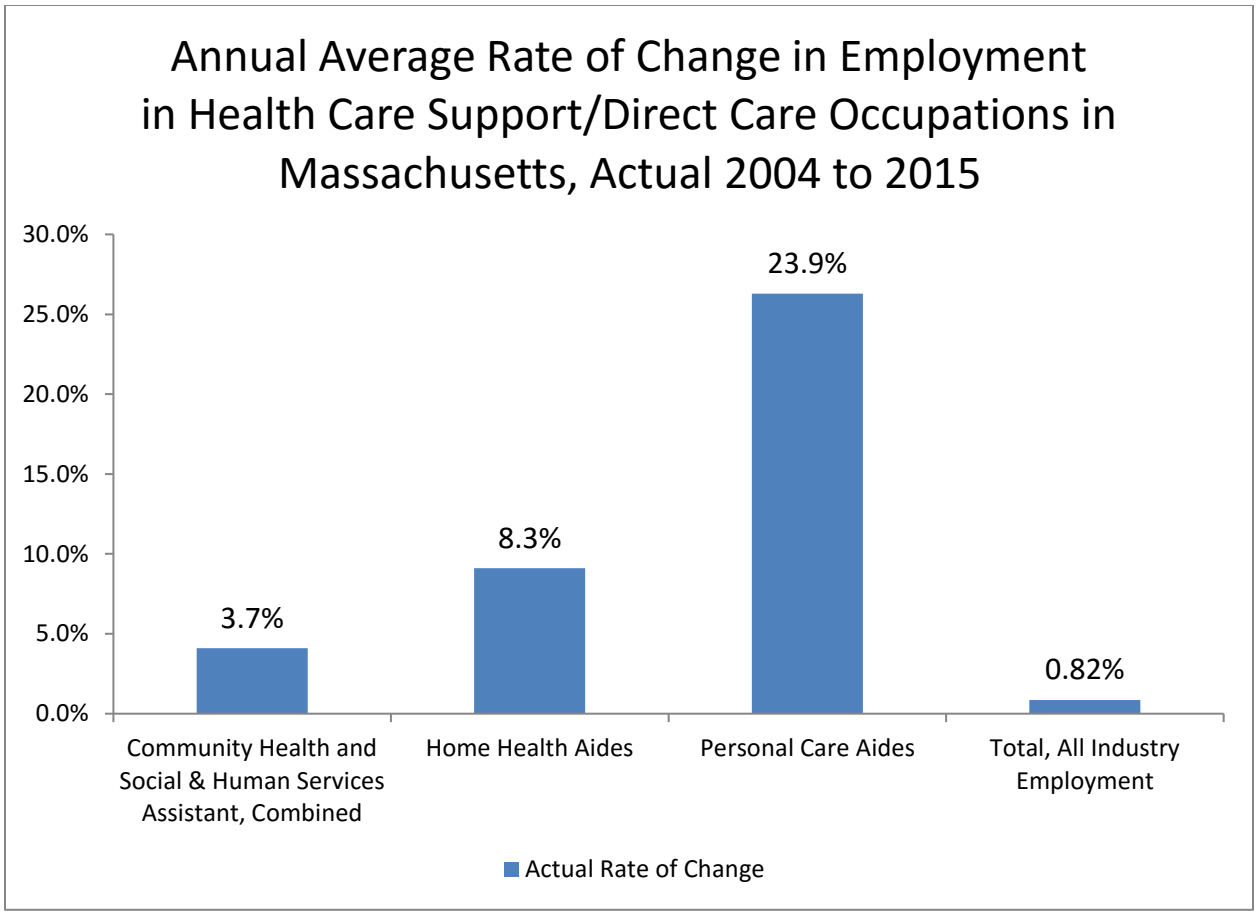
[21] The BLS occupational projections program is part of a much larger employment projections program that includes national labor force projections, national gross domestic product projections, employment by industry projections as well as the occupational projections. For a description of the most recent round of national projections see: Emily Richards, "Overview of Projections to 2024", *Monthly Labor Review,* December, 2015.

size of the nation's (and state's) labor force due to an aging population and declining labor force engagement among young people.

It is also useful to note that BLS assumes that the economy will move toward a full-employment level of labor force utilization. This assumption is made because BLS has no way of forecasting what actual business cycle conditions will be in the target year of 2024, thus the simplifying assumption of full employment. This means that industry and occupational projections should be viewed as a speculation about the likely future path of industry and occupational employment growth assuming continued long term economic growth that is ultimately constrained by the availability of future labor supply.

Employment projections should be thought of as a starting point to understanding the likely future path of job opportunities in the nation and state, not as some sort of precise scientific/mathematical prediction. While occupational projections abound, we find the BLS projections to be by far the most empirically sound; relying on a variety of large scale historical databases, careful thinking about the impact of demography technology, foreign competition, a host of other factors related to productivity, output and employment, and ultimately solid judgements by their analysts in interpreting the measures of labor market trends that are produced by the projections program.[22]

[22] U.S. Bureau of Labor Statistics, Employment Projections, Chapter 13*, Handbook of Methods*, Washington DC undated http://www.bls.gov/opub/hom/about.htm



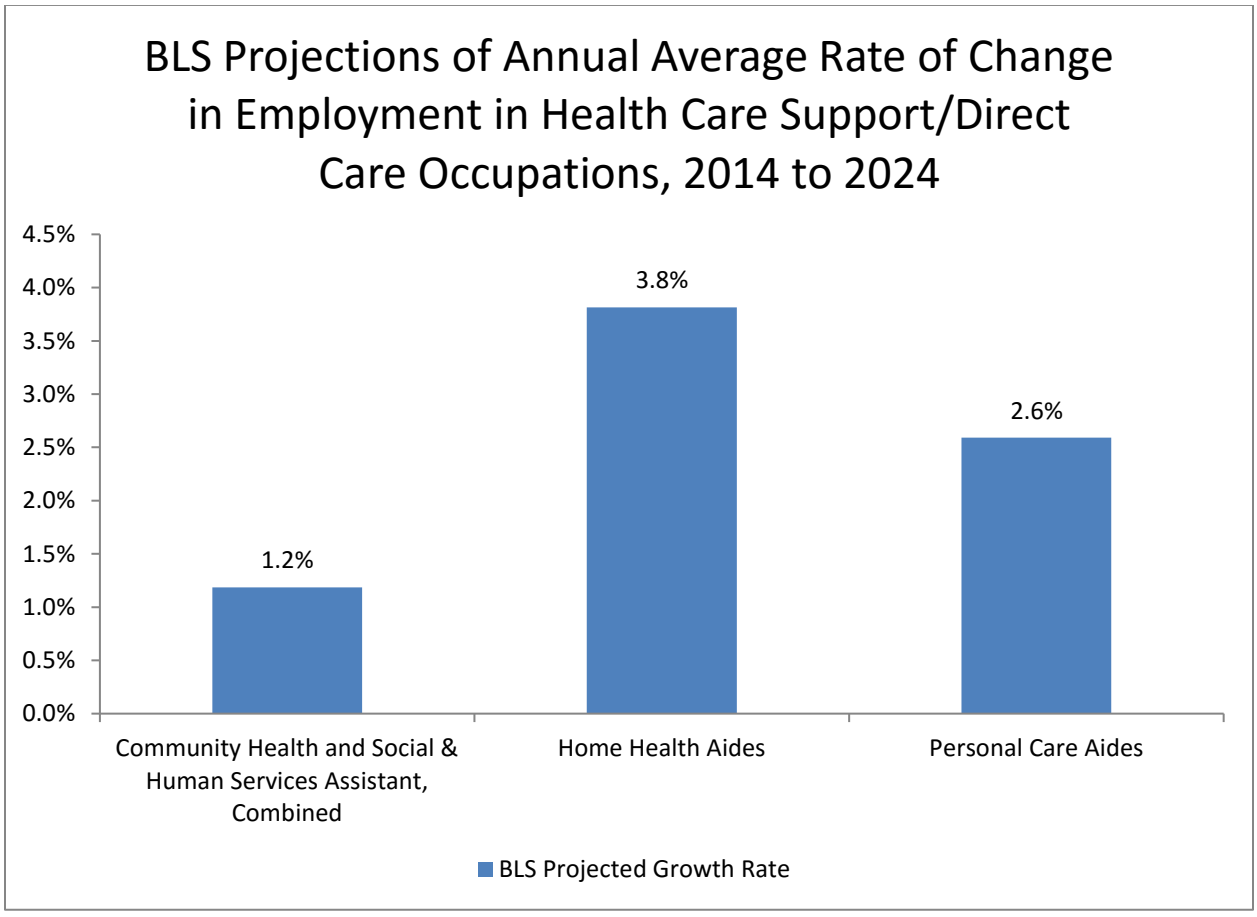
Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics Survey for Massachusetts

In considering the possibilities of future employment change it can be useful to begin with a summary of recent historical employment developments. In the case of the health care support/direct care occupations, that history is one of strong employment gains. The home health aide occupation added an average of over 1,000 jobs per year between 2004 and 2015. Personal care aide employment in Massachusetts increased by a multiple of 2.6, adding more than 2,000 jobs per year over the period. The personal care aide occupation grew on average by 24 percent per year during this period.

The national projections of employment in the home health/direct care worker occupations prepared by the U.S. Bureau of Labor Statistics suggest a promising job outlook and are consistent with some of the historical employment trends we observed in Massachusetts for these same occupations. Indeed, the BLS projections rank the home health aide occupation as the 5th and the personal care aide occupation as the 25th most rapidly growing occupations in the nation's labor market over the next decade. With the exception of these two home health/direct

care worker occupations, the other 28 occupations in the BLS top 30 ranking were small, that is they had low employment levels during 2014 of just 67,000 jobs on average that year. This is compared to 2014 home health aide employment of 913,500 and personal care aide employment of 1.768 million. Indeed, these two occupations account for nearly 60 percent of all employment in the BLS ranking of the 30 most rapidly growing occupations in the nation.

The BLS projections forecast significant annual growth rates for the health care support/direct care occupations for the 2014 to 2024 period. In the case of the CHW/social & human service assistant occupations the BLS projected pace of new job creation is 1.2 percent per year, about double the overall pace of expected new job creation in the nation.



Source: Andrew Hogan and Brian Roberts, "Occupational Employment Projections", *Monthly Labor Review*, December, 2015, and Massachusetts Department of Labor and Workforce Development Occupational Projections, undated

BLS expects that home health aide employment will rise by 3.8 percent per year through 2024. BLS projects a mean annual employment growth rate of 2.6 percent per year in the personal care aide occupation.

The impact of assuming the BLS annual pace of job growth in the home health and direct care support occupations is quite substantial on the measure of expected job creation in the future. The findings in Table 16 provide employment projections for the health care support/direct care occupations assuming that the 2014 Massachusetts baseline employment measure for each occupation would increase at the national annual average rate of increase that was forecast for that occupation by BLS. These "adjusted" statewide employment projections suggest that these home health and direct care occupations may be among the most rapidly expanding and largest individual occupational sources of new job creation in the Commonwealth over the next decade. The statewide historical employment data indicate that the pace of new job creation in these occupations has been extraordinary, suggesting the possibility of continued rapid growth in the future.

Table 16:
Projected Employment Growth in Massachusetts Using National BLS Growth Rates for the Selected Health Care Support and Direct Care Occupations

Occupation	2014 Massachusetts Base Year Employment (i)	BLS based Projection 2024 (ii)	Projected Employment Change	Projected Percent Change in Employment
Community Health and Social & Human Services Assistant, Combined	21,940	24,543	2,603	11.9%
Home Health Aides	22,749	31,425	8,676	38.1%
Personal Care Aides	33,580	42,279	8,699	25.9%

Source: (i) Massachusetts Department of Labor and Workforce Development, 2014 Base Year, OES; (ii) Andrew Hogan and Brian Roberts, "Occupational Employment Projections", *Monthly Labor Review,* December, 2015

National projections of employment in the health care support and direct care occupations suggest that they will be among the most important sources of new job creation in the nation over the next decade. The personal care aide occupation is expected to be the largest single source of new job creation in the nation between 2014 and 2024, adding 458,000 jobs over the

period. The home health aide occupation ranks third among all occupations as a source of new job creation in the U.S.

Table 17:
Ten Occupations with the Most Employment Growth in the U.S., 2014 to 2024
(in thousands)

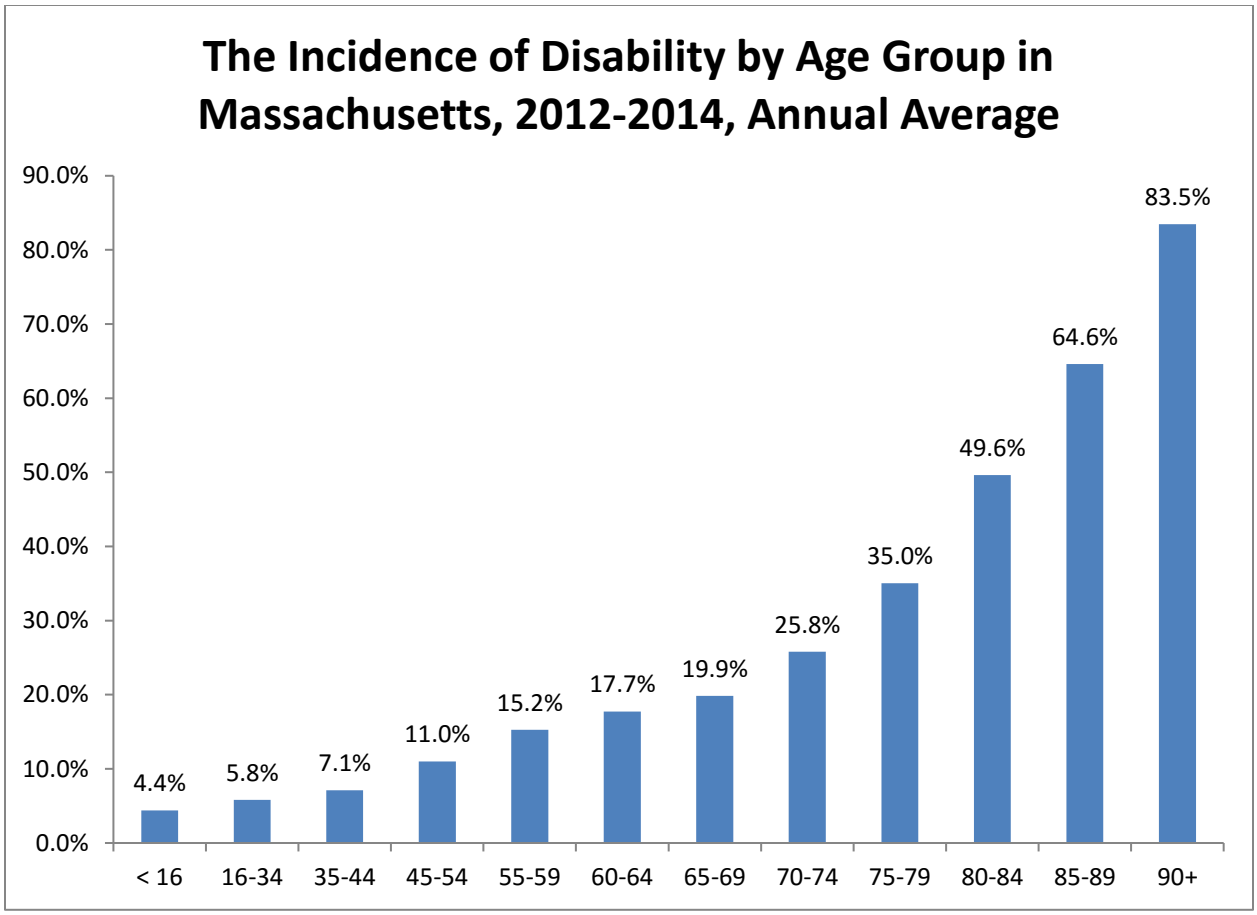
	2014	2024	Absolute Change	Relative Change
Total Employment	150,539.9	160,328.8	9,788.9	6.5%
Personal care aides	1,768.4	2,226.5	458.1	25.9%
Registered nurses	2,751	3,190.3	439.3	16.0%
Home health aides	913.5	1,261.9	348.4	38.1%
Food preparation and serving workers, including fast food	3,159.7	3,503.2	343.5	10.9%
Retail salespersons	4,624.9	4,939.1	314.2	6.8%
Nursing assistants	1,492.1	1,754.1	262	17.6%
Customer service representatives	2,581.8	2,834.8	252.9	9.8%
Cooks, restaurant	1,109.7	1,268.7	158.9	14.3%
General and operations managers	2,124.1	2,275.2	151.1	7.1%
Construction laborers	1,159.1	1,306.5	147.4	12.7%

Source: Andrew Hogan and Brian Roberts, "Occupational Employment Projections", *Monthly Labor Review*, December, 2015

Together, these two occupations are expected to account for 1 of every 12 new jobs created in the U.S. over the next decade. Clearly BLS expects the home health care system to be a centerpiece of economic and employment growth in the coming years. The state projections paint a markedly different picture of the home health aide and personal care aide occupations, as well as CHW and social and human service assistant occupations. One useful way to discern the likely growth path of employment in these areas is to examine some of the forces that are likely to shape the future demand for health support services that are provided at home.

Incidence of Disability by Age and Projections of Population Change in Massachusetts

A variety of financial, demographic and technological factors will influence the demand of home health/direct care occupations in Massachusetts. Chief among these are two inter-related developments: a strong positive relationship between the incidence of disability and age, and a sharp increase in the number of persons over the age of 65.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The chance that a resident of the Commonwealth will have a limitation in one or more activities of daily living rises sharply by the age of that individual. Persons under the age of 35 in the state are unlikely to be disabled, with only about 5 to 6 percent of that population reporting a limitation in activities of daily living that is the result of a physical, mental or emotional condition.[23] However after the age of 35, the chance that a person will be disabled at any point in time begins to rise and the pace of that increase accelerates with age. At ages 60 to 64 the share of residents in the state with a limiting conditions rises to 17.7 percent. This proportion doubles at ages 75 to 79 to 35 percent and increases sharply again with about one half of persons aged 80

[23] It is important to note that the definition of disability is not connected to employment status. Indeed more than one third of percent of all persons aged 16-64 with disabilities are employed. See: Neeta Fogg, Paul Harrington and Brian McMahon, "The Impact of the Great Recession upon the Unemployment of Americans with Disabilities", *Journal of Vocational Rehabilitation,* vol. 33, June 2010.

to 84 reporting a physical, mental or emotional limitation. Among those aged 85 to 89 nearly two thirds report that they are disabled.

Recently prepared population projections for the Commonwealth produced by the University of Massachusetts reveal a slow growing population in the future, but radical differences in the pace of growth across age groups. The population projections use the 2010 decennial Census as the base year upon which projections of population change are developed and present a variety of demographic population projections for five year intervals through 2035.[24] We rely on statewide population projections, by age, for the 2010 to 2025 period since this is the period that is most analogous to the state and national occupational employment projections time horizon.

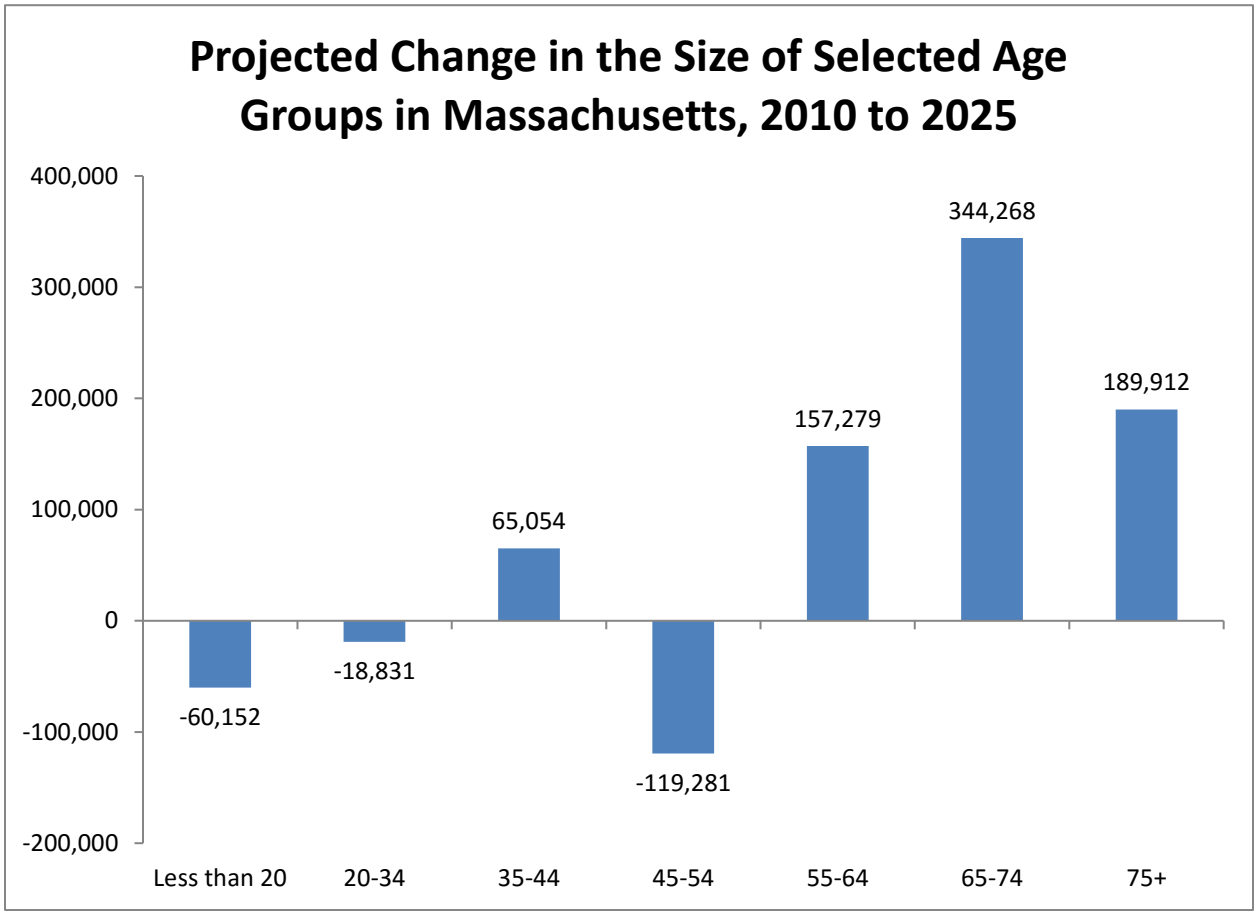
The total resident population of Massachusetts is projected to rise by about 558,000 persons between 2010 and 2025, a modest increase of 9 percent over the fifteen year period implying a mean annual population growth rate of about 0.6 percent per year. However, the distribution of this population varies enormously across age groups. The number of persons under the age of 45 in Massachusetts is projected to decline considerably between 2010 and 2025. The number of school aged persons under the age of 20 is expected to fall by about 60,000 while the 20 to 34 year old population is forecast to decline by just under 19,000 persons over the period.

The state's population of persons aged 35 to 44, composed of the "echo generation" (born between 1981 and 1992) of the baby boomers, will increase by 65,000, but the older "birth dearth generation" (born between 1966 and 1980) will cause a large decline in the number of persons aged 45 to 54 in the state between 2010 and 2025. Overall, the population of Massachusetts residents under the age of 55 is expected to experience a net decline of 133,000 over the 15 year population projection period.

The population aged 55 and over is forecast to increase from about 1.7 million persons to 2.4 million between 2010 and 2025, a 40 percent rise. The largest increase in this population group will be persons aged 65 to 69. This age group will increase by more than 177,000 by 2025,

[24] Henry Renski and Susan Strate, *Long-term Population Projections for Massachusetts Regions and Municipalities,* Donahue Institute, University of Massachusetts, March, 2015.

a two thirds increase over 15 years.



Source: Henry Renski and Susan Strate, *Long-term Population Projections for Massachusetts Regions and Municipalities*, Donahue Institute, University of Massachusetts, March, 2015

Persons in this age group have sharply curtailed job market attachment, with high and rising disability rates, though the large majority are not limited with respect to activities of daily living. The number of persons who will be aged 70 to 74 will rise by 167,000 persons an 87 percent increase over the forecast period. Persons aging into this group are entering the "frail elderly" age range (those aged 70+), a threshold that is meant to identify persons at heightened risk of general debility and cognitive impairment.[25]

[25] For a discussion of elder frailty see: Frank Lally and Peter Crome, "Understanding Frailty," *Postgraduate Medical Journal*, January, 2007.

Table 18:
Projections of the Size of the 55+ Population of Massachusetts, 2010 to 2025 by Age Group

Age	Census 2010	Projection 2025	Change	Percent Change	Annual Rate of Change
55–59	432,822	472,135	39,313	9%	0.61%
60–64	370,547	488,513	117,966	32%	2.12%
65–69	264,459	441,547	177,088	67%	4.46%
70–74	192,001	359,181	167,180	87%	5.80%
75–79	162,592	281,500	118,908	73%	4.88%
80–84	138,473	174,871	36,398	26%	1.75%
85+	145,199	179,805	34,606	24%	1.59%

Source: Henry Renski and Susan Strate, *Long-term Population Projections for Massachusetts Regions and Municipalities*, Donahue Institute, University of Massachusetts, March, 2015

The number of persons aged 75 to 79 is forecast to increase by about 119,000, a 73 percent rise in this age group. The incidence of disability is quite high for individuals at this age, with an incidence of disability of more than one in three. The number of persons aged 80 to 84 will grow more slowly. Those aging into this group by 2025 were born during the World War II period before the sharp population increase associated with the post-war baby boomer generation. The number of persons aged 80 to 84 is expected to increase by about 36,000, a 26 percent change over the 15 year forecast period. About one half of those between 80 and 84 years of age have at least one physical, mental or emotional condition that limits their activities of daily living. The number of persons aged 85 or older is projected to rise by about 35,000 persons, an increase of 24 percent. The incidence of disability is very high for this group, with more than 70 percent reporting one or more limitations in activities of daily living.

The combination of an aging population and a high incidence of disability suggests that the number of older persons with disabilities will rise sharply over the next decade. The elderly population over the age of 55 will increase by 40 percent between 2010 and 2025, however, more than one half of this population increase will be among persons aged 70 and older, a group that has a mean incidence of disability of 46 percent. The findings in Table 19 reveal that as the state's population of persons aged 55 and older increases by about 691,000 the number of older persons with a disability will rise by at least 213,000. In the years following 2025, as more boomers crowd into the frail elderly population, the number of elderly disabled residents in the state will rise substantially as well, far beyond the 2025 projection timeline.

Table 19:
Projected Change in the Size of the Massachusetts Total Population and Population with a Disability, by Age Group, 2010 to 2025

Age Group	Projected Change in Population	Incidence of Disability	Projected Change in the Number of Persons with a Disability
55–59	39,313	0.18	6,963
60–64	117,966	0.22	24,814
65–69	177,088	0.24	42,652
70–74	167,180	0.29	48,728
75–79	118,908	0.39	46,510
80–84	36,398	0.51	18,562
85+	34,606	0.72	24,835
Total	691,459	0.31	213,062

Source: Henry Renski and Susan Strate, *Long-term Population Projections for Massachusetts Regions and Municipalities*, Donahue Institute, University of Massachusetts, March, 2015 and U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

These findings suggest that powerful forces of population change and a rising incidence of disability among the frail elder population will push requirements for assistance from family, friends, neighbors and others to support elderly individuals to remain in their homes. But it also suggests that the requirements for home health aides, personal care aides and CHWs/social and human services assistants will also rise sharply. In our view, these findings suggest that the BLS national employment projections for home health and direct care workers present a jobs outlook aligned with the demographic forces at play in Massachusetts and elsewhere.

Demographic forces alone will not determine the nature of demand growth in the delivery of care to seniors in the community by compensated non-medical professionals. Some other factors likely to influence demand for home health/direct care workers might include:

- The extent to which older persons wish to remain in their current residence.
- Changes in the participation of family, friends and neighbors in providing support services to the elderly that can substitute for employed home health/direct care workers.
- Technological developments that provide aid to the aging population to remain at home.
- Changes in household and family incomes.
- Impact of federal and state public sector resource allocation decisions including cost containment efforts.

Desire to Remain in Current Residence: The overwhelming majority, more than 90 percent, of persons aged 65 and older want to live in their current residence "as long as possible."[26] Part of the motivation behind the desire to remain at home is related to attachments among networks of family, friends and neighbors. These networks provide assistance with some activities that help individuals stay at home longer. Engagement with the broader community is thought to improve the quality of life for older persons and assist them in their ability to remain independent for a longer period of time. It is a relatively safe bet to say that the desire for older persons to age in place will positively influence the demand for home health and direct care support workers in the future.

Role of Family Caregivers: Family caregiving may be the single most important source of home health care for the elderly in the nation. In Massachusetts, an estimated 884,000 persons, about 12 percent of the state's total population are engaged in uncompensated caregiving activities that support activities of daily living.[27] In the future the need for support services provided by uncompensated family, friends and neighbors will likely rise sharply as the state's population ages and the incidence of disability in the state's population increases among this aging demographic. As the incidence of disability rises, it is important to note that these caregivers go well beyond supporting activities of daily living. Very large proportions of family caregivers engage in important medical activities such as managing and dispensing medication as well as wound care. With an aging population it might be reasonable to expect that not only will the need for more family/friend caregivers rise sharply, but the duties they will be asked to undertake will become increasingly demanding.[28] Some efforts have been made to estimate the likely demand for long term care services among persons aged 65 and older. One study found that on average baby boomers will need about 3 years of some sort of long term support.[29]

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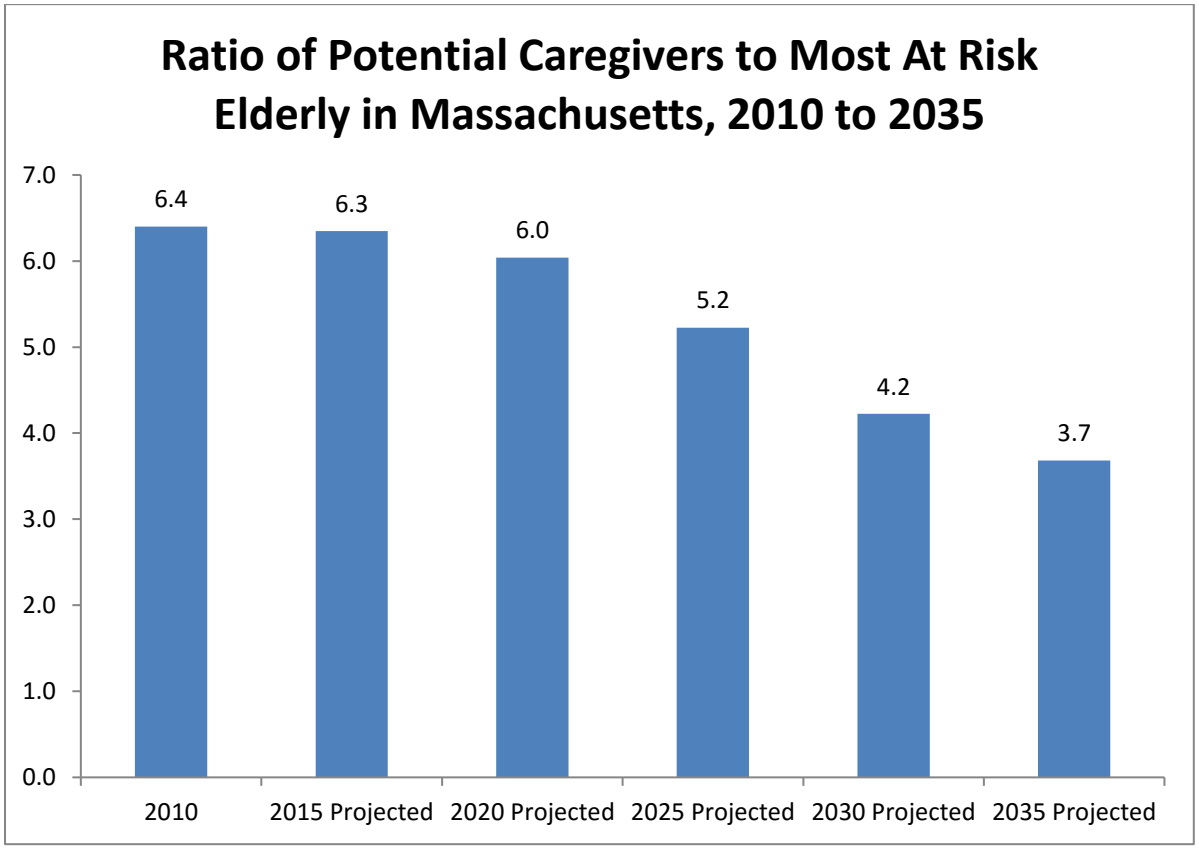
[26] Andrew Kochera, Audrey Straight and Thomas Guterbock, *Beyond 50.05: A Report to the Nation on Livable Communities: Creating Environments for Successful Aging,* American Association for Retired Persons, undated.
[27] Susan Reinhard et al, "Valuing the Invaluable: 2015 Update," *Insight on the Issues,* AARP Public Policy Institute, July 2015.
[28] Susan Reinhard, Carol Levine and Sarah Samis, *Home Alone: Family Caregivers Providing Complex Chronic Care,* AARP Public Policy Institute, October 2012
[29] Peter Kemper, Harriet Komisar and Lisa Alecxih, "Long-Term Care Over an Uncertain Future: What Can Current Retirees Expect?", *Inquiry,* Winter, 2005-2006

The outlook for growth in the number of *uncompensated* caregivers to provide the increase in support for family and friends is not good. Experts in the eldercare support field define the potential caregiver population as the population of persons aged 45 to 64; and the most at risk elderly population, with respect to the need for high levels of support to remain at home, as persons aged 80 and older.



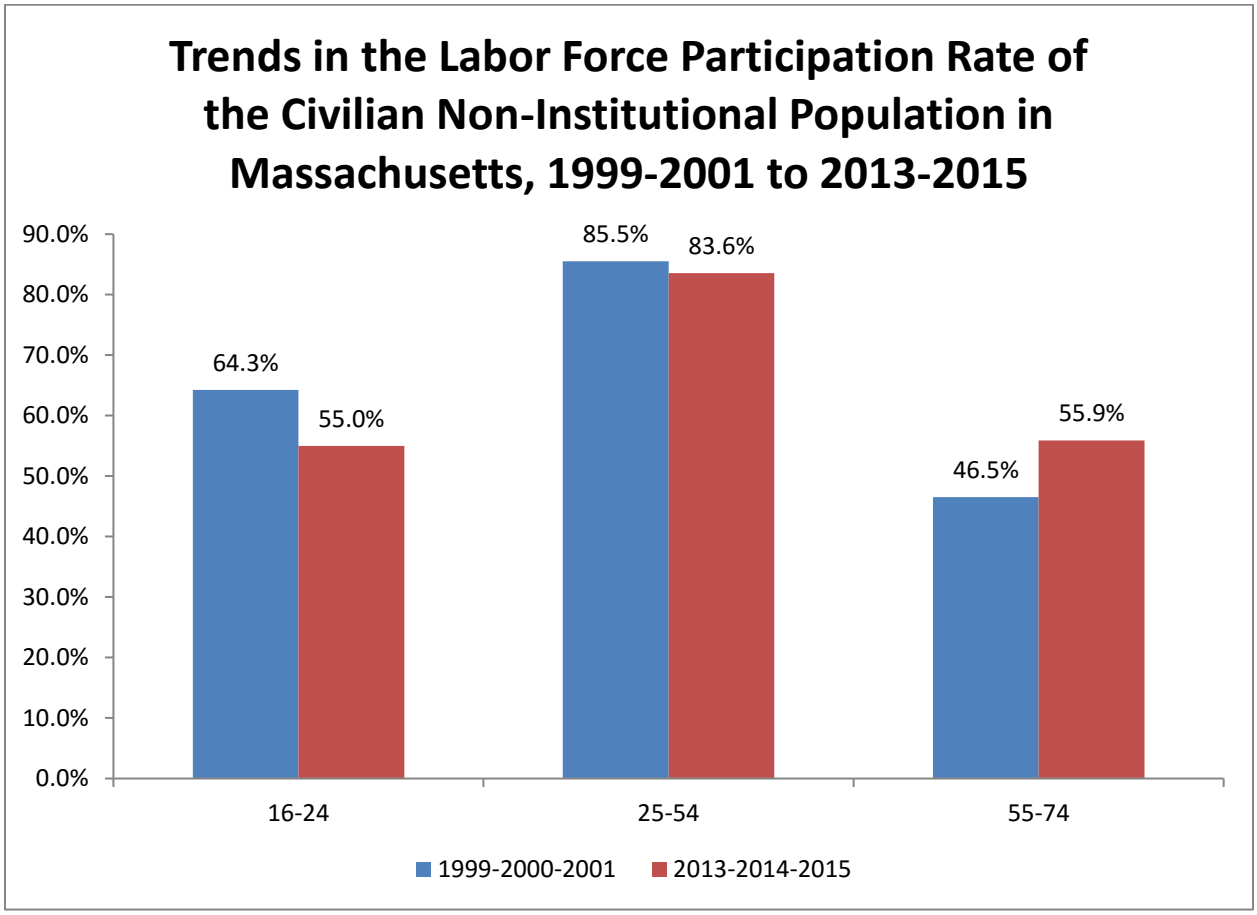
Source: Henry Renski and Susan Strate, *Long-term Population Projections for Massachusetts Regions and Municipalities,* Donahue Institute, University of Massachusetts, March, 2015 and U.S. Bureau of the Census

In 2010, the baby boomer population was largely concentrated in the 45 to 64 year old population in Massachusetts, so the size of the potential caregiver population was at its historic high at that time and the number of persons aged 80 and older was relatively low compared to the future. During 2010 there were 6.4 persons of prime caregiving age residing in Massachusetts for every person aged 80 and older.

As the baby boomer population ages in the state the size of the potential caregiver population will remain largely unchanged through 2025, while the number of persons aged 80 and above will increase by 25 percent. This means that the ratio of potential caregivers to at-risk

elderly will fall from 6.4 during 2010 to 5.2 by 2025. That ratio of caregivers to at-risk elderly is expected to decline even more rapidly through 2035 when it will be just 3.7—equal to just 60 percent of the 2010 ratio.

Further compounding the decline in the ratio of the number of potential caregivers to elders is the rise in labor force participation among older workers, particularly those aged 55 to 64 in Massachusetts. The labor force participation rate of persons 55 to 74 has risen quite sharply in Massachusetts in recent years, even as the labor force attachment of persons under the age of 55 has declined.



Source: U.S. Bureau of Labor Statistics, Labor Force Status from the Current Population Survey, various years http://www.bls.gov/cps/

Between 1999-2001 and 2013-2015, the labor force participation rate, the fraction of persons in an age group who are engaged in the labor market (either employed or available and actively seeking a job), increased from 46.5 percent to 55.9 percent among those aged 55 to 74. At the same time, the job market participation among teens and young adults fell from 64.3

percent to 55 percent. This age twist in labor force participation is, in part, the result of households headed by older workers increasingly relying on earnings from work as a source of money income. Since 2007 the returns to unearned income from assets traditionally held by older persons, such as corporate and government bonds, have declined sharply.[30]

This increase in labor force participation among those aged 55 and older may mean a reduced supply of persons willing and able to provide support to family members and neighbors in need of assistance in activities of daily living, especially the more complicated and demanding medical support requirements of these individuals. Earnings are becoming a more important component of cash income among households with persons aged 55 and older, such that the opportunity cost of devoting unpaid hours of caregiving to family members, friends or neighbors may be rising. This will potentially further reduce the number of uncompensated hours of support to the elderly in need of services.

Given this discussion, we think it unlikely that unpaid family members, friends and neighbors will *increase* their aggregate hours of service to meet the growing need for services to the elderly required to stay at home. Instead, as the ratio of potential caregivers to those in need of care declines and pressures for persons 55 to 74 to remain in the labor force continue, we suspect that this source of uncompensated services will not be able to grow much over the next decade. Thus we do not expect uncompensated work by family, friends and neighbors to serve as a substitute for growth of employment in home health aide, personal care aide and CHW/social and human service assistant occupations in the foreseeable future.

Technological Alternatives: Technology of various sorts has proven to be a very efficient substitute for labor in the American economy. Cyber-based technologies have been developed that have proven very useful in replacing routine manufacturing jobs with algorithms and hardware to produce output.[31] Increasingly these new technologies are being adapted to undertake more complex, non-routine, non-repetitive tasks including driving automobiles, trucks and buses.[32] Indeed, a recent study suggests that up to one half of all current employment in the

[30] Ke Bin Wu, Sources of Income for Older Americans, 2012, *Fact Sheet,* AARP Public Policy Institute, undated
[31] Frank Levy and Richard Murnane, *The New Division of Labor: How Computers are Creating the Next Job Market.* Princeton University Press. 2004.
[32] Mike Collas, "Delphi, Mobileye Join Froces to Develop Self-Driving System," Wall Street Journal, August 23, 2016

U.S. is in occupations that could utilize various technologies to replace labor inputs to production, including occupations in which tasks are not routine or repetitive.[33]

The potential market for home health services in the U.S. is substantial (estimated to be $68 billion in revenue and growing by 9 percent per year), with labor accounting for the lion's share of costs.[34] This robust market has caught the attention of technology firms who are working to develop a variety of products that can assist elderly individuals to live at home while still getting the kind of monitoring and care they require. Some of the technologies that are emerging to support aging at home efforts include an assortment of sensor devices that can detect a multiplicity of conditions and situations including missed meals, failure to get out of bed, a fall or leaving the water running. A number of devices are coming on line that measure various vital signs including glucose, blood pressure and heart rate. Big data is also emerging as a tool to predict and potentially ward off potentially dangerous conditions for older persons living at home.[35]

The potential for technological change to impact the labor requirements for home health/direct care workers is considerable. As low cost technologically-based products become available it is likely that these emerging products and services will serve as both substitutes for and complements to home health/direct care occupations. [36] We think that these technologies will partially offset the potential rise in demand for workers in the home health sector.

Changes in household and family incomes: An important influence on demand for home health care services will of course be related to developments in money income among older households. Money income for households headed by persons under the age of 65 has fallen in inflation adjusted terms between 2000 and 2014, while incomes in households headed by persons aged 65 and above have increased over this time. The median money income in households headed by a person age 65 and older in the nation was $36,895 during 2014, a level equal to just over 60 percent of the median income of households headed by someone under the age of 65.

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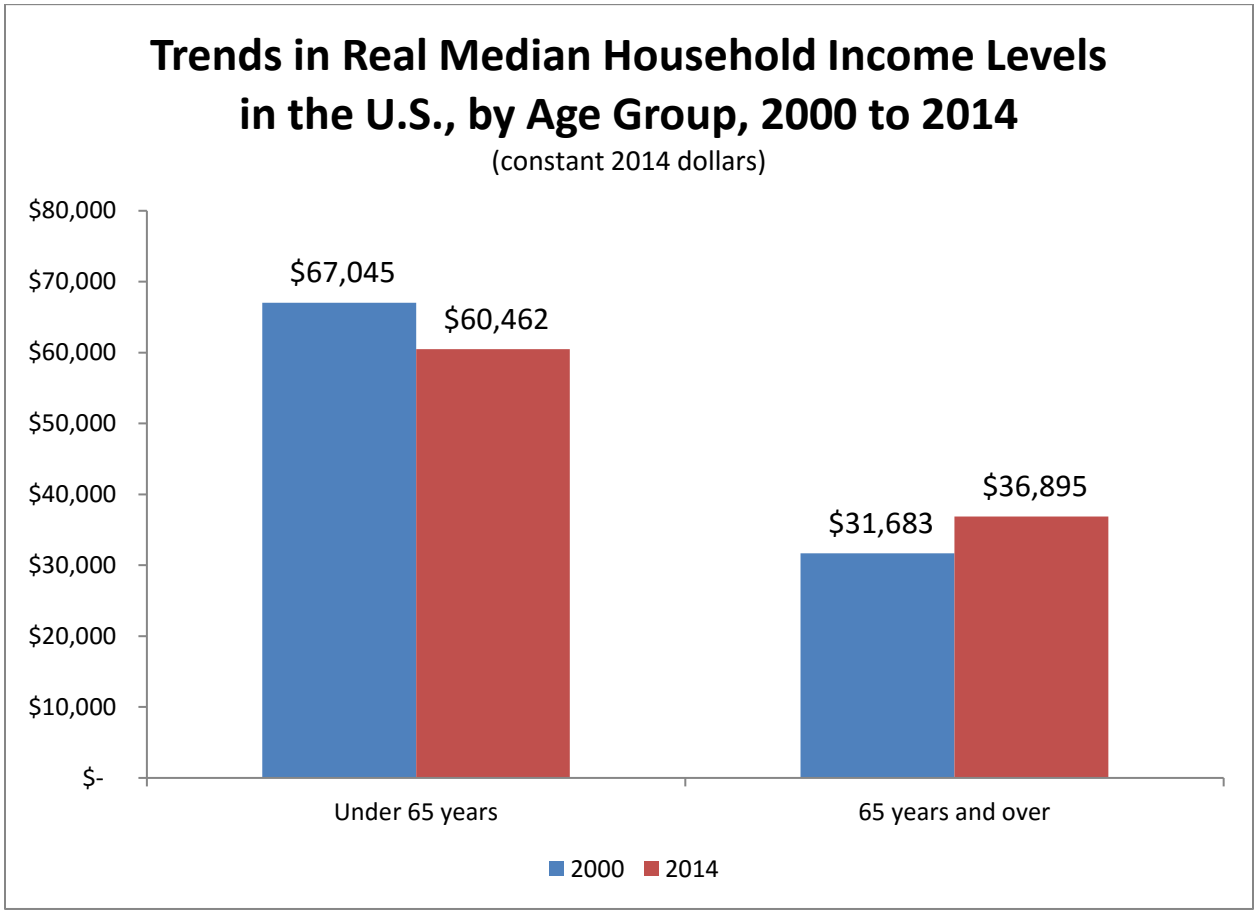
[33] Carl Frey and Michael Osborne, "The Future of Employment: How Susceptible are Jobs to Computerization?" *Journal of Economic Literature,* July 2013.

[34] Basel Kayyali, Zeb Kimmel and Steve van Kuiken, "Spurring the Market for High-Tech Home Health care." McKinsey & Co, September 2011.

[35] Alison Diana, "8 Technologies Changing Home Health Care" *Information Week,* December 18, 2014

[36] Victoria Weisfeld and Tracy Lustig, *The Future of Home Health Care: Workshop Summary*, Institute of Medicine and National Research Council, National Academies Press, 2015.

However, median income levels increased by 16.5 percent in real terms for elder-headed households compared to a 9 percent decline in incomes among households where the householder was under the age of 65. This rise in real income among older workers suggests that the ability of households to privately purchase certain home health care services, including the services of home health aides, personal care aides and related workers has increased over time.



Source: U.S. Bureau of the Census, HINC-01 Selected Characteristics of Households by Total Money Income https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-01.html

Efforts to estimate the chances of continued increases in real incomes among households headed by older persons in the future are speculative. Modeling efforts using panel income measures to predict future change in the median incomes of retirees suggest declining real incomes at least for the median retirees in the nation.[37] Indeed there appears to be little

[37] Barbara Butrica and Howard Iams "Projecting Retirement Income of Future Retirees with Panel Data: Results from the Modeling Income in the Near Term (MINT) Project," *Social Security Bulletin*, Vol. 62, No. 4, 1999.

consensus about the likely future growth path of incomes among experts in these areas. Some observers see very rapid growth in the number of persons who are financially unprepared for retirement as a growing share of retirees rely only on Social Security, old age and retirement benefits.[38] However, other observers argue that the income measures commonly used in these studies do not properly account for some very important sources of income, particularly withdrawals from defined contribution assets and therefore these "retirement crisis" studies underestimate income levels and growth in money income among retired persons.[39]

Given the slow growth in output and income in the American economy combined with a dramatic slowdown in productivity growth, incomes may not rise very rapidly, if at all, among retirees in the coming years. If this is the case, then slow or no income growth will, all else equal, tend to reduce the increase in private demand for various home health services.

Insurer and public resource allocation decisions and cost containment efforts by the federal and state government: Third party insurers and federal and state resource allocation and regulatory decisions will likely have an important impact on the growth in demand for home health care. One of the most striking developments in Massachusetts health care labor markets has been the marked decline of employment levels in the nursing home industry. Between 2010 and 2015 payroll employment levels in nursing homes in the state declined by about 8 percent as employment in the home health care and individual and social services industry (the industry where most personal care aides and social and human services assistants are employed) increased sharply.

Our discussions with a variety of health care policy makers, analysts, for-profit and not-for-profit executives and managers, as well as leaders of organized labor, have led us to conclude that this decline was the result of efforts on the part of insurers as well as the legislature to reduce resources devoted to high cost nursing home (and hospital) care and shift more private and public health care resources to the provision of services to patients at home. Even prior to the enactment of both the Affordable Care Act (ACA) at the federal level and Chapter 224 cost containment legislation in Massachusetts, efforts were undertaken by private insurers to reduce health care costs, including reduced utilization of hospitals and nursing care facilities.

[38] Keith Miller et al, *The Reality of the Retirement Crisis,* Center for American Progress, January 26, 2015
[39] Andrew Biggs and Sylvester Scheiber, "Is there a Retirement Crisis?", *National Affairs,* Summer 2014

Chapter 224 cost containment legislation enacted in Massachusetts and the enactment of the ACA has added further impetus to shifting more resources toward the provision of a variety of services designed to help elderly and disabled persons to remain at home.

We think it likely that as more cost containment provisions of the ACA are implemented over the next few years, that federal and state policy is likely to continue to support aging in place efforts as part of a broader managed care system. We suspect that public social and health care spending at the federal and state level will strongly support expansion of lower cost aging in place efforts including the increased utilization of home health/direct care workers in the future. Home health care is likely to play a central role in cost mitigating efforts to restrain the growth in aggregate health care spending in the nation and in the Commonwealth.

Characteristics of Health Care Support/Direct Care Workers in Massachusetts

The people who work in health care support and direct care occupations in Massachusetts differ markedly with respect to their demographic and socio-economic status compared to those employed in other occupations. Using data derived from the American Community Survey (ACS) Public Use Microdata Sample (PUMS) for Massachusetts from 2012 through 2014 (the most recent PUMS data available) we measure the gender, age, race/ethnicity, educational attainment, nativity status, marital status, presence of children, and income relative to poverty status for persons employed in individual health care support and direct care occupations in Massachusetts as well as for persons who are employed in all other occupations in the Commonwealth.

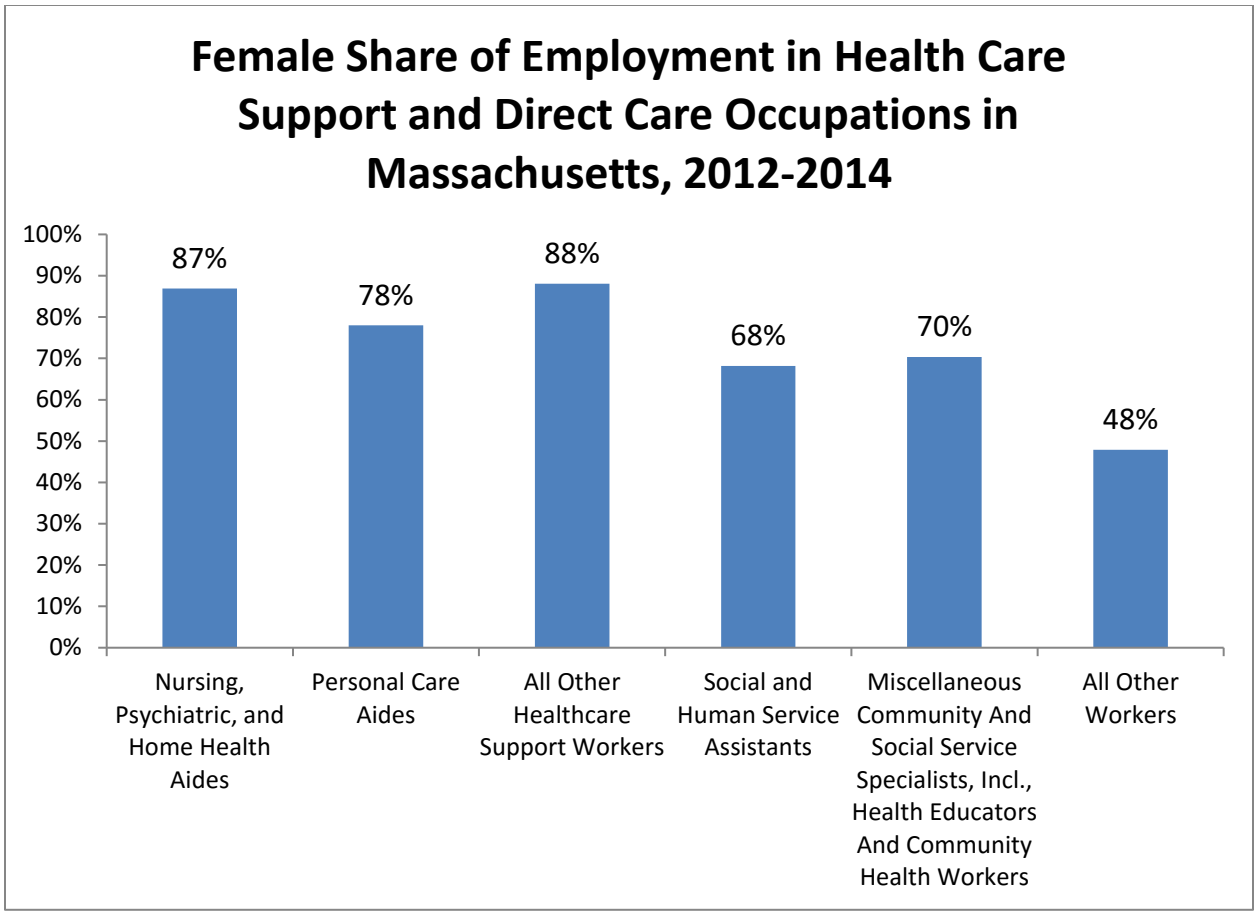
It is important to note that the ACS occupational classification system and occupational employment measures differs somewhat from occupational employment measures for Massachusetts derived from the Occupational Employment Statistics (OES) survey used to assess employment trends in health care support and direct care occupations in Massachusetts elsewhere in this paper. The ACS is a sample survey of households conducted monthly by the U.S. Bureau of the Census. ACS is designed to gather a wide range of demographic, economic, social, housing and other information about households and residents that are used in a variety of ways including allocating federal funds across states and areas. The OES survey is a sample

survey of business establishments conducted twice a year to measure employment and wage rates by occupation and industry.

Because these surveys differ in important ways, they utilize somewhat different occupational categories to achieve their survey goals. Generally the OES survey provides information about more specific occupations, whereas the ACS survey categorizes its occupational information into a somewhat broader occupational taxonomy at the state level. Both statistical surveys shed important insights into the health care support and direct care worker fields and, consequently, we rely on both surveys in this paper to create a more comprehensive and systematic picture of employment in these fields.

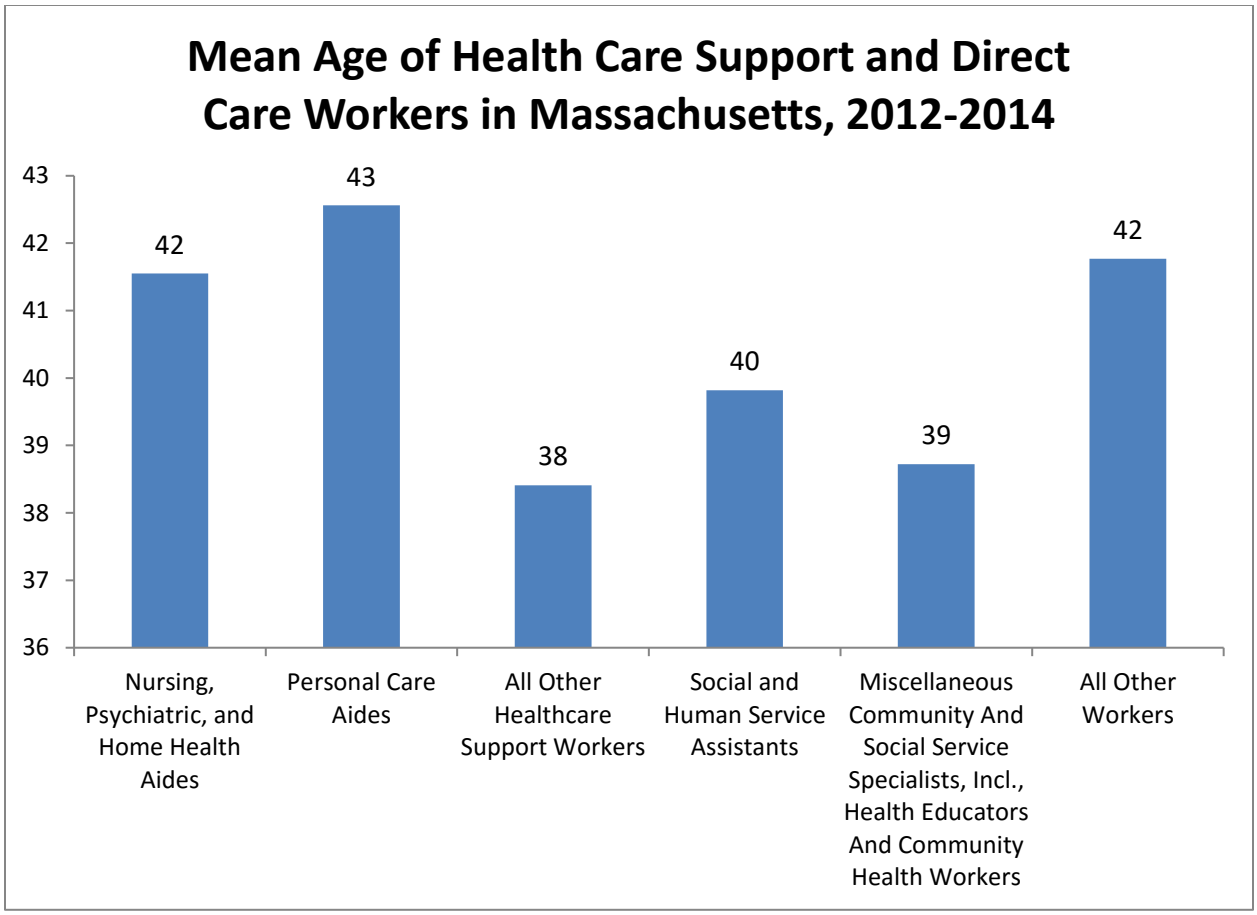
It likely comes as no surprise to the readers that very large shares of health care support/direct care workers are women. Women are intensive participants in the state's labor force and account for nearly half (49 percent) of total employment in Massachusetts.[40] The women's share of employment in health care support and direct care occupations is well above the state average. The female share of the nursing, psychiatric, and home health aide employment (hereinafter referred to as health aides) was 87 percent, on average, during 2012-2014, a proportion that is 1.81 times the women's share of employment in all other occupations in the state. Similarly, 78 percent of all personal care aides employed in Massachusetts were female. Employment in the social service assistant and CHW fields was also predominantly female. In the latter instance women's share of employment averaged 68 percent and 70 percent, respectively.

[40] The female share of employment in Massachusetts is just slightly greater than the national average of 48 percent of total employment.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The mean age of persons working in health aide and personal care aide occupations is 42 years and 43 years of age, respectively. Social and human service assistants and CHWs are somewhat younger, on average, than health aides and personal care aides in large part because a substantially lower share of older workers (aged 55 and older) are employed in these occupations.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The findings in Table 20 examine the age distribution of employment in health care support and direct care occupations during the 2012-2014 period in the state. The data reveal that older workers (55+) accounted for more than one in five health aide workers in the state and one-quarter of all personal care aides. In contrast, just one in six social and human service assistants were aged 55 and older, while just one in seven CHWs were older workers, on average, during the period. All of the health aide and direct care occupations employed about the same share of teens and young adults - somewhere between 15 percent of employment in the health aide occupation to 18 percent of employment in the community health worker field. The share of prime age workers, those 25 to 54, was substantially higher in the social and human service assistant field with 70 percent of workers in the prime age category. We also found that an above average concentration of CHWs were of prime age at 65 percent. In contrast, personal care aides, with the greatest concentration of employment of older workers among all health care

support and direct care occupations, had the lowest share of prime age workers with just 59 percent of personal care aides between the ages of 25 and 54 at the time of the ACS survey.

Table 20:
Distribution of Health Care Support and Direct Care Employment,
by Occupation and Age, Massachusetts, 2012-2014

Age	Health Aides	Personal Care Aides	All Other Health Care Support Workers	Social and Human Service Assistants	Miscellaneous Specialists, Incl., Health Educators and Community Health Workers	All Other Occupations
16–24	15%	16%	17%	16%	18%	16%
25–54	63%	59%	68%	70%	65%	61%
55+	21%	25%	16%	14%	17%	23%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Health care support and direct care employment in Massachusetts is heavily concentrated among African American and Hispanic workers. More than one-quarter of all those who worked in health aid occupations in Massachusetts were African Americans during 2012-2014 and the African American share of employment in the personal care aide occupation was 17 percent. In contrast, African Americans accounted for just 5 percent of employment in any other occupational field outside of the health care support and direct care fields. This means that African Americans were 5 times more likely to be a health aide and more than 3 times as likely to be a personal care aide as they were to be employed in any other occupation in Massachusetts.

African Americans also accounted for a disproportionate share of employment in the social services and community health care occupations. African Americans accounted for 14 percent of total employment in the social and human service assistant occupation – again nearly 3 times their proportion of overall employment in the state, as well as accounting for 10 percent of employment in the CHW occupations.

Table 21:
Distribution of Health Care Support and Direct Care Employment,
by Occupation and Race/Ethnicity, Massachusetts, 2012-2014

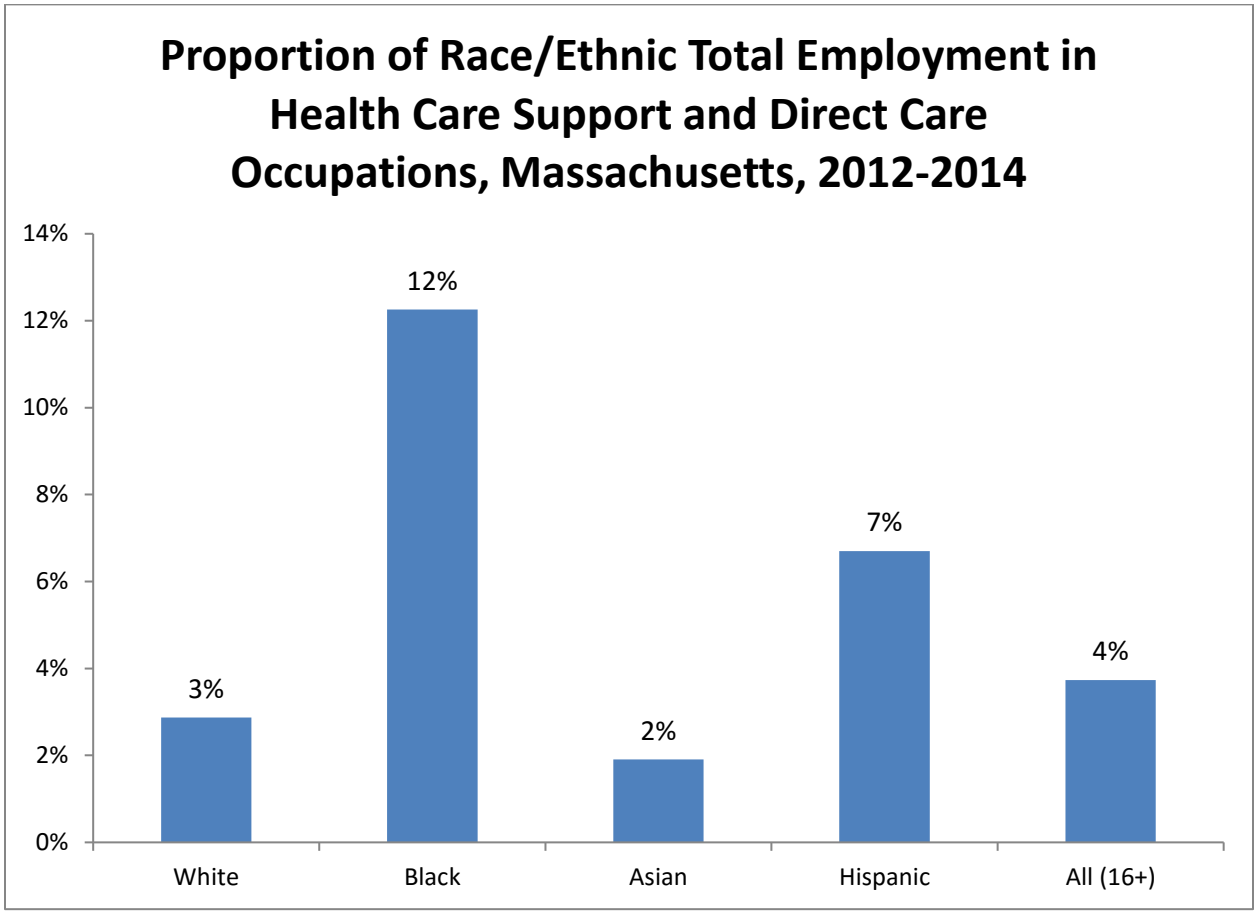
Group	Health Aides	Personal Care Aides	All Other Health Care Support Workers	Social and Human Service Assistants	Miscellaneous Specialists, Incl., Health Educators and Community Health Workers	All Other Occupations
White, non-Hispanic	53%	59%	70%	62%	67%	78%
African American, non-Hispanic	27%	17%	10%	14%	10%	5%
Asian, non-Hispanic	3%	3%	3%	2%	3%	6%
Hispanic	14%	18%	15%	19%	17%	8%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Hispanic workers also account for a disproportionate share of employment in the health care support and direct care occupations in the state. While Hispanics account for 8 percent of total Massachusetts employment during 2012-2014, our analysis of the data found that 14 percent of all health aides were Hispanic; 1.7 times their proportion of the state's workforce. We found that in the personal care aide occupation Hispanics held 18 percent of all positions, more than double their share of overall employment in the state. Hispanic workers were also disproportionately employed in social and human service assistant positions and in CHW occupations.

The very high shares of health care support and direct care jobs held by African American and Hispanic workers means that the White Non-Hispanic and Asian shares of employment in these occupations was well below their share of overall employment in the state. White Non-Hispanic workers accounted for 78 percent of total statewide employment, but they held a much lower share of jobs in the health care support and direct care fields. Asians were even less likely than Whites to work in these occupations with Asians about half as likely to work in these fields than the average worker in the state, while Whites were between 68 percent and 90 percent as likely to work in health care support and community health occupations.

The heavy concentration of African Americans in these health care support and personal care occupations means that a substantial share of all African American employment is concentrated in these occupations. Our analysis found that one out of eight employed African Americans in Massachusetts worked in a health care support and direct care occupation during 2012-2014, while 7 percent of Hispanics worked in these fields. In contrast, just 3 percent of Whites and 2 percent of Asians were employed in these occupations.



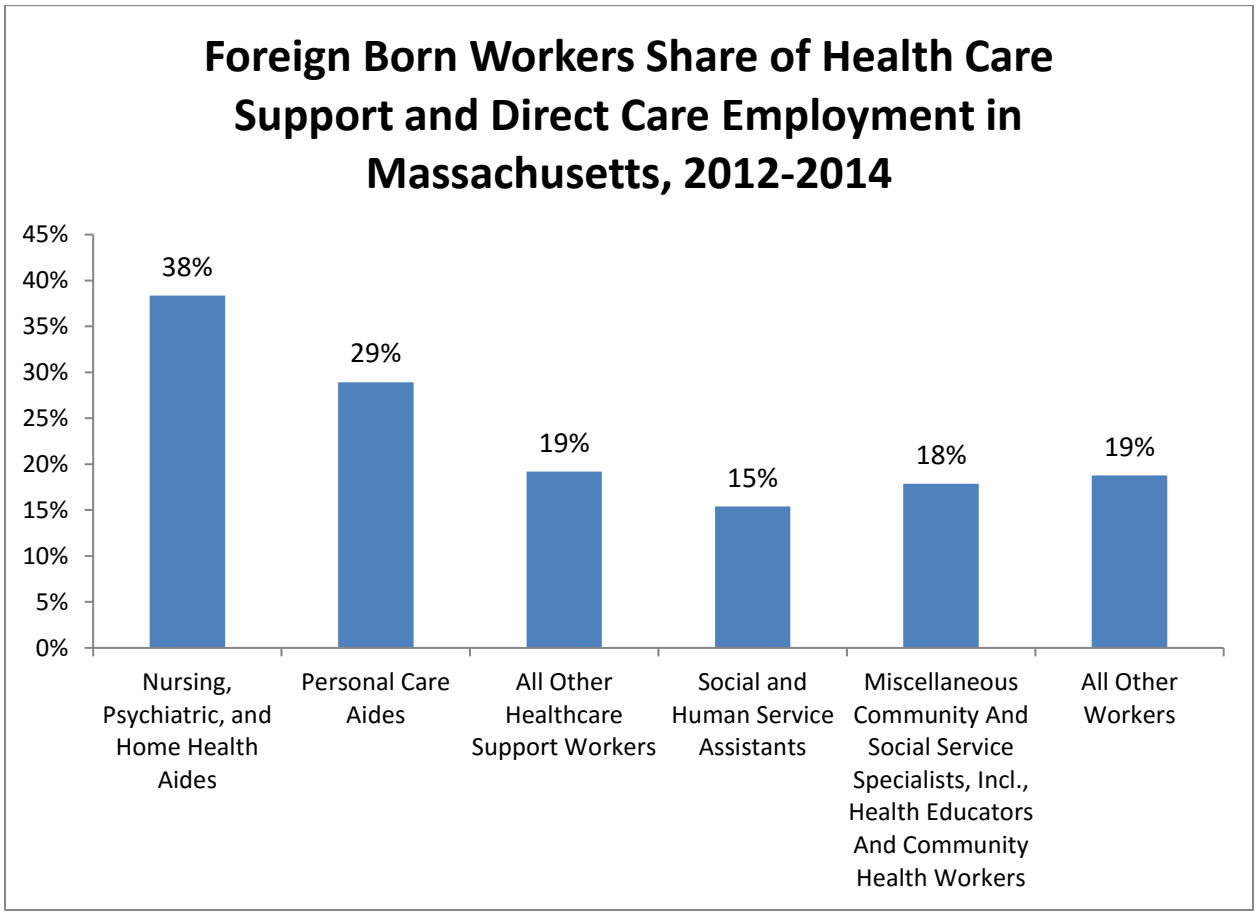
Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The share of foreign born workers employed in health care support and direct care occupations was quite high compared to foreign born worker shares in occupations outside of these fields. Statewide, about 19 percent of all employed persons were foreign born, on average, during 2012-2014. However, the share of foreign born employed persons in health aide positions was double that of the state average for all workers, with 38 percent of all health aide workers

reporting that they were born outside the United States.[41] Immigrants also accounted for 29 percent of personal care aide employment in the state, a proportion more than 1.5 times the immigrant share of overall employment.

Social and human service assistants as well as CHW occupations had much lower shares of immigrant workers than we observed in the health care aide and personal care aide occupations in the state. Only 15 percent of all social and human service assistant workers were foreign born at the time of the ACS survey, a share well below the 19 percent average for all other occupations in the state. The CHW occupation also had a relatively low proportion of its employment among immigrants, with 18 percent of all workers in the occupation reporting that they were foreign born.

[41] Under the ACS measures, the native born population includes persons born in the United States and selected U.S. territories including Puerto Rico and U.S. Island Areas, as well as children of U.S. parents who were born abroad. Foreign born residents include persons who were not U.S. citizens at birth including those who became naturalized U.S. citizens.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The level of educational attainment of workers employed in health care support and direct care occupations is generally well below that of the average worker in Massachusetts. Among health aides, 18 percent had not earned a regular high school diploma, (either never completed high school or completed a high school equivalency program). Our analysis of the ACS data found that 22 percent of all personal care aides employed in Massachusetts during 2012-2014 had not earned a regular high school diploma. An above average share of workers in both of these occupations had earned a high school diploma, but not had any additional education or training at the post-secondary level. About 30 percent of health aides and 26 percent of personal care aides had a high school diploma only compared to those 20 percent of those employed in all other occupations in the state.

Table 22:
Distribution of Health Care Support and Direct Care Employment,
by Occupation and Highest Level of Educational Attainment, Massachusetts, 2012-2014

Educational Attainment	Health Aides	Personal Care Aides	All Other Health Care Support Workers	Social and Human Service Assistants	Miscellaneous Specialists, Incl., Health Educators And Community Health Workers	All Other Occupations
No H.S. Diploma	12%	16%	3%	6%	1%	7%
GED/Equiv.	6%	6%	2%	2%	0%	2%
HS Diploma, Only	30%	26%	19%	6%	7%	20%
Some College, No Diploma	29%	28%	38%	24%	35%	20%
Associate's Degree	10%	10%	18%	10%	5%	7%
Bachelor's Degree +	13%	14%	19%	53%	52%	43%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The educational attainment levels of persons employed in social and human service assistant and CHW occupations was quite high. During 2012-2014, 63 percent of all those employed in the social and human services assistant field had earned an associate's degree or higher, with most reporting a bachelor's degree award. CHW employment was also dominated by workers with a college degree with 59 percent of these individuals reporting they had earned a bachelor's degree or higher. The high share of college graduates in these occupations is surprising given the limited educational and skill requirements of these occupations, as well as the comparatively low wages paid to workers employed in these occupations. Part of the explanation for high shares of college graduates working in these jobs may be the result of a rising mal-employment problem for college graduates that characterized New England and the nation as a whole during this period, triggered by very weak labor demand conditions associated with the Great Recession and the subsequent weak job recovery.[42]

The marital status of health care support and direct care workers differs considerably from that of workers employed in other occupations around the state. About one-half of all employed persons in Massachusetts were married at the time the ACS was conducted. Health

[42] I) Neeta Fogg and Paul Harrington, "Rising Mal Employment and the Great Recession: The Growing Disconnection between Recent College Graduates and the College Labor Market", *Continuing Higher Education Review*, V75, Fall 2011. ii) Paul Harrington and Andrew Sum, "College Labor Shortages in 2018?" *New England Journal of Higher Education,* November 2010

care support and direct care workers were considerably less likely to be married than their employed counterparts working in other occupations across the state. Just over four out of ten health care aides were married at the time of the survey, a marriage rate equal to just 81 percent of the statewide marriage rate among employed persons. The marriage rate among personal care aides was quite low, averaging just 33 percent over the 2012-2014 period, equal to just two-thirds of the overall marriage rate among employed workers in the state.

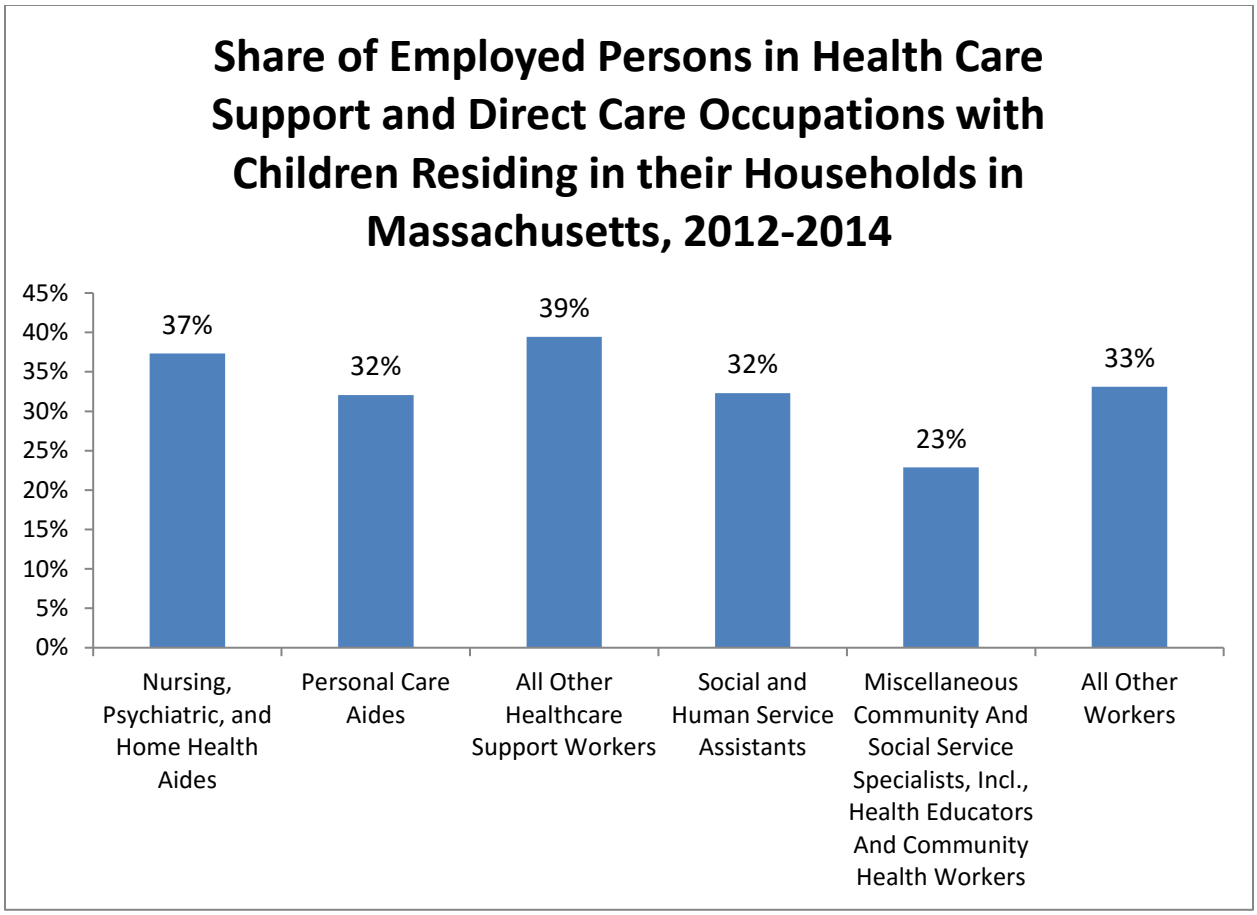
Table 23:
Distribution of Health Care Support and Direct Care Worker Employment, by Occupation and Marital Status, Massachusetts, 2012-2014

Marital Status	Nursing, Psychiatric, and Home Health Aides	Personal Care Aides	All Other Health Care Support Workers	Social and Human Service Assistants	Miscellaneous Specialists, Incl., Health Educators and Community Health Workers	All Other Workers
Married	41%	33%	42%	40%	41%	50%
Widowed	3%	4%	2%	2%	3%	2%
Divorced	12%	16%	12%	11%	14%	9%
Separated	6%	4%	4%	3%	1%	2%
Never married	38%	43%	41%	45%	41%	37%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The marriage rate in the social and human service assistant and CHW occupations were also well below the average for persons employed in all other occupations.

One in three employed persons in Massachusetts lives in a household where a child also resides and in most instances this is the child of the employed person related by blood, marriage or adoption. Workers employed in health care support and direct care occupations generally report the presence of children in their households at the same rate as those employed in other occupations.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

About 37 percent of health care aides reported children under age of 18 lived in their households while 32 percent of personal care workers said they had children. The social and human service occupation had 32 percent of its workers report the presence of children in their homes. Persons employed as CHWs were substantially less likely to report the presence of children.

Marital status and the presence of children in households can exert important influence on a wide variety of choices related to the level and intensity of work activities, the gains to families/households associated with work, as well as determining eligibility for a range of income and benefit transfer programs that exist within the Commonwealth.

Poverty and Public Assistance among Health Care Support and Direct Care Workers

Despite their work activities, a considerable share of persons employed in health care support and direct care occupations reside in households where total annual money income is below the national poverty threshold. Indeed, some analysts have observed that part of the home health care system can be characterized as poor people taking care of other poor people. In this section of our analysis we examine the poverty rates and participation in public assistance benefit transfer programs of persons employed in the health care support and direct care occupations in Massachusetts during the 2012-2014 period. Once again, we rely on the Public Use Microdata Sample (PUMS) files from the American Communty Survey of households in Massachusetts for the 2012-2014 period for our analysis.

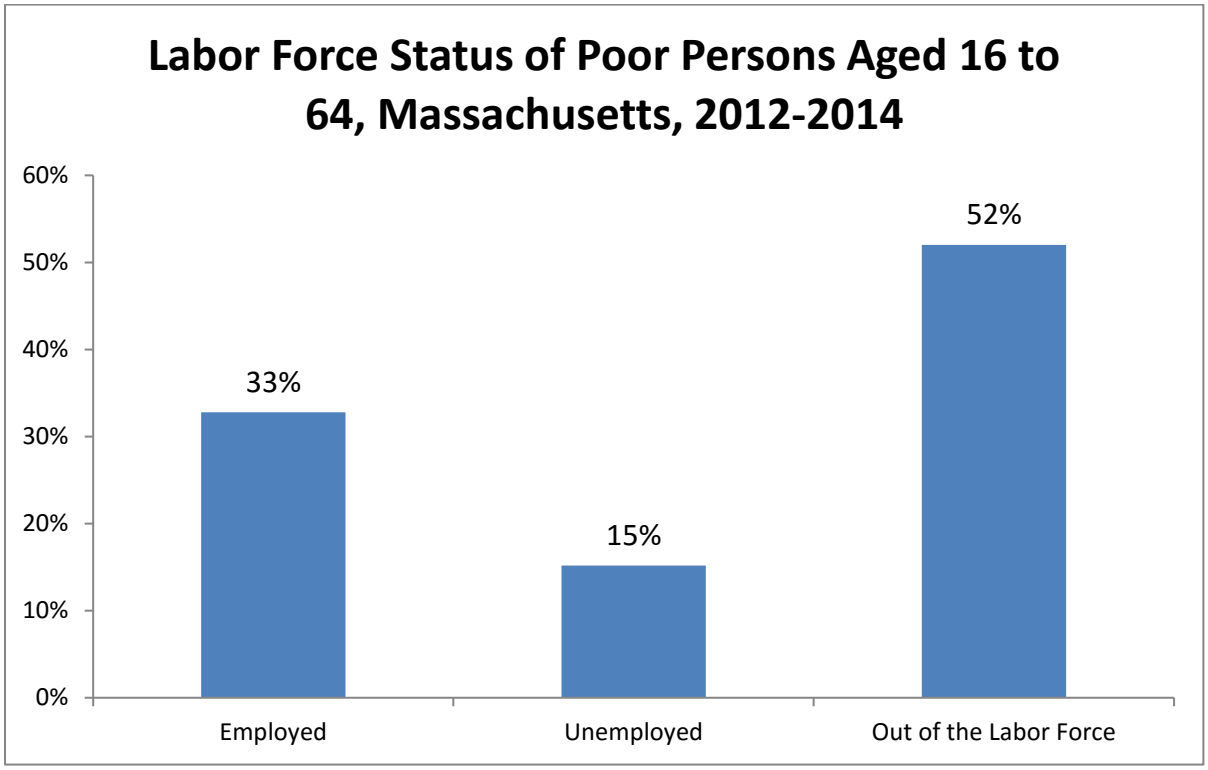
Closely connected to poverty and low-income status for employed persons in the state is participation in various cash and in-kind benefit transfer programs. Using findings from the ACS PUMS data we are able to produce a limited set of measures of transfer program participation among those employed in health care support and direct care occupations compared to all other workers in Massachusetts.

The Office of Management and Budget official poverty measure is based on measures of money income from all sources (wages, rents, interests, profits and cash federal, state and local income transfer payments including old age, retirement and disability cash benefits) for persons who reside in a houshold. Households are physical places with certain characteristics and can be composed of either a single person or multiple persons who reside within the household. Families are persons who live in the same household who are related by blood, marriage or adoption. Total money income from all sources within the household during a 12 month period is used to measure the poverty status of the houshold/family as whole.

The exact poverty threshold against which household money income is compared varies considerably depending on the size and family composition of a household. The poverty threshold for a household of three persons with related children during 2014 was $19,055, while the threshold for an individual under the age of 65 living alone in their own household was $12,316. The poverty thresholds are a national standard that does not vary across states or areas,

even though living costs may differ considerably.[43] Poverty thresholds are adjusted annually to take into account inflation, but no other factors are included in year to year changes in these thresholds.[44]

Living in poverty in Massachusetts is not restricted to persons without a job. In fact, there was considerable inter-relationship between work and poverty status in the state during the 2012-2014 period among persons aged 16 to 64.[45] During that time just over one half of all non-elderly poor persons in Massachusetts were not actively engaged in the state's labor market.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

[43] U.S Bureau of the Census. "Poverty Thresholds", http://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html

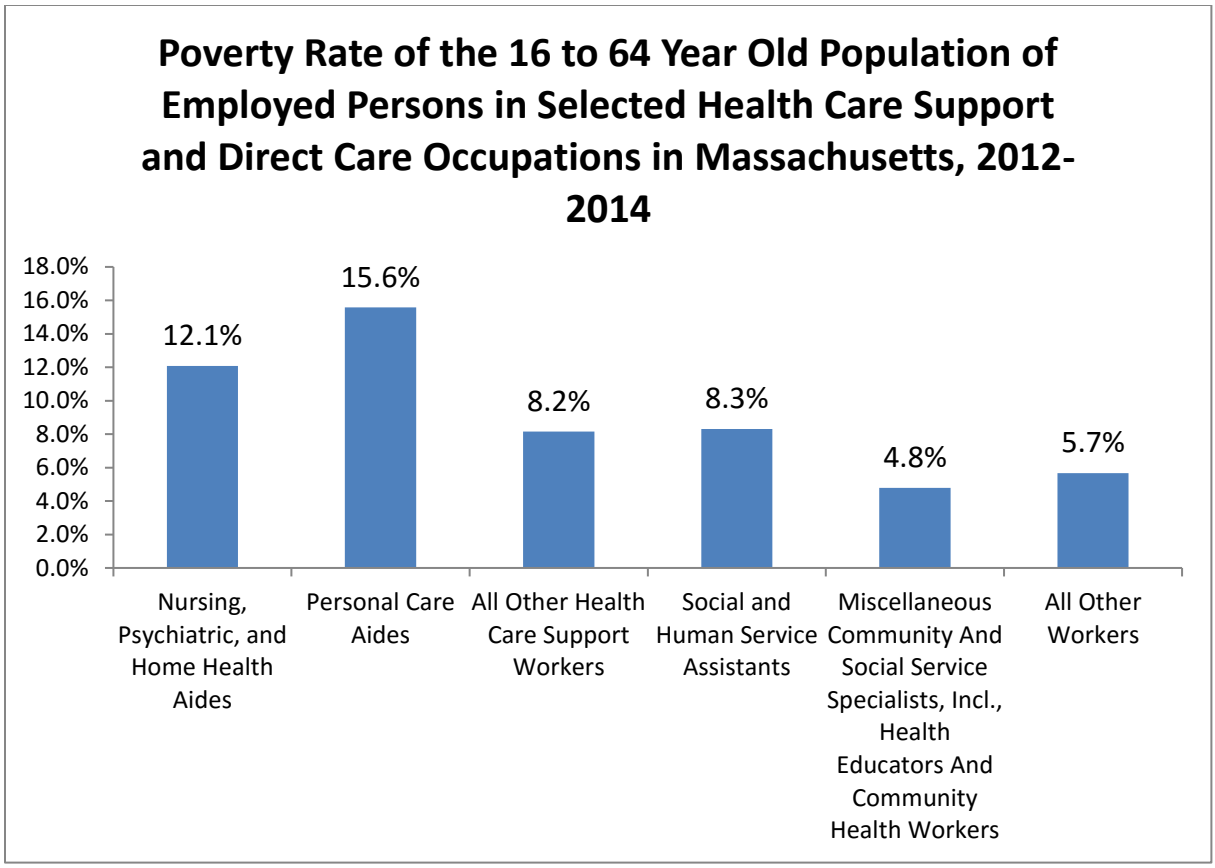
[44] Carmen DeNavas-Walt and Bernadette D. Proctor, *Income and Poverty in the United States: 2014,* Current Population Reports, U.S. Bureau of the Census, September, 2015 http://www.census.gov/content/dam/Census/library/publications/2015/demo/p60-252.pdf

[45] We include all persons under the age of 65 in the working age population. Those 65 and older are excluded since the labor force attachment of persons aged 65 and older (although increasing) is much lower than that of persons under the age of 65. Persons 65 and older are most often retired and permanently withdrawn from the labor force- their poverty rates are well below the average since income transfer programs, including old age insurance, provide income floors for most elderly residents of the state

We found that the labor force participation rate of poor persons in the state during this three year period averaged 48 percent, that is 48 out of 100 poor persons aged 16 to 64 were either employed or jobless, but actively seeking work.

Our analysis of the data reveal that one-third of all working age non-elderly poor persons in Massachusetts were employed in any given month during 2012-2014. An additional 15 percent of these persons living in poverty at that time were officially classified as unemployed. Not much difference was found in employment rates between men and women. The employment to population ratio for the poor aged 16-64 averaged 32 percent for men and 33 percent for women. It is important to note that most employed persons in Massachusetts are not poor. Just one in twenty employed persons in the state lived in a poor household during the 2012-2014 period.

When we examined the ACS data for the population of health care support and direct care workers we found that the chance of these workers living in a poor household was almost double that of all employed workers in the state. During 2012-2014, we found a relatively high proportion of health aides and personal care aides lived in households with total money income below the poverty threshold. The overall poverty rate of employed persons in Massachusetts during 2012-2014 averaged 5.7 percent. The 11.4 percent poverty rate for persons employed in health care support and direct care employment was double the state average poverty rate for all employed persons. However, the poverty rate for these workers did vary considerably within these health care support and direct care occupations.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Employed nursing, psychiatric, and home health aides had an average poverty rate of 12.1 percent during 2012-2014, more than double the poverty rate of all non-elderly employed persons in the state over this time period. Among employed personal care aides the poverty rate was even higher, averaging 15.6 percent during this period, nearly three times the poverty rate of all employed workers in Massachusetts. Personal care aides had the lowest average hourly rate of pay of all those involved in the provision of home health care and support services, likely contributing to their poverty status and reduced hours of work compared to other workers. Social and human service assistants had poverty rates of 8.2 percent, 1.4 times the overall poverty rate among employed persons in the Commonwealth. The only health support and direct care occupation that had a below average poverty rate was the CHW and related social service specialist occupation where the poverty rate averaged just 4.8 percent over the 2012-2014 period.

The findings in Table 24 examine the relative household income of selected health care support/direct care occupations in Massachusetts. For example, the findings in column 2 provide information about the proportion of workers in an occupation that have household incomes that

are between 1 and 2 times the official poverty threshhold for their specific kind of household living arrangement. In this instance we find that 23 percent of nursing, psychiatric, and home health aides reside in households with income between the official poverty threshold and two times that threshold; households in this range have income above the poverty threshold, but are referred to as "low-income" households. For a family of three, the low-income household annual money income ranged from $19,055 to $38,110. We found that 26 percent of personal care aides had household/family incomes that place them in the low-income category.

Adding both the officially poor together with the low-income households we found that 36 percent of nursing assistants and home health aides lived in a low-income/poor household and 42 percent of all personal care aides were classified as low-income or poor. About one in five social and human service assistants resided in households where money income was at or below the low-income level of 200 percent of the poverty line. Statewide, we found that about one in six non-elderly employed persons resided in households with annual income below 200 percent of the poverty threshold.

Table 24:
Household Income Relative to Poverty Threshold among Health Care Support and Direct Care Workers and Those Employed in All Other Occupations, Massachusetts, 2012-2014

	Col. 1 Below Poverty	Col. 2 Between 1-2 Times Poverty	Col. 3 Between 2-3 Times Poverty	Co. 4 3 Times or Greater than Poverty
Nursing, Psychiatric & Home Health Aides	12%	23%	34%	30%
Personal Care Aides	16%	26%	35%	24%
All Other Health Care Support Workers	8%	17%	35%	40%
Social and Human Service Assistants	8%	12%	34%	46%
Miscellaneous Community And Social Service Specialists, Incl., Health Educators And Community Health Workers	5%	11%	31%	53%
All Other Workers	6%	9%	25%	60%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Eligibility for participation in various kinds of public assistance programs in Massachusetts is usually determined by household and family income means test. Some public assistance programs' money income limits are set as multiples of the national poverty rates including the Children's Health Insurance Program (CHIP). In Massachusetts CHIP eligibility is limited to those households with annual money income equal to three times the offical poverty rate. In 2014, households and families with three persons with total money income below $57,116 met the income eligbility requirement under the state's CHIP program. About 45 percent of all under age 65 employed persons in Massachusetts lived in households with income under three times the poverty threshold and so met the income eligibility requirements for the state's CHIP program.[46]

Seventy percent of persons employed in nursing and home health aide occupations had household income below three times the poverty rate and 77 percent of all personal care aides had income below these levels. Fewer than half (46 percent) of non-elderly persons employed in

[46] For a family of 3 CHIP eligibility for uninsured children aged 0 to 18 is 305 percent of the national poverty threshold. See: "Medicaid and CHIP Income Eligibility Limits for Children as a Percent of Federal Poverty Level," *State Health Facts,* Kaiser Family Foundation, January, 2016 http://kff.org/health-reform/state-indicator/medicaid-and-chip-income-eligibility-limits-for-children-as-a-percent-of-the-federal-poverty-level/

the social and human service assistant occupation lived in households with income greater than 3 times the poverty threshold for their type of household/family, while just over one-half of all community and social service specialists had total household money income above this level.

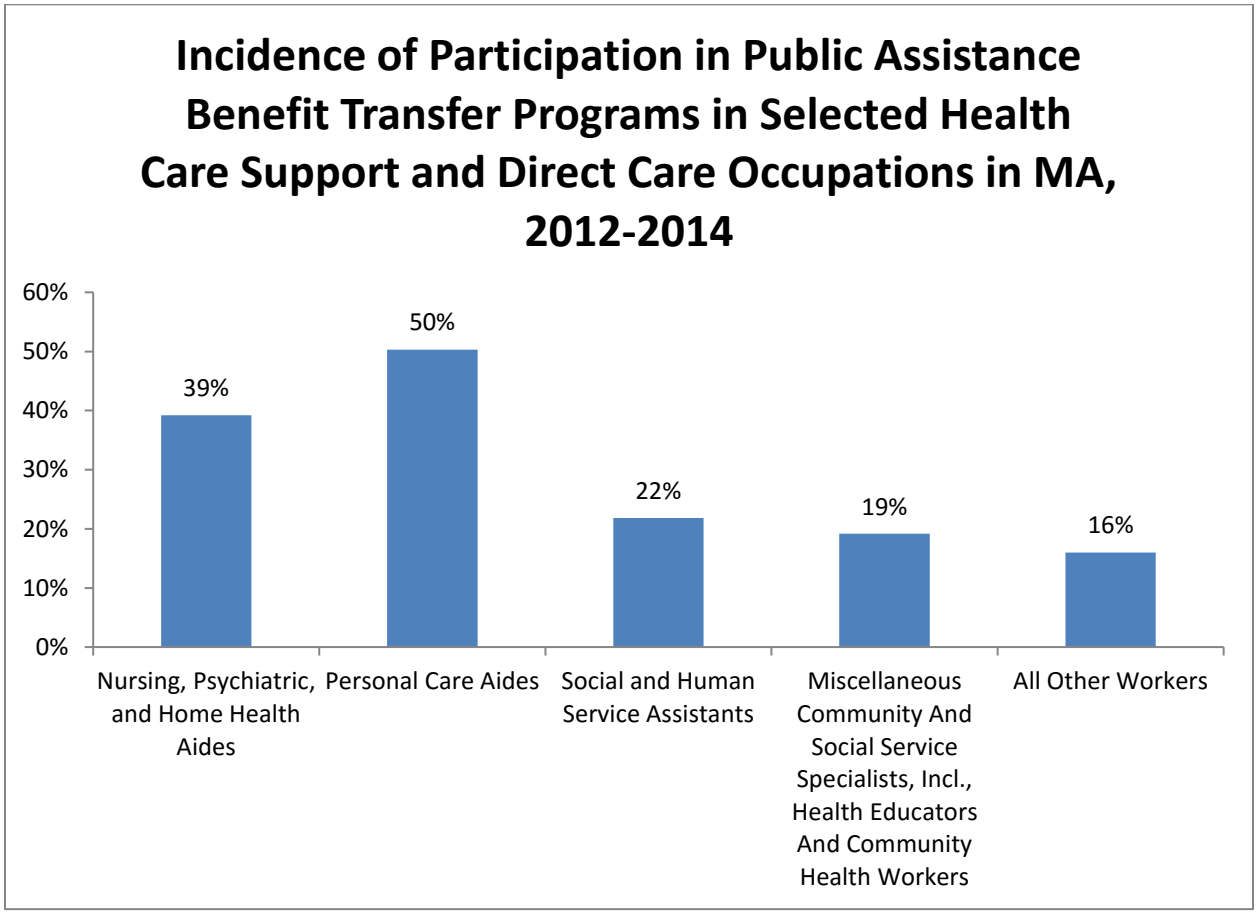
The relatively low levels of family and household incomes of those employed in nursing and home health aide and personal care aide occupations means that the likelihood of members of these households participating in various kinds of cash transfer and especially in-kind benefit programs is much greater than average non-elderly employed persons in the Commonwealth. The ACS PUMS data files contain some information about participation in some cash and in-kind public assistance programs available to eligible residents of the state. However, it is important to note that these data are limited in at least two key respects: First, the ACS questionnaire asks about participation in just four transfer programs. Two are cash transfer programs including Supplemental Security Income (SSI) and public assistance or welfare cash payments (Temporary Assistance for Needy Families or TANF) from state and/or local sources as well as two in-kind benefit programs including food stamps or the Supplemental Nutrition Assistance Program (SNAP) and Medicaid. All other cash income and benefit transfer programs are excluded from the ACS measures of public assistance program participation, including most importantly public housing and rent subsidy programs. Housing subsidies and access to public housing is thought to be among the most important income transfer program among employees who work for home health firms.

Second, respondents to household surveys like the ACS under-report their participation in benefit transfer programs. A careful study of reporting that compares administrative records with PUMS household survey responses accounts for only about 55 percent of spending on both food stamp and TANF programs and about 82 percent of SSI spending.[47]

Even with clear evidence of downward bias in the measure of transfer program participation derived from the ACS household survey, we still find very high rates of transfer program participation among those employed in health care support and direct care occupations. These findings are not surprising given the well above average shares of workers in these occupations who live in poor or low-income households.

[47] Bruce D. Meyer, Wallace K. Mok and James X. Sullivan, *The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences,* National Bureau of Economic Research, Working Paper 15181, Cambridge, July 2009

About one in six employed persons in Massachusetts reported that they participated in one of the four cash or in-kind public assistance transfer programs that were covered in the ACS questionnaire in any given month during the 2012-2014 period. This share is just about equal to the same proportion of all employed residents of the state who had household income that was either below the poverty level or the low-income (200 percent of poverty) level. The incidence of public assistance program participation among nurses aide and home health care workers was more than twice that of all employed persons in the state. We found that at any point in time 39 percent of all those who were employed in these occupations participated in one of the four public assistance benefit transfer programs included on the ACS survey. Nursing aide and home health care workers were about 2.5 times more likely to participate in a public assistance program as workers in all other occupations in Massachusetts.

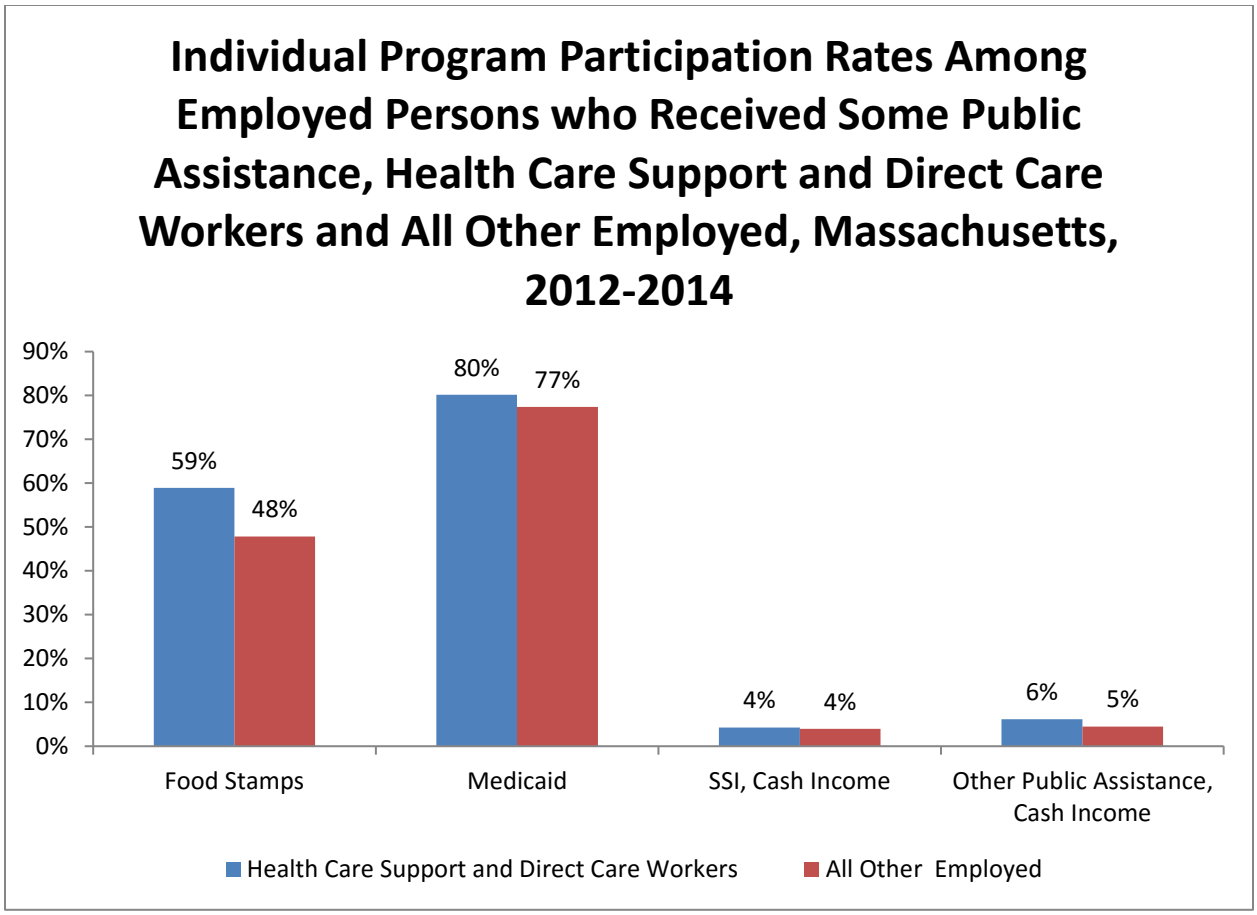


Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The incidence of participation in public assistance programs was even higher among persons who worked as a personal care aide. The ACS data found that half of all personal care aides particpated in a public assistance program at any given point in time during the 2012 to 2014 period. This means that personal care aides were more than 3 times as likely as workers in other occupations to receive benefits from one of the four programs covered by the ACS survey questionnaire.

Social and human service assistants were also somewhat more likely to participate in an income transfer program in Massachusetts during the 2012-2014 period. Our analysis of the ACS data found that about 22 percent of these individuals were participating in a public assistance program, an incidence of particpation that was more than one-third greater than the average incidence of participation of persons employed in all other occupations in the state.

Relatively few workers in the health care support and direct care related occupations received any cash public assistance. Instead, we found that most of the participation in transfer programs among these workers was associated with the receipt of benefits from non-cash benefit programs. Our analysis of the ACS PUMS files found that only between 4 percent (SSI) and 6 percent (TANF, local aid and all others) of all those enrolled in public assistance programs received money income from a cash public assistance program.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Almost all health care support and direct care workers who did receive some type of public transfer benefit received food stamps (59 percent) and/or Medicaid (80 percent). Like most employed persons, health care support and direct care workers are very unlikely to receive cash public assistance payments with participation in public assistance benefit transfer programs largely restricted to in-kind transfers. We found that among those public assistance beneficiaries employed in all other occupations in the state just 4 to 5 percent received cash public assistance; most of the benefits received were provided under non-cash food stamps and Medicaid benefits.

It is important to stress the limited nature of the information about the actual participation of health care support and direct care workers in the entire range of public assistance programs available to low-income households in Massachusetts. During the spring of 2016, the Massachusetts Home Care Aide Council organized a meeting for the authors with about 40 members, all of whom owned or managed home care agency businesses. The session focused on

some issues related to labor supply problems to home health care aide and related occupations. One of the topics discussed was the "benefit cliff" issue (discussed in detail in a subsequent section) and the way that maintaining eligibility for selected in-kind public assistance benefits may influence the choices confronting these workers in their supply of labor.

We asked a variety of questions about the nature of program participation among their home care aide staff. The group of employers provided us with a listing of the five most important sources of public assistance support for their workers. Employers have a good knowledge of this as they report that workers alter their weekly hours of work and weeks of work in a given month in order to maintain eligibility to participate in these programs. Employers told us that they estimated that about two-thirds of their home health aide and personal care aide staff participate in some kind of in-kind benefit program.

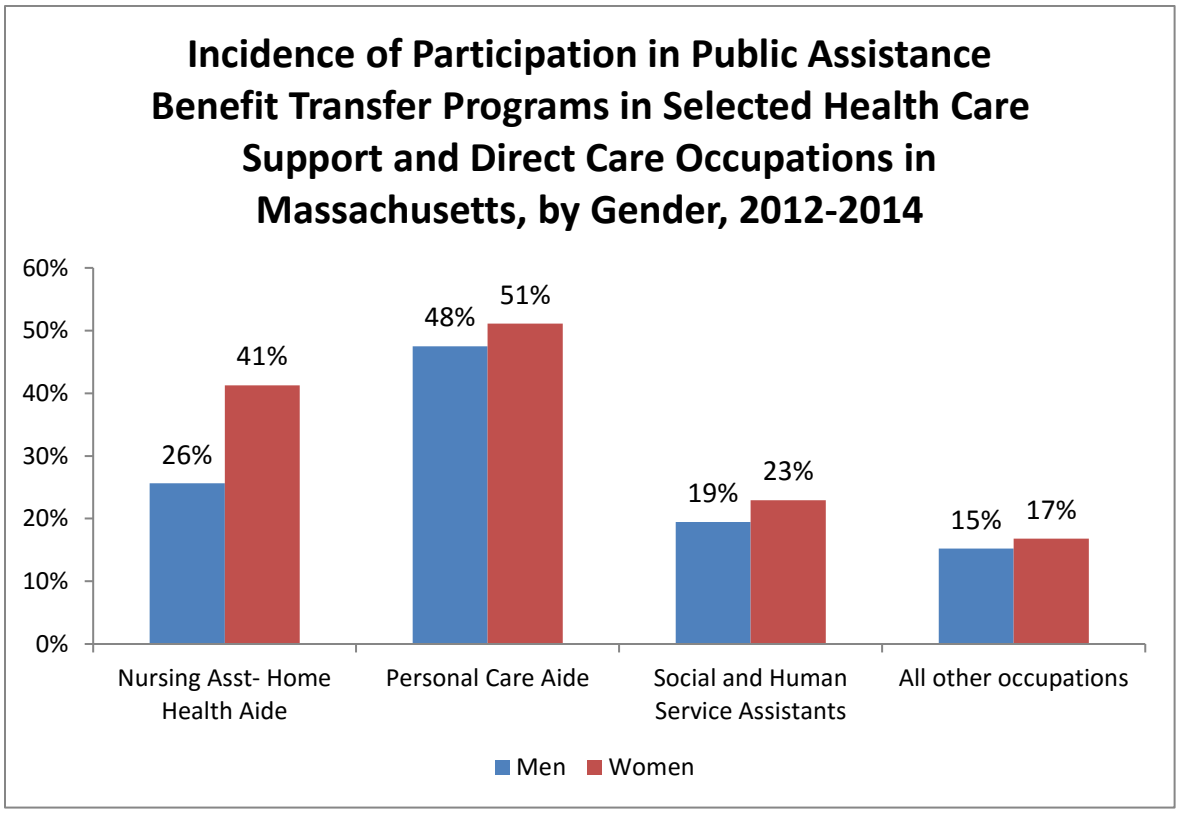
The employer group provided us with their consensus ranking of public assistance benefit programs most often utilized by their home health aide and personal care aide staff. The employers listed five programs in descending order that frequently were utilized by their home care staff including:

1) Public housing/housing subsidies
2) MassHealth/Medicaid
3) Childcare subsidies
4) SNAP (Food Stamps)
5) Fuel assistance (in a bad winter like 2014/2015)

As the reader will note, information about just two of these five in-kind public assistance benefit programs was collected as part of the ACS survey: MassHealth participation (Medicaid) and SNAP (food stamps) participation. The employers told us that they believed that public housing and housing subsidies were by far the most important programs for their workforce. Also not included in our ACS measures of public assistance were child care subsidies and fuel assistance—both programs that employers noted their home health aide and personal care aide staff also participated. Thus the low-income workers who largely make up the majority of the home health industry workforce are likely to have a very high incidence of participation in a variety of in-kind benefit transfer programs with public housing and housing subsidy transfer programs serving as the most important source of public support of living standards in these households. We will examine in greater detail in a subsequent section some measures of the

impact of participation in the in-kind benefit programs on worker decisions to supply hours of work.

The incidence of participation in public assistance programs varied somewhat by the characteristics of persons employed in the health care support and direct care occupations.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

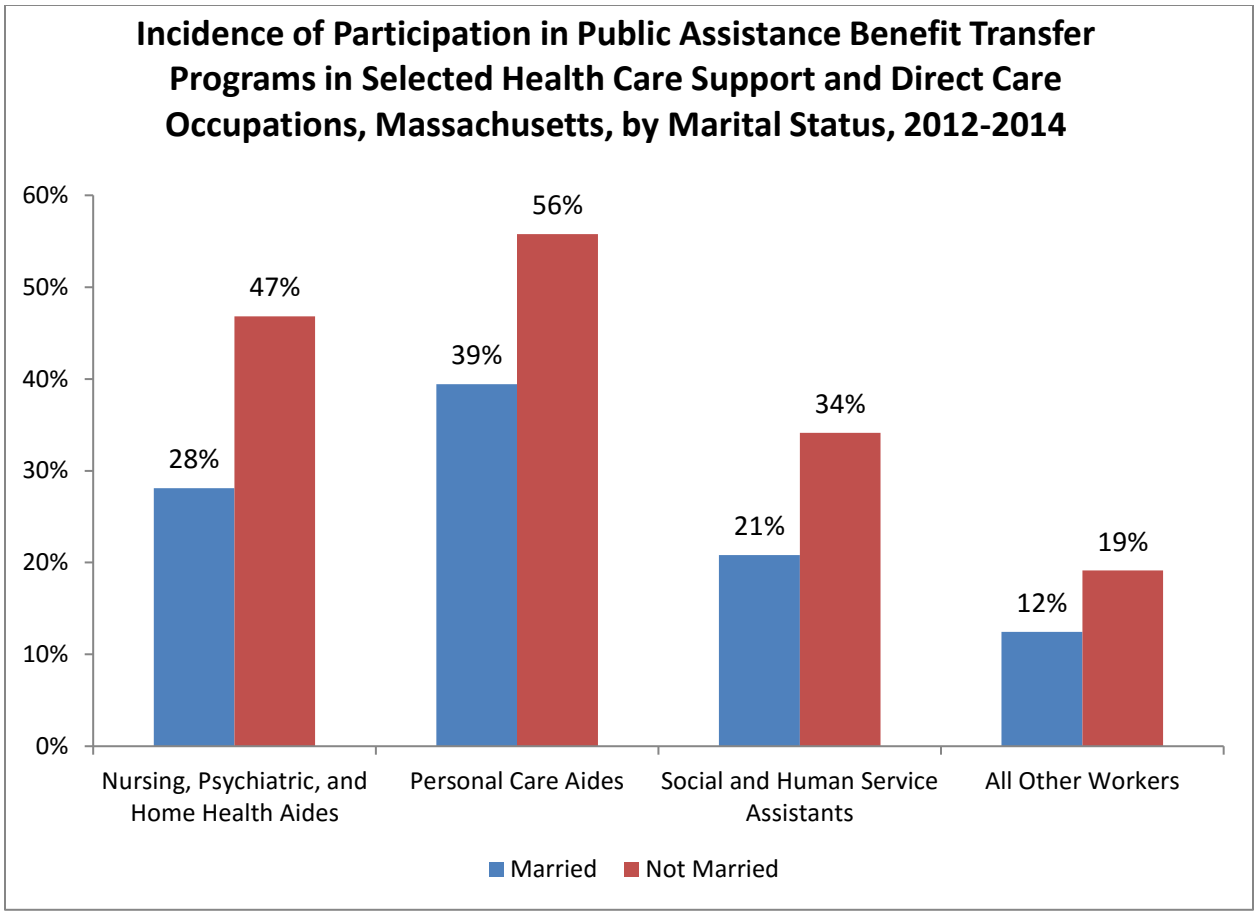
Men employed in health care support and direct care occupations were somewhat less likely to report participation in a public assistance program. The male to female difference in particpation was largest among nursing assistant and home health aide workers where 26 percent of men employed in the occupation received some form of public assistance while 41 percent of women participated in a public assistance program. About one-half of both men and women who were employed in the personal care aide occupation received a cash or in-kind public assistance benefit with little difference in the rate of participation between men and women who worked in that field. We found that about 19 percent of men who worked as social and human service assistants received some form of public assistance, while about 23 percent of women employed

in these occupations participated in a benefit transfer program on avaerage during the 2012-2014 period.

The marital status of persons employed in health care support and direct care occupations exerted an important influence on the likelihood of participation in a public assistance benefit transfer program. Our analysis of the ACS data found very large public assistance participation differences between married and unmarried health care support and direct care workers. We found that 28 percent of married nursing assistants and home health aides were receiving some type of public assistance during an average month between 2012 and 2014, while 47 percent of unmarried workers in this occupation received a public assistance transfer benefit. Single workers in jobs were 1.7 times more likely to participate in a public assistance program than their married counterparts.

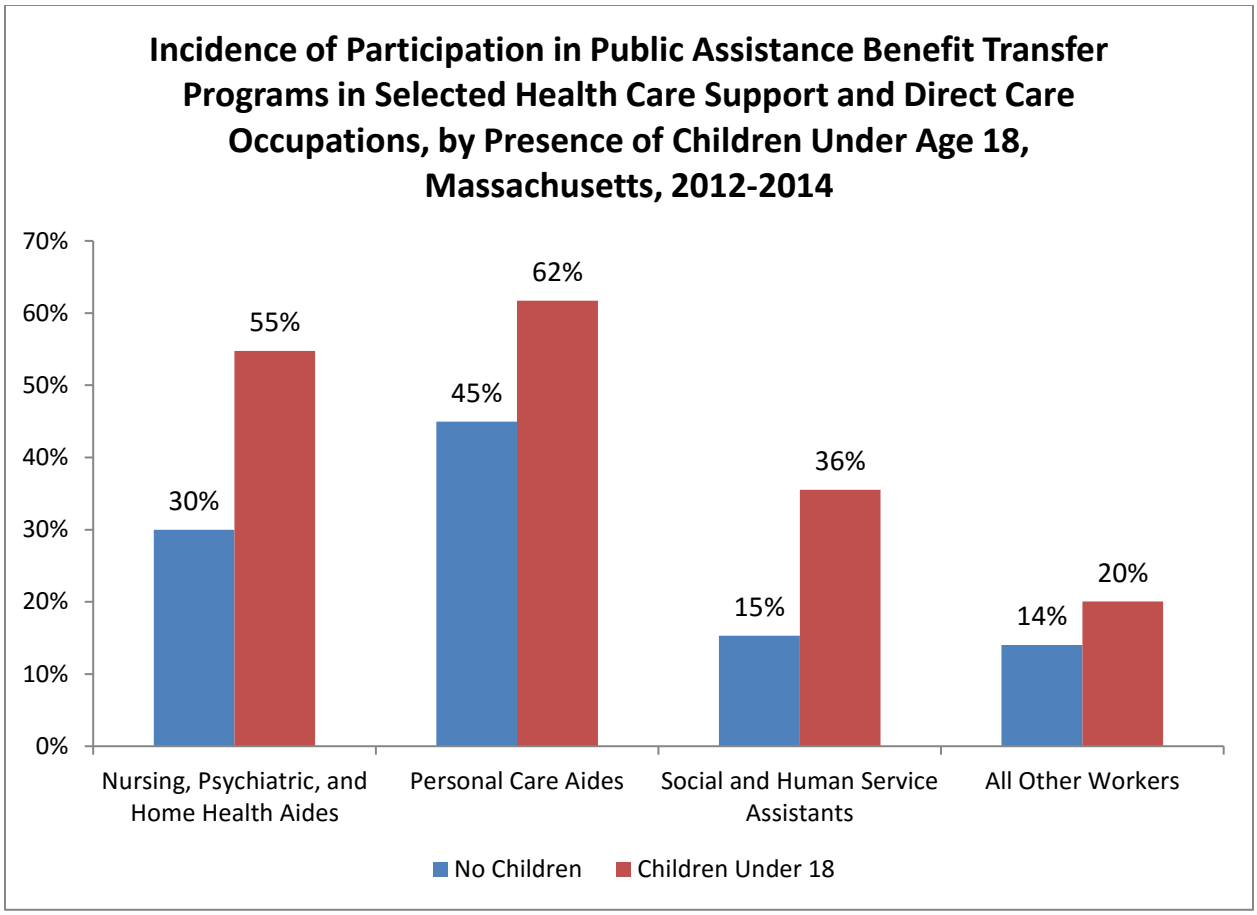
Unmarried personal care aides were about 1.4 times more likely to participate in a public assistance program with 56 percent of unmarried personal care aides receiving some kind of transfer benefit compared to 39 percent of their married counterparts. Among social and human service assistants we also found a substantial difference in the proportions of married workers relative to their single counterparts who received public assistance benefits during 2012-2014. The ACS data revealed that while 21 percent of these married workers received a transfer program benefit, the incidence of participation in one or more of these programs among unmarried workers in this occupation averaged 34 percent, about 1.63 times the rate observed for their married counterparts.

Overall we found that 28 percent of married workers in the health care support/direct care occupations received a public assistance benefit while this proportion was 44 percent for their unmarried counterparts. Thus, unmarried persons employed in these occupations were collectively about 1.6 times more likely to receive some form of public assistance than their married counterparts. Moreover, those employed in these occupations were less likely to be married than those employed in other occupations. Those employed as health care support and direct care workers at this time were married about 38 percent of the time, but workers employed in other occupations were married 50 percent of the time.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The presence of children (under the age of 18) in the household/family of persons employed in health care support and direct care occupations sharply increases the likelihood these workers will participate in a public assistance program. During the 2012-2014 period we found that more than one-half (55 percent) of employed nursing aides and home health aides who lived with children under the age of 18 participated in at least one public assistance program during a given month compared to just 30 percent of those workers with no children in their homes. Among personal care aides we found that 62 percent of those with children participated in public benefit transfer programs in any given month during 2012-2014 compared to 45 percent of their counterparts with no children present. We found that 36 percent of those employed as social and human service assistants with children at home received some type of public assistance on average during 2012-2014 compared to just 15 percent of their counterparts with no children.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Overall, we found over the 2012-2014 period that more than one-half of all health care support and direct care workers employed in Massachusetts with children at home participated in a public assistance program. In contrast, 30 percent of persons with no children at home who were employed in the same occupations received these benefits.

Supplying Hours and Weeks of Work

We learned in the course of our interviews that the work assignments to provide care in a household among those who are employed by home health care agencies are often of relatively short-duration and are somewhat unpredictable. Moreover, in cases of publicly financed home health care, local aging service access point agencies often coordinate services for a single patient by using multiple home health firms as a way to hedge against a single firm who may not be able to provide a direct care worker for a particular time period. Home health agency

employers frequently struggle to provide a long term work schedule for their employees; the flow of work can be irregular and service requirements can change week to week or even day to day.

As work comes into the firm, employers try to find staff within the local area who can provide the services required to those in need of the specific home health care services required. Given these and other challenges, home health agencies we spoke with indicated staff recruitment and retention were the primary areas of business concern and focus for them. Annual quit rates were reported anywhere between 7 and 50 percent and employers indicated using a range of screening activities and retention incentives to recruit and retain adequate numbers of staff.[48] Many home health care agencies indicated not being able to take on available caseloads due to a lack of sufficient labor supply.

Those who become employed in many lower skilled occupations in the home care industry are frequently attracted to these jobs because of flexibility in both the number of hours and weeks worked and the limited commuting/travel requirements of employers.[49] These employment conditions allow for flexibility among the largely female workforce in these occupations to better balance work and family responsibilities. Wages are relatively low for workers employed in home health aide and personal care aide jobs and their inflation adjusted hourly wage rates have not changed since 2004. Workers in these occupations and their employers struggle with managing the complexity of these benefits and trade-offs.

We noted earlier that those who supply labor in these occupations are overwhelming female, primarily in the 25 to 54 age range, are much more likely to be African-American or Hispanic than others participating in the state's job market and substantially more likely to be foreign-born as well. The level of educational attainment for these workers is well below the state average—about one fifth were never awarded a high school diploma. A substantially lower share of these workers are married, but they are somewhat more likely to have a child.

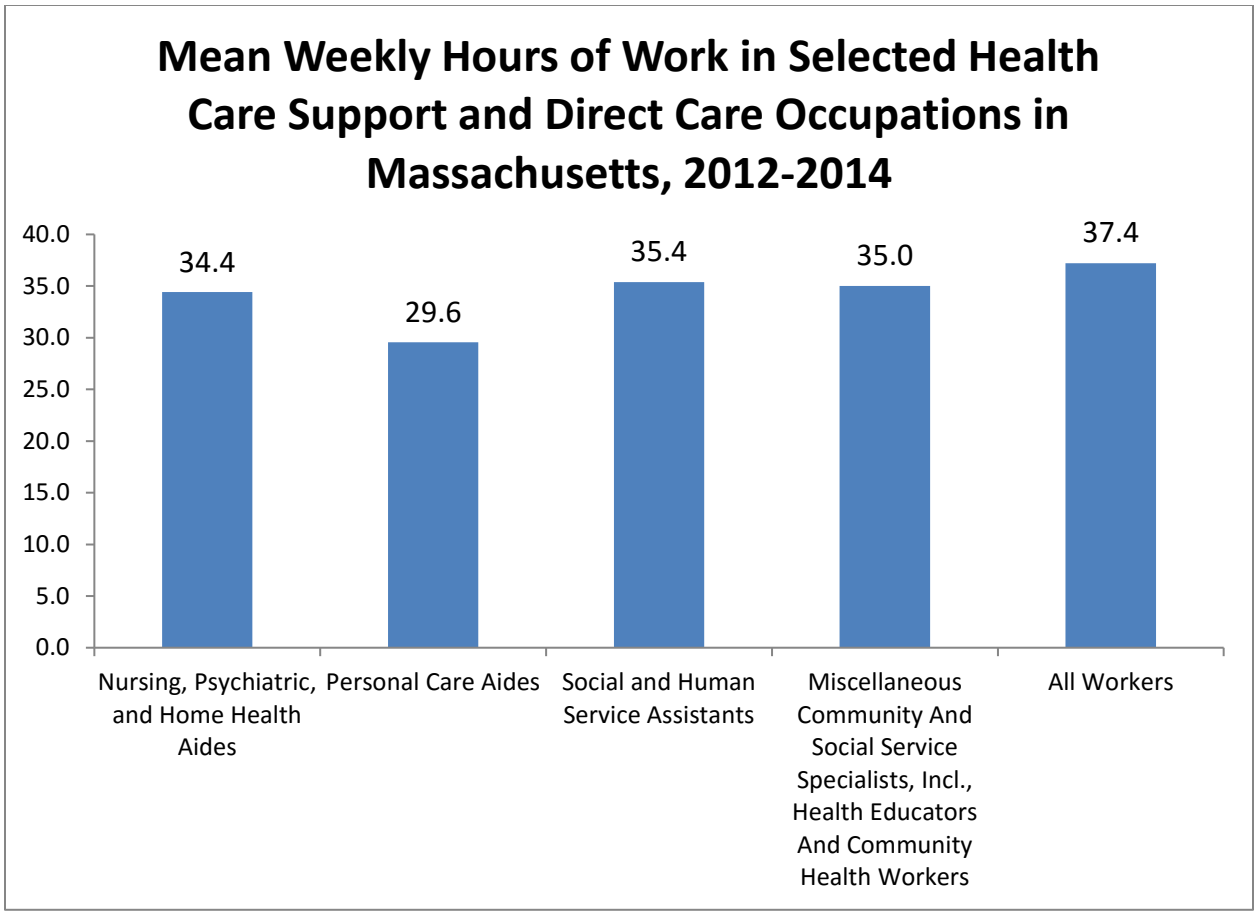
[48] We suspect that this back of the envelope quit rate estimate provided to us by employers is not based on total payroll employment quits, but rather is more indicative of quits among employees who have completed at least one work assignment. Employers reported very large numbers of hires who never completed their orientation and we think these very short term hires are excluded from the quit rate estimate. This topic is discussed in greater detail in a subsequent section of this monograph.

[49] Most employers try to match clients with staff who live nearby. However, we did hear from some workers and employers that travel time and costs can be a burden for workers. Additionally, some employers stated that there are some regions of the state where it is difficult to serve clients because of the lack of workers nearby with adequate transportation.

Employers we spoke with said that the presence of children was a significant restriction on hours and even weeks of work. The employers reported a high incidence of employees with children who themselves had complicated medical, behavioral and disability related issues requiring intensive levels of care.

Our earlier analysis of ACS data found that household incomes for persons employed in these occupations were much lower than for other households where at least one person was employed. About 4 in 10 workers in these home health occupations live in low-income households, where household income is less than 200 percent of the poverty threshold.

Home health care employers we spoke with tend to see this workforce as composed of three distinct groups with respect to availability of hours of work in a given week. The largest group of employees seek only a part-time work schedule, both because the opportunity cost of home and family responsibilities rise with their hours of work and because many participate in means tested benefit transfer programs in the state and must manage their monthly earnings in order to maintain benefit eligibility. Our earlier analysis found that half of all personal care aides and 40 percent of nursing aide and home health aide workers in the state received some kind of public assistance benefit.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

A second group of employees are those who seek large numbers of hours of work each week. These workers often put in 60 to 80 hours of work per week; however, they almost never earn overtime payments for this work. Individual home health agencies try to limit their use of overtime hours and so almost always restrict workers to 40 hours per week. Only in rare instances will overtime be paid as some employers report that they sustain losses on hours compensated at 1.5 times the usual hourly rate. Workers seeking intensive hours have jobs at multiple employers over the course of a week. These individuals may not only work for several different agencies in a given week and in several different roles/occupations,[50] but may also

[50] There are several different levels of home care worker that have different tasks, training requirements and reimbursement and pay rates. We heard from both workers and employers that workers are allocated to different roles based on client need. For more information see: http://c.ymcdn.com/sites/hcacouncil.org/resource/resmgr/2013mhcaidecareerladder.pdf

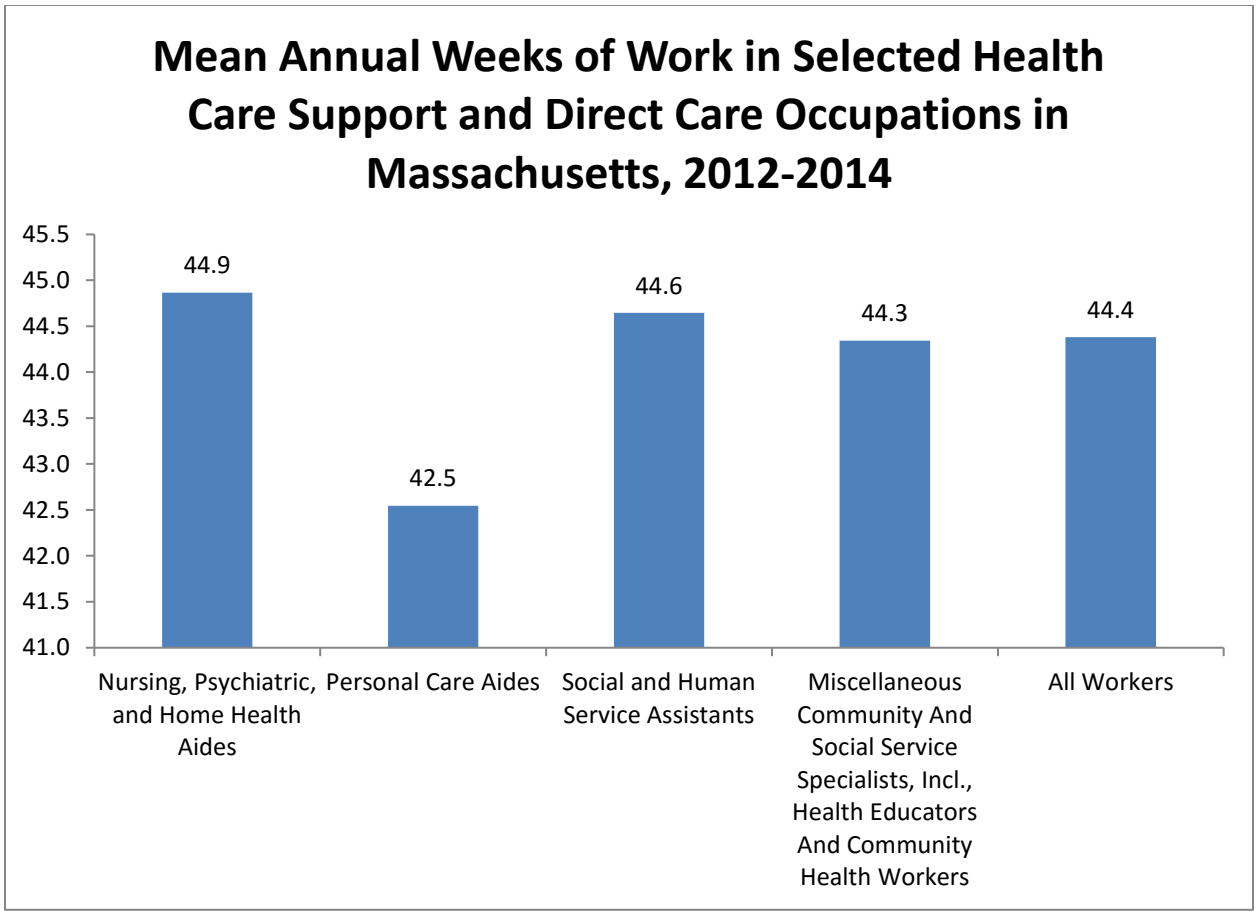
work as a personal care attendant for a consumer in need of services with their hourly pay financed through MassHealth's PCA program.[51]

A third, smaller group, perhaps more heavily concentrated among older workers aged 55 and over, work a more regular 40 hour per week schedule. These workers may also work for several different agencies and/or participate in the MassHealth PCA program in order to reliably get sufficient weekly hours of work.

Persons employed in health care support and direct care occupations in Massachusetts worked somewhat fewer hours per week on average compared to workers in all other occupations. Weekly hours of work for those employed outside the health care support and direct care services occupations averaged 37.2 hours per week during 2012-2014. Workers employed in personal care aide positions worked an average of 29.8 hours per week, about one fifth fewer hours than other workers during that period. Those employed in nursing aide and home health care occupations worked an average of 34.4 hours per week, about 8 percent fewer hours than those employed in other occupations. Social and human service assistants and CHWs also worked about 35 hours per week, slightly below the state average of weekly hours for all workers.

Employed persons in Massachusetts worked an average of 44.4 weeks out of the year in 2012-2014. While many people think of their employment as year-round, it is often the case that individuals do not work a year-round schedule for a variety of reasons ranging from schooling, family responsibilities, employment in seasonal industries, involuntary lay-off and temporary or even permanent withdrawal from the labor market, to name a few. In the health care support/direct care occupations, our analysis of the ACS data reveals that the mean number of weeks those employed in these occupations are working also averages about 44 weeks per year. The exception to this is among those who are employed as personal care aides. Personal care aides in Massachusetts work an average of 2 weeks less per year than all other workers in the state, which contributes to their reduced annual earnings.

[51] Since these individuals spread their weekly hours over several employers and rarely work for a single employer for more than forty hours per week, they seldom if ever receive overtime pay. Like any "moonlighters" who work more than 40 hours per week, these individuals do not receive overtime pay for hours worked on their second or third job.

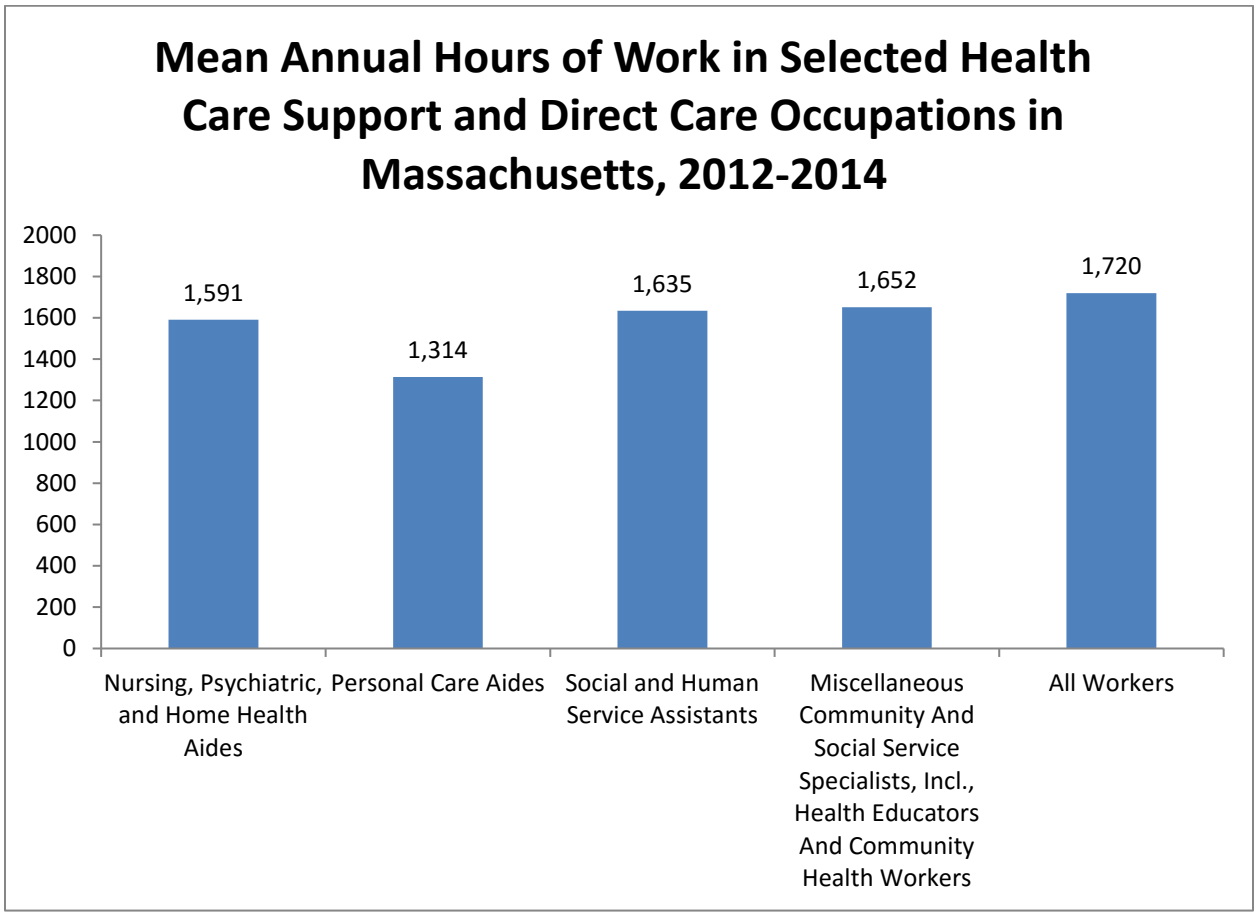


Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The number of weeks and hours of work yield the total number of hours of labor an individual supplies in the labor market. Our analysis of the ACS data reveals that on average employed persons, including those on part-time and part-year schedules, work 1,720 hours per year. About 64 percent of all those employed in Massachusetts during 2012-2014 worked full-time and year-round.

Those employed in health care support/direct care occupations worked fewer hours per year than their counterparts employed in other occupations in the state's job market. Nursing aides and home health aides worked an average of 1,590 hours per year, about 8 percent fewer annual hours than the average worker in the state. Personal care aides worked substantially fewer hours supplying an average of just over 1,300 hours of labor per year, almost one quarter fewer hours of labor supplied relative to all workers in Massachusetts. About 60 percent of nursing aide and home health aides work full-time, year-round, while just 37 percent of personal care aides

were full-time year-round workers. Community health and social and human service assistants worked an average of about 1,640 hours per year or just 4.5 percent fewer annual hours than the average worker in Massachusetts.



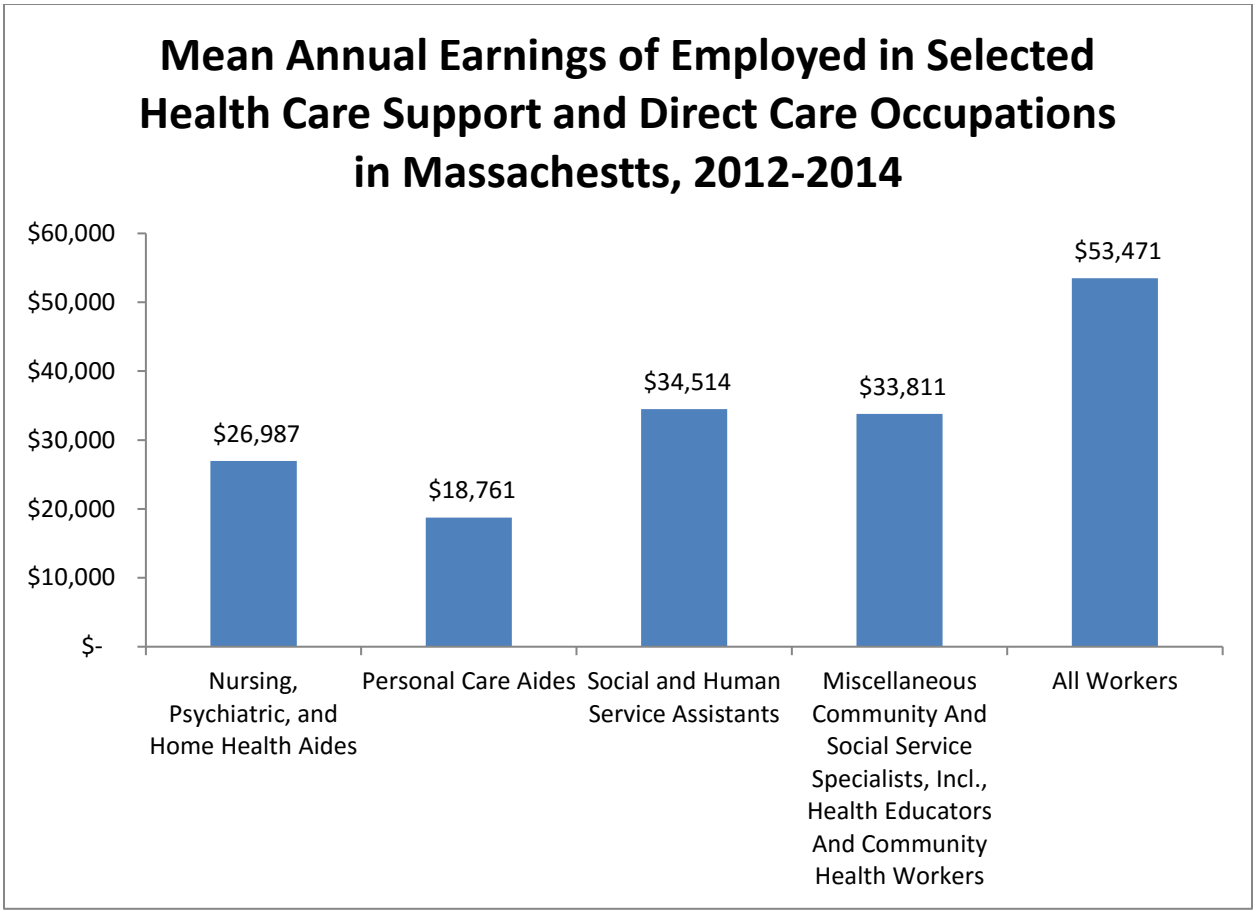
Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The annual earnings of employed persons are influenced by a wide range of human capital traits including academic ability, literacy and numeracy, occupational knowledge, social skills and behavioral characteristics. In addition, access to employment in industries and occupations in which these proficiencies are desired and valued by employers certainly influences the level of annual earnings of workers, as well as the level of lifetime earnings. However, decisions that workers make about the number of hours and weeks they desire to work, along with the hours and weeks of work offered by employers can also substantially influence the annual earnings of workers.

In a previous section of this paper we examined trends in the real hourly earnings of workers in the health care support/direct care occupations and found that the hourly pay rates of workers in these occupations are well below the state average hourly pay rate. Below we analyze findings from the ACS PUMS files to examine the mean annual earnings of health care support and direct care workers. This ACS measure of annual earnings takes into account decisions made by workers about how much labor they supply at the given wage rates, as well as decisions by employers about how many hours of work they will purchase at the prevailing level of compensation.

Persons employed in health care support and direct care occupations have mean annual earnings that are sharply below those of the average annual earnings of all workers in the Commonwealth. Annual earnings of all workers in Massachusetts average just under $51,500 during 2012-2014, about 21 percent higher than the mean earnings of all workers in the nation as a whole. The annual earnings of nursing and home health aides averaged about $27,000 per year during 2012-2014, half the annual average earnings of all workers in the state during that time period.

Those employed in the personal care aide occupation reported annual earnings that averaged just $18,761 during the 2012-2014 period. Sharply lower annual hours of work and low average hourly wage rates combined to provide earnings in a year that were equal to just over one third of the mean annual earnings of all workers in Massachusetts. The mean annual earnings of workers employed as social and human service assistants ($34,514) and CHWs ($33,811) were well above those of nursing aides and home health aides, largely because of higher hourly rates of pay.



Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

Like all occupations, there is considerable variability in the annual earnings of health care support and direct care workers, in part determined by decisions about how many hours of labor workers opt to supply in a given year. Economists think that choices made by individuals to supply hours of work in the labor market are in part governed by the gains in earnings (actually, the goods and services purchased by those earnings) relative to the costs of engaging in any of a wide range of non-work activities. Among these non-work alternatives may be a wide range of family and personal responsibilities. One panel of home health care employers spoke of having substantial shares of their staff with children with physical, cognitive and emotional disabilities, as well as children engaged in the criminal justice system. The time cost of managing these often difficult issues can be quite high and may result in difficulty working at a given point in time. Home health agency owners and managers reported these sorts of family issues were important

constraints on the ability of their home health aide and personal care aide staff in providing more hours of work and more weeks of work over the course of the year.

Further complicating the decision about how many hours and weeks of work to supply for a considerable share of health care support and direct care workers is their participation in public assistance benefit transfer programs. Public assistance benefit transfer programs are means tested programs, that is, individual, household and family income levels play a central role in determining eligibility to receive these transfer benefits. Our earlier analysis of the ACS data found that about 40 percent of nursing aide and home health aide workers and about half of all personal care aides participate in at least one of the four public assistance benefit programs that are captured by the ACS questionnaire.

Our home health agency panel told us that they thought that about two-thirds of their workers participate in a public assistance program and that the most important of these programs was related to housing subsidies of various types. It is important to note that information about housing assistance and energy assistance, among other kinds of public assistance programs, are not collected by the ACS sample—making our measures of public assistance participation among health care support and direct care workers a lower bound.

Because these income transfer programs are means tested, participants consider the trade-offs between increased income associated with supplying more hours of labor (or getting an hourly pay raise) with their potential loss in public assistance benefits. This means that as earnings rise with more hours of work, workers near a point where public assistance benefits begin to be diminished or eliminated, depending on the rules governing the program. It is universally true that public assistance benefit programs are characterized by a "benefit cliff." The benefit cliff occurs as earnings increase to a point where the value of cash and in-kind benefits begins to decline with additional earnings.[52] In such an instance, a family becomes worse off by supplying more hours of work—as benefit levels are reduced or eliminated at a steeper rate than an earnings increase can replace.

The benefit cliff problem is fundamental to all public assistance transfer programs. These programs have three conflicting objectives including:

- income support to households and families to provide some agreed upon living standard,

[52] Gary D. Alexander. *Statement of Gary D. Alexander, Secretary of Public Welfare, Commonwealth of Pennsylvania Before the Senate Budget Committee*, United States Senate, February, 2013.

- minimizing taxpayer costs by limiting program coverage, so that only those "in need" receive benefits and program costs can be held to a reasonable minimum,
- providing incentives to work so that the beneficiaries may become self-sufficient and participate more fully in labor market opportunities for upward mobility and rising living standards.

These objectives cannot be simultaneously achieved. For example, providing incentives for more hours of work mostly means increasing the level of earnings that a person can receive before benefits are reduced or eliminated or by reducing the pace of benefit reduction as earnings rise. Either way, putting in place additional incentives to work more has the effect of raising the level of household income required for eligibility, thereby expanding the size and cost of the transfer programs and providing benefits to an expanded number of households with higher incomes that may be less in need.

For a considerable proportion of those employed as nursing aides, home health aides and personal care aides careful attention must be given to the number of hours of work supplied in a given month to make sure that monthly earnings do not diminish or eliminate the value of public assistance transfer benefits largely related to housing, child care, health care, energy and food.[53] Our interviews with both workers and employers confirmed that managing monthly hours relative to continued participation in public assistance benefit transfers is important for both employers to retain dependable workers and for employees to avoid a loss in living standards associated with increased earnings. An unexpected earnings increase may eliminate or reduce the value of the benefit subsidy by far more than the increase in monthly earnings associated with additional hours of work.

Employers would most often desire more hours of labor from their workers, but they recognize that these individuals could potentially experience very large benefit losses associated with comparatively small earnings gains as they work more in a given time period. While these health care support and direct care workers limit their available hours to work for many of the same reasons that workers in a range of occupations and industries limit their hours, especially salient to employers and workers in health care support and direct care occupations (and similar

[53] As we observed in a prior section, only a very small share of workers employed in these occupations receive cash public assistance payments. Most of the public assistance benefits received by these workers are in the form of in-kind subsidies, which unlike cash assistance have very restricted uses.

occupations that employ adults in low-skill, low wage tasks) is the need to avoid a benefit cliff. Indeed, employers told us they work with their staff to manage hours of work so as to not jeopardize eligibility for public assistance benefits.

While several home health care employers stated that they offered health insurance benefits, most stated that employees found better and/or more affordable coverage through MassHealth or the Health Connector and that the take-up rate for commercial health insurance was low. Some employers reported that housing and child care public assistance benefits were especially important to their workers, in particular younger workers with children.

It is important to note that the benefit transfers received by these health care support and direct care aides are not a subsidy to the employer.[54] To the contrary, public assistance transfer programs reduce the hours of labor supplied by workers—making labor supply to these occupations relatively more scarce, putting upward pressure on overall labor costs for employers. However, for many health care support and direct care occupations where wage rates are primarily determined by Medicare/Medicaid reimbursement rates, this upward pressure on wages is stymied by what is in effect a wage ceiling. Employers struggle to recruit and retain workers to meet the hours of work patients and clients need, leaving hours of foregone care services on the table when they cannot find staff to supply the hours of work to meet the need. We examine some of the connections between hours of labor supply, the annual earnings of households and participation in benefit programs below.

The findings in Table 25 examine the mean weekly hours of work supplied by health care support and direct care workers relative to their public assistance benefit transfer program participation status. The data reveal that generally those who participate in benefit transfer programs supply somewhat fewer hours of work per week compared to their counterparts in that occupation who did not participate in a transfer program. Persons working in the nursing aide and home health aide occupation who participated in a public assistance benefit program worked about 3.4 hours less or about 10 percent fewer hours per week than those who did not receive any transfer benefits in a given month. Those employed in the personal care aide occupation who received a transfer benefit worked an average of 27.4 hours per week during 2012-2014, about 14 percent fewer hours per week than those who did not participate in a transfer benefit program.

[54] Gary Burtless, *Does the Government Subsidize Low-Wage Employers?* Brookings Institution, Real Clear Markets, July 15, 2015

Even larger reductions in weekly hours of work were found among those employed in the social and human service assistant occupation in the state. Staff in these occupations who participated in public assistance programs worked 7.2 fewer hours or about 19 percent less than their counterparts who did not receive any public assistance in a month.

Table 25:
Mean Weekly Hours of Work among Employed Health Care Support/Direct Care Workers in Massachusetts, by Public Assistance Participation, 2012-2014

	Without Any Public Assistance	With Any Public Assistance	Difference	Percent Difference
Nursing, Psychiatric, & Home Health Aides	35.8	32.3	-3.4	-9.6%
Personal Care Aides	31.8	27.4	-4.4	-13.9%
Social and Human Service Assistants	37.0	29.8	-7.2	-19.4%
All Workers	38.2	32.5	-5.7	-14.9%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

We also produced a set of measures that examines the number of weeks of employment that are supplied by workers in the health care support and direct care occupations by their public assistance participation status in Massachusetts during the 2012-2014 period. We found that those employed in health care support and direct care occupations who participated in a public assistance program in a given month worked, on average, fewer weeks over the course of the year than their counterparts who did not participate in these benefit programs.

Nursing aide and home health aide workers were employed 42.8 weeks per year compared to their counterparts who did not receive any benefits, about 7 percent less. Personal care aides who participated in public assistance programs worked about 3.4 fewer weeks per year than their counterparts who did not receive these benefits. Social and human service assistants who participated in public assistance benefit transfer programs worked 5.5 fewer weeks over the course of a year.

Table 26:
Mean Annual Weeks of Work among Employed Health Care Support/Direct Care Workers in Massachusetts, by Public Assistance Participation Status, 2012-2014

	Without Any Public Assistance	With Any Public Assistance	Difference	Percent Difference
Nursing, Psychiatric, and Home Health Aides	46.2	42.8	-3.3	-7.2%
Personal Care Aides	44.3	40.8	-3.4	-7.8%
Social and Human Service Assistants	45.8	40.4	-5.5	-12.0%
All Workers	45.2	40.4	-4.8	-10.6%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The findings provided in Table 27 examine the combined effect on decisions about weekly hours of work and weeks of work over the course of the year on the annual number of hours of employment supplied by a worker. Our analysis of the data found large differences in the annual number of hours of work supplied by health care support and direct care workers who participated in a public assistance benefit transfer program. The data reveal that nursing aides and home health aides who receive benefits worked about one-sixth fewer hours over the course of the year compared to their counterparts who did not participate in benefit transfer programs. Personal care aides who received benefits worked an average of 1,166 hours per year, one fifth fewer annual hours than the 1,464 hours supplied by their counterparts who did not receive benefits.

Table 27:
Mean Annual Hours of Work among Employed Health Care Support/Direct Care Workers in Massachusetts, by Public Assistance Participation Status, 2012-2014

	Without Any Public Assistance	With Any Public Assistance	Difference	Percent Difference
Nursing, Psychiatric, and Home Health Aides	1,691.1	1,435.1	-256.0	-15.1%
Personal Care Aides	1,463.9	1,166.6	-297.4	-20.3%
Social and Human Service Assistants	1,739.8	1,258.7	-481.1	-27.7%
All Workers	1,790.0	1,373.3	-416.7	-23.3%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

The reduction in the level of supply that appears to be associated with participation in public assistance benefit programs seems to be considerable. Our analysis suggests that about 40 percent of nursing aide and home health aide workers participate in public assistance benefit programs and that these individuals work about 15 percent fewer hours over the course of a year due to both lower weekly hours of work and fewer weeks of work compared to their counterparts who do not participate in public assistance programs.

One result of these reduced hours of work is a large annual earnings difference between the two groups. Nursing and home health aides who participated in public assistance income programs had mean annual earnings that were nearly one third lower than those who did not receive public assistance. This very large earnings gap is likely the product of not only fewer hours of work, but also lower hourly pay for those who supply fewer hours. Personal care aides who received transfer benefits had annual earnings that were 37 percent below their counterparts who did not receive such benefits. Among all workers in the state, those receiving public assistance benefits earned 60 percent less than workers not receiving public assistance. The percent difference for social and human service assistants was similar to that of all workers, and likely due to the slightly higher annual hours and hourly wages for these workers. The larger differentials are associated with much wider wage differences we observed among social and human service assistants, relative to the narrow wage distribution we observed among other health care support/direct care workers.

Table 28:
Mean Annual Earnings of Employed Health Care Support/Direct Care Workers in Massachusetts, by Public Assistance Participation Status, 2012-2014

	Without Any Public Assistance	With Any Public Assistance	Difference	Percent Difference
Nursing, Psychiatric, and Home Health Aides	$30,838	$21,022	($9,816)	-32%
Personal Care Aides	$23,009	$14,568	($8,441)	-37%
Social and Human Service Assistants	$39,577	$16,396	($23,181)	-59%
All Workers	$59,497	$23,663	($35,833)	-60%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Microdata Sample Files, 2012-2014, tabulations by Center for Labor Markets and Policy, Drexel University

A Long Term Labor Supply Problem

Currently, the overall unemployment rate in Massachusetts has averaged about 4.2 percent over the last calendar quarter. While not a full-employment rate, it does suggest the likelihood of a tightening of unemployment to job vacancy (U/V) ratios. When U/V ratios decline toward 1:1, labor shortages in certain occupations may quickly develop. Firms try to adjust their recruitment, hiring, retention and wage programs, but despite these efforts employers lose potential revenues as they struggle to fill jobs.

The U/V ratio for the nation is now 1.4 unemployed workers per current job vacancy, while the official unemployment rate for the nation has averaged 4.9 percent in recent months. The national monthly job vacancy survey conducted by the Bureau of Labor Statistics found that the health and social services industry sector has averaged 1 million vacant jobs per month in the most recent quarter of 2016, yielding a job vacancy rate of 5.0 percent. This is the highest job vacancy rate among all the major industry sectors in the American economy. Given the lower overall unemployment rate in Massachusetts it seems likely that the state labor markets are characterized by similarly low U/V ratios with shortages manifest in some occupations, and similarly high job vacancy rates in the state's health and social services industry sector.

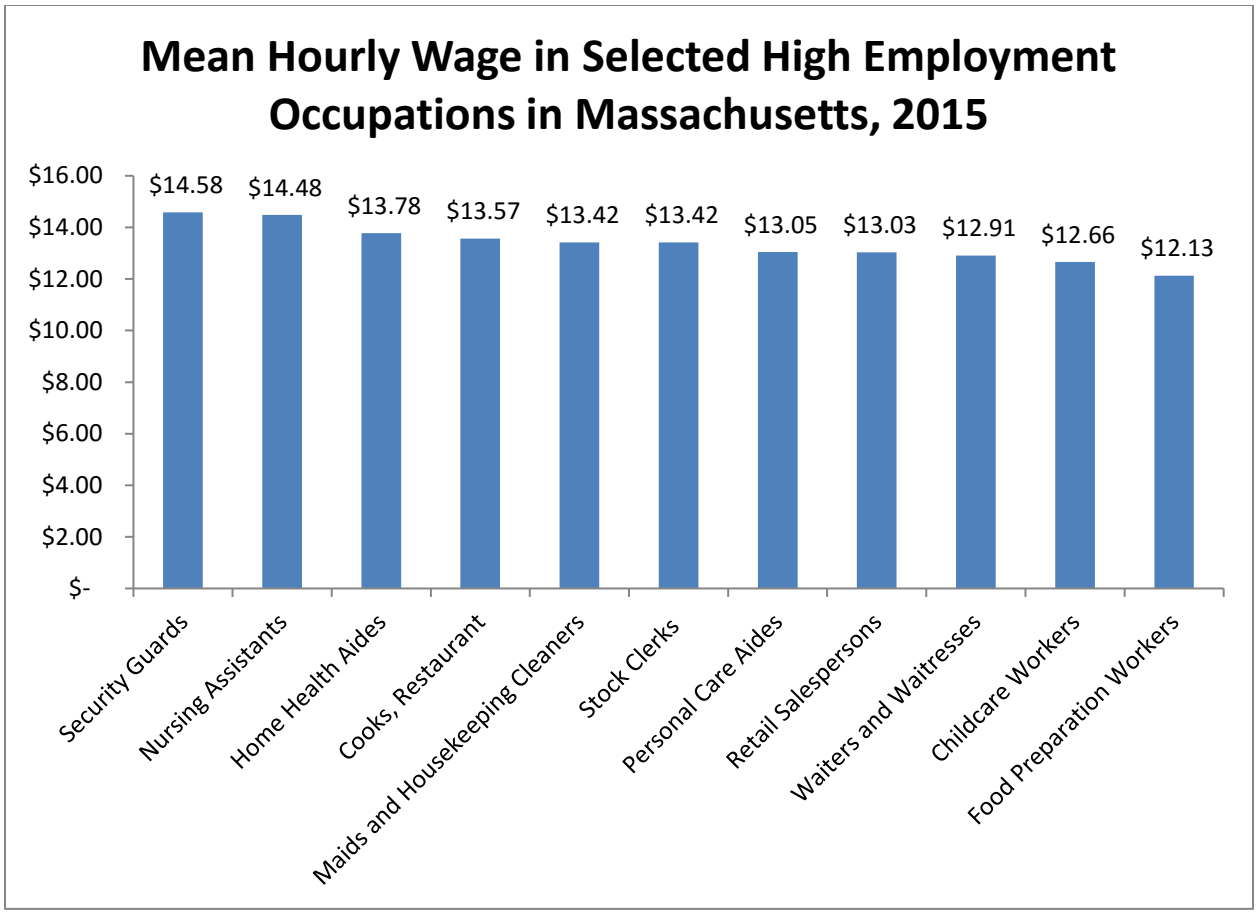
The employers we spoke with often noted that they had difficulty finding workers in the home health aide and personal care occupations, although there appears to be less reason to think a labor supply problem exists for CHWs and social and human services assistants. We worked with the Home Care Aid Council to complete a small job openings and labor turnover survey among their members and we also met on several different occasions with a number of members of the organization to ask about their labor requirements and some of the difficulties they had in meeting their labor supply objectives. The survey found a 9 percent job vacancy rate among HCAC members at that time. Our discussions with a substantial number of employers in the industry suggest a chronic problem of filling positions in order to provide services to clients. This leads to revenue losses as employers are simply unable to hire an individual to provide home health aide and personal care aide services to potential consumers of those services.

Employers attempt to adjust to this situation through expanded recruitment and outreach activities, but they note that the kinds of workers they seek often have the option to work in a variety of occupations and industries—many unrelated to the health care system at all. Our discussion of the proficiency requirements for the these occupations reveal that these jobs

require little to no specialized medical health knowledge and that soft skills including strong social skills and positive character traits are the most important proficiency requirements for employment in these occupations. However, there are a wide range of employment opportunities in Massachusetts with similar proficiency requirements that compete for workers that offer similar wages. Home health aide employers told us that they compete with grocery stores, department stores, restaurants and fast foods firms, to name a few.

At one of our employer meetings the participating employers illustrated this issue by pointing out a help wanted sign displayed by a nearby doughnut shop that was offering $14.00 per hour to start, with bonuses, for a counter position. Many employers passed this vacancy sign on route to the meeting observing that this donut shop counter worker position would be a potentially attractive job for their workers both because of the hourly wage rate as well as more clearly established and regular hours of work and, even more fundamental, a consistent location where the work is performed each day. This stands in contrast with many positions they seek to fill, where wages are lower, hours and weeks of work can be irregular and even the location of where duties are performed can change frequently, compounding commuting and related family issues.

We examined data from the OES survey and identified several occupations that would likely serve as appropriate alternative employment opportunities for persons with soft skill proficiencies, but that do not require substantial cognitive ability levels or specific occupational knowledge levels learned either in the classroom or on the job. Together, this list of eight occupations that might be available to those employed in home health aide and personal care aide occupations employed about 360,000 workers during 2015. Home health aide employers told us that it is difficult to compete with other firms on the basis of wage payments since a substantial share of their revenues are derived from reimbursements made by Medicare and Medicaid and that these rates have remained unchanged in recent years. They fear that wage competition from both inside the health and social services industry as well as from retail sales, eating and drinking, hospitality and business services industries will further exacerbate their labor supply problems.



Source: OES, May 2015

Employers also noted a problem of frequent client/patient turnover that contributes to their staffing shortfalls. Clients of home health care providers are often seeking services for a relatively short duration making it difficult for a worker to have a regular schedule at a single place of work for any length of time. Client turnover means that the location at which health care support and direct care workers are needed to provide services changes regularly. This can result in a geographic imbalance as workers' geographic scope of service may be relatively limited as the willingness and ability of these workers to commute longer distances is often restricted, indeed, knowledge of bus routes is very important for employers in allocating work assignments among staff.

Employers also pointed to unanticipated family responsibilities as an important factor that makes staffing for their agencies more difficult. Employers reported that many workers have children with complicated medical, disability or behavioral (court involvement) issues that can interfere with their ability to work increased numbers of hours. Like many employed persons

with children, home health aides and personal care workers sometimes are unable to deliver hours of work in order to effectively respond to an assortment of child related issues at school, home and in the criminal justice system. Some organizations report that they try and "troubleshoot" these issues in cooperation with their employees.

One of the strategies aging services access points (ASAP) have adopted may also exacerbate staffing difficulties. When ASAPs work to provide home care support to consumers, they may hire multiple home health care firms to service a single consumer in a given week. ASAPs adopt this strategy as a hedge against relying on a single firm that may have trouble getting staff into the household for a given shift. By relying on multiple firms providing services to the households ASAPs increase the chance that a shift can be covered in the event of a staff call-out or no-show, relying on multiple firms with different sources of workers to meet their needs. Home health agencies argue that this strategy reduces the willingness of workers to work, because of the limited number of hours of work available at a given household. Ironically, some workers adjust to limited hours by becoming employees of multiple firms and may call out on a shift at one firm to gain access to more and steadier hours of work at another firm.

How do firms adjust to the labor supply problems that confront their organizations? Increasing worker wages, while an obvious strategy, is difficult for these firms to do since their reimbursement for services from state/federal sources have not changed in a number of years. Interestingly, these employers believe more of their staff will seek personal care attendant positions as the $15.00 per hour wage increase by MassHealth for personal care attendants is well above the mean wage of home health and personal care aides employed in these agencies.

Employers have also tried to reduce quit rates in their firms by improving the recruitment and hiring process. One firm that employs a very intensive screening process told us that only half of job applicants proceed past an initial interview, and among those that make it past the first interview, just one of five will pass through the remaining elements of the screening process. This firm employs an intensive screening process because, although costly, it has resulted in a very low annual quit rate among staff screened in this rigorous way. Some employers undertake relatively in-depth screening of prospective new hires including physical exams, tuberculosis testing, CORI checks and drug tests. Other employers opt for much less rigorous screening efforts and rely largely on the references of incumbent workers.

Recruitment and screening processes themselves are costly relative to the employee yield. Some employers told us that they provide three weeks of orientation and training to new hires, but that after the training a 10 percent retention rate of those hired is considered a success. We heard widespread reports of new hires often quitting after a few days/weeks on the job, frequently by not showing up for assignments and ending contact with the employer.

One way to solve short-term labor requirements is to pay overtime to existing staff to undertake more hours of work. The problem for home health agencies is that overtime pay means that they are incurring a loss for the hours of service as the overtime rate of say $18 or $19 per hour is very close to the total reimbursement that the firm receives from state organizations. Consequently employers use overtime payments rarely and only in cases where there are no other alternatives.[55]

Employers are expanding their search for candidates and this means that candidates that in the past may not have been considered for a position are now in contention for a job. The employers that we spoke with observed that this is the last option and that they work hard to avoid this, but the alternative is that they are unable to provide services, meaning less services for clients in need and revenue losses for the firm.

[55] Recently, MassHealth has instituted a personal care attendant overtime management policy. This policy will be phased in over the fall of 2016 and will cap the number of hours that an individual PCA can work to 40 hours per week, and with some exceptions to 60 hours per week. Those clients who require more than 40 hours of PCA services per week will need to utilize more than one PCA. For more see: http://www.mass.gov/eohhs/consumer/insurance/masshealth-member-info/pca/