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COVID-19 and the Rural Health Workforce: The Impact of Federal Pandemic Funding to Address Workforce Needs

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BACKGROUND

The COVID-19 pandemic has affected every facet of the health care delivery system, including the workforce. Rural health systems have been particularly hard hit. Some rural health care challenges are new, a direct result of the pandemic. The pandemic has also intensified long-standing workforce issues and further weakened the financial position of many rural health facilities as they have attempted to mobilize their workforce while struggling to absorb the added costs of patient care and invest in the additional resources needed for pandemic response.[1,2] The federal government has addressed some of these issues through pandemic funding support and economic relief packages.

In this report we describe the workforce challenges faced by rural health care delivery systems and discuss how pre-pandemic financial instability in rural health care facilities may have contributed to the challenges experienced by the rural health workforce during the pandemic. We also discuss the availability of federal pandemic funding to address rural health workforce needs, the ability of rural facilities to access and utilize the funding, and the long-term needs of the rural health workforce and delivery system.

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CHALLENGES FACED BY THE RURAL HEALTH WORKFORCE DURING THE PANDEMIC

Early demand for health care workers

Rural health care facilities have struggled to maintain appropriate staffing levels as the need for workers has fluctuated, dramatically at times, throughout the pandemic.[3,4] Various waves of COVID-19 cases have at times overwhelmed hospital

staff and resulted in many hours of overtime. Alternatively, hours for health care workers were temporarily reduced when routine and non-emergency health services were curtailed early in the pandemic.[3] This reduced demand, primarily among non-emergency services, contributed to approximately 10% of the health workforce, in both urban and rural areas, being furloughed or losing their jobs as health systems mitigated financial losses.[3,5-7] By August 2020, many of the furloughed (or temporarily laid off) health care workers were brought back as nonemergency procedures and routine medical appointments resumed.[8] While every type of health care setting adjusted their employment arrangements in response to COVID-19, the number of rural health care workers suffering pandemic-related job losses has not been tracked nationally.[4,9,10]

Localized surges and pent-up demand for health care

In the spring of 2020, COVID-19 incidence and mortality rates were higher in urban versus rural counties in the U.S.[11,12] By January 2021, however, the intensity of the pandemic had shifted to rural areas and by mid-2021, the rural COVID-19 mortality rate was roughly twice that of urban areas.[12,13] These elevated mortality rates are likely due to lower vaccination rates in rural compared to urban areas combined with higher rates of unmet health and social needs.[13-16] The influx of COVID-19 patients increased pressure on rural hospitals which had struggled to maintain adequate staffing long before the pandemic.[1,17-22]

During the pandemic, many people deferred preventive care, routine health screenings, and other outpatient services.[23,24] As a result, in addition to caring for influxes of COVID-19 patients, health care workers have accommodated backlogs of often sicker patients who return for delayed care, further increasing the workload of those who remain on the job.[25-27] For example, nationwide, patients have skipped or delayed 9.4 million breast, colorectal, and prostate cancer screenings.[23] The Centers for Disease Control and Prevention (CDC) estimates that, as of July 2020, 9.4% of rural residents delayed or avoided urgent or emergency care, 30.9% deferred routine care, and 38.2% delayed or avoided any medical care because of COVID-19-related concerns.[27] In October 2020, a national survey found that one in every four rural households had been unable to get medical care for a serious problem during the pandemic. Over half (56%) of these patients reported negative health consequences as a result.[28]

Shrinking availability of health care workers

Multiple factors have exacerbated rural health workforce shortages during the pandemic as rural health professionals left their jobs in record numbers due to stress, burnout, vaccine mandates, and competition within the health care industry.[29-33] This exodus increased the workload for remaining staff who in turn become at increased risk of leaving.[34-36] Some rural health facilities have also faced unprecedented difficulty in hiring and retaining physicians, registered nurses (RNs), and critical support staff such as coders, schedulers, and nursing assistants.[31,34] A 2021 survey among rural hospital administrators reported that nearly 96% of rural hospitals reported difficulty filling open positions.[37] In some rural locations, a deficit of health care workers has resulted in suspension of hospital services such as obstetrics care.[37,38]

RNs are the most visible workforce in short supply in rural areas because they are the largest group of licensed health professionals in the U.S. across settings.[39] Pre-pandemic projections estimated that the U.S. would need to add 200,000 RNs to the workforce each year through 2029 to meet the dual effects of increased demand for health care and a shrinking workforce.[40,41] Even before the pandemic, many RNs voluntarily left direct-care nursing jobs due to caseloads that felt unmanageable and unsafe for their patients and themselves.[29,42] The pandemic has increased turnover and worsened the deficit of RNs in rural health facilities.[34,43-45] License counts are known to overestimate available RN supply because at all times some licensed RNs are not in clinical practice. During the pandemic some RNs may have temporarily or permanently left nursing employment but remained licensed.

Small rural hospitals have not been able to compete with large urban hospitals that attract and retain RNs with higher salaries and large sign-on bonuses.[46] For example, Monument Health, a member of The Mayo Clinic Care Network in Rapid City, South Dakota, has offered a $40,000 sign-on bonus for intensive care unit and operating room RNs, even

though the median pay for RNs in the state is just $55,660 a year.[47] During the pandemic, the University of Arkansas for Medical Sciences, a 400-bed hospital and the state's largest academic medical institution, increased sign-on bonuses for experienced acute care RNs from $12,000 to $25,000.[48] In addition to sign-on bonuses, RN salaries, in particular for lucrative travel nursing contracts, have been observed as high as $250 hour; in some cases, RNs earn a higher salary than physicians working alongside them in the same hospital.[49,50] In some scenarios, staff RNs can quit, get hired as a traveling nurse, and earn much higher salaries in the same hospital.[31]

Recruiting and retaining specialists

Recruiting and retaining intensivists to care for the critically ill and manage intensive care units (ICUs) has long been a challenge for both rural and urban hospitals.[51,52] While 19% of the U.S. population lives in rural a county, only 1% of ICU beds are located in rural hospitals, making the rural specialty care crisis especially acute.[53] These shortages were exacerbated during the pandemic when many patients hospitalized with COVID-19 required specialized care, ICU admission, or mechanical ventilation.[54-56] During the pandemic, rural hospitals have used innovative techniques such as tele-critical care that let specialists from large, often urban, medical centers share their expertise with clinicians in rural ICUs.[57] Providers such as certified registered nurse anesthetists (CRNAs) have also been deployed to manage the sickest patients in some rural hospitals, lead intubation teams, and educate other providers on critical care management.[58]

Staffing deficits at long-term care facilities affect other health facilities

Nursing homes, including skilled nursing facilities (SNFs), have long struggled to meet staffing needs.[59] Nearly 420,000 nursing home workers have left the industry since the start of the pandemic.[60-62] According to a September 2021 survey from the American Health Care Association, nearly every facility had asked staff to work overtime or extra shifts, 70% of nursing homes needed to hire costly agency staff, and 58% of nursing homes were limiting admissions.[60] Both rural and urban hospitals have patients that are medically stable enough for post-acute rehabilitative care but who cannot be discharged due to a lack of staffed SNF beds.[32,59,63] This bottleneck further stresses hospital capacity.[32,63]

As the COVID-19 pandemic has worn on, rural nursing homes have experienced worse staffing struggles, compared with urban facilities, in part because of the limited number of available workers in rural areas.[62,64] Although national data are not yet available, anecdotal reports suggest that some rural long-term care facilities have used federal and state assistance to offer bonuses and overtime pay to their staff, while recognizing that this is not a long-term solution and funds are limited.[62]

THE FINANCIAL IMPACT OF COVID-19 ON RURAL HEALTH CARE SYSTEMS

The American Hospital Association estimated that pandemic-related losses for the nation's hospitals and health systems, in both urban and rural areas, was over $323.1 billion in 2020.[65] Given that many rural facilities had fewer financial reserves before the pandemic compared with their urban counterparts (see **Boxes 1 and 2**), the higher costs and shrinking revenues associated with COVID-19 have disproportionately impacted rural facilities.[66,67] Also, rural health care facilities received a disproportionately smaller share of economic relief compared with urban hospitals although rural areas faced a higher proportion of COVID-19 cases.[68,69] Additionally, rural hospitals may experience further weakening of their financial position as they rely on hiring travel nurses through staffing agencies at costs that exceed their financial resources.[35,70] These workforce-related challenges are both cause and consequence of financial impacts of COVID-19 on rural health systems, and therefore an understanding of pandemic finances is key to appreciating rural health workforce dynamics. The full impact of the pandemic's effects on rural hospitals remains to be seen.

BOX 1. THE FINANCIAL WELLBEING OF RURAL HEALTH FACILITIES

Rural hospitals

Approximately 2,500 short-term, acute care hospitals serve rural populations.[71] Before the pandemic, many rural health facilities were more likely to have negative operating margins and half as many days of cash on hand to pay operating expenses compared to the national median.[14,72,73] In 2020, during the COVID-19 pandemic, 19 rural hospitals closed, the highest number since the University of North Carolina Cecil G. Sheps Center began tracking closures in 2005.[74,75] This does not include rural hospitals that were consolidated or sold to a larger hospital system.[75] As of January 2021, more than 500 rural hospitals across 47 states were estimated to be at immediate risk of closure.[74,75]

Primary care clinics

Small primary care clinics (in rural and non-rural areas) have been closing due to the financial strains of the pandemic.[76-78] A 2020 survey by The Physician's Foundation found that 8% of physicians surveyed, representing an estimated 16,000 medical practices, indicated that they had closed their practice as a result of the pandemic.[78] The number of rural closures is unclear,[8] but rural primary care clinics have fewer financial reserves than urban clinics, and reports suggest that the pandemic has further exacerbated these disparities, resulting in closures.[77,79]

Nursing homes

Rural nursing homes were struggling financially before the pandemic.[80] Like urban nursing homes, they have faced increased labor costs and losses in revenue due to decreased occupancy during the pandemic.[80] Numerous anecdotal reports have documented closures of rural nursing homes and long-term care facilities,[80-83] although the specific toll of the pandemic on rural nursing homes is not yet clear.

THE ROLE OF FEDERAL RELIEF PACKAGES DURING THE COVID-19 PANDEMIC

The federal government has implemented a series of financial relief packages to help offset COVID-related expenses and lost revenue due to the pandemic (**Table 1**). To examine the role of federal pandemic relief packages on workforce needs of rural health care facilities, we focus primarily on the workforce provisions of the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 and the American Rescue Plan (ARP) Act of 2021. These have been the most comprehensive financial relief programs to date. (See **Box 3** for general information on these packages.) Most CARES and ARP funds were open to all providers regardless of geographic location. Some funds were explicitly allocated for the rural health care delivery system and workforce, described below.

Table 1. RURAL WORKFORCE CHALLENGES ADDRESSED BY COVID-19 PANDEMIC POLICIES AND PROGRAMS

Federal policy initiatives addressing workforce challenges								
Rural workforce challenges	Provider Relief Funds	Paycheck Protection Program	Medicare Accelerated and Advance Payments Programs	Emergency Rural Health Care Grant Program	American Rescue Plan Rural Payments	Rural Public Health Workforce Training Network Program	Mental Health Promotion and Burnout Prevention	Telehealth Flexibilities
Health care workers furloughed or laid off early in pandemic	X	X						
Health care workers voluntarily leaving jobs due to overwork, stress and burnout	X	X	X	X		X	X	
Job loss due to vaccine mandates						X		X
Difficulty hiring new staff	X	X		X	X	X		X
Loss of staff to traveling health worker agencies	X	X		X	X	X		X
Health care workers lost to more competitive salaries and bonuses at urban health facilities	X	X		X	X	X		X
Increased patient loads due to local COVID-19 surges and pent-up demand for health care						X	X	X
Pandemic-related revenue loss	X	X	X	X	X			

CARES Act relief measures that support the rural health workforce

The CARES Act allocated $175 billion for emergency relief for hospitals and other health care facilities.[87] Of these funds, $10 billion were reserved for rural hospitals, including CAHs, Rural Health Clinics (RHCs), and Federally Qualified Health Centers (FQHCs).[87] Three CARES Act programs are particularly relevant to the rural health care system and workforce: the Provider Relief Fund, the Paycheck Protection Program, and the COVID-19 Accelerated and Advance Payments Program.

- **Provider Relief Fund (PRF)**

  Of the $175 billion of PRF payments allocated to health care providers, $10.9 billion were allocated for 4,300 rural facilities.[87] Funding could be used for recruitment and retention costs of health care workers, including costs for hiring and retention bonuses, temporary housing, and transportation.[88]

- **Paycheck Protection Program (PPP)**

  Government-owned hospitals, a majority of which are in rural counties, were eligible for PPP support.[89,90] To be eligible, a hospital needed to receive less than 50% of their funding, with the exception of Medicaid funding, from state or local government sources.[89,90] Although data are not yet available on the number of rural health care providers who received PPP loans, the U.S. Treasury Department reported that 20.1% of all PPP loans went to businesses in rural areas.[91] As of July 2020, doctor and dentist offices (in both urban and rural areas) were among the businesses most likely to receive a PPP loan, with more than 22,300 doctor's offices and 4,000 outpatient care centers receiving loans.[92,93]

  The PPP initially required businesses to have fewer than 500 employees. This requirement was later amended (in Section 5001 of the ARP Act) to allow eligibility for businesses with more than one physical location as long as they employed 300 or fewer people per location.[94,95] Rural clinics owned by larger hospital systems thus became eligible under these expanded rules.

- **COVID-19 Accelerated and Advance Payments (CAAP) Programs**

  As of October 2020 (the most recent report available), the Centers for Medicare and Medicaid Services (CMS) had distributed more than $98 billion in accelerated payments to 22,000 Part A providers (inpatient hospitals, SNFs, nursing homes, hospice, and home care agencies/providers) and more than $8.5 billion to 28,000 Part B providers, including physicians and other practitioners.[96] Of the $98 billion distributed to Part A Providers, RHCs received approximately $221 million (0.2%) and CAHs approximately $2.6 billion (2.8%).[97]

BOX 2. PANDEMIC-RELATED FINANCIAL LOSSES IN RURAL HEALTH FACILITIES

Many factors have contributed to financial losses in rural health facilities during the pandemic:

- Unprecedented demand for certain medical equipment, pharmaceuticals and personal protective equipment (PPE) has disrupted supply chains and increased costs for basic supplies needed to treat COVID-19 patients.[6,84]
- Elective and non-emergency surgeries such as knee and hip replacements have been canceled or delayed to preserve hospital and clinic capacity for COVID-19 surges.[6,85] Revenue from these services comprises approximately 48% of all hospital income.[6,84,85] Many rural hospitals depend on elective surgeries to stay solvent and are disproportionately dependent on surgical volume compared with high-occupancy health facilities.[14,66,72] In turn, fewer elective surgeries decrease demand for post-surgery care, such as rehabilitative care in skilled nursing facilities and physical therapy services.[86]
- Many patients have deferred preventive care and other outpatient services during the pandemic.[23,24] Critical Access Hospitals (CAHs) and other small rural hospitals normally receive a higher share of revenue from outpatient services compared with high-occupancy hospitals and those affiliated with larger health systems.[72] These rural hospitals are considered to be at highest risk for financial challenges due to COVID-19–related restrictions on preventive care.[72]

BOX 3. OVERVIEW OF FEDERAL RELIEF PROGRAMS DURING THE COVID-19 PANDEMIC

Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020

The CARES Act was a $2.2 trillion economic stimulus bill passed by Congress in March 2020.[98] CARES implemented a variety of programs aimed at economic assistance for workers, families, small businesses, and industries.[98] The CARES Act allocated $175 billion for emergency relief for hospitals and other health care facilities.[87] SNFs received an additional $4.9 billion of funding relief.[87,99] Three CARES programs (the Provider Relief Fund (PRF), the Paycheck Protection Program (PPP), and the COVID-19 Accelerated and Advance Payments (CAAP) Program) are relevant to the health workforce.

PRF: The PRF was authorized in April 2020 through the CARES Act and replenished several times through various legislative actions, including the American Rescue Plan (ARP).[99] The PRF provided $175 billion to health care providers with the goal of reimbursing eligible hospitals and health care providers for "health care-related expenses or lost revenues that are attributable to coronavirus."[100,101] The application period for PRF funds closed on November 3, 2021.[102] Funds did not need to be paid back if they were used according to the program's terms and conditions.[101]

PPP: The PPP was created through the CARES Act and originally included $349 billion in funding.[94,103] These funds became available to small businesses on April 3, 2020, but were depleted within two weeks.[103] Second and third rounds of funding were later approved, for $310 billion and $284 billion, respectively.[94] The PPP ended on May 31, 2021.[104] PPP funds were provided in the form of loans that were fully forgiven, including the principal amount and interest accrued, if used for payroll costs, interest on mortgages, rent, and utilities.[94] The average PPP loan was about $100,000.[92]

COVID-19 Accelerated and Advance Payments (CAAP) Programs: The Medicare AAP Programs were established in 1986 to help hospitals and other providers facing cash flow disruptions during an emergency.[105,106] Under the Medicare AAP Programs, CMS provides up-front payments for expected future claims for services provided to Medicare patients.[106] In March 2020, the CARES Act amended the existing Medicare AAP Programs to relax repayment terms for loans made to providers and to support a broader group of providers during the pandemic.[96,107]

American Rescue Plan (ARP) Act of 2021

The ARP is a $1.9 trillion economic stimulus bill passed by Congress in March 2021 to aid the country's recovery from the economic and health effects of the pandemic and ongoing recession.[108] Approximately $8.7 billion of ARP funding has been allocated to address rural health workforce issues through the Emergency Rural Health Care Grant Program, ARP Rural payments, Rural Public Health Workforce Training Network Program, and funds to enhance mental health.

ARP Act relief measures that support the rural health workforce

The ARP has initiated new funding mechanisms for the rural health workforce and health delivery system, in addition to extending some rural funding supports in the CARES Act. The ARP programs relevant to the rural health workforce are described below.

Emergency Rural Health Care Grant (ERHCG) Program

In August 2021, a $350 million initiative was developed to expand the access of rural hospitals to COVID-19 vaccines and testing, medical supplies, and telehealth, among other services.[109,110] ERHCG funds can also be used to support construction or renovation of rural health care facilities and to compensate for lost revenue or staffing expenses due to COVID-19.[110] Applications for at least a portion of these funds are open until the funds are exhausted (applications were still open as of March 2022).[109,110] Grant awards range from $25,000 to $1 million.[109]

The ERHCG program provides an additional $125 million in grants to plan and implement models that improve the long-term viability of rural health care providers and health care networks.[111] Applicants are required to establish a network or group of entities that consist of health care provider organizations, economic development entities, federally-recognized tribes, or institutions of higher learning.[111]

American Rescue Plan Rural Payments

The ARP has designated $8.5 billion to providers who serve rural Medicaid, Medicare, and Children's Health Insurance Program (CHIP) beneficiaries.[110,112] These funds aim to compensate providers for lost revenue and increased expenses associated with COVID-19.[110] In November 2021, the Biden administration announced that more than 40,000 rural providers in all 50 states, Washington, D.C., and six territories will receive these funds.[112] The average payment is $170,700 and range from $500 to approximately $43 million.[112]

Rural Public Health Workforce Training Network (RPHWTN) Program

The RPHWTN program allocates $48 million to train new rural health care workers to fill in-demand professions affected by the pandemic.[113] Applications opened in March 2022.[113] The U.S. Department of Health and Human Services reports that they are creating rural health networks by pairing minority-serving institutions, tribal colleges and universities, RHCs, CAHs, nursing homes, and substance use disorder treatment providers.[110,113] The multiple aims of this funding includes:[114]

- Cross-training community health workers in rural communities.
- Expanding the workforce to support electronic health records as well as virtual and telehealth systems.
- Developing community paramedicine programs to expand the capacity of emergency medical services.
- Increasing the number of well-trained health care professionals and connecting them with future employers.
- Training case management staff, respiratory therapists, and community paramedicine professionals who will play a critical role in helping rural clinical sites better serve patients affected by long-term COVID health challenges.

Funds to Reduce Burnout and Promote Mental Health

More than $100 million in ARP funds have been allocated to reduce burnout and promote mental health among the health workforce with a particular focus on rural and medically underserved communities.[115] The funding aims to ensure that frontline health care workers have access to needed services to limit and prevent burnout, fatigue, and stress during and beyond the COVID-19 pandemic.[115] Funds for three specific programs were awarded in January 2022.[115]

- **Promoting Resilience and Mental Health among the Health Professional Workforce**[115,116]
  Approximately $29 million was awarded to 10 health care organizations to support their workforce. This funding supports health care providers, health care provider associations, and FQHCs to establish or expand evidence-based programs that promote mental health and wellness among their workforce.[116]
- **Health and Public Safety Workforce Resiliency Training Program**[115,117]
  This funding provides approximately 30 awards totaling $68 million to eligible educational institutions and state, local, tribal, public, or private nonprofit organizations. The purpose is to provide evidence-informed planning, development, and training in health profession activities, reduce burnout and suicide, and promote resiliency among the health workforce in rural and underserved communities.
- **Health and Public Safety Workforce Resiliency Technical Assistance Center Program**[115,117]
  The program aims to promote resiliency among the health workforce in rural and underserved communities and support training in evidence-based strategies to address burnout and other behavioral health issues. Applicants could include academic health centers, state or local governments, tribal, or other public or private nonprofit entities. One award was made for approximately $6 million over three years.[118]

TELEHEALTH SOLUTIONS TO WORKFORCE CHALLENGES IN RURAL HEALTH CARE SYSTEMS

Increased use of telehealth services may help alleviate rural provider shortages, provide safer alternatives to in-person care by reducing in-person exposure to infection, and establish payment parity for rural sites.[119,120-123] The federal government,

states, and private insurers' have shifted their regulations to offer flexibility for telehealth services, at least for the duration of the pandemic.[68,119] Examples include:

- Federal guidance was updated to allow FQHCs and RHCs to serve as "distant site" providers of telehealth for Medicare beneficiaries rather than only allowing these facilities to bill for services to patients who were physically present at the facility.[119,124]
- CMS allowed providers to deliver telehealth services from their home, thereby removing geographic restrictions.[121,125]
- States were authorized to temporarily expand telehealth services and allow payments for telehealth services that are not otherwise paid under Medicaid state plans.[126]
- Many private insurers broadened telemedicine coverage in response to COVID-19.[127] Reimbursements differ per policy.[127]

Many challenges in rural areas remain. Telehealth may not be tenable in places that lack broadband access, and research suggests that rural patients are less likely than urban patients to prefer telehealth.[124,128,129] In 2020, urban Medicare beneficiaries had about 50% higher use of telehealth than rural beneficiaries.[130] In addition, telehealth has offset a portion of, but not all, financial losses for providers and small practices.[76]

DISCUSSION AND FUTURE CONSIDERATIONS

Real world implementation of pandemic relief funds

A clearer picture of the role of federal pandemic funding on the rural health delivery system and workforce is likely to emerge in the future. Early research suggest that CAHs received a median of $4.1 million and rural and community hospitals received a median of $9.1 million through the CARES Act and the PRF.[131] A key challenge to understanding the extent to which federal funding has helped health care facilities address their health workforce needs is that the funding recipients were given, appropriately, a large degree of discretion in how funds were spent. Funding packages often bundled money targeted for health workforce needs with other allowances. For example, recipients of the ERHCG Program could spend their allocations on items ranging from staffing to construction and renovation, and PPP loans could be spent on payroll costs, rent, or utilities.[109,110,132] Given this, we cannot yet untangle what portion of the funds were used for workforce-related needs and what portion was spent on other expenses, how rural and urban communities may have used the funds in different ways, and with what impact.

Anecdotal reports suggest that many health facilities, including in rural areas, had difficulty applying for, receiving, and utilizing their allocations as intended. A significant portion of these critical funds remains unspent. For example, in October 2021, more than 18 months after Congress approved relief funding for health care providers, the Urban Institute estimated that approximately $27 billion remained in the PRF, and that the balance would grow as facilities were required to return unspent grants.[133] On January 20, 2022, the American Hospital Association requested congressional action to distribute the remaining PRFs, because no PRF funds had yet been released to address the Delta and Omicron COVID-19 variants, despite their financial toll on hospitals.[134] Rather than indicating lack of need, unspent funds may mean that programs could have been better targeted to ongoing needs with more technical assistance to make use of the funds.

An additional concern is that federal relief allocations were not shared equally. Research suggests that CAHs may have received disproportionately less funding than larger hospitals and systems, some with billions of dollars in cash reserves.[135-139] For example, some larger hospitals that received millions of federal relief dollars were able to purchase weaker hospitals and provider networks.[137,138] Many factors may contribute to rural/urban disparities in utilizing pandemic relief funds. Larger health systems with more financial cushion may be more willing to apply for and spend pandemic funds because they can rely on reserves if repayment is necessary. Additionally, inconsistent and ambiguous spending and reporting guidelines[140-142]

may disproportionately affect rural facilities with fewer administrative staff to decipher complex funding requirements. Other factors may deter both rural and urban health systems from making full use of these financial packages, including restrictive spending timelines (e.g., less than 12 months to complete pandemic-related construction projects, despite severe labor and supply shortages), limited notices of revised reporting requirements (e.g., three weeks' notice of a June 30, 2021 deadline for use of funds), and concern about clawbacks of overpayments.[140-143]

Future supply of health care workers

The COVID-19 pandemic has exacerbated pre-existing health workforce shortages.[40,41] A September 2021 poll found that 18% of health care workers had left their jobs since the start of the pandemic and 31% had considered leaving.[144] Despite these unprecedented losses, several encouraging developments have emerged. First, preliminary research suggests that approximately a quarter of licensed practical nurses who have left their positions are pursuing RN degrees.[145] Additionally, applications to and enrollment in nursing programs increased in 2020.[146,147] According to the American Association of Colleges of Nursing, student enrollment increased by 5.6% in baccalaureate programs, 4.1% in master's programs, and 8.9% in doctor of nursing practice programs.[147] The ability of nursing schools to enroll even larger classes has been hampered by a lack of clinical instructors and preceptors. In 2020, 80,521 qualified applications were not accepted at nursing schools due to a lack of faculty and resources.[147] Clinical training sites and preceptors for medical, nursing, and allied health students, in short supply in both urban and rural areas even before 2020, were also impacted by the pandemic.[56,148-150]

Future research and policy efforts are needed to fully understand how to adequately prepare new health workers to provide care in the pandemic context as well as recruit and retain them in rural communities. Whether those who have left the workforce can be enticed to return to health care jobs is also worthy of exploration. Any solution to workforce challenges is likely through improved working conditions and compensation.

Conclusion and future considerations

Further investigation is needed to understand how federal pandemic funding did or did not address rural health workforce needs, potential gaps when the pandemic funding ends, and long-term rural health workforce needs. Understanding the effect of the COVID-19 pandemic and the role of federal pandemic funding in alleviating strains on the rural health workforce is critical for improving health care delivery and ensuring the availability of health care workers during the remainder of the pandemic and as rural systems recover.

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