



A National Crisis: Mental Health Disorders and Workforce Shortages in the Healthcare Sector

NEW YORK STATE CASE STUDY

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Key Findings

Before the pandemic, the healthcare sector was experiencing workforce shortages. Since then, this challenge has turned into a crisis. Government, industry, and communities all have a stake in the future of healthcare. Together, they must take steps to protect the health and well-being of the current workforce and invest in recruiting more talent to remedy this crisis.

Five key takeaways are:

1. **Healthcare in the United States is trending toward a perfect storm.** Workforce shortages are worsening, demand is rising, and costs are higher due to shortages, consolidation, and closures.
2. **Workforce shortages were already a challenge.** Workforce shortages have been growing for the past decade, but COVID-19 accelerated losses. By 2030, approximately 14.5% of healthcare jobs in New York State and 18.0% in Rochester are expected to be unfilled, compared to 13.6% nationwide.
3. **The pandemic made the situation worse.** Nearly all healthcare workers have experienced severe stress and anxiety in the wake of the pandemic, resulting in higher burnout rates and the prevalence of mental health disorders like PTSD. These conditions not only impact the ability to work but also have high economic and social costs if left untreated.
4. **Higher burnout rates lead to additional attrition.** Nearly one-third of healthcare workers are looking for new jobs, and 66% of acute care nurses are considering leaving their field. Increased burnout and turnover have a snowball effect. Turnover makes the workforce shortage more severe and adds to the stress on current workers, who are then more likely to burn out and quit.

A comprehensive strategy is needed to ensure the resiliency of the healthcare workforce.

Mental health issues and recruitment challenges threaten the reliability of the U.S. healthcare system. Using the U.S. military experience as a blueprint, a significant investment must be made in mental health and recruitment programs to ensure the resiliency of the healthcare workforce.

A National Crisis: Mental Health Disorders and Workforce Shortages in the Healthcare Sector

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Nam Pham, Ph.D., Mary Donovan, and Bridgette Wiefling, MD¹

Even before the COVID-19 pandemic, the healthcare sector was experiencing workforce shortages. Since then, the pandemic has turned a challenge into a crisis. Healthcare practitioners, technicians, and support staff suffer from burnout, with no end in sight. Mental health conditions are forcing workers to choose between leaving the sector or "toughing it out," leading to an increased prevalence of mental health disorders and suicide. Government, industry, and communities all have a stake in the future of healthcare. Together, they must take steps to protect the mental health of the current workers and invest in recruiting more talent to restore the resiliency of the healthcare workforce. The U.S. military experience exemplifies the significant effort required to address these challenges.

CURRENT HEALTHCARE WORKFORCE SHORTAGES

A reliable and resilient healthcare sector is critical to Americans' economic and social well-being. Teams of doctors, nurses, technicians, and support workers provide care at hospitals, physicians' offices, urgent care centers, and other healthcare facilities across the nation. In 2021, the U.S. healthcare sector employed nearly 20.1 million workers, 6.7 million practitioners and technicians (33.1%), and 5.8 million healthcare support workers (29.0%). The remaining 7.6 million jobs (37.9%) include administrative and office workers (13.0%), community and social service workers (5.5%), management (4.0%), and other occupations.² (Figure 1)

New York State is home to nearly 8% of the nation's healthcare workforce. In 2021, the sector's employment was 1.6 million in the state, including over 82,000 in the Rochester metro area. In New York, healthcare practitioners, technicians, and support workers make up 65% of the sector's workforce, accounting for more than 1.0 million jobs across the state and over 53,300 in Rochester in 2021.³ (Figure 1)

¹ Nam D. Pham, Ph.D. is Managing Partner and Mary Donovan is Principal at ndp | analytics, Bridgette Wiefling, MD is Senior Vice President Clinical Transformation at Highmark Health. Stephanie Barellio and Ilma Fadhil provided research assistance. The ESL Foundation, Greater Rochester Health Foundation, and Rochester Regional Health Foundation provided financial support to conduct this study. The opinions and views expressed in this report are solely those of the authors.

² The healthcare sector (NAICS 62) employs 84.1% of the nation's healthcare practitioners, technicians, and healthcare support workers. The remaining 15.9% are employed across industries including federal, state, and local governments (3.8%), retail trade (3.8%), professional and technical services (2.2%), and other industries. Source: Bureau of Labor Statistics.

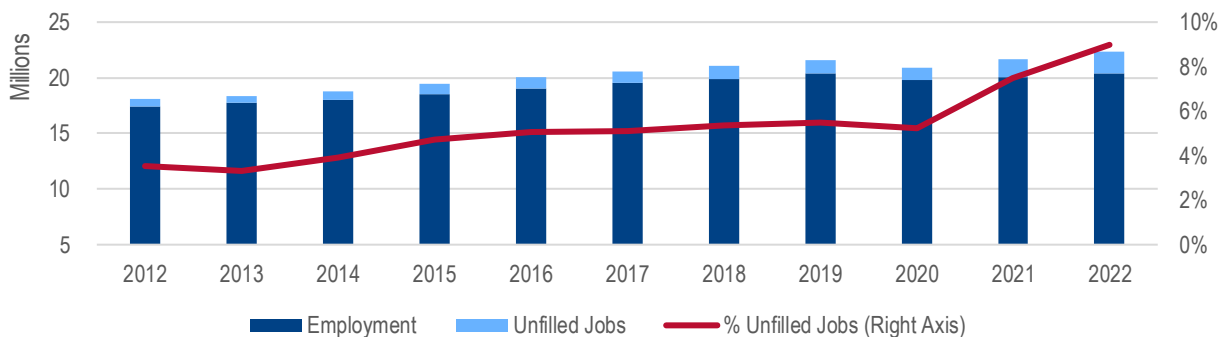
³ Estimated using the share of practitioners, technicians, and support occupations at the state level (65%).

Figure 1.
New York State's healthcare sector employed 1.6 million workers in 2021⁴



Despite some growth over the past decade, the healthcare sector cannot keep up with the demand for healthcare professionals. In 2022, about one in every eleven healthcare jobs remained unfilled, accounting for over 2.0 million jobs across the country.⁵ The workforce shortage began to rise sharply with the COVID-19 pandemic; unfilled healthcare jobs increased from 5.5% in 2019 to 9.0% in 2022. Notably, employment in the healthcare sector is still below pre-pandemic levels, with over 59,000 fewer workers in 2022 compared to 2019. (Figure 2 and Appendix 1)

Figure 2.
9% of healthcare jobs across America remain unfilled, up from 6% in 2019⁶



⁴ Bureau of Labor Statistics. Current Employment Statistics; Bureau of Labor Statistics. Occupational Employment Statistics. The healthcare sector is classified as NAICS 62. Healthcare practitioners, technicians, and support occupations are Bureau of Labor Statistics standard occupational codes 29-000 and 31-000. Rochester occupational employment estimated using state statistics.

⁵ Partial year data (Jan-Jun).

⁶ Bureau of Labor Statistics. Job Openings and Labor Turnover Survey; Bureau of Labor Statistics. Current Employment Statistics. 2022 is based on year-to-date data (Jan-Jun).

New York State and the Rochester area have both experienced severe increases in workforce shortages. By applying national job vacancy rates to official state and local employment statistics, we estimate the number of unfilled healthcare jobs in New York has grown 246% from 2013 to 2022. Similarly, the workforce gap in Rochester increased by 213% during the same period. Compared to pre-pandemic levels, the workforce shortage has risen by nearly 69% in New York State and over 63% in the Rochester area. (Table 1 and Appendix 1)

Declines in current employment levels exacerbate workforce shortages. This decrease can be attributed to pandemic-induced causes, such as early retirement, burnout, and loss of life due to COVID-19, in addition to ongoing recruitment and retention challenges.⁷ Areas like Rochester are struggling to rebound. In 2022, Rochester's healthcare sector employment was nearly 4% lower than in 2019. (Table 1 and Appendix 1)

Table 1.
The healthcare workforce in New York State is below pre-pandemic levels, and the number of unfilled jobs continues to rise⁸

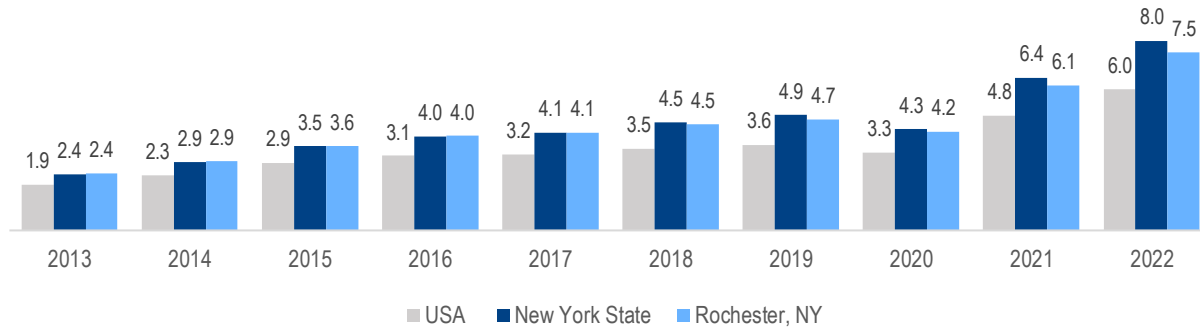
	Unfilled Jobs as % of Workforce Requirement	New York State			Rochester Metro Area, New York		
		Healthcare Employment	Estimated Unfilled Jobs	Workforce Requirement	Healthcare Employment	Estimated Unfilled Jobs	Workforce Requirement
2013	3.3%	1,347,283	46,154	1,393,437	76,242	2,612	78,853
2014	3.9%	1,377,425	56,252	1,433,677	77,200	3,153	80,353
2015	4.7%	1,410,892	69,668	1,480,559	77,750	3,839	81,589
2016	5.1%	1,460,800	77,679	1,538,479	80,533	4,282	84,816
2017	5.0%	1,509,583	80,894	1,590,478	82,542	4,423	86,965
2018	5.4%	1,565,725	88,781	1,654,506	84,508	4,792	89,300
2019	5.5%	1,628,958	94,619	1,723,577	86,292	5,012	91,304
2020	5.3%	1,550,217	85,898	1,636,115	81,617	4,522	86,139
2021	7.5%	1,579,425	127,707	1,707,132	82,008	6,631	88,639
2022	9.0%	1,617,950	159,634	1,777,584	82,967	8,186	91,153
Change Over Time							
10 Year (2013-22)		20.1%	245.9%	27.6%	8.8%	213.4%	15.6%
Pandemic (2019-22)		-0.7%	68.7%	3.1%	-3.9%	63.3%	-0.2%

The healthcare workforce shortage is more severe in New York State and the Rochester Metro Area than in the United States overall. In 2013, the number of unfilled healthcare jobs per 1,000 residents was 2.4 in New York State and Rochester compared to 1.9 nationwide. In 2022, this measure reached 8.0 in New York State and 7.5 in Rochester compared to 6.0 nationwide. (Figure 3 and Appendix 1)

⁷ Wiefing, Bridgette, MD, et al. 2022. "Addressing a Compounding Public Health Crisis."

⁸ Bureau of Labor Statistics. Job Openings and Labor Turnover Survey; Bureau of Labor Statistics. Current Employment Statistics. 2022 is partial year data (Jan-Jun).

Figure 3.
The number of unfilled healthcare jobs for every 1,000 residents reached 8.0 in New York State⁹



HEALTHCARE WORKFORCE SHORTAGES ARE EXPECTED TO WORSEN BY 2030

Current workforce shortages, burnout, and mental health concerns further strain the healthcare worker supply. At the same time, the demand for healthcare services continues to rise as the population grows and ages. These factors will potentially create severe shortfalls in the sector's ability to meet patients' needs.

We examined three socio-economic trends during 2013-22 to estimate future workforce shortages during 2023-30: the demand for healthcare workers, population, and healthcare employment.

The demand for healthcare workers is rising

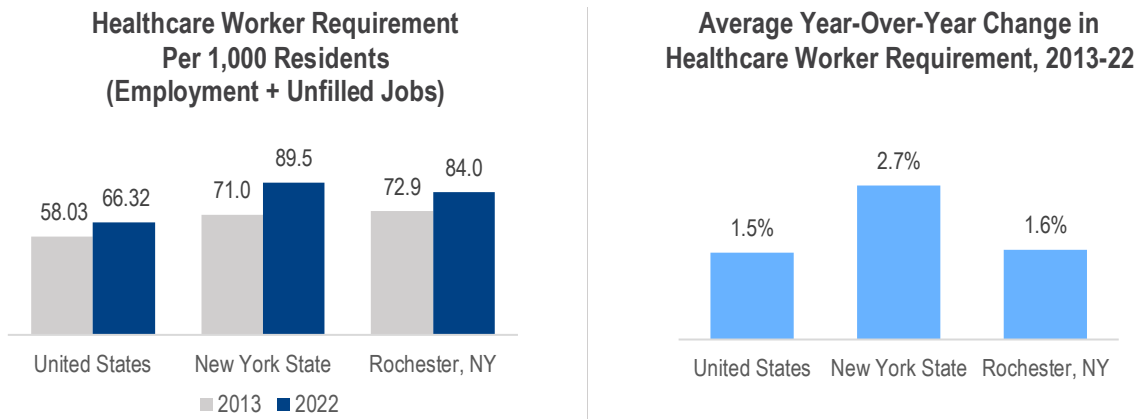
The demand for healthcare workers continues to increase as the U.S. population grows and people live longer. Aging populations tend to have a higher prevalence of chronic conditions like diabetes and more frequently use ambulatory services, like urgent care and emergency room visits.

To assess changes in demand, we examine the healthcare worker requirement: the number of employed healthcare workers and unfilled healthcare jobs per capita. In 2022, the healthcare worker requirement in New York State was 89.5 per 1,000 residents, up from 71.0 in 2013. In the Rochester Metro Area, demand reached 72.9 per 1,000 residents in 2022, up from 84.0 in 2013. (Figure 4 and Appendix 1)

Over the last decade, the healthcare worker requirement has risen 1.5% per year, on average, nationwide. In New York, it increased more rapidly, averaging 2.7% per year during 2013-22. During the same period, the rate in Rochester was just above the national level, averaging 1.6% per year. (Figure 4)

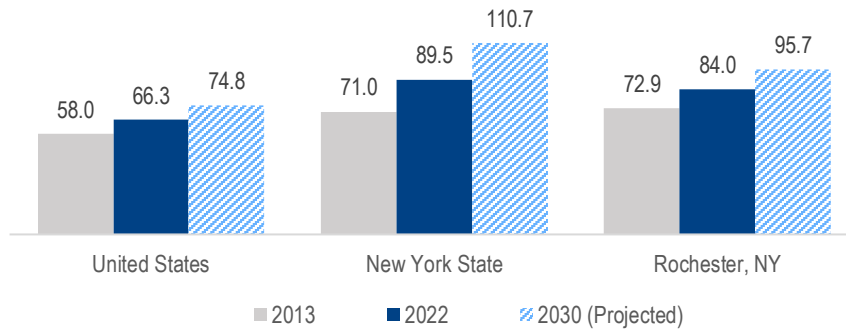
⁹ Bureau of Labor Statistics. Current Employment Statistics; Census Bureau. Resident Population in New York and Rochester, NY (MSA); Census International Database: Population Estimates and Projections. Authors' estimates. 2022 is partial year data (Jan-Jun). 2022 state and local population based on national population trend from 2021 to 2022.

Figure 4.
Demand for healthcare workers has increased over time



At this rate, the demand for healthcare workers nationwide will increase from 66.3 workers for every 1,000 residents in 2022 to 74.8 in 2030. Demand is expected to reach 110.7 in New York State and 95.7 in the Rochester Metro Area. (Figure 5 and Appendix 2)

Figure 5.
New York will need nearly 111 healthcare workers per 1,000 residents by 2030

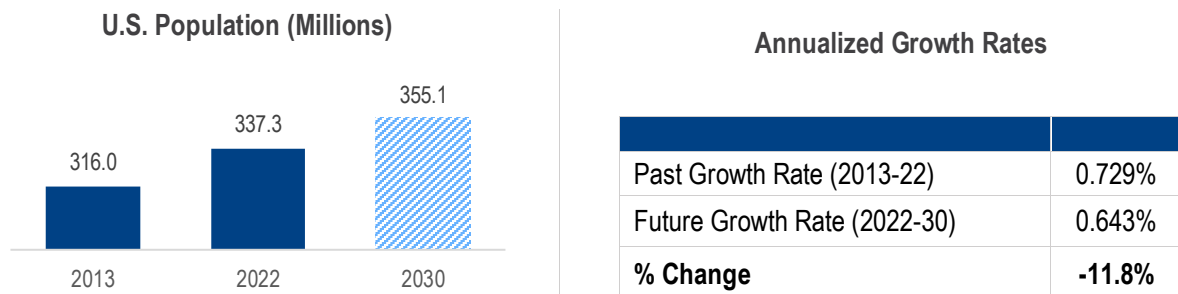


Population growth is expected to slow

The U.S. population growth is expected to slow. From 2013 to 2022, the nation's population grew 0.7% per year, on average, from 316.0 million to 337.3 million. The Census projects the population will reach 355.1 million in 2030, averaging 0.6% annually. By that time, one in every five Americans is projected to be at retirement age, further increasing the demand for healthcare services.¹⁰ (Figure 6)

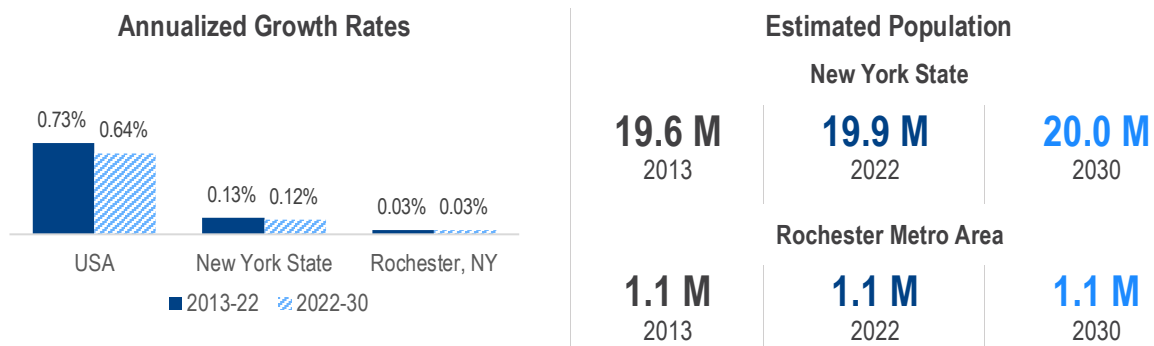
¹⁰ Vespa, Jonathan, et al. 2018. "Demographic Turning Points for the United States: Population Projections for 2020 to 2060." Census Bureau.

Figure 6.
Future U.S. population growth is expected to be nearly 12% slower than in the past¹¹



During 2013-22, the population grew at an annual rate of 0.13% in New York State and 0.03% in the Rochester Metro Area. Applying the national population trend, we estimate that New York State and Rochester populations will grow at a rate of 0.12% and 0.03%, respectively, during 2022-30 (11.8% slower than in the past). (Figure 7)

Figure 7.
New York's population is expected to reach 20.0 million in 2030¹²



Healthcare employment growth is expected to slow

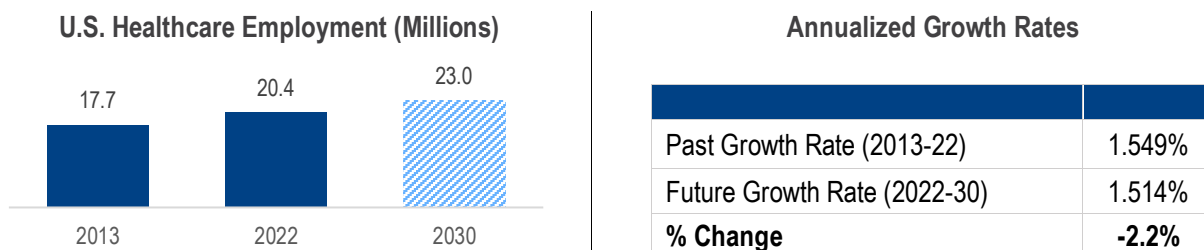
The Bureau of Labor Statistics projected healthcare employment to increase by 16% from 2020 to 2030.¹³ Based on the projected growth and current employment statistics, we estimate the number of healthcare workers in the U.S. will reach 23.0 million in 2030. While the sector's employment is still projected to rise, the future growth rate is expected to be 2.2% slower than in the past. (Figure 8)

¹¹ Census Bureau. Population Estimates and Projections.

¹² Census Bureau. Population Estimates; Authors' Estimates.

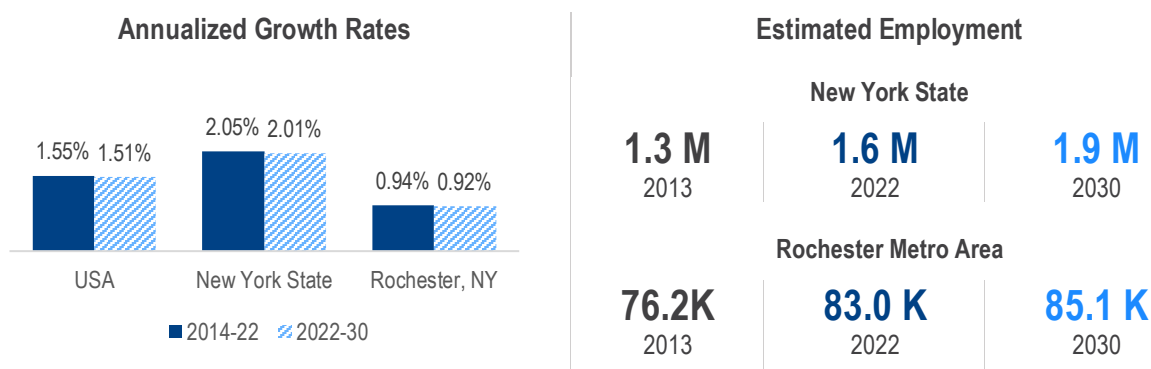
¹³ Bureau of Labor Statistics. Employment Projections.

Figure 8.

National healthcare employment is expected to grow about 2% slower than in the past¹⁴


The healthcare sector in Rochester has been growing slower than the U.S. overall, while New York State has grown faster. During 2013-22, healthcare employment increased at an average rate of 2.05% in New York State and 0.94% in the Rochester Metro Area. Based on national trends, the number of healthcare workers in New York will reach 1.9 million in 2030, including 85,126 in Rochester. (Figure 9 and Appendix 2)

Figure 9.

New York's healthcare employment is expected to reach 1.9 million in 2030¹⁵

Workforce shortages are expected to worsen

Based on the Census population projections, BLS employment projections, and our projected workforce requirements, we estimate that the national healthcare workforce shortage will reach nearly 3.6 million by 2030 under the status quo. New York State will have 321,550 unfilled healthcare jobs, including 18,707 in the Rochester Metro Area. (Table 2 and Appendix 2)

¹⁴ Bureau of Labor Statistics. Current Employment Statistics; Bureau of Labor Statistics. Employment Projections; Authors' estimates.

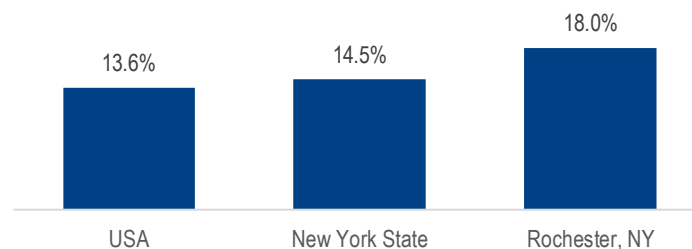
¹⁵ Bureau of Labor Statistics. Current Employment Statistics; Authors' estimates.

Table 2.
Healthcare workforce shortages are expected to reach 321,550 in New York State by 2030¹⁶

	2030 Healthcare Workforce Projection				
	Resident Population	Workforce Requirement Per 1,000 Residents	Workforce Requirement	Healthcare Employment	Workforce Shortage
United States	355,100,730	74.8	26,565,255	22,963,660	3,601,596
New York State	20,049,182	110.7	2,218,579	1,897,029	321,550
Rochester	1,085,350	95.7	103,832	85,126	18,707

The workforce shortages in New York State and Rochester are expected to be more severe than at the national level. By 2030, 14.5% of healthcare jobs in New York State will be unfilled under the status quo. In Rochester, closer to one in every five jobs is expected to be unfilled (18.0%). (Figure 10)

Figure 10.
By 2030, 18% of healthcare jobs in the Rochester Metro Area will be unfilled



COVID-19 HAS TAKEN A HUGE TOLL ON HEALTHCARE WORKERS, EXACERBATING SHORTAGES

The pandemic has taken an enormous toll on healthcare workers and exacerbated workforce shortages. Since the onset of the pandemic, the healthcare workforce has eroded due to a range of issues, including COVID-induced early retirement, death and disability from COVID, vaccine or trauma-induced exodus, mental health issues, and burnout.¹⁷

Pandemic-induced stress and mental health concerns among healthcare workers are widespread. During the summer of 2020, 93% of healthcare workers reported regular stress, 86% had anxiety, 77% reported frustration, 76% were experiencing exhaustion and burnout, and 75% were overwhelmed. (Figure 11)

¹⁶ Census. Population Projections; Bureau of Labor Statistics. Current Employment Statistics; Bureau of Labor Statistics. Employment; Authors' estimates.

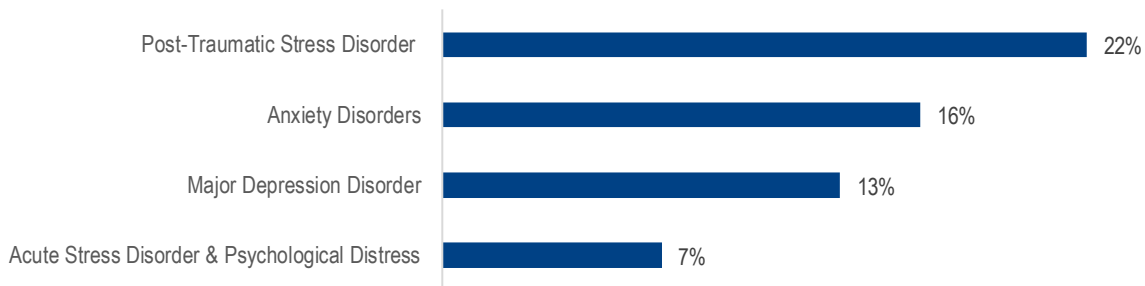
¹⁷ Wiefeling, Bridgette, MD, et al. 2022. "Addressing a Compounding Public Health Crisis."

Figure 11.
Most healthcare workers regularly experienced stress and anxiety during the pandemic¹⁸



Severe stress and anxiety contributed to a higher prevalence of mental health disorders among healthcare workers. Post-traumatic stress disorder (PTSD) is the most common condition developed during COVID-19, followed by anxiety disorders, major depression disorder, acute stress disorder and psychological stress. (Figure 12)

Figure 12.
More than 1 in every 5 healthcare workers has experienced PTSD in the United States¹⁹



Mental health challenges further contribute to workforce shortages. In 2021, nearly one-third of healthcare workers who stayed in their jobs through the pandemic considered quitting; 19% contemplated leaving healthcare altogether, and 12% were open to another role in the sector.²⁰ The outlook for positions such as nurses is more dire. Among acute and critical care nurses, 92% believed their careers would be shorter than originally intended because of the pandemic, and 66% were considering leaving the field.²¹ (Figure 13)

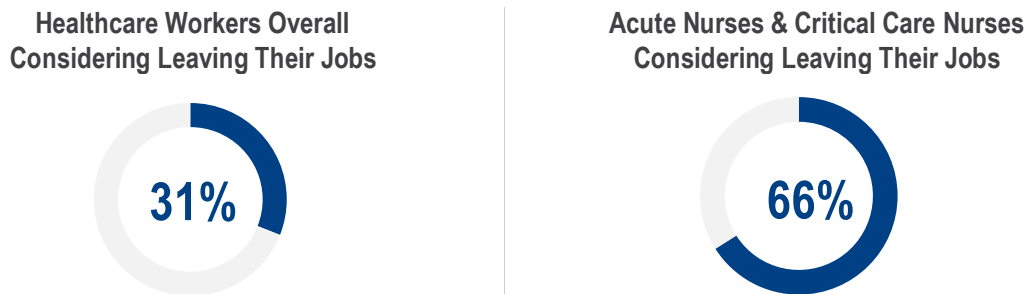
¹⁸ Mental Health America. 2022. The Mental Health of Healthcare Workers in COVID-19.

¹⁹ Hill, James, et al. 2022. "Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: A systematic review and meta-analysis." *Journal of Advanced Nursing*.

²⁰ Morning Consult. 2021. Nearly 1 in 5 Health Care Workers Have Quit Their Jobs During the Pandemic. October 4.

²¹ American Association of Critical Care Nurses. 2021. "Hear Us Out Campaign Reports Nurses' COVID-19 Reality." September.

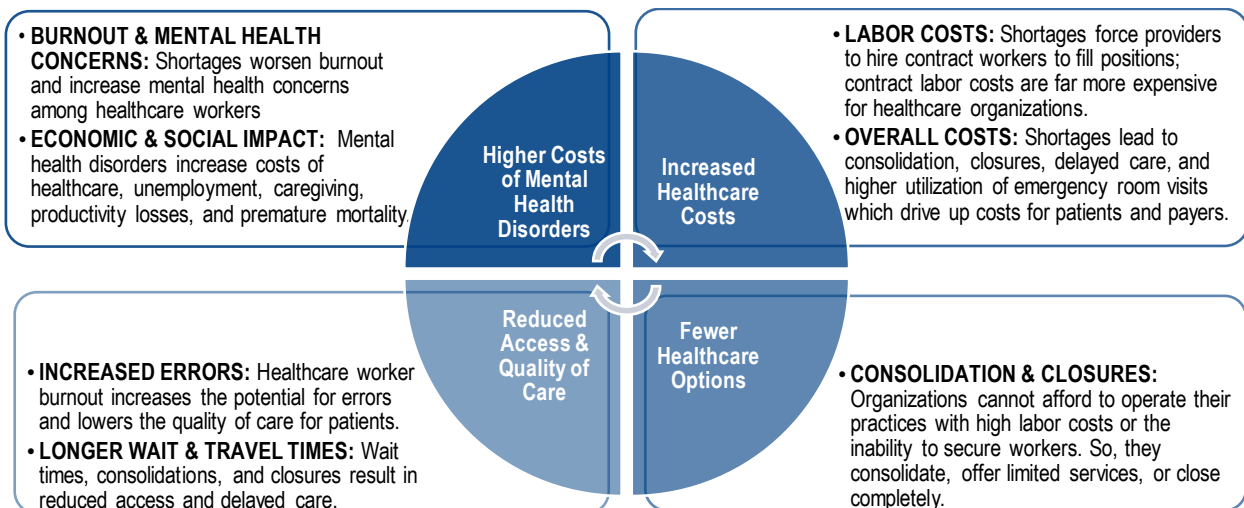
Figure 13.
Retention is a significant issue among healthcare workers²²



NEGATIVE ECONOMIC & SOCIAL CONSEQUENCES OF WORKFORCE SHORTAGES

Healthcare workforce shortages have negative economic and social consequences for American households and communities, the healthcare industry, and the country as a whole. Workforce shortages raise costs, reduce healthcare utilization, and reduce the quality of care. These adverse outcomes drive up costs for healthcare providers, patients, and government agencies that manage national, state, and local healthcare programs. (Figure 14)

Figure 14.
Negative impacts of healthcare workforce mental health crisis and workforce shortages



²² American Association of Critical Care Nurses. 2021. "Hear Us Out Campaign Reports Nurses' COVID-19 Reality." September; Morning Consult. 2021. Nearly 1 in 5 Health Care Workers Have Quit Their Jobs During the Pandemic. October 4.

Workforce shortages contribute to higher economic and social costs due to mental health disorders

Workforce shortages compromise the health of current healthcare workers. The increased labor demand and stresses caused by workforce shortages increase the probability of burnout and exacerbate the severity of mental health issues among current workers, who are, at baseline, at higher risk of suicide.²³

Ongoing anxiety can develop into severe mental health disorders, which have significant negative economic and social impacts on individuals, communities, the healthcare system, and society. PTSD has affected nearly 22% of healthcare workers and was the most common pandemic-induced mental health issue in the workforce (see Figure 12, pg. 9). We estimate almost 351,100 healthcare workers in New York State have experienced PTSD, including over 18,000 in Rochester. The number of reported cases is likely much lower than actual cases due to stigma and risks of losing medical licenses required to work.²⁴ (Table 3)

Table 3.
Nearly 351,100 healthcare workers have experienced pandemic-related PTSD in New York State²⁵

	Prevalence	Number of Healthcare Workers Impacted (M)		
		United States	New York State	Rochester, NY
Total Employment (2022)		20,361,900	1,617,950	82,967
Post-Traumatic Stress Disorder	21.7%	4,418,532	351,095	18,004
Anxiety Disorders	16.1%	3,278,266	260,490	13,358
Major Depression Disorder	13.4%	2,728,495	216,805	11,118
Acute Stress & Psychological Distress	7.4%	1,506,781	119,728	6,140

The true toll of mental health issues is substantial. The costs include direct healthcare expenditures as well as costs related to unemployment, caregiving, productivity losses, and premature mortality. Recent research estimated the economic and social impact of PTSD, the most prevalent pandemic-induced mental health disorder among healthcare workers, was \$21,063 per civilian.²⁶ If left unaddressed, the total cost of PTSD in the healthcare workforce could exceed \$93 billion nationwide, including \$7.4 billion in New York State and over \$379 million in the Rochester Metro Area. If unaddressed, the consequences could be severe. According to CDC, healthcare workers are at disproportionate risk of suicide because of the nature of their work.²⁷ Now, the experience of healthcare workers during the pandemic only increases that risk. (Table 4)

²³ CDC. 2021. <https://blogs.cdc.gov/niosh-science-blog/2021/09/17/suicide-prevention-hcw/>

²⁴Saddawi-Konefka, Daniel et al. 2021. "Consistency Between State Medical License Applications and Recommendations Regarding Physician Mental Health." JAMA; 325 (19).

²⁵ Bureau of Labor Statistics; Hill, James, et al. 2022. "Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: A systematic review and meta-analysis." Journal of Advanced Nursing.

²⁶ Davis, Lori L., MD, et al. 2022. "The Economic Burden of Posttraumatic Stress Disorder in the United States from a Societal Perspective." Journal of Clinical Psychiatry. 83(3); 2018 data (\$18,640 per civilian) converted to 2022 dollars.

²⁷ CDC. 2021. <https://blogs.cdc.gov/niosh-science-blog/2021/09/17/suicide-prevention-hcw/>

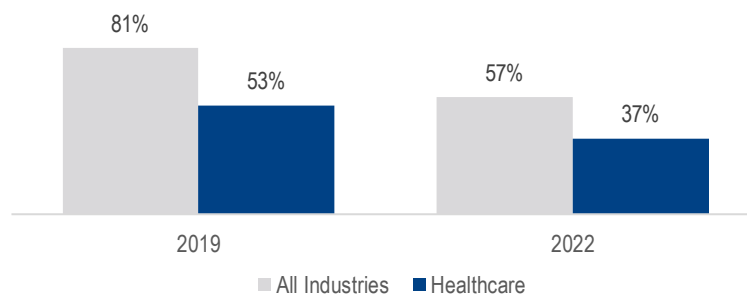
Table 4.
Economic and social costs of PTSD among healthcare workers exceed \$7 billion in New York State²⁸

	Per Civilian	Total Impact (\$M)		
		United States	New York State	Rochester, NY
Healthcare Workers Experiencing PTSD		4,418,532	351,095	18,004
Economic & Social Cost of PTSD				
Direct Healthcare Costs (34.8%)	\$7,330	\$32,387.8	\$2,573.5	\$132.0
Unemployment (22.5%)	\$4,739	\$20,940.4	\$1,663.9	\$85.3
Caregiving (17.5%)	\$3,707	\$16,380.0	\$1,301.6	\$66.7
Productivity losses (15.4%)	\$3,244	\$14,332.5	\$1,138.9	\$58.4
Non-healthcare costs (8.9%)	\$1,875	\$8,283.1	\$658.2	\$33.8
Costs of premature mortality (0.7%)	\$147	\$651.5	\$51.8	\$2.7
Total Costs (100%)	\$21,063	\$93,068.4	\$7,395.2	\$379.2

Workforce shortages increase healthcare costs

The inability to fill open healthcare positions drives up overall healthcare costs. Healthcare job vacancies tend to be more challenging to close than other sectors due to education requirements, expenses, work conditions, and pay. The current environment makes recruitment even more difficult. Pre-pandemic, the job fill rate (hires as a percentage of job openings) was 81% across sectors but only 53% for healthcare. In 2022, it fell to 37% for healthcare, compared to 57% overall. (Figure 15)

Figure 15.
The fill rate for jobs in healthcare is only 37% compared to 57% for all industries²⁹

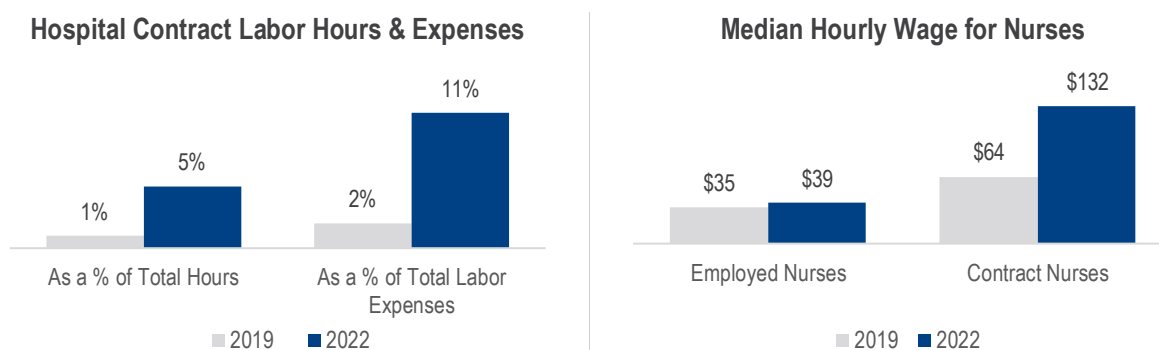


²⁸ Bureau of Labor Statistics. Current Employment Statistics; Davis, Lori L., MD, et al. 2022. “The Economic Burden of Posttraumatic Stress Disorder in the United States from a Societal Perspective.” *Journal of Clinical Psychiatry*. 83(3); Hill, James, et al. 2022. “Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: A systematic review and meta-analysis.” *Journal of Advanced Nursing*.

²⁹ Bureau of Labor Statistics. Job Openings and Labor Turnover Survey.

To remedy workforce gaps, healthcare organizations employ contract workers. Although contract labor is exceptionally more expensive than regular employment, many healthcare providers must hire workers through staffing agencies because they cannot fill vacancies. The use and cost of contract workers has increased rapidly since the pandemic as workforce shortages worsen. Hospital labor expenses have increased by over one-third nationwide; contract labor as a percentage of total labor expenses increased over five times compared to pre-pandemic levels.³⁰ For example, in March 2022, hourly wages for contract nurses were three times higher than employed nurses (\$132 compared to \$39 per hour). This wage discrepancy prompts healthcare workers to convert to contractors, further increasing the reliance on contract labor. These rising labor costs raise healthcare costs for healthcare providers, patients, and payers.³¹ (Figure 16)

Figure 16.
Increased contract labor is contributing to high healthcare costs³²



Workforce shortages increase hospital consolidation & closures

Some hospitals, especially those in rural or socially disadvantaged areas, can no longer operate efficiently and effectively due to the combination of workforce shortages and skyrocketing labor costs. Consequently, they are forced to consolidate or close. The Health Care Cost Institute recently found that 67% of metro areas have high or very high levels of consolidation, providing patients with fewer options for care and increasing costs for patients.³³ During the last decade, 122 rural hospitals have closed, including 69 complete and 53 converted closures, where the facilities still provide some healthcare services.³⁴

The COVID-19 pandemic put more strain on the healthcare system, and hospitals are at risk of closing. According to the Center for Healthcare Quality and Payment Reform, nearly 30% of rural hospitals nationwide and 53% of rural hospitals in New York State are at risk of closing in the near future. (Figure 17)

³⁰ KaufmanHall. 2022. "The Financial Effects of Hospital Workforce Dislocation."

³¹ KaufmanHall. 2022. "The Financial Effects of Hospital Workforce Dislocation." May.

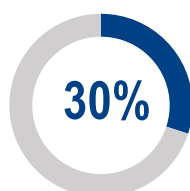
³² KaufmanHall. 2022. "The Financial Effects of Hospital Workforce Dislocation." Kaufman, Hall & Associates, LLC.

³³ Health Care Cost Institute. 2022. Hospital Consolidation Index.

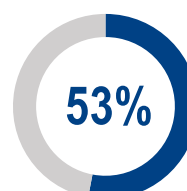
³⁴ University of North Carolina Sheps Center for Health Services Research. Rural Hospital Closures.

Figure 17.
53% of rural hospitals are at risk of closing in New York State³⁵

Rural Hospitals at Risk of Closing Nationwide



Rural Hospitals at Risk of Closing in New York



Workforce shortages reduced access & quality of care

Increased burnout among healthcare workers, higher healthcare costs, and a higher probability of hospital closures and consolidations ultimately hurt patients. Higher burnout rates increase errors, resulting in lower-quality care.³⁶ Meanwhile, healthcare closures and consolidations severely impact patients and communities. Patients have fewer options and higher costs of care.³⁷ Many patients must travel farther for care. As a result, patients delay or forego care, which increases the risk of more severe medical conditions and the probability of patients relying on higher-cost care options, such as emergency room visits. (Table 5)

Table 5.
Healthcare workforce shortages negatively impact patients

Consequences of Workforce Shortages	Impact on Patients
<ul style="list-style-type: none"> • Increased prevalence of mental health disorders among healthcare workers experiencing severe stress and anxiety. • Higher rates of burnout and attrition among healthcare workers compound on one another • Higher labor costs for healthcare organizations that rely more heavily on contract workers. • More consolidation and hospital closures. 	<ul style="list-style-type: none"> • Lower quality of care due to limited staff; workers experiencing burnout have a higher risk of error. • Higher healthcare costs due to rising labor costs; patient expenses also rise with delayed care and higher utilization of emergency visits. • Lower access to care due to consolidations and closures; patients have fewer options and may forego care due to longer travel and wait times.

³⁵ Center for Healthcare Quality and Payment Reform. 2023. Hospitals At Risk of Closing.

³⁶ Reith TP. 2018. "Burnout in United States Healthcare Professionals: A Narrative Review." Cureus. Dec 4;10(12).

³⁷ U.S. Government Accountability Office. 2021. "Rural Hospital Closures: Affected Residents Had Reduced Access to Health Care Services." GAO-21-93.

RESOLVING HEALTHCARE CHALLENGES USING THE U.S. MILITARY AS AN EXAMPLE

The mental health and workforce pipeline issues in healthcare parallel challenges faced by the U.S. military. The Department of Defense (DoD) spends billions annually to support service members and fund recruitment efforts. These efforts can serve as a blueprint for rebuilding a strong and resilient healthcare workforce.

The U.S. military spends significantly on retention and recruitment

Mental health issues negatively impact military recruitment and retention. During 2016-20, nearly 456,300 servicemembers were diagnosed with mental health conditions, including adjustment disorders, alcohol and substance-related disorders, PTSD, anxiety and bipolar disorders, and psychosis.³⁸ According to DoD, these disorders account for significant morbidity, healthcare utilization, disability, and attrition from service.³⁹

DoD funds mental health programs to restore readiness and increase resiliency. In 2021, the National Defense Strategy priorities included \$30.7 million for programs that help servicemembers seek and receive support through behavioral health clinics, medical treatment facilities, counseling programs, crisis lines, and self-care mobile apps.⁴⁰ Additionally, \$13.6 million was budgeted for suicide prevention programs.⁴¹ With nearly 1.4 million active-duty servicemembers in 2021, we estimate DoD spent \$32.6 per person on these initiatives, including \$22.60 on mental health programs and \$10.01 on suicide prevention. (Table 6)

Table 6.

DoD spent over \$44 million on mental health and suicide prevention programs in 2021

	FY21 Expenditures (\$M)	Expenditure / Active-Duty Servicemember
Behavioral and Mental Health Programs	\$30.7	\$22.60
Suicide Prevention	\$13.6	\$10.01
Total Mental Health Funding	\$44.3	\$32.60

Note: Values may not sum to totals due to rounding.

The U.S. government invests heavily in recruitment. In 2021, these efforts included nearly \$1.9 billion to recruit commands (51%), advertise to reach and retain quality personnel (39%), and conduct processing for active duty (10%).⁴² The overall recruitment expenditures totaled \$1,388.98 per servicemember: \$708.43 on recruitment, \$540.76 on advertising, and \$139.79 on examining and processing. (Table 7)

³⁸ Department of Defense. Armed Forces Health Surveillance Division. 2021. "Update: Mental Health Disorders and Mental Health Problems, Active Component, U.S. Armed Forces, 2016–2020." Military Health System.

³⁹ Department of Defense. Armed Forces Health Surveillance Division. 2021. "Update: Mental Health Disorders and Mental Health Problems, Active Component, U.S. Armed Forces, 2016–2020." Military Health System.

⁴⁰ Defense Health Program Fiscal Year (F.Y.) 2021 President's Budget Operation and Maintenance, 2021.

⁴¹ Kamarck, Kristy N. and Bryce H. P. Mendez. 2021. "Military Suicide Prevention and Response." Congressional Service Research 2021.

⁴² Department of Defense. 2020. Operations and Maintenance Overview. FY2021 Budget Estimates.

Table 7.
DoD spent nearly \$1.9 billion on recruitment in 2021⁴³

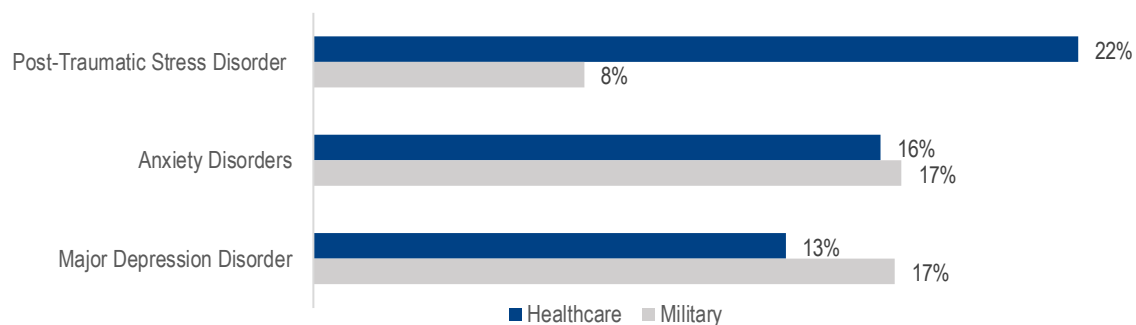
	Percent of Funding	Annual Expenditures (\$M)	Expenditure / Active-Duty Service Member
Recruiting	51%	\$962.9	\$708.43
Advertising	39%	\$735.0	\$540.76
Examining and Processing	10%	\$190.0	\$139.79
Overall Recruitment Funding	100%	\$1,887.9	\$1,388.98

Implementing similar efforts for healthcare

Like the military, healthcare is critical to the well-being of the nation. Despite severe workforce challenges, increasing demand for healthcare services, and rising costs, there is currently no comprehensive effort to restore the resiliency of the healthcare workforce. More direct programs and funding are needed to support current healthcare workers and rebuild a reliable pipeline.

The state of mental health in the healthcare sector shares similarities with the military. During the pandemic, nearly 22% of healthcare workers experienced PTSD, which is only diagnosed in about 8% of active duty service members. In both sectors, stigma, and impact on careers contribute to underreporting, which deters individuals from seeking help and underestimates the true prevalence of these conditions.⁴⁴ (Figure 18)

Figure 18.
22% of healthcare workers experienced PTSD compared to 8% of military service members⁴⁵



⁴³ Department of Defense. 2020. Operations and Maintenance Overview. FY2021 Budget Estimates.

⁴⁴ Dean, K.R., et al. 2020. "Multi-omic biomarker identification and validation for diagnosing warzone-related post-traumatic stress disorder." *Mol Psychiatry* 25. Saddawi-Konefka, Daniel, M.D., et al. 2021. "Consistency Between State Medical License Applications and Recommendations Regarding Physician Mental Health." *JAMA*, 325(19).

⁴⁵ Department of Defense. Armed Forces Health Surveillance Division. 2021. Update: Mental Health Disorders and Mental Health Problems, Active Component, U.S. Armed Forces, 2016–2020; Hill, James, et al. 2022. "Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: A systematic review and meta-analysis." *Journal of Advanced Nursing*.

Current and projected workforce shortages prove that recruitment is a major issue in healthcare. To resolve this, all stakeholders must play a role in addressing the needs of current workers and promoting healthcare as an attractive field. Like the military, these efforts are imperative to ensuring a reliable and resilient pipeline.

Using U.S. government funding as a benchmark, we estimate similar efforts to support healthcare retention and recruitment require nearly \$26.1 billion, including \$664 million for mental health and \$25.4 billion for recruitment. New York would require almost \$2.1 billion, including \$106 million in Rochester. (Table 8)

Table 8.
Over \$2 billion is needed to address mental health and recruitment programs in New York State

	Per Person	Total Expenditures (\$M)		
		United States	New York State	Rochester, NY
Number of Healthcare Workers		20,361,900	1,617,950	82,967
Mental Health Expenditures	\$32.60	\$663.8	\$52.8	\$2.7
Behavioral/Mental Health Programs	\$22.60	\$460.1	\$36.6	\$1.9
Suicide Prevention	\$10.01	\$203.7	\$16.2	\$0.8
Recruitment Expenditures	\$1,249.20	\$25,436.0	\$2,021.1	\$103.6
Recruiting	\$708.43	\$14,425.1	\$1,146.2	\$58.7
Advertising	\$540.76	\$11,010.9	\$874.9	\$44.9
Total	\$1,281.80	\$26,099.8	\$2,073.9	\$106.4

Note: Values may not sum to totals due to rounding.

CLOSING REMARKS

The U.S. healthcare system is in critical condition. Healthcare workforce shortages are growing and compromising the mental health of current workers. If unaddressed, the accessibility, affordability, and quality of care will deteriorate. It is in the national interest to support current workers and build a reliable pipeline.

Congress has begun to act, but a greater effort is needed. Last year, it granted funding to promote and support the use of mental health and substance abuse services among healthcare workers.⁴⁶ It also tasks the Department of Health and Human Services with identifying actions to address mental health challenges and strategies to promote resiliency. This Act is an important step forward but does not go far enough.

The healthcare system's challenges parallel those that the U.S. military has dealt with for decades. To ensure the resiliency of its forces, DoD invests billions in retention and recruitment. In many ways, the vitality of the healthcare system is just as critical – it underpins the health and well-being of local communities, the economy, and national security. A similar commitment to funding programs and joint efforts from all stakeholders is required to restore the resiliency of the U.S. healthcare system.

⁴⁶ 117th Congress. 2021-22. "Dr. Lorna Breen Health Care Provider Protection Act." Public Law No: 117-105.

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APPENDIX 1. WORKFORCE DATA TABLES

Table A1.1. Total Healthcare Workforce, Gap, and Requirements in the United States

	Workforce Gap ¹	U.S. Total			Per 1,000 Residents ⁵		
		Actual Employment ²	Unfilled Jobs ³	Workforce Requirement ⁴	Actual Employment	Unfilled Jobs	Workforce Requirement
2013	3.3%	17,731,092	607,417	18,338,508	56.11	1.92	58.03
2014	3.9%	18,022,150	736,000	18,758,150	56.62	2.31	58.93
2015	4.7%	18,557,367	916,333	19,473,700	57.88	2.86	60.73
2016	5.0%	19,068,783	1,014,000	20,082,783	59.05	3.14	62.19
2017	5.1%	19,519,608	1,046,000	20,565,608	60.06	3.22	63.28
2018	5.4%	19,922,642	1,129,667	21,052,308	60.98	3.46	64.44
2019	5.5%	20,421,092	1,186,167	21,607,258	62.21	3.61	65.83
2020	5.3%	19,796,258	1,096,917	20,893,175	59.51	3.30	62.81
2021	7.5%	20,083,925	1,623,917	21,707,842	59.95	4.85	64.80
2022	9.0%	20,361,900	2,009,000	22,370,900	60.36	5.96	66.32

1/workforce Gap = Unfilled Jobs / Workforce Requirement.

2/ BLS Current Employment Statistics (NAICS 62). 2022 data is based on YTD statistics (Jan-Jun).

3/ BLS Job Openings & Labor Turnover Survey (NAICS 62). 2022 data is based on YTD statistics (Jan-Jun).

4/ Workforce Requirement = Employment + Unfilled Jobs.

5/ U.S. Census Current Population Statistics.

Table A1.2. Healthcare Workforce, Gap, and Requirements in New York State

	Workforce Gap (National) ¹	New York Total			Per 1,000 Residents ⁵		
		Actual Employment ²	Unfilled Jobs ³	Workforce Requirement ⁴	Actual Employment	Unfilled Jobs	Workforce Requirement
2013	3.3%	1,347,283	46,154	1,393,437	68.65	2.35	71.00
2014	3.9%	1,377,425	56,252	1,433,677	70.09	2.86	72.95
2015	4.7%	1,410,892	69,668	1,480,559	71.77	3.54	75.32
2016	5.0%	1,460,800	77,679	1,538,479	74.39	3.96	78.35
2017	5.1%	1,509,583	80,894	1,590,478	77.04	4.13	81.17
2018	5.4%	1,565,725	88,781	1,654,506	80.11	4.54	84.66
2019	5.5%	1,628,958	94,619	1,723,577	83.69	4.86	88.56
2020	5.3%	1,550,217	85,898	1,636,115	76.91	4.26	81.18
2021	7.5%	1,579,425	127,707	1,707,132	79.62	6.44	86.06
2022	9.0%	1,617,950	159,634	1,777,584	81.00	7.99	88.99

1/ Workforce Gap is the national level unfilled jobs as % of workforce requirement.

2/ BLS Current Employment Statistics (NAICS 62). 2022 data is based on YTD statistics (Jan-Jun).

3/ Unfilled Jobs = Workforce Requirement – Employment.

4/workforce Requirement = Employment / (1 - Workforce Gap).

5/ U.S. Census Current Population Statistics. 2022 data is estimated based on national level trend from 2021-22.

Table A1.3. Healthcare Workforce, Gap, and Requirements in the Rochester Metro Area

	Workforce Gap (National) ¹	Rochester Total			Per 1,000 Residents ⁵		
		Actual Employment ²	Unfilled Jobs ³	Workforce Requirement ⁴	Actual Employment	Unfilled Jobs	Workforce Requirement
2013	3.3%	76,242	2,612	78,853	70.47	2.41	72.88
2014	3.9%	77,200	3,153	80,353	71.46	2.92	74.37
2015	4.7%	77,750	3,839	81,589	72.16	3.56	75.72
2016	5.0%	80,533	4,282	84,816	74.94	3.98	78.92
2017	5.1%	82,542	4,423	86,965	76.93	4.12	81.05
2018	5.4%	84,508	4,792	89,300	78.74	4.46	83.20
2019	5.5%	86,292	5,012	91,304	80.60	4.68	85.29
2020	5.3%	81,617	4,522	86,139	74.96	4.15	79.12
2021	7.5%	82,008	6,631	88,639	75.59	6.11	81.70
2022	9.0%	82,967	8,186	91,153	75.94	7.49	83.43

1/ Workforce gap is the national level unfilled jobs as % of workforce requirement.

2/ BLS Current Employment Statistics (NAICS 62). 2022 data is based on YTD statistics (Jan-Jun).

3/ Unfilled Jobs = Workforce Requirement - Employment

4/workforce Requirement = Employment / (1 - Workforce Gap)

5/ U.S. Census Current Population Statistics. 2022 data is estimated based on national level trend from 2021-22.

APPENDIX 2. WORKFORCE PROJECTIONS

Table A2.1. Healthcare Workforce Requirements Per 1,000 Residents Projections

	USA	New York State	Rochester, NY
2013	58.03	71.0	72.9
2014	58.93	72.9	74.4
2015	60.73	75.3	75.7
2016	62.19	78.3	78.9
2017	63.28	81.2	81.1
2018	64.44	84.7	83.2
2019	65.83	88.6	85.3
2020	62.81	81.2	79.1
2021	64.80	86.1	81.7
2022	66.32	89.5	84.0
2023	67.32*	91.90*	85.34*
2024	68.34*	94.37*	86.74*
2025	69.38*	96.91*	88.16*
2026	70.43*	99.52*	89.60*
2027	71.50*	102.19*	91.07*
2028	72.59*	104.94*	92.56*
2029	73.69*	107.76*	94.08*
2030	74.81*	110.66*	95.62*

Table A2.2. Population Projections¹

	USA	New York State	Rochester, NY
2013	315,993,715	19,626,488	1,081,961
2014	318,301,008	19,653,431	1,080,380
2015	320,635,163	19,657,321	1,077,450
2016	322,941,311	19,636,391	1,074,684
2017	324,985,539	19,593,849	1,072,948
2018	326,687,501	19,544,098	1,073,259
2019	328,239,523	19,463,131	1,070,551
2020	332,639,102	20,154,933	1,088,776
2021	334,998,398	19,835,913	1,084,973
2022	337,341,954	19,862,120*	1,085,631*
2023	339,665,118*	19,882,334*	1,086,138*
2024	341,963,408*	19,902,569*	1,086,645*
2025	344,234,377*	19,922,825*	1,087,152*
2026	346,481,182*	19,943,101*	1,087,660*
2027	348,695,115*	19,963,398*	1,088,167*
2028	350,872,007*	19,983,716*	1,088,675*
2029	353,008,224*	20,004,054*	1,089,184*
2030	355,100,730*	20,024,413*	1,089,692*

¹/ Census Bureau. Population Estimates and Projections.

*Projection

Table A2.3. Healthcare Sector Employment Projections¹

	USA	New York State	Rochester, NY
2013	17,731,092	1,347,283	76,242
2014	18,022,150	1,377,425	77,200
2015	18,557,367	1,410,892	77,750
2016	19,068,783	1,460,800	80,533
2017	19,519,608	1,509,583	82,542
2018	19,922,642	1,565,725	84,508
2019	20,421,092	1,628,958	86,292
2020	19,796,258	1,550,217	81,617
2021	20,083,925	1,579,425	82,008
2022	20,361,900	1,617,950	82,967
2023	20,670,270*	1,638,432*	83,271*
2024	20,983,310*	1,659,174*	83,577*
2025	21,301,091*	1,680,179*	83,883*
2026	21,623,685*	1,701,449*	84,191*
2027	21,951,164*	1,722,988*	84,500*
2028	22,283,602*	1,744,801*	84,810*
2029	22,621,076*	1,766,889*	85,122*
2030	22,963,660*	1,789,257*	85,434*

1/ Bureau of Labor Statistics. Current Employment Statistics; Bureau of Labor Statistics. Employment Projections. 2022 based on year-to-date data (Jan-Jun).

Table A2.4. Unfilled Healthcare Jobs: Workforce Shortage Projections

	USA	New York State	Rochester, NY
2013	607,417	46,154	2,612
2014	736,000	56,252	3,153
2015	916,333	69,668	3,839
2016	1,014,000	77,679	4,282
2017	1,046,000	80,894	4,423
2018	1,129,667	88,781	4,792
2019	1,186,167	94,619	5,012
2020	1,096,917	85,898	4,522
2021	1,623,917	127,707	6,631
2022	2,009,000	159,634	8,186
2023	2,179,802*	177,059*	8,945*
2024	2,353,615*	195,234*	9,723*
2025	2,530,294*	214,184*	10,519*
2026	2,710,080*	233,937*	11,334*
2027	2,892,378*	254,520*	12,170*
2028	3,076,884*	275,964*	13,025*
2029	3,263,315*	298,296*	13,900*
2030	3,601,596*	321,550*	18,707*

1/ Bureau of Labor Statistics. Job Openings and Labor Turnover Survey; 2022 based on year-to-date data (Jan-Jun).

*Projection