Physical Medicine and Rehabilitation in Rhode Island during the COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic has transformed the practice of medicine. We interviewed Physical Medicine and Rehabilitation (PM&R) specialist physicians providing rehabilitation services throughout Rhode Island to organize a narrative assessing the pandemic's impact on the state's rehabilitation community and the responses of its leaders. Almost half of rehabilitation providers needed to suspend their services during the initial peak of the pandemic. Most experienced reductions in the size of their practices, as well as personnel issues that contributed to burnout. All physicians used telemedicine to connect with patients. Many reported issues with accessing personal protective equipment and providing clinical opportunities for trainees. Inpatient rehabilitation policies and practices helped to maintain access for COVID-positive and negative patients, yet challenges were faced when configuring physical space to abide by CDC social distancing guidelines and providing care without patient visitors. Despite setbacks, the pandemic outlined opportunities for improvement of healthcare organization and delivery.

KEYWORDS: physical medicine and rehabilitation, physiatry, COVID-19, pandemic, Rhode Island

INTRODUCTION

The first cases of novel coronavirus infection were reported in Hubei, China on December 31, 2019.[1] The newly identified virus quickly spread to create the global COVID-19 pandemic. The first case in the United Stated was reported on January 20, 2020 in Washington[2]; within weeks it had spread to the East Coast. Rhode Island is positioned between two initially heavily burdened areas, New York and Boston. The first case in Rhode Island was reported on March 1, 2020,[3] and Governor Gina Raimondo declared a State of Emergency on March 9.[4] Rhode Island followed national guidance to ban public gatherings of 25 or more people, and closed many in-person businesses including restaurants, malls, and gyms. Healthcare underwent many rapid changes during the initial surge of the COVID-19 pandemic in March 2020, with effects across different specialties and modes of delivery.

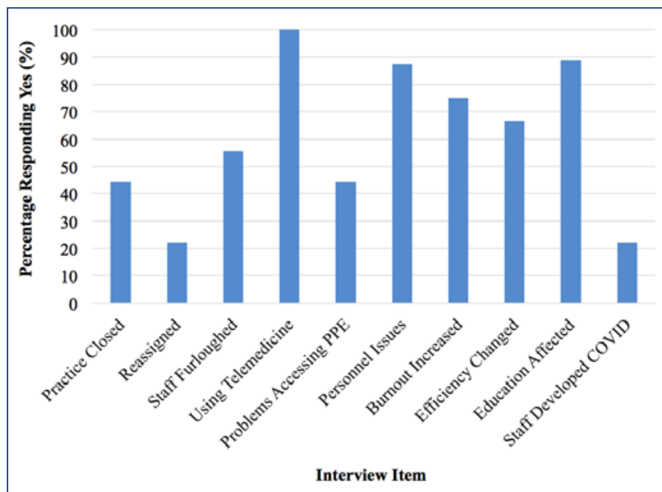
Physical Medicine and Rehabilitation (PM&R), or physiatry, is a medical specialty that provides care for people with disability or functional deficits. Physiatrists serve a distinct patient population, including people with stroke, brain injury, spinal injury, musculoskeletal injury, amputation, pain, congenital anomaly, and other neurological or medical diseases. Physiatrists treat patients in inpatient rehabilitation units (IRU), nursing homes, long-term care facilities, and outpatient clinics.

Although the initial surge of the pandemic briefly subsided in the northeast of the United States, lockdown gave way to a "new normal" mode of operation. Clinicians grappled with emerging challenges and interruptions to established practices while attempting to provide the same quality of care to patients. We hypothesized that there may be important lessons to be learned from studying the response of the PM&R community in Rhode Island to disruption caused by the COVID-19 pandemic. We interviewed nine PM&R physicians in the state of Rhode Island during July 2020 in

Table 1. Interview Responses of Rhode Island Rehabilitation Physicians

Item	Yes (N)	Yes (%)
Did your practice close at any point due to the pandemic?	4/9	44.4
Were you reassigned to provide care in a different setting or location?	2/9	22.2
Did your workplace furlough any employees?	5/9	55.6
Did you use telemedicine to provide virtual patient care?	9/9	100
Did you have problems with accessing the personal protective equipment necessary to work safely?	4/9	44.4
Have there been personnel issues at work related to the pandemic, such as transportation or childcare?	7/8	87.5
Did office changes and personnel issues lead to increased burnout?	6/8	75
Has your workflow efficiency been affected by COVID-related workplace changes?	6/9	66.7
Was student and staff education affected by the pandemic?	8/9	88.9
Did any employees at your workplace develop COVID?	2/9	22.2

Figure 1. Percentage of Physicians Reporting Changes in Practice Due to COVID-19 Pandemic



an effort to understand how they adapted to various challenges initially presented by the pandemic. We asked a standardized set of targeted questions of all physicians we interviewed. Additional questions were asked of physiatrists providing inpatient rehabilitation care during the pandemic. The responses of all physicians to the general set of questions are displayed in **Table 1** and **Figure 1**.

EFFECTS OF THE PANDEMIC ON REHABILITATION PRACTICES

The COVID-19 pandemic presented many challenges to providing outpatient care. Many physician practices temporarily closed until they were able to create protocols and procedures to adequately protect patients, providers, and support staff. Of the Rhode Island PM&R physicians interviewed, four out of nine needed to close their practice at some point during the initial surge of the pandemic. Lengths of closures ranged from one week to six weeks. Two of the physicians were reassigned in order to cover inpatient rehabilitation units on days they were not working, typically weekends.

While closures were temporary, six of the nine physicians reported that their practices had to furlough staff permanently in order to remain viable. All interviewees who reported furloughs in their practices noted that furloughed employees were either advanced practice providers or support/administrative staff. At one group, healthcare providers voluntarily left due to perceived occupational risk. As a result, physicians had to complete tasks normally delegated to support staff, such as scheduling and checking in patients.

Not only did physicians assume greater responsibilities within their organizations, but all nine physicians interviewed also adopted telemedicine during the initial surge of the pandemic. Only one of these physicians had experience in using telemedicine before the pandemic began, which led to a steep learning curve to implement. The majority of physicians continue to see patients by telemedicine on a regular basis, although all are seeing a larger proportion of their patients on an in-person basis again.

Access to personal protective equipment (PPE) was problematic both nationally and in Rhode Island. Four of nine physicians interviewed reported difficulty accessing adequate PPE. The most commonly needed items were masks, which were rationed at all the physician practices. Other physicians reported that although access to PPE was adequate according to guidelines issued by their organizational leadership, infection control PPE measures were more lenient due to short supply. For instance, at Kent Hospital, providers were given N-95 respirators to wear until soiled. At Lifespan and at the Veteran's Administration, providers were given surgical masks to replace every two days or until soiled.

The rapid changes in medical practice and workplace demands were taxing on the physician workforce. Seven of eight physicians reported personnel or staffing issues during the initial surge of the pandemic. The most common issues revolved around staffing to accommodate changes in office schedules and transportation or childcare for staff families. These demands contributed to an increased rate of burnout, as reported by six of the eight physicians. Data was missing for one of the nine physicians, who was unable to elaborate on these questions due to time restrictions.

Ultimately, considering all changes to the workflow and resources of individual practices, six of nine physicians reported that their work efficiency was still impacted as of July 15, 2020, well after the initial COVID-19 surge. Five physicians reported being able to see fewer patients per hour, with up to a 50% loss in daily productivity. These physicians cited greater administrative responsibilities as well as time spent on infection control measures. Paradoxically, one physician reported greater efficiency at work from a more streamlined workflow with adaptation of telemedicine, whereas three reported no change in work efficiency. Additional effects of the pandemic were reported by eight of the physicians who had to limit trainees in clinical environments, resulting in limited educational opportunities. Fortunately, only two of nine physicians reported COVID infections among staff at their practices.

EFFECTS ON INPATIENT REHABILITATION

Inpatient rehabilitation faced unique challenges during the initial wave of the pandemic in spring of 2020. At Lifespan, space within the inpatient rehabilitation unit (IRU) at Rhode Island Hospital was re-purposed to care for COVID-positive patients. Care for acute rehabilitation patients was

subsequently transferred to the Vanderbilt Rehabilitation Center (VRC) at Newport Hospital, increasing the capacity of VRC from twelve to twenty-six acute rehabilitation beds on the IRU, with an additional seven acute rehabilitation beds located on other floors of the hospital. This was, in part, because VRC was the only IRU to accept COVID-positive patients as well as a temporary relaxation of Center of Medicare and Medicaid Services (CMS) criteria regarding patients qualifying for acute rehabilitation. The sudden increase in bed capacity at VRC allowed for separate, dedicated sections for COVID-positive and COVID-negative patients. Likewise at Kent Hospital, the acute rehabilitation unit opened an additional floor to care for COVID-positive acute rehabilitation patients. At both hospitals, admission to the COVID-negative unit generally required at least two negative tests within 48 hours of admission.

To facilitate IRU admissions, the CMS relaxed many inpatient rehabilitation requirements, such as a "three-hour rule" requiring that 15 hours per week were dedicated to therapy for each acute rehabilitation patient as well as the 60% rule, which normally requires that IRUs treat a majority of patients with typical rehabilitation diagnoses such as stroke or spinal cord injury.[6] All four of the interviewed physicians who provided IRU care reported that such changes were helpful but not specifically needed in Rhode Island due to the limited COVID-19 surge. However, three physicians managing IRU patients felt that the Medicare waiver allowing off-unit beds to be used for rehabilitation patients facilitated ongoing access for lower-risk acute rehabilitation patients. The physiatrists generally did not notice a change in the average level of disability (zero of four physicians) or medical acuity (one of four physicians) on their respective units. One physician noted greater medical acuity of acute rehabilitation patients as acute hospital patients flowed through their hospital system. Specifically, their IRU had to manage higher acuity patients in the IRU, who otherwise would have been further medically or surgically managed prior to acute rehabilitation admission.

All of the inpatient rehabilitation physicians reported that increased infection control requirements challenged normal operations on their unit. Communal gyms, which normally allowed multiple patients to participate in therapy simultaneously, could not operate as such due to social distancing. Rounding on patients was reduced to limit repetitive contact with patients. Restriction of patient visitors challenged discharge planning, as families and friends often facilitated disposition of these patients. Also, visitor restrictions complicated education and training of important post-discharge tasks such as activities of daily living (ADLs) and medical care for wounds or ostomies. Physicians had to devise creative solutions, including telemedicine technology such as telephone video-calling patients and their families to demonstrate aspects of post-discharge care.

OPPORTUNITIES AHEAD

The disruption imposed by the COVID-19 pandemic did create setbacks, but it also created opportunities to improve rehabilitation care. One major opportunity has been the rapid expansion of telemedicine services. Physicians interviewed universally expanded telemedicine to primarily maintain safe, physically distanced access to care. Additional benefits of telemedicine included enhanced efficiency of patient triage and new opportunities for patient education, such as screen sharing of clinical images and direct observation of the patient's home environment. Other physicians indicated that some patients preferred televisits because it eliminated logistical concerns of transportation to the clinic, as well as medical concerns regarding contracting the virus. One physician reported benefit from the ability to see the patient's home environment on camera, which provided clinically relevant information to individualize treatment and limit safety concerns including fall risks. Unfortunately, both physicians and patients experienced technological challenges using telemedicine. Nevertheless, telemedicine has the potential to improve healthcare delivery in times of crisis and for a cohort of patients with disabilities.

Heightened public awareness of risks in contracting COVID-19 as well as limitations of healthcare resource allocation during the pandemic created unique challenges to providing care, particularly concerning elective procedures. As CMS recommended a temporary restriction on elective procedures,[7] PM&R was particularly affected, as it is a specialty that incorporates both diagnostic and therapeutic procedures. While some interventional pain and spasticity treatments deemed essential continued without interruption, other interventions including peripheral joint injections, dry needling, trigger point injections, and electromyography (EMG) were placed on hold.[8] Physicians interviewed expressed concern about limited access to care for patients, but reported that patients were usually understanding because of the crisis at hand. Interestingly, physicians reported more pushback from referring providers than from patients themselves when deferring elective procedures.

Finally, the disruption from the initial wave of the pandemic encouraged enhanced workforce organization. In Rhode Island, many practices reduced staffing and roles shifted within organizations to provide coverage. In other areas of the country, organizational changes split roles of providers, whereby some maintained access through telemedicine, while others were deployed to relieve physicians on the front line.[9] In heavily burdened areas such as New York, organizational adaptations resulted in deployment of PM&R physicians to other medical specialty services lines or in support roles such as remote chart review.[10] Additionally, organizational changes led to medical students confronting limited educational opportunities. Although some were able to find virtual clinical clerkships to continue learning, limitations in providing opportunities to interact with patients and practice physical examination skills were noted.

CONCLUSIONS

The COVID-19 pandemic has resulted in rapid and unprecedented change to the practice of medicine. Rhode Island has remained ahead of the curve and emerged as a national leader in its pandemic response.[11] Rhode Island's successful response was bolstered by continued collaborative efforts of healthcare leaders to maintain an appropriate standard of care despite challenges in resource allocation. The specialty of physical medicine and rehabilitation was uniquely challenged by the vulnerability of its patient population, telerehabilitation, procedural restrictions, staffing, and medical education. The ongoing success of PM&R in Rhode Island will depend on lessons learned during the initial surge of COVID-19 and efforts of leaders to continue to adapt in face of future challenges.

References

1. World Health Organization. *Pneumonia of unknown cause – China, 2020.* Available at: https://www.who.int/csr/don/05-january-2020-pneumonia-of-unkown-cause-china/en/. Accessed 22 July, 2020.
2. Holshue ML, DeBolt C, Lindquist S, et al: First Case of 2019 Novel Coronavirus in the United States. N Engl J Med 382:929-936, 2020
3. Martinez A: Rhode Island reports first case of coronavirus, Boston Herald, 2020
4. Plantations SoRIaP: Executive Order 20-02: Delcaration of Disaster Emergency, 2020
5. Lee PK: Defining physiatry and future scope of rehabilitation medicine. Ann Rehabil Med 35:445-9, 2011
6. Inpatient Rehabilitation Facilities: CMS Flexibilities to Fight COVID-19 Center for Medicare & Medicaid Services, 2020
7. Non-Emergent, Elective Medical Services, and Treatment Recommendations Center for Medicare and Medicaid Services, 2020
8. Kassardjian CD, Desai U, Narayanaswami P: Practical guidance for managing electromyography requests and testing during the COVID-19 pandemic. Muscle Nerve 62:30-33, 2020
9. Physical Medicine and Rehabilitation During The COVID-19 Pandemic. University of Pittsburgh Medical Center Physician Resources, 2020
10. Stein J, Visco CJ, Barbuto S: Rehabilitation Medicine Response to the COVID-19 Pandemic. Am J Phys Med Rehabil 99:573-579, 2020
11. Grunwald M. *How the Smallest State Engineered a Big Covid Comeback*. Available at: https://www.politico.com/news/magazine/2020/07/08/gina-raimondo-interview-rhode-island-governor-covid-353799/. Accessed 23 July, 2020.

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