



RESEARCH REPORT

Occupational Projections for Low-Income Older Workers

Assessing the Skill Gap for Workers Age 50 and Older

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Introduction

The AARP Foundation seeks to target its resources to help current and future low-income workers find and keep employment that pays a living wage. To do so, the foundation needs to understand the skills that population needs. To aid in that understanding, this report examines current employment for low-income older workers¹ and compares it to projected employment for different occupations. We also examine low- and middle-wage occupations projected to grow most rapidly between 2014 and 2024 and analyze the education, experience, and on-the-job training requirements for those occupations. Given the current skills of low-income older workers and the needed skills projected for various occupations, we estimate potential skill gaps for low-income older workers. Finally, we examine the occupations and industries from which older workers will be exiting the workforce in the next five years.

In this report, we define “low-income workers” as those earning 300 percent or less of the federal poverty level (FPL)² after adjusting for household size, and we define “older workers” as those age 50 or above. Those definitions are consistent with those used by the AARP Foundation in their current employment programs serving older workers. Applying the 2015 FPL definitions, a one-person household with income up to \$35,310 and a two-person household with an income up to \$47,790 are included in our analyses as low-income workers. Older workers have a lower unemployment rate and are better paid on average than younger workers (Bureau of Labor Statistics 2016a, 2016b), and according to our analyses of Census Bureau data from 2015, there are 13.2 million low-income older workers in the United States. We limit our analyses to those individuals that are currently employed. Low-income older workers may not have the financial resources to retire in the near future, so they may have to continue working (ideally in better jobs that pay decent wages).

Obtaining better jobs can be difficult for many older workers, however, because as the nature of jobs has changed, the education, training, and experience required for those jobs has also changed. According to a study by Pew Research Center (2016), jobs are changing to focus more on social, communications, and analytical skills. The number of workers in occupations requiring average to above-average education, training, and experience increased from 49 million in 1980 to 83 million in 2015 (68 percent). In contrast, jobs requiring below-average education, training, and experience increased by less than half this amount, from 50 million to 65 million (31 percent), over the same period. Likewise, employment in jobs requiring stronger social skills (such as interpersonal, communications, or management skills) increased from 49 million to 90 million (84 percent) between 1980 and 2015. A

similar increase occurred in employment requiring analytical skills, such as critical thinking and computer skills, from 49 to 86 million (77 percent).

Americans are living longer and working longer, and workers age 55 and older are the only age group to experience strong growth in labor force participation rates in the past two decades (Kalil et al. 2010). Therefore, employers filling jobs in the future may have to turn to older workers more often to meet their hiring needs. At the same time, low-income older workers' skills may be less relevant as they age, and many of them may be stuck in low-skilled jobs (Mikelson and Butrica, forthcoming). Therefore, both employers and older workers will benefit if more older workers develop the skills they need to work in the jobs that employers will need to fill in the future.

One of the most frequently cited concerns about the current and future state of the United States labor market is skill mismatches, or shortages of workers with the knowledge, skills, and abilities demanded by employers for specific occupations (Carnevale, Smith, and Strohl 2013; Manufacturing Institute 2011). Studies disagree about the consequences, magnitude, and even existence of skills shortages (Neumark, Johnson, and Mejia 2011),³ but much of that disagreement likely stems from different approaches to defining and measuring shortages and labor supply and demand (Cappelli 2015).

Although many different definitions of occupational shortages exist, for this study we use Barnow, Trutko, and Piatak's (2013) definition of "a sustained market disequilibrium between supply and demand in which the quantity of workers demanded exceeds the supply available and willing to work at a particular wage and working conditions at a particular place and point in time" (3).⁴ This definition is desirable because it encompasses many different causes of occupational shortages, including (1) an insufficient number of workers overall with the knowledge, skills, and abilities required for the occupation in demand; (2) the unwillingness of potential workers to accept a specific job at the prevailing wage or, alternatively, an unwillingness of employers to compensate workers sufficiently to induce them to accept employment in the demanded occupations; (3) geographic mismatch between potential workers with the knowledge and skills demanded in the occupation and the location of the occupations; and (4) a temporal misalignment between when the work is needed and when qualified workers are willing to supply that work (Mikelson et al. 2014). In this report, we examine whether there may be an insufficient number of workers with the knowledge, skills, and abilities to meet the projected occupational needs of employers in the coming decade. Identifying an occupational shortage, however, does not necessarily provide an obvious solution, because the shortage may have many causes that may not be remedied by training investments. To identify the most fruitful areas for training for low-income

older workers, we also analyze the knowledge, skills, and abilities critical to the occupations likely to experience the most growth.

Labor Supply of Older Workers

Because Americans are living longer and life expectancy is expected to continue increasing, the increasing labor force participation rates among workers age 50 and older will likely continue to increase. Despite those increasing life expectancy and labor force participation rates, the median retirement age in the United States was 63 years old in 2016.⁵ As we show later in this report, low-income workers are less likely than other workers to say that they plan to stop working in the next five years. Further, the likelihood that workers say they plan to stop working in the coming years decreases with income.

Older Americans are healthier now than they used to be, increasing their productivity and ability to work. Between 1991 and 2014, the share of 55- to 64-year-olds reporting fair or poor health fell about 11 percent and, among 65- to 74-year-olds, the share reporting fair or poor health fell 25 percent (National Center for Health Statistics 2016). For individuals ages 65 to 74, the share with fair or poor health was nearly one-third lower in 2014 than 1991. Although this health measure is subjective, those who report poor health have much higher mortality rates than those who report better health (Dowd and Zajacova 2007; Idler and Benyamini 1997), suggesting that the measure reflects real health problems.

In recent decades, as the economy has moved toward service- and technology-based jobs and away from manufacturing, fewer Americans have worked in blue-collar and physically demanding occupations (Bucknor and Baker 2016). From 1971 to 2006, for example, the proportion of workers in blue-collar occupations decreased from 36 to 24 percent, while the share in management, professional occupations, and services increased from 38 to 51 percent (Johnson, Mermin, and Resseger 2011). The share of jobs involving high physical demands (such as strength, bending, or quick reaction time) declined from 8.8 to 7.3 percent between 1971 and 2006, while the share involving moderate or high physical demands (such as standing, walking, or repetitive motion) declined from 56.5 to 46.0 percent. Between 1992 and 2002, the share of workers ages 55 to 60 in jobs that never or almost never involved much physical effort increased nearly 20 percent (Johnson 2004). The decline in physically demanding jobs and improvements in health status have increased the share of older adults able to work, and data show that they are working at higher rates than they have in the past; however, these improvements

are disproportionately among those older adults who are better educated and higher paid (Bucknor and Baker 2016). Further, as noted by Belbase, Sanzenbacher, and Gillis (2016), even jobs that are not physically demanding may be challenging for older workers if the jobs require fluid cognitive abilities, quick reaction times, and fine motor skills.

Employer Demand for Older Workers

Employment at older ages depends not only on older adults' willingness and ability to work but also on employers' willingness to hire and retain them. Posthuma and Campion (2009) find that some employers view older workers as poor performers, resistant to change, less able to learn than younger workers, more likely to leave the company, and more costly, although they are often viewed as more dependable. Despite these perceptions, Posthuma and Campion's review of the literature on age and workplace performance finds little support for the claim that job performance declines with age. They find that too few studies exist to prove or disprove that older workers are resistant to change. The evidence that older workers have lower ability to learn than younger workers is mixed because outcomes often depend on training methods. Studies also show that older workers provide higher returns on employer investment because they are less likely than younger workers to leave. Lastly, they find mixed evidence that older workers are more costly and some proof that they are more dependable.

Despite that evidence, and although employers claim to value older workers' experience, maturity, and work ethic, employers are often hesitant to recruit or retain older workers (Mikelson and Butrica forthcoming). One-quarter of employers in a 2006 survey said they were reluctant to hire older workers (Pitt-Catsouphes et al. 2007), and there is evidence that some employers discriminate against older workers (Lahey 2008; Reynolds, Ridley, and Van Horn 2005; Rosen and Jerdee 1995). Age discrimination, however, may not affect all groups equally. A recent study by Neumark, Burn, and Button (2015) finds strong evidence of age discrimination against older women but less clear evidence of age discrimination against older men. Other studies find that employers may be willing to hire older professionals but are less willing to hire other older workers (Munnell, Sass, and Soto 2006). Finally, low-wage older workers are significantly more likely than other older workers to be unemployed or displaced (Cummins, Harootyan, and Kunkel 2015).

The rest of this report is organized as follows. In the next section, we describe the specific research questions, data sources, methods, and data limitations for this report. Then, we describe the results of the data analyses. This includes current employment and occupational projections at the state and

national level for older workers as well as current and projected skills, knowledge, and abilities and whether a skill gap is likely to arise among older workers. This portion also provides an analysis of industries and occupations that low-income older workers expect to be exiting in the next five years. Finally, we provide recommendations.

Research Questions, Data Sources, and Methods

This section presents the research questions addressed in this report, the various data sources analyzed, and the methods used to answer the research questions.

Research Questions

This report addresses the following research questions:

1. What is the current distribution of employment by industry and occupation for low-income workers age 50 and older?
2. What is the distribution of educational attainment by occupation and industry in 2015?
3. Which low- to middle-wage occupations are expected to grow most rapidly from 2014 to 2024 at the state and national levels?
4. What are the wages, educational requirements, work experience requirements, and on-the-job training requirements for those occupations expected to grow most rapidly by 2024?
5. What are the current skills of low-income workers age 50 and older, and how might those skills be useful in occupations that are expected to grow in the future?
6. What industries or occupations are low-income older workers exiting the workforce or retiring from in the next five years?

Data Sources

This analysis incorporates several data sources, each of which sheds some light on occupational projections and skill gaps that could be filled by targeted education and training of the low-income older population. Individual and household surveys that include data on low-income older workers, namely the American Community Survey (ACS) and the Health and Retirement Study (HRS), provide the foundation for this report. Those data are supplemented by occupation-level information from the Bureau of Labor Statistics' Employment Projections program and the Occupational Information Network (O*NET) database. Each of those surveys and databases are summarized below, followed by a discussion of the treatment of occupational categories across the data sources.

The American Community Survey

The primary data source for information on low-income older workers is the public-use microdata version of the 2015 ACS, a nationally representative household survey conducted annually by the US Census Bureau. The 2015 survey is the most recent wave of the survey available. The primary advantage of the ACS is that it is large: surveys are sent to approximately 3.5 million households each year. The large sample provides an opportunity to identify detailed occupational employment levels for older workers even after restricting the analysis to low-income workers age 50 and older. The ACS includes several demographic characteristics as well as information on health and disability status, reported in table 1.

Bureau of Labor Statistics and State Employment Projections

We use occupational employment projections provided by the Bureau of Labor Statistics (BLS) at the national level and by state employment agencies at the state level⁶ to assess anticipated occupational growth in the United States and project impending skill gaps that could be filled by low-income older workers. Employment projections are produced every two years, and projections are made 5 and 10 years into the future. The most recent projections were produced for 2014. In addition to employment growth estimates, the BLS provides educational, experience, and on-the-job training requirements for employment in these occupations.

Critically, the employment projections are projected equilibrium employment levels, without any generalized labor surplus or shortage (Horrigan 2004). Although the data are frequently misused to estimate projected labor shortages, the data are not designed to measure those concepts. However, any measured gaps or disparities between projected occupational employment and current occupational employment require some adjustment in the labor market for those projections to be fulfilled. Such adjustments would certainly include education and training investments that allow workers to fill jobs in growing occupations. The AARP Foundation can therefore still use these growth projections to plan valuable training investments even if the BLS is not explicitly assuming or projecting labor shortages.

To the extent the BLS is assuming demand increases are driving changes in employment projections, however, one can infer that even more untapped demand than the projections indicate may exist in some of the growing occupations. For example, if the BLS data predict that medical facilities in Arizona will hire 100,000 new nurses, that may indicate a demand exists to hire some greater number

but employers are only able to hire 100,000. Therefore, the BLS occupational projections are likely a lower bound.

Occupational Information Network Database

O*NET is developed and maintained by the US Department of Labor and houses detailed information on hundreds of occupations in the United States. O*NET includes information on occupational knowledge and skill requirements as well as on the typical tasks, technologies, and work environments associated with an occupation. Those characteristics are assessed by surveying many workers and experts in a particular occupation. This report uses the database's records on knowledge, skills, and abilities requirements to understand the gap between projected skills requirements and the skill set of the older low-income workforce.

The Health and Retirement Study

The HRS is a longitudinal panel study that surveys a representative sample of approximately 20,000 people in America age 50 and older every two years.⁷ The HRS focuses on the changes in labor force participation and health transitions for individuals nearing the end of their work lives. We use the 2014 HRS for this study, which is the most recent year of data available, to understand the likely retirement behavior of the low-income older workforce. Because the HRS collects data on employment in broad occupational categories, we also explore how retirement behavior is distributed across different occupations.

Research Methods and Data Limitations

All of the data sources used in this analysis classify occupations using the Standard Occupational Classification (SOC) system used by the federal government, which allows occupational characteristics from data sources such as the BLS Employment Projections program or O*NET to be merged onto surveys such as the ACS or the HRS. The SOC codes are hierarchical in the sense that more detailed (i.e., higher-digit) codes representing more detailed occupations are organized under broader, lower-digit codes. Some data sources, such as O*NET, report information using highly detailed six-digit SOC code

level; other datasets report occupations at a lower-digit summary level. The HRS only reports occupations at the two-digit SOC code level.

When we discuss skill gaps in this report, note that none of the datasets we use report individuals' skill levels. Rather, the O*NET data provide information about the minimum skills required for occupations at the time of hire. We use the required occupational skill levels from O*NET to estimate the skills profile of the workforce. An individual's actual skills may vary from those required by their occupation because one might have additional skills they are not using in their current job or because one's skills may exceed the minimum level required by an occupation. If a worker is employed in a particular occupation, however, he or she is assumed to meet that occupation's skill requirements.

A limitation of the ACS is that occupations are not available for all respondents with the same level of detail. Although many low-income older respondents report very detailed descriptions of their occupations that are coded using six-digit SOC codes, others report less detail about their occupations, leading to three-digit SOC codes. Nevertheless, all ACS respondents report occupations for at least the three-digit level of detail. Approximately 100 different three-digit occupations are represented in the low-income older worker sample, so an analysis of skill gaps at that level can be quite precise.

To accommodate the less detailed SOC codes in the ACS, O*NET data on knowledge, skills, and abilities by occupation are aggregated from the six-digit level to the three-digit level using current employment weights for more detailed occupations.⁸ These three-digit versions of the O*NET scores are then applied to the three-digit BLS occupational projections and the population age 50 or older in the ACS. Broader occupational categories (two-digit level occupations) are reported for descriptive purposes in tables 3 and 11, but to more narrowly target education and training recommendations, the detailed three-digit occupational categories are used in all tables associated with occupational projections and skill gaps.

Results

Here we describe the demographic characteristics of low-income older workers overall and by gender, age, and educational attainment within the most common occupations and industries. We examine those low- and middle-wage occupations expected to grow most rapidly between 2014 and 2024 (the latest BLS projections available). In addition to wages, we describe the education, experience, and on-the-job training requirements for these occupations. After linking the BLS projections with the O*NET data, we discuss the current and projected knowledge, skills, and abilities by their importance among growing occupations and estimate the gaps in skills between all workers and low-income older workers. We select the knowledge, skills, and abilities with the highest importance and present occupation-specific skill-importance scores for the top 20 occupations (regardless of income). We conclude with analyses of the HRS data describing when older workers think they will stop working and the current occupations and industries of low-income older workers who plan to retire over the next five years.

The majority (52 percent) of older workers in our sample have a household income of 200 to 300 percent of FPL (table 1). Thirty-six percent have an income of 100 to 199 percent of FPL, and 12 percent have an income below 100 percent of FPL. Still, 12 percent amounts to nearly 1.6 million working-poor individuals age 50 or older who are earning less than \$11,770 in a one-person household or \$15,930 in a two-person household. Those very low-income older workers may be underemployed⁹ or unemployed for part of the year. Examining household income by gender shows that women are slightly more likely than men to have income below 100 percent of FPL (13 percent of women versus 11 percent of men).

Overall, two-thirds (67 percent) of low-income workers age 50 or older report working full time (greater than 35 hours a week); one-third (33 percent) report working part time. Work status differs substantially by gender—74 percent of low-income older men work full time compared with 60 percent of low-income older women. Conversely, low-income older women report working part time at a much higher rate (40 percent) than men (26 percent).

Over one-third (36 percent) of low-income older workers are ages 50 to 54, somewhat fewer (29 percent) are ages 55 to 59, one in five (20 percent) are ages 60 to 64, and the remainder (16 percent) are age 65 and older. Low-income older workers are racially and ethnically diverse and have varying education levels. Fifty-nine percent of low-income older workers are non-Hispanic white, 19 percent are Hispanic, 15 percent are non-Hispanic black, and 5 percent are Asian. Notably among low-income older workers, 17 percent of women are non-Hispanic black compared with only 12 percent of men, and

16 percent of women are Hispanic compared with 22 percent of men. The racial and ethnic differences likely reflect the broader differences in labor force participation among these two groups.

TABLE 1

Demographic Characteristics of Low-Income Workers Age 50 and Older in 2015 by Gender

Characteristics of workers	All Workers		Men		Women	
	%	#	%	#	%	#
All	100	13,192,031	48	6,389,167	52	6,802,864
Age						
50–54	36	4,703,755	37	2,339,983	35	2,363,772
55–59	29	3,839,901	29	1,874,976	29	1,964,925
60–64	20	2,617,452	20	1,249,605	20	1,367,847
64–69	9	1,132,699	8	512,765	9	619,934
70–74	4	500,246	4	223,823	4	276,423
75–79	2	251,862	2	114,518	2	137,344
80+	1	146,116	1	73,497	1	72,619
Race or ethnicity						
Non-Hispanic white	59	7,779,396	58	3,702,056	60	4,077,340
Non-Hispanic black	15	1,923,294	12	787,721	17	1,135,573
Hispanic	19	2,503,747	22	1,397,357	16	1,106,390
Asian	5	714,577	6	379,536	5	335,041
Other	2	271,017	2	122,497	2	148,520
Employment status						
Full time	67	8,808,166	74	4,749,359	60	4,058,807
Part time	33	4,383,865	26	1,639,808	40	2,744,057
Education						
Less than a high school degree	19	2,453,284	22	1,405,790	15	1,047,494
High school diploma/GED	36	4,767,331	36	2,329,617	36	2,437,714
Some college/two-year degree	30	3,903,958	26	1,657,686	33	2,246,272
Bachelor's/graduate/professional degree	16	2,067,458	16	996,074	16	1,071,384
Household income level						
<100% FPL	12	1,588,838	11	724,575	13	864,263
100–199% FPL	36	4,799,253	36	2,299,532	37	2,499,721
200–300% FPL	52	6,803,940	53	3,365,060	51	3,438,880
Marital status						
Married	51	6,769,656	62	3,952,396	41	2,817,260
Single	15	1,968,711	15	981,078	15	987,633
Divorced	26	3,470,883	20	1,257,247	33	2,213,636
Widowed	7	982,781	3	198,446	12	784,335
Health status						
Cognitive difficulty	3	391,103	3	187,682	3	203,421
Ambulatory difficulty	7	864,885	5	340,889	8	523,996
Independent living difficulty	2	268,900	2	114,934	2	153,966
Self-care difficulty	1	155,287	1	71,642	1	83,645
Vision difficulty	3	362,895	3	176,639	3	186,220
Hearing difficulty	4	536,197	5	344,445	3	191,752
Any health difficulties	13	1,715,464	13	823,117	13	892,347

Source: 2015 American Community Survey.

Note: FPL = the federal poverty level; GED = general equivalency diploma. All gender differences greater than or equal to 1 percent are statistically significant at the $p < 0.01$ level.

Over one-third of low-income older workers have a high school degree or general equivalency diploma (GED) as their highest level of education. Thirty percent of low-income older workers have either completed some college or obtained a two-year degree, and only 16 percent have earned a bachelor's degree or higher. Nineteen percent of low-income older workers have less than a high school degree, and that may encumber their ability to earn a living wage or move up a career ladder without first receiving additional education or training, likely in combination with basic skills education. Low-income older men are more likely (22 percent) than women (15 percent) to have less than a high school degree, and, conversely, men are much less likely (26 percent) to have some college education or a two-year degree than women (33 percent). Despite this educational advantage (and as noted earlier), women are slightly more likely to have a lower household income and are substantially less likely to work full time.

Marital status among low-income older workers may also affect their low-income status. Approximately half of all low-income older workers (49 percent) report being divorced (26 percent), single (15 percent), or widowed (7 percent), so they might live alone.¹⁰ This percentage is much higher for women (60 percent) because a greater percentage of low-income older women report being divorced (33 percent) or widowed (12 percent) than do men, among which 20 percent report being divorced and 3 percent report being widowed. Overall, 51 percent of low-income older workers report being married, and that may provide economic protection if they benefit from economies of scale in housing or other shared resources. Unfortunately, the potential for economic protection is not gender neutral: 62 percent of low-income older men report being married compared with 41 percent of women.

The ACS analyses also provide information about the health of these low-income older workers; health issues may negatively affect their ability to continue working in their current occupation, train for another occupation, or move up a career ladder. Although not overwhelmingly high, 13 percent (over 1.7 million) of low-income older workers report having any health difficulty. The most common health difficulties reported are ambulatory difficulty (7 percent), hearing difficulty (4 percent), or cognitive and vision difficulty (3 percent each). Such health difficulties likely affect the employment and well-being of those experiencing them. Low-income older women report higher rates of ambulatory difficulty (8 percent) compared with men (5 percent). On the other hand, 5 percent of older men report hearing difficulty compared with 3 percent of women.

Examining low-income older workers by three age groups (50 to 59, 60 to 69, and 70 and older) shows significant differences for every demographic characteristic except education (table 2). The numbers of men and women age 50 to 59 in our sample differ very little (51 percent are female versus

49 percent male); this gap increases for those ages 60 to 69 (with 53 percent women and 47 percent men) and again for those age 70 and older (with 54 percent women and 46 percent men).

The racial and ethnic composition of the sample changes dramatically as low-income older workers age, most likely because of variation in life expectancy. For example, the only group to increase their share of the low-income working population as they age are non-Hispanic whites, who represent 55 percent of 50- to 59-year-olds, 64 percent of 60- to 69-year-olds, and 75 percent of workers age 70 and older. Non-Hispanic blacks drop 3 percentage points for each decade—from 16 percent of 50- to 59-year-olds to 13 percent of 60- to 69-year-olds to only 10 percent of workers age 70 and older. The decline in the proportion of low-income working Hispanics is stark—dropping 5 percent for each decade. Hispanics are 21 percent of low-income older workers age 50 to 59, declining to 16 percent for 60- to 69-year-olds and 11 percent for those age 70 and older.

Not surprisingly, the proportion of low-income workers that report working full time declines. Full-time workers decline from 75 percent of 50- to 59-year-olds to 59 percent of 60- to 69-year-olds to 26 percent of workers age 70 and older. This decrease in full-time workers and the corresponding increase in part-time workers does not lead to a decrease in household income. Thirteen percent of workers age 50 to 59 report earnings <100 percent of FPL, and this declines to 8 percent for low-income workers age 70 and older. The percentage of workers reporting income of 100 to 199 percent of FPL also decreases slightly, from 37 percent for 50- to 59-year-olds to 34 percent for workers age 70 and older. The percentage of workers earning 200 to 300 percent of FPL increases from 50 percent for 50- to 59-year-olds to 58 percent for workers age 70 and older.

Marital status changes dramatically with age: the proportion of widowed low-income older workers increases from 5 percent for 50- to 59-year-olds to 26 percent for workers age 70 and older. Conversely, the proportion of single, divorced, and married low-income older workers declines 11, 5, and 4 percent, respectively, for the same age groups.

As expected, health difficulties increase with age. In particular, ambulatory difficulties affect 5 percent of 50- to 59-year-olds compared with 8 percent of 60- to 69-year-olds and 13 percent of workers age 70 and older. Hearing difficulties increase from 3 percent to 5 percent to 13 percent for workers of the same age. Low-income workers experiencing any health difficulties grows from 11 percent of those ages 50 to 59 to 15 percent of 60- to 69-year-olds to over one-quarter (26 percent) of those age 70 and older.

TABLE 2

Demographic Characteristics of Low-Income Workers Age 50 and Older in 2015, by Age

Characteristics of workers	All Workers		Age 50-59		Age 60-69		Age 70+	
	%	#	%	#	%	#	%	#
All	100	13,192,031	65	8,543,656	28	3,750,151	7	898,224
Sex								
Male	48	6,389,167	49	4,214,959	47	1,762,370	46	411,838
Female	52	6,802,864	51	4,328,697	53	1,987,781	54	486,386
Race or ethnicity								
Non-Hispanic white	59	7,779,396	55	4,717,573	64	2,391,221	75	670,602
Non-Hispanic black	15	1,923,294	16	1,340,303	13	491,047	10	91,944
Hispanic	19	2,503,747	21	1,809,126	16	594,914	11	99,707
Asian	5	714,577	6	491,318	5	200,402	3	22,857
Other	2	271,017	2	185,336	2	72,567	1	13,114
Employment status								
Full-time	67	8,808,166	75	6,367,807	59	2,202,741	26	237,618
Part-time	33	4,383,865	25	2,175,849	41	1,547,410	74	660,606
Education								
Less than a high school degree	19	2,453,284	19	1,630,669	17	653,701	19	168,914
High school diploma/GED	36	4,767,331	37	3,149,493	34	1,284,728	37	333,110
Some college/two-year degree	30	3,903,958	30	2,532,978	30	1,131,689	27	239,291
Bachelor's/graduate/ professional degree	16	2,067,458	14	1,230,516	18	680,033	17	156,909
Household income level								
<100% FPL	12	1,588,838	13	1,133,532	10	384,484	8	70,822
100–199% FPL	36	4,799,253	37	3,156,245	36	1,335,499	34	307,509
200–300% FPL	52	6,803,940	50	4,253,879	54	2,030,168	58	519,893
Marital status								
Married	51	6,769,656	52	4,445,742	50	1,893,553	48	430,361
Single	15	1,968,711	17	1,450,136	12	466,463	6	52,112
Divorced	26	3,470,883	26	2,258,997	27	1,025,721	21	186,165
Widowed	7	982,781	5	388,781	10	364,414	26	229,586
Health status								
Cognitive difficulty	3	391,103	3	245,999	3	108,604	4	36,500
Ambulatory difficulty	7	864,885	5	456,275	8	289,659	13	118,951
Independent living difficulty	2	268,900	2	149,977	2	74,537	5	44,386
Self-care difficulty	1	155,287	1	85,406	1	46,964	3	22,917
Vision difficulty	3	362,895	3	222,602	3	102,817	4	37,440
Hearing difficulty	4	536,197	3	233,829	5	186,925	13	115,443
Any health difficulties	13	1,715,464	11	920,481	15	558,496	26	236,487

Source: 2015 American Community Survey.

Note: FPL = federal poverty level; GED = general equivalency diploma.

Educational Attainment in the Most Common Occupations and Industries

The most common occupations and industries for low-income older workers vary by their educational attainment. When comparing occupations and industries in tables 3, 4, 10, and 11, the names of the

occupations and industries can look quite similar (such as health care practitioners and technical occupations compared with the health and social assistance industry). However, *occupation* refers to the specific tasks and responsibilities for a particular job, while *industry* classifies businesses, government offices, or nonprofits based on their major products and services.

Overall, the most common occupations among this population are office and administrative support (14 percent), followed by sales and related occupations; transportation and material moving; and building and grounds cleaning and maintenance (10 percent each; table 3). Among low-income older workers with less than a high school degree, the data suggest occupational choices may be much more limited. For example, 18 percent of low-income older workers with less than a high school degree work in building and grounds cleaning and maintenance. A similar number of low-income older workers with less than a high school degree, about 13 percent (320,000), work in either transportation and material moving or production occupations. Among low-income older workers with the highest level of education, a four-year college degree or above, approximately 13 percent (250,000 to 275,000) work in one of three occupations: office and administrative support; sales and related occupations; and education, training, and library. The majority (40 percent) of office and administrative support workers, however, have some college education or a two-year degree. That suggests that workers looking to move into office or administrative support positions will be competing with workers who often have high school degree or higher.

In addition to working in a wide variety of occupations, low-income older workers are also employed in a wide variety of industries. Occupational categories characterize the types of jobs that workers perform; industry categories indicate the sector of a worker's employer. Manufacturing is the most common industry among low-income older workers with less than a high school degree, with 14 percent working in it (table 4). Those workers with a high school degree or GED are most concentrated in retail trade (16 percent) and health and social assistance (14 percent), but a significant percentage also work in manufacturing (12 percent). Similarly, low-income older workers with some college education or a two-year degree are most often working in the health and social assistance industry (18 percent) and the retail trade industry (15 percent). Finally, although low-income older workers with a bachelor's degree or higher are also working in the health and social assistance industry (16 percent) and the retail trade industry (12 percent), a significant portion are working in the educational services industry (15 percent).

TABLE 3

Most Common Occupations for Low-Income Workers Age 50 and Older by Educational Attainment, 2015

Occupation	All		Less than a high school degree		High school diploma/GED		Some college/ two-year college degree		Four-year college degree/graduate or professional school	
	%	#	%	#	%	#	%	#	%	#
Office and administrative support	14	1,829,398	5	130,725	14	681,682	19	740,236	13	276,755
Sales and related occupations	10	1,381,573	6	148,370	11	507,578	12	466,736	13	258,889
Transportation and material moving	10	1,301,749	13	320,769	12	567,413	8	318,252	5	95,315
Building and grounds cleaning and maintenance	10	1,269,186	18	442,934	11	520,942	6	236,473	3	68,837
Production	8	1,098,705	13	318,452	10	473,211	6	242,272	3	64,770
Personal care and service	7	890,985	7	170,039	7	329,452	7	281,924	5	109,570
Food preparation and serving related occupations	7	867,152	10	247,953	8	371,242	5	185,281	3	62,676
Construction and extraction	6	797,279	10	254,757	7	333,333	4	167,516	2	41,673
Management	5	699,363	3	64,031	4	201,216	6	240,725	9	193,391
Education, training, and library	4	507,361	1	15,047	2	77,086	4	147,777	13	267,451
Healthcare support occupations	4	463,692	3	80,749	4	174,154	4	163,139	2	45,650
Installation maintenance and repair	3	439,481	4	97,419	4	185,295	3	127,717	1	29,050
Healthcare practitioners and technical occupations	2	326,579	0	6,192	1	61,469	4	162,644	5	96,274
Business and financial operations	2	290,444	0	8,658	1	52,875	3	108,643	6	120,268
Legal	2	253,261	0	10,074	1	40,061	2	87,393	6	115,733
Protective service	2	236,388	1	24,547	2	95,057	2	89,018	1	27,766
Community and social service	2	212,216	0	9,771	1	32,451	1	58,273	5	111,721
Farming, fishing, and forestry	1	157,628	4	96,059	1	39,431	0	15,581	0	6,557
Architecture and engineering	1	70,363	0	3,516	0	12,701	1	28,675	1	25,471
Computer and mathematical	1	68,873	0	1,179	0	7,402	1	28,223	2	32,069
Life, physical, and social science	0	30,355	0	2,043	0	3,280	0	7,460	1	17,572
Total	100	13,192,031	100	2,453,284	100	4,767,331	100	3,903,958	100	2,067,458

Source: 2015 American Community Survey.

TABLE 4

Most Common Industries for Low-Income Workers Age 50 and Older by Educational Attainment, 2015

Industry	All		Less than a high school degree		High school diploma/GED		Some college/ two-year college degree		For-year college degree/graduate or professional school	
	%	#	%	#	%	#	%	#	%	#
Health and social assistance	15	1,976,398	11	275,671	14	666,335	18	706,437	16	327,955
Retail trade	14	1,837,731	11	267,920	16	745,795	15	572,227	12	251,789
Manufacturing	10	1,339,296	14	335,496	12	569,355	8	328,235	5	106,210
Other services	8	1,033,982	9	213,166	8	376,288	7	289,494	8	155,034
Educational services	7	964,017	4	85,838	6	282,522	7	280,105	15	315,552
Construction	7	955,156	11	271,900	8	388,820	6	230,014	3	64,422
Accommodation and food services	7	939,421	11	268,860	8	360,496	5	213,812	5	96,253
Admin support and waste management and remediation services	7	866,904	10	233,300	6	300,258	6	235,101	5	98,245
Transportation and warehousing	5	681,525	5	129,972	6	274,169	5	202,957	4	74,427
Professional, scientific, and technical services	3	436,265	1	21,967	2	86,773	4	147,350	9	180,175
Public administration	3	386,924	2	36,685	3	128,262	4	150,624	3	71,353
Wholesale trade	2	326,684	3	64,856	3	125,997	2	92,851	2	42,980
Arts, entertainment, and recreation	2	313,260	2	44,688	2	103,327	2	94,190	3	71,055
Real estate, rental, and leasing	2	311,411	2	40,742	2	96,350	3	111,418	3	62,901
Agricultural/forestry/fishing/hunting	2	288,559	5	121,501	2	92,906	1	48,494	1	25,658
Finance and insurance	2	284,950	0	10,677	2	86,736	3	115,334	3	72,203
Information	1	148,938	0	11,010	1	40,697	1	56,129	2	41,102
Utilities	0	53,559	0	5,928	0	22,587	0	18,703	0	6,341
Mine, quarry, oil, and gas extraction	0	42,886	1	12,770	0	18,847	0	8,310	0	2,959
Management of companies and enterprises	0	4,165	0	337	0	811	0	2,173	0	844
Total	100	13,192,031	100	2,453,284	100	4,767,331	100	3,903,958	100	2,067,458

Source: 2015 American Community Survey.

Ten-Year Projected Growth in Low- and Middle-wage Occupations

This section examines the low- and middle-wage anticipated occupational growth in the United States between 2014 and 2024, using the latest occupational employment projections provided by the BLS at the national and state levels. The purpose of these analyses is to identify impending skill gaps that could be filled by low-income older workers.

Median wages in table 5 and the low- and middle-wage occupational categories used in appendix table A.2 are calculated for the sample of workers age 50 and older in the ACS. Median occupational wages tend to be higher among older workers than among comparable younger workers, so these wages do not represent national occupational median wages. Low-wage occupations are defined as those with median wages below the 25th percentile; middle-wage occupations are defined as those with median wages between the 25th and 50th percentiles.

Table 5 shows the 36 occupations projected to grow most rapidly between 2014 and 2024.¹¹ The top four occupations are projected to produce nearly 2.3 million jobs, but only one of these occupations—construction trades workers—has a median wage greater than \$12 per hour. Five occupations with the highest median wages (above \$17 per hour) are secretaries and administrative assistants; supervisors of sales workers; other office and administrative support; entertainer, sports, and related workers; and funeral service workers. Before targeting training to those higher-paying occupations, note that the number of projected jobs may be quite low. For example, funeral service workers pay \$19.05 per hour, but only approximately 1,000 more such jobs are expected nationwide through 2024. There are also nine jobs with projected growth that pay between \$15.00 and \$16.99 per hour. Of those nine, four are projected to grow substantially with 126,000 to 514,000 new jobs: construction trades workers, information and record clerks, other healthcare support occupations, and other teachers and instructors. The remaining five occupations are projected to have growth of fewer than 28,000 jobs nationwide.

TABLE 5

Low- and Middle-wage Occupations Projected to Grow Most Rapidly Nationally from 2014 to 2024

Occupation	Projected Growth, 2014–24		Median wage	Education Requirements				OJT requirements
	Number (thousands)	Percentage		None	HS diploma or GED	Postsecondary, no degree	BA or AA degree	
Nursing/psychiatric/home health aides	620	25	\$12.02			x		None
Other personal care/service workers	610	16	\$8.97		x			Short OJT
Food and beverage serving workers	535	8	\$11.06	x				Short OJT
Construction trades workers	514	10	\$16.03		x			Moderate OJT
Retail sales workers	413	5	\$11.54	x				Short OJT
Information and record clerks	399	7	\$15.38		x			Short OJT
Other healthcare support occupations	286	19	\$15.38			x		None
Building cleaning and pest control	248	6	\$11.06	x				Short OJT
Motor vehicle operators	227	6	\$14.96			x		Short OJT
Material moving workers	200	5	\$14.42	x				Short OJT
Cooks and food preparation workers	152	5	\$9.85	x				Short OJT
Other teachers and instructors	126	9	\$15.38				x	Moderate OJT
Secretaries and admin assistants	119	3	\$17.31		x			Short OJT
Other education, training, and library	100	7	\$12.47			x		None
Food prep supervisors and serving ^a	100	10	\$12.50		x			None
Supervisors of sales workers ^a	88	5	\$18.95		x			None
Personal appearance workers	86	10	\$2.98			x		None
Grounds maintenance workers	78	6	\$9.62	x				Short OJT
Other protective service workers	74	5	\$14.42		x			Short OJT
Other office/administrative support	62	2	\$17.01		x			Short OJT
Entertainer/sports/related workers	46	6	\$19.21			x		Short OJT
Helpers, construction trades	33	14	\$14.11		x			Short OJT
Entertainment attendants	33	6	\$12.98	x				Short OJT
Personal care & service supervisors ^a	28	10	\$15.38		x			None
Media and communication equipment	27	5	\$16.58			x		Moderate OJT
Other sales and related workers	27	3	\$12.53		x			Short OJT
Other food prep & serving related	26	2	\$9.61	x				Short OJT
Animal care and service workers	26	11	\$5.77		x			Short OJT
Supervisors of building and grounds	24	6	\$14.90		x			None

Occupation	Projected Growth, 2014-24		Median wage	Education Requirements				OJT requirements
	Number (thousands)	Percentage		None	HS diploma or GED	Postsecondary, no degree	BA or AA degree	
cleaning and maintenance workers ^a								
Food processing workers	23	3	\$13.46	x				Moderate OJT
Religious workers	22	5	\$16.79				x	Short OJT
Other transportation workers	21	6	\$15.87	x				Short OJT
Art and design workers	17	2	\$15.38				x	Short OJT
Baggage porters, bellhops, concierges	7	9	\$14.90		x			Short OJT
Tour and travel guides	2	5	\$10.82		x			Moderate OJT
Funeral service workers	1	2	\$19.05			x		Moderate OJT

Source: US Bureau of Labor Statistics Employment Projections program; 2015 American Community Survey; and O*NET database.

Notes: AA = associate of arts; BA = bachelor of arts; HS = high school; GED = general equivalency diploma; OJT = on-the-job training. We use wage data from the American Community Survey to determine low- and middle-wage occupations. We calculate the median wage among the older population for each occupation. Occupations falling below the 25th percentile (\$14.43) are low wage. Occupations falling between the 25th and 50th percentile (\$14.42 to \$19.23) are middle wage. Wages for personal appearance workers and animal care and service workers fall below the federal minimum wage, likely because of a high prevalence of self-employment in those occupations.

^aThese occupations have required experience of less than five years; for all other occupations, no experience is required.

In addition to the median wage and the number of jobs projected within each occupation, it is also important to consider the education, experience, and on-the-job training requirements for a given occupation. The majority of jobs listed in table 5 require either no formal education or a high school diploma or GED. Of the jobs listed in table 5 that have no education requirements, however, only one of these—other transportation workers—pays over \$15 per hour, and that occupation has only about 21,000 projected new jobs.

Jobs that both pay reasonably well and require a high school diploma or GED (an education level that may be attainable for many older workers) include secretaries and administrative assistants, supervisors of sales workers, and other office and administrative support jobs. Further, each of those three jobs requires short or no on-the-job training. Eight occupations listed in table 5 require postsecondary education but not a degree. Several of these—other healthcare support occupations, entertainer/sports/related workers, media and communication equipment, and funeral service workers—pay over \$15 per hour, and all but two require no or short on-the-job training.

Only three occupations listed in table 5 require a two-year degree or higher; of those, other teachers and instructors is the only occupation projected to have a substantial number of new jobs. Finally, three jobs in table 5 require less than five years of experience: food prep supervisors and serving workers, supervisors of sales workers, and personal care and service supervisors; all other listed jobs do not require experience.

In addition to the national occupational projections, it is also important to consider state-level variations in projected growth. We examined the top 20 occupations projected to grow most rapidly nationally between 2014 and 2024 and present the total number of projected jobs in each of those 20 occupations for every state (table A.1). Our analyses also include the top 10 low- and middle-wage occupations that are projected to grow most rapidly between 2014 and 2024 for every state (table A.2).

Examining state-level projected growth in the occupations listed in table 5, we find that in a majority of states, the three highest-growth occupations are also within the top six highest-growth occupations nationally. Following from table 5, table A.1 lists the same top 20 low- and middle-wage occupations projected to grow most rapidly at the national level. Median wages are used to restrict the sample of jobs in table A.1. For each state, projected growth in thousands of jobs for 2014 to 2024 is shown, and the top three occupations with the highest projected growth are shaded in blue. The majority of states follow the national pattern.

Fourteen states do not follow the national patterns as closely. In Illinois, for example, material-moving jobs are the second fastest growing occupation (with nearly 23,000 jobs), but that occupation is ranked 10th nationally. Table 5 shows that material-moving workers are paid a median wage of \$14.42, have no formal

educational requirements, and require short on-the-job training; further, job growth in this occupation in Illinois amounts to over 10 percent of the nearly 200,000 jobs projected nationally. Five other states—Indiana, Kentucky, New Jersey, South Carolina, and Tennessee—also show significant projected job growth in material-moving occupations. Similarly, in Maryland, secretaries and administrative assistants are projected to be the highest-growing occupation with nearly 19,000 jobs, and that amounts to over 15 percent of the nearly 119,000 jobs projected nationally. Requiring a high school diploma or GED and short on-the-job training, secretaries and administrative assistants receive a median wage of \$17.31, making this occupation an important one for low-income older workers in Maryland to consider.

Several states have projected declines in some of the top 20 occupations. For example, North Dakota, West Virginia, and Wyoming as well as Puerto Rico all have negative projected growth in at least 3 of the 20 occupations projected to grow most rapidly nationally. Eleven states project no growth or a decline in secretaries and administrative assistants or other office and administrative support workers, despite those occupations' projected growth nationally.

Table A.2 lists the top 10 low- and middle-wage occupations projected to grow most rapidly for each state as well as the District of Columbia and Puerto Rico. The percent change and absolute change are shown for each occupation. The occupations projected to grow most rapidly vary substantially across the states, but patterns exist. Forty-seven states have food and beverage-serving workers as one of the three highest-growth occupations. Construction trades workers and retail sales workers are one of the three highest-growth occupations for 24 and 23 states, respectively. Nursing, psychiatric, and home health aides as well as other personal care and service workers are also one the three highest-growth occupations in 19 and 18 states, respectively. Other occupations appear in the top three only once or a handful of times. For example, financial clerks are the second-fastest growing occupation in Tennessee, but that occupation does not appear in any of the other states' top three. Likewise, secretaries and administrative assistants are only among the top three highest-growth occupations for Maryland and Massachusetts.

Current and Projected Knowledge, Skills, and Abilities

Knowledge, skills, and abilities are each somewhat distinct in O*NET. O*NET defines knowledge as “organized sets of principles and facts that apply to a wide range of situations,” including both traditional academic fields and disciplines as well as applied areas of expertise such as clerical or administrative knowledge. Skills are defined as “developed capacities that facilitate learning and the performance of activities that occur across jobs.” Examples of skills include critical thinking and complex problem solving. Finally, abilities are “enduring attributes of an individual that influence performance,” and range from

physical abilities, such as stamina or trunk strength, to sensory abilities, such as hearing sensitivity and night vision. Knowledge and skills are probably more amenable to education and training programs, although many abilities could certainly be developed and trained for as well. For simplicity, and to be consistent with the broader “skill gap” discussion, we refer to all three as “skills” in the text and in table titles moving forward. Skill types (i.e., knowledge, skill, or ability) are specified in each table. O*NET scores each skill on its importance and on the “level” of the skill required for each occupation, presented here on a scale of 0 to 100. An importance score indicates how critical that skill is to a given occupation, while a level score indicates the occupation’s required mastery of that skill. O*NET provides an example of lawyers and paralegals to illustrate the difference. Speaking skills are critical in both occupations, so their importance scores for speaking skills are comparable. However, because lawyers frequently speak publicly in high-pressure environments, the level of speaking skill required to be a lawyer is much higher than the level required to be a paralegal. We use importance scores to identify the most important skills to target in education and training programs and level scores to identify gaps in skill levels that need to be filled.

One hundred and twenty skill categories are tracked in the O*NET database, although some are less critical to success in high-growth jobs than others. Only the 40 most important skill categories for the occupations projected to have the highest levels of growth are reported in table 6.

Table 6 compares skill levels for all workers to the skill levels for low-income older workers across the 40 most important skills in growing occupations. Because data on skills are only available at the occupational level from O*NET, we impute the skills of the population by assuming individuals have the skill levels required to succeed in their occupation as reported in O*NET. That is, if worker is in a job that requires a given skill (e.g., customer and personal service), then we assume this worker has that skill. If this occupation does not require some other skill (e.g., trunk strength), then we assume this worker does not have this skill. Individual skill levels, which could be higher or lower than occupational requirements, would be ideal, but those are not available.¹²

TABLE 6

Rank of Current Knowledge, Skills, and Abilities by Importance Score among Growing Occupations

Rank of importance among growing occupations	Knowledge, skills, or abilities	Type	Skill levels for all workers	Skill levels for low-income workers age 50+	Net difference in current skill levels
1	Customer & personal service	Knowledge	57	55	-3
2	Oral comprehension	Ability	54	51	-3
3	Oral expression	Ability	53	51	-3
4	Active listening	Skill	48	45	-3
5	English language	Knowledge	49	45	-4
6	Speech recognition	Ability	47	44	-2
7	Near vision	Ability	49	48	-1
8	Speaking	Skill	47	44	-3
9	Problem sensitivity	Ability	48	45	-2
10	Speech clarity	Ability	45	43	-2
11	Service orientation	Skill	42	41	-2
12	Social perceptiveness	Skill	43	41	-2
13	Information ordering	Ability	45	43	-2
14	Written comprehension	Ability	49	46	-3
15	Deductive reasoning	Ability	47	44	-3
16	Monitoring	Skill	45	43	-3
17	Critical thinking	Skill	48	45	-3
18	Coordination	Skill	44	42	-2
19	Reading comprehension	Skill	48	44	-4
20	Inductive reasoning	Ability	46	43	-3
21	Time management	Skill	42	40	-2
22	Selective attention	Ability	40	40	-1
23	Judgment & decision making	Skill	42	39	-3
24	Written expression	Ability	45	41	-4
25	Category flexibility	Ability	43	42	-2
26	Finger dexterity	Ability	35	36	1
27	Arm-hand steadiness	Ability	30	32	2
28	Writing	Skill	43	40	-4
29	Far vision	Ability	40	40	0
30	Complex problem solving	Skill	41	38	-2
31	Active learning	Skill	42	38	-3
32	Administration & management	Knowledge	41	38	-2
33	Public safety and security	Knowledge	33	33	1
34	Instructing	Skill	39	36	-3
35	Education and training	Knowledge	44	41	-3
36	Trunk strength	Ability	30	33	4
37	Manual dexterity	Ability	28	31	3
38	Persuasion	Skill	39	37	-2
39	Time sharing	Ability	36	35	-1
40	Learning strategies	Skill	38	35	-3

Source: Occupational Information Network (O*NET) database and the American Community Survey.

Notes: O*NET scores each skill on its importance and on the “level” of the skill required for each occupation and ranges from 0 to 100. Net differences may not equal the difference of the preceding two columns because of rounding. Skill levels for all workers are calculated by weighting the O*NET skill levels by the current employment level of that occupation. Skill levels for low-income workers age 50 and older are calculated by weighting the same O*NET skill levels by the employment of older low-income workers in that occupation, using the American Community Survey sample.

For the majority of the 40 most important skill areas, low-income older workers work in occupations that require lower skills than the occupations of workers overall. This difference is particularly high in language-related skills, such as English language skills, reading comprehension, written expression, and writing. All of those skill areas have a difference of at least 4 points on a 100-point skill level scale. Relative to average skill levels in those categories for low-income older workers, this represents an 8 to 10 percent skills deficit. This is consistent with research that shows that a lack of basic skills may prevent some older workers from participating in education and training programs (Good 2011; Heidkamp and Mabe 2011). Skills differences are also relatively high in the 10 most important skills, including customer and personal service, oral comprehension and expression, and active listening.

Notably, the 40 most important skills do not include technical skills related to computers or other equipment. This may be because technical skills that are important to one growing occupation may not be important to another, but nontechnical skills are more generalizable across occupations. Any occupational training is likely to highlight occupation-specific skills, but table 6 suggests that older, low-income workers would benefit from blending that occupational training with basic skills instruction, particularly those basic skills that relate to language and communication.

Table 6 includes some seemingly unusual results related to the physical abilities of the older, low-income population relative to all workers. For example, low-income older workers have “trunk strength” scores several points higher than those for all workers. These results are accurate but reflect the data limitations around workers’ knowledge, skills, and abilities. As noted, the O*NET database reports required skills at the occupational level; none of the datasets we use report an individual’s skill level. Instead, we use required occupational skill levels from O*NET to estimate the skills profile of the workforce; if a worker is employed in a particular occupation, they are assumed to meet that occupation’s skill requirements. Low-income older workers are disproportionately employed in low- and middle-wage occupations that require greater levels of physical strength. For example, many older workers are in retail or nursing occupations, transportation, personal care, or protective services. Because we focus on low-income workers, relatively fewer are employed in white-collar jobs. The scores for physical abilities therefore do not necessarily imply that older workers are physically stronger than workers in the general population, only that they are working in jobs where the strength requirements are higher. Younger workers presumably have higher levels of physical ability but do not always use those abilities on the job.

Will a Skill Gap Arise among Older Low-Income Workers?

Table 7 examines the skills that current workers have relative to the skills that will be needed in the future given the projected pattern of occupational growth. The projected skills that will be needed in the future are based on the BLS data that estimate the growth and decline of all occupations in the economy combined with the O*NET data that provide the skills needed in each of these occupations. The skills of the current workforce are estimated based on the skills required for the occupations the workers are currently in. The workforce as a whole faces only small skill deficits relative to projected skills needs, but many more significant skill gaps are projected for low-income older workers.

The relatively small skill gaps for all workers reflect that the projected distribution of occupations in 2024 differs from the current distribution of occupations, but not radically so. In contrast, the current distribution of occupations among low-income older workers differs substantially from the projected 2024 distribution. Consequently, the skill sets of older workers less closely resemble future needs.

Table 7 allows for some comparison of the relative skill gaps facing low-income older workers by skill category. For example, the average skill gap facing older workers for basic skills is larger than the average gap in any other skills category in table 7, reinforcing the importance of blending basic skills into training opportunities (as highlighted previously). Knowledge of computers and electronics is included in table 7 as well, and the gap in this skill facing older workers is larger than any other skill gap. Some computer training may therefore be valuable to older workers, although knowledge of computers and electronics was not among the 40 most important skills for the fastest-growing occupations among low-income older workers.

TABLE 7
Projected Knowledge, Skills, and Abilities by Importance Score Needed for All Workers and Low-Income Workers Age 50 and Older

	Importance of projected skills needed	Gap in skill levels for all workers (projected to current)	Gap in skill levels for age low-income workers age 50+ (projected to current)
Basic skills			
Active listening	64.6	-0.1	-3.1
Speaking	63.2	-0.1	-3.2
Critical thinking	58.5	-0.1	-3.1
Reading comprehension	58.0	-0.1	-3.8
Monitoring	55.6	-0.1	-2.6
Writing	50.4	-0.1	-3.8
Active learning	48.6	-0.2	-3.3
Learning strategies	41.6	-0.2	-3.5
Social skills			

	Importance of projected skills needed	Gap in skill levels for all workers (projected to current)	Gap in skill levels for age low-income workers age 50+ (projected to current)
Social perceptiveness	55.9	-0.2	-2.6
Coordination	54.4	-0.1	-2.1
Service orientation	52.9	-0.2	-1.8
Persuasion	44.8	-0.1	-2.6
Instructing	44.3	-0.2	-3.1
Negotiation	41.6	-0.1	-2.5
Additional miscellaneous skills			
Judgment and decision making	52.9	-0.1	-3.0
Time management	52.1	-0.1	-1.8
Complex problem solving	49.4	-0.1	-2.6
Knowledge			
Customer and personal service	66.5	-0.3	-3.0
English language	64.0	-0.2	-3.8
Administration and management	48.0	-0.1	-2.4
Education and training	44.3	-0.2	-3.2
Computers and electronics	43.1	-0.1	-6.4
Clerical	42.7	0.0	-4.8
Mathematics	41.3	0.0	-4.0
Public safety and security	40.6	-0.1	0.4
Cognitive abilities			
Oral comprehension	68.3	-0.1	-2.7
Oral expression	67.4	-0.1	-2.7
Problem sensitivity	62.2	-0.2	-2.6
Written comprehension	59.9	-0.1	-3.5
Deductive reasoning	58.4	-0.1	-2.7
Information ordering	57.1	-0.1	-2.0
Inductive reasoning	55.5	-0.2	-2.7
Written expression	54.4	-0.1	-4.1
Category flexibility	50.5	-0.1	-1.8
Selective attention	49.7	0.0	-0.9
Fluency of ideas	42.9	-0.1	-2.9
Flexibility of closure	42.6	-0.1	-1.8
Perceptual speed	41.8	0.0	-1.0
Originality	41.2	-0.1	-2.9
Time sharing	41.0	-0.1	-0.8
Sensory abilities			
Near vision	61.3	0.0	-1.5
Speech clarity	61.2	-0.1	-2.5
Speech recognition	60.9	-0.1	-2.3
Far vision	44.2	0.0	0.1

Source: Occupational Information Network (O*NET) database and the American Community Survey.

Notes: O*NET scores each skill on its importance and on the “level” of the skill required for each occupation and ranges from 0 to 100. Skill levels for all workers and projected skill needs are calculated by weighting the O*NET skill levels by the current and projected employment level of that occupation, respectively. Skill levels for low-income workers age 50 and older are calculated by weighting the same O*NET skill levels by the employment of older low-income workers in that occupation, using the American Community Survey sample.

Knowledge, Skills, and Abilities for the Top 20 Fastest-Growing Occupations

Table 8 presents the skill importance scores for the most important skills for each of the 20 fastest-growing occupations among workers of all ages. Recall that a skill’s importance refers to the centrality of a skill to a job, not the level of expertise required in the skill (expertise levels are reported in table 6 and gaps are reported in table 7). Table 8 provides information on what skills matter most for an individual who is interested in a particular occupation.

The blue and red shading in table 8 shows the relative importance of a given knowledge, skill, or ability to the top 20 fastest-growing occupations. The blue-shaded cells show skill areas that are relatively more important for a given occupation and include any skills rated 60 and higher. Conversely, red-shaded cells show skill areas that are relatively less important for a given occupation and include any skills rated 40 and lower. The darker the blue, the more important the skill is to that occupation. For example, among nursing, psychiatric, and home health aides, three knowledges, skills, or abilities are rated 71—customer and personal service, oral comprehension, and service orientation—and are the skills deemed most important to those occupations. A skill that is important for these occupations but less so would be speech recognition, shown in a lighter shade of blue and rated 62. Unlike for nursing, psychiatric, and home health aides, service orientation has very low importance as a skill for material moving (rated 31) and is therefore shaded dark red in that column.

TABLE 8

Occupation-Specific Skill Importance Scores for Skill Areas with the Highest Importance, by Top 20 Fastest-Growing Occupations for all Workers

Knowledge, skills, or abilities	Skill type	Occupations																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		Nursing, psychiatric, & home health aides	Other personal care & service	Food & beverage serving	Construction trades	Retail sales	Information & record clerks	Other healthcare support	Building cleaning & pest control	Motor vehicle operators	Material moving	Cooks & food preparation	Other teachers & instructors	Secretaries & admin assistants	Other education, training, & library	Supervisors of food prep & serving	Supervisors of sales	Personal appearance maintenance	Grounds maintenance	Other protective service	Other office & admin support
Customer & personal service	Knowledge	71	71	78	53	80	82	80	60	67	39	54	72	72	53	71	83	82	56	59	76
Oral comprehension	Ability	71	67	69	57	73	74	72	52	54	51	55	77	79	67	75	68	66	48	61	68
Oral expression	Ability	68	68	66	52	74	74	69	47	52	48	51	81	74	73	78	68	66	45	59	67
Active listening	Skill	66	62	65	52	65	70	68	49	53	44	52	73	72	67	68	68	67	45	61	65
English language	Knowledge	66	58	56	59	58	69	73	50	57	50	49	84	77	67	50	66	48	60	59	69
Speech recognition	Ability	62	56	66	50	63	68	66	45	50	48	52	66	71	66	65	68	62	48	57	63
Near vision	Ability	64	55	52	62	60	62	66	52	64	55	52	57	70	54	56	56	71	51	54	62
Speaking	Skill	55	61	60	50	64	70	65	43	53	44	49	71	72	67	72	65	65	47	58	64
Problem sensitivity	Ability	69	63	50	59	55	58	64	47	59	51	53	59	58	61	72	62	51	51	71	54
Speech clarity	Ability	56	58	59	49	67	69	61	44	51	44	50	75	70	66	63	67	55	47	57	64
Service orientation	Skill	71	68	62	37	62	64	56	45	48	31	43	57	63	57	68	62	62	38	46	51
Social perceptiveness	Skill	65	64	58	46	57	54	61	44	49	36	42	64	52	60	63	62	52	38	52	54
Information ordering	Ability	52	53	53	54	52	54	54	48	52	47	54	55	62	52	60	56	48	47	49	55
Written comprehension	Ability	56	55	43	48	55	63	65	32	49	43	41	70	75	57	61	55	48	33	46	67
Deductive reasoning	Ability	54	53	47	54	50	55	59	46	51	49	48	55	54	53	69	59	48	45	55	53
Monitoring	Skill	56	58	52	49	48	49	58	42	50	44	50	61	50	55	66	65	49	38	57	49
Critical thinking	Skill	55	54	45	51	51	55	58	43	50	46	45	62	52	58	60	65	54	48	54	51
Coordination	Skill	54	55	53	50	50	50	53	46	44	46	48	53	57	55	69	64	47	44	52	46
Reading comprehension	Skill	54	50	42	48	52	61	63	36	48	42	41	68	70	57	58	55	48	32	51	65
Inductive reasoning	Ability	56	51	38	52	50	51	53	46	49	44	42	55	51	52	57	52	48	44	53	50
Time management	Skill	49	53	39	47	47	50	51	42	51	40	44	54	67	50	60	60	48	41	36	55
Selective attention	Ability	44	49	48	50	50	47	48	40	52	42	45	54	49	51	53	44	50	48	59	51
Judgment & decision making	Skill	48	53	48	46	44	45	49	33	47	38	43	55	49	52	57	58	51	38	47	44
Written expression	Ability	49	53	36	36	49	62	58	27	44	40	37	65	71	54	48	50	44	21	45	62
Category flexibility	Ability	50	45	42	48	47	45	50	39	45	42	43	48	52	51	50	56	47	36	35	53
Finger dexterity	Ability	47	43	47	53	42	41	51	40	46	44	41	35	38	29	50	47	66	45	25	48
Arm-hand steadiness	Ability	50	40	50	62	37	23	46	42	49	49	52	22	21	21	50	32	68	54	28	34
Writing	Skill	49	49	33	34	42	50	55	27	44	34	32	57	70	53	47	53	42	20	48	56
Far vision	Ability	44	47	34	52	35	37	41	43	68	48	34	36	35	45	52	48	33	47	61	38
Complex problem solving	Skill	46	47	39	46	39	46	46	30	44	33	35	58	44	50	53	56	45	33	40	41

Source: Occupational Information Network (O*NET) database.

Notes: O*NET skills scores are provided at the six-digit occupation level. They are aggregated up to the three-digit level for this table.

Broadly, the skills identified as important across all fast-growing occupations are of high importance in individual occupations as well. Customer and personal service, oral comprehension, and oral expression are extremely important in most occupations. However, some notable exceptions exist. Those skills are of much lower importance among material moving occupations, cooks and food preparation, and grounds maintenance, and they are only marginally important in building cleaning and pest control. Workers interested in such occupations would be better served investing in other skills that are more important to those jobs.

Table 8 also shows that some skills that are not particularly important to most fast-growing jobs are more critical in specific occupations. For example, writing is generally of low importance, but it is predictably very important to the work of secretaries and administrative assistants. Arm-hand steadiness is also of negligible importance in most occupations, but it is of high importance in construction trades and personal appearance workers. Although such nuances may not matter for developing a broader skills strategy, they are essential for designing specific programs or directing job seekers to necessary education and training.

When Do Low-income Older Workers Plan to Stop Working?

The HRS provides information on when low-income older workers think they will retire from various industries and occupations. We include the HRS analysis in our report for two reasons. First, knowing the occupations that low-income older workers plan to retire from allows us to look for potential opportunities for incumbent workers who plan to continue working. Second, employers often say that they do not want to train older workers because they are likely to retire soon, but our analysis shows that this is not the case for the majority of low-income older workers in many different occupations.

The survey is weighted to represent the 86.5 million Americans who were age 53 or older at the time of the most recent survey (2014). Almost half (47 percent) of the weighted sample have low incomes (less than 300 percent of FPL), representing 40.5 million individuals. Among this group, 42 percent (10.1 million people) are currently working for pay. The survey asks what year the respondent thinks he or she will stop working (table 9). Of the low-income, working respondents, 44 percent have no plans to retire. An additional 9 percent do not know when they will retire. Of the remaining 48 percent, 15 percent said they thought they would retire within five years of the survey (between 2014

and 2018), 17 percent expected to retire between 2019 and 2023, and the remaining 15 percent expected to retire after 2023.

..... Low-income older workers are less likely to have any plans to retire than older workers with higher incomes. Fifty-three percent of low-income older workers do not know when they will retire or say they have no plans to retire compared with 46 percent of older workers who do not have low incomes. Among low-income older workers, as their level of poverty increases, their likelihood of having plans to retire at all and in the next five years decreases.

TABLE 9

Year That Low-Income Older Workers Think They Will Stop Working

	All Low-Income		< 100% of FPL		100–199% of FPL		200–300% of FPL	
	%	#	%	#	%	#	%	#
2014–18	15	1,452,932	11	237,246	16	562,450	17	653,236
2019–23	17	1,648,555	15	332,201	17	591,505	19	724,849
2024–28	10	966,342	10	217,827	9	319,448	11	429,067
2029+	5	491,696	5	111,033	6	201,976	5	178,687
Don't know	9	840,974	10	222,229	11	388,937	6	229,808
No plans to retire	44	4,189,004	49	1,069,949	41	1,457,760	43	1,661,295
Total	100	9,589,503	100	2,190,485	100	3,522,076	100	3,876,942

Source: Health and Retirement Survey, 2014.

Notes: Because of missing data, the overall percentages in tables 10 and 11 may not match those in table 9. Includes individuals age 53 and older.

Tables 10 and 11 show the current occupations and industries of low-income older workers who had plans to retire within five years of the time of the survey.

TABLE 10

Current Occupations of Low-Income Older Workers Planning to Retire between 2014 and 2018

	Likelihood of retiring 2014–18 (%)	Number of people planning to retire 2014–18
All	14	1,082,574
Protective service occupations	26	52,071
Business and financial operations occupations	25	55,594
Personal care and service occupations	20	132,218
Building and grounds cleaning and maintenance occupations	17	143,550
Education, training, and library occupations	16	50,511
Office and administrative support occupations	15	165,214
Food preparation and serving related occupations	15	71,008
Transportation and material moving occupations	15	97,826
Healthcare support occupations	14	43,177

Production occupations	11	59,159
Sales and related occupations	11	79,781
Healthcare practitioners and technical occupations	10	16,151
Management occupations	9	22,429
Construction and extraction occupations	9	49,795
Other occupations ^a	9	29,235
Community and social service occupations	7	8,741
Installation, maintenance, and repair occupations	3	6,114

Source: Health and Retirement Survey, 2014.

Notes: Because of missing data, the overall percentages in tables 10 and 11 may not match those in table 9.

^a Includes occupations with low sample size: computer and mathematical occupations; architecture and engineering occupations; life, physical, and social science occupations; legal occupations; arts, design, entertainment, sports, and media occupations; farming, fishing, and forestry occupations; and military specific occupations.

In table 10, the occupation categories are broad because the HRS only provides information on occupations at the two-digit SOC level. The second column shows the “likelihood” of retiring between 2014 and 2018 (i.e., the percentage of respondents within that occupational category that said they planned to retire in that year range). The occupational categories with the highest likelihood of retiring between 2014 and 2018 were protective service occupations (26 percent), business and financial operations occupations (25 percent), and personal care and service occupations (20 percent). The number of low-income older workers planning to retire is highest in the following occupations: office and administrative support occupations (165,214), building and grounds cleaning and maintenance occupations (143,550), and personal care and service occupations (132,218). The occupational categories with the least likelihood of retiring in 2014 to 2018 are installation, maintenance, and repair occupations (3 percent); community and social service occupations (7 percent); and construction and extraction occupations (9 percent).

Table 11 shows similar information by industry. The industries with the highest likelihood of retiring between 2014 and 2018 are public administration (30 percent); arts, entertainment, and recreation (19 percent); and professional, scientific, and technical services (18 percent). The number of low-income older workers planning to retire is highest in the following industries: health care and social assistance (197,553), retail trade (117,983), and other services (116,314). The industries with the least likelihood of retiring are manufacturing (7 percent), construction (7 percent), and wholesale trade (10 percent).

Assuming that the likelihood of retiring within the next five years remains stable among older workers, the information presented in tables 10 and 11 can be used to predict retirement patterns over the next five years and therefore could be used to inform training, recruitment, and retention efforts. The occupations and industries that are expecting many low-income retirees may be good targets for training and recruitment efforts for other low-income older workers. In contrast, low-income older

workers may find themselves unable to retire as expected, creating possible opportunities for incumbent-worker training to retain this segment of the workforce. Finally, in industries with low rates of expected retirement among low-income older workers, including manufacturing and construction, employers may want to consider investing more in training their older incumbent workforce. It is also possible, however, that the age distribution is younger in occupations such as construction and manufacturing, possibly accounting for the lower percentages of people planning to retire from those jobs.

TABLE 11

Current Industries of Low-Income Older Workers Planning to Retire between 2014 and 2018

	Likelihood of retiring 2014–18 (%)	Number of people planning to retire 2014–18
All	14	1,036,946
Public administration	30	67,834
Arts, entertainment, and recreation	19	36,476
Professional, scientific, and technical services	18	31,997
Agriculture, forestry, fishing and hunting	17	27,853
Real estate and rental and leasing	17	33,801
Health care and social assistance	17	197,553
Transportation and warehousing	16	68,415
Educational services	15	89,799
Accommodation and food services	14	54,412
Other services (except public administration)	14	116,314
Retail trade	14	117,983
Other industries ^a	13	21,702
Management of companies and enterprises	11	59,484
Wholesale trade	10	21,730
Construction	7	39,842
Manufacturing	7	51,751

Source: Health and Retirement Survey, 2014.

Notes: Because of missing data, the overall percentages in tables 10 and 11 may not match those in table 9.

^a Includes industries with low sample size: mining, quarrying, and oil and gas extraction; utilities; information; and finance and insurance.

Conclusion

This report examines current and projected employment for low-income workers age 50 and older. In particular, it examines low- and middle-wage occupations projected to grow most rapidly between 2014 and 2024. After examining the current skills of low-income older workers and the needed skills projected for various occupations, we find some skill deficits for low-income older workers. Our examination of retirement plans indicates that 44 percent of low-income workers have no plans to retire, and an additional 9 percent do not know when they will retire. Given that over half of low-income older workers have no plans to retire in the next five years, the findings from this report may prove useful in determining which occupations are projected to grow and what skill deficits need to be addressed to close the gap for older workers interested in moving into those jobs.

Appendix A. Additional Tables

TABLE A.1

Top 20 Occupations Projected to Grow Most Rapidly from 2014 to 2024 at the National Level, by State

	Occupations																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Nursing, psychiatric, home health aides	Other personal care/ services	Food/beverage serving	Construction trades	Retail sales	Information/record clerks	Other healthcare support	Building cleaning and pest control	Motor vehicle operators	Material moving	Cooks and food prep	Other teachers and instructors	Secretaries/admin assistants	Other education, training, and library	Food prep supervisors/serving	Sales supervisors	Personal appearance	Grounds maintenance	Other protective service	Other office/admin support
Alabama	6	6	7	6	9	7	3	3	5	5	1	2	2	1	2	3	1	1	1	1
Alaska	0	1	1	0	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1
Arizona	10	18	31	38	27	36	8	13	13	14	10	2	12	6	5	6	2	6	7	13
Arkansas	4	5	10	4	7	4	2	2	5	4	4	1	2	1	2	2	0	1	1	3
California	33	211	193	168	74	62	45	39	58	77	84	31	40	22	32	13	16	17	29	42
Colorado	15	20	36	45	26	23	10	14	15	11	13	1	22	4	5	4	4	7	6	6
Connecticut	3	10	5	6	2	4	2	4	3	3	1	1	0	1	1	0	1	1	0	1
Delaware	2	1	2	2	2	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0
DC	3	2	2	1	1	1	1	1	1	0	1	0	0	0	1	0	0	0	1	0
Florida	30	26	106	95	100	81	29	41	37	40	41	12	35	9	16	23	9	22	17	27
Georgia	11	13	29	19	22	24	12	7	14	22	9	7	6	7	5	5	2	3	3	5
Hawaii	2	1	2	3	3	1	1	2	1	1	1	1	0	0	1	1	0	1	1	0
Idaho	1	0	4	5	2	1	0	2	4	3	0	2	0	1	1	2	1	-	1	3
Illinois	16	14	31	17	17	13	6	10	15	23	11	4	-1	2	5	3	2	2	3	4
Indiana	10	10	18	14	15	8	6	6	11	16	5	2	4	2	3	3	1	2	2	3
Iowa	7	5	7	9	7	7	2	4	8	5	2	1	2	2	1	2	1	1	1	3
Kansas	2	9	8	2	2	4	1	2	3	3	3	1	3	0	2	0	1	1	1	0
Kentucky	15	9	9	12	8	13	5	6	7	14	5	2	6	5	2	3	1	2	2	5
Louisiana	7	10	8	3	10	4	2	4	4	5	5	1	0	1	2	1	0	0	1	2
Maine	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Maryland	16	18	6	10	11	15	7	15	14	8	2	11	19	11	1	3	2	4	8	4
Massachusetts	5	5	9	4	3	4	2	4	4	2	4	1	6	2	1	1	2	1	2	4
Michigan	15	10	18	12	12	13	5	6	10	9	5	4	2	1	3	3	2	2	2	4
Minnesota	12	20	7	7	6	3	4	4	3	2	3	1	0	1	1	1	1	1	1	0
Mississippi	4	3	5	4	1	2	1	2	1	3	2	1	1	1	1	1	0	1	1	0
Missouri	8	14	13	9	7	8	3	4	3	3	2	2	2	1	3	1	1	1	1	0
Montana	1	2	4	3	4	2	0	2	1	1	2	0	1	0	1	1	0	1	0	1
Nebraska	2	3	6	5	4	4	1	2	6	3	1	1	1	1	1	1	0	1	1	1

TABLE A.1

Top 20 Occupations Projected to Grow Most Rapidly from 2014 to 2024 at the National Level, by State (continued)

	Occupations																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Nursing, psychiatric, home health aides	Other personal care/ services	Food/beverage serving	Construction trades	Retail sales	Information/record clerks	Other healthcare support	Building cleaning and pest control	Motor vehicle operators	Material moving	Cooks and food prep	Other teachers and instructors	Secretaries/admin assistants	Other education, training, and library	Food prep supervisors/serving	Sales supervisors	Personal appearance	Grounds maintenance	Other protective service	Other office/admin support
Nevada	2	5	29	17	23	12	4	16	13	9	12	3	4	3	5	3	1	3	7	8
New Hampshire	2	2	3	1	2	2	1	1	1	1	1	1	1	1	0	1	1	1	0	1
New Jersey	24	8	21	13	13	10	7	4	10	19	7	4	0	3	4	2	5	3	3	-2
New Mexico	3	11	7	2	2	2	1	1	1	1	2	1	1	1	1	1	0	0	0	0
New York	92	72	86	63	40	43	15	44	28	22	30	20	24	13	17	8	14	5	25	16
North Carolina	31	13	44	20	29	25	11	11	12	14	13	2	7	4	7	7	2	5	4	7
North Dakota	2	3	3	-1	2	2	1	1	-3	0	1	0	0	1	1	0	0	0	0	0
Ohio	40	8	22	15	6	8	9	6	9	8	6	3	8	3	3	1	4	2	2	1
Oklahoma	5	6	9	8	8	5	2	3	4	5	2	1	2	1	2	2	1	1	2	2
Oregon	4	8	18	15	13	8	5	6	7	7	11	2	6	2	3	2	1	2	1	4
Pennsylvania	24	19	27	24	7	9	6	10	15	13	7	3	2	2	4	1	5	3	4	-2
Rhode Island	2	1	3	2	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0
South Carolina	7	5	11	7	8	7	3	5	4	8	4	1	2	1	2	2	1	2	2	1
South Dakota	1	1	3	2	2	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0
Tennessee	14	12	12	10	6	15	8	8	11	19	3	2	9	2	3	2	1	2	6	6
Texas	54	109	183	110	148	94	36	66	80	71	66	27	60	23	29	31	12	24	27	63
Utah	5	8	21	23	15	22	6	7	11	10	7	5	9	3	3	3	2	4	2	7
Vermont	0	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia	14	17	22	13	14	14	9	7	5	5	8	6	3	4	4	3	3	3	6	5
Washington	8	17	30	30	20	18	12	17	13	17	14	8	10	7	4	6	8	11	7	11
West Virginia	2	4	0	-2	-2	1	0	0	0	-1	0	0	0	0	0	-1	0	0	0	-2
Wisconsin	7	23	15	8	4	6	2	6	10	5	4	2	0	1	2	1	0	3	1	1
Wyoming	1	1	2	-1	1	0	0	1	-1	0	1	0	0	0	0	0	0	0	0	0
Puerto Rico	1	1	5	-3	3	1	0	1	1	0	1	0	-2	-1	1	1	0	0	1	-3

Source: State occupational projections 2014–24.

Notes: NA = not available. State-level occupational projections are developed in the labor market information sections of each State Employment Security Agency; therefore, the state-level projections may not be consistent with the national projections. The top 20 occupations are those with the most projected absolute growth at the national level. In each row, the three occupations with the most growth are shaded in blue.

TABLE A.2

Top 10 Low- to Middle-wage Occupations Projected to Grow Most Rapidly from 2014 to 2024, by State

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Alabama	1	Assemblers and fabricators	23%	11		x
Alabama	2	Retail sales workers	7%	9	x	
Alabama	3	Information and record clerks	9%	7		x
Alabama	4	Food and beverage serving workers	8%	7	x	
Alabama	5	Construction trades workers	10%	6		x
Alabama	6	Nursing, psychiatric, and home health aides	19%	6	x	
Alabama	7	Other personal care and service workers	15%	6	x	
Alabama	8	Material moving workers	7%	5	x	
Alabama	9	Motor vehicle operators	7%	5		x
Alabama	10	Other healthcare support occupations	18%	3		x
Alaska	1	Retail sales workers	7%	2	x	
Alaska	2	Other personal care and service workers	13%	1	x	
Alaska	3	Food and beverage serving workers	10%	1	x	
Alaska	4	Other healthcare support occupations	18%	1		x
Alaska	5	Cooks and food preparation workers	10%	1	x	
Alaska	6	Information and record clerks	7%	1		x
Alaska	7	Other office and administrative support workers	5%	1		x
Alaska	8	Building cleaning and pest control workers	7%	1	x	
Alaska	9	Other food preparation and serving related workers	11%	1	x	
Alaska	10	Motor vehicle operators	6%	0		x
Arizona	1	Construction trades workers	45%	38		x
Arizona	2	Information and record clerks	25%	36		x
Arizona	3	Food and beverage serving workers	22%	31	x	
Arizona	4	Retail sales workers	16%	27	x	
Arizona	5	Other personal care and service workers	27%	18	x	
Arizona	6	Material moving workers	22%	14	x	
Arizona	7	Other office and administrative support workers	18%	13		x
Arizona	8	Motor vehicle operators	21%	13		x
Arizona	9	Building cleaning and pest control workers	22%	13	x	
Arizona	10	Secretaries and administrative assistants	16%	12		x
Arkansas	1	Food and beverage serving workers	21%	10	x	
Arkansas	2	Retail sales workers	10%	7	x	
Arkansas	3	Motor vehicle operators	10%	5		x
Arkansas	4	Other personal care and service workers	14%	5	x	
Arkansas	5	Information and record clerks	10%	4		x
Arkansas	5	Construction trades workers	11%	4		x
Arkansas	7	Cooks and food preparation workers	12%	4	x	
Arkansas	8	Nursing, psychiatric, and home health aides	15%	4	x	
Arkansas	9	Material moving workers	8%	4	x	
Arkansas	10	Other office and administrative support workers	6%	3		x

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
California	1	Other personal care and service workers	29%	211	x	
California	2	Food and beverage serving workers	26%	193	x	
California	3	Construction trades workers	30%	168		x
California	4	Cooks and food preparation workers	21%	84	x	
California	5	Material moving workers	14%	77	x	
California	6	Retail sales workers	8%	74	x	
California	7	Information and record clerks	12%	62		x
California	8	Motor vehicle operators	16%	58		x
California	9	Other healthcare support occupations	21%	45		x
California	10	Other office and administrative support workers	8%	42		x
Colorado	1	Construction trades workers	41%	45		x
Colorado	2	Food and beverage serving workers	27%	36	x	
Colorado	3	Retail sales workers	17%	26	x	
Colorado	4	Information and record clerks	21%	23		x
Colorado	5	Secretaries and administrative assistants	25%	22		x
Colorado	6	Other personal care and service workers	40%	20	x	
Colorado	7	Nursing, psychiatric, and home health aides	43%	15	x	
Colorado	8	Motor vehicle operators	22%	15		x
Colorado	9	Building cleaning and pest control workers	23%	14	x	
Colorado	10	Cooks and food preparation workers	24%	13	x	
Connecticut	1	Other personal care and service workers	17%	10	x	
Connecticut	2	Construction trades workers	10%	6		x
Connecticut	3	Food and beverage serving workers	7%	5	x	
Connecticut	4	Building cleaning and pest control workers	9%	4	x	
Connecticut	5	Information and record clerks	6%	4		x
Connecticut	6	Nursing, psychiatric, and home health aides	10%	3	x	
Connecticut	7	Motor vehicle operators	7%	3		x
Connecticut	8	Material moving workers	8%	3	x	
Connecticut	9	Retail sales workers	2%	2	x	
Connecticut	10	Other healthcare support occupations	12%	2		x
Delaware	1	Food and beverage serving workers	10%	2	x	
Delaware	2	Construction trades workers	15%	2		x
Delaware	3	Retail sales workers	6%	2	x	
Delaware	4	Nursing, psychiatric, and home health aides	19%	2	x	
Delaware	5	Information and record clerks	7%	1		x
Delaware	6	Motor vehicle operators	9%	1		x
Delaware	7	Material moving workers	9%	1	x	
Delaware	8	Building cleaning and pest control workers	9%	1	x	
Delaware	9	Other personal care and service workers	16%	1	x	
Delaware	10	Cooks and food preparation workers	8%	1	x	
DC	1	Nursing, psychiatric, and home health aides	33%	3	x	
DC	2	Food and beverage serving workers	9%	2	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N	Low	Middle
				(hundreds)		
DC	3	Other personal care and service workers	20%	2	x	
DC	4	Building cleaning and pest control workers	6%	1	x	
DC	5	Construction trades workers	13%	1		x
DC	6	Retail sales workers	7%	1	x	
DC	7	Cooks and food preparation workers	9%	1	x	
DC	8	Motor vehicle operators	11%	1		x
DC	9	Information and record clerks	4%	1		x
DC	10	Other protective service workers	5%	1	x	
Florida	1	Food and beverage serving workers	21%	106	x	
Florida	2	Retail sales workers	17%	100	x	
Florida	3	Construction trades workers	32%	95		x
Florida	4	Information and record clerks	19%	81		x
Florida	5	Building cleaning and pest control workers	19%	41	x	
Florida	6	Cooks and food preparation workers	24%	41	x	
Florida	7	Material moving workers	18%	40	x	
Florida	8	Motor vehicle operators	19%	37		x
Florida	9	Secretaries and administrative assistants	14%	35		x
Florida	10	Nursing, psychiatric, and home health aides	25%	30	x	
Georgia	1	Food and beverage serving workers	15%	29	x	
Georgia	2	Information and record clerks	13%	24		x
Georgia	3	Retail sales workers	9%	22	x	
Georgia	4	Material moving workers	13%	22	x	
Georgia	5	Construction trades workers	16%	19		x
Georgia	6	Motor vehicle operators	11%	14		x
Georgia	7	Other personal care and service workers	16%	13	x	
Georgia	8	Other healthcare support occupations	27%	12		x
Georgia	9	Nursing, psychiatric, and home health aides	23%	11	x	
Georgia	10	Assemblers and fabricators	16%	10		x
Hawaii	1	Construction trades workers	11%	3		x
Hawaii	2	Retail sales workers	6%	3	x	
Hawaii	3	Food and beverage serving workers	6%	2	x	
Hawaii	4	Nursing, psychiatric, and home health aides	21%	2	x	
Hawaii	5	Building cleaning and pest control workers	6%	2	x	
Hawaii	6	Other personal care and service workers	12%	1	x	
Hawaii	7	Cooks and food preparation workers	6%	1	x	
Hawaii	8	Motor vehicle operators	7%	1		x
Hawaii	9	Other healthcare support occupations	11%	1		x
Hawaii	10	Information and record clerks	4%	1		x
Idaho	1	Construction trades workers	26%	5		x
Idaho	2	Motor vehicle operators	19%	4		x
Idaho	3	Food and beverage serving workers	30%	4	x	
Idaho	4	Material moving workers	16%	3	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N	Low	Middle
				(hundreds)		
Idaho	4	Other office and administrative support workers	15%	3		x
Idaho	6	Building cleaning and pest control workers	15%	2	x	
Idaho	7	Retail sales workers	13%	2	x	
Idaho	8	Supervisors of sales workers	21%	2		x
Idaho	9	Material recording, scheduling, dispatching, and distributing workers	14%	2		x
Idaho	10	Other teachers and instructors	21%	2		x
Illinois	1	Food and beverage serving workers	12%	31	x	
Illinois	2	Material moving workers	9%	23	x	
Illinois	3	Retail sales workers	5%	17	x	
Illinois	4	Construction trades workers	9%	17		x
Illinois	5	Nursing, psychiatric, and home health aides	17%	16	x	
Illinois	6	Motor vehicle operators	9%	15		x
Illinois	7	Other personal care and service workers	11%	14	x	
Illinois	8	Information and record clerks	6%	13		x
Illinois	9	Cooks and food preparation workers	9%	11	x	
Illinois	10	Building cleaning and pest control workers	6%	10	x	
Indiana	1	Food and beverage serving workers	11%	18	x	
Indiana	2	Material moving workers	13%	16	x	
Indiana	3	Retail sales workers	9%	15	x	
Indiana	4	Construction trades workers	13%	14		x
Indiana	5	Assemblers and fabricators	12%	14		x
Indiana	6	Motor vehicle operators	11%	11		x
Indiana	7	Nursing, psychiatric, and home health aides	20%	10	x	
Indiana	8	Other personal care and service workers	19%	10	x	
Indiana	9	Information and record clerks	9%	8		x
Indiana	10	Other production occupations	8%	7		x
Iowa	1	Construction trades workers	14%	9		x
Iowa	2	Motor vehicle operators	12%	8		x
Iowa	3	Food and beverage serving workers	10%	7	x	
Iowa	4	Information and record clerks	12%	7		x
Iowa	5	Retail sales workers	7%	7	x	
Iowa	6	Nursing, psychiatric, and home health aides	20%	7	x	
Iowa	7	Material moving workers	9%	5	x	
Iowa	8	Other personal care and service workers	13%	5	x	
Iowa	9	Building cleaning and pest control workers	10%	4	x	
Iowa	10	Other office and administrative support workers	6%	3		x
Kansas	1	Other personal care and service workers	24%	9	x	
Kansas	2	Food and beverage serving workers	13%	8	x	
Kansas	3	Information and record clerks	7%	4		x
Kansas	4	Motor vehicle operators	8%	3		x
Kansas	5	Financial clerks	10%	3		x
Kansas	6	Cooks and food preparation workers	9%	3	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Kansas	7	Secretaries and administrative assistants	7%	3		x
Kansas	8	Material moving workers	7%	3	x	
Kansas	9	Construction trades workers	5%	2		x
Kansas	10	Nursing, psychiatric, and home health aides	8%	2	x	
Kentucky	1	Nursing, psychiatric, and home health aides	47%	15	x	
Kentucky	2	Material moving workers	18%	14	x	
Kentucky	3	Information and record clerks	15%	13		x
Kentucky	4	Construction trades workers	19%	12		x
Kentucky	5	Food and beverage serving workers	9%	9	x	
Kentucky	6	Other personal care and service workers	18%	9	x	
Kentucky	7	Retail sales workers	7%	8	x	
Kentucky	8	Motor vehicle operators	11%	7		x
Kentucky	9	Building cleaning and pest control workers	16%	6	x	
Kentucky	10	Secretaries and administrative assistants	11%	6		x
Louisiana	1	Other personal care and service workers	19%	10	x	
Louisiana	2	Retail sales workers	7%	10	x	
Louisiana	3	Food and beverage serving workers	11%	8	x	
Louisiana	4	Nursing, psychiatric, and home health aides	19%	7	x	
Louisiana	5	Cooks and food preparation workers	8%	5	x	
Louisiana	6	Material moving workers	7%	5	x	
Louisiana	7	Information and record clerks	7%	4		x
Louisiana	8	Motor vehicle operators	7%	4		x
Louisiana	9	Building cleaning and pest control workers	8%	4	x	
Louisiana	10	Construction trades workers	3%	3		x
Maine	1	Nursing, psychiatric, and home health aides	10%	1	x	
Maine	2	Other personal care and service workers	7%	1	x	
Maine	3	Food and beverage serving workers	4%	1	x	
Maine	4	Information and record clerks	4%	1		x
Maine	5	Other healthcare support occupations	8%	1		x
Maine	6	Building cleaning and pest control workers	3%	0	x	
Maine	7	Grounds maintenance workers	4%	0	x	
Maine	7	Cooks and food preparation workers	2%	0	x	
Maine	9	Retail sales workers	1%	0	x	
Maine	10	Supervisors of food preparation and serving workers	5%	0	x	
Maryland	1	Secretaries and administrative assistants	18%	19		x
Maryland	2	Other personal care and service workers	36%	18	x	
Maryland	3	Nursing, psychiatric, and home health aides	34%	16	x	
Maryland	4	Information and record clerks	14%	15		x
Maryland	5	Building cleaning and pest control workers	21%	15	x	
Maryland	6	Motor vehicle operators	19%	14		x
Maryland	7	Other teachers and instructors	27%	11		x
Maryland	8	Retail sales workers	7%	11	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Maryland	9	Other education, training, and library occupations	26%	11	x	
Maryland	10	Construction trades workers	13%	10		x
Massachusetts	1	Food and beverage serving workers	6%	9	x	
Massachusetts	2	Secretaries and administrative assistants	6%	6		x
Massachusetts	3	Nursing, psychiatric, and home health aides	7%	5	x	
Massachusetts	4	Other personal care and service workers	5%	5	x	
Massachusetts	5	Building cleaning and pest control workers	5%	4	x	
Massachusetts	6	Motor vehicle operators	5%	4		x
Massachusetts	7	Information and record clerks	4%	4		x
Massachusetts	8	Other office and administrative support workers	5%	4		x
Massachusetts	9	Construction trades workers	4%	4		x
Massachusetts	10	Cooks and food preparation workers	6%	4	x	
Michigan	1	Food and beverage serving workers	8%	18	x	
Michigan	2	Nursing, psychiatric, and home health aides	16%	15	x	
Michigan	3	Assemblers and fabricators	11%	13		x
Michigan	4	Information and record clerks	8%	13		x
Michigan	5	Construction trades workers	11%	12		x
Michigan	6	Retail sales workers	5%	12	x	
Michigan	7	Motor vehicle operators	9%	10		x
Michigan	8	Other personal care and service workers	12%	10	x	
Michigan	9	Material moving workers	9%	9	x	
Michigan	10	Other production occupations	8%	8		x
Minnesota	1	Other personal care and service workers	17%	20	x	
Minnesota	2	Nursing, psychiatric, and home health aides	19%	12	x	
Minnesota	3	Food and beverage serving workers	5%	7	x	
Minnesota	4	Construction trades workers	8%	7		x
Minnesota	5	Retail sales workers	4%	6	x	
Minnesota	6	Other healthcare support occupations	14%	4		x
Minnesota	7	Building cleaning and pest control workers	5%	4	x	
Minnesota	8	Information and record clerks	3%	3		x
Minnesota	9	Cooks and food preparation workers	7%	3	x	
Minnesota	10	Motor vehicle operators	3%	3		x
Mississippi	1	Food and beverage serving workers	12%	5	x	
Mississippi	2	Construction trades workers	11%	4		x
Mississippi	3	Nursing, psychiatric, and home health aides	15%	4	x	
Mississippi	4	Material moving workers	8%	3	x	
Mississippi	5	Other personal care and service workers	15%	3	x	
Mississippi	6	Building cleaning and pest control workers	9%	2	x	
Mississippi	7	Assemblers and fabricators	9%	2		x
Mississippi	8	Cooks and food preparation workers	4%	2	x	
Mississippi	9	Information and record clerks	5%	2		x
Mississippi	10	Supervisors of food preparation and serving workers	15%	1	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Missouri	1	Other personal care and service workers	19%	14	x	
Missouri	2	Food and beverage serving workers	9%	13	x	
Missouri	3	Construction trades workers	10%	9		x
Missouri	4	Information and record clerks	7%	8		x
Missouri	5	Nursing, psychiatric, and home health aides	13%	8	x	
Missouri	6	Retail sales workers	4%	7	x	
Missouri	7	Building cleaning and pest control workers	6%	4	x	
Missouri	8	Assemblers and fabricators	8%	4		x
Missouri	9	Motor vehicle operators	4%	3		x
Missouri	10	Material moving workers	4%	3	x	
Montana	1	Food and beverage serving workers	16%	4	x	
Montana	2	Retail sales workers	12%	4	x	
Montana	3	Construction trades workers	22%	3		x
Montana	4	Building cleaning and pest control workers	15%	2	x	
Montana	5	Other personal care and service workers	18%	2	x	
Montana	6	Information and record clerks	13%	2		x
Montana	7	Cooks and food preparation workers	16%	2	x	
Montana	8	Motor vehicle operators	9%	1		x
Montana	9	Material moving workers	12%	1	x	
Montana	10	Secretaries and administrative assistants	8%	1		x
Nebraska	1	Food and beverage serving workers	12%	6	x	
Nebraska	2	Motor vehicle operators	13%	6		x
Nebraska	3	Construction trades workers	14%	5		x
Nebraska	4	Retail sales workers	7%	4	x	
Nebraska	5	Information and record clerks	9%	4		x
Nebraska	6	Other personal care and service workers	15%	3	x	
Nebraska	7	Material moving workers	8%	3	x	
Nebraska	8	Nursing, psychiatric, and home health aides	13%	2	x	
Nebraska	9	Building cleaning and pest control workers	7%	2	x	
Nebraska	10	Other production occupations	8%	2		x
Nevada	1	Food and beverage serving workers	32%	29	x	
Nevada	2	Retail sales workers	26%	23	x	
Nevada	3	Construction trades workers	34%	17		x
Nevada	4	Building cleaning and pest control workers	26%	16	x	
Nevada	5	Motor vehicle operators	33%	13		x
Nevada	6	Information and record clerks	23%	12		x
Nevada	7	Cooks and food preparation workers	29%	12	x	
Nevada	8	Other food preparation and serving related workers	26%	9	x	
Nevada	9	Material moving workers	25%	9	x	
Nevada	10	Material recording, scheduling, dispatching, and distributing workers	22%	8		x
New Hampshire	1	Food and beverage serving workers	9%	3	x	
New Hampshire	2	Retail sales workers	5%	2	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N	Low	Middle
				(hundreds)		
New Hampshire	3	Nursing, psychiatric, and home health aides	20%	2	x	
New Hampshire	4	Other personal care and service workers	14%	2	x	
New Hampshire	5	Information and record clerks	7%	2		x
New Hampshire	6	Motor vehicle operators	8%	1		x
New Hampshire	7	Building cleaning and pest control workers	8%	1	x	
New Hampshire	8	Construction trades workers	7%	1		x
New Hampshire	9	Other healthcare support occupations	15%	1		x
New Hampshire	10	Material moving workers	6%	1	x	
New Jersey	1	Nursing, psychiatric, and home health aides	25%	24	x	
New Jersey	2	Food and beverage serving workers	13%	21	x	
New Jersey	3	Material moving workers	12%	19	x	
New Jersey	4	Retail sales workers	5%	13	x	
New Jersey	5	Construction trades workers	12%	13		x
New Jersey	6	Information and record clerks	6%	10		x
New Jersey	7	Motor vehicle operators	9%	10		x
New Jersey	8	Other personal care and service workers	12%	8	x	
New Jersey	9	Other healthcare support occupations	15%	7		x
New Jersey	10	Cooks and food preparation workers	11%	7	x	
New Mexico	1	Other personal care and service workers	35%	11	x	
New Mexico	2	Food and beverage serving workers	16%	7	x	
New Mexico	3	Nursing, psychiatric, and home health aides	22%	3	x	
New Mexico	4	Retail sales workers	4%	2	x	
New Mexico	5	Construction trades workers	6%	2		x
New Mexico	6	Cooks and food preparation workers	10%	2	x	
New Mexico	7	Information and record clerks	6%	2		x
New Mexico	8	Building cleaning and pest control workers	7%	1	x	
New Mexico	9	Other healthcare support occupations	14%	1		x
New Mexico	10	Motor vehicle operators	6%	1		x
New York	1	Nursing, psychiatric, and home health aides	32%	92	x	
New York	2	Food and beverage serving workers	21%	86	x	
New York	3	Other personal care and service workers	23%	72	x	
New York	4	Construction trades workers	21%	63		x
New York	5	Building cleaning and pest control workers	15%	44	x	
New York	6	Information and record clerks	12%	43		x
New York	7	Retail sales workers	7%	40	x	
New York	8	Cooks and food preparation workers	17%	30	x	
New York	9	Motor vehicle operators	12%	28		x
New York	10	Other protective service workers	17%	25	x	
North Carolina	1	Food and beverage serving workers	18%	44	x	
North Carolina	2	Nursing, psychiatric, and home health aides	29%	31	x	
North Carolina	3	Retail sales workers	11%	29	x	
North Carolina	4	Information and record clerks	14%	25		x

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
North Carolina	5	Construction trades workers	18%	20		x
North Carolina	6	Material moving workers	9%	14	x	
North Carolina	7	Cooks and food preparation workers	17%	13	x	
North Carolina	8	Other personal care and service workers	16%	13	x	
North Carolina	9	Motor vehicle operators	10%	12		x
North Carolina	10	Building cleaning and pest control workers	11%	11	x	
North Dakota	1	Food and beverage serving workers	14%	3	x	
North Dakota	2	Other personal care and service workers	21%	3	x	
North Dakota	3	Nursing, psychiatric, and home health aides	21%	2	x	
North Dakota	4	Retail sales workers	7%	2	x	
North Dakota	5	Information and record clerks	10%	2		x
North Dakota	6	Building cleaning and pest control workers	9%	1	x	
North Dakota	7	Cooks and food preparation workers	10%	1	x	
North Dakota	8	Other education, training, and library occupations	11%	1	x	
North Dakota	9	Other healthcare support occupations	18%	1		x
North Dakota	10	Supervisors of food preparation and serving workers	15%	1	x	
Ohio	1	Nursing, psychiatric, and home health aides	27%	40	x	
Ohio	2	Food and beverage serving workers	7%	22	x	
Ohio	3	Construction trades workers	9%	15		x
Ohio	4	Other healthcare support occupations	18%	9		x
Ohio	5	Motor vehicle operators	5%	9		x
Ohio	6	Material moving workers	4%	8	x	
Ohio	7	Information and record clerks	4%	8		x
Ohio	8	Other personal care and service workers	10%	8	x	
Ohio	9	Secretaries and administrative assistants	5%	8		x
Ohio	10	Retail sales workers	2%	6	x	
Oklahoma	1	Food and beverage serving workers	12%	9	x	
Oklahoma	2	Construction trades workers	12%	8		x
Oklahoma	3	Retail sales workers	8%	8	x	
Oklahoma	4	Other personal care and service workers	18%	6	x	
Oklahoma	5	Information and record clerks	8%	5		x
Oklahoma	6	Nursing, psychiatric, and home health aides	16%	5	x	
Oklahoma	7	Material moving workers	9%	5	x	
Oklahoma	8	Motor vehicle operators	9%	4		x
Oklahoma	9	Building cleaning and pest control workers	8%	3	x	
Oklahoma	10	Other healthcare support occupations	13%	2		x
Oregon	1	Food and beverage serving workers	21%	18	x	
Oregon	2	Construction trades workers	21%	15		x
Oregon	3	Retail sales workers	12%	13	x	
Oregon	4	Cooks and food preparation workers	21%	11	x	
Oregon	5	Other personal care and service workers	24%	8	x	
Oregon	6	Information and record clerks	11%	8		x

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N	Low	Middle
				(hundreds)		
Oregon	7	Material moving workers	13%	7	x	
Oregon	8	Motor vehicle operators	13%	7		x
Oregon	9	Building cleaning and pest control workers	14%	6	x	
Oregon	10	Secretaries and administrative assistants	11%	6		x
Pennsylvania	1	Food and beverage serving workers	9%	27	x	
Pennsylvania	2	Nursing, psychiatric, and home health aides	17%	24	x	
Pennsylvania	3	Construction trades workers	12%	24		x
Pennsylvania	4	Other personal care and service workers	13%	19	x	
Pennsylvania	5	Motor vehicle operators	8%	15		x
Pennsylvania	6	Material moving workers	6%	13	x	
Pennsylvania	7	Building cleaning and pest control workers	6%	10	x	
Pennsylvania	8	Information and record clerks	4%	9		x
Pennsylvania	9	Cooks and food preparation workers	7%	7	x	
Pennsylvania	10	Retail sales workers	2%	7	x	
Rhode Island	1	Food and beverage serving workers	10%	3	x	
Rhode Island	2	Construction trades workers	14%	2		x
Rhode Island	3	Nursing, psychiatric, and home health aides	14%	2	x	
Rhode Island	4	Retail sales workers	5%	1	x	
Rhode Island	5	Information and record clerks	7%	1		x
Rhode Island	6	Other personal care and service workers	11%	1	x	
Rhode Island	7	Material moving workers	10%	1	x	
Rhode Island	8	Motor vehicle operators	9%	1		x
Rhode Island	9	Cooks and food preparation workers	8%	1	x	
Rhode Island	10	Building cleaning and pest control workers	7%	1	x	
South Carolina	1	Food and beverage serving workers	12%	11	x	
South Carolina	2	Retail sales workers	6%	8	x	
South Carolina	3	Material moving workers	11%	8	x	
South Carolina	4	Information and record clerks	9%	7		x
South Carolina	5	Nursing, psychiatric, and home health aides	22%	7	x	
South Carolina	6	Construction trades workers	12%	7		x
South Carolina	7	Assemblers and fabricators	13%	7		x
South Carolina	8	Building cleaning and pest control workers	10%	5	x	
South Carolina	9	Other personal care and service workers	14%	5	x	
South Carolina	10	Motor vehicle operators	8%	4		x
South Dakota	1	Food and beverage serving workers	12%	3	x	
South Dakota	2	Retail sales workers	7%	2	x	
South Dakota	3	Construction trades workers	8%	2		x
South Dakota	4	Information and record clerks	7%	1		x
South Dakota	5	Motor vehicle operators	9%	1		x
South Dakota	6	Building cleaning and pest control workers	8%	1	x	
South Dakota	7	Other personal care and service workers	10%	1	x	
South Dakota	8	Material moving workers	8%	1	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
South Dakota	9	Assemblers and fabricators	10%	1		x
South Dakota	10	Nursing, psychiatric, and home health aides	9%	1	x	
Tennessee	1	Material moving workers	15%	19	x	
Tennessee	2	Financial clerks	19%	15		x
Tennessee	3	Information and record clerks	14%	15		x
Tennessee	4	Nursing, psychiatric, and home health aides	29%	14	x	
Tennessee	5	Assemblers and fabricators	23%	12		x
Tennessee	6	Other personal care and service workers	19%	12	x	
Tennessee	7	Food and beverage serving workers	16%	12	x	
Tennessee	8	Motor vehicle operators	10%	11		x
Tennessee	9	Other production occupations	12%	10		x
Tennessee	10	Construction trades workers	11%	10		x
Texas	1	Food and beverage serving workers	31%	183	x	
Texas	2	Retail sales workers	21%	148	x	
Texas	3	Construction trades workers	25%	110		x
Texas	4	Other personal care and service workers	31%	109	x	
Texas	5	Information and record clerks	20%	94		x
Texas	6	Motor vehicle operators	22%	80		x
Texas	7	Material moving workers	20%	71	x	
Texas	8	Building cleaning and pest control workers	25%	66	x	
Texas	9	Cooks and food preparation workers	25%	66	x	
Texas	10	Other office and administrative support workers	15%	63		x
Utah	1	Construction trades workers	34%	23		x
Utah	2	Information and record clerks	29%	22		x
Utah	3	Food and beverage serving workers	34%	21	x	
Utah	4	Retail sales workers	19%	15	x	
Utah	5	Motor vehicle operators	28%	11		x
Utah	6	Material moving workers	29%	10	x	
Utah	7	Secretaries and administrative assistants	22%	9		x
Utah	8	Other personal care and service workers	35%	8	x	
Utah	9	Material recording, scheduling, dispatching, and distributing workers	22%	8		x
Utah	10	Building cleaning and pest control workers	24%	7	x	
Vermont	1	Other personal care and service workers	13%	2	x	
Vermont	2	Construction trades workers	9%	2		x
Vermont	3	Food and beverage serving workers	5%	1	x	
Vermont	4	Building cleaning and pest control workers	5%	0	x	
Vermont	5	Nursing, psychiatric, and home health aides	11%	0	x	
Vermont	6	Agricultural workers	18%	0	x	
Vermont	7	Food processing workers	16%	0	x	
Vermont	8	Other production occupations	6%	0		x
Vermont	9	Motor vehicle operators	3%	0		x
Vermont	9	Information and record clerks	3%	0		x

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Virginia	1	Food and beverage serving workers	12%	22	x	
Virginia	2	Other personal care and service workers	19%	17	x	
Virginia	3	Nursing, psychiatric, and home health aides	30%	14	x	
Virginia	4	Information and record clerks	10%	14		x
Virginia	5	Retail sales workers	6%	14	x	
Virginia	6	Construction trades workers	10%	13		x
Virginia	7	Other healthcare support occupations	25%	9		x
Virginia	8	Cooks and food preparation workers	11%	8	x	
Virginia	9	Building cleaning and pest control workers	7%	7	x	
Virginia	10	Other teachers and instructors	13%	6		x
Washington	1	Food and beverage serving workers	21%	30	x	
Washington	2	Construction trades workers	19%	30		x
Washington	3	Retail sales workers	11%	20	x	
Washington	4	Information and record clerks	16%	18		x
Washington	5	Material moving workers	17%	17	x	
Washington	6	Building cleaning and pest control workers	23%	17	x	
Washington	7	Other personal care and service workers	19%	17	x	
Washington	8	Cooks and food preparation workers	19%	14	x	
Washington	9	Motor vehicle operators	14%	13		x
Washington	10	Other healthcare support occupations	25%	12		x
West Virginia	1	Other personal care and service workers	17%	4	x	
West Virginia	2	Nursing, psychiatric, and home health aides	16%	2	x	
West Virginia	3	Information and record clerks	2%	1		x
West Virginia	4	Other healthcare support occupations	5%	0		x
West Virginia	5	Building cleaning and pest control workers	2%	0	x	
West Virginia	6	Food and beverage serving workers	1%	0	x	
West Virginia	7	Personal appearance workers	5%	0	x	
West Virginia	8	Supervisors of food preparation and serving workers	2%	0	x	
West Virginia	9	Assemblers and fabricators	2%	0		x
West Virginia	10	Animal care and service workers	5%	0	x	
Wisconsin	1	Other personal care and service workers	20%	23	x	
Wisconsin	2	Food and beverage serving workers	10%	15	x	
Wisconsin	3	Motor vehicle operators	10%	10		x
Wisconsin	4	Construction trades workers	9%	8		x
Wisconsin	5	Nursing, psychiatric, and home health aides	16%	7	x	
Wisconsin	6	Building cleaning and pest control workers	8%	6	x	
Wisconsin	7	Information and record clerks	5%	6		x
Wisconsin	8	Material moving workers	5%	5	x	
Wisconsin	9	Cooks and food preparation workers	8%	4	x	
Wisconsin	10	Retail sales workers	2%	4	x	
Wyoming	1	Food and beverage serving workers	11%	2	x	
Wyoming	2	Other personal care and service workers	15%	1	x	

State	Rank	Occupation	Projected Growth, 2014–24		Wage Level	
			%	N (hundreds)	Low	Middle
Wyoming	3	Retail sales workers	5%	1	x	
Wyoming	4	Building cleaning and pest control workers	8%	1	x	
Wyoming	5	Nursing, psychiatric, and home health aides	16%	1	x	
Wyoming	6	Cooks and food preparation workers	8%	1	x	
Wyoming	7	Information and record clerks	6%	0		x
Wyoming	8	Other healthcare support occupations	15%	0		x
Wyoming	9	Other teachers and instructors	9%	0		x
Wyoming	10	Supervisors of food preparation and serving workers	14%	0	x	
Puerto Rico	1	Food and beverage serving workers	17%	5	x	
Puerto Rico	2	Retail sales workers	4%	3	x	
Puerto Rico	3	Supervisors of sales workers	6%	1		x
Puerto Rico	4	Cooks and food preparation workers	5%	1	x	
Puerto Rico	5	Motor vehicle operators	6%	1		x
Puerto Rico	6	Building cleaning and pest control workers	4%	1	x	
Puerto Rico	7	Information and record clerks	5%	1		x
Puerto Rico	8	Other personal care and service workers	9%	1	x	
Puerto Rico	9	Other protective service workers	4%	1	x	
Puerto Rico	10	Other sales and related workers	10%	1	x	

Source: State occupational projections 2014–24.

Notes: National projections are developed by the US Department of Labor, Bureau of Labor Statistics. State-level occupational projections are developed in the labor market information sections of each State Employment Security Agency; therefore, the state-level projections may not be consistent with the national projections. The top 10 occupations are those with the most projected absolute growth for each state. American Community Survey wage data are used to determine which occupations are low- and middle-wage.

Notes

1. This report defines low-income as 300 percent or less of the federal poverty level (adjusting for household size) and defines older workers as those age 50 and older. These definitions are consistent with those used by the AARP Foundation in their current employment programs serving older workers.
2. The federal poverty guidelines are used to determine financial eligibility for certain federal programs. They are issued each year in the Federal Register by the Department of Health and Human Services. The 2015 guidelines are available at <https://www.gpo.gov/fdsys/pkg/FR-2015-01-22/pdf/2015-01120.pdf>.
3. Michael S. Teitelbaum, "The Myth of the Science and Engineering Shortage," *Atlantic*, March 19, 2014, <http://www.theatlantic.com/education/archive/2014/03/the-myth-of-the-science-and-engineering-shortage/284359/>.
4. Barnow, Trutko, and Piatak (2013) take this definition from the US Department of Labor in the Request for Proposals for a study of labor shortages, and it is essentially identical to the definition used by Franke and Sobel (1970).
5. Amanda Dixon, "The Average Retirement Age in Every State in 2016," *SmartReads* (blog), March 29, 2017, <https://smartasset.com/retirement/average-retirement-age-in-every-state-2016>.
6. State-level occupational projections are estimated by state employment agencies in collaboration with the BLS.
7. Because the HRS sample is only occasionally refreshed with new respondents, the youngest respondents to the 2014 HRS are age 53 or older, and there are a disproportionately low number of 53-year-olds. This means that the HRS sample of low-income older workers is somewhat older than the ACS sample. However, the general size and occupational distribution of the HRS sample match the ACS sample. Because retirement expectations are not reported in the ACS, the HRS remains an important supplementary data source for this analysis.
8. In other words, six-digit occupations that make up a larger share of total employment at the more aggregated three-digit level are given a higher weight when estimating aggregate scores by three-digit SOC codes.
9. An underemployed person is defined as someone involuntarily working part time or not doing work that makes full use of his or her skills and abilities.
10. Our analyses do not consider whether these unmarried individuals are cohabiting with a partner or with family, which could mean their economic situation is different and perhaps better. Further, we do not account for the possibility that low-income singles may be living in a broader household that improves their economic situation.
11. Using the two-digit SOC code, the 36 jobs shown are all those with projected growth. The remaining jobs had flat or negative projected growth, and those occupations have been omitted from our analyses.
12. If we assume that occupational skill requirements in O*NET are a minimum hiring requirement in these occupations, then the skill gaps reported in tables 5 and 6 are likely to exaggerate actual skill gaps, because individual workers are likely to have higher skill levels than are required at hiring. Nevertheless, the skill gaps reported in table 6 provide a starting point for identifying skill areas with training needs.

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