As the most severe patients present with cardio-pulmonary distress and failure due to SARS-CoV-2, health care facilities have been forced to expand intensive care unit (ICU) capacity. Due to high demand, facilities have been turning to the contingent staffing workforce to access critical care nurses. As Covid-19 hotspots shift, demand for travel ICU nurses within those hotspots increases sharply. Given the transient nature of this workforce, ICU travel nurses may be at heightened risk of infection and burnout while representing a crucial resource in the prolonged national Covid-19 response. Supplying adequate PPE and providing mental health support is essential to a long-term response.

Health care facilities have faced overwhelming pressures in a rolling fashion during the Covid-19 pandemic, depending on infection rates in their local areas. While early lockdowns caused a reduction in elective medical care, high demand for specific services, such as intensive care units, continue to stress health care facilities in hotspots.1

The high rates of infection across the United States and a lack of preparedness has led to high demand for critical care nurses. Due to a limited supply of these specialized personnel on staff and available in local areas, hospitals are seeking additional nurses to relieve exhausted systems and to respond to the high patient need.

During non-pandemic operations, the contingent health care workforce is utilized to staff facilities experiencing increased patient demand. During Covid-19, clinician hiring in non-Covid-19 specialties has been impacted by a reduction in in-person visit volumes.2 As most health care systems continue to operate largely on a fee-for-service basis, any major reduction in volume places major financial pressure on health systems, hospitals, and other health care facilities. Thus,
Covid-19 has negatively impacted available jobs in some areas of health care, while generating significant demand for staff in areas most impacted by Covid-19’s clinical presentation.

Contingent health care professionals, or travel nurses, are essential to the nation’s health care workforce. According to Staffing Industry Analysts, the U.S. health care staffing industry is estimated at $17.4 billion in size. Also known as out-of-state clinicians, these individuals take temporary employment opportunities at locations away from their official place of residence, or designated IRS tax home. These jobs are typically located greater than 50 miles from their designated home location. These assignments are most often approximately 3 months in length. The market for this type of employment exists because many health care facilities are unable to access sufficient workforce in their immediate geographic areas. Health care organizations that cannot recruit and hire the number and specialty-type of nurses they need, frequently turn to contingent clinicians to fill those needs.

News reports also offer anecdotal evidence suggesting that hospitals have turned to the contingent staffing market for ICU positions as infection rates cause spikes in demand, facilities have been under-staffed, or staffs have been overwhelmed or sick. The same reports suggest that some travel nurses may be taking jobs sequentially in Covid-19 hotspot states. Similar news reports have also indicated major pay rate increases that may contribute to an increase in travel nurses seeking high-pay Covid-19 response assignments.

**Covid-19 and Travel Nurses**

Covid-19 was first identified in the United States in early 2020. After a period of community spread in January and February and the implementation of testing, longitudinal data from the CDC indicates two periods of sustained infection growth from January 2020 through July 2020.

The first period of growth in new infections occurred from February to April 2020. The primary hotspot of this first period of infection growth was New York, with additional high rates of infection in Massachusetts.

The second period of infection growth began in mid-June 2020 coinciding with the rollback of preventive public health measures such as lockdowns, mask mandates, and other policies. This period of infection growth became concentrated in new state hotspots. CDC data as of August 4, 2020, showed hotspots with the highest rate of Covid-19 infections in Florida, Texas, Georgia, and Arizona.

The first period of exponential growth and the second period of exponential growth are utilized in this analysis as events that precede demand changes for travel critical care clinicians.

A PubMed literature review and Google search was performed to identify existing data or information related to demand for contingent health care professionals during Covid-19. To supplement existing information, Covid-19 infection data from the Centers for Disease Control and Prevention (CDC), and Wanderly, a neutral travel staffing marketplace, were utilized and included in this analysis. Wanderly is a digital marketplace that facilitates matching between contingent
job postings by staffing agencies on the behalf of health care systems and the travel health care professionals. Longitudinal ICU job data from Wanderly from January 2020 through July 2020 is used as an indication of demand.

A six-state (Arizona, Florida, Georgia, Massachusetts, New York, and Texas) comparison was performed to allow for an analysis of the relationship between Covid-19 hotspots and demand for critical care nurses as demonstrated by number of jobs and weekly pay rates.

**Travel ICU Job Trends during Covid-19**

During the Covid-19 pandemic in the United States, demand for ICU nurses has been high and has shifted as hotspots developed over time. As Covid-19 infections increase in each specific state, a corresponding increase in demand for ICU nurses is seen (Figure 1).
During the first period of Covid-19 infection growth, travel ICU jobs in Massachusetts and New York increased 612% and 1,038%, respectively. States not yet designated as national hotspots during this time, such as Arizona and Texas, had increases of 265% and 59%, respectively (Table 1).

**During the second period of infection growth, the number of ICU jobs can be compared to the same January baseline. Hotspots during this time included Arizona and Texas, where ICU job increases of 732% and 927%, respectively, are visible.**
During the second period of infection growth, the number of ICU jobs can be compared to the same January baseline. Hotspots during this time included Arizona and Texas, where ICU job increases of 732% and 927%, respectively, are visible. At the same time, New York and Massachusetts managed to keep new Covid-19 infection growth at bay during the second period. ICUs in New York and Massachusetts are elevated above January numbers, but much lower than their peaks in April 2020.

Analysis of average weekly pay for ICU assignments across the 6 states confirms anecdotal evidence suggesting elevated pay to attract travel ICU nurses to Covid-19 hotspots. When Covid-19 infection rates increase, pay for critical care nurses does as well in order to attract the available supply of nurses (Table 2).

The average weekly pay in New York for a travel ICU nurse in January was $1,945.61 whereas, in April, rates had increased 74% to an average of $3,392.86, weekly. Similarly, for the hotspots of the second period of infection growth, such as Texas, a 46% increase in pay occurred in July.
Research Opportunities: Looking Ahead

The transient nature of the contingent health care workforce aligns with the shifting state-based demand for ICU nurses. This analysis shows a clear relationship between Covid-19 infection hotspots and demand for contingent health care professionals specializing in critical care. Pay rate data also fluctuates with infection growth and corresponds with an increase in demand. To our knowledge, no previous empirical analyses have shown the relationships between Covid-19 infection hotspots and demand for travel ICU nurses.

With a large number of staffing agency users representing hospital job openings across the United States, the Wanderly staffing data used in this analysis represents a resource to understand trends in demand for the contingent health care workforce. The real-time nature of this data source presents the opportunity for further exploration as a tool to predict stresses and resource needs in the health care system during large public health events. For public health organizations and policymakers, Wanderly data provides a 50-state view of contingent clinical staff demand in more real-time than other data sources. For example, in August 2020, New York ICU jobs have spiked again, perhaps in anticipation of a fall second wave.

In addition, while little research has been performed on the contingent health care workforce during Covid-19, it is supported that frontline nurses are at a higher risk of infection and burnout. Travel nurses may be at elevated risk due to the potential for multiple places of employment shifting with Covid-19 hotspots. An ICU nurse taking a position in a New York hospital in April may now be caring for patients in an Arizona facility.

Travel critical care nurses must cope with not only the risks of their workplace, but also the mental health ramifications of their personal situations during the pandemic. Frontline clinical staff face increased fear of exposure, extreme workloads, new mental stressors, and a high-stakes clinical environment that differs from those pre-pandemic. Evidence suggests that the risk of burn-out and negative mental health impacts is high among frontline staff during Covid-19. Indeed, critical care nurses are at an elevated risk of burnout during even non-pandemic clinical operations.

One of the authors (KJ) is an ICU nurse who has been working in travel nursing for five years, and offers this warning: “Losing any patient is absolutely traumatic, but losing patients at the rate of our frontline ICU health care providers, during this pandemic, is unconscionable. There will be aftermath, there will be burnout, there will need to be some form of recovery for a long time.”

Providing mental health support and adequate infection protection is essential for all frontline health care professionals, including and especially travel nurses who may be experiencing sustained stressors as they care for critically ill Covid-19 patients in multiple state hotspots.

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