CEPR
CENTER FOR ECONOMIC AND POLICY RESEARCH

Organizational Restructuring in U.S. Healthcare Systems:

Implications for Jobs, Wages, and Inequality

By Eileen Appelbaum and Rosemary Batt*

September 2017

Center for Economic and Policy Research
1611 Connecticut Ave. NW
Suite 400
Washington, DC 20009

tel: 202-293-5380
fax: 202-588-1356
http://cepr.net

* Eileen Appelbaum is Senior Economist at the Center for Economic and Policy Research (CEPR). Rosemary Batt is the Alice Hanson Cook Professor of Women and Work at the ILR School, Cornell University. She is also a Professor in Human Resource Studies and International and Comparative Labor.

Contents

Acknowledgements

The authors are grateful to the W.K. Kellogg Foundation for generous support for this research and to Jonathan Njus and Kinah Harrison for their guidance. We want to thank Cherrie Bucknor for her invaluable research assistance and help analyzing the data. Kevin Cashman did an excellent job laying out the report. The report was greatly improved by perceptive comments from the reviewers of an earlier draft. We thank Dean Baker, Mary Ellen Clark, Merrill Goozner, Susan Houseman, and Sam Bernstein for their careful reviews. Special thanks to John Schmitt for his helpful advice and input. This report presents the findings of phase I of WKKF Grant P3035084. Additional funding was provided by the Nathan Cummings Foundation.

Executive Summary

The healthcare sector is one of the most important sources of jobs in the economy. Healthcare spending reached $3.2 trillion in 2015 or 17.8 percent of GDP (Centers for Medicare and Medicaid Services 2016) and accounted for 12.8 percent of private sector jobs (Bureau of Labor Statistics 2017b). It was the only industry that consistently added jobs during the Great Recession. In 2016, this sector added 381,000 private sector jobs, the most of any industry (Bureau of Labor Statistics 2017a). It is a particularly important source of employment for workers without a college degree, most of whom, as we document in this report, earn low wages.

This report describes the changing patterns of jobs and wages for healthcare workers. We focus particularly on workers in hospitals and outpatient clinics, where major industry restructuring is occurring in response to financial pressures and regulatory and technological change.[1] Several findings are noteworthy.

Healthcare Sector Employment Trends

- Private sector healthcare employment grew by 20 percent between 2005 and 2015, when it accounted for 12.8 percent of all private sector jobs (**Table 1**).

- The healthcare sector includes six major occupational groups that interact with patients in the delivery of care: healthcare professionals, social service workers, medical technicians, health aides and assistants, food service workers, and cleaning service workers. These occupations accounted for 69 percent of all healthcare jobs in 2005 and 74 percent in 2015 — suggesting that the proportion of jobs focused on patient care has increased over the decade (**Table 2**).

- Healthcare professionals experienced the fastest job growth over the decade (at almost 50 percent), compared to other occupational groups, followed by strong growth (about 20 percent) among social service workers, medical technicians, and health aides and assistants (**Table 2**).

- The healthcare sector workforce became more demographically diverse over the decade. Jobs held by black workers grew by almost 25 percent, Hispanics by 57 percent, and Asian and other workers

1 Findings are based on national data on healthcare workers over the period 2005 to 2015 from the American Community Survey (ACS), the Current Population Survey (CPS) and its Outgoing Rotation Group data, and the Occupational Employment Survey (OES). Wage data are for full-time, full-year workers. Appendix C provides wage data on part-time workers.

by 48 percent. Jobs among white workers, by contrast, grew at 11.5 percent — lower than the industry average. Men increased their workforce participation by 27 percent, but overall, women still held 78 percent of healthcare jobs in 2015 (**Table 5**).

Hospital Restructuring and the Growth of Outpatient Care Jobs

- This report focuses primarily on the consolidation and restructuring of hospital-based healthcare systems. In response to regulatory reform and financial pressures, healthcare organizations are consolidating into larger healthcare systems while also decentralizing services to lower-cost outpatient (or ambulatory) care settings. Hospitals and outpatient clinics account for about 41 percent of all jobs in healthcare (**Table 1**).

- Hospitals remain by far the largest employer in this sector, but jobs in hospitals grew by 10 percent between 2005 and 2015 while those in outpatient care facilities grew by 60 percent (**Table 1**).

- Healthcare professional jobs grew rapidly in both hospitals and outpatient care but at double the rate in outpatient care (60 percent versus 30 percent) (**Tables 4a, b**).

- For workers in nonprofessional occupations (social services, medical technicians, health aides and assistants, food and cleaning services), job growth in hospitals was relatively flat but grew by 61 percent in outpatient centers over the decade (**Tables 4a, b**).

- Job growth in outpatient facilities was disproportionately high for black workers (65 percent growth rate), Hispanic workers (103 percent), and Asian/others (82 percent), and within these groups, women's job growth outpaced that of men (**Table 5**).

Real Wage Trends

- In 2015 across the industry as a whole, the median real wage of full-time healthcare professionals (which includes RNs and social workers as well as physicians, specialists, nurse practitioners and physicians' assistants) was $32.72 per hour. Full-time social service workers earned a median wage of $18.16 per hour, while medical technicians earned $19.63 and health aides and assistants earned $13.25 per hour. The median hourly pay of the lowest paid full-time workers, in food and cleaning services, was $11.14 and $11.78, respectively (**Tables 7b, c, d**).

- While healthcare jobs in the entire sector grew by 20 percent over the decade, real median earnings for full-time workers fell on average by 2.4 percent over 10 years. But wage trends varied across workplace locations, occupations, and demographic groups. Overall median real hourly wages rose very modestly in hospitals, increasing by 75 cents over the decade from $23.79 to $24.54. This was an increase of 3.2 percent over the decade or less than a third of a percent a year on average. The biggest percentage gain was for Hispanic women, whose median real wage increased 5.7 percent over the decade from $17.84 an hour to $18.85. However, this was an increase of $1.01 or about 10 cents a year on average. White women saw a 5.2 percent increase in pay from $23.79 to $25.03 an hour, an increase of $1.24 or about 12 cents a year. Pay rose 5.4 percent for Asian/Other women from $27.95 to $29.45 an hour or by $1.50 over 10 years, an increase of about 15 cents a year. Other demographic groups saw average annual pay increases of 6 to 10 cents an hour, with pay increasing over the decade by about 65 cents an hour for black women and Hispanic men and by about 95 cents an hour for black, white and Asian/other men. Wages of hospital workers over the 2005 to 2015 period can best be described as 'stagnant' (**Table 7a**).

  Wage trends in outpatient care centers were more negative. Median real wages of full-time workers in these facilities fell by almost 6 percent from $20.81 to $19.63 an hour, a decline of $1.18 over ten years. This pattern of declining real wages held for almost all demographic groups except white males, whose median pay rose by about $1.00 per hour over the decade and for Asian/other women whose earnings were flat. The median real wage fell by 12.6 percent for black men, by about 5 percent for white women and Hispanic men and women, and by less than 1 percent for black women (**Table 7a**).

- The finding that real wages were stagnant or fell for most healthcare workers during the decade is surprising in light of the fact that educational attainment rose among virtually all occupational groups. These educational trends were very similar in hospitals and outpatient settings. Educational levels in 2015 were actually higher in outpatient care centers than in hospitals. In some healthcare occupations, a college degree does not translate into a solid middle-class wage. For example, in 2015 64 percent of social service workers in hospitals and 78.5 percent in outpatient care had a four-year college degree or more, yet median annual pay for full-time, full-year workers in this occupation was less than $42,000 in hospitals and less than $38,000 in outpatient care (**Tables 7b and 8**).

- Within hospitals, real wage trends varied by *occupational* group. Among *healthcare professionals* and *social service workers*, pay increased modestly for most demographic groups. But pay declined for

most workers in the *two largest nonprofessional occupational groups* — medical technicians and health aides and assistants (**Table 7b, c**).

- In outpatient centers, wages for healthcare professionals were essentially stagnant overall, but grew over the decade for black men and white men, while falling sharply for black women and Hispanic and Asian men and women. Among medical technicians and health aides and assistants, it is the pay of black men that fell the most over the decade. Median hourly pay of black male medical technicians fell by almost 30 percent, while that of black male health aides and assistants declined nearly 17 percent (**Table 7b, c**).

Wage Gaps, Pay Penalties, and Trends in Inequality

- The findings in this report show that the unraveling of hospital-based employment systems is associated with greater wage inequality. In hospitals, the rise in real wages among healthcare professionals and the modest fall in wages for non-professional groups suggest that inequality has increased within hospital settings. Wage trends in outpatient care facilities suggest a different pattern of growing inequality as the pay of black men employed as medical technicians or health aides and assistants fell (**Tables 7b, c, and d**).

- In separate regressions for each occupation group that control for work location (hospital or outpatient facility), for demographic variables (gender, race/ethnicity, age, nativity), educational attainment, and geographic location (state), we find that some demographic groups are more disadvantaged than others. Substantial gender wage gaps occur in every occupational group except social service workers in both hospitals and outpatient care facilities. Women earn between 7.7 percent and 24.3 percent less than men depending on occupational group and work location (**Table 13a**).

- Pay penalties for working in outpatient facilities relative to hospitals are prevalent among healthcare professionals and medical technicians. Female healthcare professionals in outpatient care centers earn 20.1 percent less than those in hospitals in 2015; male healthcare professionals in outpatient care centers earn 12.7 percent less than males in hospitals. Among medical technicians, women and men in outpatient care centers earn 13.6 percent less than their counterparts in hospitals (**Table 13b**).

- In both 2005 and 2015, less educated workers (less than high school or high school degree) received a substantial pay penalty compared to those with some college; while those with a college

or advanced degree earned a large pay premium compared to those with only some college. The pay premiums for higher education in most cases were considerably larger in 2015 than in 2005 **(Appendix D, Tables 1–6)**.

- Declining real wages in outpatient services and lower pay for healthcare professionals and medical technicians cannot be explained by factors that often influence wage determination: educational level, age, or the share of workers who are part-time or foreign-born. Educational attainment rose for virtually every occupational group — in some cases, substantially. Similarly, the share of the workforce that is foreign-born rose by only 1 percentage point overall and was lower in the lower-paying outpatient centers than in hospitals. Part-time employment also declined overall in hospitals and in most occupation groups **(Tables 8–11).**

Introduction

The healthcare sector is one of the most important sources of jobs in the economy. Healthcare spending reached $3.2 trillion in 2015 or 17.8 percent of GDP (Centers for Medicare and Medicaid Services 2016) and accounted for 12.8 percent of private sector jobs (Bureau of Labor Statistics 2017b). It was the only industry that consistently added jobs during the Great Recession. In 2016, the private sector healthcare industry, which is the focus of this report, added 381,000 private sector jobs, the most of any industry (Bureau of Labor Statistics 2017a). It is a particularly important source of employment for workers without a college degree, most of whom, as we document in this report, earn low wages.

This report describes how organizational restructuring is affecting the job opportunities and wages of healthcare workers. We focus on changing employment and wages in hospitals and outpatient clinics, where the most profound restructuring is occurring.[2] Over the last decade or more, hospitals have restructured the organization of care delivery in response to major technological advances, regulatory changes, and financial pressures. This restructuring has occurred at two levels: the consolidation of hospitals and providers into larger healthcare systems on the one hand; and the decentralization of services and the movement of jobs to outpatient facilities on the other. Outpatient care facilities include a wide range of services — from primary care centers to specialized units such as urgent care centers, ambulatory surgery centers, free-standing emergency rooms, dialysis facilities, trauma and burn units, and other specialty clinics. These organizational changes began before the 2010 passage of the Patient Protection and Affordable Care Act (ACA), but have accelerated considerably since then, and are likely to continue even as the ACA is revamped in the future.

This shift to outpatient care centers offers benefits to patients — convenience as well as opportunities for preventative care — and most healthcare providers and unions have supported the move to more community-based care. But in this report, we show that workers are bearing the costs of this organizational restructuring.

Hospitals remain by far the largest employer in this sector, but jobs are growing much faster in outpatient care facilities, where wages of workers in two broad occupational categories — healthcare professionals and medical technicians are considerably lower. And while real wage rates in hospitals

2 Findings are based on national data on healthcare workers over the period 2005 to 2015 from the American Community Survey (ACS), the Current Population Survey (CPS) and its Outgoing Rotation Group data, and the Occupational Employment Survey (OES). Wage data are for full-time, full-year workers. Appendix C provides wage data on part-time workers.

either stagnated or grew very modestly between 2005 and 2015, they fell in outpatient services. Many healthcare workers receive lower wages when they work in outpatient settings compared to hospitals.

Our analyses also suggest that declining real wages and pay penalties in outpatient services cannot be explained by demographic factors that often influence wage determination: education level, age, or the share of workers who are part-time or foreign-born. Institutional explanations may hold greater insights. Hospitals offer large internal employment systems in which administrative rules and norms may compress wage differences within and across occupational and demographic groups. Unionization rates are higher in hospitals than outpatient centers, which may contribute to differences in wage trends in these work locations. As jobs move to smaller outpatient locations, these internal equity norms and union influence decline. Changes in union density that we document in this report may provide a partial explanation. Among non-professional employees, union density has fallen, particularly in outpatient settings, which may have contributed to lower wages for these workers. Union density among healthcare professionals and technical workers increased over the decade in both hospitals and outpatient clinics. Real median wages of these workers have not fallen, but they have stagnated in outpatient settings.

Changes in payment systems and industry restructuring may also have contributed to wage stagnation. Medicaid reimbursement rates have declined over the decade, putting pressure on healthcare organizations to hold down labor costs, which comprise some 60 percent of operating costs. And as healthcare systems have consolidated, the bargaining power of employers may have increased. In communities with one or a few healthcare systems, employers may be able to exercise monopsony power and pay lower wages. Geographic differences in the cost of living may affect the wages of healthcare workers, with those employed in high-cost states earning higher wages. Patients' ability to pay may also vary across geographically dispersed localities — from suburban locations with a higher rate of private payers — to urban or rural locations with greater reliance on Medicaid patients. These differences in payer markets may contribute to differences in outpatient centers' ability to pay workers.

Overview: Employment in Healthcare: 2005–2015

We begin with an overview of employment trends in the healthcare industry as a whole before moving to industry restructuring and the impact on jobs and pay in hospitals and outpatient settings.

Employment Growth by Industry Segment

Between 2005 and 2015, employment increased by 20 percent in the healthcare industry, which includes five major segments — hospitals, outpatient care centers, physicians' offices, home healthcare services, and nursing homes. These five healthcare segments account for about three-quarters of all healthcare jobs (77.4 percent in 2005, 75.5 percent in 2015). Hospitals and outpatient clinics account for about 41 percent of all jobs in healthcare, doctors' offices 16 percent, nursing homes 10 percent, and home healthcare 8 percent (**Table 1**).

Hospitals are the largest employer by far, employing 5.75 million people in 2015, up from 5.25 million in 2005. But this segment grew by about 10 percent over the decade — just half the overall growth rate of healthcare jobs. The much smaller outpatient care centers and home health services segments grew six times faster than did hospitals.

TABLE 1
Employment in the Healthcare Industry and Major Segments 2005, 2015

	2005	Share, 2005	2015	Share, 2015	Change, 2005–15	% Change 2005–15
Overall Healthcare	13,151,260	100.0	15,832,030	100.0	2,680,770	20.4
Overall Hospitals	5,246,630	39.9	5,755,150	36.4	508,520	9.7
Overall Outpatient Care Centers	465,560	3.5	737,410	4.7	271,850	58.4
Overall Offices of Physicians	2,079,650	15.8	2,509,450	15.9	429,800	20.7
Overall Home Healthcare Services	806,460	6.1	1,298,940	8.2	492,480	61.1
Overall Nursing Home Facilities	1,576,680	12.0	1,653,320	10.4	76,640	4.9
Share of Total Jobs		77.4		75.5		

Source and notes: CEPR analysis of OES.

Employment Growth by Occupation

Our analysis includes six major occupational groups in healthcare that provide direct services to patients: healthcare professionals, social service workers, medical technicians, health aides and assistants, food service workers, and cleaning service workers. (See Appendix, **Table A2** for a

complete list of occupations in each group.) As shown in **Table 2**, these occupations accounted for 69 percent of all healthcare jobs in 2005 and 74 percent in 2015.

Healthcare professionals include doctors, physicians' assistants, nurse practitioners, nurses, technical staff and social workers. The small but increasingly important social service occupation includes social and human service assistants, community health workers, counselors, and social service specialists. Demand for this occupational group has grown as healthcare systems have attempted to reduce costs and improve care quality through preventative care strategies such as population health management, which we discuss in detail below. We expected this group to be composed mainly of workers with less than a four-year college degree. In analyzing the educational attainment of workers in this occupational group, however, we found that a substantial number are college educated. This occupational category falls between the healthcare professionals and the other occupational groups consisting largely of nonprofessional jobs. Nonprofessional jobs are concentrated in four occupational categories: medical technicians (laboratory technologists and technicians' assistants, licensed practical and licensed vocational nurses), health aides and assistants (certified nursing assistants, medical assistants, phlebotomists), food service workers (food prep and food servers), and cleaning service workers (housekeeping, janitorial, environmental services).

These professional and nonprofessional occupational groups are comprised of workers that have contact with patients — what may be referred to as 'nurturant' jobs — but they are not exhaustive of all employees in healthcare. Clerical, administrative, and managerial employees, accountants and bookkeepers, and chaplains, for example, are among the occupations not included in our analysis.

TABLE 2

Employment in Selected Occupations in Healthcare 2005, 2015

	2005	Share, 2005	2015	Share, 2015	Change, 2005–15	% Change, 2005–15
Overall Healthcare	13,151,260	100.0	15,832,030	100.0	2,680,770	20.4
Healthcare Professionals	3,359,960	25.5	4,980,650	31.5	1,620,690	48.2
Nonprofessional Occupations	5,759,790	43.8	6,695,720	42.3	935,930	16.0
Social Services	282,140	2.1	338,540	2.1	56,400	20.0
Medical Technicians	1,828,420	13.9	2,143,640	13.5	315,220	17.2
Health Aides and Assistants	2,792,310	21.2	3,351,020	21.2	558,710	20.0
Food Services	460,760	3.5	475,920	3.0	15,160	3.3
Cleaning Services	396,160	3.0	386,600	2.4	-9,560	-2.4
Share of All Healthcare Jobs		69.3		73.8		

Source and notes: CEPR analysis of OES.

Healthcare professionals experienced the fastest job growth over the decade, followed by strong growth among social service workers, medical technicians, and health aides and assistants. Jobs for

healthcare professionals grew by nearly half, and the share of professional jobs increased from about a quarter of all healthcare jobs to nearly a third (31.5 percent). This does not capture all of the increase in the number of healthcare professionals, as hospitals have increasingly made use of professional staffing agencies to supply doctors and other professionals, and these are not captured in the national healthcare industry data. While still small, this development bears watching. One of the largest healthcare staffing agencies, TeamHealth, employs 15,000 healthcare professionals in 2,000 hospitals and skilled nursing facilities in 28 states (Johnson 2015). The largest physician staffing agency was formed in late 2016 by a merger between Envision Health, which focuses on emergency room doctors and hospital internist (hospitalist) staffing, and Amsurg, whose doctors practice other specialties. Now rebranded as Envision Physician Services, the company employs 23,000 physicians and advance practice medical practitioners and provides professionals to staff emergency rooms, radiology, anesthesiology, and neonatology departments across the country (Barkholz 2017).

Employment for social service workers, med techs, and health aides taken together grew by almost 20 percent over the decade — a total of 930,000 jobs. By contrast, job growth in food services was slow, and it declined in cleaning services. These developments are due in part to the faster growth in outpatient and home healthcare services, which utilize very few cleaning and food service workers, as their facilities are small and they don't provide overnight or intensive care services. But national industry statistics also understate the true number of food and cleaning service workers because hospitals and nursing home facilities have increasingly outsourced these jobs to multiservice providers — mainly Aramark, Sodexo, and Compass — which supply food, housekeeping, security, and facilities management services (Brennan 2014). Exact numbers are not available because the outsourced jobs are no longer counted under the healthcare industry, but rather under 'business services.' Nonetheless, outsourcing has not proceeded as rapidly as might be expected: hospitals still employed 326,000 food and cleaning service workers in 2015. This may be due to the fact that maintaining control over nutrition and sanitation is critical to providing quality care. Outsourcing of cleaning services is associated with significantly higher infection rates in hospitals (Litwin, Avgar, and Becker 2017).

Workers employed by service contractors also typically earn lower wages, according to a growing body of empirical research. Wages fall substantially when jobs are shifted from in-house to outsourced operations because internal equity norms are broken, contractors are more likely to be non-union, or lead firms have the power to set terms and conditions of service contracts that squeeze contractor profit margins (Dube and Kaplan 2010; Goldschmidt and Schmieder 2013; Appelbaum 2017).

An important debate has emerged in recent years regarding whether the pattern of job growth in care work has contributed to the polarization of jobs in the economy more generally. Sociologist Rachel Dwyer, for example, argues that low-wage care work jobs, including healthcare aides, contributed to

more rapid growth of low-wage jobs. She also expected high-wage jobs (e.g., doctors) and middle-high wage jobs that require a college degree (e.g., nurses) to grow strongly. Dwyer examined job growth in care work in five quintiles over the period 1983–2007 ranked by median wage[3] in 1983. She found strong employment growth in jobs paying high- and middle-high wages and in jobs paying low wages, and weak employment growth in middle-wage jobs (2013: 396–402)

While the data in Table 2 is much less fine-grained than in Dwyer's analysis, it does reveal some broad patterns of job growth in healthcare for the later period of 2005–2015.[4] We find very strong job growth for healthcare professionals, a group that includes nurses and social workers (Dwyer's middle-high-wage jobs) as well as specialists, doctors, and physicians' assistants (Dwyer's high-wage jobs). Consistent with Dwyer's findings, employment in this occupational group grew by 48.2 percent in the decade to 2015.

Employment of health aides and assistants — a low-wage occupational group paying $13.59 in 2005 — increased by 20 percent over the 2005–2015 period. While not as strong as employment growth in the highest-wage occupational group, it represents a substantial increase in jobs. In contrast to Dwyer's finding for the broad care work sector of the economy, however, we do not observe very slow growth in middle-wage occupations in healthcare. Our two middle-wage occupational groups — social services paying $17.25 and medical technicians paying $20.81 in 2005 — experienced employment growth rates of 20.0 and 17.2 percent respectively over the following decade.

In terms of the increase in the number of jobs in these healthcare occupations, high- and high-middle wage professional occupations added 1.6 million jobs; middle-wage jobs in social services and medical technicians increased by 372,000; and low-wage health aides and assistants added 559,000 jobs (Table 2).

3 The median wage is the wage earned by the worker in the middle of the wage distribution. Half of workers earn more than the median wage and half earn less.

4 Our analysis combines data on employment from the OES with data on occupational wages from the ACS, allowing us to observe employment trends and the median wage paid in each broad occupational group. (See **Appendix A** for details of the data sources used throughout this report.) The ACS reports median wages of full-time, full-year workers. This differs from Dwyer's data which includes the pay of part-time workers. We include information on the modal educational attainment of workers in each occupational group as an indication of skill.

Employment Growth by Demographic Group

Between 2005 and 2015, the healthcare industry created 2.7 million new jobs, with the workforce growing overall from 13.2 million to 15.8 million workers. In 2015, the healthcare industry employed 3.5 million men and 12.3 million women. It employed 9.9 million white workers, 2.7 million black workers, 1.9 million Hispanic workers, and 1.4 million Asian/other workers.

While overall healthcare employment grew by 20.4 percent between 2005 and 2015, job growth varied dramatically across different race and ethnic groups and resulted, overall, in the growth of a more diverse workforce. Healthcare employment among white workers grew by 11.5 percent over the decade, while jobs held by black workers grew by almost 25 percent, Hispanics by 57 percent, and Asian/other workers by 48 percent. The differences in growth rates between men and women within each of these groups were not substantial — in the range of 6 percentage points — except for black workers, where jobs grew at 35 percent for men and 22 percent for women (**Table 3**).

Overall, men's employment increased by 26.6 percent and women's by 18.7 percent, but women still held 78 percent of jobs in the industry in 2015. Despite a slower growth rate, women's employment grew by nearly 2 million jobs while men's grew by just over 700,000. Employment of white workers grew by 1 million jobs — with about two-thirds of the job growth among women. Employment of black workers increased by more than half a million, with black women filling about three-quarters of those jobs. The greatest rate of job growth was among Hispanic workers, with Asian/other workers also benefitting (Table 3).

TABLE 3

Healthcare Employment by Race/Ethnicity and Gender

	2005	2015	Change, 2005–15	% Change, 2005–15
Overall Healthcare	**13,151,260**	**15,832,030**	**2,680,770**	**20.4**
Men	2,780,322	3,518,596	738,274	26.6
Women	10,370,938	12,313,434	1,942,496	18.7
White	***8,867,544***	***9,889,259***	***1,021,715***	**11.5**
Men	1,834,265	2,146,258	311,993	17.0
Women	7,033,279	7,743,000	709,721	10.1
Black	***2,131,542***	***2,654,367***	***522,825***	**24.5**
Men	390,887	528,362	137,475	35.2
Women	1,740,655	2,126,005	385,350	22.1
Hispanic	***1,207,535***	***1,892,079***	***684,544***	**56.7**
Men	269,657	411,004	141,347	52.4
Women	937,878	1,481,075	543,197	57.9
Asian/Other	***944,639***	***1,396,325***	***451,686***	**47.8**
Men	285,513	432,971	147,458	51.6
Women	659,126	963,354	304,228	46.2

Source and notes: CEPR analysis of the ACS and OES.

Organizational Restructuring in Healthcare Service Delivery

In response to financial pressures, regulatory reform, and technological change, healthcare organizations are consolidating into larger healthcare systems while also decentralizing services to lower-cost outpatient (or ambulatory) care settings. These organizational changes began in some local markets in the 1990s, expanded in the 2000s, and were further stimulated under the ACA. But even in 2017, the healthcare industry remains highly fragmented. These trends, as we explain in this section, are likely to continue even as the ACA is reshaped in the coming years. And as we document in the next section, they have profound implications for the jobs and pay of healthcare workers as a greater proportion of jobs shift to outpatient or ambulatory settings.

Ownership Consolidation

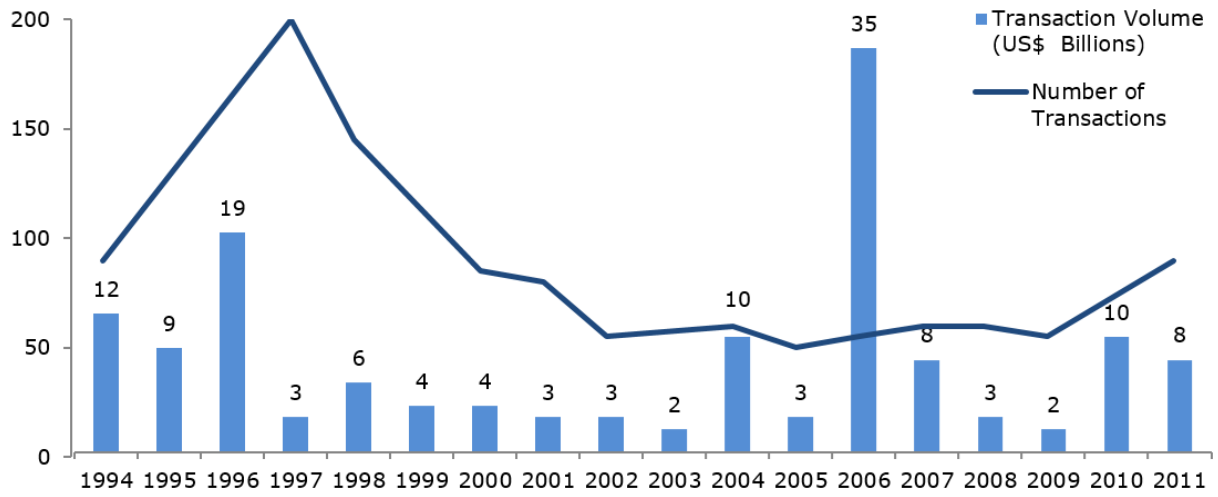
Direct government payments for programs such as Medicare, Medicaid, and the Veterans Administration account for nearly half (48 percent) of healthcare expenditures (Himmelstein and Woolhandler 2016). Medicare accounts for 20 percent of healthcare expenditures while Medicaid accounts for another 18 percent and the VA and other programs for the remainder.

Hospitals and healthcare systems have undergone three waves of consolidation via merger and acquisition (M&A) activity, as shown in **Figure 1**. The first merger wave, which occurred in the 1994 to 1997 period, was driven by the threat and promise of managed care as well as regulatory changes. Mergers in the 1990s typically involved the merger or two or three community or not-for-profit hospitals into small systems or occasionally, the takeover of several community hospitals by a large hospital to form a hub (for specialized care) and spokes of satellite community or feeder hospitals (for more routine care). Some government and non-profit hospitals converted to for-profit status and were absorbed into large for-profit chains. The number of M&A transactions peaked in 1997 at just under 200. For-profit hospital chains grew dramatically from a very low share of hospitals in the 1980s to about 10.5 percent of hospitals by 2000.

But M&A activity largely fell off after 1997, as many managed care experiments failed to deliver on their promises and the Balanced Budget Act of 1997 led to reductions and uncertainty in

reimbursement rates (Ettinger and Berenbaum 1996; Irving Levin Associates, Inc. 2013)[5]. Both the number and dollar value of M&A transactions fell steadily between 1997 and 2003, before leveling off at less than 50 a year. Then, between 2004 and 2007, reforms to the Balanced Budget Act and access to low-cost debt drove a second wave of hospital mergers — this time mega-mergers led by private equity-funded buyouts of hospitals. The number of mergers and acquisitions remained low, but the dollar value of transaction volume increased dramatically during this period.

FIGURE 1
Hospitals and Healthcare Systems Merger and Acquisition (M&A) Activity



Source and notes: Adapted from Booz and Company (2013).

With the passage of the ACA in 2010, M&A activity rose again, with the number and value of deals continuing to grow through 2016 (Booz and Company 2013; AHA 2016; Kauffman-Hall and Associates 2016). The Affordable Care Act stimulated M&A activity because of changes in payment systems coupled with unprecedented cuts in Medicaid and Medicare reimbursement rates. The ACA's new reimbursement rules provided incentives to shift from traditional fee-for-service systems in which insurers bear all the risks of paying for unforeseen costs to 'shared risk' or 'value-based' payments in which hospitals and providers absorb some of these risks and have strong incentives to adopt preventative approaches to healthcare. The ACA also offers incentives to providers to cut costs while improving the quality of care, for example, by tying Medicaid and Medicare payments and reimbursement rates to quality of care indicators, such as reductions in hospital readmissions rates.

5 The 1997 Balanced Budget Act, which included the largest reduction in Federal hospital payments to date, led to a 10.5 percent loss in expected payments over five years — an amount later reduced by the Balanced Budget Refinement Act (BBRA) of 1999 and the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act (BIPA) of 2000.

These payment changes encourage the adoption of 'population health management' in which hospitals prioritize preventative care over the more costly emergency or hospital-based acute care.

Hospitals have adopted two organizational strategies to help them meet cost and quality goals: consolidation of ownership and decentralization of service provision. First, hospitals are merging to create a larger population 'footprint' that will allow greater revenue generation; and they are attempting to create full-service, vertically or 'virtually' integrated healthcare systems that include physician practices, outpatient care centers, home health providers and skilled nursing facilities. Hospitals argue that this consolidation enables them to have greater control over costs as well as quality through integrated care coordination. Critics, however, are concerned that the horizontal consolidation of hospitals into relatively few healthcare systems will have detrimental effects for patients and the broader community. The decline in competition tends to lead to higher prices for hospital procedures and reduces the incentives for hospitals to use improved quality of care to compete for patients (Gaynor, Mostashari and Ginsburg 2017).

The new payment systems introduced under the ACA have encouraged both consolidation and decentralization. Providers and payers may choose to merge in order to implement population health management programs. Payers have the kind of claims data that hospitals need to manage chronic conditions. In addition, cost reductions imposed by the ACA have spurred hospitals to shift many procedures from hospitals — the highest cost venue — to outpatient centers with much lower overhead costs.

Technological advances brought about by digitalization facilitate both organizational consolidation and decentralized care provision. Electronic records systems make it possible for healthcare providers to coordinate patient care across hospitals, primary care doctors, and outpatient clinics. The HITECH Act (Health Information Technology for Economic and Clinical Health Act) allocated millions of dollars to healthcare providers through 2019 to implement electronic medical record systems; and by 2015, 69 percent of hospitals had reported either full or partial implementation (Kuran 2015:30), although interoperability across these systems remains a challenge. Hospitals that fail to comply after 2019 will lose up to 1 percent of their Medicare reimbursements. Advances in big data analytics also enhance the capacity of payers and providers to work effectively to identify individuals with chronic conditions likely to require high-priced interventions and to identify patterns of population diseases as they emerge. This allows provider organizations to develop targeted preventative care at lower costs.

In the current period, then, three aspects of M&A activity are qualitatively different from the past. First, not-for-profit systems have been much more aggressive in soliciting acquisitions as well as buyers than in the past, for the reasons cited above. Second, while most mergers have historically

involved two or more single hospitals, they now also involve 'vertical' acquisitions in which hospitals are buying up outpatient clinics, physician practices, and other facilities in order to create vertically integrated systems. Third, large systems are beginning to form across localities or regions, building considerable market power (Cooper, Craig, Gaynor, and Van Reenen 2015). In Austin, Texas, for example, two systems control 93.5 percent of the market (Baumgarten 2014). Regional markets are becoming more consolidated, and some systems are moving to have a statewide presence. In Florida, more than half of the hospitals have combined into integrated systems controlled by investor-owned companies, religious organizations, local governments, and community non-profits (Baumgarten 2015). In addition to M&A activity, hospitals are entering into strategic partnerships or other forms of network arrangements to avoid anti-trust concerns.

Decentralization of Services to Outpatient Settings

The decentralization of services in the current period also has few historical precedents. While prior waves of restructuring included some outsourcing of ancillary jobs — such as food and cleaning services — decentralization now entails the movement of pre- and post-acute care and less complex acute medical services to outpatient or ambulatory care settings. As outpatient care is decentralized to community settings, convenience and speed of service delivery are likely to improve. Like consolidation, decentralization is facilitated by advanced digital technologies and electronic records systems that enable hospitals and health systems to build out integrated service delivery networks between hospital and outpatient facilities (Brown Gibbons Lang & Company 2013; Meyerhoffer et al. 2016). Not all outpatient facilities, however, are affiliated with a hospital or healthcare system. Many — especially ambulatory surgery centers and the rapidly growing urgent care centers — are independent (Becker and Fry 2014).

The governance structures of outpatient care facilities vary. Some are owned by non-profit or for-profit hospital-centered healthcare systems. Others are part of clinically integrated networks affiliated with hospital or healthcare systems. And a growing number are owned by for-profit entities unaffiliated with a hospital or healthcare system. For-profit hospitals have been leaders in the use of outpatient services to treat patients and to boost operating margins. As early as 2009, for example, Texas-based Tenet Healthcare System owned 67 outpatient centers; in 2010 it acquired 24 more. About a third of Tenet's revenue that year came from outpatient services. In 2014, the number of its outpatient centers increased to about 200 (Galloro 2011; Kutscher 2015). In 2015, Tenet acquired one of the largest chains of independent ambulatory surgery centers — United Surgical Partners International (USPI).

Clinically integrated networks (CINs) are collaborative ventures (joint ventures, affiliations, or partnerships) that bring together hospitals and other healthcare providers to coordinate patient care, but which preserve some aspects of financial and operational independence. CINs differ from traditional service-line co-management arrangements that typically involve a select group of specialist physicians that manage a single healthcare service line. Instead, CINs foster coordination across a spectrum of front-line primary care physicians, specialist physician groups, and smaller 'feeder' hospitals that handle less complex cases(Ferrari and Warner 2016). An example is the joint venture between San Francisco-based Dignity Health hospital system and urgent-care developer GoHealth, formed in 2016 and owned equally by the two companies. The urgent care centers will allow Dignity to treat patients with more routine illnesses or injuries at lower cost while referring those with more complex problems to the emergency department at one of Dignity's 39 hospitals (Evans 2016).

Independent outpatient care centers are also growing rapidly. Urgent care centers, for example, grew by 20 percent over the four years from 2010 to 2014. They numbered more than 9,400 facilities in 2014, and are expected to grow to over 12,000 clinics by 2017. Many urgent care companies are small — 80 percent have three or fewer clinics (Becker and Fry 2014). But as of 2014, a third of urgent care centers were owned by a hospital or health system or were part of a joint venture that has a hospital or health system as a partner, according to the Urgent Care Association of America.

Unions and workers have generally viewed consolidation of healthcare organizations and decentralization of service delivery positively, as helping to improve the delivery of patient care and, potentially, stabilizing hospital finances. But workers have generally not benefited from these changes. The cost reductions have gone to improve financial outcomes for healthcare systems and insurers, but they have not been used to invest in the skills of front-line healthcare workers or to improve workers' wages. To the contrary, many jobs in outpatient settings pay lower wages than hospitals for jobs in similar occupations — as we discuss further in the analyses below.

Healthcare Consolidation and Decentralization in the Trump Era

The processes of healthcare consolidation and decentralization are likely to continue in the future for several reasons. The institutional and philosophical landscape has begun to shift toward value-based care and population health management, which require larger catchment areas. Many payers and providers have sunk investments in new acquisitions, new infrastructure, and organizational redesign. Healthcare providers have also learned that mergers achieve many goals: they reduce costs and achieve scale economies; they reduce exposure to economic, regulatory, and reimbursement rate

uncertainty; they diversify the payer base; and they expand revenues by enlarging the pool of patients that are served. A downside is that the increased concentration that is often the result of M&A activity creates opportunities for anti-competitive behavior that can raise prices to patients and hold down wages of workers.

Despite this steady process of hospital consolidation since the early 1980s, the healthcare system still remains highly fragmented — offering lots of opportunities for continued M&A activity. Investor-owned hospital chains, which tend to engage aggressively in mergers, accounted for 21.3 percent of the 4,862 community hospitals (non-government-owned) in the U.S. and 18.6 percent of the 5,564 total registered hospitals in 2017 (AHA 2017).

The cautionary concern about healthcare consolidation is the potential for providers to increase monopoly power and charge higher prices. While vertical integration of hospitals and other health providers can improve coordination and the quality of patient care, horizontal consolidation of hospitals into a relatively few healthcare systems in a local or regional market may decrease competition and increase anti-competitive practices that raise prices and revenues (Gaynor, Mostashari, and Ginsburg 2017). Where a few hospital systems control a local market, they increase their bargaining power relative to insurance companies in setting prices, and relative to employees in setting wages. Studies by Gaynor and colleagues have found that the prices negotiated by hospitals with private insurers are strongly correlated with hospital market structure. Markets in which there are only one or two hospital systems have much higher prices for procedures than those with four or more hospitals (Cooper, Craig, Gaynor, and Van Reenen 2015) as a result of anti-competitive practices.

The various versions of healthcare reform proposed by the Trump administration and the Republican-controlled Congress would likely continue the trend toward greater consolidation in healthcare. The various reform efforts, as well as an outright repeal of the Affordable Care Act, would have put greater financial pressure on healthcare systems by reducing Medicaid substantially as well as undermining the individual insurance markets designed to improve coverage, which also increases revenue for providers. The proposed changes under the Senate's plan would have capped or reduced federal payments to states for their Medicaid programs; eliminated Medicaid expansion funding; and reduced or eliminated tax credits for individual market coverage. The Congressional Budget Office estimated that the version of healthcare reform passed by the House of Representatives would have caused about 14 million Americans to lose coverage by 2018 and 23 million by 2026, and the total number of uninsured to rise to 51 million in 2026 compared to 28 million under the ACA (CBO 2017). Hospitals and other providers would face heightened rates of uncompensated care, which had fallen under the ACA (Blumenthal and Collins 2017). The Economic Policy Institute (EPI) estimated that the bill

passed by the House of Representatives could lower healthcare employment by 1.8 million by 2022 (Bivens 2017). All of the leading healthcare associations and patient advocacy groups opposed both the House and Senate bills, including the American Hospital Association, American Medical Association, Association of American Medical Colleges, American Psychiatric Association, American Academy of Family Physicians, and American Association of Retired Persons (AARP).

Two studies of the effects of the partial repeal of the ACA passed by Congress in 2016 and vetoed by President Obama found large effects on healthcare expenditures.[6] The Urban Institute estimated that the partial repeal in this bill would cause a reduction in healthcare expenditures of $146 billion in 2019 and $1.7 trillion between 2019 and 2028. Spending in hospitals would be $59 billion lower in 2019 and $596 billion lower between 2019 and 2028 (Buettgens, Blumberg, and Holahan 2017). The study by the Federation of American Hospitals and the American Hospital Association (FAH-AHA) estimated that hospital net revenue would be reduced by $166 billion in 2018 to 2026. If the ACA Medicare payment reductions were maintained, hospitals would suffer additional losses of $290 billion (Dobson-DaVanzo 2016;[7] see also the Commonwealth Fund report by Ku, Steinmetz, Brantley, and Bruen 2017). In addition, nearly all of the new costs of uncompensated care would fall on providers, as federal funding would cover less than 4 percent of the increase in costs for uncompensated care for the uninsured.[8] The Urban Institute estimated that the costs of uncompensated care would increase fourfold (Buttgrens et al. 2016:3) after having fallen to their lowest level in 26 years in 2015 according to the AHA (Morse 2017).

In sum, all of the versions of healthcare reform proposed by Congress and the Trump Administration would have increased the financial pressures that healthcare providers face. The erosion of the ACA via proposed defunding of its mandates and continued cuts in Medicaid reimbursement rates remain under consideration in Congress, even now that attempts to overhaul it have failed. Providers and insurers face continuing financial pressure and uncertainty and have even more reason to seek the financial advantages of consolidated systems. This, in turn, raises the potential for anti-competitive practices in local markets.

6 That bill would have repealed expanded coverage without a replacement, repealed ACA taxes to help fund that coverage, but would have retained most of the ACA reductions in hospital payments. It would have eliminated the Medicaid expansion, the individual and employer mandates, and the Marketplace premium tax credits and cost-sharing reductions. It would have kept the ACA's individual insurance market reforms (prohibitions on pre-existing condition exclusions, essential health benefit requirements, guaranteed issue, and modified community rating).

7 The 1997 Balanced Budget Act (BBA), which included the largest reduction in Federal hospital payments to date, led to a 10.5 percent loss in expected payments over five years. By contrast, the repeal of the ACA plus other Medicare payment reductions would represent almost 100 percent more than those in the BBA as a percent of Medicare hospital expenditures (Dobson-DaVanzo 2016:3–4).

8 An estimated 39 percent of uncompensated care in 2013 was funded by the federal government through programs such as Medicaid and Medicare Disproportionate Share Hospital payments, 24 percent was funded by state and local governments, and 37 percent by healthcare providers (Buttrens et al. 2016:9).

Job Shifts in Hospitals and Outpatient Settings

Our findings of employment trends in hospitals and outpatient settings are consistent with the strategies of organizational restructuring that hospitals have undertaken. Hospitals continue to hire the lion's share of workers in healthcare, with employment rising from 5.25 million in 2005 to 5.75 million jobs in 2015 — a growth rate of almost 10 percent. While outpatient centers account for a much smaller number of jobs, just 737,000 in 2015, employment in these facilities increased by almost six times the rate of hospital job growth over the decade (**Tables 4a, b**).

Job Shifts by Occupation

Despite its much smaller size, the outpatient segment added 272,000 jobs, more than half as many as the 509,000 jobs added by hospitals. Job growth among healthcare professionals was strong in both segments, but almost twice the rate in outpatient clinics (58 percent) compared to hospitals (31 percent). Moreover, for workers in nonprofessional occupations, job growth in hospitals was relatively flat, while in outpatient centers it grew by 61 percent over the decade. Outpatient care centers added three times the number of non-professional jobs added by hospitals — a difference primarily driven by the growth of jobs for med techs and health aides and assistants. Outpatient centers added four times the number of jobs for medical technicians as did hospitals, while hospitals and outpatient centers added about the same number of jobs for health aides and assistants. Despite its small size, outpatient care centers have been a major source of job growth for nonprofessional workers.

TABLE 4a

Employment in Selected Occupations in Hospitals 2005, 2015

	2005	Share, 2005	2015	Share, 2015	Change, 2005–15	% Change, 2005–15
Employment in Hospitals	5,246,630	100.0	5,755,150	100.0	508,520	9.7
Healthcare Professionals	1,913,900	36.5	2,511,160	43.6	597,260	31.2
Nonprofessional Occupations	1,941,830	37.0	1,973,210	34.3	31,380	1.6
Social Services	54,650	1.0	66,120	1.1	11,470	21.0
Medical Technicians	849,030	16.2	859,900	14.9	10,870	1.3
Health Aides and Assistants	690,930	13.2	721,080	12.5	30,150	4.4
Food Services	152,340	2.9	137,810	2.4	-14,530	-9.5
Cleaning Services	194,880	3.7	188,300	3.3	-6,580	-3.4
Share of All Healthcare Jobs		73.5		77.9		

Source and notes: CEPR analysis of OES.

TABLE 4b

Employment in Selected Occupations in Outpatient Care Centers 2005, 2015

	2005	Share, 2005	2015	Share, 2015	Change, 2005–15	% Change, 2005–15
Employment in Outpatient Care	465,560	100.0	737,410	100.0	271,850	58.4
Healthcare Professionals	145,660	31.3	230,500	31.3	84,840	58.2
Nonprofessional Occupations	171,910	36.9	277,020	37.6	105,110	61.1
Social Services	64,390	13.8	89,600	12.2	25,210	39.2
Medical Technicians	53,390	11.5	99,680	13.5	46,290	86.7
Health Aides and Assistants	47,670	10.2	77,980	10.6	30,310	63.6
Food Services	1,310	0.3	2,000	0.3	690	52.7
Cleaning Services	5,150	1.1	7,760	1.1	2,610	50.7
Share of All Outpatient Care Center Jobs		68.2		68.6		

Source and notes: CEPR analysis of OES.

The effects of the Affordable Care Act can be seen in the growth of social service jobs. Incentives in the ACA reward healthcare providers for managing the health of the population they serve and penalize them for readmissions of patients to hospitals. As a result, healthcare providers — physicians' practices, outpatient care centers, and hospitals — have all put additional resources into making sure that patients with chronic conditions or who are at high-risk for readmission are filling prescriptions, taking their medications, keeping doctor's appointments, and otherwise engaging in practices that will support their health. Social service jobs, such as community health aides, health educators, or care coordinator assistants, have become increasingly important. Hospitals added 11,000 of these jobs between 2005 and 2015; outpatient centers added 25,000 — more than double the increase in hospitals.

To sum up: major shifts in the delivery of healthcare services have occurred in recent years, with a migration of jobs from hospitals to outpatient care centers. Outpatient centers have dramatically increased their employment of social service workers, medical technicians, and health aides and assistants — creating an additional 102,000 jobs over the decade — while the far larger hospital segment added only 52,000 jobs in these occupations.

Job Shifts by Demographic Group

The pattern of disproportionate job growth in outpatient centers compared to hospitals held for all demographic groups, except white women, whose employment in outpatient services grew by 17 percent. Black workers' jobs in outpatient grew by 65 percent; Hispanic workers, 103 percent; and

Asian/others, 82 percent. Within these groups, women's employment growth in outpatient care substantially outpaced that of men (**Table 5**).
But even as minority workers disproportionately found jobs in outpatient services, they often suffered a wage penalty for doing so — because, as we show below, outpatient centers pay lower wages, on average, than do hospitals. Later in the report, we present the results of wage regressions that estimate the relative wage premium or penalty for workers in outpatient settings compared to those in hospitals.

Hospital employment grew slowly, and white and black women experienced very little job growth. But Hispanic and Asian/other men and women gained a disproportionate share of jobs in hospitals — with growth rates of 40 percent for Hispanics and 35 percent for the Asian/other group.

In outpatient centers, both men and women experienced increases in employment on par with the 58 percent rate of overall job growth. There were, however, large differences in employment growth among women of different race and ethnic backgrounds. White women experienced the slowest employment growth (17 percent), Hispanic women the most rapid employment growth (111 percent), followed by Asian and other women (97 percent) and black women (67 percent). White women hold the majority of jobs in outpatient care centers, four times the number of jobs held by Hispanic women. But Hispanic women gained a disproportionate share of new jobs in outpatient care.

These variations in employment growth among different race and ethnic groups affect their shares of employment in healthcare overall and in hospitals and outpatient centers (**Table 6a**). Most notable is the decline in the share of healthcare jobs held by white women and the increase in the share held by Hispanic women. In the ten-year period, white women's share of employment fell from 53.5 percent to 48.9 percent in healthcare overall, from 53.1 percent to 49.4 percent in hospitals, and from 54.1 percent to 49.4 percent in outpatient facilities. Black women maintained their share of employment in healthcare overall at about 13 percent, with little change in their relative share of jobs in hospitals and outpatient. Hispanic women increased their share of jobs in healthcare from 7.1 to 9.4 percent, with considerably higher job growth in outpatient centers than in hospitals. Asian/other women increased their share of jobs from 5.0 to 6.1 percent, and the growth rate was similar in hospitals and outpatient centers. Men maintained their share of jobs in the healthcare industry and in the two segments for each race/ethnic group.

TABLE 5

Healthcare Employment by Race/Ethnicity and Gender

	2005	2015	Change, 2005–15	% Change, 2005–15
Overall Healthcare	**13,151,260**	**15,832,030**	**2,680,770**	**20.4**
Men	2,780,322	3,518,596	738,274	26.6
Women	10,370,938	12,313,434	1,942,496	18.7
White	***8,867,544***	***9,889,259***	***1,021,715***	**11.5**
Men	1,834,265	2,146,258	311,993	17.0
Women	7,033,279	7,743,000	709,721	10.1
Black	***2,131,542***	***2,654,367***	***522,825***	**24.5**
Men	390,887	528,362	137,475	35.2
Women	1,740,655	2,126,005	385,350	22.1
Hispanic	***1,207,535***	***1,892,079***	***684,544***	**56.7**
Men	269,657	411,004	141,347	52.4
Women	937,878	1,481,075	543,197	57.9
Asian/Other	***944,639***	***1,396,325***	***451,686***	**47.8**
Men	285,513	432,971	147,458	51.6
Women	659,126	963,354	304,228	46.2
Hospitals	**5,246,630**	**5,755,150**	**508,520**	**9.7**
Men	1,210,583	1,425,132	214,549	17.7
Women	4,036,047	4,330,018	293,971	7.3
White	***3,570,850***	***3,695,849***	***124,999***	**3.5**
Men	785,088	851,136	66,048	8.4
Women	2,785,762	2,844,713	58,951	2.1
Black	***820,555***	***884,374***	***63,819***	**7.8**
Men	174,734	212,720	37,986	21.7
Women	645,821	671,654	25,833	4.0
Hispanic	***420,260***	***589,073***	***168,813***	**40.2**
Men	115,178	166,016	50,838	44.1
Women	305,081	423,057	117,976	38.7
Asian/Other	***434,965***	***585,855***	***150,890***	**34.7**
Men	135,583	195,260	59,677	44.0
Women	299,382	390,595	91,213	30.5
Outpatient Care Centers	**465,560**	**737,410**	**271,850**	**58.4**
Men	105,769	168,315	62,546	59.1
Women	359,791	569,095	209,304	58.2
White	***319,473***	***470,456***	***150,983***	**47.3**
Men	67,772	106,067	38,295	56.5
Women	251,701	364,390	42,418	16.9
Black	***59,333***	***97,993***	***38,660***	**65.2**
Men	13,138	20,797	7,659	58.3
Women	46,195	77,196	31,001	67.1
Hispanic	***52,737***	***107,074***	***54,337***	**103.0**
Men	12,375	21,982	9,607	77.6
Women	40,363	85,091	44,728	110.8
Asian/Other	***34,017***	***61,887***	***27,870***	**81.9**
Men	12,484	19,468	6,984	55.9
Women	21,533	42,418	20,885	97.0

Source and notes: CEPR analysis of the ACS and OES.

TABLE 6a

Share of Employment by Race/Ethnicity and Gender

(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
Total	**13,151,260**	**15,832,030**	**5,246,630**	**5,755,150**	**465,560**	**737,410**
Men	21.1	22.2	23.1	24.8	22.7	22.8
Women	78.9	77.8	76.9	75.2	77.3	77.2
White	***67.4***	***62.5***	***68.1***	***64.2***	***68.6***	***63.8***
Men	13.9	13.6	15.0	14.8	14.6	14.4
Women	53.5	48.9	53.1	49.4	54.1	49.4
Black	***16.2***	***16.8***	***15.6***	***15.4***	***12.7***	***13.3***
Men	3.0	3.3	3.3	3.7	2.8	2.8
Women	13.2	13.4	12.3	11.7	9.9	10.5
Hispanic	***9.2***	***12.0***	***8.0***	***10.2***	***11.3***	***14.5***
Men	2.1	2.6	2.2	2.9	2.7	3.0
Women	7.1	9.4	5.8	7.4	8.7	11.5
Asian/Other	**7.2**	**8.8**	**8.3**	**10.2**	**7.3**	**8.4**
Men	2.2	2.7	2.6	3.4	2.7	2.6
Women	5.0	6.1	5.7	6.8	4.6	5.8

Source and notes: CEPR analysis of the ACS.

The declining share of jobs held by white women occurred in both healthcare professional jobs and nonprofessional jobs (**Table 6b**). Among healthcare professionals, the drop in the share of white women was greatest in hospitals, but declines were also registered in healthcare overall and in outpatient centers. Black women increased their share of professional jobs in outpatient centers by about 2 percentage points, the same as Hispanic women and Asian/other women. This increase in the share of non-white women professionals in outpatient care centers is reflected in the decline in men's share of professional jobs in these facilities from about 27 percent in 2005 to about 24 percent in 2015. This may reflect greater use of physicians' assistants and nurse practitioners in these centers and lesser reliance on doctors.

The nonprofessional jobs employing the largest numbers of workers without a four-year college degree are medical technicians (2.1 million in 2015) and health aides and assistants (3.4 million in 2015). Here again, we see a decline in the share of white women in these occupations in healthcare overall and in hospitals and outpatient care facilities. Black women maintained their share of jobs in these two occupations in healthcare overall, but experienced declines in their share of jobs in hospitals (1 percentage point) and outpatient care centers (2 percentage points). Hispanic women increased their share of medical technician jobs by 3 percentage points in healthcare, by 2 percentage points in hospitals, and by more than 4 percentage points in outpatient centers. Asian/other women also increased their share of medical technician jobs, but much more modestly.

TABLE 6b

Share of Employment by Occupation Group and Race/Ethnicity and Gender

(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
Healthcare Professionals	**3,359,960**	**4,980,650**	**1,913,900**	**2,511,160**	**145,660**	**230,500**
Men	25.4	24.4	19.4	20.8	26.9	23.7
Women	74.6	75.6	80.6	79.2	73.1	76.3
White	***76.3***	***71.4***	***75.6***	***71.6***	***76.7***	***72.9***
Men	18.8	17.0	13.9	13.9	18.4	17.2
Women	57.5	54.4	61.8	57.7	58.3	55.7
Black	***8.6***	***9.7***	***8.9***	***9.1***	***7.1***	***8.3***
Men	1.6	1.7	1.3	1.5	2.2	1.3
Women	7.0	8.0	7.6	7.6	4.9	7.0
Hispanic	***4.7***	***6.6***	***4.4***	***6.3***	***7.2***	***8.2***
Men	1.5	1.7	1.1	1.6	2.5	1.7
Women	3.2	4.8	3.4	4.7	4.6	6.5
Asian/Other	***10.4***	***12.3***	***11.0***	***13.0***	***9.0***	***10.6***
Men	3.6	4.0	3.2	3.8	3.8	3.5
Women	6.8	8.4	7.9	9.2	5.3	7.1
Social Services	**282,140**	**338,540**	**54,650**	**66,120**	**64,390**	**89,600**
Men	36.1	29.0	36.5	29.1	32.5	26.6
Women	63.9	71.0	63.5	70.9	67.5	73.4
White	***60.5***	***60.5***	***65.9***	***57.2***	***64.4***	***65.0***
Men	21.0	16.5	21.8	14.6	20.0	16.8
Women	39.5	44.1	44.1	42.7	44.5	48.2
Black	***25.3***	***23.4***	***22.6***	***24.1***	***20.7***	***20.4***
Men	9.5	7.3	10.1	6.5	5.6	5.2
Women	15.8	16.1	12.6	17.6	15.1	15.2
Hispanic	***10.0***	***10.7***	***9.4***	***11.9***	***8.4***	***9.8***
Men	3.9	3.4	3.9	5.0	3.5	3.0
Women	6.0	7.3	5.4	6.9	4.8	6.8
Asian/Other	***4.3***	***5.3***	***2.0***	***6.8***	***6.5***	***4.7***
Men	1.6	1.8	0.7	3.0	3.3	1.6
Women	2.6	3.5	1.3	3.8	3.2	3.2
Medical Technicians	**1,828,420**	**2,143,640**	**849,030**	**859,900**	**53,390**	**99,680**
Men	18.6	21.6	21.8	24.8	18.1	20.3
Women	81.4	78.4	78.2	75.2	81.9	79.7
White	***70.7***	***63.8***	***68.1***	***62.9***	***63.5***	***59.6***
Men	12.5	12.8	14.2	13.9	8.5	10.7
Women	58.2	51.0	54.0	49.1	54.9	48.8
Black	***15.7***	***17.0***	***16.7***	***17.1***	***18.7***	***16.6***
Men	2.3	3.4	3.1	4.4	3.2	3.5
Women	13.4	13.6	13.6	12.6	15.5	13.1
Hispanic	***7.1***	***11.1***	***7.4***	***10.9***	***10.9***	***14.9***
Men	1.9	3.0	2.1	3.5	3.5	3.1
Women	5.1	8.1	5.3	7.4	7.4	11.8
Asian/Other	***6.5***	***8.0***	***7.7***	***9.1***	***6.8***	***9.0***
Men	1.9	2.3	2.5	3.0	2.8	3.0
Women	4.6	5.7	5.3	6.2	4.0	6.0
Health Aides and Assistants	**2,792,310**	**3,351,020**	**690,930**	**721,080**	**47,670**	**77,980**
Men	11.1	12.1	17.7	18.7	15.4	19.8
Women	88.9	87.9	82.3	81.3	84.6	80.2
White	***54.2***	***49.1***	***53.9***	***49.3***	***57.1***	***49.5***
Men	5.2	5.3	8.4	8.1	8.6	9.2
Women	48.9	43.7	45.4	41.2	48.4	40.2
Black	***27.0***	***26.6***	***27.0***	***26.1***	***16.9***	***16.7***
Men	3.2	3.2	5.1	5.2	2.8	4.2
Women	23.8	23.4	21.9	20.9	14.1	12.5
Hispanic	***12.5***	***17.4***	***12.0***	***16.4***	***18.4***	***26.0***
Men	1.5	2.2	2.4	3.2	2.0	4.3
Women	11.0	15.2	9.6	13.2	16.4	21.8
Asian/Other	***6.3***	***7.0***	***7.2***	***8.3***	***7.6***	***7.8***
Men	1.2	1.4	1.8	2.3	2.0	2.2
Women	5.1	5.5	5.4	6.0	5.6	5.6

TABLE 6b (cont.)

Share of Employment by Occupation Group and Race/Ethnicity and Gender (Percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2005	2015	2005
Food Services	**460,760**	**475,920**	**152,340**	**137,810**	**1,310**	**2,000**
Men	30.8	35.3	32.0	37.4	32.1	34.9
Women	69.2	64.7	68.0	62.6	67.9	65.1
White	***53.1***	***53.2***	***45.7***	***46.6***	***42.7***	***62.0***
Men	14.6	17.8	13.9	15.7	9.0	28.2
Women	38.4	35.5	31.7	30.9	33.7	33.8
Black	***28.0***	***25.4***	***31.7***	***30.8***	***48.0***	***28.2***
Men	8.6	8.5	8.9	11.6	13.8	5.2
Women	19.4	16.9	22.8	19.2	34.2	23.1
Hispanic	***12.7***	***14.2***	***14.0***	***14.1***	***2.3***	***9.8***
Men	5.5	5.8	6.4	6.4	2.3	1.5
Women	7.2	8.4	7.6	7.7	0.0	8.3
Asian/Other	***6.3***	***7.2***	***8.6***	***8.5***	***6.9***	***0.0***
Men	2.0	3.3	2.8	3.7	6.9	0.0
Women	4.3	3.9	5.9	4.8	0.0	0.0
Cleaning Services	**396,160**	**386,600**	**194,880**	**188,300**	**5,150**	**7,760**
Men	39.0	39.8	40.7	43.7	58.9	55.2
Women	61.0	60.2	59.3	56.3	41.1	44.8
White	***47.6***	***44.7***	***40.8***	***39.5***	***47.3***	***43.7***
Men	19.1	18.1	17.9	18.0	28.6	25.8
Women	28.4	26.6	22.9	21.5	18.7	17.9
Black	***27.6***	***27.3***	***31.7***	***31.5***	***20.1***	***17.8***
Men	10.5	10.5	11.9	12.9	12.2	11.7
Women	17.0	16.8	19.8	18.6	7.9	6.1
Hispanic	***19.1***	***20.4***	***21.1***	***20.7***	***23.5***	***27.1***
Men	6.5	7.2	7.5	7.9	11.0	11.7
Women	12.6	13.2	13.5	12.8	12.5	15.4
Asian/Other	***5.8***	***7.6***	***6.4***	***8.2***	***9.1***	***11.4***
Men	2.8	4.0	3.3	5.0	7.2	5.9
Women	2.9	3.6	3.2	3.3	1.9	5.4

Source and notes: CEPR analysis of the ACS and OES.

The decline in the share of healthcare jobs held by white women is most apparent in the health aides and assistants occupational group. In healthcare overall, their share in this occupational group fell from about 49 to 44 percent. In outpatient centers, it fell from 48 to 40 percent or 8 percentage points. Black women maintained their share of these jobs in healthcare overall, but their share of jobs in outpatient centers fell somewhat. Here again, it is Hispanic women whose shares of jobs as health aides and assistants increased — by about 4 percentage points in healthcare overall and in hospitals, and by more than 5 percentage points in outpatient facilities.

Hispanic and white women also increased their share of social service jobs in outpatient services, while black women increased their share of these jobs in hospitals — all by modest amounts.

Changing Real Wages: 2005–2015

While jobs in healthcare grew at a steady clip between 2005 and 2015, real wages were largely stagnant or fell for full-time, full-year workers.[9] They fell a modest 2.4 percent for the industry as a whole, but by 5.7 percent in outpatient care, where job growth has been the strongest. Median real hourly pay in hospitals rose a meager 3.2 percent (just 75 cents) over 10 years or less than 8 cents a year on average. In this section, we describe changes in median real wages over the decade by gender and race/ethnicity (**Table 7a**), and then by demographic group within each occupation (**Tables 7b**, **c**, **d**).

A particularly disturbing finding is the decline in real wages of full-time, full-year workers between 2005 and 2015 in outpatient care centers for nearly every demographic group except white males (Table 7a). Overall, the median real wage of white men increased very modestly over the decade, by about $1.00 per hour or 10 cents a year on average. Real wages of Asian/other women were flat over the period. Every other demographic group employed in outpatient care centers saw their real wages decline, with the largest declines for black men from $20.22 to $17.67 (12.6 percent), white women from $20.70 to $19.63 (5.2 percent), and Hispanic men from $20.62 to $19.63 and women from $15.46 to $14.72 (both 4.8 percent).

Real median wages in hospitals increased for every demographic group, but the increases were quite moderate. Increases over the decade ranged from a low of 2.9 percent for Hispanic men (63 cents over 10 years) to a high of 5.7 percent ($1.01 over that period) for Hispanic women. Median real pay of white women increased by $1.24 between 2005 and 2015. Other demographic groups experienced median pay rises over the decade of about 60 cents to $1 (6 cents to 10 cents a year on average) (Table 7a).

9 There are two sources of data on median wages of healthcare workers appropriate for our purposes — the American Community Survey (ACS) and the Current Population Survey (CPS). The ACS, which is based on a very large number of respondents, reports real median hourly wages of workers who work full-time and full-year. Earnings of part-time workers or those who work only part of the year are not included in the wage data. The CPS Outgoing Rotation Group (ORG) data cover a much smaller sample of workers, but it reports real median hourly wages across all employees — including part-time and part-year workers. Appendix Table C1 presents analyses based on the CPS ORG data for all workers and separately for those employed full-time or part-time. Results are comparable to those based on the ACS reported in Tables 6a, b.

TABLE 7a

Real Median Hourly Wages of Full-Time, Full-Year Workers, by Race/Ethnicity and Gender

(2015 dollars)

	Overall Healthcare			Hospitals			Outpatient Care Centers		
	2005	2015	% Change	2005	2015	% Change	2005	2015	% Change
Total	**20.22**	**19.73**	**-2.4**	**23.79**	**24.54**	**3.2**	**20.81**	**19.63**	**-5.7**
Men	25.83	24.68	-4.5	25.99	26.50	2.0	25.69	24.54	-4.5
Women	18.96	19.41	2.4	22.60	23.56	4.2	19.03	18.65	-2.0
White	***21.65***	***22.09***	**2.0**	***24.98***	***26.18***	**4.8**	***21.75***	***21.60***	**-0.7**
Men	29.14	28.96	-0.6	28.55	29.45	3.2	27.49	28.47	3.6
Women	20.22	20.61	1.9	23.79	25.03	5.2	20.70	19.63	-5.2
Black	***16.31***	***16.20***	**-0.7**	***18.44***	***18.85***	**2.2**	***17.84***	***17.18***	**-3.7**
Men	17.84	17.78	-0.3	18.78	19.63	4.5	20.22	17.67	-12.6
Women	16.06	15.71	-2.2	18.00	18.65	3.6	17.31	17.18	-0.8
Hispanic	***16.06***	***15.90***	**-1.0**	***18.44***	***19.63***	**6.5**	***16.65***	***15.71***	**-5.6**
Men	19.03	19.63	3.2	20.81	21.42	2.9	20.62	19.63	-4.8
Women	15.14	15.17	0.2	17.84	18.85	5.7	15.46	14.72	-4.8
Asian/Other	***24.98***	***26.01***	**4.1**	***28.52***	***29.45***	**3.3**	***23.79***	***24.54***	**3.2**
Men	29.73	29.45	-0.9	28.55	29.45	3.2	29.73	29.45	-0.9
Women	23.13	24.54	6.1	27.95	29.45	5.4	22.63	22.69	0.3

Source and notes: CEPR analysis of the ACS.

These overall trends for healthcare workers by gender and race/ethnicity mask important differences by occupational group. In 2015 across the industry as a whole, the median real wage of full-time healthcare professionals (which includes RNs and social workers as well as physicians, nurse practitioners and physicians' assistants) was $32.72 per hour. Full-time social service workers earned a median wage of $18.16 per hour, while medical technicians earned $19.63 and health aides and assistants earned $13.25 per hour. The median hourly pay of the lowest paid full-time workers, in food and cleaning services, was $11.14 and $11.78, respectively (Tables 7b, c, d).

Healthcare professionals, whose median real wage rose, saw an increase of just 60 cents an hour in hospitals over the decade, and only 26 cents in outpatient care. Median real pay of social services workers rose by $1.09 over 10 years or about 11 cents a year in hospitals, and by 32 cents over 10 years or about 3 cents a year in outpatient care. In 2015, these workers had a median annual pay of $37,773 in outpatient care and $41,850 in hospitals (Table 7b).

TABLE 7b

Real Median Hourly Wages of Full-Time, Full-Year Healthcare Professionals and Social Service Workers by Occupation Group, Gender, and Race/Ethnicity

(2015 dollars)

	Overall Healthcare			Hospitals			Outpatient Care Centers		
	2005	2015	% Change	2005	2015	% Change	2005	2015	% Change
Healthcare Professionals	**32.55**	**32.72**	**0.5**	**32.62**	**33.22**	**1.8**	**29.73**	**29.99**	**0.9**
Men	44.93	43.98	-2.1	36.87	39.27	6.5	35.68	38.75	8.6
Women	29.73	30.85	3.8	31.52	32.28	2.4	27.95	28.05	0.4
White	***32.11***	***32.72***	**1.9**	***32.11***	***32.72***	**1.9**	***29.07***	***29.99***	**3.2**
Men	46.73	45.26	-3.1	36.87	39.27	6.5	34.63	38.28	10.5
Women	29.73	30.43	2.4	30.92	31.90	3.2	27.19	28.05	3.2
Black	***29.73***	***29.45***	**-0.9**	***29.77***	***31.63***	**6.2**	***26.43***	***26.18***	**-0.9**
Men	29.73	32.39	8.9	26.76	35.45	32.5	25.83	29.45	14.0
Women	29.73	29.06	-2.3	30.33	30.54	0.7	29.31	26.18	-10.7
Hispanic	***30.92***	***29.99***	**-3.0**	***31.93***	***31.90***	**-0.1**	***29.73***	***23.07***	**-22.4**
Men	39.84	39.27	-1.4	32.71	35.34	8.0	43.25	31.41	-27.4
Women	28.55	28.27	-1.0	31.26	30.92	-1.1	26.76	22.44	-16.1
Asian/Other	***39.65***	***39.27***	**-1.0**	***38.65***	***39.27***	**1.6**	***41.63***	***37.30***	**-10.4**
Men	47.58	47.72	0.3	41.63	41.72	0.2	47.58	44.17	-7.2
Women	36.87	37.63	2.1	38.32	38.17	-0.4	38.65	35.34	-8.6
Social Services	**17.25**	**18.16**	**5.3**	**19.03**	**20.12**	**5.7**	**17.84**	**18.16**	**1.8**
Men	17.84	18.65	4.5	19.93	19.63	-1.5	17.84	19.63	10.0
Women	16.65	17.67	6.1	18.44	21.60	17.1	17.84	17.67	-1.0
White	***17.84***	***18.56***	**4.0**	***19.82***	***22.09***	**11.5**	***17.99***	***18.32***	**1.8**
Men	17.84	19.63	10.0	22.13	20.61	-6.9	18.15	20.51	13.0
Women	*17.56*	*17.67*	*0.6*	*19.03*	*23.56*	*23.8*	17.84	17.28	-3.1
Black	***16.65***	***17.24***	**3.5**	***18.38***	***19.63***	**6.8**	***19.03***	***17.67***	**-7.1**
Men	18.44	17.82	-3.4	18.63	18.16	-2.5	20.81	19.63	-5.7
Women	16.06	17.18	7.0	17.28	19.63	13.6	18.08	17.18	-5.0
Hispanic	***16.18***	***18.70***	**15.6**	***17.84***	***22.04***	**23.5**	***17.84***	***18.65***	**4.5**
Men	17.84	17.67	-1.0	19.93	19.63	-1.5	17.84	18.65	4.5
Women	14.87	19.63	32.0	16.65	22.09	32.7	11.50	18.85	63.9
Asian/Other	***17.13***	***19.63***	**14.6**	***26.76***	***19.63***	**-26.6**	***17.13***	***20.61***	**20.3**
Men	17.13	16.83	-1.8	27.19	19.63	-27.8	17.13	15.22	-11.2
Women	17.25	20.61	19.5	26.76	19.63	-26.6	19.62	22.09	12.6

Source and notes: CEPR analysis of the ACS.

It is striking how low the median pay of medical technicians and social services workers is in hospitals and outpatient care, ranging from $37,000 to $45,000 a year in 2015 depending on industry sector and occupation. Medical technicians saw their median real pay drop in both hospitals and outpatient care. Among medical technicians, only Hispanic women experienced an increase in pay while real wages of white women were flat. All other demographic groups in this occupation experienced declines in pay, with white men and Asian/other women experiencing real declines of almost 9 percent (Table 7c).

The median pay of health aides and assistants working full-time, full-year was less than $15 an hour in 2015 in hospitals and in outpatient facilities. Already among the lowest-paid workers in hospitals and outpatient facilities in 2005, health aides and assistants saw a slight drop in pay in hospitals and

stagnant wages in outpatient care over the decade to 2015. Every demographic group except Asian/other men lost ground in hospitals. Declines in median real wages in hospitals for white, black, and Hispanic men were the largest, falling by 11 to 13 percent over the decade, or about $2.00 an hour. While the decline was less dramatic for white women in hospitals, their pay fell by 6 percent. The pattern is a bit more complex in outpatient care, where Hispanic men and Asian/other men saw large increases in median real pay, $4.30 and $2.52 over 10 years respectively. Pay increased by 44 cents for white women and was flat for black and Hispanic women (Table 7c).

TABLE 7c

Real Median Hourly Wages of Full-Time, Full-Year Medical Technicians and Health Aides by Occupation Group, Gender, and Race/Ethnicity

(2015 dollars)

	Overall Healthcare			Hospitals			Outpatient Care Centers		
	2005	2015	% Change	2005	2015	% Change	2005	2015	% Change
Medical Technicians	**20.81**	**19.63**	**-5.7**	**22.00**	**21.60**	**-1.8**	**17.84**	**17.67**	**-1.0**
Men	22.60	19.85	-12.2	24.52	22.73	-7.3	20.81	19.14	-8.0
Women	19.82	19.63	-1.0	20.81	20.72	-0.4	16.65	17.45	4.8
White	***20.81***	***19.63***	**-5.7**	***22.30***	***22.04***	**-1.2**	***17.84***	***17.67***	**-1.0**
Men	22.60	20.12	-11.0	25.04	22.90	-8.5	20.81	19.63	-5.7
Women	20.22	19.63	-2.9	21.41	21.60	0.9	16.65	17.67	6.1
Black	***19.11***	***19.14***	**0.2**	***20.31***	***19.63***	**-3.3**	***17.66***	***17.18***	**-2.7**
Men	22.20	19.63	-11.6	22.20	20.86	-6.0	20.81	14.72	-29.3
Women	19.03	18.65	-2.0	19.62	19.14	-2.4	16.65	17.18	3.2
Hispanic	***18.50***	***18.36***	**-0.8**	***19.62***	***20.61***	**5.0**	***17.84***	***16.69***	**-6.4**
Men	20.09	19.63	-2.3	23.11	23.07	-0.2	18.10	19.63	8.5
Women	18.44	17.67	-4.2	18.55	19.63	5.8	17.84	16.20	-9.2
Asian/Other	***23.79***	***22.09***	**-7.1**	***24.98***	***23.56***	**-5.7**	***22.50***	***19.63***	**-12.8**
Men	26.43	23.56	-10.9	26.17	24.54	-6.2	26.76	19.63	-26.6
Women	23.79	21.32	-10.4	24.25	22.09	-8.9	17.84	18.65	4.5
Health Aides and Assistants	**13.59**	**13.25**	**-2.5**	**14.87**	**14.72**	**-1.0**	**14.27**	**14.28**	**0.1**
Men	14.87	14.18	-4.6	16.65	14.72	-11.6	14.84	14.72	-0.8
Women	13.32	13.09	-1.7	14.87	14.23	-4.3	14.27	14.18	-0.6
White	***13.68***	***13.59***	**-0.7**	***14.87***	***14.18***	**-4.6**	***14.87***	***15.22***	**2.4**
Men	14.27	13.96	-2.2	16.53	14.72	-10.9	15.94	14.72	-7.7
Women	13.59	13.45	-1.0	14.87	13.99	-5.9	14.87	15.31	3.0
Black	***13.08***	***12.56***	**-4.0**	***14.87***	***14.72***	**-1.0**	***13.68***	***13.74***	**0.4**
Men	14.87	14.23	-4.3	16.65	14.72	-11.6	14.67	12.22	-16.7
Women	13.03	12.32	-5.4	14.87	14.68	-1.3	13.68	13.74	0.4
Hispanic	***13.08***	***12.76***	**-2.4**	***14.87***	***14.43***	**-3.0**	***13.08***	***13.25***	**1.3**
Men	14.54	13.74	-5.5	16.99	14.72	-13.4	13.68	16.20	18.4
Women	13.08	12.73	-2.7	14.54	14.18	-2.5	12.49	12.56	0.6
Asian/Other	***15.02***	***14.72***	**-2.0**	***16.65***	***16.69***	**0.2**	***16.06***	***16.69***	**3.9**
Men	16.65	16.44	-1.3	17.84	18.16	1.8	14.84	19.14	29.0
Women	14.87	14.23	-4.3	16.52	16.36	-1.0	17.84	16.69	-6.4

Source and notes: CEPR analysis of the ACS.

Thus most demographic groups in the two largest nonprofessional occupations — medical technicians and health aides and assistants experienced falling or stagnant wages.

Food and cleaning service workers — the lowest paid workers in hospitals — experienced modest real wage increases between 2005 and 2015, overall. The median pay of food service and cleaning service workers rose somewhat in hospitals and outpatient but was still just $11.78 to $12.27 an hour in 2015. Not all demographic groups experienced an increase in pay. In hospitals, the median real wage of both black and white men and black and white women fell in food services, most steeply for black men, as did the wages of black and white men in cleaning services (Table 7d).

TABLE 7d

Real Median Hourly Wages of Full-Time, Full-Year Food Service and Cleaning Workers by Occupation Group, Gender, and Race/Ethnicity

(2015 dollars)

	Overall Healthcare			Hospitals			Outpatient Care Centers		
	2005	2015	% Change	2005	2015	% Change	2005	2015	% Change
Food Services	**11.66**	**11.14**	**-4.5**	**12.02**	**12.27**	**2.1**	**11.00**	**12.27**	**11.5**
Men	13.08	12.27	-6.2	14.27	13.74	-3.7	17.60	12.27	-30.3
Women	11.12	10.60	-4.7	11.89	11.78	-0.9	9.10	12.27	34.8
White	***11.89***	***11.78***	**-0.9**	***13.08***	***12.27***	**-6.2**	***11.89***	***12.27***	**3.2**
Men	14.27	13.09	-8.3	15.46	14.72	-4.8	*	*	*
Women	11.89	10.88	-8.5	12.49	11.88	-4.9	*	*	*
Black	***11.30***	***10.23***	**-9.5**	***11.89***	***10.80***	**-9.2**	***11.00***	***12.27***	**11.5**
Men	11.89	10.80	-9.2	14.87	10.91	-26.6	*	*	*
Women	10.70	9.82	-8.2	11.30	10.31	-8.8	*	*	*
Hispanic	***11.12***	***10.95***	**-1.5**	***11.89***	***13.74***	**15.6**	***9.52***	***10.11***	**6.2**
Men	13.08	13.74	5.0	14.27	15.22	6.7	*	*	*
Women	10.51	9.82	-6.6	11.89	12.27	3.2	*	*	*
Asian/Other	***11.89***	***12.27***	**3.2**	*	*	*	*****	*****	*****
Men	10.91	13.40	22.8	*	*	*	*	*	*
Women	11.89	12.08	1.6	*	*	*	*	*	*
Cleaning Services	**11.89**	**11.78**	**-0.9**	**11.89**	**12.27**	**3.2**	**11.21**	**11.78**	**5.1**
Men	14.27	14.14	-0.9	14.64	14.72	0.5	13.08	13.56	3.7
Women	10.41	10.31	-1.0	10.88	11.29	3.8	10.40	10.21	-1.8
White	***11.96***	***11.88***	**-0.7**	***12.49***	***12.27***	**-1.8**	***13.08***	***12.54***	**-4.1**
Men	15.10	14.72	-2.5	15.46	14.72	-4.8	*	*	*
Women	10.64	10.45	-1.8	11.23	11.29	0.5	*	*	*
Black	***11.36***	***11.78***	**3.7**	***11.42***	***12.27***	**7.4**	***17.84***	***12.02***	**-32.6**
Men	13.81	14.23	3.0	14.27	14.14	-0.9	*	*	*
Women	10.53	10.32	-2.0	10.70	11.29	5.5	*	*	*
Hispanic	***10.70***	***10.80***	**0.9**	***11.89***	***11.44***	**-3.8**	***7.42***	***11.45***	**54.3**
Men	12.18	12.27	0.7	12.23	12.78	4.5	*	*	*
Women	10.11	10.21	1.0	10.70	10.80	0.9	*	*	*
Asian/Other	***12.31***	***13.25***	**7.6**	***12.49***	***14.72***	**17.9**	*****	*****	*****
Men	12.72	14.72	15.7	13.08	14.72	12.5	*	*	*
Women	11.27	11.24	-0.3	10.82	12.27	13.4	*	*	*

Source and notes: CEPR analysis of the ACS. * Cell size too small to analyze.

The small numbers of workers employed in food and cleaning services in outpatient care centers makes a detailed demographic breakdown unreliable. Wages, while still very low, generally rose for

workers in these occupations. One exception — and it is a big one — is that median real wages of men and women in food services moved to $12.27 an hour in 2015, an increase of nearly 35 percent for women and a decline of more than 30 percent for men. The median pay of black workers in cleaning services declined precipitously while those of Hispanic workers increased dramatically. Despite these changes, white workers in cleaning services earned $12.54 an hour, black workers earned $12.02, and Hispanic workers earned $11.45 (**Table 7d**).

What Might Explain Changes in Real Wages?

Real wages could have fallen for a number of reasons: a drop in educational attainment, an increase in the share of the foreign-born or part-time workers, a change in the age distribution of the workforce, or declines in union density. In this section, we examine those plausible explanations and find that these factors do not seem to explain changing wage patterns. Educational attainment rose for virtually every occupational group — in some cases, substantially. Similarly, the share of the workforce that is foreign-born rose by only 1 percentage point overall and was lower in the lower-paying outpatient centers than in hospitals. Part-time employment also declined overall in hospitals and in most occupation groups. Part-time jobs did grow for social service workers in outpatient centers, but cannot explain wage declines in other occupational groups. Union density in healthcare remained steady throughout the decade — at 9.2 percent — higher than the private sector average. It rose for healthcare professional and technical workers in both hospitals and outpatient clinics but fell among non-professional support occupations — considerably in outpatient services, so this change may explain some of the wage declines in outpatient services.

Rising Educational Attainment

The educational attainment of healthcare workers increased between 2005 and 2015, as indicated in **Table 8**. The proportion of workers with a high school degree or less declined from 28.9 to 22.1 percent of workers while the proportion with a college degree or more increased from 32.8 to 38.3 percent of workers. The patterns are similar but even stronger within the hospital and outpatient segments. The proportion of workers with a high school degree or less fell from 21.1 to 15.3 percent in hospitals and from 18.9 to 14.4 percent in outpatient care centers. The proportion with some college also declined from 40.3 to 37.8 percent in hospitals and from 37.3 to 35.7 percent in outpatient centers. The proportion of workers with a college degree or more rose strongly — from 38.6 to 46.9 percent in hospitals and from 43.8 to 49.9 percent in outpatient care centers. Educational attainment is not the culprit in the declining wage story. It is also striking that educational levels in outpatient care centers were higher than those in hospitals. Differences in educational attainment do not appear to be

the reason that many workers employed in outpatient care centers experience pay penalties relative to those employed in hospitals.

TABLE 8
Employment Shares by Education and Occupation Group
(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
Total						
Less than High School	7.0	4.4	4.0	2.4	3.1	2.1
High School	21.9	17.7	17.1	12.9	15.8	12.3
Some Post-HS or College	38.4	39.6	40.3	37.8	37.3	35.7
College Degree	18.1	21.7	23.4	28.4	21.4	23.9
Advanced	14.7	16.6	15.2	18.5	22.4	26.0
Healthcare Professionals						
Less than High School	0.3	0.4	0.2	0.3	0.4	0.4
High School	1.7	1.4	1.4	1.0	0.9	1.5
Some Post-HS or College	29.7	24.7	34.3	26.3	20.7	18.6
College Degree	31.9	34.9	37.0	41.2	32.6	30.9
Advanced	36.4	38.6	27.1	31.3	45.4	48.7
Social Services						
Less than High School	1.6	1.4	1.4	1.4	1.4	1.2
High School	13.7	9.4	11.9	8.9	7.6	5.1
Some Post-HS or College	27.8	22.6	22.8	25.9	23.2	15.2
College Degree	30.9	30.1	28.9	31.8	35.4	31.0
Advanced	26.1	36.5	35.0	32.0	32.5	47.5
Medical Technicians						
Less than High School	2.0	1.4	2.0	1.4	1.2	1.6
High School	17.1	14.7	16.5	12.9	17.5	15.8
Some Post-HS or College	60.0	61.8	57.7	59.1	65.1	64.2
College Degree	16.5	18.4	19.5	22.1	13.1	15.3
Advanced	4.4	3.6	4.3	4.5	3.1	3.0
Health Aides and Assistants						
Less than High School	14.1	8.7	8.8	4.6	3.5	3.8
High School	36.4	29.7	32.6	24.8	29.0	19.1
Some Post-HS or College	41.9	51.1	48.4	56.5	55.2	59.4
College Degree	5.7	8.5	8.1	11.6	9.0	14.6
Advanced	1.9	2.0	2.2	2.5	3.3	3.1
Food Services						
Less than High School	28.8	17.2	20.9	12.5	29.0	2.3
High School	44.1	43.1	48.7	44.9	32.7	52.6
Some Post-HS or College	23.2	34.7	26.0	36.7	29.0	44.7
College Degree	3.4	4.3	3.9	5.1	9.3	0.0
Advanced	0.5	0.8	0.6	0.8	0.0	0.5
Cleaning Services						
Less than High School	33.3	23.3	30.8	20.5	42.7	19.6
High School	46.3	48.3	46.6	47.5	41.2	47.5
Some Post-HS or College	17.4	24.8	19.9	28.2	12.8	29.3
College Degree	2.6	3.0	2.3	3.3	3.3	3.2
Advanced	0.4	0.6	0.4	0.5	0.0	0.4

Source and notes: CEPR analysis of the ACS.

Disaggregating these trends by occupational group, we find that educational levels increased across all occupational groups in healthcare between 2005 and 2015. Among healthcare professionals and social

service occupations, workers with a college degree or more increased their share of employment. Among medical technicians, most of whom had some college, the share of workers with a high school degree or less declined. The proportion of health aides and assistants with some college education or more rose by over 20 percent in hospitals (to 70.6 percent) and more than 14 percent in outpatient facilities (to 77.1 percent) — and the share with a high school degree or less declined. And in both food services and cleaning services, the share of workers with less than a high school degree declined and the proportion with a high school degree or some college increased sharply. These patterns held in both the hospital and outpatient segments — with the exception of social service workers (whose education levels remained flat in hospitals). Across all occupational groups, educational attainment was higher in outpatient care centers than in hospitals.

Thus, educational attainment rose among virtually all occupational groups, with very similar patterns in hospitals and outpatient settings, and with higher educational levels in the latter. Despite these educational gains, however, median wages fell or were stagnant for many occupational groups. In some healthcare occupations, a college degree does not translate into a solid middle-class wage. For example, in 2015 64 percent of social service workers in hospitals and 78.5 percent in outpatient care had a four-year college degree or more, yet median annual pay for full-time, full-year workers in this occupation was less than $42,000 in hospitals and less than $38,000 in outpatient care.

The Share of Part-time Workers

The share of the workforce that is part-time is an important trend to watch because employers may replace full-time jobs with part-time jobs in order to save costs or increase flexibility. Workers who prefer to have full-time jobs will be negatively affected. Moreover, because part-time workers often receive lower pay and benefits than full-time workers, a higher proportion of part-time jobs may exert downward pressure on the wage levels of full-time workers.

In fact, for the industry as a whole, the share of healthcare workers who are part-time hardly changed between 2005 and 2015, remaining at about 23 percent (**Table 9**). In hospitals, however, it fell from 19.4 to 16.4 percent — a 15.5 percent decline overall — with the largest drop among healthcare professionals (by 20 percent). Part-time work remained about the same or increased slightly for food and cleaning service workers.

In outpatient care, part-time employment inched up slightly to 20.9 percent — a 3.5 percent increase. The part-time workforce increased the most for social service workers — by about one-third. But it fell among food service workers by about 25 percent. Thus, it's possible that the growth of part-time staff in outpatient settings could have put downward pressure on full-time wages, particularly among social service workers.

TABLE 9

Share of Part-time Workers by Occupation Group

(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
Total	23.7	22.8	19.4	16.4	20.2	20.9
Healthcare Professionals	21.9	19.5	22.0	17.5	21.3	22.1
Social Services	17.8	21.8	20.7	18.0	16.8	22.3
Medical Technicians	23.5	23.3	19.5	17.7	19.4	19.6
Health Aides and Assistants	30.4	31.2	25.1	23.6	25.4	25.7
Food Services	36.8	37.0	24.7	24.5	33.7	25.4
Cleaning Services	21.5	22.8	11.6	13.1	39.1	37.1

Source and notes: CEPR analysis of the ACS.

The Share of Foreign-born Workers

The share of the workforce that is foreign-born may also depress employee pay if foreign-born workers are employed at lower wages. But the share of foreign-born, in fact, changed very little between 2005 and 2015 (**Table 10**). In hospitals, the share rose by a percentage point to 15.3 in 2015. In both periods, above average employment of foreign-born workers occurred among healthcare professionals, health aides, food service workers, and cleaning service workers (the highest at about 25 percent).

Overall, employment of foreign-born workers in outpatient clinics was lower than in hospitals in both periods, and growth was negligible over the decade. This pattern was consistent across all occupational groups except cleaning services, where the percent of foreign-born rose from 21 percent to 28 percent.

TABLE 10

Share of Foreign-Born Workers by Occupation Group

(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
Total	13.9	15.6	14.3	15.3	12.7	12.9
Healthcare Professionals	15.7	16.8	16.1	16.8	14.1	13.2
Social Services	9.4	9.5	10.3	11.0	8.4	7.7
Medical Technicians	11.0	13.3	12.6	13.8	11.8	12.1
Health Aides and Assistants	16.7	19.0	16.3	17.8	14.9	15.3
Food Services	15.8	16.5	18.9	17.8	15.7	6.9
Cleaning Services	21.9	24.3	24.8	25.6	21.1	28.1

Source and notes: CEPR analysis of the ACS.

In addition, the percent of foreign-born workers in outpatient services actually fell among healthcare professionals, social service workers, and food service workers. In sum, there is no *prima facie* case that changes in the size of the foreign-born workforce affected healthcare wage patterns in this period.

The Age Distribution of Workers

It is useful to consider the age distribution of workers as a factor that may explain a decline in wage levels because younger and less-experienced workers are likely to earn lower wages. The overall healthcare sector, however, experienced an upward shift in the age distribution of the workforce between 2005 and 2015, which would tend to increase wages. The pattern was quite similar in hospitals and outpatient centers. In 2005, 53 percent of workers in hospitals were between 35–54 years old, while 17 percent were 55 years or older; by 2015 the age breakdown was 44.5 percent in the 35–54 age bracket and 24.1 percent in the 55 and older bracket. Similarly, in outpatient clinics in 2005, 50 percent of the workforce was between 35 and 54 years old and 17 percent was 55 years or older. By 2015, only 42.3 percent of the workforce was aged 35–54, while 21.7 percent was 55 years or older (**Table 11**).

TABLE 11
Employment Shares by Age
(percent)

	Overall Healthcare		Hospitals		Outpatient Care Centers	
	2005	2015	2005	2015	2005	2015
16–24	10.1	9.2	7.7	6.6	8.7	8.7
25–34	21.9	23.9	22.3	24.9	24.4	27.2
35–44	25.0	21.8	25.4	22.4	25.0	22.4
45–54	25.5	21.5	27.4	22.1	25.0	19.9
55–64	14.0	18.2	14.4	19.4	13.7	17.0
65+	3.5	5.3	2.8	4.7	3.2	4.7

Source and notes: CEPR analysis of the ACS.

Summing up, it is very unlikely that the stagnant or declining real wages of full-time, full-year workers in nonprofessional occupations in hospitals and across occupational groups in outpatient centers can be attributed to changes in educational attainment, the share of foreign-born workers, or the age distribution of workers. Part-time employment declined overall in hospitals and in most occupational groups. At most this could have contributed to the increase in the median wage of professional workers; it would not be expected to lead to the lower wages in other hospital occupational groups. Part-time jobs increased in outpatient centers, mainly among social service workers, but cannot explain median wage declines in other occupational categories.

Union Membership in Healthcare

Declines in union density have been shown to contribute to lower industry-wide wages as fewer workers receive a union wage premium or as non-union firms experience less pressure to mimic higher union wage rates. However, the union membership rate in the private sector healthcare industry was higher in 2005 (9.2 percent) than in the private sector generally (7.8 percent) and, in contrast to the private sector unionization rate, did not decline over the decade from 2005 to 2015 (see **Table 12a**,

b). The unionization rate in 2015 held at 9.2 percent. Overall, the number of union members in healthcare increased by 237,000 workers over the decade; it reached nearly 1.5 million members in 2015. Hospitals saw an increase of 116,000 unionized workers, and the much smaller outpatient care segment saw an increase of 31,000.

TABLE 12a

Union Members Healthcare Industry and Sectors, 2005, 2015

(thousands of workers)

	2005	2015	Change
All Workers	**15,685**	**14,795**	**-890**
All Private Sector	**8,255**	**7554**	**-701**
All Healthcare	**1,238**	**1,475**	**237**
Practitioners/Technical	597	804	207
Healthcare Support	246	246	7
Hospitals	**788**	**904**	**116**
Practitioners/Technical	461	601	140
Healthcare Support	82	82	-1
Outpatient Care Facilities	**60**	**91**	**31**
Practitioners/Technical	23	43	20
Healthcare Support	10	10	0
Physicians' Offices	**27**	**54**	**27**
Practitioners/Technical	14	27	13
Healthcare Support	4	8	4
Home Health Services	**73**	**111**	**38**
Practitioners/Technical	7	23	15
Healthcare Support	46	54	8
Nursing Home Facilities	**158**	**125**	**-33**
Practitioners/Technical	33	32	-1
Healthcare Support	78	61	-17

Source and notes: Bureau of Labor Statistics (2006, 2017c) and CEPR analysis of CPS ORG data.

The data on union members uses a slightly different terminology and categorization than we have employed in this report. Practitioners and technical employees include workers we have categorized as professionals as well as some that are included in our medical technician category. Healthcare support occupations include some medical technician occupations and all of the workers in our other occupational categories. All of the increases in union membership occurred among practitioners and technical employees; the number of union members in healthcare support occupations in healthcare overall and in hospitals and outpatient care centers was flat over the decade. The union membership rate for practitioners and technical workers increased in healthcare generally, and in hospitals and, perhaps surprisingly, in outpatient care facilities. But flat numbers of union members in the growing healthcare support occupations translated into declines in union density for these workers, most dramatically in outpatient care centers (Tables 12a, b).

TABLE 12b

Union Membership Rate Healthcare Industry and Sectors, 2005, 2015

(percent of employees)

	2005	2015	Change
All Workers	**12.5**	**11.1**	**-1.4**
All Private Sector	**7.8**	**6.7**	**-1.1**
All Healthcare	**9.2**	**9.2**	**0.0**
Practitioners/Technical	11.7	12.3	0.5
Healthcare Support	9.4	8.4	-1.0
Hospitals	**13.7**	**13.5**	**-0.2**
Practitioners/Technical	15.9	16.5	0.6
Healthcare Support	13.0	12.6	-0.4
Outpatient Care Facilities	**6.9**	**6.0**	**-0.9**
Practitioners/Technical	6.6	7.5	0.9
Healthcare Support	10.0	4.5	-5.6
Physicians' Offices	**1.7**	**3.6**	**1.9**
Practitioners/Technical	2.5	4.5	1.9
Healthcare Support	2.0	3.4	1.4
Home Health Services	**9.8**	**8.7**	**-1.2**
Practitioners/Technical	5.4	8.7	3.4
Healthcare Support	12.7	10.6	-2.0
Nursing Home Facilities	**8.4**	**6.9**	**-1.5**
Practitioners/Technical	8.1	6.9	-1.3
Healthcare Support	9.9	8.4	-1.5

Source and notes: Bureau of Labor Statistics (2006, 2017c) and CEPR analysis of CPS ORG data.

These trends in union density — and in bargaining strength of workers — may provide some clues to wage developments. The increased number (and steady membership rate) of hospital-based practitioners and technical workers who belong to a union may have contributed the modest increase in wages of professional workers in hospitals over the 2005 to 2015 decade. Similarly, the decline in union density for healthcare support workers may have contributed to the stagnant or declining wages in most of these occupations in hospitals. Sharp declines in union density (membership held steady but employment increased rapidly) for healthcare support workers in outpatient centers may have contributed directly to the decline in real wages for nonprofessional workers in these facilities

Finally, it could be that the bargaining power of employers has increased. In consolidated markets characterized by one or a few healthcare systems, employers may be able to exercise monopsony power to gain lower prices for inputs — in this case, lower wages of workers. The increase in hospital mergers and market concentration over the 2005–2015 decade may be part of the explanation for the stagnant or falling real wages experienced by most workers in occupations in healthcare with direct patient contact. Falling wages in hospitals would allow other providers to pay lower wages as well.

Wage Gaps, Pay Penalties, and Trends in Inequality

We also analyzed whether real wage trends described above led to two potential types of pay disparities in hospitals and outpatient clinics. First, within the same occupational group, is there a wage gap for women, blacks, Hispanics, and Asian/other? Second, within the same occupational group, do workers in outpatient settings receive lower median wages than comparable workers in hospitals? To address these questions, we conducted a series of wage regressions that examine, for each occupational group, the effect of work location (hospital or outpatient facility), demographic characteristics (age, education, gender, race/ethnicity, and nativity), and geographic (state) location on log real wage in 2005 and 2015 (**Tables S1–S6 in the Supplement to this report**). Coefficients were converted from log points to percentages for ease of exposition (**Tables 13a, b**; **Appendix D**, **Tables D1–6**).

Model 1 in Tables S1–S6 and D1–D6 reports the result of wage regressions for each occupation that includes these variables. Our main interest is in the effects of work location, gender and race/ethnicity on workers' wages. Model 2 adds an interaction between work location and gender, and interactions between work location and each of the race/ethnicity characteristics. Because women's wages controlling for age, education, race/ethnicity, nativity, and geographic location may be different in hospitals than in outpatient centers, we evaluate the gender wage gap in each occupational group using Model 2. For each occupation group, we report the wage gap between women and men in hospitals and in outpatient facilities separately. We do the same for race/ethnicity wage gaps (Table 13a). We also use Model 2 to examine pay penalties associated with working in an outpatient center relative to working in a hospital. We look at the pay penalty for women in outpatient centers compared to women in hospitals; for men in outpatient care compared to men in hospitals, and for women in outpatient locations compared to men in hospitals. We carry out similar analyses for each race/ethnicity group relative to whites (Table 13b).

Wage Gaps

We calculated gender and race/ethnicity wage gaps separately for each broad occupational group and work location. Within occupational groups, we controlled for educational attainment, age, nativity, and geographic location (state). In general, we are comparing wages of workers with similar educational levels and experience in broadly comparable jobs and locations. Among healthcare professionals, however, the educational distinctions are not fine enough to distinguish between medical doctors and advance practice nurses (nurse practitioners and physician's assistants) which both require advanced degrees but have different levels of skill and responsibilities. These jobs are 'gendered' in that women dominate the occupation of advance practice nursing. Thus the gender wage gap for healthcare professionals reflects both differences in pay for male and female doctors as well as the fact that advance practice nurses are predominantly female.

TABLE 13a

Wage Gap for Female, Black, and Hispanic Workers in Hospitals and Outpatient Care, 2015

	Female Workers				Black Workers				Hispanic Workers			
	Wage Gap (percent)		Annual $ Loss (2015 dollars)		Wage Gap (percent)		Annual $ Loss (2015 dollars)		Wage Gap (percent)		Annual $ Loss (2015 dollars)	
	Hos	Out	Hos	Out	Hos	Out	Hos	Out	Hos	Out	Hos	Out
Healthcare professionals	-16.9	-24.3	-13,804	-19,586	-9.9	-9.9	-6,738	-6,176	-5.7	-5.7	-3,879	-3,556
Social service workers												
Medical technicians	-7.7	-7.7	-3,640	-3,065	-6.9	-6.9	-3,163	-2,536				
Health aides and assistants	-7.7	-7.7	-2,358	-2,358								
Food service workers	-18.0	-18.0	-5,144	-4,594		-10.7		-2,726				
Cleaning service workers	-18.1	-18.1	-5,542	-5,030	-5.2	-5.2	-1,327	-1,356	-12.8	-12.8	-3,267	-3,339

Source and notes: CEPR regression analysis of ACS data. See Appendix D, Tables 1–6 for details. Blank cells mean there is no wage gap. Hos = Hospital, Out = Outpatient

The gender wage gap is largest for healthcare professionals — female professionals working full-time, full-year earn about 17 percent less than male professionals in hospitals and 24 percent less in outpatient care centers. This translates to $13,804 less on an annual basis in hospitals and $19,586 less in outpatient care centers (Table 13a).

Social service workers is the only occupational group within which there are no wage gaps between women and men. In both of the two largest nonprofessional occupational groups — medical technicians and health aides and assistants, women earn 7.7 percent less than men in hospitals and in outpatient care facilities. Relative to their male counterparts, this translates into an annual loss of pay of almost $2,400 a year for female health aides and assistants in both hospitals and outpatient care centers, and of about $3,600 for female med techs in hospitals and $3,200 for female med techs in outpatient care. In the lowest paid occupations — food service workers and cleaning service workers — women suffer a very large pay penalty relative to men of 18 percent in both hospitals and outpatient care centers. This translates into annual wage losses for women relative to men that are substantial for workers earning so little, ranging from $4,600 to $5,500 depending on occupation and work location (Table 13a).

Black-white wage gaps are more modest and less prevalent than female-male wage gaps. Among healthcare professionals, black workers earn 9.9 percent less than white workers in both hospitals and outpatient care centers. This translates into an annual loss of income for black workers relative to white workers of $6,738 in hospitals and $6,176 in outpatient care centers. There are no black-white

wage gaps for social service workers in either hospitals or outpatient facilities. Black med techs earn 6.9 percent less than white med techs in both work locations, earning $3,163 less on an annual basis in hospitals and $2,536 less in outpatient care. There is no black-white pay gap among health aides and assistants in either hospitals or outpatient care centers. Among food service workers, there is no black-white wage gap in hospitals but there is a gap of 10.7 percent in outpatient facilities or an annual pay loss for black workers relative to white of $2,726 in these facilities. Black workers in cleaning services earn 5.2 percent less than white workers in both hospitals and outpatient care centers. This translates into annual pay losses for black workers relative to white workers in these locations of $1,327 and $1,356 respectively (Table 13a).

There are no Hispanic-white wage gaps in hospitals or outpatient care facilities for workers employed as social service workers, medical technicians, health aides and assistants, or food service workers. Among healthcare professionals, Hispanic workers earn 5.7 percent less than white workers in both hospitals and outpatient facilities — a loss in annual pay of $3,879 and $3,556 respectively. This is smaller than the gender wage gap or the black-white wage gap. The Hispanic-white wage gap among cleaning service workers is 12.8 percent in hospitals and in outpatient care centers, an annual loss of pay for Hispanic workers relative to white workers in this occupation of $3,267 and $3,339 respectively (Table 13a).

It is noteworthy that one group — Asian/other workers — did not experience lower pay relative to white workers in any occupational group in 2015. In outpatient care centers Asian/other healthcare professionals experienced a wage premium of 4.9 percent ($3,057) relative to white workers (not shown in table).

Pay Penalties

In the previous section, we examined the gap in wages among workers in different demographic groups *within* hospitals and *within* outpatient care facilities. We turn now to an assessment of the differences in pay for workers in hospitals versus outpatient settings.

The differences vary for distinct demographic groups working in hospitals versus outpatient settings. In Table 13b, we examine the pay penalty for men in outpatient settings relative to men in hospitals, for women in outpatient settings relative to women in hospitals, and for women in outpatient settings relative to men in hospitals, for each occupational group. This analysis identifies the penalty (if any) for working in an outpatient facility compared to working in a hospital. The comparison of women in outpatient facilities with men in hospitals reflects the pay penalty, if any, plus the gender wage gap (if any) in hospitals and outpatient care facilities. Not reported in the table but included in the text are

the results of similar analyses for black workers, white workers, Hispanic workers, and Asian/other workers.

TABLE 13b

Pay Penalty for Work in Outpatient Settings by Gender and Occupation, 2015

	Percent Pay Penalty 2015	$ Loss in Annual Pay 2015
Healthcare professionals		
Women in Out relative to women in Hos	20.1	13,496
Men in Out relative to men in Hos	12.7	10,374
Women in Out relative to men in Hos	37.0	30,222
Social service workers		
Women in Out relative to women in Hos		
Men in Out relative to men in Hos		
Women in Out relative to men in Hos		
Medical technicians		
Women in Out relative to women in Hos	13.6	5,861
Men in Out relative to men in Hos	13.6	6,430
Women in Out relative to men in Hos	21.4	10,118
Health aides and assistants		
Women in Out relative to women in Hos		
Men in Out relative to men in Hos		
Women in Out relative to men in Hos		
Food service workers		
Women in Out relative to women in Hos		
Men in Out relative to men in Hos		
Women in Out relative to men in Hos	18.0	5,144
Cleaning service workers		
Women in Out relative to women in Hos		
Men in Out relative to men in Hos		
Women in Out relative to men in Hos	37.0	11,329

Source and notes: CEPR regression analysis of ACS data. See Appendix D, Tables 1–6 for full regressions. Blank cells mean no penalty. Hos = hospital, Out = outpatient.

Among healthcare professionals, we find that women and men in outpatient facilities earn less than their counterparts in hospitals, with wage penalties of 20.1 percent and 12.7 percent respectively. The annual wage loss for a woman healthcare professional who takes a job in an outpatient facility compared to one who takes a job in a hospital is $13,496. For men, the annual wage loss is $10,374. Comparing women in outpatient facilities with men in hospitals, we find that these women face a pay penalty due to both employment in outpatient facilities and gender wage gaps in both hospitals and outpatient care centers. Taken together, these combine into a pay penalty of 37.0 percent (Table 13b). Some of this latter pay penalty is due to the fact that most advance practice nurses are women as discussed earlier in the section on wage penalties.

We also examined the pay penalties for white, black, Hispanic and Asian/other healthcare professionals employed in outpatient care centers compared with hospitals. White, black and Hispanic professionals employed in outpatient facilities rather than hospitals all experienced a pay penalty of 12.7 percent. This translated into an annual pay loss of $8,643 for white professionals, of $8,355 for black professionals and of $8,427 for Hispanic professionals. Asian/other professionals experienced a pay premium of 4.9 percent in outpatient care facilities compared to hospitals, for an annual pay gain of $3,335.

Medical technicians also experienced substantial wage penalties for working in outpatient care centers compared to working in hospitals. Male and female med techs earned 13.6 percent less in outpatient facilities than their counterparts in hospitals, which translates into an annual wage loss of $6,430 for men and $5,861 for women. White, black, Hispanic and Asian/other med techs experienced the same 13.6 percent pay penalty for working in outpatient relative to hospital settings.

What explains the disparity in pay of healthcare professionals and medical technicians in hospitals and outpatient care facilities? It does not appear to be a difference in skills, as workers in outpatient care tend to be more highly educated than those employed in hospitals. There are differences in the complexity of some jobs, but these differences can go either way. Surgeons in ambulatory surgery centers, on the one hand, typically perform a narrower range of less complex operations than do surgeons in hospitals. Physical and occupational therapists, on the other hand, typically work under a doctor's supervision in hospitals and don't get to utilize the full range of their skills as they do in outpatient centers.

Jobs in outpatient care — especially for social service workers and medical technicians — due to the greater focus in the Affordable Care Act on population health management and preventative care for patients with chronic conditions or who are at high risk of needing to be admitted to a hospital. This includes gathering social as well as health data from patients, coordinating care across provider locations, following up to assure that patients are taking prescribed medications and keeping appointments with health providers. If anything, the educational attainment of these workers is higher and these jobs are more complex in outpatient settings and should pay more than they do in hospitals. Instead, the pay of social service workers in outpatient facilities is the same as in hospitals, while the pay of medical technicians in lower in outpatient care.

Jobs within the same broad occupational group may vary in other important ways between hospitals and outpatient facilities and entail what economists call 'compensating wage differentials' — advantages in outpatient care centers that compensate employees in these facilities for the lower pay. For example, physical therapists in hospitals spend much of their time training patients to toilet

themselves. Some physical therapists may prefer lower-paying jobs in outpatient facilities working with patients that do not require such training. Outpatient facilities typically do not require overnight shifts, and they may be located more conveniently for employees as well as patients. Some workers may value these advantages highly enough to accept lower paying jobs in outpatient care centers.

Workers' characteristics are not the only determinants of their pay. One important consideration is the lack of competition faced by hospitals and healthcare systems in geographic areas where consolidation of healthcare providers into just a few health systems has resulted in market concentration. This development means that many hospital and healthcare systems have substantial market (monopoly) power and are able to exercise considerable control over the prices they charge, setting high prices for procedures and bargaining for higher reimbursement rates from insurance companies to the detriment of consumers who face higher prices and insurance premiums. In general, reimbursement rates paid to hospitals by Medicare and Medicaid, as well as by private insurance companies, are higher than rates paid to outpatient clinics. Hospitals are in a position to be able to pay higher wages and may find themselves compelled to do so by the presence of unions or by internal norms of fairness. Unaffiliated outpatient care centers are in a far weaker position to bargain over prices and reimbursement rates, and those associated with hospitals generally do not retain their profits or control their finances. This puts pressure on outpatient care facilities to hold down wages. Healthcare providers in highly concentrated markets may also be able to exercise monopsony power, paying workers lower wages than they would be able to command in more competitive markets. If there are only one or a few healthcare employers in a geographic area, healthcare workers in that area may have no alternative but to accept whatever wage is offered.

Trends in Inequality

Trends in wages over the 2005–2015 decade have led to changes in inequality within and between groups in the healthcare industry. In hospitals, the modest rise in real wages among healthcare professionals and fall in wages for non-professional groups suggest that between-group inequality has increased in hospital settings. This runs counter to the expectation that equity norms lead to wage consolidation in large organizations. In outpatient care facilities, roughly stagnant wages for most workers combined with the steep decline in the pay of black men in the main nonprofessional occupation groups (medical technicians and health aides and assistants) means that race-based inequality has increased in this setting (Tables 7b, c, and d). Some demographic groups are more disadvantaged than others. Substantial gender wage gaps occur in every occupational group except social service workers in both hospitals and outpatient care facilities. While wage gaps are less prevalent for black and Hispanic workers, they do earn less than white workers in some occupations and work settings (Table 13a). Pay penalties for working in outpatient facilities relative to hospitals are prevalent among healthcare professionals and medical technicians, and (not reported in the table) for

Hispanics employed as health aides and assistants. In other occupational groups, the only pay penalties are for women in outpatient clinics relative to men in hospitals and these reflect the gender wage gaps in hospitals and outpatient care centers (Table 13b). We find similar results for pay penalties for blacks and Hispanics in outpatient care facilities relative to whites in hospitals.

Conclusion

Over the last decade or more, healthcare systems have restructured the organization of care delivery and moved many healthcare services from large hospitals to decentralized units that offer a wide range of pre-acute care and acute care procedures as well as preventative care. While hospitals continue to be by far the largest employers in the industry, employment in outpatient care has grown at 6 times the rate of hospitals in the last decade. And the direction of change is likely to continue in the future — particularly given the lingering possibility of reductions in Medicaid and private insurance coverage in a post-ACA world.

Integrated healthcare systems that offer care via decentralized outpatient centers in community locations provide important benefits to patients — convenience, preventative care, potentially higher quality at lower cost as a result of better coordination among providers; and most healthcare providers and unions have supported the move to more community-based care. But workers are bearing the costs of this organizational restructuring. The cost reductions have gone to improve financial outcomes for healthcare systems and insurers, but they have not been used to invest in the skills of front-line healthcare workers or to improve workers' wages. Hospitals in healthcare markets in which mergers have reduced the number of healthcare systems to just a few providers are able to exercise pricing power, raising the cost of procedures and insurance reimbursement rates to the detriment of consumers who face higher prices and higher insurance premiums. Patients' ability to pay may also vary across geographically dispersed localities — from suburban locations with a higher rate of private payers — to urban or rural locations with greater reliance on Medicaid patients. These differences in payer markets may contribute to differences in outpatient centers' ability to pay workers.

The findings in this report show that the unraveling of hospital-based employment systems is associated with stagnant or declining wages for healthcare workers. In addition, this shift is leading to greater wage inequality. In hospitals, the modest rise in real wages among healthcare professionals and the fall in wages for non-professional groups suggest that inequality has increased within hospital settings. A similar, but more modest development can be seen in outpatient care facilities. Some demographic groups are more disadvantaged than others. Substantial gender wage gaps occur in every occupational group in both hospitals and outpatient care facilities. In addition, pay penalties for working in outpatient facilities relative to hospitals are prevalent among professional workers and medical technicians.

References

Agha, Leila, Brigham Frandsen and James B. Rebitzer. 2017. "Causes and Consequences of Fragmented Care Delivery: Theory, Evidence, and Public Policy." Cambridge, MA: NBER Working Paper 23078. April. https://www.nber.org/papers/w23078.

AHA (American Hospital Association). 2016. "Trendwatch Chartbook 2016. Organizational Trends." Washington, D.C.: American Hospital Association. http://www.aha.org/research/reports/tw/chartbook/2016/chart2-9.pdf (accessed 03-15-17).

——. 2017. "Fast Facts on US Hospitals." Washington, D.C.: American Hospital Association. http://www.aha.org/research/rc/stat-studies/fast-facts.shtml (accessed 01-15-17).

Appelbaum, Eileen. 2017. "Domestic Outsourcing, Rent Seeking, and Increasing Inequality." David Gordon Memorial Lecture, Allied Social Science Association Meetings. January 6. Forthcoming in the *Review of Radical Political Economy*.

Barkholz, Dave. 2017. "Envision Rebrands Its Physician Services Business." Modern Healthcare, April 18. http://www.modernhealthcare.com/article/20170418/NEWS/170419872?utm_source=modernhealthcare&utm_medium=email&utm_content=20170418-NEWS-170419872&utm_campaign=hits (accessed 04-19-17).

Baumgarten, Allen. 2014. "Texas Health Care Market Review." Minneapolis, Minnesota: Allen Baumgarten. December.

——. 2015. "Florida Health Care Market Review." Minneapolis, Minnesota: Allen Baumgarten. December.

Becker, Scott and Tim Fry. 2014. "Healthcare Private Equity Investment — 5 Areas to Examine in 2014: Hospitals and Health Systems, Pain Management and Anesthesia, Ambulatory Surgery Centers, Urgent Care and Dental Practice Management." Becker's Hospital Review, January 13. http://www.beckershospitalreview.com/hospital-management-administration/healthcare-private-equity-investment-5-areas-to-examine-in-2014-hospitals-and-health-systems-pain-management-and-anethesia-ambulatory-surgery-centers-urgent-care-and-dental-practice-management.html (accessed 08-09-16).

Bivens, Josh. 2017. "The AHCA-but-worse plan should not be passed by the House today." Washington, D.C.: Economic Policy Institute. http://www.epi.org/blog/the-ahca-but-worse-plan-should-not-be-passed-by-the-house-today/ (accessed 05-10-2017).

Blumenthal, David, M.D., and Sara Collins. 2017. "House Narrowly Passes ACA Repeal-and-Replace Bill That Would Leave Millions Uninsured." Washington, D.C.: The Commonwealth Fund. May 5. http://www.commonwealthfund.org/publications/blog/2017/apr/amendment-aca-repeal-and-replace-bill (accessed 05-08-17).

Booz and Company. 2013. "Succeeding in Hospital and Health Systems MA." New York City: Booz and Company. http://www.strategyand.pwc.com/media/file/Strategyand_Succeeding-in-Hospital-and-Health-Systems-MA.pdf (accessed 03-15-17).

Brennan, Andrew. 2014. "Eating up: Downstream Markets Will Renew." *IBISWorld Industry Report 72231: Food Service Contractors in the US*, April. www.ibisworld.com.

Brown Gibbons Lang & Company. 2012. "Spotlight on: Hospitals and Health Systems." *Healthcare Insider: Healthcare & Life Sciences*, October.

Buettgens, Matthew, Linda J. Blumberg, and John Holahan. 2017. "The Impact on Health Care Providers of Partial ACA Repeal through Reconciliation." Washington, D.C.: The Urban Institute. http://www.urban.org/sites/default/files/publication/86916/2001046-the-impact-on-health-care-providers-of-partial-aca-repeal-through-reconciliation_0.pdf (accessed 01-11-17).

Bureau of Labor Statistics. 2006. "Union Members in 2005." Washington, D.C.: Bureau of Labor Statistics. https://www.bls.gov/news.release/archives/union2_01202006.pdf.

——. 2017a. "Historical Table B-1. Change from Dec. 2015 to Dec. 2016, not seasonally adjusted." Washington, D.C.: Bureau of Labor Statistics. https://www.bls.gov/webapps/legacy/cesbtab1.htm (accessed 02-03-17).

——. 2017b. "Employment Situation, Employees on Nonfarm Payrolls by Industry Sector and Selected Industry Detail, seasonally adjusted, Table B-1." Washington, D.C.: Bureau of Labor Statistics. https://www.bls.gov/news.release/empsit.t17.htm (accessed 02-02-17).

——. 2017c. "Union Members in 2016." Washington, D.C.: Bureau of Labor Statistics. https://www.bls.gov/news.release/pdf/union2.pdf.

——. 2017d. "Standard Occupational Classification." Washington, D.C.: Bureau of Labor Statistics. https://www.bls.gov/soc/.

CBO (Congressional Budget Office). 2017. "H.R. 1628, American Health Care Act of 2017: Cost Estimate as Passed by the House of Representatives on May 4, 2017." Washington, D.C.: Congressional Budget Office. https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/hr1628aspassed.pdf (accessed 05/25/17).

Cebul, Randall D., James B. Rebitzer, Lowell J. Taylor, and Mark E. Votruba. 2008. "Organizational Fragmentation and Care Quality in the U.S. Healthcare System." *The Journal of Economic Perspectives*, 22(4): 93–114.

Centers for Medicare and Medicaid Services. 2016. "National Health Expenditures Fact Sheet." Woodlawn, MD: Centers for Medicare and Medicaid Services. https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html (accessed 02-02-2017).

Cooper, Zack, Stuart V. Craig, Martin Gaynor, John Van Reenen. 2015. "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured." Cambridge, MA: NBER Working Paper 21815, December. https://www.nber.org/papers/w21815 (accessed 1-13-16).

Dobson-DaVanzo. 2016. "Estimating the Impact of Repealing the Affordable Care Act on Hospitals: Findings, Assumptions, and Methodology." Washington, D.C.: American Hospital Association. Report prepared for the American Hospital Association (AHA) and the Federation of American Hospitals (FAH). http://www.aha.org/content/16/impact-repeal-aca-report.pdf (accessed 01-09-17).

Dube, Arindrajit, and Ethan Kaplan. 2010. "Does Outsourcing Reduce Wages in the Low-wage Service Occupations? Evidence from Janitors and Guards." *Industrial and Labor Relations Review* 63(2): 287–306.

Dwyer, Rachel E. 2013. "The Care Economy? Gender, Economic Restructuring, and Job Polarization in the U.S. Labor Market." *American Sociological Review,* 78(3) 390–416.

Ettinger, D.A., and S.P. Berenbaum. 1996. "Health Care Mergers and Acquisitions: The Antitrust Perspective." Washington, D.C.: Bureau of National Affairs.

Evans, Melanie. 2016. "Private-Equity Backed Urgent-Care Developer Taps Dignity Health for California Expansion." Modern Health Care, February 9. http://www.modernhealthcare.com/article/20160209/NEWS/160209862.

Ferrari, Andrea and Adria Warren. 2016. "The Clinically-Integrated, Value-Focused World: w\2015 in Review and Seven Tips for 2016 and Beyond." *HealthCare Appraisers, Inc. and Foley & Lardner, LLP*, May. Available at http://www.healthcareappraisers.com/ (accessed 01-15-17).

Frandsen, Brigham R., Karen E. Joynt, James B. Rebitzer, and Ashish K. Jha. 2015. "Care Fragmentation, Quality, and Costs among Chronically Ill Patients." *American Journal of Managed Care*, 21(5): 355–326. http://www.ajmc.com/journals/issue/2015/2015-vol21-n5/care-fragmentation-quality-costs-among-chronically-ill-patients (accessed 3-13-16).

Galloro, Vince. 2011. "Growth Strategies: Chains Look beyond Inpatient Side." Modern Health Care, August 29. http://www.modernhealthcare.com/article/20110829/MAGAZINE/110829989.

Gaynor, Martin, Farzad Mostashari and Paul B. Ginsburg. 2017. "Making Health Care Markets Work: Competition Policy for Health Care." Report presented at the Summit on Health Care Markets, Washington, D.C. https://www.brookings.edu/research/making-health-care-markets-work-competition-policy-for-health-care/ (accessed 4-19-17).

Goldschmidt, Deborah, and Johannes F. Schmieder. 2015. "The Rise of Domestic Outsourcing and the Evolution of the German Wage Structure." Bonn: Institute for the Study of Labor. IZA Discussion Paper No. 9194.

Himmelstein, David U. and Steffe Woolhandler. 2016. "The current and projected taxpayer shares of U.S. health costs." *American Journal of Public Health*, online ahead of print, Jan. 21, 2016. http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302997.

Irving Levin Associates, Inc. 2013. "The Hospital Acquisition Report 2013." Norwalk, CT: Irving Levin Associates, Inc. Fourth Edition.

Johnson, Steven Ross. 2015. "TeamHealth to Acquire IPC Healthcare for $1.6 B." Modern Healthcare, August 4. http://www.modernhealthcare.com/article/20150804/NEWS/150809978?utm_source=modernhealthcare&utm_medium=email&utm_content=20150804-NEWS-150809978&utm_campaign=mh-alert (accessed 8-6-2015).

Kauffman Hall & Associates. 2016. "Hospital Merger and Acquisition Activity Rises in First Quarter of 2016, According to Kaufman Hall Analysis." June 1. https://www.kaufmanhall.com/software/news-detail/m_a-hospital-merger-and-acquisition-activity-rises-in-first-quarter-of-2016-according-to-kaufman-hall-analysis (accessed 03-15-17).

KeyBank. 2015. "Financing Acquisitions: Top Strategies for Today's Healthcare Providers." Cleveland, OH; KeyBank. http://cdn2.hubspot.net/hubfs/498900/HR_85875_KeyBank_ModernHealthcareWP.pdf.

Ku, Leighton, Erika Steinmetz, Erin Brantley, and Brian Bruen. 2017. "Repealing Federal Health Reform: Economic and Employment Consequences for States." Washington, D.C.: The Commonwealth Fund. http://www.commonwealthfund.org/publications/issue-briefs/2017/jan/repealing-federal-health-reform?omnicid=EALERT1150318&mid=slivingston@modernhealthcare.com (accessed 01-15-2017).

Kuran, Jack. 2015. "Hospitals in the US." *IBISWorld Industry Report 6211*. December.

Kutscher, Beth. 2015. "Breaking: Tenet Makes Big Ambulatory Play with Deal for Majority United Surgical Partners Stake." Modern Health Care, March 23. http://www.modernhealthcare.com/article/20150323/NEWS/150329984.

Litwin, Adam, Ariel Avgar, Edmund Becker. 2017. "Superbugs vs. Outsourced Cleaners: Employment Arrangements and the Spread of Healthcare-Associated Infections." *Industrial and Labor Relations Review*, 70(3):610–641.

Meyerhoefer, Chad D., Mary E. Deily, Susan A. Sherer, Shin-Yi Chou, Lizhong Peng, Michael Sheinberg, and Donald Levick. 2016 "The Consequences of Electronic Health Record Adoption for Physician Productivity and Birth Outcomes." *Industrial and Labor Relations Review,* 69 (4): 860–889. A Special Issue on Work and Employment Relations in Health Care.

Morse, Susan. 2017. "Uncompensated care costs at lowest level in 26 years at roughly $36 billion." Healthcare Finance. January 9. http://www.healthcarefinancenews.com/news/bolder-healthcare-solutions-acquires-rev-cycle-management-company-business-dynamics (accessed 01-14-17).

Rosenthal, Elisabeth. 2017. *An American Sickness: How Healthcare Became Big Business and How You Can Take It Back*. New York, NY: Penguin Press.

Rosin, Tamara. 2016. "Nonprofit Hospitals Increasingly Seek Strategic, Nontraditional Partnerships: 5 Key Thoughts." Becker's Hospital Review, May 17. http://www.beckershospitalreview.com/hospital-transactions-and-valuation/nonprofit-hospitals-increasingly-seek-strategic-nontraditional-partnerships-5-key-thoughts.html (accessed 07-25-16).

Rubenfire, Adam. 2015. "Swedish Covenant Joins Growing List of Hospital Urgent-Care Operators." Modern Health Care, July 27. http://www.modernhealthcare.com/article/20150727/NEWS/150729864 (accessed 07-15-16).

U.S. Census Bureau. 2016. "North American Industry Classification System, 2012 NAICS Definition." Suitland, MD: U.S. Census Bureau. https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart_code=62&search=2012%20NAICS%20Search.

World Bank. 2013. "Data: Health Expenditure Total (% of GDP)." Washington, D.C.: World Bank. http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS (accessed 9-22-2014).

Appendix A: Data Appendix

This report analyzes data from three sources: CEPR's extracts of the American Community Survey (ACS), Current Population Survey Outgoing Rotation Group (CPS ORG), and the Occupational Employment Statistics (OES) data from the Bureau of Labor Statistics. The data in the report cover the years 2005 and 2015.

The **Occupational Employment Statistics** (OES) program conducts a survey of establishments designed to produce estimates of employment and wages for over 800 occupations and about 400 private sector, nonfarm industries. The OES program surveys approximately 200,000 establishments per panel (every six months), taking three years to fully collect the sample of 1.2 million establishments.

The **American Community Survey** (ACS) is an ongoing survey that provides vital information on a yearly basis about our nation and its people. In 2015, the ACS selected a sample of approximately 3.54 million housing units and received over 2.31 million final survey responses. Subjects covered include demographic variables (sex, age, race, Hispanic or Latino origin, nativity, educational attainment) and economic variables (employment, full- and part-time status, wages of full-time, full-year workers).

The **Current Population Survey** (CPS) is a monthly survey of about 60,000 households conducted by the Bureau of Census for the Bureau of Labor Statistics. It provides a comprehensive body of data, including employment, hours of work, earnings, and demographic and labor force characteristics. Every household that enters the CPS is interviewed each month for four months, then ignored for eight months, then interviewed again for four more months. Usual weekly hours/earning questions are asked only of households in their 4th and 8th interview (along with basic demographic and labor force characteristics). These outgoing interviews are the only ones included in the **Outgoing Rotation Group** (ORG) data. One fourth of the households are in an outgoing rotation each month.

Industry Segments

The five major segments of the healthcare industry are hospitals, outpatient care centers, offices of physicians, home healthcare services, and nursing home facilities. In this report, we focus on the experiences of workers in hospitals and outpatient care centers, but some data on workers in offices of physicians, home healthcare services, and nursing home facilities are discussed briefly. The North American Industry Classification System (NAICS) codes were used and are listed in **Table A1**.

TABLE A1

North American Industry Classification System Codes

622	**Hospitals**	
6214	**Outpatient Care Centers**	
	621410	**Family Planning Centers**
		Abortion clinics
		Birth control clinics
		Childbirth preparation classes
		Counseling services, family planning
		Family planning centers
		Family planning counseling services
		Fertility clinics
		Pregnancy counseling centers
		Reproductive health services centers
	621420	**Outpatient Mental Health and Substance Abuse Centers**
		Alcoholism treatment centers and clinics (except hospitals), outpatient
		Detoxification centers and clinics (except hospitals), outpatient
		Drug addiction treatment centers and clinics (except hospitals), outpatient
		Mental health centers and clinics (except hospitals), outpatient
		Outpatient mental health centers and clinics (except hospitals)
		Outpatient treatment centers and clinics (except hospitals) for substance abuse
		Outpatient treatment centers and clinics for alcoholism
		Outpatient treatment centers and clinics for drug addiction
		Psychiatric centers and clinics (except hospitals), outpatient
		Substance abuse treatment centers and clinics (except hospitals), outpatient
	62149	**Other Outpatient Care Centers**
		Dialysis centers and clinics
		Outpatient biofeedback centers and clinics
		Freestanding ambulatory surgical centers and clinics
		Outpatient community health centers and clinics
		Freestanding emergency medical centers and clinics
		Outpatient sleep disorder centers and clinics
		Health maintenance organization (HMO) medical centers and clinics
6211	**Offices of Physicians**	
6213	**Home Health Care Services**	
6231	**Nursing Care Facilities**	

Source: U.S. Census Bureau (2016).

Occupations

Within each industry segment, the following broad occupational groups were analyzed: healthcare professionals, social services, medical technicians, health aides and assistants, food services, and cleaning services. The Standard Occupational Classification (SOC) codes were used and are listed in **Table A2**. 2000 SOC codes were used for 2005 data and 2010 SOC codes were used for 2015 data.

TABLE A2

Standard Occupational Classification Codes

Occupational Group	Detailed 2000 SOC codes for 2005 data		Occupational Group	Detailed 2000 SOC codes for 2015 data	
	21-1010	Counselors		21-1010	Counselors
	21-1011	Substance Abuse and Behavioral Disorder Counselors		21-1011	Substance Abuse and Behavioral Disorder Counselors
	21-1012	Educational, Vocational, and School Counselors		21-1012	Educational, Guidance, School, and Vocational Counselors
	21-1013	Marriage and Family Therapists		21-1013	Marriage and Family Therapists
	21-1014	Mental Health Counselors		21-1014	Mental Health Counselors
	21-1015	Rehabilitation Counselors		21-1015	Rehabilitation Counselors
Social Services	21-1019	Counselors, All Other	**Social Services**	21-1019	Counselors, All Other
	21-1090	Miscellaneous Community and Social Service Specialists		21-1090	Miscellaneous Community and Social Service Specialists
	21-1091	Health Educators		21-1091	Health Educators
	21-1092	Probation Officers and Correctional Treatment Specialists		21-1092	Probation Officers and Correctional Treatment Specialists
	21-1093	Social and Human Service Assistants		21-1093	Social and Human Service Assistants
	21-1099	Community and Social Service Specialists, All Other		21-1094	Community Health Workers
				21-1099	Community and Social Service Specialists, All Other
	21-1020	Social Workers		21-1020	Social Workers
	21-1021	Child, Family, and School Social Workers		21-1021	Child, Family, and School Social Workers
	21-1022	Medical and Public Health Social Workers		21-1022	Healthcare Social Workers
	21-1023	Mental Health and Substance Abuse Social Workers		21-1023	Mental Health and Substance Abuse Social Workers
	21-1029	Social Workers, All Other		21-1029	Social Workers, All Other
	29-1010	Chiropractors		29-1010	Chiropractors
	29-1011	Chiropractors		29-1011	Chiropractors
	29-1020	Dentists		29-1020	Dentists
	29-1021	Dentists, General		29-1021	Dentists, General
	29-1022	Oral and Maxillofacial Surgeons		29-1022	Oral and Maxillofacial Surgeons
	29-1023	Orthodontists		29-1023	Orthodontists
	29-1024	Prosthodontists		29-1024	Prosthodontists
	29-1029	Dentists, All Other Specialists		29-1029	Dentists, All Other Specialists
	29-1030	Dietitians and Nutritionists		29-1030	Dietitians and Nutritionists
	29-1031	Dietitians and Nutritionists		29-1031	Dietitians and Nutritionists
	29-1040	Optometrists		29-1040	Optometrists
	29-1041	Optometrists		29-1041	Optometrists
Healthcare Professionals	29-1050	Pharmacists	**Healthcare Professionals**	29-1050	Pharmacists
	29-1051	Pharmacists		29-1051	Pharmacists
	29-1060	Physicians and Surgeons		29-1060	Physicians and Surgeons
	29-1061	Anesthesiologists		29-1061	Anesthesiologists
	29-1062	Family and General Practitioners		29-1062	Family and General Practitioners
	29-1063	Internists, General		29-1063	Internists, General
	29-1064	Obstetricians and Gynecologists		29-1064	Obstetricians and Gynecologists
	29-1065	Pediatricians, General		29-1065	Pediatricians, General
	29-1066	Psychiatrists		29-1066	Psychiatrists
	29-1067	Surgeons		29-1067	Surgeons
	29-1069	Physicians and Surgeons, All Other		29-1069	Physicians and Surgeons, All Other
	29-1070	Physician Assistants		29-1070	Physician Assistants
	29-1071	Physician Assistants		29-1071	Physician Assistants
	29-1080	Podiatrists		29-1080	Podiatrists
	29-1080	Podiatrists			
	29-1081	Podiatrists		29-1081	Podiatrists
	29-1110	Registered Nurses		29-1120	Therapists
	29-1111	Registered Nurses		29-1122	Occupational Therapists

TABLE A2 (cont.)

Standard Occupational Classification Codes

Occupational Group	Detailed 2000 SOC codes for 2005 data		Occupational Group	Detailed 2000 SOC codes for 2015 data	
Healthcare Professionals (cont.)	29-1120	Therapists	Healthcare Professionals (cont.)	29-1123	Physical Therapists
	29-1121	Audiologists		29-1124	Radiation Therapists
	29-1122	Occupational Therapists		29-1125	Recreational Therapists
	29-1123	Physical Therapists		29-1126	Respiratory Therapists
	29-1124	Radiation Therapists		29-1127	Speech-Language Pathologists
	29-1125	Recreational Therapists		29-1128	Exercise Physiologists
	29-1126	Respiratory Therapists		29-1129	Therapists, All Other
	29-1127	Speech-Language Pathologists		29-1140	Registered Nurses
	29-1129	Therapists, All Other		29-1141	Registered Nurses
	29-1190	Miscellaneous Health Diagnosing and Treating Practitioners		29-1150	Nurse Anesthetists
	29-1199	Health Diagnosing and Treating Practitioners, All Other		29-1151	Nurse Anesthetists
	29-9010	Occupational Health and Safety Specialists and Technicians		29-1160	Nurse Midwives
	29-9011	Occupational Health and Safety Specialists		29-1161	Nurse Midwives
	29-9012	Occupational Health and Safety Technicians		29-1170	Nurse Practitioners
	29-9090	Miscellaneous Health Practitioners and Technical Workers		29-1171	Nurse Practitioners
	29-9091	Athletic Trainers		29-1180	Audiologists
	29-9099	Healthcare Practitioners and Technical Workers, All Other		29-1181	Audiologists
				29-1190	Miscellaneous Health Diagnosing and Treating Practitioners
				29-1199	Health Diagnosing and Treating Practitioners, All Other
				29-9010	Occupational Health and Safety Specialists and Technicians
				29-9011	Occupational Health and Safety Specialists
				29-9012	Occupational Health and Safety Technicians
				29-9090	Miscellaneous Health Practitioners and Technical Workers
				29-9091	Athletic Trainers
				29-9092	Genetic Counselors
				29-9099	Healthcare Practitioners and Technical Workers, All Other
Medical Technicians	29-2010	Clinical Laboratory Technologists and Technicians	Medical Technicians	29-2010	Clinical Laboratory Technologists and Technicians
	29-2011	Medical and Clinical Laboratory Technologists		29-2011	Medical and Clinical Laboratory Technologists
	29-2012	Medical and Clinical Laboratory Technicians		29-2012	Medical and Clinical Laboratory Technicians
	29-2020	Dental Hygienists		29-2020	Dental Hygienists
	29-2021	Dental Hygienists		29-2021	Dental Hygienists
	29-2030	Diagnostic Related Technologists and Technicians		29-2030	Diagnostic Related Technologists and Technicians
	29-2031	Cardiovascular Technologists and Technicians		29-2031	Cardiovascular Technologists and Technicians
	29-2032	Diagnostic Medical Sonographers		29-2032	Diagnostic Medical Sonographers
	29-2033	Nuclear Medicine Technologists		29-2033	Nuclear Medicine Technologists
	29-2034	Radiologic Technologists and Technicians		29-2034	Radiologic Technologists
	29-2040	Emergency Medical Technicians and Paramedics		29-2035	Magnetic Resonance Imaging Technologists
	29-2041	Emergency Medical Technicians and Paramedics		29-2040	Emergency Medical Technicians and Paramedics
	29-2050	Health Diagnosing and Treating Practitioner Support Technicians		29-2041	Emergency Medical Technicians and Paramedics
	29-2051	Dietetic Technicians		29-2050	Health Practitioner Support Technologists and Technicians
	29-2052	Pharmacy Technicians		29-2051	Dietetic Technicians

TABLE A2 (cont.)

Standard Occupational Classification Codes

Occupational Group	Detailed 2000 SOC codes for 2005 data		Occupational Group	Detailed 2000 SOC codes for 2015 data	
	29-2053	Psychiatric Technicians		29-2052	Pharmacy Technicians
	29-2054	Respiratory Therapy Technicians		29-2053	Psychiatric Technicians
	29-2055	Surgical Technologists		29-2054	Respiratory Therapy Technicians
	29-2056	Veterinary Technologists and Technicians		29-2055	Surgical Technologists
	29-2060	Licensed Practical and Licensed Vocational Nurses		29-2056	Veterinary Technologists and Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses		29-2057	Ophthalmic Medical Technicians
	29-2070	Medical Records and Health Information Technicians		29-2060	Licensed Practical and Licensed Vocational Nurses
	29-2071	Medical Records and Health Information Technicians		29-2061	Licensed Practical and Licensed Vocational Nurses
Medical Technicians (cont.)	29-2080	Opticians, Dispensing	**Medical Technicians (cont.)**	29-2070	Medical Records and Health Information Technicians
	29-2081	Opticians, Dispensing		29-2071	Medical Records and Health Information Technicians
	29-2090	Miscellaneous Health Technologists and Technicians		29-2080	Opticians, Dispensing
	29-2091	Orthotists and Prosthetists		29-2081	Opticians, Dispensing
	29-2099	Health Technologists and Technicians, All Other		29-2090	Miscellaneous Health Technologists and Technicians
				29-2091	Orthotists and Prosthetists
				29-2092	Hearing Aid Specialists
				29-2099	Health Technologists and Technicians, All Other
	31-1010	Nursing, Psychiatric, and Home Health Aides		31-1010	Nursing, Psychiatric, and Home Health Aides
	31-1011	Home Health Aides		31-1011	Home Health Aides
	31-1012	Nursing Aides, Orderlies, and Attendants		31-1013	Psychiatric Aides
	31-1013	Psychiatric Aides		31-1014	Nursing Assistants
	31-2010	Occupational Therapist Assistants and Aides		31-1015	Orderlies
	31-2011	Occupational Therapist Assistants		31-2010	Occupational Therapy Assistants and Aides
	31-2012	Occupational Therapist Aides		31-2011	Occupational Therapy Assistants
	31-2020	Physical Therapist Assistants and Aides		31-2012	Occupational Therapy Aides
	31-2021	Physical Therapist Assistants		31-2020	Physical Therapist Assistants and Aides
	31-2022	Physical Therapist Aides		31-2021	Physical Therapist Assistants
	31-9010	Massage Therapists		31-2022	Physical Therapist Aides
	31-9011	Massage Therapists		31-9010	Massage Therapists
Aides	31-9090	Miscellaneous Healthcare Support Occupations	**Aides**	31-9011	Massage Therapists
	31-9091	Dental Assistants		31-9090	Miscellaneous Healthcare Support Occupations
	31-9092	Medical Assistants		31-9091	Dental Assistants
	31-9093	Medical Equipment Preparers		31-9092	Medical Assistants
	31-9094	Medical Transcriptionists		31-9093	Medical Equipment Preparers
	31-9095	Pharmacy Aides		31-9094	Medical Transcriptionists
	31-9096	Veterinary Assistants and Laboratory Animal Caretakers		31-9095	Pharmacy Aides
	31-9099	Healthcare Support Workers, All Other		31-9096	Veterinary Assistants and Laboratory Animal Caretakers
				31-9097	Phlebotomists
				31-9099	Healthcare Support Workers, All Other
	35-1010	First-Line Supervisors/Managers, Food Preparation and Serving Workers		35-1010	Supervisors of Food Preparation and Serving Workers
	35-1011	Chefs and Head Cooks		35-1011	Chefs and Head Cooks
	35-1012	First-Line Supervisors/Managers of Food Preparation and Serving Workers		35-1012	First-Line Supervisors of Food Preparation and Serving Workers
Food Services	35-2010	Cooks	**Food Services**	35-2010	Cooks
	35-2011	Cooks, Fast Food		35-2011	Cooks, Fast Food
	35-2012	Cooks, Institution and Cafeteria		35-2012	Cooks, Institution and Cafeteria
	35-2013	Cooks, Private Household		35-2013	Cooks, Private Household
	35-2014	Cooks, Restaurant		35-2014	Cooks, Restaurant

TABLE A2 (cont.)

Standard Occupational Classification Codes

Occupational Group	Detailed 2000 SOC codes for 2005 data		Occupational Group	Detailed 2000 SOC codes for 2015 data	
Food Services (cont.)	35-2015	Cooks, Short Order	Food Services (cont.)	35-2015	Cooks, Short Order
	35-2019	Cooks, All Other		35-2019	Cooks, All Other
	35-2020	Food Preparation Workers		35-2020	Food Preparation Workers
	35-2021	Food Preparation Workers		35-2021	Food Preparation Workers
	35-3020	Fast Food and Counter Workers		35-3020	Fast Food and Counter Workers
	35-3021	Combined Food Preparation and Serving Workers, Including Fast Food		35-3021	Combined Food Preparation and Serving Workers, Including Fast Food
	35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop		35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
	35-3030	Waiters and Waitresses		35-3030	Waiters and Waitresses
	35-3031	Waiters and Waitresses		35-3031	Waiters and Waitresses
	35-3040	Food Servers, Nonrestaurant		35-3040	Food Servers, Nonrestaurant
	35-3041	Food Servers, Nonrestaurant		35-3041	Food Servers, Nonrestaurant
	35-9010	Dining Room and Cafeteria Attendants and Bartender Helpers		35-9010	Dining Room and Cafeteria Attendants and Bartender Helpers
	35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers		35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers
	35-9020	Dishwashers		35-9020	Dishwashers
	35-9021	Dishwashers		35-9021	Dishwashers
	35-9030	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop		35-9030	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
	35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop		35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
	35-9090	Miscellaneous Food Preparation and Serving Related Workers		35-9090	Miscellaneous Food Preparation and Serving Related Workers
	35-9099	Food Preparation and Serving Related Workers, All Other		35-9099	Food Preparation and Serving Related Workers, All Other
Cleaning Services	37-1010	First-Line Supervisors/Managers, Building and Grounds Cleaning and Maintenance Workers	Cleaning Services	37-1010	First-Line Supervisors of Building and Grounds Cleaning and Maintenance Workers
	37-1011	First-Line Supervisors/Managers of Housekeeping and Janitorial Workers		37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers
	37-1012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers		37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
	37-2010	Building Cleaning Workers		37-2010	Building Cleaning Workers
	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners		37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners
	37-2012	Maids and Housekeeping Cleaners		37-2012	Maids and Housekeeping Cleaners
	37-2019	Building Cleaning Workers, All Other		37-2019	Building Cleaning Workers, All Other
	37-2020	Pest Control Workers		37-2020	Pest Control Workers
	37-2021	Pest Control Workers		37-2021	Pest Control Workers
	37-3010	Grounds Maintenance Workers		37-3010	Grounds Maintenance Workers
	37-3011	Landscaping and Groundskeeping Workers		37-3011	Landscaping and Groundskeeping Workers
	37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation		37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation
	37-3013	Tree Trimmers and Pruners		37-3013	Tree Trimmers and Pruners
	37-3019	Grounds Maintenance Workers, All Other		37-3019	Grounds Maintenance Workers, All Other

Source: Bureau of Labor Statistics (2017d).

Employment Levels

The OES was used to determine overall healthcare employment levels as well as employment levels of the healthcare occupation groups listed in Table A2.

The OES data do not contain any demographic information for employees. The ACS was used to determine the shares of workers within each industry/occupation group by various demographic breakdowns, including gender, race/ethnicity, educational attainment, full- and part-time status, nativity, and age. These shares were then applied to the employment levels from the OES to determine the final employment levels.

Wages

The data in the main text of this paper used real 2005 and 2015 median hourly wages of full-year (50 or more weeks) and full-time (35 or more hours per week) workers using the ACS. The wages used in Appendix C are real 2015 median hourly wages for all workers, using the CPS ORG. The ACS only reports annual wage data. Hourly wages for full-time, full-year workers were calculated using the number of hours worked per week and an imputed value of 51 for the number of weeks worked (this is the midpoint of the 50-52 category of the original weeks worked variable).

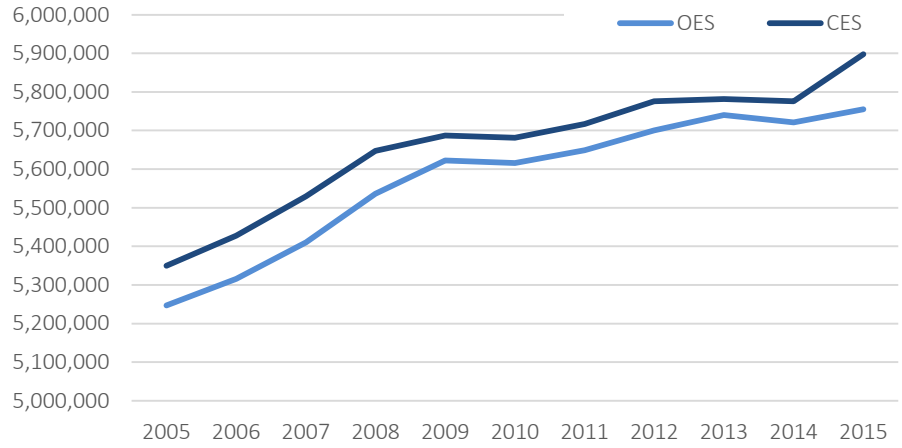
Data

The underlying CPS ORG and ACS data used in this report are available at http://ceprdata.org/. The OES data are available at https://www.bls.gov/oes/.

Appendix B: Employment Trends, 2005–2015, OES and CES Compared

FIGURE B1

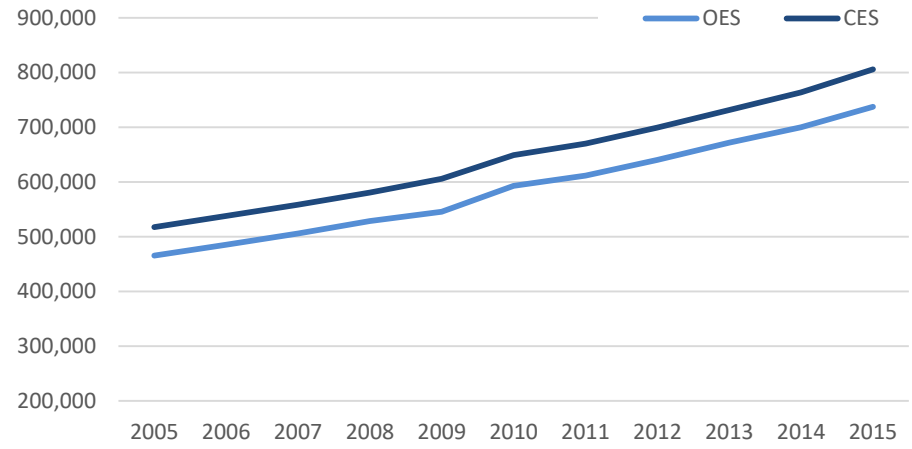
Hospital Employment Growth, 2005–2015, OES and CES Compared



Source and notes: CEPR analysis of BLS data: Occupational Establishment Survey (OES) and Current Employment Survey (CES).

FIGURE B2

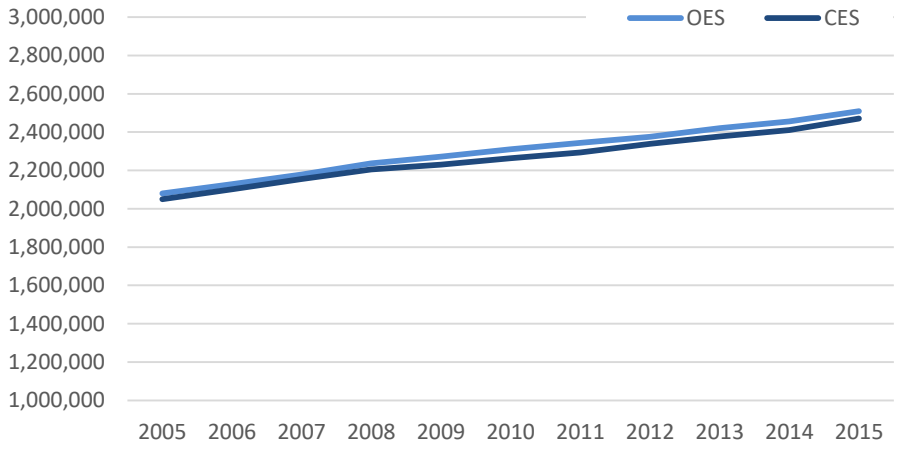
Outpatient Employment Growth, 2005–2015, OES and CES Compared



Source and notes: CEPR analysis of BLS data: Occupational Establishment Survey (OES) and Current Employment Survey (CES).

FIGURE B3

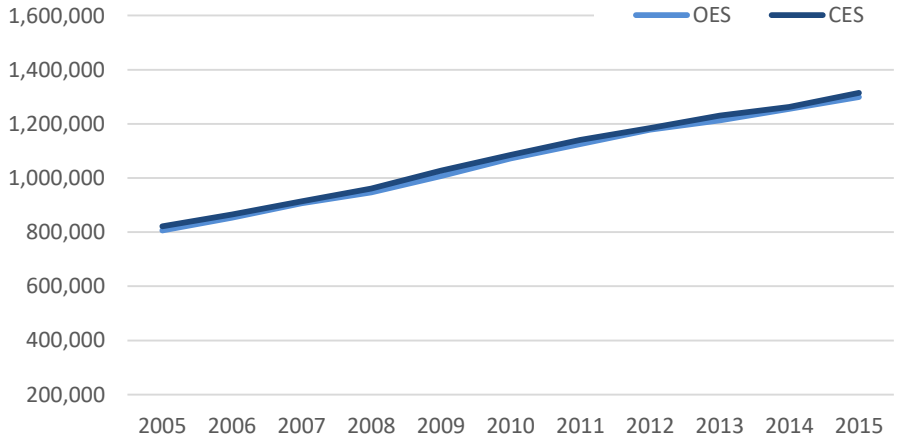
Physician Offices Employment Growth, 2005–2015, OES and CES Compared



Source and notes: CEPR analysis of BLS data: Occupational Establishment Survey (OES) and Current Employment Survey (CES).

FIGURE B4

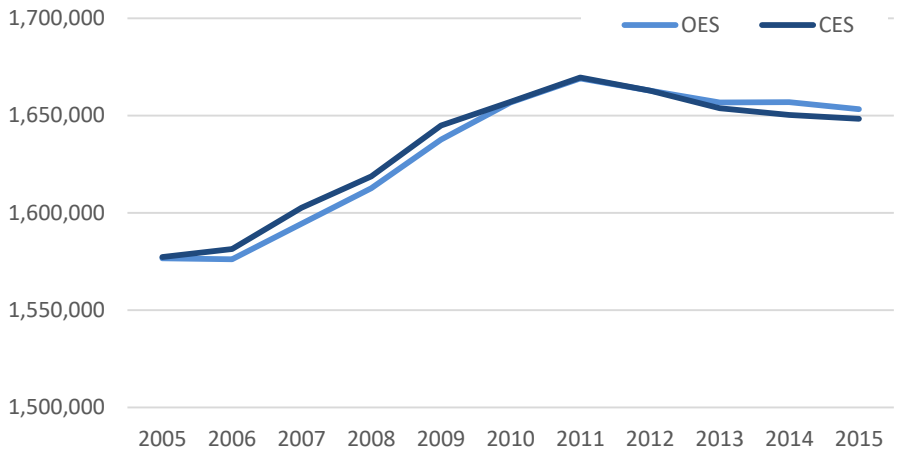
Home Health Care Services Employment Growth, 2005–2015, OES and CES Compared



Source and notes: CEPR analysis of BLS data: Occupational Establishment Survey (OES) and Current Employment Survey (CES).

FIGURE B5

Nursing Care Facilities Employment Growth, 2000–2015, OES and CES Compared



Source and notes: CEPR analysis of BLS data: Occupational Establishment Survey (OES) and Current Employment Survey (CES).

Appendix C: Supplemental Wage Data, CPS Outgoing Rotation Group (ORG)

As noted earlier, the ACS has a large sample size that allows for analysis of the industry and occupation groups in this report. However, many researchers and readers of this report may be more familiar with wage data in the CPS ORG data set. The main disadvantage of using the CPS ORG for this kind of analysis is the much smaller sample size of the CPS ORG compared to the ACS. The small number of workers employed in food services and cleaning services in outpatient care centers results in data for subgroups by demographic characteristics or full- vs. part-time hours that is volatile in both data sets, but even more problematic in the CPS ORG. We report data for these occupational groups in **Table C1,** but do not discuss them.

Comparing wage data in the ACS and CPS ORG data sets, we find that the median real wage of workers in each occupational group in healthcare overall, hospitals and outpatient care centers are roughly similar. Median real wages in the CPS ORG are dominated by the much larger group of full-time as compared to part-time workers. But the CPS ORG reveals the steep decline in real wages of part-time workers in some occupational groups, notably health aides and assistants (Table C1).

Using the CPS ORG data, we find that median real wages in healthcare overall increased modestly in 2015 compared with 2005, rising $1.01 over the decade to $19.23. Results differed, however, between full-time workers who experienced an increase of 63 cents an hour to $20 and part-time workers whose wages fell by 79 cents to $15. This contrasts with a fall in median real wages in healthcare overall in the ACS data (Table 6a). The increase in pay overall in healthcare in the CPS ORG data reflects a rise in the hourly pay of full-time workers in hospitals; the pay of part-time hospital employees declined. Pay in outpatient care fell 2.1 percent, in this instance with full-time workers experiencing a steeper decline than part-time workers (Table C1). The findings for wages in hospitals and outpatient care centers broadly mirror those using ACS data.

The median hourly pay in 2015 of all professional workers was $30.77 in hospitals and $28.00 in outpatient care in the CPS ORG data, compared with $33.22 in hospitals and $29.99 in outpatient care using the ACS. However wages of professionals increased in 2015 compared with 2005 in both hospitals and outpatient care using the ACS (Table 6b), while they fell in both settings for both full- and part-time workers using the CPS ORG data (Table C1). The median pay of workers in social services was $22.00 in hospitals in 2015 and $21.00 in outpatient care centers in the CPS ORG data

(Table C1). This compares with median wages that year of $20.12 in hospitals and $18.16 in outpatient care in the ACS (Table 6b).

Wages of medical technicians are similar in both data sets. The median wage of this occupational group in the CPS ORG was $21.99 in hospitals in 2015 and $17.00 in outpatient centers. Medical technician wages increased slightly in hospitals and were flat in outpatient care in 2015 compared with 2005 (Table C1). In the ACS data, the median wage of medical technicians in 2015 was $21.60 in hospitals and $17.67 in outpatient facilities, down slightly over the decade in both settings (Table 6c).

Finally, health aides and assistants earned $13.50 an hour in hospitals in the CPS ORG data in 2015, up two cents compared to 2005. Full-time workers saw a small increase in their real wage over the decade, but part-time aides and assistants experienced a decline of about 10 percent in hourly pay. In outpatient care facilities the overall median real wage was $14.00 an hour in 2015, down 57 cents over the decade. Median real wages of full-time workers fell very slightly compared with 2005, but wages of part-time workers fell dramatically – by more than $4 an hour (Table C1). In the ACS data, median real wages of health aides and assistants fell by 15 cents in hospitals to $14.72 and rose by a penny in outpatient care facilities to $14.28 over the decade (Table 6c). While median wages in this occupational group are similar in the two data sets, the CPS ORG data demonstrate dramatic declines in wages of part-time health aides and assistants in both hospitals and outpatient care facilities.

The two most striking results that we found in our earlier analysis of wage developments using data from the ACS are apparent in this analysis as well. First, wages have fallen broadly for occupational groups in both hospitals and outpatient care centers. In the CPS ORG data, even professionals employed in hospitals saw their real wages fall slightly over the 2005–2015 decade (by 1.3 percent), whereas they are stagnant in the ACS data. Workers also face a steep pay penalty for working in outpatient care facilities, compared to what workers employed in hospitals earn. In both analyses, health aides and assistants did not experience a pay penalty for working in outpatient facilities. In the CPS ORG data, the pay of full-time aides and assistants is on a par with that of aides and assistants in hospitals, while part-time aides and assistants earn marginally more in outpatient facilities.

TABLE C1

Employment Shares and Real Median Hourly Wages (2015$) of Full-time and Part-time Workers, Selected Occupations 2005, 2015

(2015 dollars)

	Overall Healthcare						Hospitals						Outpatient Care Centers						Hourly Wage Premium /Penalty 2015	Annual Premium /Penalty 2015
	2005		2015		% Change	2015	2005		2015		% Change	2015	2005		2015		% Change	2015		
	Wage	Share	Wage	Share		N	Wage	Share	Wage	Share		N	Wage	Share	Wage	Share		N		
All Occupations	**18.22**	**1.000**	**19.23**	**1.000**	**5.5**	**20,582**	**22.59**	**1.000**	**23.55**	**1.000**	**4.2**	**8,537**	**20.43**	**1.000**	**20.00**	**1.000**	**-2.1**	**2,036**	**-3.55**	**-7,384**
Part-time	15.79	0.219	15.00	0.199	-5.0	4,168	23.27	0.178	22.49	0.142	-3.4	1,239	18.22	0.183	18.00	0.172	-1.2	367	-4.49	-9,339
Full-time	19.37	0.781	20.00	0.801	3.3	16,414	22.47	0.822	23.75	0.858	5.7	7,298	20.44	0.817	20.00	0.828	-2.2	1,669	-3.75	-7,800
Healthcare Professionals	***30.36***	***1.000***	***30.00***	***1.000***	***-1.2***	**6,413**	***31.19***	***1.000***	***30.77***	***1.000***	***-1.3***	**3,643**	***29.15***	***1.000***	***28.00***	***1.000***	***-3.9***	**667**	***-2.77***	***-5,762***
Part-time	32.89	0.219	31.00	0.180	-5.7	1,194	34.61	0.218	32.50	0.159	-6.1	609	34.01	0.201	31.00	0.208	-8.9	138	-1.50	-3,120
Full-time	30.29	0.781	30.00	0.820	-1.0	5,219	30.36	0.782	30.00	0.841	-1.2	3,034	28.03	0.799	27.00	0.792	-3.7	529	-3.00	-6,240
Social Services	***19.11***	***1.000***	***21.25***	***1.000***	***11.2***	**336**	***23.36***	***1.000***	***22.00***	***1.000***	***-5.8***	**64**	***19.11***	***1.000***	***21.00***	***1.000***	***9.9***	**167**	***-1.00***	***-2,080***
Part-time	*	0.167	*	0.138	*	49	*	0.080	*	0.120	*	8	*	0.170	*	0.135	*	25	*	*
Full-time	19.43	0.833	21.62	0.862	11.3	287	23.36	0.920	23.08	0.880	-1.2	56	19.11	0.830	20.00	0.865	4.7	142	-3.08	-6,406
Medical Technicians	***21.02***	***1.000***	***20.19***	***1.000***	***-3.9***	**2,482**	***21.86***	***1.000***	***21.99***	***1.000***	***0.6***	**1,104**	***17.00***	***1.000***	***17.00***	***1.000***	***0.0***	**209**	***-4.99***	***-10,379***
Part-time	23.27	0.208	19.23	0.214	-17.4	529	21.90	0.184	19.23	0.165	-12.2	178	*	0.152	*	0.174	*	39	*	*
Full-time	20.65	0.792	20.80	0.786	0.7	1,953	21.86	0.816	22.00	0.835	0.6	926	18.22	0.848	18.00	0.826	-1.2	170	-4.00	-8,320
Health Aides and Assistants	***12.33***	***1.000***	***12.50***	***1.000***	***1.4***	**3,590**	***13.48***	***1.000***	***13.50***	***1.000***	***0.1***	**834**	***14.57***	***1.000***	***14.00***	***1.000***	***-3.9***	**284**	***0.50***	***1,040***
Part-time	12.15	0.293	11.91	0.274	-2.0	980	13.36	0.227	12.00	0.211	-10.2	174	16.40	0.206	12.05	0.187	-26.5	52	0.05	104
Full-time	12.61	0.707	12.78	0.726	1.3	2,610	13.87	0.773	14.00	0.789	0.9	660	14.08	0.794	14.00	0.813	-0.6	232	0.00	0
Food Services	***11.19***	***1.000***	***11.25***	***1.000***	***0.5***	**412**	***13.33***	***1.000***	***12.00***	***1.000***	***-10.0***	**144**	*****	***1.000***	*****	***1.000***	*****	**6**	*****	*****
Part-time	9.72	0.351	9.00	0.308	-7.4	116	*	0.287	*	0.197	*	26	*	0.207	*	0.041	*	1	*	*
Full-time	12.15	0.649	12.25	0.692	0.8	296	13.43	0.713	12.50	0.803	-6.9	118	*	0.793	*	0.959	*	5	*	*
Cleaning Services	***11.72***	***1.000***	***11.80***	***1.000***	***0.7***	**539**	***12.15***	***1.000***	***12.03***	***1.000***	***-1.0***	**290**	***10.51***	***1.000***	***10.00***	***1.000***	***-4.9***	**14**	***-2.03***	***-4,222***
Part-time	10.48	0.214	10.56	0.182	0.8	102	*	0.153	*	0.084	*	23	*	0.315	*	0.357	*	7	*	*
Full-time	12.15	0.786	12.00	0.818	-1.2	437	12.15	0.847	12.50	0.916	2.9	267	*	0.685	*	0.643	*	7	*	*

Source and notes: CEPR analysis of CPS ORG Data. * N < 50.

Appendix D: Wage Regressions for Occupational Groups

Tables D1–D6 report the results of log wage regressions for each occupational group. The coefficients of variables have been converted from log points to percent for ease of exposition. The underlying log wage regressions are available in the supplement to this report.

TABLE D1

Healthcare Professionals: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

	Model 1		Model 2 (with interactions)	
Variables	**2005**	**2015**	**2005**	**2015**
Outpatient location	-8.628***	-16.337***	-4.152	-12.670***
Female	-13.670***	-17.886***	-12.523***	-16.885***
Black	-8.504***	-9.643***	-8.891***	-9.866***
Hispanic	same	-6.942***	-4.553*	-5.747***
Asian/other	5.437**	1.695***	3.772	-0.272
Outpatient*Female			-9.623***	-7.444**
Outpatient*Black			3.005	2.035
Outpatient*Hispanic			6.955	-6.565
Outpatient*Asian/other			18.838***	17.579***
Age	6.059***	7.185	6.059***	7.181***
Age²	-0.053***	-0.061***	-0.053***	-0.061***
LTHS	-12.444	36.902***	-11.999	36.611***
High School	-27.007***	-14.494***	-26.921***	-14.304***
College	14.649***	18.462***	14.646***	18.398***
Advanced	27.967***	48.880***	28.097***	49.024***
Foreign-Born	4.034*	2.033	4.088*	2.254
Observations	17,226	26,001	17,226	26,001
R-squared	0.191	0.260	0.192	0.262

Source and notes: CEPR regression analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the ACS. ***p<0.01, **p<0.05, * p<0.1

TABLE D2

Social Service Workers: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

	Model 1		Model 2 (with interactions)	
Variables	**2005**	**2015**	**2005**	**2015**
Outpatient location	-8.174**	-11.846***	-11.156**	-6.996
Female	-1.584	-9.148**	-4.587	-3.071
Black	0.069	0.463	0.335	-4.614
Hispanic	-11.591*	5.839	-9.428	6.590
Asian/other	-6.005	6.801	-8.442	10.533
Outpatient*Female			6.712	-8.870
Outpatient*Black			-1.196	8.187
Outpatient*Hispanic			-4.786	-0.958
Outpatient*Asian/other			3.678	-5.116
Age	4.460***	4.041***	4.437***	3.933***
Age²	-0.040***	-0.036***	-0.040***	-0.035***
LTHS	-41.869*	27.938*	-42.965*	30.561**
High School	-11.502*	8.888	-11.865*	8.950
College	11.721***	21.330***	11.583***	21.417***
Advanced	29.447***	46.363***	29.373***	46.266***
Foreign-Born	6.319	2.863	6.692	2.588
Observations	671	1,158	671	1,158
R-squared	0.354	0.226	0.356	0.229

Source and notes: CEPR analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the ACS. *** p<0.01, ** p<0.05, *p<0.1

TABLE D3

Medical Technicians: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

	(1)	(2)	(3)	(4)
Variables	**Model 1 2005 wgt**	**Model 1 2015 wgt**	**Model 2 2005 wgt**	**Model 2 2015 wgt**
Outpatient location	-15.680***	-11.626***	-4.284	-13.645***
Female	-13.512***	-7.318***	-12.835***	-7.671***
Black	-1.285	-6.625***	-0.106	-6.854***
Hispanic	-6.317**	-1.200	-5.403*	-1.780
Asian/other	3.685	-2.968	4.415	-2.133
Outpatient*Female			-10.080*	2.741
Outpatient*Black			-11.697*	1.673
Outpatient*Hispanic			-10.190	3.080
Outpatient*Asian/other			-10.549	-5.320
Age	5.082***	4.907***	5.113***	4.920***
Age²	-0.049***	-0.043***	-0.049***	-0.043***
LTHS	-13.869***	-17.741***	-13.960***	-17.865***
High School	-16.393***	-13.784***	-16.513***	-13.785***
College	18.910***	20.041***	19.015***	20.073***
Advanced	26.757***	32.207***	26.813***	32.130***
Foreign-Born	-3.258	-3.802*	-3.330	-3.857*
Observations	6,186	8,313	6,186	8,313
R-squared	0.216	0.208	0.218	0.208

Source and notes: CEPR analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the ACS. *** p<0.01, ** p<0.05, * p<0.1

TABLE D4

Health Aides and Assistants: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

Variables	(1) Model 1 2005 wgt	(2) Model 1 2015 wgt	(3) Model 2 2005 wgt	(4) Model 2 2015 wgt
Outpatient location	-1.944	-0.190	-7.547	1.524
Female	-11.291***	-7.099***	-11.981***	-7.675***
Black	-3.659*	-3.379*	-3.988*	-2.138
Hispanic	-7.786***	0.579	-7.861***	2.894
Asian/other	-4.386	4.481	-4.946	6.248*
Outpatient*Female			6.288	3.274
Outpatient*Black			2.622	-6.526
Outpatient*Hispanic			-0.149	-8.674**
Outpatient*Asian/other			3.934	-7.345
Age	4.843***	4.611***	4.835***	4.580***
Age²	-0.047***	-0.041***	-0.047***	-0.040***
LTHS	-16.202***	-14.842***	-16.226***	-15.137***
High School	-10.582***	-7.998***	-10.619***	-7.856***
College	9.523***	11.644***	9.556***	11.677***
Advanced	61.296***	76.029***	61.158***	76.376***
Foreign-Born	-3.499	-5.137**	-3.473	-5.136**
Observations	4,217	5,584	4,217	5,584
R-squared	0.236	0.221	0.236	0.222

Source and notes: CEPR analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the ACS. *** p<0.01, ** p<0.05, * p<0.1

TABLE D5

Food Service Workers: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

Variables	(1) Model 1 2005 wgt	(2) Model 1 2015 wgt	(3) Model 2 2005 wgt	(4) Model 2 2015 wgt
Outpatient location	-7.450	-1.832	-11.870	-15.624
Female	-11.745***	-17.737***	-11.566***	-17.979***
Black	-2.417	-10.680**	-2.426	-11.793**
Hispanic	-11.021	-8.436	-10.937	-9.417
Asian/other	-18.291**	-8.356	-19.293**	-9.299
Outpatient*Female			-4.926	-2.728
Outpatient*Black			7.953	47.501
Outpatient*Hispanic			-31.416**	26.221
Outpatient*Asian/other			110.994***	
Age	3.781***	3.411***	3.736***	3.459***
Age²	-0.036***	-0.029***	-0.036***	-0.030***
LTHS	-7.538	-14.902**	-7.310	-15.208**
High School	-8.124*	-10.647***	-8.228*	-10.774***
College	10.735	8.203	11.072	8.218
Advanced	-7.913	-44.091**	-8.002	-43.893**
Foreign-Born	-3.295	11.367**	-3.474	11.362**
Observations	694	839	694	839
R-squared	0.251	0.273	0.255	0.276

Source and notes: CEPR analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the AC.S There are too few Asian/other workers in outpatient centers employed in food service to be included in the analysis. They are omitted in the original data set. *** p<0.01, ** p<0.05, *p<0.1

TABLE D6

Cleaning Service Workers: Wages as a Function of Work Location and Demographic Characteristics, 2005 and 2015

Variables	(1) Model 1 2005 wgt	(2) Model 1 2015 wgt	(3) Model 2 2005 wgt	(4) Model 2 2015 wgt
Outpatient location	-5.319	-6.356	-10.130	-6.809
Female	-19.270***	-18.020***	-19.429***	-18.076***
Black	-7.929**	-5.272*	-8.375**	-5.192*
Hispanic	-10.596***	-12.698***	-10.656***	-12.792***
Asian/other	-7.604	-4.591	-9.905	-3.986
Outpatient*Female			10.113	2.208
Outpatient*Black			22.119	-0.894
Outpatient*Hispanic			-22.724	2.772
Outpatient*Asian/other			44.673	-10.163
Age	2.600***	2.607***	2.541***	2.594***
Age²	-0.024***	-0.022***	-0.024***	-0.022***
LTHS	-17.293***	-9.086**	-17.272***	-9.040**
High School	-10.338***	-4.835*	-10.445***	-4.812*
College	0.788	11.228	2.226	11.074
Advanced	35.067	9.564	34.912	9.184
Foreign-Born	5.415	4.912	6.272*	4.800
Observations	1,544	1,797	1,544	1,797
R-squared	0.229	0.213	0.234	0.214

Source and notes: CEPR analysis of ACS data. State dummy variables not listed but included in all models. Wage penalties in percent are converted from log points by taking the antilog of ordinary least squares regression coefficients and subtracting 1. Models are weighted based on individual person weights in the ACS. *** p<0.01, ** p<0.05, *p<0.1