



Health Workforce Strategic Plan



U.S. Department of Health and Human Services

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Introduction

The mission of the U.S. Department of Health and Human Services (HHS, the Department) is to enhance the health and well-being of all Americans, by providing for effective health and human services and by fostering sound, sustained advances in the sciences underlying medicine, public health, and social services.

Across its operating divisions, HHS administers an array of health and human services programs that aim to provide all Americans with a usual and ongoing source of health care, including informed and coordinated investments to enhance the access, supply, distribution, and quality of the nation's health workforce. The health workforce is composed of a wide variety of occupations – including providers such as registered nurses, physicians, and dentists, as well as individuals in critical and essential health care support roles, such as community health workers, direct support professionals, and caregivers. Current HHS investments in the health workforce are informed using available data and are aligned with the Department's authorities.

The Coronavirus Aid, Relief, and Economic Security (CARES) Act (Public Law No. 116-136), enacted on March 27, 2020, directed the Secretary of HHS to develop a “comprehensive and coordinated plan with respect to HHS health workforce development programs, including education and training programs.” The legislation ([Appendix A](#)) requires that the plan identify performance measures to determine the extent to which programs are strengthening the nation's health care system; gaps that exist between the outcomes of programs and projected health workforce needs; actions to address the gaps; and barriers to implementing the actions.

This Health Workforce Strategic Plan (Strategic Plan) provides a forward-looking framework for health workforce improvements, focused on four key goals: expanding supply, ensuring equitable distribution, improving quality, and enhancing the use of data and evidence to improve program outcomes. This Strategic Plan will facilitate coordinated and intentional efforts to address long-standing barriers to strengthening the health workforce – barriers that have been amplified by ongoing crises including the Coronavirus Disease 2019 (COVID-19) pandemic, the economic condition for lower and middle-income families, changing health impacts due to climate change, and the need to advance racial equity. This Strategic Plan also aligns with the *National Strategy for the COVID-19 Response and Pandemic Preparedness* and Presidential Executive Orders related to the COVID-19 pandemic. Notably, several of the Presidential Executive Orders¹ task the Secretary of HHS as well as heads of other federal departments and agencies to develop plans and recommendations, and to take immediate actions for strengthening the public health workforce. Together, these efforts will provide continued opportunities for engagement of relevant stakeholders and refinement of the framework set forth in this Strategic Plan.

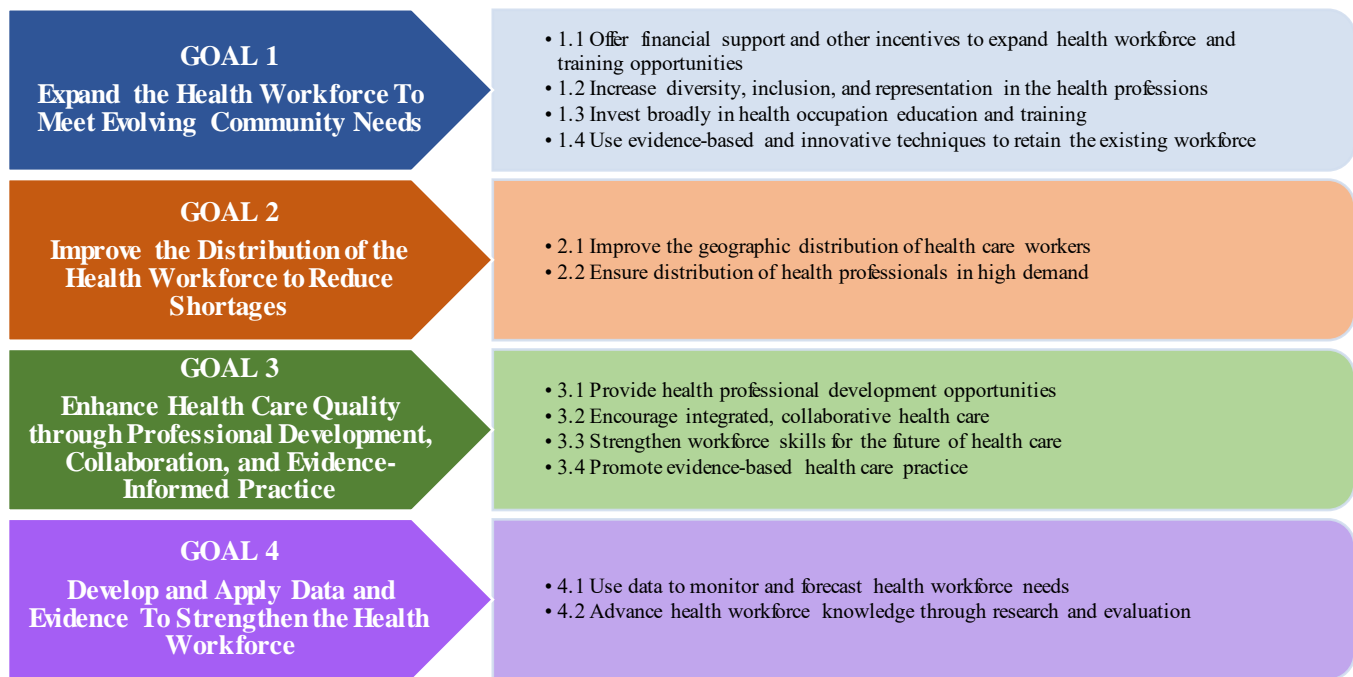
The American Rescue Plan Act (ARP) of 2021 (P.L. 117-2) invests significant resources in the health care, public health, and mental health workforce, aligning with the goals of this strategic plan. The ARP appropriated \$7.6 billion to HHS to carry out activities related to establishing, expanding, and sustaining a public health workforce, including by making awards to state, local, and territorial public health departments. Additionally, the ARP continues to support health care professionals and students through new funding for scholarships, loan repayment, and graduate medical education, which will dramatically expand the supply of the primary care health workforce. New funding will help community health centers establish, expand, and sustain a public health workforce, including case investigators, contact tracers, social support specialists, community health workers, public health nurses, disease intervention specialists, epidemiologists, program managers, laboratory personnel, and informaticians. The ARP

provides substantial investments to deploy evidence-based strategies to prevent and reduce suicide, burnout, and mental and behavioral health conditions, including substance use disorders among health care students, residents, professionals, paraprofessionals, trainees, and public safety officers and promote such services among providers, personnel, and members of healthcare entities.

Federal funding will also be used to hire and train laboratory personnel and other staff to serve in medically underserved areas; expand the supply of Medical Reserve Corps volunteers to respond to this public health emergency; and strengthen the ability of the Indian Health Service’s public health workforce to respond to COVID-19. New investments will help enhance the informatics capabilities of the public health workforce; establish and expand evidence-informed programs and protocols to support providers’ mental health; and will promote care coordination and other evidence-based integrated models of care.

Strategic Plan Framework

Below is a high-level framework of the Strategic Plan’s goals and objectives:



Strategic Plan Development

HHS engaged subject matter experts from operating and staff divisions that have roles in strengthening the health workforce to develop this comprehensive Strategic Plan ([Appendix B](#)).

This workgroup of subject matter experts established a standard set of definitions for issues relevant to supporting the health workforce ([Appendix C](#)), and identified relevant legislation, program investments, research and evaluation findings, and data collection efforts to create this Strategic Plan’s framework.

Each goal describes its relevance to strengthening the health workforce and challenges to successful achievement. Each objective lists actions that reflect the Department’s current commitments, which will adjust as needed to reflect changes in authorities, policies, or funding. [Appendix D](#) provides additional

information about these commitments. As required by the CARES Act, the plan also identifies how the Department measures performance of these efforts; [Appendix E](#) provides a table of current program performance measures, organized by goal.

HHS also consulted with the Advisory Committee on Training in Primary Care Medicine and Dentistry and the Advisory Council on Graduate Medical Education, as required by the CARES Act. HHS consulted with other relevant advisory groups as well. [Appendixes F](#) and [G](#) provide descriptions of these advisory groups and include their input.

Implementation

Following publication of this Strategic Plan, HHS will coordinate with other federal agencies that fund or administer health workforce development programs to implement the plan. Implementation will include evaluating performance of health workforce development programs, identifying opportunities to strengthen programs, to eliminate redundancies where possible, and to implement improvements. HHS will produce a report to Congress on those activities, as required by the CARES Act.

Goal 1. Expand the Health Workforce Supply to Meet Evolving Community Needs

This goal describes efforts to increase and improve access to health care services across the nation by ensuring a national health workforce of sufficient size and composition across the health professions.

Improving access to health care services includes ensuring that people have a usual and ongoing source of care. People with a usual source of care have better health outcomes, fewer disparities, and lower health care costs.² Having a usual primary care provider is associated with lower mortality from all causes.³ In addition, access to oral health care⁴ and mental health care are critical to overall health and well-being.

With the United States population growing by 25 million people every 10 years, the number of people older than age 65 doubling between 2000 and 2030, and recent medical advances, the demand for health care professionals continues to grow.⁵ The U.S. Bureau of Labor Statistics projects that employment in health care occupations will increase by 15 percent between 2019 and 2029, adding more jobs than any other occupational group.⁶ Intentional, long-term planning is critical to build the health workforce the nation needs, now and in the future.

Challenges and Risks

Projections estimate that current increases in supply will not meet demand for many health care occupations, such as dentists,⁷ general surgeons,⁸ psychiatrists, addiction counselors,⁹ and direct support professionals.¹⁰

Graduate medical education (GME) payments made by the Medicare program and other funding sources represent the largest federal investment in building up the nation's physician workforce. GME payments from the Medicare program are governed largely by strict, statutory formulas, and the Institute of Medicine has noted that in general, the statute has insufficient flexibility to be directed effectively towards meeting the nation's health care needs, such as the ability to address geographic and specialty-related physician shortages.¹¹ As part of its oversight responsibility, Congress has provided HHS with legislative authority to add 1,000 additional physician residency positions to address provider maldistributions related to location and other criteria. Specifically, section 126 of the fiscal year 2021 appropriations law (P.L. 116-260) provided for a criteria-guided distribution of new physician residency positions. However, following such one-time actions, allocated and reallocated residency positions typically are supported by the traditional Medicare GME mechanisms. Additional human resource investments from multiple sources will be necessary to match the health needs of communities with the right number and types of health workers.¹²

The cost of education and training is a deterrent to field entry for a number of health careers.¹³ The rising cost of health education and associated debt acquisition tends to favor the matriculation of students from higher income upbringings over those with lower incomes.¹⁴ The cost of institutional training for an individual's health career can be significant, and institutions often rely heavily on the financial support of the federal government.¹⁵

Objective 1.1. Offer financial support and other incentives to expand health workforce education and training opportunities

This objective describes efforts to use grants, scholarships, and other incentives to expand the health care and health support workforce to meet current and future needs.

Strengthening health systems to improve access to essential health care services results in better health, social, and economic outcomes.¹⁶ However, an adequate supply of a well-trained health workforce must be available to provide these needed services to communities.¹⁷ Currently, the United States is experiencing significant shortages of primary care providers and other types of essential health workers, with some of these workforce deficiencies anticipated to worsen in coming years.¹⁸

Building a health workforce able to meet the needs of communities includes strategies to expand individual incentives to recruit individuals into health professions where demand exceeds supply.¹⁹ In addition, the Department works to expand the capacity of educational institutions and training sites across the nation.²⁰

Within HHS, CMS, CDC, HRSA, and ONC implement activities to achieve this objective.

- 1.1.1 [Provide scholarships or stipends for professional and paraprofessional students and faculty in health, allied health, and public health programs to expand the workforce and reduce financial barriers](#)
- 1.1.2 [Fund graduate and post-graduate training to practicing health professionals through fellowships and residency programs to incentivize providing services in high-need areas and to vulnerable populations](#)
- 1.1.3 [Support curriculum development to improve quality, quantity, distribution, and diversity of the health workforce](#)

Objective 1.2. Increase diversity, inclusion, and representation in the health professions

This objective describes efforts to increase the overall diversity of the health workforce and the levels of participation from traditionally underrepresented groups in the health professions.

Improving the health status of the nation depends on how effectively the broader health care system can deliver high-quality health care to all patients regardless of their location, socioeconomic status, race, ethnicity, gender, disability, or other demographic that has historically led to persistent health disparities.

Successfully reducing and eliminating health disparities and advancing health equity require a multipronged approach. Strengthening the cultural and linguistic competency of health professionals can improve delivery of patient-centered care to diverse patient populations; parallel efforts to build a diverse, representative health workforce and increase minority participation in the health professions.²¹ Many racial, ethnic, and disability groups remain underrepresented in certain health professions,²² but ensuring that the health workforce is diverse can promote health care access for and improve the quality of care delivered to underserved populations.²³ Financial incentives can help recruit individuals into health professions who otherwise could not afford to pursue these careers.²⁴

Within HHS, ACF, CDC, HRSA, IHS, and ONC implement activities to achieve this objective.

- 1.2.1 [Target training assistance to individuals with low incomes and from disadvantaged backgrounds to strengthen supply in high demand health occupations that offer good pay, benefits, and opportunities for advancement](#)
- 1.2.2 [Actively recruit, train, and retain students from underrepresented backgrounds, including racial and ethnic minority students and students with disabilities, into the health workforce](#)
- 1.2.3 [Conduct targeted recruitment of American Indian and Alaska Native individuals to strengthen their representation within the workforce](#)

Objective 1.3. Invest broadly in health occupation education and training

This objective describes efforts to invest in health education and training to prepare the next generation of health care providers to deliver effective, high-quality, evidence-supported care.

Health care professionals and paraprofessionals must develop the knowledge, competencies, experience, and technical skills necessary to deliver safe, appropriate, and effective care – and communicate and deliver patient-centered and culturally informed care. Preparation for these critical components of health care practice requires sufficient health occupation education and training.²⁵ Tomorrow’s health workforce must be trained to be agile in a complex and ever-changing health care system, able to pivot to address emerging public health issues like the COVID-19 pandemic, and capable of evolving through the expansion of knowledge through scientific advancements.^{26 27}

Institutions of higher education, community colleges, community-based training organizations, and clinical training sites that work to build tomorrow’s health workforce must be nimble in adapting to periodic changes in accreditation requirements, while also fostering learning environments in which trainees can achieve educational milestones and develop competencies they can use throughout their professional lives.²⁸ Often these entities implement training strategies, such as clinical learning opportunities, that help expand the health workforce in rural and other high-need, underserved communities.²⁹ Interprofessional training, or the [education and training of professionals from different disciplines to provide coordinated services by an integrated care team](#), can better prepare providers to deliver health care. Training an interprofessional health workforce able to collaborate to meet the health needs of the population it serves is one approach to meet these challenges.³⁰ Health professionals who train in rural and underserved community sites gain a better understanding of patients and communities in these settings and are more likely to practice in similar settings after graduation.³¹ Moreover, increasing attention to the impact of social determinants of health is driving integration of community health workers, social workers, and social service agencies, requiring robust public health leadership as well as a well-trained paraprofessional and community health workforce.

In addition, faculty are needed to train the future workforce, but barriers can limit entry into these academic careers, such as salaries that are less competitive with those for jobs in nonacademic environments.³² Health faculty need to be proficient in delivering care within new value-based models and evolving care systems, and to transmit their insights to future clinicians.³³

Within HHS, HRSA, IHS, and SAMHSA implement activities to achieve this objective.

- 1.3.1 [Invest in institutions of higher education to strengthen and expand the primary care workforce](#)
- 1.3.2 [Conduct targeted training and recruitment to expand and diversify the behavioral health workforce](#)
- 1.3.3 [Recruit and retain health professions faculty members and encourage students to pursue faculty roles in their respective health care fields](#)

Objective 1.4. Use evidence-based and innovative techniques to retain the existing workforce

This objective describes efforts to retain providers in their professions by helping them focus on patients, improving career satisfaction, and mitigating burnout.

Strengthening the health workforce must also include efforts to optimize and retain the existing health workforce. Strategies include leveraging different types of health professionals to deliver services, deploying interprofessional care teams to expand care capacity, and addressing systemic inefficiencies in order to increase productivity.³⁴

Mitigating burnout and improving career satisfaction are important strategies for retaining health care workers, especially in rural areas, where recruitment and retention of providers face unique challenges.³⁵ High levels of administrative burden, paired with increasing productivity demands on providers, can contribute to the emotional exhaustion and depersonalization that can develop because of occupational stress.³⁶ The COVID-19 pandemic has exacerbated this burnout.³⁷ Studies suggest reducing regulatory burden on health care providers and facilities may save time that would have been spent away from patient care, and have notable cost savings.³⁸ Streamlining patient care workflows and maximizing use of technology can improve provider capacity and allow for more patient visits.³⁹

Community health workers and other paraprofessionals, including direct support professionals, augment the care team and serve as front line public health workers in predominantly vulnerable and other high-risk communities. These workers facilitate access to services, improve the quality and cultural competence of service delivery, and serve as a bridge between the health care team and communities.⁴⁰ Scaling up this component of the workforce has the potential to reduce some of the burden on clinical providers and decrease clinician burnout – a critical support both during and after COVID-19 pandemic response. Recruitment and retention of direct support professionals would be enhanced by high-quality training, increased compensation, and career ladders that begin early, such as exposure to the profession before individuals commit to specialized health care training.

Strengthening the workforce's ability to respond to public health emergencies such as the COVID-19 pandemic will involve using existing and new members of the workforce to conduct testing, contact tracing, and mass vaccinations. Other strategies include developing and implementing career tracks in disaster medicine and nursing, curricula that include disaster response, and baseline principles of care for disaster-related injuries and illnesses. The *National Strategy for the COVID-19 Response and Pandemic Preparedness* and related Presidential Executive Orders call for the HHS Secretary as well as other Agency heads to develop approaches to build a cadre of personnel able to respond to public health emergencies.

Through the ARP, HHS received substantial new, one-time investments to deploy evidence-based and evidence-informed strategies to decrease suicide, burnout, and mental and behavioral health conditions, including substance use disorders among health care students, residents, professionals, paraprofessionals, trainees, and public safety officers and to promote such services among providers, other personnel, and members of healthcare entities.

Within HHS, AHRQ, CDC, CMS, and HRSA implement activities to achieve this objective.

1.4.1 [Improve working conditions and work-life balance for health care providers to mitigate burnout and increase career satisfaction](#)

Goal 2. Improve the Distribution of the Health Workforce to Reduce Shortages

This goal describes efforts to improve the distribution of the health workforce to reduce shortages in underserved and rural communities.

Executive Order 13985, “Advancing Racial Equity and Support for Underserved Communities through the Federal Government,” defines equity as the “consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.”

HHS is working to address the inequitable distribution of the health workforce.⁴¹ Workforce shortages are defined in multiple ways. Health Professional Shortage Areas (HPSAs) can be geographic areas, populations, or facilities that have a shortage of primary, dental, or mental health care providers.⁴² Medically Underserved Areas (MUAs) have a shortage of primary care services within a specific geographic area. Medically Underserved Populations (MUPs) have a shortage of primary care health services for a specific population subset, such as people experiencing homelessness or people who are low-income, within a geographic area.

HHS has classified more than 6,000 areas across the country as primary care HPSAs.⁴³ Approximately 121 million people in the United States live in a HPSA for mental health, with an estimated 6,500 additional practitioners needed to meet the demand. The nation also faces a shortage of more than 10,000 dental health providers to care for approximately 60 million people lacking dental health coverage.

Challenges and Risks

Health workforce shortages are often in the places where health care is needed most urgently. Rural and urban underserved areas disproportionately face health workforce shortages and face some of the nation’s greatest health care needs. For example, rural residents tend to have lower life expectancy levels than their urban counterparts,⁴⁴ and the per capita availability of primary care physicians to serve rural residents is roughly 19 percent lower than in urban areas.⁴⁵ Economically depressed and other underserved areas also face greater challenges in recruiting and retaining health care providers.⁴⁶ The COVID-19 pandemic has exacerbated these challenges. Americans in underserved areas may be at higher risk of severe illness from COVID-19, rural health care infrastructure is limited, and rural residents or urban residents in healthcare access “deserts” often must travel long distances to access clinical specialists.⁴⁷

In addition to geographic inequities, the United States experiences shortages in certain health care professions and specialties, including oral health, behavioral health, maternal and child health, and public health, that can negatively affect health outcomes. About half of all people in the United States will be diagnosed with a mental health disorder at some point in their lifetime, but only [half](#) of all people with mental health disorders get the treatment they need. More than 20 million adults and adolescents in the United States have had a [substance use disorder](#) in the last year, but very few get the treatment they need. The nation’s workforce of mental health and substance use disorder providers is critical to providing Americans with access to essential health care services. Strategies for ensuring access to adequate behavioral health care for rural and underserved communities should include training primary

care providers to deliver medication-assisted treatment for substance use disorder, including opioid use disorder.

The demand for geriatricians is projected to exceed supply, resulting in a shortage of nearly 27,000 positions in 2025.⁴⁸ Numerous factors challenge the education and training of health professionals in the area of geriatrics, such as a shortage of faculty, limited availability of clinical experiences, and few opportunities for advanced training. Similarly, the geographic maldistribution of women's health service providers also is well recognized, and shortages of obstetrician gynecologists are projected to increase in the coming years. Only six percent of obstetrician gynecologists work in rural areas, and less than half of women in rural areas live within a 30-minute drive of a hospital with obstetric services.⁴⁹ Also, the Improving Access to Maternity Care Act (Public Law 115-320) could help to redistribute maternity care health professionals to rural and underserved areas.

Objective 2.1. Improve the geographic distribution of health care workers

This objective describes efforts to implement evidence-supported strategies, such as performing education and training in rural and other high-need communities, to help resolve health workforce shortages.

In the face of greater population health challenges, rural and other underserved areas struggle with recruiting and retaining sufficient numbers of health care providers to serve their communities and deliver necessary health care services.⁵⁰

Training health professional students within underserved communities can encourage them to practice in those areas.⁵¹ These health professional training programs focus on the specific needs of local populations, and often matriculate trainees who have local or rural backgrounds or who display other characteristics that appear to be associated with future rural and underserved practice.⁵² These programs typically offer educational and clinical experiences based at rural training sites, have a strong cadre of rural educators, strive to build community support and financial stability for their programs, use continuous evaluation to measure progress in achieving desired graduate outcomes, and apply this knowledge to drive appropriate strategic adjustments.⁵³

Overall, these approaches have been successful in the training of various types of health professionals, including physicians,⁵⁴ dentists,⁵⁵ nurses⁵⁶ and nurse practitioners,⁵⁷ allied health professionals,⁵⁸ and psychologists.⁵⁹ To prepare the health workforce, training and education should be inter-professional, steeped in population health principles, and based in community care settings.

Within HHS, HRSA, IHS, and SAMHSA implement activities to achieve this objective.

- 2.1.1 [Provide loan repayment and other supports to expand access to care in designated HPSAs and Critical Shortage Facilities](#)
- 2.1.2 [Conduct targeted recruitment, training, and retention investments to improve access to a high-quality health workforce in rural and underserved areas](#)
- 2.1.3 [Encourage commitments to join the Indian Health Service, to meet critical staffing needs](#)

Objective 2.2. Ensure distribution of health professions in high demand

This objective describes efforts to align efforts for recruitment, distribution, and retention of the health workforce to serve in the professions, specialties, and locations where they are most needed. It also involves the provision of training and technical assistance to facilitate the ability of health workforce professionals and paraprofessionals to address public health emergencies.

Rural communities and other underserved areas tend to face disproportionate hurdles when it comes to recruiting and retaining health care providers to serve their communities.⁶⁰ Effective strategies to address this problem are multifaceted. Scholarships and loans can be linked to later service commitments. Financial and salary incentives can be used to recruit individuals who have ties to the local community and/or who are eager to serve in rural communities. Professional development and support for rural practitioners can strengthen job satisfaction and retention. Other strategies aim to ensure that practice work environments are both well-equipped and financially stable.⁶¹ Retention can often be more challenging than recruitment but can be strengthened when work in communities is meaningful and rewarding, and when health care providers and their families are well integrated into local communities.⁶²

Section 2501 of the ARP appropriated funds to HHS to carry out activities related to establishing, expanding, and sustaining a public health workforce, including by making awards to state, local, and territorial public health departments. Broadly, these programs include grants to state, local, territorial, and tribal entities, grants to community-based organizations and expansion and creation of job training and other programs in support of the Administration's goal to fund 100,000 public health workers. These investments will nearly triple the nation's community health workforce, with the intention that individuals will be hired to work in their local communities. These programs will expand the public health workforce by training and utilizing public health professionals, community health workers, and other paraprofessionals to improve access to care and pandemic response in underserved communities.

Within HHS, the Office of the Assistant Secretary for Preparedness and Response (ASPR), CDC, CMS, HRSA, and SAMHSA implement activities to achieve this objective.

- 2.2.1 [Use a holistic approach to patient-centered care that expands screening and preventive services across primary care, behavioral health, and oral health, particularly in underserved and rural settings to expand the capacity and role of the primary care workforce](#)
- 2.2.2 [Increase the supply and capacity of the behavioral health workforce to provide new, innovative, and evidence-based treatment in community-based primary care settings](#)
- 2.2.3 [Apply solutions that integrate primary care, geriatric care, oral health and public health to expand a workforce capable of managing the complex and challenging demands of caring for older adults](#)
- 2.2.4 [Conduct targeted investments to reduce disparities in access to specialized health care services, including oral health, maternal and child health, and public health](#)
- 2.2.5 [Strengthen the public health workforce to support robust responses during public health emergencies such as the COVID-19 pandemic](#)

Goal 3. Enhance Health Care Quality through Professional Development, Collaboration, and Evidence-Informed Practice

This goal describes efforts to increase and improve the delivery of essential, high-quality health care services across the nation by cultivating a well-trained, agile, and coordinated health workforce.

Strengthening the workforce involves more than meeting challenges of supply and demand. The Department is investing in a health workforce equipped to deliver high-quality, evidence-supported, patient-centered health care to a diverse population with varying needs and health inequities.⁶³ HHS seeks to empower patients in their own care, to reimburse health care services using an approach that prioritizes and rewards clinical outcomes, and to prevent disease or cure it early, before it becomes disabling, difficult, and costly to treat.⁶⁴

A renewed priority must be placed on the delivery of high-quality primary care and preventive services, by interprofessional teams built upon effective partnerships that fully leverages data, scientific evidence, and technology.⁶⁵ To reduce and eliminate health disparities, health professionals build competencies to work with vulnerable populations, including those who may have different cultural and linguistic backgrounds than their own.⁶⁶ A well-trained workforce can help proactively address and reduce the spread and harm of misinformation by sharing credible and accurate information. Supporting professional development for team members can lead to more positive teamwork and performance, in addition to building and maintaining their clinical skills.⁶⁷ Given the significant influence of social determinants of health, training in team-based care models should integrate community health workers, social workers, and other needed service providers.

Challenges and Risks

As described above, interprofessional care can improve the quality of care, yet barriers persist. Barriers such as inconsistencies in the scope of practice regulations at the state level can limit the ability of certain advance practice registered nurses, physician assistants, and other providers to work at the top of their education and training.⁶⁸ For example, advanced training and credentialing can allow certain pharmacists to provide expanded patient care and disease management services, but this approach is authorized in only a few states.⁶⁹ The limitations in clinicians working at the full potential of their education and training can lead to poorer quality of care and worse health outcomes. These limitations can also contribute to workforce shortages, as the time of clinicians with the highest levels of training is diverted to tasks that could optimally be done by those with other professional qualifications.

Promoting quality involves ensuring the workforce has the necessary skills to meet the demands of rapidly evolving conditions. The COVID-19 pandemic has exacerbated existing challenges and has heightened the urgency of training a flexible, responsive health workforce able to respond to urgent and shifting health care needs. Efforts to extend health care into workforce shortage areas serving vulnerable populations can be disrupted by a crisis event and lead to financial instability for provider practices.⁷⁰ Longstanding, measurable health disparities result in significant differences in access to care.⁷¹ Innovative approaches to health care delivery such as telehealth services can extend the health workforce into high-need shortage areas without sacrificing quality,⁷² but some populations still have limited access to this resource.

Objective 3.1. Provide health professional development opportunities

This objective describes efforts to support professional development in the workforce to help providers strengthen knowledge and competencies, learn and apply new skills, advance their careers, and provide safe, appropriate, and high-quality care.

For health care workers to deliver high-quality, evidence-supported, and patient-centered health care, they must have the opportunity to acquire and maintain clinical knowledge and profession-specific competencies. Investments in professional development help health care providers learn and apply new skills, advance their careers, and provide safe, appropriate, and high-quality care. Professional development for rural providers enhances their levels of job satisfaction and improves retention.⁷³ Supporting professional development for interprofessional teams can lead to more positive collaborative experiences and performance, in addition to strengthening the clinical skills of individual team members.⁷⁴ Other benefits of professional development can include improved cross-cultural professional skills and better clinical outcomes,⁷⁵ new or reinforced proficiency in working with specific population groups,⁷⁶ and improved provider competency in managing specific health conditions.⁷⁷

Through CDC's Project Firstline, for example, healthcare workers may receive infection control training designed specifically for them so that they have the knowledge to keep themselves, their patients, and their colleagues safe from spread of infectious diseases in healthcare settings.

Within HHS, AHRQ, CDC, HRSA, and SAMHSA implement activities to achieve this objective.

- 3.1.1 [Provide continuing education opportunities for health care providers to improve quality and patient safety, comparative effectiveness, and prevention care management](#)
- 3.1.2 [Provide training and technical assistance to the health workforce to help them apply knowledge from recent advances in medical research, health care program evaluations, and data analysis to their field of practice](#)
- 3.1.3 [Enhance the health care research workforce to support ongoing learning of the health workforce](#)

Objective 3.2. Encourage integrated, collaborative health care

This objective describes efforts to strengthen access to high-quality health care services by optimizing interprofessional, team-based care and the ability of providers to work at the full scope of their education, training, and license for their professions.

Collaborative models for care management can strengthen access to care for patients wherever they live.⁷⁸ One efficient and effective model for delivering high-quality health care is a team-based approach, which helps physicians, dentists, nurses, nurse practitioners, physician assistants, and other health care providers train and work together to care for their shared patients.⁷⁹ Most family physicians already report routinely working with advance practice registered nurses and physician assistants,⁸⁰ and health consumers are receptive to receiving care from all of these provider types.⁸¹ Positive clinical outcomes associated with care delivered by advance practice registered nurses and physician assistants⁸² are well documented.⁸³ Interprofessional health care teams can expand capacity at primary care practices, while not adding to physician workload or negatively affecting care quality.⁸⁴ Further, outcomes from interprofessional care within patient-centered medical home care models appear to include a reduction in hospitalizations and emergency department use.⁸⁵

In addition to recruitment, training, and retention, allowing health care providers from different professions to practice to their full scope of their education and training is critical to improving care access. When fully implemented, interprofessional care models can be an important component of delivering high-quality primary care and preventive services.⁸⁶

Within HHS, ACL, AHRQ, CDC, CMS, HRSA, and SAMHSA implement activities to achieve this objective.

- 3.2.1 [Promote team-based care to take a patient centered-approach to planning and delivering care](#)
- 3.2.2 [Integrate community health workers, paraprofessionals, social workers, and social service agencies into interdisciplinary teams to strengthen coordination of primary care and public health approaches](#)

Objective 3.3. Strengthen workforce skills for the future of health care

This objective describes efforts to advance the capabilities of the health workforce to address current and future needs of the diverse communities they serve and promote health equity.

The health workforce is delivering care in a context of rapidly evolving patient and geographic demographics and health needs, technological innovations, urgent national priorities such as the opioid crisis, and frequent public health emergencies.⁸⁷ Delivering high-quality health care in this complex environment is not a “one size fits all” endeavor. Training and technical assistance for the health workforce to deliver care in this context involves approaches that may vary across geography and profession. Furthermore, training for healthcare workers must reflect the diversity of the workforce itself and be culturally appropriate and linguistically accessible.

HHS is employing a variety of responses to help the health workforce in the context of the COVID-19 pandemic. For example, HHS is supporting increased use of telehealth as a care modality to help hospitals and health care providers working on the front lines of pandemic response. To improve capacity to serve diverse populations and advance health equity, HHS is working to enhance cultural and linguistic competency among providers.⁸⁸

Within HHS, CMS, CDC, HRSA, and SAMHSA implement activities to achieve this objective.

- 3.3.1 [Promote expanded use of innovations such as telehealth services to help providers deliver high-quality care](#)
- 3.3.2 [Promote care practices that advance health equity](#)

Objective 3.4. Promote evidence-based health care practice

This objective describes efforts to increase awareness and promote use of data- and evidence-supported practices, reduce medical errors, and optimize care coordination across health care delivery settings.

More than two decades have passed since publication of the seminal Institute of Medicine report, *To Err Is Human*, which highlighted the incidence of preventable deaths attributable to medical errors in the United States. This study informed numerous actions to improve the safety of health care delivery to patients,⁸⁹ including strategies to promote integrated and coordinated care and efforts to better apply data, scientific evidence, and technology to health care delivery.⁹⁰ This approach facilitates access to care and more effective care coordination between the providers and other health care team members working to improve patient health. Care coordination efforts can be particularly critical during transitions of care between providers and/or across care settings.⁹¹

Within HHS, AHRQ, HRSA, and SAMHSA implement activities to achieve this objective.

- 3.4.1 [Promote multidisciplinary care, or integrated health care solutions, encouraging collaborations of health care professionals with the patient and family, to improve care quality](#)
- 3.4.2 [Promote evidence-informed practices to enhance the capacity of behavioral health care providers to deliver high-quality care](#)

Goal 4. Develop and Apply Data and Evidence to Strengthen the Health Workforce

This goal describes efforts to collect, analyze, and apply data, research and evaluation findings, and other evidence to understand opportunities to strengthen the nation's health workforce.

The United States health care system needs to be agile to serve the nation's more than 330 million people, a population that grows roughly every 9 seconds.⁹² In addition to evolving demographics, changes in political, economic, social, and environmental contexts require the health workforce to be flexible and responsive to emerging health needs and new models of care delivery and reimbursement.

While health care occupations are projected to add more new jobs and grow at a faster rate than any other occupational group,⁹³ consistent monitoring of these professions is critical to match health care worker supply with demand.⁹⁴ Training too many health care workers can create employment imbalances, shift provider responsibilities, and negatively affect job satisfaction. Training too few workers can contribute to provider burnout and perpetuate workforce shortages, with historically underserved and vulnerable populations often feeling the greatest impact.⁹⁵

The Foundations for Evidence-Based Policymaking Act of 2018 (Public Law 115-435) charged federal agencies with modernizing their data management practices, evidence-building functions, and statistical efficiency to inform policy decisions. Sufficient data to drive policy decisions is critical to investing resources and achieving an optimal balance between health worker supply and demand for health care.⁹⁶ Implementation of the Evidence Act can lead to an improved understanding of the current and future needs of the health workforce.

Challenges and Risks

Workforce supply and demand data are not static. The demographics of the nation's population shift over time, as do factors such as labor force participation. New medical and nursing schools can change the number of entrants into these professions each year, with changes often observed at a regional level.⁹⁷ Shifts in the health care delivery system, such as increased access to health insurance through Medicaid expansion and the sudden and widespread adoption of telehealth during the COVID-19 pandemic, can change demand for various types of care.⁹⁸ Medical advances and new therapies also create changing demands on the health care system.⁹⁹

[Minimum Data Sets](#) help ensure national databases use consistent core data elements for demographic, educational, credentialing, and practice characteristics of health professionals, supporting health services research and guiding health workforce policy. Professionalized occupations, such as physicians or dentists, have comprehensive data sources collected by states or third parties that can be accessed by the federal government. However, minimum standardized data do not exist for a range of health occupations, such as community health workers and many direct care occupations. For data that do exist, data analysis is difficult, as the quality and granularity vary widely, and data sources, formats, and occupational definitions are inconsistent.

In addition, the COVID-19 public health emergency has reinforced the importance of building a workforce capable of providing surge medical care in situations of extreme need. Examples of rapid pivots by health care providers include strategies such as engaging trauma surgeons to care for COVID-19 patients, pediatric intensivists to care for adult COVID-19 patients, and training hospital nurses to provide intensive care unit care. Other pivots include the implementation of [Medical Operations Coordination Cells](#), which facilitate movement of patients, staff, and supplies between healthcare facilities and states, and the development of [Alternate Care Sites](#), non-traditional care sites such as

converted hotels or mobile field medical units. These examples support the need to assist the health workforce in acquiring and retaining cross-cutting clinical care capabilities, providing training in medical operations, and offering career tracks in disaster medicine and nursing. We still have much to learn about the pandemic's long-term impact on supply and demand for health care providers across professions. The evidence we build to identify best practices about supporting the health workforce during the COVID-19 pandemic will inform efforts during future public health emergencies.

Objective 4.1. Use data to monitor and forecast health workforce needs

This objective describes efforts to conduct monitoring, occupational forecasting, and data collection and analysis on the health workforce to identify the characteristics, gaps, needs, and trends to determine where to target resources.

HHS uses health workforce modeling to identify and understand trends affecting the nation's health workforce supply and the levels of demand for health care, as well as the implications of these findings.¹⁰⁰ New, better data to reassess the nation's needs for health care workers is required as the health system and the nation change. This information can guide federal, tribal, and state government entities in how and where to allocate their workforce resources, as well as shape individual decisions about whether to pursue a particular health occupation or specialty. The public sharing of high-quality workforce data will be important to drive change. To that end, many of the federal agencies have begun to externalize their data to enhance program accountability and transparency.

Within HHS, CDC, HRSA, and SAMHSA implement activities advancing this objective, through the strategies below.

- 4.1.1 [Use health workforce data, research, and evaluations to inform how and where to allocate resources to strengthen the health workforce](#)
- 4.1.2 [Conduct ongoing tracking of adverse actions to support the delivery of quality care](#)

Objective 4.2. Advance health workforce knowledge through research and evaluation

This objective describes efforts to identify and prioritize areas of current and future health workforce needs, policy, strategies, and education and training requirements through research and evaluation.

Building the health workforce of the future must entail education and training that facilitates progressive achievement of milestones and competencies that trainees will leverage throughout their professional lives.¹⁰¹ Developing the skills for evidence-based practice is essential, as is learning how to better use technology to deliver appropriate, safe, high-quality care.¹⁰² The scientific evidence that builds a provider's knowledge base will constantly evolve.¹⁰³

Within HHS, ACL, AHRQ, ASPE, CDC, HRSA, and SAMHSA implement activities advancing this objective, through the strategies below.

- 4.2.1 [Conduct studies to learn how best to prepare primary care providers to participate in and lead health care systems aimed at improving access, quality of care, and cost effectiveness](#)
- 4.2.2 [Assess the workforce needed to deliver high-quality behavioral health care](#)
- 4.2.3 [Engage stakeholders to assemble best practices for supporting the public health workforce](#)
- 4.2.4 [Develop evidence to improve the home and community-based services workforce](#)

Appendix A: Coronavirus Aid, Relief, and Economic Security Act (Public Law 116-136), Section 3402. Health Workforce Coordination

(a) Strategic Plan.--

(1) In general.--Not later than 1 year after the date of enactment of this Act, the Secretary of Health and Human Services (referred to in this Act as the "Secretary"), in consultation with the Advisory Committee on Training in Primary Care Medicine and Dentistry and the Advisory Council on Graduate Medical Education, shall develop a comprehensive and coordinated plan with respect to the health care workforce development programs of the Department of Health and Human Services, including education and training programs.

(2) Requirements.--The plan under paragraph (1) shall--

(A) include performance measures to determine the extent to which the programs described in paragraph (1) are strengthening the Nation's health care system;

(B) identify any gaps that exist between the outcomes of programs described in paragraph (1) and projected health care workforce needs identified in workforce projection reports conducted by the Health Resources and Services Administration;

(C) identify actions to address the gaps described in subparagraph (B); and

(D) identify barriers, if any, to implementing the actions identified under subparagraph (C).

(b) Coordination With Other Agencies.--The Secretary shall coordinate with the heads of other Federal agencies and departments that fund or administer health care workforce development programs, including education and training programs, to--

(1) evaluate the performance of such programs, including the extent to which such programs are efficient and effective and are meeting the nation's health workforce needs; and

(2) identify opportunities to improve the quality and consistency of the information collected to evaluate within and across such programs, and to implement such improvements.

(c) Report.--Not later than 2 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Health, Education, Labor, and Pensions of the Senate, and the Committee on Energy and Commerce of the House of Representatives, a report describing the plan developed under subsection (a) and actions taken to implement such plan.

Appendix B: Health Workforce Strategic Plan Workgroup List

U.S. Department of Health and Human Services

- Administration for Children and Families
 - Office of Family Assistance
- Administration for Community Living
- Agency for Healthcare Research and Quality
- Centers for Disease Control and Prevention
 - Center for State, Tribal, Local, and Territorial Support
 - Center for Surveillance, Epidemiology, and Laboratory Services
 - National Center for Emerging and Zoonotic Infectious Diseases
 - National Center for Health Statistics
 - National Institute for Occupational Safety and Health
- Centers for Medicare & Medicaid Services
- Food and Drug Administration
- Health Resources and Services Administration
 - Bureau of Health Workforce
 - Maternal and Child Health Bureau
 - Federal Office of Rural Health Policy
 - Office of Planning, Analysis, and Evaluation
- Indian Health Service
- Office of the Assistant Secretary for Health
- Office of the Assistant Secretary for Planning and Evaluation
 - Office of Behavioral Health, Disability, and Aging Policy
 - Office of Health Policy
- Substance Abuse and Mental Health Services Administration
 - Center for Substance Abuse Prevention
 - Center for Substance Abuse Treatment
 - Center for Mental Health Services

Appendix C: Definitions

Below are the definitions used to develop this Strategic Plan. These definitions informed the initial environmental scan, which gathered information about relevant legislation, funded programs, research and evaluations, and data collection efforts, and guided drafting the full plan narrative.

Health Workforce. This plan, which is inclusive of workforce occupations defined within the U.S. Department of Labor, Bureau of Labor Statistics [Standard Occupational Classification system](#), defines the health workforce as follows: the occupations include all health care providers with direct patient care and support responsibilities, such as physicians (including primary care physicians, preventive medicine physicians, and specialty physicians), nurses, nurse practitioners, optometrists, physician assistants, pharmacists, dentists, dental hygienists, and other oral health care professionals, allied health professionals, doctors of chiropractic, community health workers, health care paraprofessionals, direct support professionals, psychologists and other behavioral and mental health professionals (including substance abuse prevention and treatment providers), social workers, physical and occupational therapists, certified nurse midwives, podiatrists, the EMS workforce (including professional and volunteer ambulance personnel and firefighters who perform emergency medical services), licensed complementary and alternative medicine providers, integrative health practitioners, public health professionals, and any other health professional that the Comptroller General of the U.S. determines appropriate.¹⁰⁴

Health Disparities. A higher burden of illness, injury, disability, or mortality experienced by one group relative to another.

Health Care Access. The ability of patients to access available services and the linking of appropriately trained providers to those in need of care.

Health Care Equity. The absence of disparities or avoidable differences among socioeconomic and demographic groups or geographical areas in health status and health outcomes such as disease, disability, or mortality.

Health Care Provider Quality. Training and professional development to help health care providers to use techniques proven to help patients.

Health Workforce Distribution. Health care providers work where they are needed.

Health Workforce Employment. The condition of paid work positions in the health care and social assistance sectors of the U.S. economy. This term is limited to occupations and professions commonly found in employment settings such as ambulatory health care services, hospitals, nursing and residential care facilities and social assistance organizations, as defined by the North American Industry Classification System (NAICS).

Health Workforce Supply. The number of health care workers in the workforce.

Health Workforce Surveillance. Collecting, analyzing, and using data to understand opportunities to strengthen the health workforce.

Appendix D: Health Care Workforce Programs and Activities

Below are health workforce programs and activities that support achievement of the goals and objectives articulated in this Strategic Plan.

1.1.1: Provide scholarships or stipends for professional and paraprofessional students and faculty in health and allied health programs to reduce financial barriers

Program/Activity (with hyperlink)	Description	Division
Epidemic Intelligence Service – Student Loan Repayment	Federal student loan repayment to select participants as an incentive to recruit qualifying public health fellows to priority initiatives, including data science.	CDC
National Health Service Corps Scholarship Program	Scholarships to students pursuing eligible primary care health professions training who commit to provide primary care services in Health Professional Shortage Areas.	HRSA
Nurse Corps Scholarship Program	Scholarships to nursing students who agree to work at a Critical Shortage Facility when they graduate.	HRSA
Ruth L. Kirschstein National Research Service Award Institutional Research Training Grant	Institutional training grants to eligible institutions to develop or enhance postdoctoral research training opportunities for individuals, including women and individuals from disadvantaged backgrounds, who are planning to pursue careers in primary care research.	HRSA

1.1.2: Fund graduate and post-graduate training to practicing health professionals through fellowships and residency programs to incentivize providing services in high need areas and to vulnerable populations

Program/Activity (with hyperlink)	Description	Division
Children’s Hospitals Graduate Medical Education Program	Funds to freestanding children’s hospitals to maintain graduate medical education programs, including residency programs for primary care physicians and physicians with pediatric medical and surgical subspecialties.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Direct Graduate Medical Education Indirect Medical Education	Regulations implementing the statutory methodology for determining payments to hospitals for the costs of approved graduate medical education programs.	CMS
Enhancing Peer Support and Navigation in the Certified Community Behavioral Health Centers	Effort to train and hire peer support providers and peer navigators in the current and expanded CCBHC programs which will number in excess of 500 across the country.	SAMHSA
Nurse Anesthetist Traineeship Program	Support for entities to meet the cost of traineeships to increase the number of Certified Registered Nurse Anesthetists providing care, especially to rural and underserved populations.	HRSA
Postdoctoral Training in General, Pediatric, and Public Health Dentistry Program	Professional training programs in general, pediatric, public health dentistry and dental hygiene for students, dental residents, other oral health professionals, practicing dentists, or other approved primary care dental trainees and provide financial assistance to dental or dental hygiene students, dental residents, and practicing dentists.	HRSA
Prevention Fellowship Program	Program designed to address the critical, nationwide shortage and projected future need of substance abuse prevention professionals by providing training, mentorship, and hands-on work experience to develop and sustain a cadre of prevention professionals who understand and exemplify the principles and best practices of substance abuse prevention including new and changing regulations, practices, and research findings.	SAMHSA
Preventive Medicine Residency and Fellowship	Service-learning fellowship program providing preventive medicine residents and fellows with opportunities to gain leadership and management skills while bridging medicine and public health.	CDC
Preventive Medicine Residency Program	Residencies to train physicians in preventive medicine specialties to increase the number and quality of preventive medicine residents and physicians.	HRSA

Program/Activity (with hyperlink)	Description	Division
Primary Care Training and Enhancement – Physician Assistant Program	Programs that train physician assistants and prepare faculty to train physician assistants.	HRSA
Primary Care Training and Enhancement: Community Prevention and Maternal Health	Training for primary care physicians in maternity care services or population health to improve maternal health outcomes in rural and underserved areas.	HRSA
Primary Care Training and Enhancement: Residency Training in Primary Care Program	Residency programs in family medicine, general internal medicine, general pediatrics, or a combination of internal medicine and pediatrics.	HRSA
Primary Care Training and Enhancement: Training Primary Care Champions	Fellowship programs to train community-based practicing primary care physician, physician assistant, and nurse practitioner champions to lead health care transformation and enhance teaching in community-based settings.	HRSA

1.1.3: Support curriculum enhancement to improve quality, quantity, distribution, and diversity of the health workforce

Program/Activity (with hyperlink)	Description	Division
CDC Workforce Fellowship Programs	Curriculum revisions to improve health equity and diversity, equity, and inclusion of our programs.	CDC
Centers of Excellence	Effort to recruit, train, and retain underrepresented minority students and faculty and improve information resources, clinical education, curricula, and cultural competence as they relate to minority health issues and social determinants of health.	HRSA
Public Health Informatics and Technology Workforce Development Program	Program to train at least 4,000 individuals from Minority Serving Institutions and other colleges and universities through an interdisciplinary approach in public health informatics and technology and ensure these training,	ONC

Program/Activity (with hyperlink)	Description	Division
	certification and degree programs are sustainable to create a continuous pipeline of diverse public health informatics and technology professionals.	

1.2.1: Target training assistance to individuals with low incomes and from disadvantaged backgrounds to strengthen supply in high-demand health occupations that offer good pay, benefits, and opportunities for advancement

Program/Activity (with hyperlink)	Description	Division
Health Careers Opportunity Program: National HCOP Academies	Assistance to individuals from educationally or economically disadvantaged backgrounds to undertake education and complete a health or allied health professions program.	HRSA
Health Profession Opportunity Grants	Education, training, and supportive services to recipients of Temporary Assistance for Needy Families (TANF) and other low-income individuals in health care occupations that pay well and are expected to experience labor shortages or be in high demand.	ACF
Health Professions Student Loans	Long-term, low-interest loans for students with financial need who are pursuing a course of study in an approved health discipline, an approved course in a nursing discipline, or a degree in allopathic medicine, osteopathic medicine, dentistry, pharmacy, optometry, or podiatric medicine.	HRSA
Maternal and Child Health Leadership, Education, and Advancement in Undergraduate Pathways Training Program	Effort to recruit undergraduate students from economically and educationally disadvantaged backgrounds into maternal and child health professions and related fields such as pediatrics, nutrition, social work, nursing, pediatric dentistry, psychology, health education, pediatric occupational/physical therapy and speech language pathology.	HRSA
Scholarships for Disadvantaged Students	Scholarships to health professional students from disadvantaged backgrounds enrolled in health professions degree programs.	HRSA

Program/Activity (with hyperlink)	Description	Division
Temporary Assistance for Needy Families	TANF and state maintenance of effort funds could help low-income parents pay for health care training programs.	ACF

1.2.2: Actively recruit, train, and retain individuals from underrepresented backgrounds, including racial and ethnic minority students and students with disabilities, into the health workforce

Program/Activity (with hyperlink)	Description	Division
Centers of Excellence	Mentoring, academic support, research opportunities, community-based clinical placements, and training enhancement programs to increase health professions opportunities for underrepresented minority students and faculty.	HRSA
Epidemic Intelligence Service	Expansion of the number of EIS fellows to increase workforce diversity through experiential service fellowship, which includes opportunities to apply epidemiology and gain practical skills to become future public health leaders.	CDC
Laboratory Leadership Service	Training which prepares early-career laboratory scientists to become future public health laboratory leaders, while providing field-based training for early career public health professionals. Expanding program to increase workforce diversity.	CDC
Maternal and Child Health (MCH) Public Health Catalyst Program	Exposure to maternal and child health content for public health students, including individuals from underrepresented backgrounds who are also underrepresented in the maternal and child health field.	HRSA
Native Hawaiian Health Scholarship Program	Scholarships for Native Hawaiian health professional students in exchange for providing service after graduation in a medically underserved area in Hawaii.	HRSA
Nursing Workforce Diversity – Eldercare Enhancement Program	Eldercare education and training opportunities to nursing students from disadvantaged backgrounds, including racial and ethnic minorities underrepresented among registered nurses.	HRSA

Program/Activity (with hyperlink)	Description	Division
Nursing Workforce Diversity Program	Mentoring, partnerships, financial support, academic support, and peer support for individuals from disadvantaged backgrounds, including racial and ethnic minorities underrepresented among registered nurses.	HRSA
Public Health Associate Program	Competitive, two-year paid training program with CDC, which assigns associates to public health agencies and nongovernmental organizations in the United States and U.S. territories, and helps associates gain hands-on experience that will serve as a foundation for their public health careers.	CDC

1.2.3: Conduct targeted recruitment of American Indian and Alaska Native individuals to strengthen their representation within the workforce

Program/Activity (with hyperlink)	Description	Division
Indian Health Service Extern Program	Pre-professional training for scholarship recipients, offering opportunities to participate in hands-on experiences in their chosen health profession or field with the Indian Health Service.	IHS
Indian Health Service Scholarship Program	Scholarships to AI/AN students enrolled in courses for entry into a health professions school, courses leading to a degree in pre-medicine, pre-dentistry, pre-podiatry, or other health subjects, or an eligible health professions degree program.	IHS
Indians into Medicine Program	Tutoring, career counseling, scholarship and financial aid assistance, summer educational sessions, and travel grants for health conferences to encourage American Indians and Alaska Natives to enter the health professions.	IHS
Public Health Informatics and Technology Workforce Development Program	Program to train at least 4,000 individuals from Minority Serving Institutions and other colleges and universities through an interdisciplinary approach in public health informatics and technology and ensure these training, certification and degree programs are sustainable to create a continuous pipeline of diverse public health informatics and technology professionals.	ONC

1.3.1: Invest in institutions of higher education to strengthen and expand the primary care workforce

Program/Activity (with hyperlink)	Description	Division
American Indians into Nursing Program	Grants to colleges and universities to recruit and train qualified American Indian and Alaska Native (AI/AN) individuals into nursing and advanced practice nursing professions (nurse midwives, nurse anesthetists, and nurse practitioners).	IHS
Medical Student Education Program	Grants to public institutions of higher education to expand or support graduate education for medical students preparing to become physicians in the top quintile of states with a projected primary care provider shortage in 2025.	HRSA

1.3.2: Conduct targeted training and recruitment to expand and diversify the behavioral health workforce

Program/Activity (with hyperlink)	Description	Division
American Indians into Psychology Program	Targeted career recruitment programs to encourage entry of American Indians and Alaska Natives into the mental health field, such as psychology.	IHS
Behavioral Health Workforce Education and Training	The BHWET Program for Paraprofessionals develops and expands community-based experiential training to increase the supply of students preparing to become peer support specialists and other behavioral health-related paraprofessionals while also improving distribution of a quality behavioral health workforce.	HRSA
Historically Black Colleges and Universities (HBCU) Center of Excellence in Behavioral Health	Training for HBCU students to obtain advanced degrees in the behavioral health field.	SAMHSA
Provider’s Clinical Support System - Universities	Training for eligible providers to obtain a Drug Addiction Treatment Act (DATA) 2000 waiver to prescribe medication-assisted treatment for opioid use disorder.	SAMHSA

1.3.3: Recruit and retain health professions faculty members and encourage students to pursue faculty roles in their respective health care fields

Program/Activity (with hyperlink)	Description	Division
Primary Care Training and Enhancement Program-Primary Care Medicine and Dentistry Clinician Educator Career Development	Support the development of junior faculty and leaders in primary care medicine and dentistry as well as support innovative projects to transform health care delivery systems.	HRSA
Dental Faculty Loan Repayment Program	Loan repayment program for health professionals engaged in general, pediatric, and public health dentistry and dental hygiene in exchange for a commitment to serve as full-time faculty members.	HRSA
Faculty Loan Repayment Program	Loan repayment program for faculty from disadvantaged backgrounds, in exchange for a commitment to serve as faculty educating the health workforce.	HRSA
Geriatrics Academic Career Award Program	Support for career development of individual junior faculty in geriatrics at accredited schools of allopathic medicine, osteopathic medicine, nursing, social work, psychology, dentistry, pharmacy, or allied health.	HRSA

1.4.1: Improve working conditions and work-life balance for health care providers to mitigate burnout and increase career satisfaction

Program/Activity (with hyperlink)	Description	Division
AHRQ Resource: Physician Burnout	Examination of the effects of working conditions on health care professionals' ability to keep patients safe while providing high-quality care.	AHRQ
Delta Region Community Health Systems Development Program	Intensive, multi-year technical assistance to health care facilities, including critical access hospitals, small rural hospitals, rural health clinics, Tribal health care facilities and other health care organizations in the Mississippi Delta Region.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Education and Awareness Campaign for Health Care Workers	Initiative to raise awareness of and provide resources for health care workers and first responders such as Emergency Medical Technicians (EMTs), focusing on working conditions and the risks of work-related stress, burnout, depression, anxiety, substance use disorders, and suicidal behavior.	CDC
Healthy Work Design and Well-Being Program	Program to advance worker safety, health, and well-being by improving the design of work, management practices, and the physical and psychosocial work environment.	CDC
Health and Public Safety Workforce Resiliency Technical Assistance Center	Provide tailored training and technical assistance to HRSA's workforce resiliency programs to enhance capacity and infrastructure to rapidly deploy innovative strategies that address workforce burnout and promote resiliency.	HRSA
Health and Public Safety Workforce Resiliency Training Program	Promote resiliency through targeted training activities using evidence-based and evidence-informed strategies to reduce and address burnout, suicide, mental health conditions, and substance abuse disorders among health care professionals, including health care students, residents, professionals, paraprofessionals, trainees, public safety officers, and employers of such individuals in rural and medically underserved communities.	HRSA
Promoting Resilience and Mental Health among Health Professional Workforce	Provide support to entities providing health care, health care providers associations, and Federally Qualified Health Centers, taking into consideration the needs of rural and medically underserved communities, to establish, enhance, or expand evidence informed or evidenced-based programs or protocols to promote resilience, mental health, and wellness among their providers, other personnel, and members.	HRSA
Total Worker Health® Program	Policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being.	CDC
Patients over Paperwork	Reduction in regulatory burden and unnecessary paperwork to enable providers to focus on delivering care to patients.	CMS

2.1.1: Provide loan repayment and other supports to expand access to care in designated HPSAs and Critical Shortage Facilities

Program/Activity (with hyperlink)	Description	Division
National Health Service Corps Loan Repayment Program	Loan repayment program for eligible primary care, dental, and mental health clinicians to provide culturally competent, interdisciplinary health care services to underserved populations located in designated HPSAs in exchange for repayment of outstanding qualifying educational loans.	HRSA
National Health Service Corps Rural Community Loan Repayment Program	Loan repayment program, in coordination with HRSA's Rural Communities Opioid Response Program, for eligible individuals working in HPSAs to combat the opioid epidemic in the nation's rural communities.	HRSA
National Health Service Corps Students to Service Loan Repayment Program	Loan repayment program for students in their last year of study pursuing a degree in medicine, nursing, or dentistry and who agree to provide culturally competent primary health services in HPSAs of greatest need for at least three years.	HRSA
National Health Service Corps Substance Use Disorder Workforce Loan Repayment Program	Loan repayment program for medical, physician assistant, nursing, and behavioral/mental health clinicians with specific training and credentials to provide evidence-based substance use disorder treatment serving at an NHSC-approved SUD treatment facility that is located in a designated Mental Health or Primary Medical Care HPSA.	HRSA
Nurse Corps Loan Repayment Program	Loan repayment program for registered nurses in exchange for a commitment to serve in a Critical Shortage Facility or at an accredited school of nursing.	HRSA
Primary Care Services Resource Coordination and Development Program (State Primary Care Office)	Support states and territories in addressing their statewide primary care needs assessment, Shortage Designation coordination; and technical assistance and collaboration to expand access to primary care.	HRSA

Program/Activity (with hyperlink)	Description	Division
State Loan Repayment Program	Grants to states to operate loan repayment programs that offer participants repayment of their qualifying educational loans in exchange for a commitment to serve in HPSAs.	HRSA

2.1.2: Conduct targeted recruitment, training, and retention investments to improve access to a high-quality health workforce in rural and underserved areas

Program/Activity (with hyperlink)	Description	Division
Delta Region Rural Health Workforce Training Program	Education and training for future and current health professionals in the rural counties and parishes of the Mississippi River Delta Region and Alabama Black Belt; focus on critical administrative support functions, such as medical coding and billing, claims processing, information management, and clinical documentation.	HRSA
National Rural Health Policy, Community, and Collaboration Program	Engagement with rural communities on national rural health policy issues and promising practices to improve the health of people living in rural communities.	HRSA
Nurse Education, Practice, Quality and Retention Simulation Education Training Program	Experiential learning opportunities for the nursing workforce, using simulation-based technology, to advance the health of patients, families, and communities in rural and medically underserved areas experiencing diseases and conditions that affect public health, such as high burden of stroke, heart disease, behavioral health, maternal mortality, HIV/AIDS, and obesity.	HRSA
Primary Care Services Resource Coordination and Development Program	Assistance to states to strengthen rural and medically underserved health care delivery systems, including supporting workforce recruitment and retention efforts within each state.	HRSA
Rural Emergency Medical Services Training Grant	Recruitment and training of emergency medical services personnel in rural areas.	SAMHSA

Program/Activity (with hyperlink)	Description	Division
Rural Telementoring Training Center	Training to academic medical centers and other centers of excellence to create technology-enabled telementoring learning programs that facilitate the dissemination of best practice specialty care to primary care providers and care teams in rural and underserved areas across the country.	HRSA

2.1.3: Encourage commitments to join the Indian Health Service, to meet critical staffing needs

Program/Activity (with hyperlink)	Description	Division
Indian Health Service Career Fairs	Opportunities to promote awareness of health care careers at the Indian Health Service and conduct targeted recruitment to fill gaps in geographic distribution or provider type.	IHS
Indian Health Service Loan Repayment Program and Supplemental Loan Repayment Program	Loan repayment awards to health care professionals in exchange for a commitment to serve in a full-time clinical capacity at Indian health programs with critical staffing needs.	IHS

2.2.1: Use a holistic approach to patient-centered care that expands screening and preventive services across primary care, behavioral health, and oral health, particularly in underserved urban and rural settings, to expand the capacity and role of the primary care workforce

Program/Activity (with hyperlink)	Description	Division
Advanced Nursing Education – Sexual Assault Nurse Examiners Program	Training and certification of registered nurses, advanced practice registered nurses and forensic nurses as sexual assault nurse examiners, to expand the number of providers able to conduct sexual assault forensic examinations, providing better physical and mental health care for survivors, better evidence collection, and higher prosecution rates.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Advanced Nursing Education Nurse Practitioner Residency Program	Preparation of new nurse practitioners for practice in community-based settings through clinical and academic focused residency programs, and connecting program participants to primary care employment, especially in rural and/or underserved areas.	HRSA
Advanced Nursing Education Workforce	Support for innovative academic practice partnerships to prepare primary care advanced practice registered nurse students through academic and clinical training with a focus on rural and underserved populations, traineeships to deliver primary care clinical training experiences with rural and/or underserved populations for selected advanced practice nurse practitioner, clinical nurse specialist, and nurse-midwifery students in primary care programs.	HRSA
Area Health Education Centers	Educational and training activities that address six core topic areas (inter-professional education, behavioral health integration, social determinants of health, cultural competency, practice transformation, and current and emerging health issues) to improve the distribution, diversity and supply of the primary care health professional workforce.	HRSA
Grants to States to Support Oral Health Workforce Activities	Establishment of new oral health facilities for children, expanded oral health facilities in dental HPSAs, and replacement of water fluoridation systems to improve the oral health workforce's ability to provide comprehensive dental services for underserved geographic areas and populations.	HRSA
Pharmacy Practice Experiential Rotation in Managed Pharmacy Care	Experiential rotations for pharmacy care students to improve understanding of the major concerns related to management, regulation, and evaluation of the formulary and benefit designs of Medicare Part D prescription drug plans.	CMS
Rural Residency Planning and Development Program	Development of newly accredited and sustainable rural residency programs in family medicine, internal medicine, public health and general preventive medicine, psychiatry, general surgery, obstetrics and gynecology to expand the physician and dentist workforce in rural communities.	HRSA

Program/Activity (with hyperlink)	Description	Division
Teaching Health Center Graduate Medical Education Program	Support for qualified teaching health centers to bolster the primary care workforce and improve the distribution of that workforce into outpatient community-based care.	HRSA
Teaching Health Center Planning and Development Program	Support the development of newly accredited primary care residency training programs in community-based ambulatory patient care centers.	HRSA
Teaching Health Center Planning and Development Technical Assistance Program	Technical assistance to recipients of and potential applicants to the Teaching Health Center Planning and Development Program.	HRSA

2.2.2: Increase the supply and capacity of the behavioral health workforce to provide new, innovative, and evidence-based treatment in community-based primary care settings

Program/Activity (with hyperlink)	Description	Division
Addiction Medicine Fellowship Program , Addiction Psychiatry Fellowship Program	Fellowship program to expand the number of addiction medicine specialists who will work in underserved community-based settings that integrate primary care with mental health disorders and substance use disorder prevention and treatment services.	HRSA
Advanced Nursing Education Nurse Practitioner Residency Integration Program	Preparation of new nurse practitioners in primary care or behavioral health practice in integrated, community-based settings through clinical and academic focused 12-month Nurse Practitioner Residency programs.	HRSA
Area Health Education Centers	Expansion of the substance abuse and mental health workforce who will focus on children, adolescents, and transitional-age youth who have or are at-risk for developing a recognized behavioral health disorder through targeted recruitment, field placements, career development, and job placement services.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Behavioral Health Workforce Education and Training Program for Professionals	Effort to increase the supply of behavioral health professionals and coordination with community-based partners (e.g., hospitals, crisis centers, state and local health departments, emergency departments, faith-based organizations, first responders, and judicial systems).	HRSA
Expansion of Practitioner Education	Integration of substance use disorder education into the standard curriculum of relevant health care and health services education programs to expand the number of practitioners able to deliver high-quality, evidence-based substance use disorder treatment.	SAMHSA
Graduate Psychology Education Program	Practice-based training experience for psychology students through grants for the planning, development, or operation of accredited graduate, doctoral, doctoral internship, and post-doctoral psychology fellowship programs that address access for underserved populations.	HRSA
Integrated Substance Use Disorder Training Program	Training program to expand of the number of nurse practitioners, physician assistants, health service psychologists, and social workers trained to provide mental health and substance use disorders services in underserved community-based settings that integrate primary care and mental health and substance use disorders services.	HRSA
Opioid-Impacted Family Support Program	Expansion in the number of peer support specialists and other paraprofessionals trained to work in integrated, interprofessional teams to serve children whose parents are affected by opioid use disorders and other substance use disorders.	HRSA
Providers Clinical Support System	Incentives to expand the number of providers with a DATA 2000 waiver to expand prescribing of FDA-approved medications for treatment of opioid use disorder.	SAMHSA

2.2.3: Apply solutions that integrate primary care, geriatric care, and public health to expand a workforce capable of managing the complex and challenging demands¹⁰⁵ in caring for older adults

Program/Activity (with hyperlink)	Description	Division
Geriatrics Workforce Enhancement Program	Integration of geriatrics with primary care and transformation of primary care clinical environments into age-friendly health systems to maximize patient and family engagement and improve health outcomes for older adults.	HRSA

2.2.4: Conduct targeted investments to reduce disparities in access to specialized health care services, including oral health, behavioral health, maternal and child health, and public health

Program/Activity (with hyperlink)	Description	Division
Implementation of Improving Access to Maternity Care Act	Development of criteria for Maternity Care Health Professional Target Areas.	HRSA
NEPQR - Veteran Nurses in Primary Care Training Program	Career ladder programs to increase the enrollment, progression, and graduation of veterans from nursing programs to expand the nursing workforce and improve employment opportunities for veterans in high demand careers such as nursing.	HRSA
Rural Communities Opioid Response Program	Recruitment and retention of the substance use disorder workforce in rural communities to implement and sustain substance use disorder prevention, treatment, and recovery services in underserved rural areas.	HRSA
State Opioid Response Technical Assistance Grant	Promotion of greater access to prevention treatment, recovery supports to address opioid and stimulant misuse, and care, by identifying health care professionals with relevant expertise and capacity to provide technical assistance.	SAMHSA

2.2.5: Strengthen the public health workforce to support robust responses during public health emergencies such as the COVID-19 pandemic

Program/Activity (with hyperlink)	Description	Division
Executive Order 13994: Ensuring a Data-Driven Response to COVID-19 and Future High-Consequence Public Health Threats	Enhanced data collection and collaboration activities for high-consequence public health threats and advance innovation in public health data and analytics.	HHS
Executive Order 13996: Establishing the COVID-19 Pandemic Testing Board and Ensuring a Sustainable Public Health Workforce for COVID-19 and Other Biological Threats	Recruitment and training of sufficient public health workers and other personnel to ensure adequate and equitable community-based testing, testing in schools, and testing in high-risk settings.	HHS
Executive Order 13999: Protecting Worker Health and Safety	Protection of the health and safety of health care workers and other essential workers during the COVID-19 pandemic.	HHS
Enhancing Community-Based Capacity for National COVID-19 Vaccine Outreach	Effort to establish, expand, and sustain a public health workforce to prevent, prepare for and respond to COVID-19 including mobilizing community outreach workers, which may include community health workers, patient navigators and social support specialists to educate, and assist individuals in receiving the COVID-19 vaccination.	HRSA
CDC TRAIN	Modernization and support for integration between TRAIN and other learning management systems to better provide trainings to build the skills of the current workforce.	CDC
CDC Steven M. Teutsch Prevention Effectiveness Fellowship	Implementation of an infectious disease modeling track.	CDC
Emergency System for Advance Registration for Volunteer Health Professionals	Development of a national network of state-based programs for pre-registration of volunteer health professionals who can provide needed help during an emergency.	ASPR

Program/Activity (with hyperlink)	Description	Division
Epidemiology Elective Program	Expansion of a program to support placing more EEP students at state, tribal, local, and territorial health departments.	CDC
National Public Health Laboratory Fellowship Program	Establishment of a program to expand the current CDC/Association for Public Health Laboratories program to support Bachelor or Master’s level fellows for 1 year full time fellowships in state, local or territorial laboratories.	CDC
National Special Pathogen System	Effort to improve recruitment and retention of special pathogen-trained staff with specialties that may be needed in special pathogen response.	ASPR
Public Health AmeriCorps	Partnership with AmeriCorps to recruit and build a new workforce to respond to the public health needs of the nation and provide public health service in their own communities.	CDC
Public Health Laboratory Internship Program	Collaboration with Association for Public Health Laboratories to establish new national public health laboratory internship program for undergraduates for up to 12 weeks, full time internships in state, local or territorial laboratories.	CDC

3.1.1: Provide continuing education opportunities for health care providers to improve quality and patient safety, comparative effectiveness, and prevention/care management

Program/Activity (with hyperlink)	Description	Division
AHRQ PSNet Continuing Medical Education, Maintenance of Certification	Continuing education modules in the form of Web based Morbidity and Mortality Rounds (Web M&M) for clinicians to learn about patient safety challenges resulting from medical errors, and how to address them.	AHRQ
AHRQ PSNet Training Catalog	Continuing education through a published national resource featuring a variety of classroom, self-study, and web-based training opportunities.	AHRQ
Health Assessment Recertification Project for Diversely Trained Clinicians	Evidence-based practice improvement guide and interactive web-based modules that help diversified clinicians design and implement a quality improvement plan to improve documentation of health assessments.	AHRQ

Program/Activity (with hyperlink)	Description	Division
Patient Self-Management Support of Chronic Conditions: Framework for Clinicians Seeking Recertification Credit	Interactive web-based module to help clinicians design and implement a quality improvement plan that solicits patient input to improve patient self-management support for those with chronic health conditions.	AHRQ
Project Firstline	Culturally appropriate and linguistically accessible infection control training opportunities for all U.S. frontline health care workers and select public health professionals to support the healthcare community to stop the spread of infectious diseases in healthcare settings.	CDC

3.1.2: Provide training and technical assistance to the health workforce to help them apply knowledge from recent advances in medical research, health care program evaluations, and data analysis to their field of practice

Program/Activity (with hyperlink)	Description	Division
Behavioral Health Workforce Development Technical Assistance and Evaluation	Tailored technical assistance to behavioral health workforce programs.	HRSA
CDC Public Health Training	Training and continuing education credits through free accredited courses, engaging professionals in state, Tribal, local and territorial agencies and organizations.	CDC
Center of Excellence for Infant and Early Childhood Mental Health Consultation	Tools, resources, training, and mentorship to the infant and early childhood mental health field to promote the healthy social and emotional development of infants and young children.	SAMHSA
Centers of Excellence in Maternal and Child Health Education, Science and Practice	Leadership training, applied research, and technical assistance to communities, states, and regions to prepare students for careers in maternal and child public health practice, research, planning, policy development, and advocacy.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Developmental-Behavioral Pediatrics	Program to support fellows in developmental-behavioral pediatrics, to enhance the behavioral, psychosocial, and developmental aspects of general pediatric care, by preparing them with the knowledge and skills to evaluate, diagnose, develop, and provide evidence-based interventions to children and adolescents with autism spectrum disorder and other developmental disabilities.	HRSA
First Responders – Comprehensive Addiction and Recovery Act	Training for first responders and members of key community sectors to administer drugs or devices approved for emergency treatment of known or suspected opioid overdose, to reduce morbidity associated with opioid overdose.	SAMHSA
Improving Cause of Death Reporting Training Module	Training module designed to increase knowledge and improve the competency of those who certify causes of death. The goal of this educational activity is to provide training on how cause-of-death information is used, how to fill out death certificates, when to refer a case to a medical examiner or coroner, and where to access additional resources.	CDC
Leadership Education in Neurodevelopmental and Related Disabilities (LEND)	Training for future leaders in a variety of disciplines to improve the health of children who have or are at risk of developing neurodevelopmental disabilities or other similar conditions such as autism and intellectual disabilities.	HRSA
Maternal and Child Health Navigator	Free, competency-based learning and tools for state public health professionals to improve health of children and families.	HRSA
Maternal and Child Health Workforce Development Programs	Workforce development and training investments to support the development of maternal and child health leaders and professionals in the areas of public health and clinical practice.	HRSA
National Ambulatory Medical Care Survey Continuing Education	Continuing education courses, including courses to explain the purpose, scope, and design of the National Ambulatory Medical Care Survey, to support timely certifications among health care providers and professionals.	CDC

Program/Activity (with hyperlink)	Description	Division
Nurse Education, Practice, Quality and Retention – Veteran Nurses in Primary Care Training Program	Recruitment and training of nursing students and current registered nurses who are veterans to practice to the full scope of their license in community-based primary care teams, with an emphasis on chronic disease prevention and control, including mental health and substance use disorders.	HRSA
Ryan White HIV/AIDS Program Part F: AIDS Education and Training Centers Program	A national network of centers with leading HIV experts who provide tailored education and technical assistance to healthcare providers and organizations to strengthen their ability to care for and treat patients with HIV or at-risk for HIV.	HRSA

3.1.3: Enhance the health care research workforce to support ongoing learning of the health workforce

Program/Activity (with hyperlink)	Description	Division
AHRQ Research Training and Education	Research Training of health services researchers, including clinician researchers, to produce a cadre of independent researchers and scientists who will continue contributing to the health services research field and attain research funding.	AHRQ
Learning Health Systems	Training for clinician and research scientists to conduct patient-centered outcomes research within learning health systems and build the capacity of researchers to conduct, apply, and implement patient-centered outcomes research.	AHRQ

3.2.1: Promote team-based care¹⁰⁶ to take a patient-centered approach to planning and delivering care

Program/Activity (with hyperlink)	Description	Division
Nurse Education, Practice, Quality and Retention – Registered Nurses in Primary Care Training Program	Recruitment and training of nursing students and current registered nurses to practice in community-based primary care teams, with a focus on chronic disease prevention and control, including mental health and substance use conditions.	HRSA
Nurse Education, Practice, Quality, and Retention Interprofessional Collaborative Practice Program: Behavioral Health Integration	Promotion of team-based care models in interprofessional nurse-led primary care teams in rural or underserved areas.	HRSA
Opioid Workforce Expansion Program Professionals	Training at interprofessional and team-based care field placement sites and internships integrating behavioral health and primary care to increase the number of behavioral health professionals and transform integrated behavioral health and primary care teams.	HRSA
TeamSTEPPS (Strategies and Tools to Enhance Performance and Patient Safety) 2.0 Curriculum	Evidence-based program to improve teamwork and communication skills among health care providers, enabling them to respond quickly and effectively to whatever situations arise.	AHRQ

3.2.2: Integrate community health workers, paraprofessionals, social workers, and social service agencies into interdisciplinary teams to strengthen coordination of primary care and public health approaches

Program/Activity (with hyperlink)	Description	Division
Center of Excellence for Protected Health Information	Training and technical assistance for health care practitioners on privacy laws and regulations related to information about mental and substance use disorders.	SAMHSA

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Program/Activity (with hyperlink)	Description	Division
Education and Research Centers Portfolio	Interdisciplinary graduate training, research training, continuing education, and outreach in core occupational safety and health disciplines to help improve workplace safety and health.	CDC
Family Support Technical Assistance Center	Specialized training to provider organizations and practitioners on family supports and services during times of medical or psychiatric emergency and other critical situations with families.	SAMHSA
Leadership Education in Adolescent Health (LEAH)	Interdisciplinary leadership training to maternal and child health leaders in adolescent and young adult health within medicine, nursing, nutrition, psychology, and social work.	HRSA
Leadership Education in Neurodevelopmental and Related Disabilities (LEND)	Interdisciplinary training to enhance the clinical expertise and leadership skills of professionals caring for children with neurodevelopmental and other disabilities, including autism.	HRSA
Maternal and Child Health Nutrition	Graduate training to nutritionists and registered dietitians and short-term training focused on clinical and public health approaches to maternal and child nutrition.	HRSA
National Center of Excellence for Eating Disorders	Training and technical assistance for health care practitioners on issues related to addressing eating disorders.	SAMHSA
Opioid Workforce Expansion Program Paraprofessionals	Experiential training opportunities such as field placement, internships, and apprenticeships to increase the supply and skill level of behavioral health-related paraprofessionals while also improving distribution of a quality behavioral health workforce.	HRSA
Partnering to Transform Health Outcomes with Persons with Intellectual Disabilities and Developmental Disabilities Program	Development of resources for medical professionals to address, prevent, and report health care discrimination, in partnership with people with intellectual and developmental disabilities and their families.	ACL

Program/Activity (with hyperlink)	Description	Division
Pediatric Pulmonary Centers	Interdisciplinary leadership training in pediatric pulmonary medicine, nursing, social work, nutrition, and family leadership to assure access to care and improve the health status of infants, children, and youth with chronic respiratory and sleep related conditions.	HRSA
Recovery Community Services Program	Program to develop a trained, qualified, and effectively supervised peer workforce to support the recovery experience and complement clinical practice.	SAMHSA
Regional Public Health Training Centers Program	Tailored training and technical assistance for the public health workforce to enhance skills in systems thinking, change management, persuasive communication, data analytics, and problem solving.	HRSA
Resources for Integrated Care	Capacity building for providers to build understanding and skills in addressing the needs of individuals eligible for Medicaid and Medicare, also known as dual eligibles.	CMS

3.3.1: Promote expanded use of innovations such as telehealth services to help providers deliver high-quality care

Program/Activity (with hyperlink)	Description	Division
COVID-19 CARES Telehealth Programs	Program to expand telehealth access and distant care services for providers, pregnant women, children, adolescents, and families to help prevent and respond to COVID-19.	HRSA
Geriatrics Workforce Enhancement Program Area Health Education Centers Program Centers of Excellence Program	Training for health care clinicians and students in using telehealth to enable referrals for screening and testing, case management, outpatient care, and other essential care to respond to public health emergencies such as the COVID-19 pandemic.	HRSA

Program/Activity (with hyperlink)	Description	Division
Nurse Education, Practice, Quality and Retention – Veteran Nurses in Primary Care Training Program Nurse Education, Practice, Quality and Retention – Registered Nurses in Primary Care Training Program		
Pediatric Mental Health Care Access Program	Promote behavioral health integration into pediatric primary care using telehealth to provide tele-consultation, training, technical assistance, and care coordination for pediatric primary care providers to diagnose, treat, and refer children and adolescents with behavioral health conditions, especially those living in rural and other underserved areas.	HRSA
Telehealth Resource Centers	Telehealth-related training and support to the health workforce in rural and underserved areas.	HRSA
Telehealth.HHS.gov	Information for providers and patients on efforts to support and promote telehealth services through the Telehealth.HHS.gov website.	HHS

3.3.2: Promote care practices that advance health equity

Program/Activity (with hyperlink)	Description	Division
Centers of Excellence for Behavioral Health Disparities	Training and technical assistance for health care practitioners on issues related to addressing behavioral health disparities among African Americans, the LGBTQ community, and older individuals.	SAMHSA
Minority Fellowship Program	Fellowship to expand the number of mental and substance use disorder professionals who provide culturally competent service.	SAMHSA

3.4.1: Promote multidisciplinary care, or integrated health care solutions, encouraging collaborations of health care professionals with the patient and family, to improve care quality

Program/Activity (with hyperlink)	Description	Division
AHRQ Patient and Family Engagement Resources	A variety of programs to engage patients and families in their care to improve the quality and safety of care, including resources for different settings for use by clinicians as well as resources for direct use by patients and families.	AHRQ
Assertive Community Treatment Grants	Innovative service delivery models to deliver multidisciplinary, comprehensive, and effective services to patients with complex and challenging needs.	SAMHSA
Center of Excellence for Integrated Health Solutions	Effort to advance the implementation of high-quality, evidence-based treatment for individuals with co-occurring physical and mental health conditions, including substance use disorders.	SAMHSA
Center of Excellence for Protected Health Information Related to Mental and Substance Use Disorders	Training and technical assistance for providers to understand confidentiality and privacy protections under 42 CFR Part 2 and HIPAA to eliminate barriers to coordinated care.	SAMHSA
Expansion of Practitioner Education	Integration of substance use disorder education into the standard curriculum of relevant health care and health services education programs, to expand the number of practitioners who deliver high-quality, evidence-based substance use disorder treatment.	SAMHSA
Primary Care Training and Enhancement: Integrating Behavioral Health and Primary Care Program	Innovative training programs for current and future primary care clinicians that integrate behavioral health care into primary care, particularly in rural and underserved settings, with a special emphasis on the treatment of opioid use disorder.	HRSA

3.4.2: Promote evidence-informed practices to enhance the capacity of behavioral health care providers to deliver high-quality, evidence-based care

Program/Activity (with hyperlink)	Description	Division
Addiction Technology Transfer Centers	Technical assistance to increase the capacity of specialized behavioral and primary health care providers to provide high-quality, effective services for clients with substance use disorder and co-occurring disorder.	SAMHSA
Clinical Support System for Serious Mental Illness	Consultations for mental health professionals on evidence-based screening and treatment and courses on topics related to serious mental illness.	SAMHSA
Mental Health Technology Transfer Centers	Training and technical assistance to ensure that mental health treatment and recovery support services and evidence-based practices are available for individuals with mental disorders.	SAMHSA
Prevention Technology Transfer Centers	Tools for substance use prevention professionals to improve understanding of prevention science, use of epidemiological data to guide prevention planning, and selection and implementation of evidence-based and promising prevention practices.	SAMHSA

4.1.1: Use health workforce data, research, and evaluations to inform how and where to allocate resources to strengthen the health workforce

Program/Activity (with hyperlink)	Description	Division
Behavioral Health Workforce Report	Data comparing the availability and need for behavioral health services.	SAMHSA
Health Equity Report	Metrics on how the contributions of the health workforce have led to improvements in health equity and diversity.	HRSA

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Program/Activity (with hyperlink)	Description	Division
Mental and Substance Use Disorder Practitioner Data	Comprehensive data and analysis on occupations that provide prevention and treatment of mental and substance use disorders to inform policy and planning decisions.	SAMHSA
Merit-Based Incentive Payment System (MIPS)	Data reporting system focusing on quality and cost of patient care, to provide performance-based payment adjustments to participating Medicare Part B clinicians.	CMS
National Center for Health Workforce Analysis	Health workforce projections estimating future demand, supply, and adequacy of specified occupations at the national, state, and metro-nonmetro levels.	HRSA
National Sample Survey of Registered Nurses	Nationally representative data on the nursing workforce to identify their characteristics such as education and training, employment, income, and demographics and evaluate and project the supply and demand of nursing resources.	HRSA
Payroll-Based Journal	System that collects nursing home staffing information to gauge its impact on quality of care.	CMS
Public Health Workforce Surveillance Data	Analysis of workforce data to forecast future needs, evaluate program, and forecast improvements, including, but not limited to, data from national profile surveys of state, tribal, local and territorial health departments.	CDC
Shortage Designation Modernization Project	Effort to streamline the shortage designation process that encompasses HPSAs and Medically Underserved Areas/Populations.	HRSA
Staffing Up: Determining Public Health Workforce Levels Needed to Serve the Nation Project	A collaborative project of CDC, the deBeaumont Foundation and the Public Health National Center for Innovation to develop a national estimate and tools that can inform public health workforce staffing levels needed to perform the foundational public health services.	CDC

4.1.2: Conduct ongoing tracking of adverse actions to support the delivery of quality care

Program/Activity (with hyperlink)	Description	Division
National Center for Health Statistics	Nationally representative statistics on health care to inform the development of professional education curricula for health care workers, formulate health policy, inform medical practice management, and evaluate quality of care.	CDC
National Practitioner Data Bank	Web-based repository of medical malpractice payments and certain adverse actions related to health care practitioners, providers, and suppliers as a flagging system to prevent practitioners from moving state to state without disclosure or discovery of previous damaging performance.	HRSA

4.2.1: Conduct studies to learn how best to prepare primary care providers to participate in and lead health care systems aimed at improving access, quality of care, and cost effectiveness

Program/Activity (with hyperlink)	Description	Division
AHRQ Primary Care Research Studies	Research concerning the nature and characteristics of primary care practice, the management of commonly occurring and undifferentiated clinical problems, and the continuity and coordination of health services.	AHRQ
Health Workforce Research Centers	Research and data analysis on national health workforce issues, and technical assistance to regional and local entities on workforce data collection, analysis, and reporting.	HRSA

4.2.2: Assess the workforce needed to deliver high-quality behavioral health care

Program/Activity (with hyperlink)	Description	Division
Bureau of Health Workforce Substance Use Disorder Evaluation	Assessments of efforts to increase access to the number of clinicians delivering evidence-based substance use disorder treatment, to enhance education and training in substance use prevention, and to support substance use disorder treatment in rural and underserved communities.	HRSA
Disability and Rehabilitation Research Projects Program	Test the impact of a peer navigator program on how people with psychiatric disabilities engage in the existing service system to address their health and wellness goals.	ACL
Field Initiated Projects Program (Research)	Effort to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended, through field-initiated research projects that explore increasing service provider capacity to deliver day services and supporting to individuals with intellectual and developmental disabilities.	ACL
Rehabilitation Research and Training Center Program	Development of new scientific knowledge about how the credentialing process for newly certified peer specialists contributes to employment outcomes and career advancement opportunities, to understand how mental health workers with a psychiatric history use this lived experience and formal training to support other people with psychiatric histories.	ACL
Technology Transfer Centers Program	Effort to track the number of providers receiving training and technical assistance on evidence-based practices for substance use disorder treatment, mental disorder treatment, and substance use disorder prevention practices.	SAMHSA

4.2.3: Engage stakeholders to assemble best practices for supporting the public health workforce

Program/Activity (with hyperlink)	Description	Division
CDC-ASTHO Partnership	Discussions with ASTHO committee developing a new program to enhance the capacity and strengthen the professional network of mid- to senior level governmental public health professionals from identity groups that are underrepresented in public health leadership, including people of color, people with disabilities, and lesbian/gay/bisexual/transgender individuals.	CDC
HRSA Maternal and Child Health Bureau’s Public Health Workforce Expert Panel Meeting	Meeting to gather input about priorities, needs, and opportunities to support an optimal public health workforce.	HRSA
Public Health Accreditation Board	A voluntary national accreditation program which supports the use of field-developed and evidence-based consensus standards for state, tribal, local and territorial health departments. The program includes a domain and set of standards dedicated to workforce development.	CDC

4.2.4: Develop evidence to improve the home and community-based services workforce

Program/Activity (with hyperlink)	Description	Division
Rehabilitation Research and Training Center Program	Program to accelerate development and application of non-medical, person-centered outcome measures that inform the design, implementation, and continuous improvement of federal and state home and community-based services programs, policies, and interventions, by identifying promising practices and requisite service-delivery competencies.	ACL
COVID-19 Intensifies Nursing Home Workforce Challenges (October 2020)	Examination of the impact of the COVID-19 pandemic on nursing homes in relation to long-standing workforce challenges, and identify new federal, state, and facility-level policies and practices that have been implemented to address	ASPE

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Program/Activity (with hyperlink)	Description	Division
	those challenges, including relaxation of federal licensing, credentialing, and training requirements.	

Appendix E: Performance Measures

Below is a comprehensive list of health workforce measures identified by the partners who contributed to the development of this Strategic Plan, organized by Goal and then by HHS Division. These performance measures capture both outputs and outcomes of program investments, to examine effectiveness and improve program processes. Progress on performance measures is tracked regularly and reported annually.

Goal 1: Expand Health Workforce Supply to Meet the Evolving Need

Program	Measure	Division
Health Profession Opportunity Grants (HPOG)	HPOG does not have program-wide targets; however, all grantees are required to establish 5-year quantifiable projections for the following 7 program activities: Overall Enrollment; TANF Enrollment; Basic Skills Enrollment; Basic Skills Completion; Healthcare Training Enrollment; Healthcare Training Completion; First-Time Employed in Healthcare.	ACF
National Health Service Corps	4.E.1 Default rate of NHSC Scholarship and Loan Repayment Program participants.	HRSA
National Health Service Corps	4.I.C.1 Number of individuals served by NHSC clinicians.	HRSA
National Health Service Corps	4.I.C.2 Support field strength (participants in service) of the NHSC.	HRSA
National Health Service Corps	4.I.C.4 Percent of NHSC clinicians retained in service to the underserved for at least one year beyond the completion of their NHSC service commitment.	HRSA
National Health Service Corps	4.I.C.6 Number of NHSC sites.	HRSA
Nurse Corps	5.E.1 Default rate of NURSE Corps Loan Repayment Program and Scholarship Program participants.	HRSA
Nurse Corps	5.I.C.7 Proportion of NURSE Corps Scholarship Program awardees obtaining their baccalaureate degree or advanced practice degree in nursing.	HRSA

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Program	Measure	Division
Public Health Training Centers Program	6.I.C.18 Number of instructional hours offered by Public Health Training Centers.	HRSA
Public Health Training Centers Program	6.I.C.19 Number of Public Health Training Center-sponsored public health students that completed field placement practicums in State, Local, and Tribal Health Departments.	HRSA
Centers for Excellence Program	6.I.C.20 Percent of program participants who completed pre-health professions preparation training and intend to apply to a health professions degree program.	HRSA
Centers for Excellence Program	6.I.C.21 Percent of program participants who received academic retention support and maintained enrollment in a health professions degree program.	HRSA
Primary Care Training and Enhancement Program	6.I.C.24 Number of physicians completing a Bureau of Health Workforce-funded residency or fellowship.	HRSA
Primary Care Training and Enhancement Program	6.I.C.25 Number of physicians graduating from a Bureau of Health Workforce-funded medical school.	HRSA
Primary Care Training and Enhancement Program	6.I.C.26 Number of physician assistants graduating from a Bureau of Health Workforce-funded program.	HRSA
Oral Health Training Program	6.I.C.27 Number of dental students trained.	HRSA
Oral Health Training Program	6.I.C.28 Number of dental residents trained.	HRSA
Oral Health Training Program	6.I.C.29 Number of faculty trained.	HRSA

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Program	Measure	Division
Behavioral Health Workforce Development Program	6.I.C.34 Number of students currently receiving training in behavioral health degree and certificate programs.	HRSA
Behavioral Health Workforce Development Program	6.I.C.35 Number of graduates completing behavioral health programs and entering the behavioral health workforce.	HRSA
Advanced Nursing Education Programs	6.I.C.38 Number of students trained in advanced nursing degree programs.	HRSA
Advanced Nursing Education Programs	6.I.C.40 Number of graduates from advanced nursing degree programs.	HRSA
Nursing Workforce Diversity Program	6.I.C.42 Number of program participants who participated in academic support programs during the academic year.	HRSA
Nursing Workforce Diversity Program	6.I.C.43 Number of program participants who are enrolled in a nursing degree program.	HRSA
Nurse Faculty Loan Program	6.I.C.46 Number of graduate-level nursing students who received a loan.	HRSA
Nurse Faculty Loan Program	6.I.C.47 Number of loan recipients who graduated from an advanced nursing degree program.	HRSA
Nursing Education, Practice, Quality, and Retention Program	6.I.C.57 Number of Nurse Education, Practice, Quality, and Retention nursing students trained in primary care.	HRSA
Medical Student Education Program	6.I.C.60 Number of medical students matched to primary care residencies.	HRSA
Behavioral Health Workforce Development Program	6.I.C.62 Number of substance use disorder treatment providers receiving loan repayment.	HRSA

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Program	Measure	Division
Public Health Training Center	6.I.C.9 Number of trainees participating in continuing education sessions delivered by Public Health Training Centers.	HRSA
Children's Hospitals Graduate Medical Education Payment Program	7.E Percent of payments made on time.	HRSA
Children's Hospitals Graduate Medical Education Payment Program	7.I.A.1 Maintain the number of FTE residents training in eligible children's teaching hospitals.	HRSA
Children's Hospitals Graduate Medical Education Payment Program	7.VII.C.1 Percent of hospitals with verified FTE residents counts and caps.	HRSA
State Offices of Rural Health	31.V.B.5: Number of clinician placements facilitated by the SORHs through their recruitment initiatives.	HRSA
MCH Pipeline Training Program (Undergraduate)	Training 07: The percent of MCHB Pipeline Program graduates who have been engaged in work focused on MCH populations 5 years post-graduation.	HRSA
MCH Pipeline Training Program (Undergraduate)	Training 08: The percent of pipeline graduates that enter graduate programs preparing them to work with the MCH population 5 years post-graduation.	HRSA
MCHB Graduate Training Programs	Training 10: The percent of long-term trainees that have demonstrated field leadership after completing an MCH training program (5 years after completing the training program).	HRSA
MCHB Graduate Training Programs	Training 11: The percentage of long-term trainees who are engaged in work focused on MCH populations after completing their MCH Training Program (5 years after completing the training program).	HRSA

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Program	Measure	Division
MCHB Graduate Training Programs	Training 12: The percent of long-term trainees who at 5 years post training have worked in an interdisciplinary manner to serve the MCH populations (e.g., individuals with disabilities and their families, adolescents and their families, etc.).	HRSA
Loan Repayment Program	IHP-4 Number of new 2-year contracts awarded under Section 108.	IHS
Loan Repayment Program	IHP-4 Number of continuing 1-year contracts awarded under Section 108.	IHS
Scholarship Program	Proportion of Health Scholarship recipients placed in Indian Health settings within 90 days of graduation.	IHS
Scholarship Program	Number of scholarship awards under section 103.	IHS
Scholarship Program	Number of scholarship awards under section 104.	IHS
Scholarship Program	Number of externs under section 105.	IHS
Public Health Informatics and Technology Workforce Development Program	Number of Minority Serving Institution students trained in Public Health Informatics and Technology.	ONC
Improving Access to Overdose Treatment Activities	5.2.1 Number trained on prescribing FDA-approved opioid-overdose reversal drugs or devices for emergency treatment of known or suspected opioid overdose.	SAMHSA
First Responder Training-CARA	5.1.1 Number of first responders trained how to administer FDA- approved overdose reversing medication kits.	SAMHSA
PDO-Naloxone	5.1 Number of lay persons trained how to administer Naloxone (or other FDA approved drug or device).	SAMHSA

Goal 2: Improve Distribution of the Health Workforce to Reduce Shortages

Program	Measure	Division
Health Profession Opportunity Grants (HPOG)	HPOG does not have program-wide targets; however, all grantees are required to establish 5-year quantifiable projections for the following 7 program activities: Overall Enrollment; TANF Enrollment; Basic Skills Enrollment; Basic Skills Completion; Healthcare Training Enrollment; Healthcare Training Completion; First-Time Employed in Healthcare.	HRSA
Nurse Corps	5.I.C.5 Proportion of NURSE Corps Loan Repayment Program/Scholarship Program participants retained in service at a critical shortage facility for at least one year beyond the completion of their NURSE Corps Loan Repayment Program/Scholarship Program commitment.	HRSA
Nurse Corps	5.I.C.4 Proportion of NURSE Corps Loan Repayment Program participants who extend their service contracts to commit to work at a critical shortage facility for an additional year.	HRSA
Bureau of Health Workforce Cross-Cutting Measure	6.I.B.1 Percentage of graduates and program completers of Bureau of Health Workforce-supported health professions training programs who are underrepresented minorities and/or from disadvantaged backgrounds.	HRSA
Bureau of Health Workforce Cross-Cutting Measure	6.I.C.1 Percentage of trainees in Bureau of Health Workforce-supported health professions training programs who receive training in medically underserved communities.	HRSA
Bureau of Health Workforce Cross-Cutting Measure	6.I.C.2 Percentage of individuals supported by the Bureau of Health Workforce who completed a primary care training program and are currently employed in underserved areas.	HRSA
Scholarships for Disadvantaged Students	6.I.C.22 Number of disadvantaged students with scholarships.	HRSA
Geriatrics Workforce Enhancement Program	6.I.C.12 Number of Bureau of Health Workforce-sponsored educational offerings provided on Alzheimer’s disease and related dementias.	HRSA

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Program	Measure	Division
Geriatrics Workforce Enhancement Program	6.I.C.13 Number of trainees participating in educational offerings on Alzheimer's disease and related dementias.	HRSA
Geriatrics Workforce Enhancement Program	6.I.C.32 Number of continuing education trainees in geriatrics programs.	HRSA
Geriatrics Workforce Enhancement Program	6.I.C.33 Number of students who received geriatric-focused training in settings across the care continuum.	HRSA
Graduate Psychology Education Program	6.I.C.36 Number of graduate-level psychology students supported in Graduate Psychology Education program.	HRSA
Graduate Psychology Education Program	6.I.C.37 Number of interprofessional students trained in Graduate Psychology Education program.	HRSA
Advanced Nursing Education Program	6.I.C.39 Percent of students trained who are underrepresented minorities and/or from disadvantaged backgrounds.	HRSA
Nursing Workforce Diversity Program	6.I.C.41 Percent of program participants who are underrepresented minorities and/or from disadvantaged backgrounds.	HRSA
Teaching Health Center Graduate Medical Education	6.I.C.48 Percent of Teaching Health Center Graduate Medical Education-supported residents training in rural and/or underserved communities.	HRSA
Teaching Health Center Graduate Medical Education	6.I.C.5 Number of resident positions supported by Teaching Health Centers.	HRSA
Area Health Education Center	6.I.C.49 Number of Area Health Education Center scholars trained in medically underserved communities and/or rural areas.	HRSA
Area Health Education Center	6.I.C.50 Percent of Area Health Education Center program completers practicing in medically underserved communities and/or rural areas.	HRSA

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Program	Measure	Division
Health Careers Opportunity Program	6.I.C.51 Number of Health Careers Opportunity Program trainees from disadvantaged backgrounds participating in academic programming, clinical training and/or student support services.	HRSA
Health Careers Opportunity Program	6.I.C.52 Percent of Health Careers Opportunity Program health professions program completers who intend to work in primary care settings.	HRSA
Opioid Workforce Expansion Program	6.I.C.53 Number of Opioid Workforce Expansion Program trainees currently receiving training in opioid-related behavioral health degree and certificate programs.	HRSA
Opioid Workforce Expansion Program	6.I.C.54 Number of Opioid Workforce Expansion Program graduates completing opioid-related behavioral health programs and entering the behavioral health workforce.	HRSA
Medical Student Education Program	6.I.C.59 Number of medical students trained in underserved states.	HRSA
Addiction Medicine Fellowship Program	6.I.C.61 Number of new addiction medicine and addiction psychiatry fellowship graduates entering workforce.	HRSA
Maternal and Child Health Undergraduate and Graduate Training Programs	Training 06: The percentage of participants in MCHB long-term training programs who are from underrepresented racial and ethnic groups.	HRSA
Maternal and Child Health Pipeline Training Program (Undergraduate)	The percent of MCH Pipeline Program graduates who have been engaged in work with populations considered to be underserved or vulnerable 5 years post-graduation.	HRSA
Maternal and Child Health Graduate Training Programs	Former Trainee Survey: The percentage of former trainees who report working with underserved or vulnerable populations.	HRSA

Goal 3: Enhance Health Care Quality through Professional Development, Collaboration, and Evidence-Informed Practice

Program	Measure	OpDiv
University Centers for Excellence in Developmental Disabilities, Education, Research and Service (UCEDD)	Increase the percentage of individuals with developmental disabilities receiving the benefit of services through activities in which professionals were involved who completed University Centers of Excellence in Developmental Disabilities (UCEDDs) state-of-the-art training within the past 10 years.	ACL
Project Firstline	For the initial phase of the program (Project Firstline infection control training for health care personnel and the public health workforce), Project Firstline will track the following elements: learning needs of frontline workers, reach of Project Firstline partner networks, program responsiveness to the infection control informational and delivery needs of frontline workers, profession or role of those receiving Project Firstline training materials, perceived value of information to the trainee, and integration of IPC curricular elements into academic workforce training programs.	CDC
Division of Scientific Education and Professional Development and the Center for State, Tribal, Local, and Territorial Support's Public Health Associate Program	Increase the number of CDC trainees in state, Tribal, local, and territorial public health agencies.	CDC
Division of Scientific Education and Professional Development	Increase the number of CDC's free accredited courses passed by learners to earn Continuing Education (CE), demonstrating successful achievement of educational content.	CDC

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Program	Measure	OpDiv
Resources for Integrated Care (RIC), a CMS/Medicare-Medicaid Coordination Office contract	RIC Contractor tracks webinar attendance and website statistics. The contractor also solicits ongoing feedback of technical assistance products to determine effectiveness and potential areas of improvement.	CMS
Bureau of Health Workforce Cross-Cutting Measure	6.I.1 Percent of clinical training sites that provide interprofessional training to individuals enrolled in a primary care training program.	HRSA
Nurse Education, Practice, Quality, and Retention	6.I.C.58 Number of Nurse Education, Practice, Quality, and Retention trainees and professionals participating in interprofessional team-based care.	HRSA
National Traumatic Childhood Stress Initiative	3.2.24 Number of child-serving professionals trained in providing trauma-informed services.	SAMHSA
Assertive Outpatient Treatment for Individuals with SMI	3.4.08 Number of people in the mental health and related workforce trained in mental health-related practices/activities.	SAMHSA
Other Mental Health Capacity Programs	3.5.00 Number of people in the mental health and related workforce trained in mental health-related practices/activities that are consistent with the goals of the grants.	SAMHSA
Infant and Early Childhood Mental Health	3.4.18 Number of people in the mental health and related workforce trained in specific mental health-related practices/activities as a result of the program.	SAMHSA

Goal 4: Develop and Apply Data and Evidence to Strengthen the Health Care Workforce

Program	Measure	Division
National Practitioner Data Bank	8.III.B.5 Increase the number of practitioners enrolled in Continuous Query (which is a subscription service for Data Bank queries that notifies them of new information on enrolled practitioners within one business day).	HRSA
National Practitioner Data Bank	8.III.B.7 Increase annually the number of reports disclosed to health care organizations.	HRSA

Appendix F: Advisory Committee on Training in Primary Care Medicine and Dentistry and Advisory Council on Graduate Medical Education

Section 3402 of the CARES Act directed the Department to consult with two advisory committees on the development of this Strategic Plan. The Department engaged these committees on the plan's initial framework and invited their input. Letters from these advisory committees are included separately.

Advisory Committee on Training in Primary Care Medicine and Dentistry

The [Advisory Committee on Training in Primary Care Medicine and Dentistry](#) (ACTPCMD) advises and makes recommendations to the Secretary of the Department of Health and Human Services, the Senate Committee on Health, Education, Labor and Pensions, and the House of Representatives Committee on Energy and Commerce on policy, program development, and other matters of significance concerning the medicine and dentistry activities under Section 747 of the Public Health Service Act. In addition, ACTPCMD develops, publishes, and implements performance measures and longitudinal evaluations for programs under Part C of Title VII of the Public Health Service Act.

Council on Graduate Medical Education

The [Council on Graduate Medical Education](#) (COGME) provides an ongoing assessment of physician workforce trends, training issues and financing policies, and recommends appropriate federal and private sector efforts on these issues. COGME advises and makes recommendations to the Secretary of the U.S. Department of Health and Human Services and to the Senate Committee on Health, Education, Labor and Pensions, and the House of Representatives Committee on Energy and Commerce.

Appendix G: Other Health Workforce Advisory Groups

The Department also engaged and invited input from three advisory committees not specifically mentioned in the CARES Act but with whom the Department regularly engages on matters related to the health workforce. Letters from these advisory committees are included separately.

Advisory Committee on Interdisciplinary, Community-Based Linkages

The [Advisory Committee on Interdisciplinary, Community-Based Linkages](#) (ACICBL) is authorized by section 757 of the Public Health Service Act (42 U.S.C. 294f), as amended by the Patient Protection and Affordable Care Act, Public Law 111-148. ACICBL provides advice and recommendations on policy and program development to the Secretary of Health and Human Services (Secretary) concerning the activities under Title VII, Part D of the Public Health Service Act, and is responsible for submitting an annual report to the Secretary and Congress describing the activities of ACICBL, including its findings and recommendations concerning the activities under Part D of Title VII. In addition, ACICBL develops, publishes, and implements performance measures and guidelines for longitudinal evaluations, as well as recommends appropriation levels for programs under this part. ACICBL focuses on the following targeted program areas and/or disciplines: Area Health Education Centers, Geriatrics, Allied Health, Chiropractic, Podiatric Medicine, Social Work, Graduate Psychology, and Rural Health.

National Advisory Council on Nurse Education and Practice

The [National Advisory Council on Nurse Education and Practice](#) (NACNEP) is required by section 851 of the Public Health Service Act (42 U.S.C. 297t), as amended. NACNEP provides advice and recommendations on policy, program, and general regulation development to the Secretary of Health and Human Services (Secretary) and Congress with respect to the administration of Title VIII of the Public Health Service Act. This includes the range of issues relating to nurse workforce, nurse supply, education, and practice improvement. In addition, NACNEP is responsible for submitting an annual report to the Secretary and Congress on its activities, including findings and recommendations concerning the activities under Title VIII.

National Advisory Council on the National Health Service Corps

The [National Advisory Council on the National Health Service Corps](#) (NACNHSC) was established under section 337 of the Public Health Service Act (42 USC 254j), as amended by Section 10501 of the Affordable Care Act. NACNHSC is governed by provisions of Public Law 92-463 (5 USC App. 2), which set forth standards for the formation and use of advisory committees. NACNHSC serves as a forum to discuss and identify the priorities of the National Health Service Corps (NHSC), bring forward new priorities as needed, and anticipate health workforce emerging program trends as well as challenges. NACNHSC provides ongoing communication with Council members, professional organizations, and with the NHSC. NACNHSC functions as a sounding board for proposed policy changes by using its expertise to advise on specific program areas and new initiatives.

Appendix H: Endnotes

¹ White House. January 21, 2021. "Executive Order on Establishing the COVID-19 Pandemic Testing Board and Ensuring a Sustainable Public Health Workforce for COVID-19 and Other Biological Threats." <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/21/executive-order-establishing-the-covid-19-pandemic-testing-board-and-ensuring-a-sustainable-public-health-workforce-for-covid-19-and-other-biological-threats/>

(Accessed October 22, 2021).

² U.S. Department of Health and Human Services. n.d. "Healthy People 2020: Access to Health Services." Last Modified October 8, 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services> (Accessed October 22, 2021).

³ Starfield, B., L. Shi, and J. Macinko. 2005. "Contribution of Primary Care to Health Systems and Health." *Milbank Q* 83 (3): 457-502. <https://doi.org/10.1111/j.1468-0009.2005.00409.x>.

⁴ U.S. Department of Health and Human Services. n.d. "Healthy People 2020: Oral Health." Last Modified October 8, 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health> (Accessed October 22, 2021).

⁵ Institute of Medicine, National Cancer Policy Forum. 2009. "Supply and Demand in the Health Care Workforce." *Ensuring Quality Cancer Care through the Oncology Workforce: Sustaining Care in the 21st Century: Workshop Summary*, 3-12. Washington, DC: National Academies Press. <https://www.ncbi.nlm.nih.gov/books/NBK215247/> (Accessed October 22, 2021).

⁶ U.S. Bureau of Labor Statistics. n.d. "Healthcare Occupations." Occupational Outlook Handbook. Last Modified September 8, 2021. <https://www.bls.gov/ooh/healthcare/home.htm> (Accessed October 22, 2021).

⁷ Health Resources and Services Administration, National Center for Health Workforce Analysis. n.d. *Oral Health Workforce Projections, 2017-2030: Dentists and Dental Hygienists*. Rockville, MD: Health Resources and Services Administration. <https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/oral-health-2017-2030.pdf> (Accessed October 22, 2021).

⁸ Ellison, E. Christopher, Timothy M. Pawlik, David P. Way, Bhagwan Satiani, and Thomas E. Williams. 2018. "Ten-Year Reassessment of the Shortage of General Surgeons: Increases in Graduation Numbers of General Surgery Residents are Insufficient to Meet the Future Demand for General Surgeon." *Surgery* 164 (4): 726-732. <https://pubmed.ncbi.nlm.nih.gov/30098811/> (Accessed July 15, 2021).

⁹ Health Resources and Services Administration, National Center for Health Workforce Analysis. n.d. *Behavioral Health Workforce Projections, 2017-2030*. Rockville, MD: Health Resources and Services Administration. <https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/bh-workforce-projections-fact-sheet.pdf> (Accessed October 22, 2021).

¹⁰ Institute on Community Integration, University of Minnesota. 2021. "Direct Support Workforce." <https://ici.umn.edu/program-areas/community-living-and-employment/direct-support-workforce> (Accessed October 22, 2021).

¹¹ Institute of Medicine. 2014. *Graduate Medical Education That Meets the Nation’s Health Needs*, ed. Jill Eden, Donald Berwick and Gail Wilensky. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/18754/graduate-medical-education-that-meets-the-nations-health-needs> (Accessed October 22, 2021).

¹² National Academies of Sciences, Engineering, and Medicine. 2017. *Future Financial Economics of Health Professional Education: Proceedings of a Workshop*, ed. Patricia A. Cuff and Megan M. Perez. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/24736/future-financial-economics-of-health-professional-education-proceedings-of-a> (Accessed October 22, 2021).

¹³ Phillips, Julie P., Stephen M. Petterson, Andrew W. Bazemore, and Robert L. Phillips. 2014. “A Retrospective Analysis of the Relationship Between Medical Student Debt and Primary Care Practice in the United States.” *Ann Fam Med* 12 (6): 542-549. <https://doi.org/10.1370/afm.1697>.

¹⁴ Jolly, P. 2005. “Medical School Tuition and Young Physicians’ Indebtedness.” *Health Aff (Millwood)* 24 (2): 527-535. <https://doi.org/10.1377/hlthaff.24.2.527>.

¹⁵ Regenstein, Marsha, Kiki Nocella, Mariellen Malloy Jewers, and Fitzhugh Mullan. 2016. “The Cost of Residency Training in Teaching Health Centers.” *N Engl J Med* 375 (7): 612-614. <https://doi.org/10.1056/NEJMp1607866>.

¹⁶ National Academies of Sciences, Engineering, and Medicine. 2017. *Future Financial Economics of Health Professional Education: Proceedings of a Workshop*, ed. Patricia A. Cuff and Megan M. Perez. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/24736/future-financial-economics-of-health-professional-education-proceedings-of-a> (Accessed October 22, 2021).

¹⁷ U.S. Government Accountability Office. December 11, 2015. *Health Care Workforce: Comprehensive Planning by HHS Needed to Meet National Needs*. GAO-16-17. Washington, DC: U.S. Government Accountability Office. <https://www.gao.gov/products/GAO-16-17> (Accessed October 22, 2021).

¹⁸ Health Resources and Services Administration, National Center for Health Workforce Analysis. November 2016. *National and Regional Projections of Supply and Demand for Primary Care Practitioners: 2013-2025*. Rockville, MD: Health Resources and Services Administration. <https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/primary-care-national-projections-2013-2025.pdf>. (Accessed October 22, 2021).

¹⁹ National Academies of Sciences, Engineering, and Medicine. 2017. *Future Financial Economics of Health Professional Education: Proceedings of a Workshop*, ed. Patricia A. Cuff and Megan M. Perez. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/24736/future-financial-economics-of-health-professional-education-proceedings-of-a> (Accessed October 22, 2021).

²⁰ Reyes-Akinbileje, Bernice. August 13, 2013. *Health Workforce Programs in Title VII of the Public Health Service Act. R43177*. Washington, DC: Congressional Research Service. <https://www.hsdl.org/?view&did=744097> (Accessed October 22, 2021).

²¹ Wakefield, Mary. 2014. “Improving the Health of the Nation: HRSA’s Mission to Achieve Health Equity.” *Public Health Rep* 129 Suppl 2 (Suppl 2): 3-4. <https://doi.org/10.1177/003335491412915202>.

²² Health Resources and Services Administration, National Center for Health Workforce Analysis. August 2017. *Sex, Race, and Ethnic Diversity of U.S. Health Occupations (2011-2015)*. Rockville, MD: Health Resources and Services Administration.

<https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/diversityushealthoccupations.pdf> (Accessed October 22, 2021).

²³ Council on Graduate Medication Education. May 2016. *Resource Paper: Supporting Diversity in the Health Professions*. Rockville, MD: Health Resources and Services Administration.

<https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/graduate-medical-edu/resource-papers/May2016.pdf> (Accessed October 22, 2021).

²⁴ National Academies of Sciences, Engineering, and Medicine. 2017. *Future Financial Economics of Health Professional Education: Proceedings of a Workshop*, ed. Patricia A. Cuff and Megan M. Perez. Washington, DC: The National Academies Press.

<https://www.nap.edu/catalog/24736/future-financial-economics-of-health-professional-education-proceedings-of-a> (Accessed October 22, 2021).

²⁵ Accreditation Council for Graduate Medical Education. 2019. *2019 Milestones National Report*. Chicago, IL: Accreditation Council for Graduate Medical Education.

<https://www.acgme.org/Portals/0/PDFs/Milestones/2019MilestonesNationalReportFinal.pdf?ver=2019-09-30-110837-587> (Accessed October 22, 2021).

²⁶ Mehrotra, Ateev, Michael Chernew, David Linetsky, Hilary Hatch, and David Cutler. “The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges.” *To the Point* (blog), *Commonwealth Fund*. May 19, 2020.

<https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits> (Accessed October 22, 2021).

²⁷ Association of American Medical Colleges. November 2016. *Policy Priorities to Improve the Nation’s Health. From America’s Medical Schools and Teaching Hospitals*. Washington, DC: Association of American Medical Colleges.

<https://www.aamc.org/system/files/c/2/472838-policy-priorities-improve-nations-health.pdf> (Accessed October 22, 2021).

²⁸ Surdyk, Patricia M. 2017. “The History of Sponsoring Institutions, 1982-2017.” *J Grad Med Educ* 9 (6 Suppl): 7-10. <https://doi.org/10.4300/1949-8349.9.6s.7>.

²⁹ Health Resources and Services Administration. n.d. “Teaching Health Center Graduate Medical Education (THCGME) Program.” Last Modified February 2021.

<https://bhw.hrsa.gov/funding/apply-grant/teaching-health-center-graduate-medical-education> (Accessed October 22, 2021).

³⁰ Institute of Medicine. 2014. *Graduate Medical Education That Meets the Nation’s Health Needs*, ed. Jill Eden, Donald Berwick and Gail Wilensky. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/18754/graduate-medical-education-that-meets-the-nations-health-needs> (Accessed October 22, 2021).

³¹ Barrett, Felicia A., Martin S. Lipsky, and May Nawal Lutfiyya. 2011. “The Impact of Rural Training Experiences on Medical Students: A Critical Review.” *Acad Med* 86 (2): 259-263.

<https://doi.org/10.1097/ACM.0b013e3182046387>.

³² Kwan, Jennifer M., Dania Daye, Mary Lou Schmidt, Claudia Morrissey Conlon, Hajwa Kim, Bilwaj Gaonkar, Aimee S. Payne, Megan Riddle, Sharline Madera, Alexander J. Adami, and Kate Quinn. Winter. 2017. “Exploring Intentions of Physician-Scientist Trainees: Factors Influencing MD and MD/Phd Interest in Research Careers.” *BMC Med Educ* 17 (1): 115-115.

<https://doi.org/10.1186/s12909-017-0954-8>.

³³ Klink, K. A., S. E. Joice, and S. K. McDevitt. 2014. “Impact of the Affordable Care Act on Grant-Supported Primary Care Faculty Development.” *J Grad Med Educ* 6 (3): 419-423.

<https://doi.org/10.4300/jgme-d-14-00329.1>.

- ³⁴ Shipman, S. A., and C. A. Sinsky. 2013. “Expanding Primary Care Capacity by Reducing Waste and Improving the Efficiency of Care.” *Health Aff (Millwood)* 32 (11): 1990-1997. <https://doi.org/10.1377/hlthaff.2013.0539>.
- ³⁵ Sharp, Dayle, Maritza Bond, Kelly Cheek, Holly Wolff, and National Rural Health Association. February 2015. *Quality of Life Impacts the Recruitment and Retention of Rural Health Providers*. Washington, DC: National Rural Health Association. <https://www.ruralhealthweb.org/getattachment/Advocate/Policy-Documents/QualityofLifeRecruitmentRetentionProvidersFeb2015.pdf.aspx?lang=en-US> (Accessed October 22, 2021).
- ³⁶ National Academies of Sciences, Engineering, and Medicine. 2019. *Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being*. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/25521/taking-action-a-against-clinician-burnout-a-systems-approach-to-professional> (Accessed October 22, 2021).
- ³⁷ Miguel-Puga, José Adán, Davis Cooper-Bribiesca, Francisco José Avelar-Garnica, Luis Alejandro Sanchez-Hurtado, Tania Colin-Martínez, Eliseo Espinosa-Poblano, Juan Carlos Anda-Garay, Jorge Iván González-Díaz, Oscar Bernardo Segura-Santos, Luz Cristina Vital-Arriaga, Kathrine Jáuregui-Renaud. 2021. “Burnout, Depersonalization and Anxiety Contribute to Posttraumatic Stress in Frontline Health Workers at COVID-19 Patient Care, a Follow-Up Study.” *Brain Behav.* e02007. <https://doi.org/10.1002/brb3.2007>.
- ³⁸ Centers for Medicare & Medicaid Services. June 23, 2020. “CMS Unveils Major Organizational Change to Reduce Provider and Clinician Burden and Improve Patient Outcomes.” <https://www.cms.gov/newsroom/press-releases/cms-unveils-major-organizational-change-reduce-provider-and-clinician-burden-and-improve-patient> (Accessed October 22, 2021).
- ³⁹ Shipman, S. A., and C. A. Sinsky. 2013. “Expanding Primary Care Capacity by Reducing Waste and Improving the Efficiency of Care.” *Health Aff (Millwood)* 32 (11): 1990-1997. <https://doi.org/10.1377/hlthaff.2013.0539>.
- ⁴⁰ Association of State and Territorial Health Officials. 2016. *Issue Brief: Utilizing Community Health Workers to Improve Access to Care for Maternal and Child Populations: Four State Approaches*. Arlington, VA: Association of State and Territorial Health Officials. <https://astho.org/Maternal-and-Child-Health/AIM-Access-CHW-Issue-Brief/> (Accessed October 22, 2021).
- ⁴¹ Health Resources and Services Administration, National Center for Health Workforce Analysis. November 2016. *National and Regional Projections of Supply and Demand for Primary Care Practitioners: 2013-2025*. Rockville, MD: Health Resources and Services Administration. <https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/primary-care-national-projections-2013-2025.pdf>. (Accessed October 22, 2021).
- ⁴² Facilities automatically designated as HPSAs based on statute or through regulation include Federally Qualified Health Centers (FQHC), FQHC Look-A-Likes, Indian Health Facilities, Indian Health Service and Tribal Hospitals, Dual-funded Community Health Centers and Tribal Clinics, and CMS-Certified Rural Health Clinics.
- ⁴³ Health Resources and Services Administration. n.d. “Shortage Areas.” Last Modified October 21, 2021. <https://data.hrsa.gov/topics/health-workforce/shortage-areas> (Accessed October 22, 2021).
- ⁴⁴ Cosby, A. G., M. M. McDoom-Echebiri, W. James, H. Khandekar, W. Brown, and H. L. Hanna. 2019. “Growth and Persistence of Place-Based Mortality in the United States: The Rural

Mortality Penalty.” *Am J Public Health* 109 (1): 155-162.

<https://doi.org/10.2105/ajph.2018.304787>.

⁴⁵ Petterson, S. M., R. L. Phillips, Jr., A. W. Bazemore, and G. T. Koinis. 2013. “Unequal Distribution of the U.S. Primary Care Workforce.” *Am Fam Physician* 87 (11).

<https://www.ncbi.nlm.nih.gov/pubmed/23939507>.

⁴⁶ Liu, X., L. Dou, H. Zhang, Y. Sun, and B. Yuan. 2015. “Analysis of Context Factors in Compulsory and Incentive Strategies for Improving Attraction and Retention of Health Workers in Rural and Remote Areas: A Systematic Review.” *Hum Resour Health* 13: 61.

<https://doi.org/10.1186/s12960-015-0059-6>.

⁴⁷ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. n.d. “Rural Communities.” Last Modified July 7, 2021. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/other-at-risk-populations/rural-communities.htm#why-higher-risk> (Accessed October 22, 2021).

⁴⁸ Health Resources and Services Administration, National Center for Health Workforce Analysis. n.d. “Projecting Health Workforce Supply and Demand.” Last Modified April 2021.

<https://bhw.hrsa.gov/data-research/projecting-health-workforce-supply-demand> (Accessed October 21, 2021).

⁴⁹ Rayburn, W. F., M. E. Richards, and E. C. Elwell. 2012. “Drive Times to Hospitals with Perinatal Care in the United States.” *Obstet Gynecol* 119 (3): 611-616.

<https://doi.org/10.1097/AOG.0b013e318242b4cb>.

⁵⁰ Liu, X., L. Dou, H. Zhang, Y. Sun, and B. Yuan. 2015. “Analysis of Context Factors in Compulsory and Incentive Strategies for Improving Attraction and Retention of Health Workers in Rural and Remote Areas: A Systematic Review.” *Hum Resour Health* 13: 61.

<https://doi.org/10.1186/s12960-015-0059-6>.

⁵¹ Barrett, F. A., M. S. Lipsky, and M. N. Lutfiyya. 2011. “The Impact of Rural Training Experiences on Medical Students: A Critical Review.” *Acad Med* 86 (2): 259-63.

<https://doi.org/10.1097/ACM.0b013e3182046387>.

⁵² Goodfellow, A., J. G. Ulloa, P. T. Dowling, E. Talamantes, S. Chheda, C. Bone, and G. Moreno. 2016. “Predictors of Primary Care Physician Practice Location in Underserved Urban or Rural Areas in the United States: A Systematic Literature Review.” *Acad Med* 91 (9): 1313-1321. <https://doi.org/10.1097/acm.0000000000001203>.

⁵³ Downey, L. H., J. R. Wheat, J. D. Leeper, J. A. Florence, J. G. Boulger, and M. L. Hunsaker. 2011. “Undergraduate Rural Medical Education Program Development: Focus Group Consultation with the NRHA Rural Medical Educators Group.” *J Rural Health* 27 (2): 230-238.

<https://doi.org/10.1111/j.1748-0361.2010.00334.x>.

⁵⁴ Rosenblatt, R. A., F. M. Chen, D. M. Lishner, M. P. Doescher, and WWAMI Rural Health Research Center. August 2010. *The Future of Family Medicine and Implications for Rural Primary Care Physician Supply. Final Report #125*. Seattle, WA: WWAMI Rural Health Research Center. http://depts.washington.edu/uwrhrc/uploads/RHRC_FR125_Rosenblatt.pdf (Accessed October 22, 2021).

⁵⁵ Werts, M., G. Amah, and E. Mertz. September 2020. *How Evidence-based Is US Dental Workforce Policy for Rural Communities?* Rensselaer, NY: Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, SUNY Albany.

http://www.oralhealthworkforce.org/wp-content/uploads/2020/10/OHWRC_Dental_Workforce_Policy_for_Rural_Communities_2020.pdf

(Accessed October 22, 2021).

- ⁵⁶ Terry, D. R., B. Peck, A. Smith, T. Stevenson, and E. Baker. 2019. "Is Nursing Student Personality Important for Considering a Rural Career?" *J Health Organ Manag* 33 (5): 617-634. <https://doi.org/10.1108/jhom-03-2019-0074>.
- ⁵⁷ Kaplan, L., T. Klein, S. Skillman, and C. H. Andrilla. 2016. "Faculty Supervision of NP Program Practicums: A Comparison of Rural and Urban Site Differences." *Nurse Pract* 41 (7): 36-42. <https://doi.org/10.1097/01.NPR.0000484321.06426.fa>.
- ⁵⁸ Schwartz, M. R., D. G. Patterson, and R. L. McCarty. December 2019. *State Incentive Programs that Encourage Allied Health Professionals to Provide Care for Rural and Underserved Populations*. Seattle, WA: Center for Health Workforce Studies, University of Washington. <https://depts.washington.edu/fammed/chws/wp-content/uploads/sites/5/2019/12/State-Incentive-Programs-Allied-Health-FR-2019.pdf> (Accessed October 22, 2021).
- ⁵⁹ Domino, M. E., C. C. Lin, J. P. Morrissey, A. R. Ellis, E. Fraher, E. L. Richman, K. C. Thomas, and M. J. Prinstein. 2019. "Training Psychologists for Rural Practice: Exploring Opportunities and Constraints." *J Rural Health* 35 (1): 35-41. <https://doi.org/10.1111/jrh.12299>.
- ⁶⁰ Liu, X., L. Dou, H. Zhang, Y. Sun, and B. Yuan. 2015. "Analysis of Context Factors in Compulsory and Incentive Strategies for Improving Attraction and Retention of Health Workers in Rural and Remote Areas: A Systematic Review." *Hum Resour Health* 13: 61. <https://doi.org/10.1186/s12960-015-0059-6>.
- ⁶¹ Academy Health. December 2017. *Rapid Evidence Review: What are Effective Approaches for Recruiting and Retaining Rural Primary Care Health Professionals?* Academy Health. <https://academyhealth.org/publications/2018-01/rapid-evidence-review-what-are-effective-approaches-recruiting-and-retaining>. (Accessed October 22, 2021).
- ⁶² Morken, C., K. Bruksch-Meck, B. Crouse, and K. Traxler. 2018. "Factors Influencing Rural Physician Retention Following Completion of a Rural Training Track Family Medicine Residency Program." *WMJ* 117 (5): 208-210. <https://www.ncbi.nlm.nih.gov/pubmed/30674097>.
- ⁶³ Weil, A. R. 2017. "Pursuing Health Equity." *Health Aff (Millwood)* 36 (6): 975-975. <https://doi.org/10.1377/hlthaff.2017.0583>.
- ⁶⁴ Azar, Alex M. November 18, 2018. "Remarks on Primary Care and Value-Based Transformation. Remarks to the Patient-Centered Primary Care Collaborative (Washington, D.C.) on November 8, 2018." Washington, DC: U.S. Department of Health and Human Services. <https://www.hhs.gov/about/leadership/secretary/speeches/2018-speeches/remarks-on-primary-care-and-value-based-transformation.html> (Accessed October 22, 2021).
- ⁶⁵ Ellner, A. L., and R. S. Phillips. 2017. "The Coming Primary Care Revolution." *J Gen Intern Med* 32 (4): 380-386. <https://doi.org/10.1007/s11606-016-3944-3>.
- ⁶⁶ Wakefield, Mary. 2014. "Improving the Health of the Nation: HRSA's Mission to Achieve Health Equity." *Public Health Rep* 129 Suppl 2 (Suppl 2): 3-4. <https://doi.org/10.1177/00333549141291S202>.
- ⁶⁷ Welp, A., A. Johnson, H. Nguyen, and L. Perry. 2018. "The Importance of Reflecting on Practice: How Personal Professional Development Activities Affect Perceived Teamwork and Performance." *J Clin Nurs* 27 (21-22): 3988-3999. <https://doi.org/10.1111/jocn.14519>.
- ⁶⁸ Dill, M. J., S. Pankow, C. Erikson, and S. Shipman. 2013. "Survey Shows Consumers Open to a Greater Role for Physician Assistants and Nurse Practitioners." *Health Aff (Millwood)* 32 (6): 1135-1142. <https://doi.org/10.1377/hlthaff.2012.1150>.
- ⁶⁹ Giberson, S., S. Yoder, and M. P. Lee. December 2011. *Improving Patient and Health System Outcomes through Advanced Pharmacy Practice. A Report to the U.S. Surgeon General*. P a g e

Rockville, MD: Office of the Chief Pharmacist, U.S. Public Health Service.

https://dcp.psc.gov/OSG/pharmacy/sc_comms_sg_report.aspx (Accessed October 22, 2021).

⁷⁰ Mehrotra, Ateev, Michael Chernew, David Linetsky, Hilary Hatch, and David Cutler. “The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges.” *To the Point* (blog), *Commonwealth Fund*. May 19, 2020.

<https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits> (Accessed October 22, 2021).

⁷¹ Weil, A. R. 2017. “Pursuing Health Equity.” *Health Aff (Millwood)* 36 (6): 975-975.

<https://doi.org/10.1377/hlthaff.2017.0583>.

⁷² Shigekawa, E., M. Fix, G. Corbett, D. H. Roby, and J. Coffman. 2018. “The Current State of Telehealth Evidence: A Rapid Review.” *Health Aff (Millwood)* 37 (12): 1975-1982.

<https://doi.org/10.1377/hlthaff.2018.05132>.

⁷³ Academy Health. December 2017. *Rapid Evidence Review: What are Effective Approaches for Recruiting and Retaining Rural Primary Care Health Professionals?* Academy Health.

<https://academyhealth.org/publications/2018-01/rapid-evidence-review-what-are-effective-approaches-recruiting-and-retaining> (Accessed October 22, 2021).

⁷⁴ Welp, A., A. Johnson, H. Nguyen, and L. Perry. 2018. The Importance of Reflecting on Practice: How Personal Professional Development Activities Affect Perceived Teamwork and Performance.” *J Clin Nurs* 27 (21-22): 3988-3999. <https://doi.org/10.1111/jocn.14519>.

⁷⁵ Riley, C., L. A. Spies, L. Prater, and S. L. Garner. 2019. “Improving Neonatal Outcomes Through Global Professional Development.” *Adv Neonatal Care* 19 (1): 56-64.

<https://doi.org/10.1097/anc.0000000000000550>.

⁷⁶ McCann, E., and M. Brown. 2018. “The Inclusion of LGBT+ Health Issues within Undergraduate Healthcare Education and Professional Training Programmes: A Systematic Review.” *Nurse Educ Today* 64: 204-214. <https://doi.org/10.1016/j.nedt.2018.02.028>.

⁷⁷ Gibson-Helm, M., E. C. Tassone, H. J. Teede, A. Dokras, and R. Garad. 2018. “The Needs of Women and Healthcare Providers regarding Polycystic Ovary Syndrome Information, Resources, and Education: A Systematic Search and Narrative Review.” *Semin Reprod Med* 36 (1): 35-41. <https://doi.org/10.1055/s-0038-1668086>.

⁷⁸ Agency for Healthcare Research and Quality. n.d. “Project ECHO.” Last Modified September 2020. <https://www.ahrq.gov/patient-safety/resources/project-echo/index.html> (Accessed October 22, 2021).

⁷⁹ Johnson, J. E. 2013. “Working Together in the Best Interest of Patients.” *J Am Board Fam Med* 26 (3): 241-243. <https://doi.org/10.3122/jabfm.2013.03.130075>.

⁸⁰ Peterson, L. E., R. L. Phillips, J. C. Puffer, A. Bazemore, and S. Petterson. 2013. “Most Family Physicians Work Routinely with Nurse Practitioners, Physician Assistants, or Certified Nurse Midwives.” *J Am Board Fam Med* 26 (3): 244-245.

<https://doi.org/10.3122/jabfm.2013.03.120312>.

⁸¹ Dill, M. J., S. Pankow, C. Erikson, and S. Shipman. 2013. “Survey Shows Consumers Open to a Greater Role for Physician Assistants and Nurse Practitioners.” *Health Aff (Millwood)* 32 (6): 1135-1142. <https://doi.org/10.1377/hlthaff.2012.1150>.

⁸² Kurtzman, E. T., and B. S. Barnow. 2017. “A Comparison of Nurse Practitioners, Physician Assistants, and Primary Care Physicians' Patterns of Practice and Quality of Care in Health Centers.” *Med Care* 55 (6): 615-622. <https://doi.org/10.1097/mlr.0000000000000689>.

- ⁸³ Naylor, M. D., and E. T. Kurtzman. 2010. "The Role of Nurse Practitioners in Reinventing Primary Care." *Health Aff (Millwood)* 29 (5): 893-899.
<https://doi.org/10.1377/hlthaff.2010.0440>.
- ⁸⁴ Margolius, D., and T. Bodenheimer. 2010. "Transforming Primary Care: From Past Practice to the Practice of the Future." *Health Aff (Millwood)* 29 (5): 779-784.
<https://doi.org/10.1377/hlthaff.2010.0045>.
- ⁸⁵ Peikes, D., A. Zutshi, J. Genevro, K. Smith, M. Parchman, and D. Meyers. February 2012. *Early Evidence on the Patient-Centered Medical Home. Final Report*. Rockville, MD: Agency for Health care Research and Quality.
<https://pcmh.ahrq.gov/sites/default/files/attachments/Early%20Evidence%20on%20the%20PCMH%20%2028%2012.pdf> (Accessed October 22, 2021).
- ⁸⁶ Ellner, A. L., and R. S. Phillips. 2017. "The Coming Primary Care Revolution." *J Gen Intern Med* 32 (4): 380-386. <https://doi.org/10.1007/s11606-016-3944-3>.
- ⁸⁷ Mehrotra, Ateev, Michael Chernew, David Linetsky, Hilary Hatch, and David Cutler. "The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges." *To the Point* (blog), *Commonwealth Fund*. May 19, 2020.
<https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits> (Accessed October 22, 2021).
- ⁸⁸ Wakefield, Mary. 2014. "Improving the Health of the Nation: HRSA's Mission to Achieve Health Equity." *Public Health Rep* 129 Suppl 2 (Suppl 2): 3-4.
<https://doi.org/10.1177/003335491412915202>.
- ⁸⁹ Bates, D. W., and H. Singh. 2018. "Two Decades Since To Err Is Human: An Assessment Of Progress And Emerging Priorities In Patient Safety." *Health Aff (Millwood)* 37 (11): 1736-1743.
<https://doi.org/10.1377/hlthaff.2018.0738>.
- ⁹⁰ Ellner, A. L., and R. S. Phillips. 2017. "The Coming Primary Care Revolution." *J Gen Intern Med* 32 (4): 380-386. <https://doi.org/10.1007/s11606-016-3944-3>.
- ⁹¹ McDonald, K. M., E. Schultz, L. Albin, N. Pineda, J. Lonhart, V. Sundaram, C. Smith-Spangler, J. Brustrom, E. Malcolm, L. Rohn, and S. Davies. June 2014. *Care Coordination Measures Atlas Update*. Rockville, MD: Agency for Healthcare Research and Quality.
<https://www.ahrq.gov/ncepcr/care/coordination/atlas.html> (Accessed October 22, 2021).
- ⁹² U.S. Census Bureau. n.d. "U.S. and World Population Clock."
<https://www.census.gov/popclock> (Accessed March 22, 2021).
- ⁹³ U.S. Bureau of Labor Statistics. n.d. "Healthcare Occupations." *Occupational Outlook Handbook*. Last Modified September 8, 2021. <https://www.bls.gov/ooh/healthcare/home.htm> (Accessed October 22, 2021).
- ⁹⁴ Health Resources and Services Administration. n.d. "The National Center for Health Workforce Analysis (NCHWA)." Health Resources and Services Administration.
<https://bhw.hrsa.gov/health-workforce-analysis/about> (Accessed October 22, 2021).
- ⁹⁵ Health Resources and Services Administration, National Center for Health Workforce Analysis. 2019. *Technical Documentation for HRSA's Health Workforce Simulation Model. Version 4.2020*. Rockville, MD: Health Resources and Services Administration.
<https://bhw.hrsa.gov/sites/default/files/bhw/health-workforce-analysis/research/projections/technical-documentation-health-workforce-simulation-model.pdf> (Accessed October 22, 2021).
- ⁹⁶ Health Resources and Services Administration, National Center for Health Workforce Analysis. 2019. *Technical Documentation for HRSA's Health Workforce Simulation Model*.

Version 4.2020. Rockville, MD: Health Resources and Services Administration.

<https://bhwh.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/technical-documentation-health-workforce-simulation-model.pdf>. (Accessed October 22, 2021).

⁹⁷ Adler, B., W. S. Biggs, and A. W. Bazemore. 2013. "State Patterns in Medical School Expansion, 2000-2010: Variation, Discord, and Policy Priorities." *Acad Med* 88 (12): 1849-1854. <https://doi.org/10.1097/acm.000000000000037>.

⁹⁸ Mehrotra, Ateev, Michael Chernew, David Linetsky, Hilary Hatch, and David Cutler. "The Impact of the COVID-19 Pandemic on Outpatient Visits: A Rebound Emerges." *To the Point* (blog), *Commonwealth Fund*. May 19, 2020.

<https://www.commonwealthfund.org/publications/2020/apr/impact-covid-19-outpatient-visits> (Accessed October 22, 2021).

⁹⁹ Grover, A., and L. M. Niecko-Najjum. 2013. "Building a Health Care Workforce for the Future: More Physicians, Professional Reforms, and Technological Advances." *Health Aff (Millwood)* 32 (11): 1922-1997. <https://doi.org/10.1377/hlthaff.2013.0557>.

¹⁰⁰ Health Resources and Services Administration, National Center for Health Workforce Analysis. 2019. *Technical Documentation for HRSA's Health Workforce Simulation Model. Version 4.2020*. Rockville, MD: Health Resources and Services Administration.

<https://bhwh.hrsa.gov/sites/default/files/bureau-health-workforce/data-research/technical-documentation-health-workforce-simulation-model.pdf>. (Accessed October 22, 2021).

¹⁰¹ Surdyk, Patricia M. 2017. "The History of Sponsoring Institutions, 1982-2017." *J Grad Med Educ* 9 (6 Suppl): 7-10. <https://doi.org/10.4300/1949-8349.9.6s.7>.

¹⁰² Mackey, A., and S. Bassendowski. 2017. "The History of Evidence-Based Practice in Nursing Education and Practice." *J Prof Nurs* 33 (1): 51-55.

<https://doi.org/10.1016/j.profnurs.2016.05.009>.

¹⁰³ Grover, A., and L. M. Niecko-Najjum. 2013. "Building a Health Care Workforce for the Future: More Physicians, Professional Reforms, and Technological Advances." *Health Aff (Millwood)* 32 (11): 1922-1927. <https://doi.org/10.1377/hlthaff.2013.0557>.

¹⁰⁴ Definition of the Health Care Workforce." 2010. 42 U.S.C. 294q - National Health Care Workforce Commission. <https://www.govinfo.gov/app/details/USCODE-2010-title42/USCODE-2010-title42-chap6A-subchapV-partE-subpart1-sec294q> (Accessed October 22, 2021).

¹⁰⁵ National Research Council, Panel on a Research Agenda and New Data for an Aging World. 2001. "Chapter 6: The Health of Aging Populations." *Preparing for an Aging World: The Case for Cross-National Research*. Washington, DC: National Academies Press.

<https://www.ncbi.nlm.nih.gov/books/NBK98373/> (Accessed October 22, 2021).

¹⁰⁶ Schottenfeld, L, D Petersen, D Peikes, R Ricciardi, H Burak, R McNellis, and J Genevro. March 2016. *Creating Patient-Centered Team-Based Primary Care. AHRQ Pub. No. 16-0002-EF*. Rockville, MD: Agency for Healthcare Research and Quality.

<https://pcmh.ahrq.gov/sites/default/files/attachments/creating-patient-centered-team-based-primary-care-white-paper.pdf> (Accessed October 22, 2021).