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AMERICAN HOSPITAL ASSOCIATION | JANUARY 2020

TRENDWATCH

HOSPITAL AND HEALTH SYSTEM WORKFORCE STRATEGIC PLANNING

TRENDWATCH:

Hospital and Health System Workforce Strategic Planning

America's hospitals and health systems are at the center of their communities, both as providers of critical services and as large – and often the largest – employers. They train tomorrow's health care providers and cultivate future leaders by building and expanding their dynamic workforces to effectively keep pace with health care trends, evolving technology and broader socio-cultural trends.

Across health care, job openings are at record highs. Using Bureau of Labor Statistics (BLS) data, *Forbes* estimated that in December 2018 there were "over 1.2 million health care jobs open … a 17.9% increase year over year."[1] This *TrendWatch* is intended to highlight emerging trends in workforce, as well as outline key strategies and tools to embrace new opportunities and address challenges. Although there are challenges, there also are opportunities to improve care, motivate and re-skill staff, and modernize processes and business models that reflect the shift toward providing the right care, at the right time, in the right setting.

The workforce trends discussed in this paper fall within six broad categories: professional shortages; financial pressures; burnout; workplace violence; the evolving workforce; and diversity. These categories were identified based on input from hospital and health system leaders and are consistent with themes that emerged from a targeted literature review.

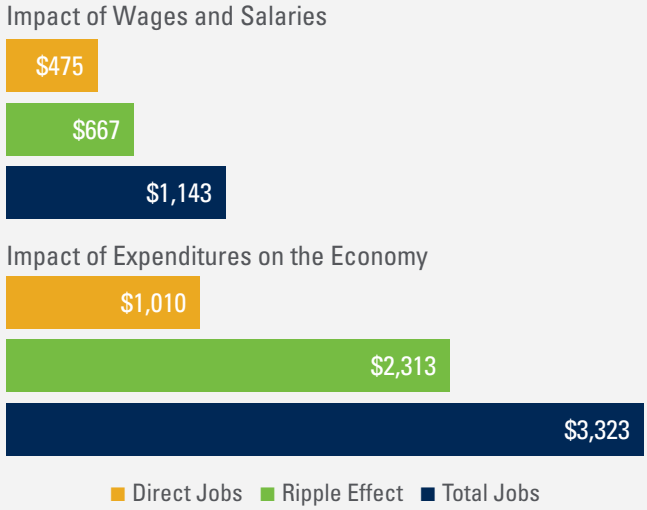
Labor is the largest single cost for most hospitals, and the workforce is essential to the critical mission of providing life-saving care. While workforce challenges are formidable, so are the tools available to hospitals and health systems. Each section of this paper includes a discussion of strategies hospitals are using to convert challenges into opportunities.

This *TrendWatch* is not intended to be an exhaustive catalogue of all workforce-related issues. Instead, it summarizes key trends and can be used to foster strategic discussion and planning within hospitals and among communities they serve.

A National Snapshot of the Hospital Workforce

In 2018, America's hospitals and health systems treated 143 million people in emergency departments, provided 623 million outpatient visits, performed over 28 million surgeries and delivered nearly 4 million babies.[2] Every year, hospitals provide vital health care services to hundreds of millions of people. However, the importance of hospitals to their communities extends far beyond the health care services they provide. Hospitals and health systems fulfill a critical role within their communities and across the broader U.S. economy.

Figure 1: Impact of Community Hospitals on U.S. Economy (Billions), 2018



Source: AHA analysis using BEA RIMS-II (2012/2017) multipliers for hospital NAICS Code 622000, released Oct. 2019, applied to American Hospital Association Annual Survey data for 2018. Hospital jobs are total part time and full time jobs. The percent of total employment supported by direct and indirect hospital employment is based on 2018 BLS data – Total employment in column E is from BLS Table 4 Aug. 2019: Employees on nonfarm payrolls by state and selected industry sector, not seasonally adjusted. **Note:** Multipliers released in 2010 and subsequent years no longer include the national level multipliers needed for this chart.

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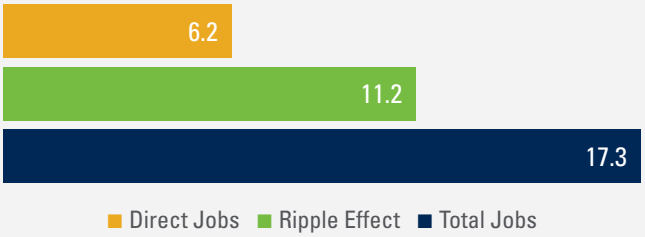
Figure 2: Impact of Community Hospitals on U.S. Jobs (Millions), 2018



Source: AHA analysis using BEA RIMS-II (2012/2017) multipliers for hospital NAICS Code 622000, released Oct. 2019, applied to American Hospital Association Annual Survey data for 2018. Hospital jobs are total part time and full time jobs. The percent of total employment supported by direct and indirect hospital employment is based on 2018 BLS data – Total employment in column E is from BLS Table 4 Aug. 2019: Employees on nonfarm payrolls by state and selected industry sector, not seasonally adjusted. **Note:** Multipliers released in 2010 and subsequent years no longer include the national level multipliers needed for this chart.

Hospitals are significant national employers – more than 6 million individuals work for hospitals in full- or part-time positions. Hospitals also purchase $1,010 billion in goods and services from other businesses per year, creating economic value for the community. In fact, with these ripple effects included, each hospital job supports almost two additional jobs, and every dollar spent by a hospital supports roughly $2.30 of additional business activity in the economy. Overall, hospitals support 17.3 million jobs, or one out of nine jobs, and $3.2 trillion in economic activity.[3] *(Figures 1 and 2)*

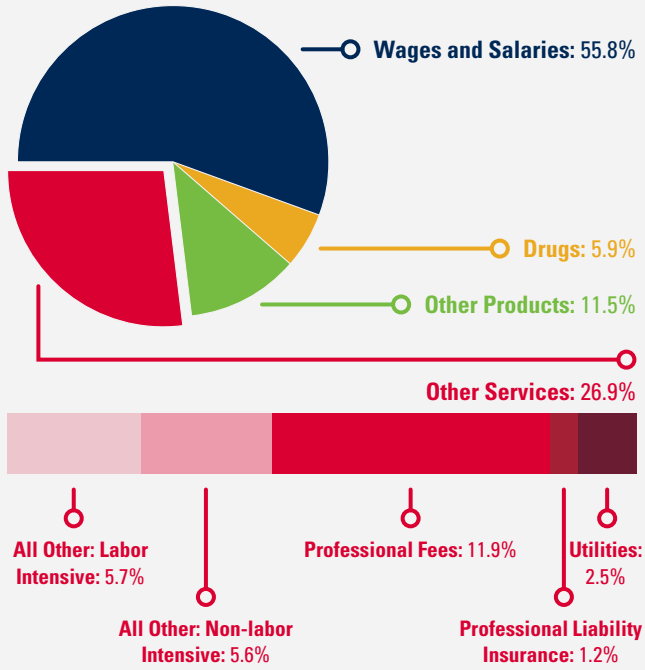
Delivering high-quality care to communities across the country requires hospitals to assemble a qualified and skilled workforce, by far the largest cost in hospital patient care. Wages and salaries comprise 56% of the inpatient prospective payment system hospital market basket, with all other services, drugs and other medical products collectively accounting for only 44% of inpatient costs.[4] *(Figure 3)*

The hospital workforce is relatively high earning, but not overwhelmingly so, averaging roughly $1,200 in weekly pay vs. roughly $900 for other service industries. The higher-than-average weekly pay reflects the varying levels of specialized training and/or education required across roles.

Practitioners and technicians make up the vast majority of the hospital workforce, accounting for roughly 3.4 million employees with another 800,000 in health care support professions (such as certified nurse assistants). In contrast, 700,000 hospital employees are in office and administrative support positions, 200,000 are in management and 100,000 are in business/finance positions.[5] *(Figure 4)*

Although total hospital employment has grown in recent years, it has remained stable relative to overall utilization. However, the share of certain employees engaged in direct patient care has grown. For example, the number of full-time equivalent hospital employees per thousand adjusted admissions remained stable from 2009 to 2018, while the number of full-time equivalent registered nurses per thousand adjusted admissions increased from 19.4 to 21.3.[6] *(Figures 5 and 6)*

Figure 3: Percent of Costs in the Inpatient Prospective Payment System Hospital Market Basket, 2018



Source: AHA analysis of Centers for Medicare and Medicaid Services data, using base year 2014 weights. (1) Does not include capital. (2) Includes postage and telephone expenses. **Note:** FY 2017 IPPS Rule uses base year 2014 IPPS Market Basket weights. Base year 2014 Inpatient Prospective Payment System Market Basket weights do not incorporate impact of prescription drug price growth after the measurement period.

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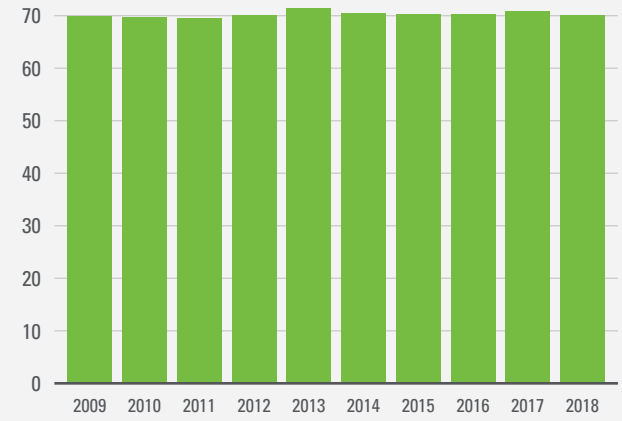
Professional Shortages

A skilled and robust workforce is essential to the delivery of high-quality care. A major obstacle to building and nurturing a talented and dedicated workforce is the shortages in many key health care professions. These shortages can strain a hospital's care delivery and finances, aggravate other workforce challenges such as burnout, and lead to costly mitigations. According to BLS, the health care sector added 391,000 jobs from March 2018 to May 2019, but these additions have not alleviated the need for more qualified individuals.[7]

Figure 4: Hospital Employment by Occupation Type (Thousands), 2017

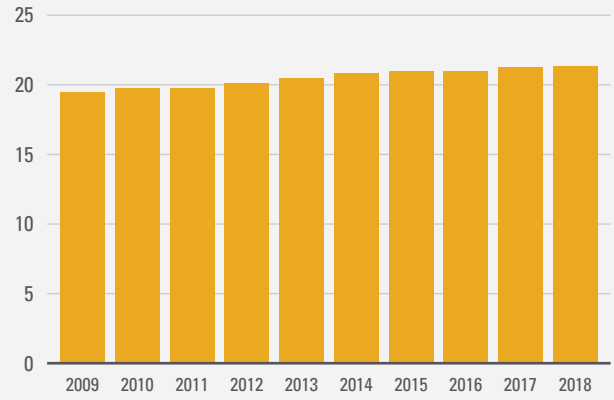
Source: Department of Labor, BLS, National Industry-Specific Occupational Employment and Wage Estimates. Data released May 2018. *www.bls.gov/oes/current/naics3_622000.htm* (1) Does not include public hospitals.

Figure 5: Full-time Equivalent Employees per Thousands of Adjusted Admissions, 2009-2018



Source: Analysis of American Hospital Association Annual Survey data, 2018, for community hospitals. (1) An aggregate measure of workload reflecting the number of inpatient admissions, plus an estimate of the volume of outpatient services, expressed in units equivalent to an inpatient admission in terms of level of effort.

Figure 6: Number of RN FTEs and RN FTEs per Thousands of Adjusted Admission, 2009-2018



Source: Analysis of American Hospital Association Annual Survey data, 2018, for community hospitals. (1) RN: Registered Nurse; FTE: Full-time Equivalent. (2) An aggregate measure of workload reflecting the number of inpatient admissions, plus an estimate of the volume of outpatient services, expressed in units equivalent to an inpatient admission in terms of level of effort.

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The Health Resources and Services Administration has designated 7,026 American communities as primary care Health Professional Shortage Areas. HRSA's designation, when applied to U.S. population data by the Kaiser Family Foundation, suggests that nearly 80 million Americans live in HPSAs. Nearly 15,000 practitioners would be needed in these HPSAs to fully remedy the shortage. *(Figure 7)*

Source: Kaiser Family Foundation. "Primary Care Health Professional Shortage Areas (HPSAs)," *kff.org*, Dec. 31, 2018.

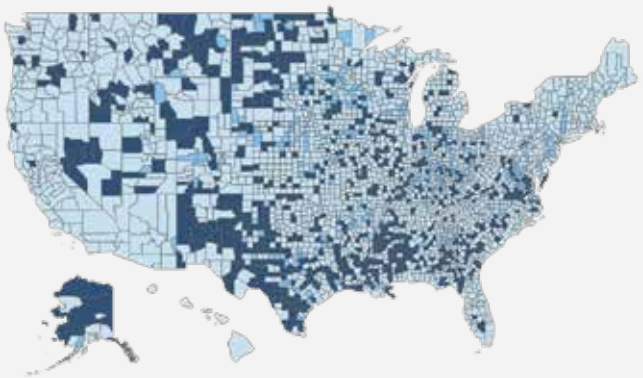
Health care workforce shortages vary across professions and have disparate geographic impacts. Hospitals are deploying tools, outlined below, to overcome the challenges created by shortages.

Physicians: A recent study from the Association of American Medical Colleges (AAMC) projects a national shortage of 122,000 physicians by 2032, including shortages of primary care physicians and specialists, such as pathologists, neurologists, radiologists and psychiatrists.[8] The physician shortages are exacerbated by the uneven geographic distribution of physicians, which creates challenges for hospitals.[9,10] A study of primary care physicians in California notes that the state is facing an imminent shortage of primary care clinicians – demand is projected to increase from 12% to 18% between 2016 and 2030. This is in part due to the aging of the physician workforce *(Figure 8)*, but also a cap on the number of Medicare-funded residency slots, which have been frozen at 1996 levels since the 1997 Balanced Budget Act. The study's authors further note that the impact of physician shortages will disproportionately affect lower-income and minority populations.[11] Beyond California, evolving patterns of care create opportunities for hospitals to adjust staffing and recruitment practices to meet their communities' needs. As discussed elsewhere in this paper, solutions may include increasing the number of Medicare-funded residency positions, as well as the increased use of advanced practice providers (APPs), particularly in primary care to better meet the care needs of the community by increasing access to practitioners.

Nurses: The U.S. needs more than 200,000 new registered nurses (RNs) each year to meet increasing health care needs and to replace nurses entering retirement.[12] In 2017, more than half of all nurses were age 50 or older, and almost 30% were age 60 or over. *(Figure 9)* Efforts over the last two decades have resulted in more than 1 million new nurses; however, roughly 2 million new nurses over the next decade are needed to keep pace with health care demand under the current care delivery structure. The American Association of Colleges of Nursing projects that the RN workforce will increase by only half a million nurses between 2016 and 2026, which is just 25% of the projected need.[13]

In interviews with hospital leaders, it was noted that there has been an increasing scarcity of nurses (as well as APPs) over the last decade, particularly since the recession of 2007-2009, and that other opportunities are reducing the number and supply of bedside nurses. Several interviewees observed that many nurses are returning to school to continue their education as nurse practitioners, in some cases with support from tuition reimbursement programs from their employers. Some recent nursing graduates pursue the APP track after only a short time practicing as RNs. The growth in care management and administrative opportunities for nurses also impact the supply of bedside nurses.[14]

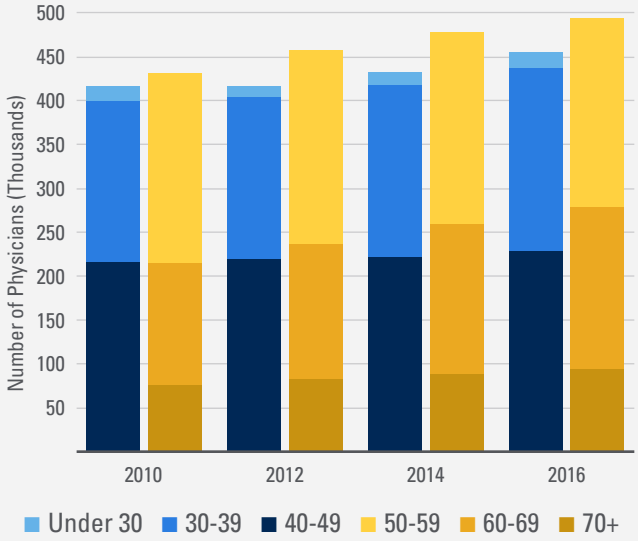
Figure 7: Health Professional Shortage Areas: Primary Care, by County, 2017



Portion of County That Is Shortage Area: None Part Whole

Source: *data.HRSA.gov*, 2017.

Figure 8: Number of Physicians by Age, 2010, 2012, 2014 and 2016



Source: Federation of State Medical Boards (FSMB). *2016 FSMB Census of Licensed Physicians.* (1) Includes actively licensed physicians. Resident physician licenses were excluded when such licensed could be identified.

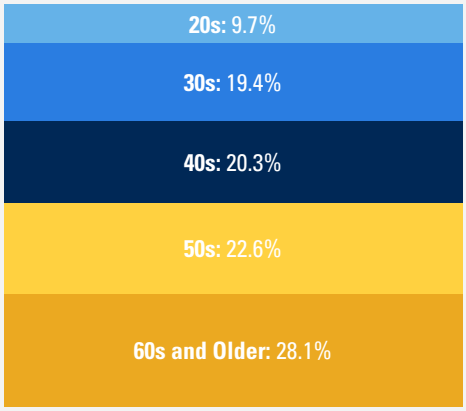
Behavioral Health Professionals: Across health care, job openings are at record highs, with behavioral health as one area of particular need. The National Council for Behavioral Health, using HRSA data, projects the demand for addiction counselors to "increase anywhere between 21% to 38% by 2030." Projections are similar for a number of other behavioral health professions.[15]

Other Technicians and Practitioners: Workforce pressures exist across a variety of professions – including certified nursing assistants (CNAs), medical assistants and several technician positions that provide routine patient care and assist higher-skilled professionals. According to one recent survey, the annual turnover rate of hospital CNAs was 27.7% (nearly double the turnover rate of nurses and physician assistants).[16] Meanwhile, the aging society will, according to BLS, create a need for 11% more CNAs by 2025.[17] The lack of laboratory technicians may be particularly acute – a 2017 survey conducted by the American Society for Clinical Laboratory Science concluded that there were, nationally, 7.2% lab technician positions unfilled.[18]

Information Technology and Analysts: Hospitals are quickly growing their IT and analytics capabilities, a trend expected to continue as the federal government pushes for interoperability, expands risk- and value-based care models, and addresses the field's commitment to data-driven quality of care. Hospitals may not be using analysts and IT professionals to their full potential, as one interviewee shared, because clinician executives are not always steeped in those skills or content. Analysts and IT professionals are in high demand across industries, and several hospital interviewees expressed concern about recruitment and retention of this skillset. One hospital traditionally filled IT roles with foreign workers but has been limited by new immigration policies, including the reduced number of approved visas. Analysts are in high demand by other industries and large technology firms that offer higher salaries for similar roles. One interviewee shared that they must compete for staff with tech giants like Amazon and Microsoft.

Office Professionals: Hospitals employ large numbers of office professionals, including specialists in finance, medical records/billing and compliance. The fastest growing of these white-collar professions is medical records and billing – which is projected to grow 13% by 2026.[19] High administrative burden from health insurer

Figure 9: Percent Distribution of RN Workforce by Age Group, 2017



Source: National Council of State Boards of Nursing. National Nursing Workforce Study 2017

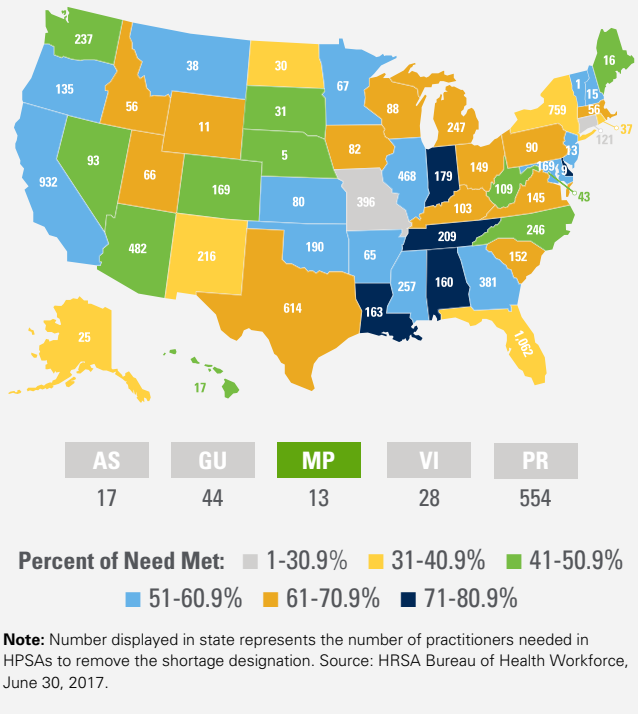
denials and prior authorization drive this need (86% of surveyed physicians described the administrative burden of prior authorization as "high or extremely high," and 88% said the burden has risen in the last five years).[20]

Other Professionals: Blue-collar service workers – such as food service, environmental services and landscaping – play an important role in hospital operations. Hospitals experience high turnover among non-degree, (generally) hourly wage employees who may leave for pay increases and more favorable hours in other fields. Compounding this trend is a continued strong U.S. economy that could create shortages in many of these areas. For example, BLS projects that the need for environmental services will grow 10% by 2026 across all sectors.[21]

Geographic Shortages: The distribution of health care professionals across the U.S. is very uneven. The rate of clinicians per 100,000 state residents ranges from just 4.87 in Louisiana to 54.60 in Maine.[22] As noted in the map compiled by the National Council of State Legislatures (NCSL) *(Figure 10)*, all U.S. states face a primary care professional shortage, but the number of professionals needed to alleviate the shortage across the states ranges from a few to more than 1,000. Working from HRSA's data, NCSL determined that 59% of primary care shortage areas are in rural parts of the U.S.[23] As of November 2018, two-thirds of the nation's 6,941 primary care Health Professional Shortage Areas (HPSAs) were in rural or partially rural areas.[24]

Immigration Visas: To help meet their communities' needs, many hospitals rely on foreign-born employees to address their workforce shortages. As reported in a Health Affairs study, 18.2% of U.S. health care workers were born outside of the U.S. (24% in certain lower-skilled positions).[25,26] According to a *JAMA* study, 29% of U.S. physicians were born in other countries, and almost 7% are not U.S. citizens.[27] Similarly, foreign-born nurses account for 15% of RNs in the U.S., according to a report by the Institute for Immigration Research at George Mason University.[28] Despite growth in domestic graduations, foreign-trained RNs still represent about 10% of annual new hires.

Figure 10: Meeting the Need for Primary Care Health Professionals



Note: Number displayed in state represents the number of practitioners needed in HPSAs to remove the shortage designation. Source: HRSA Bureau of Health Workforce, June 30, 2017.

Tools to Address Professional Shortages

Hospitals are implementing numerous strategies for improving recruitment and retention. Hospital leaders shared examples of a number of financial tools used to attract and retain key staff, including retention and three-year completion bonuses, as well as tuition reimbursement. Hospitals also employ a variety of incentive programs (both cash and benefits) to address shortages. Centering recruitment and retention processes on the hospital's mission and emphasizing the importance of service to others were two key themes that emerged from interviews. Aligning mission, recruitment and retention can aid in identifying candidates motivated by the hospital's mission.

To reinforce the importance of mission and culture, hospitals are engaging in non-traditional activities, including team-building events such as barbecues,

sporting events and volunteer opportunities. These activities keep staff connected to the hospital's mission and promote a team atmosphere. For technology and analyst roles, hospitals need to find new ways to encourage and recruit candidates. As one interviewee said, "We need to make the pathway clear for technology and analytic people, so they know these types of jobs exist in health care." Rural hospitals in particular are expanding their strategies to address workforce shortages, taking a long-term approach by recruiting based on projected need rather than waiting to fill a vacancy.

Rural hospitals are recruiting candidates with ties to the community or training people from their communities to meet workforce needs, rather than relying on simply trying to hire employees away from urban areas. Rural hospitals also are relying heavily on APPs and are making use of telehealth and other new technologies to mitigate certain labor shortages and meet their patients' needs. *(See Telehealth on page 14 for more on this topic.)*

The National Health Service Corps (NHSC) assists the rural workforce by awarding scholarships and loan repayment to primary care providers. In fiscal year 2019, the NHSC received $319 million in award funding to recruit, retain and support clinicians in high-need areas.[29] Providers receiving a scholarship or loan repayment must commit to at least two years at an NHSC-approved site. NHSC-approved sites are those that provide outpatient, ambulatory or primary health services in Health Professional Shortage Areas (HPSAs). Several other loan forgiveness programs similarly facilitate growth of the workforce, including the Public Student Loan Forgiveness Program, the Indian Health Service Loan Repayment Program and the National Institutes of Health Loan Repayment Program.[30,31,32]

Some hospitals are embracing artificial intelligence to help solve workforce shortages, particularly in administrative and office roles. *(See Artificial Intelligence on page 14 for more on this topic.)*

Another solution to alleviate physician shortages is to increase the number of Medicare-funded residency slots. The AHA supports the Resident Physician Shortage Reduction Act (S. 348), which would add 15,000 Medicare-funded residency positions over five years. The legislation would prioritize the distribution of the new residency positions to teaching hospitals as follows: hospitals in states with new medical schools or branch campuses; hospitals exceeding their graduate medical education residency slot cap; hospitals affiliated with Veterans Affairs medical centers; hospitals that emphasize training in community-based settings or hospital outpatient departments; hospitals that operate an approved "rural track" program in a non-rural area; and all other hospitals. Similar legislation in the House (H.R. 1763) also would add 15,000 new residency positions but would distribute them differently.[33]

The AHA is advocating to maintain and improve vital immigration programs. For example, AHA supports the Conrad State 30 and Physician Access Reauthorization Act (H.R. 2895), which would improve the Conrad State 30 program and extend it until 2021. The Conrad 30 waiver program allows J-1 medical doctors to apply for a waiver of the two-year home residence requirement upon completion of the J-1 exchange visitor program. To obtain the waiver and eventually become a U.S. permanent resident, these doctors must agree to five years of service in H-1B status in an underserved area. Most important of the reforms in H.R. 2895 is granting immediate permanent resident status after this service. The AHA is also seeking to protect visa numbers for immigrant nurses and the preservation of family and diversity immigration categories that supply most of the foreign-born health care workers in non-professional positions.[34]

Financial Pressures

The average compensation of professionals across the health care workforce varies greatly. Yet regardless of base compensation, the high rate of projected growth in employment of several health care professions may spur more competition for qualified professionals and

Figure 11: Average Compensation of Health Care Professionals Across the Health Care Workforce

BLS Occupation	2016 Employment	Estimated 2026 Employment	Sum	Employment Growth by 2026	Median Salary
Medical Transcriptionists	57,400	1,900	59,300	3%	$34,770
Physician Assistants	106,200	39,600	145,800	37%	$108,610
Diagnostic Medical Sonographers and Cardiovascular Technologists	122,300	21,100	143,400	17%	$67,080
Nurse Anesthetists, Nurse Midwives and Nurse Practitioners	203,800	64,200	268,000	31%	$113,930
Medical Records and Health Information Technicians	206,300	27,800	234,100	13%	$ 40,350
EMTs and Paramedics	248,000	37,400	285,400	15%	$34,320
Medical and Clinical Laboratory Technologists and Technicians	335,700	42,700	378,400	13%	$52,330
Medical Assistants	624,400	183,900	808,300	29%	$33,610
Physicians and Surgeons	713,800	91,400	805,200	13%	$208,000
Registered Nurses	2,955,200	438,100	3,393,300	15%	$71,730

Source: BLS, Healthcare Professionals, *www.bls.gov/ooh/healthcare/home.htm* **Note:** The numbers cited above may not fully align with figures offered elsewhere in the paper due to slightly differing scopes of analysis and methodologies.

increase salaries. Hospital interviewees expressed concern about their ability to retain staff in highly competitive professions. *(Figure 11)* Student debt poses another workforce challenge. Debt can push otherwise engaged staff to switch jobs based solely on compensation, which, in turn, can exacerbate shortages. Three-fourths of recent medical school graduates reported student debt, with an average of $179,068 and 4% with more than $300,000 owed.[35] The financial pressures of student debt push medical students toward higher-paying specialties, intensifying the primary care physician shortages discussed elsewhere in this paper.[36] Policymakers can assist hospitals and the health care workforce by expanding on the limited loan forgiveness opportunities that currently exist.

Reimbursement and Compliance Impact on Workforce: More than half of all patients are covered by government programs, and nearly half of the revenue paid to hospitals comes from government programs (primarily Medicare and Medicaid, which historically underpay hospitals for care provided to program beneficiaries). Combined underpayments were $76.6 billion in 2018. This includes a shortfall of $56.9 billion for Medicare and $19.7 billion for Medicaid. Hospitals also provided $41.3 billion in uncompensated care.[37,38] The combination of low reimbursement and high administrative burden makes government programs challenging business partners for hospitals. Insufficient reimbursement limits overall resources available to build the workforce, and low reimbursement also can deprive hospitals of the resources necessary to fully deploy the workforce tools discussed throughout this paper.

Health care is a heavily regulated field, and hospitals are among the most heavily regulated health care entities. A 2017 AHA report estimated that hospitals were subject to 341 unique compliance requirements (629 if they provide post-acute services). All of the resulting requirements can lower morale and increase burnout by diverting provider attention from patients to paperwork, and by forcing the establishment of new teams focused

solely on appropriate data collection and reporting.[39] This topic is touched on elsewhere in this paper.

The rise of physician staffing services creates new demand for professionals, particularly specialist physicians – an industry trend born out of physician shortages but with significant financial repercussions. One staffing services expert noted that health-focused staffing companies grew 17% in 2018.[40] One interviewee, when focusing on behavioral health, noted the negative impact of venture capital-backed companies luring away staff with high salaries. Staffing services pose a long-term threat to hospitals if they can successfully poach needed staff and then, in effect, rent that staff back to hospitals with a large mark-up.

Teaching hospitals depend on the federal government's commitment to supporting the physician workforce through support of graduate medical education (GME). As discussed above, one solution to alleviate physician shortages is to increase the number of Medicare-funded residency slots. With limits on how many GME slots Medicare will cover, hospitals find themselves taking on a growing percentage of the burden to fund their GME programs. Medicare spending overall and spending on graduate medical education have risen since 2001 but the cap on GME residents has not.[41]

Tools to Address Financial Pressures

To assist with student debt, hospitals offer tuition reimbursement programs for qualified employees and alert employees to loan forgiveness programs. The AAMC also reports that nearly 40% of graduating medical students in 2015 planned to participate in a loan program that would forgive some level of their debt.[42]

Recognizing the link between workforce strategies and appropriate reimbursement, AHA and its member hospitals advocate to improve hospital reimbursement rates. In January 2020, the AHA published an Underpayment by Medicare and Medicaid Fact Sheet, which documented a $76.6 billion reimbursement shortfall from the major government programs in 2018.[37] AHA also continues to advocate for increased health care access (such as Medicaid expansion in states that have not expanded the program) in order to improve health outcomes and lessen uncompensated care.

Burnout

Across the U.S. economy, Americans are working more and exhibiting signs of burnout. Workplace expert Christina Maslach defines its impact: "Burnout has many consequences for the individual including physical illness, increased feelings of hopelessness, irritability, impatience, and poor interpersonal relationships with family/coworkers/others. In severe cases, burnout can cause diminished executive functioning, attention, and memory. Burnout also has many organizational consequences including absenteeism, increased turnover, and decreased job performance."[43]

> **"The simple fact is … folks are burnt out, whether they're nurses or doctors."**

The hospital workforce is not immune to this nationwide problem. A recent National Academy of Medicine report identifies an imbalance in which the demands of a clinician's job are greater than the resources available to complete the job effectively. The result is that between 35% and 54% of U.S. nurses and physicians have symptoms of burnout, which it characterizes as high emotional exhaustion, high depersonalization (i.e. cynicism), and a low sense of personal accomplishment from work.[44]

Hospital workers may be especially susceptible. A 2012 Truven study notes that hospital employees have 9% higher health care costs than the rest of the U.S. workforce – a finding that raises questions about the impacts of job-related emotional and physical stress.[45] A 2019 Medscape survey found that roughly 40% of

Work System Factors Contributing to Burnout

Job Demands:

- Excessive workload, unmanageable work schedules and inadequate staffing
- Administrative burden
- Workflow, interruptions and distractions
- Inadequate technology usability
- Time pressure and encroachment on personal time
- Moral distress
- Patient factors

Job Resources:

- Meaning and purpose in work
- Organizational culture
- Alignment of values and expectations
- Job control, flexibility and autonomy
- Rewards
- Professional relationships and social support
- Work-life integration

Source: National Academy of Medicine. "Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being," Oct. 2019.

physicians claimed to have symptoms of burnout. A recent study on nurse burnout reports 15.6% of nurses having such symptoms.[46] Long hours and increasing administrative tasks were cited as the primary causes.[47]

Clinician frustration with a workload perceived as increasingly administrative and removed from patient care is a major driver of burnout commonly identified across our interviews. One interviewee from a small rural hospital suggested that electronic health records (EHRs) were a source of frustration. A recent study conducted by the Mayo Clinic gave the usability of current EHR systems a grade of F. It also concluded that EHR usability was independently associated with the odds of burnout (based on the Maslach Burnout Inventory).[48] Another interviewee noted doctors and nurses will suffer professional fatigue "if they don't feel they're capable of doing what they went to nursing school or medical school to do."

Tools to Address Burnout

There is no easy solution for burnout. However, several of the innovations noted elsewhere in this paper have the potential to mitigate the impact of burnout and address the underlying causes. To the degree that administrative burden is a contributing factor, it should be noted that many of these technologies and processes are still in their early stages and subject to change in the years to come.

The National Academy of Medicine advocates for taking a "systems approach" to mitigating burnout. Organizations should focus on identifying, evaluating and implementing effective improvements at all levels of the system by targeting known work system factors (job demands and job resources) that influence burnout and well-being as well as learning and continuous improvement processes (informed by clinician and patient feedback). The report suggests a six-goal approach: 1) create positive work environments; 2) create positive learning environments; 3) reduce administrative burden; 4) enable technology solutions; 5) provide support to clinicians and learners; and 6) invest in research on clinician well-being.

Hospitals are seeing some success in reducing burnout by implementing programs that can improve work-life balance and reinforce the commitment to the organization's mission. A recent study of hospital worker work-life balance (the authors call it "work-life integration," or WLI) concluded that: "Improving this [hospital workplace] climate should be a strategic priority for leaders interested in building capacity and resilience in their workforce. Improving WLI is likely to improve health care worker's quality of life, organizational outcomes and, ultimately, quality of care for patients."[49]

The AHA Physician Alliance recently released a guide promoting well-being strategies that includes case studies of tools implemented by several hospitals.[50] Novant Health, for example, implemented an executive coaching program to support employees as well

as numerous organizational initiatives to address burnout. The program has demonstrated a sustained increase in employee engagement and significant success in improving patient experience.[51] Similarly, hospitals interviewed for this paper employ practices such as allowing nurses to be more selective in their assigned shifts and helping physicians train for (and be compensated for) other roles, such as administrative leadership. Finally, burnout symptoms may vary across hospitals – one children's hospital interviewee noted that his hospital built a highly committed and connected workforce, which has helped combat burnout.

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Workplace Violence

In 2014, the Government Accountability Office (GAO) reported that the rate of serious workplace violence incidents was more than five times greater in health care than in the general workforce. Further, BLS data show that violence-related injuries are four times more likely to cause health care workers to take time off from work than other kinds of injuries.[51] Working with 106 hospitals, the Occupational Health Safety Network examined 2012 to 2013 data and found that nursing assistants and nurses had the highest workplace violence injury rates per 1,000 full-time equivalent workers.[53] A national survey of emergency medicine residents and physicians published in the Journal of Emergency Medicine found that 78% of emergency medicine physicians reported being targets of workplace violence in the prior year.[54] Tom Mihaljevic, M.D., president and CEO of Cleveland Clinic, labeled workplace violence a "national epidemic" and notes his health system confiscated a staggering 30,000 weapons from patients and visitors in 2018.[55]

Tools to Address Workplace Violence

To reduce and prevent violence in the hospital setting, hospitals and health systems have installed cameras and security-call buttons; limited access to work areas to people with badges; limited guest hours; installed metal detectors; increased police presence; implemented de-escalation training and emergency preparedness; and taken a variety of other steps.[56] In 2018, 57% of hospitals offered workplace violence prevention programs.[57] According to a 2017 AHA report, hospitals spent an estimated $1.1 billion in security and training to prevent violence within their facilities, plus $429 million in medical care, staffing, indemnity and other costs resulting from violence against hospital workers.[58] The AHA has implemented a Hospitals Against Violence initiative that has made available numerous resources to assist the field in this area.

HOSPITALS AGAINST VIOLENCE

The Evolving Workforce

Hospitals have sought to ensure that care is delivered in the right setting at the right time. One observed trend is that health care is increasingly delivered outside of traditional settings. Care continues to shift away from inpatient settings, with a 2 million decrease in inpatient admissions between 2008 and 2017.[60]

Care delivery, particularly with regard to primary care, is shifting from physician-centric to team-based models that combine physicians with RNs and APPs, including nurse practitioners (NPs), certified registered nurse anesthetists, clinical nurse specialists, certified nurse midwives and physician assistants (PAs). Richard Ricciardi of the Agency for Health Care Research and Quality observes that: "NPs and PAs, who comprise approximately 30% of the primary care workforce, already play a central role in the delivery of a broad range of primary care services, while leading practice improvement efforts focused on quality and safety. The time for RNs to join them is here."[48] Hospitals are advancing the ability of APPs to work at the top of their licenses (while remaining consistent with state scope

of practice and other laws) and integrating nurses and other professionals into team-based care models.[49]

> **Rural health care's savior is APPs with telemedicine as a backup to assure that access and quality are always available out in these rural areas.**

A number of studies conclude that quality of care is maintained when APPs play a more prominent role in the provision of care. A 2018 study in the *American Journal of Medicine*, for example, concluded that for nearly 20,000 diabetics over five years, "management by nurse practitioners and physician assistants was comparable to management by physicians."[63] While NPs and PAs are top of mind in most discussions about APPs, other clinical roles also are important to the evolving health care workforce. Certified registered nurse anesthetists (CRNAs), for example, provide services previously only offered by anesthesiologists. Particularly in rural hospitals, CRNAs are increasingly critical to a hospital's ability to perform surgery.[64] The value of APPs to rural hospitals was further underscored by the rural hospital CEO interviewed for this paper: "Rural health care's savior is APPs with telemedicine as backup to assure that access and quality are always available out in these rural areas."

Tools to Address the Evolving Workforce

Employee Education and Training: Education and training are necessary to develop staff into a dynamic and well-equipped workforce. Interviewees recognized the importance of training for multiple reasons: 1) retaining exceptional employees with professional growth opportunities; 2) training employees to meet evolving needs; and 3) maintaining positive morale and loyalty. Many hospitals have developed detailed online staff training programs. Interviewees also shared that their hospitals offer tuition reimbursement benefits at local universities for staff pursuing degrees consistent with hospital goals.

Most health care professions have annual continuing education requirements that must be satisfied to maintain active licensure. As a primary provider of continuing education to many health care professions, hospitals can support and promote education and training opportunities that align with the hospital's workforce goals and licensure requirements for staff. Investments in the skills, training and education of staff is an effective approach to build and expand the hospital workforce.

Training also plays a central role in retention, and hospitals are offering new approaches to engage and train employees. These include leveraging technology to increase the time clinicians can spend bedside, incentivizing serving on committees and presenting at conferences, and other activities that focus on individualized career progression and skills building. One hospital interviewee addresses retention by strategically placing students and new graduates in nursing, information technology and other positions to shadow and learn from more experienced staff.

In May 2019, the *North Carolina Medical Journal* profiled a CNA apprentice program co-implemented by CaroMont Regional Medical Center (CRMC) and Gaston Community College (GCC). In early 2019, CRMC "enrolled its first 20 CNAs into the CNA II apprenticeship program." The apprenticeship will permit CRMC's participating CNAs to continue their education with a combination of on-the-job and GCC classroom training. At the conclusion of the apprenticeship program, participating CRMC CNAs will have expanded skills that can be leveraged by the hospital, and the CNAs will receive a corresponding salary increase.

Source: Goble, Patricia. "Preparing the Health Care Workforce Through Apprenticeship." *NC Medical Journal* (2019): 160-161.

Telehealth: Telehealth is another important tool that enables hospitals to harness emerging technology in meeting the demands of the changing workforce. An AHA report, *Telehealth: A Virtual Path to Integrated Care*, notes that 97% of patients were satisfied with their first telehealth service. The report also notes that 80% of virtual appointments "resolve the episode of care" without visiting the emergency department (ED) or another site of care.

Hospitals are embracing telehealth in substantial ways in order to better serve hard-to-reach communities and ensure local access to care. The Medical University of South Carolina, for example, provides 77 telehealth services at more than 200 sites in 27 counties – 78% of which are in medically underserved areas. The University of Mississippi Medical Center launched a tele-emergency medicine program to connect small, rural hospitals to the Medical Center's Level 1 trauma center.[65] Yet even with increasing adoption, hospital use of telehealth is still in its early stages. One hospital executive remarked: "I think we are just scratching the surface."

Artificial Intelligence (AI): In a recent Accenture survey of health care leaders, respondents agreed that machine learning can "help achieve previously hidden or unobtainable value," and 86% agreed that AI processes "are finding solutions to previously unsolved business problems."[66] AI has been deployed successfully to impact non-clinical business processes such as inventory management and revenue cycle. Hospital leaders spoke optimistically about opportunities that AI and other IT-enabled developments present in health care to augment care without sacrificing human interaction and empathy at the core of successful patient care.

A Market Insights report from the AHA's Center for Health Innovation provides useful frameworks and tools for hospital and health system leaders to successfully integrate AI technologies into their workforce and workflows. *(Figure 12)* The report highlights the potential of AI to produce better clinical, operational and financial results, while also noting that this transformation will require significant changes in the composition, competencies and skill sets of the health care workforce. The Market Insights report also describes some of the new positions and responsibilities that will be needed to design, install, implement, run and monitor AI.

Other New Technologies: According to McKinsey, a number of evolving technologies have the potential to transform hospital operations and workforce deployment, including: connected and cognitive devices, electroceuticals, targeted and personalized medicine, robotics, 3D printing, big data and analytics, blockchain and automation. Collectively, these technologies can dramatically improve clinical productivity and reduce inappropriate use and enhance quality of care. The rate of technology adoption is slower in health care than in other fields because of a history of risk aversion and the highly regulated nature of health care.[67] While regulatory concerns cannot be ignored, hospitals are positioning themselves for the

Figure 12: New Roles AI Could Create in Health Care

DATA SCIENTIST
This person knows how AI works and can design AI models to perform tasks required at a hospital or health system.

AI ENGINEER
This person builds the AI models to perform the tasks required at a hospital or health system.

DATA GOVERNANCE EXPERT
This person makes sure the data are clean and accurate by setting the policies around how data are collected. They are also responsible for making sure that when staff do their jobs, they're doing them ethically, protecting the privacy and security of patients' personal health information, and following the data governance policies of the hospital or health system.

DATA ENTRY EXPERT
This person curates, cleans, scrubs and structures data from a variety of internal and external sources into the system that feeds AI models with the data they need to perform the tasks required at a hospital or health system.

DATA ENGINEER
This person builds the system that fuels the AI models with the data they need to perform the tasks required at a hospital or health system.

CHIEF AI OFFICER
This person leads the effort to explore potential opportunities, develops a cogent AI strategy and harnesses the necessary funding, professionals, technology and organizational resources to implement them. They must understand the clinical workflow – the front-line workforce and the culture that drives care delivery.

Source: *www.aha.org/center/emerging-issues/market-insights/ai/ai-and-health-care-workforce.*

Remote Work Sites: Beyond telehealth, regular work-at-home is growing rapidly – 140% since 2005. According to a survey from Global Workplace Analytics, 4.3 million Americans (3.2% of the workforce) now work from home at least half the time. 40% more U.S. employers offered flexible workplace options than five years ago. Several interviewees noted having policies that allow remote workers across a range of non-clinical departments, including information technology, billing/coding, call center, sales and finance. Particularly for professions such as IT, where remote workers are common, hospitals are assessing the market and implementing strategies to recruit and retain successful employees.

Source: Lister, Kate. "Telecommuting Trend Data," *globalworkplaceanalytics.com*, Aug. 16, 2019.

big data future by hiring staff skilled in data analytics and health IT.

Applying clinical data analysis – such as those gleaned from patient acuity data and historical volume – to staffing is producing positive results. According to a recent AHA Health Forum webinar, this data can be "aligned to help unit nursing managers determine how many nurses with which skill sets will be needed in the coming days and weeks." A program at Midland (Texas) Memorial Hospital "saw catheter-associated bloodstream infections decrease by 64%" following implementation of a staffing system that uses "predictive analytics to identify future nurse scheduling needs." There have also been decreases in "other hospital-acquired conditions as well, including falls and pressure ulcers." And nursing turnover decreased 32% concurrent with these quality improvements.[68]

Hospitals are evolving to align themselves with the preferences and habits of the millennial generation – as both patients and employees. One hospital leader interviewed for this paper suggested that 50% of hospital employees are millennials. Another interviewee pointed out that millennials change locales and jobs more readily than previous generations. An article in the Journal of Applied Business and Economics, citing BLS data, notes that millennials "are retained on average less than three years" by their employers. The preferences of millennials noted in this and other articles may also speak to broader societal trends that could shape the preferences of post-millennial generations, and potentially influence older generations.

Source: Campione, Wendy. "Corporate Offerings: Why Aren't Millennials Staying?" *Journal of Applied Business and Economics* (2015): 60-75.

A Diverse and Inclusive Workforce

The U.S. is in the midst of major demographic changes. The Census Bureau projects that by 2045 the U.S. will be "majority-minority"; that is, non-Hispanic whites will account for less than half the population.[69] As the U.S. becomes more diverse, the health care workforce also must reflect the diversity of the community.

Hospital leaders recognize that their communities and organizations are diverse, and strategies to address diversity and inclusion should encompass veterans, multi-generations and people of diverse religions, disabilities and sexual orientation.[70] Research shows workforce diversity leads to increased racial and ethnic minority patient choice and satisfaction.[71] The changing face of America makes it a workforce imperative to ensure culturally competent, equitable access to care for all the people and communities we serve. Hospitals have made some progress in increasing workforce diversity, but there remains significant room for improvement. According to data from the AHA's Institute for Diversity and Health Equity, hospitals increased diversity in their first- and mid-level management positions from 15% in 2011 to 19% in 2015. However, minorities represented a reported 32% of patients in 2015.[72]

> **"It's going to be a monumental change once machine learning and deep cognition really take hold – and the whole workforce is going to have to change."**

Tools to Further Promote Diversity and Meet Evolving Expectations

Hospitals are building on existing diversity initiatives. Diversity recruitment and inclusion programs are a field norm and often include developing hiring goals, mentoring employees from minority backgrounds, and employing recruiters from diverse communities to identify minority candidates for open positions. Interviewees for this *TrendWatch* discussed the value of diversity training as a key component to quality of care and workplace retention.

As discussed in a bi-annual study conducted by AHA's Institute for Diversity and Health Equity, successful diversity disparities elimination strategies within a health care setting can address disparities by engaging communities, prioritizing diversity in leadership and governance, and delivering quality, culturally competent care.[73] Interviewees for this report also noted the need to "grow their own" talent from within their communities to promote diversity, improve patient care and serve as a retention tool.

Institute for Diversity and Health Equity
An affiliate of the American Hospital Association

The AHA's 2018 Equity of Care Toolkit outlines specific steps that hospitals and health systems can take to improve diversity in governance and leadership:[74]

- Establish a mentoring program to help develop talent, regardless of gender, race or ethnicity.
- Require search firms to present a mix of candidates reflecting the community's diversity.
- Recruitment efforts should include strategies to reach out to racial and ethnic minorities in the community.
- Put a system in place to measure diversity progress and report on it to leadership and the board.
- Identify community organizations, schools, places of worship, businesses and publications that serve racial and ethnic minorities for outreach and educational purposes.

As part of its commitment to eliminating health and health care disparities, the AHA also launched its #123forEquity pledge campaign. Hospitals and health systems can take the pledge and commit to working on efforts within their organization or in the community related to health equity, diversity and inclusion, even if the efforts do not fit clearly under one of the pledge goals listed above.

Conclusion

A robust, skilled hospital workforce is essential to delivering high-quality care. The economic impact of hospitals extends beyond direct employment and has a ripple effect on the well-being of local economies and communities. As large employers, hospitals face the same national economic and societal trends as other sectors. The unique role of hospitals in ensuring the health of their communities – both medically and economically – compounds the importance of addressing hospital workforce challenges.

The health care sector faces challenges related to labor shortages and the impact of burnout on the workforce. Regardless, hospitals are embracing opportunities to reduce administrative burden and augment care through technology. Looking to the future, the hospital sector must continue to evolve to reflect the changing care delivery models and the needs of our communities.

Methods: This paper was informed by (1) structured interviews with five hospital executives from hospitals of different sizes, focus and geographic regions; and (2) a literature review supported by a trained research librarian and supplemented by materials contributed by subject matter experts. The literature review was driven by a systematic search of academic databases and legal databases, and search engine reviews of trade and general news publications, government publications and resources, nonprofit and research organization materials, and health care consulting reports. The search yielded approximately 90 sources that were sorted across 14 topic areas. Each was reviewed prior to developing this *TrendWatch* report. The report does not cite all materials reviewed.

Policy and Strategy Questions

1. What regulatory or legislative changes are necessary to support the hospital workforce and its continued development?
2. How can policymakers support hospitals and health systems in addressing the current challenges in the health care workforce?
3. How can payment models and care delivery approaches complement workforce development strategies?
4. How should hospitals evolve their business models to support a nimble and agile workforce of the future, and how must policy adjust to support those changes?

Other Resources

- *AI and the Health Care Workforce, Market Insights from the AHA Center for Health Innovation*
- *Telehealth: A Path to Virtual Integrated Care, Markets Insights from the AHA Center for Health Innovation*
- *The Hospitals Against Violence Initiative*
- *Institute for Diversity and Health Equity*
- *AHA Physician Alliance*
- *Workforce Case Studies*

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