



# Effects of Early COVID-19 Restrictions on Resident Well-being and Burnout

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**BACKGROUND AND OBJECTIVES:** The COVID-19 pandemic has contributed to burnout among residents, a population already at increased risk for heightened stress and work-related fatigue. Residency programs were also forced to alter schedules and educational objectives. We assessed how social distancing restrictions (specifically self-isolation) enacted early in the COVID-19 pandemic affected family medicine (FM) resident well-being and burnout. Our FM department created a 2-week reserve rotation as a response to the need to socially distance and protect the residents. We explored how the reserve rotations impacted their experiences.

**METHODS:** A purposive sample of FM residents were recruited in May and June of 2020. Qualitative interviews explored well-being and burnout, changes in education and provision of patient care, and overall adaptation to the pandemic. We employed interpretative phenomenology to analyze the interviews.

**RESULTS:** We interviewed six out of 24 residents before saturation was reached. Qualitative analysis revealed themes related to positive and negative consequences of the pandemic, including uncertainty/fear of the unknown, schedule/life changes, communication, and adapting to a new routine.

**CONCLUSIONS:** The COVID-19 pandemic placed an additional burden on residents, a group already at increased risk for burnout. While uncertainty and disruptions in work and home life were significant stressors, this cohort demonstrated adaptability and resilience that was facilitated by peer support and effective communication. These factors, along with the reserve rotation with decreased clinical responsibilities, led to an improved sense of well-being and decreased feelings of burnout.

(Fam Med. 2022;54(9):708-12.)  
doi: 10.22454/FamMed.2022.233405

Clinicians face increased stress from the COVID-19 pandemic, including risk of infection, disrupted schedules, and alterations in work/home life.<sup>1</sup> Prepandemic research suggests residents suffer from greater burnout than other clinicians.<sup>2,3</sup> COVID-19 caused alterations in resident rotations, changes in patient care, quarantine, and disruptions in education by forcing

online didactics. Research suggests these changes negatively affected resident well-being.<sup>3-7</sup> Alterations or cancellations of elective rotations were particularly linked to burnout and reduced well-being.<sup>8</sup>

These challenges have fueled interest in addressing resident burnout. However, effective strategies to reduce burnout remain elusive. While previous studies suggest

that social and institutional support bolster resident well-being, some interventions including faculty mentorship and counseling were insufficient.<sup>7</sup> It is critical to identify interventions that effectively mitigate burnout and enhance well-being.<sup>3</sup>

We created a 2-week reserve rotation that included an asynchronous independent study curriculum at the start of the pandemic to protect our family medicine (FM) residents from infection, consistent with social distancing (specifically self-isolation recommendations). We sought to explore resident perceptions of this intervention, particularly regarding its effects on well-being and feelings of burnout.

## Methods

This study (STUDY#00015096) received institutional review board approval.

## Participants

All FM residents at our university hospital were invited to complete an interview about their motivation or ability to meet residency requirements, well-being, feelings of burnout, and general experiences during the pandemic (Figure 1).

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From Department of Family and Community Medicine (Drs Messner, Bone, Clebak, and Riley, and Ms Parascando), Penn State College of Medicine, Hershey, PA (Ms La Gamma).

**Figure 1: Resident Interview Questions**

1. Could you please tell us about your overall experiences during the COVID pandemic?
2. Have there been any changes in your schedule? And if so, how have you adapted to them?
3. If you have had telephone and or virtual visits, can you describe any challenges or successes you've experienced with them?
4. Have you changed anything to take better care of yourself, your family, or your colleagues during the pandemic and if so, how?
5. How satisfied are you with the residency's communication regarding COVID related changes?
6. How do you feel about the changes in the rotation schedule in response to the COVID pandemic?
7. How has the switch in curriculum to an online format impacted your learning abilities?
8. How has the COVID pandemic impacted your well-being?
9. How has the COVID pandemic affected your feelings regarding burnout?
10. Any other thoughts or comments you'd like to offer regarding your experience with the changes that occurred due to the COVID pandemic?

### Procedures

In March 2020, the FM residency program implemented an asynchronous curriculum and block rotations (Table 1) in a platoon system to limit potential transmission of COVID-19 between residents, allowing for quarantine after hospital exposure, and to focus on resident education and well-being. All FM residents (n=24) were invited to complete voluntary interviews in May 2020.

### Analysis

We used interpretative phenomenological analysis (IPA) to analyze the interviews. IPA uses purposive sampling to enhance insight into an experience by selecting participants for whom the research is meaningful. This helps to conceptualize the human experience and focuses on perceptions of research participants and how they make sense of an experience.<sup>9</sup> Interviews were analyzed by three team members (J.P., C.L., E.M.), and emerging themes for each participant were condensed to develop superordinate themes for further discussion. Saturation of the data began around the fifth interview, and we felt no new significant themes would be discovered after analysis of the sixth interview. We employed a consensus approach until study team members reached 100% agreement on themes.

### Results

Six of 24 residents completed interviews before saturation was reached. Three were PGY3s, three were PGY2s, and two were male. Five were more than 30 years old, and four were partnered but only one had children. Twenty-two residents completed the reserve rotation from April 1 through June 30, 2020. Two had vacation scheduled that reduced their clinic and telehealth responsibilities, however they still had to self-isolate at home due to travel restrictions at the time.

The pandemic and associated disruptions had a meaningful impact on these residents. Table 2 displays a list of superordinate themes, subthemes, and supportive quotes. Themes from early in the pandemic included uncertainty and fear of the unknown. There were frequent changes to institutional policy and procedures as the pandemic evolved. Most residents noted the reserve rotation was initially stressful, as the psychological toll of uncertainty and limited engagement with family and colleagues increased apprehension.

Some initial conflicting attitudes were reported as schedule and life changes reallocated time spent on patient care, medical education, and personal life. Indicators of increased potential burnout were noted as residents lamented about forfeited

educational experiences and elective rotations, unanticipated lifestyle changes, and stress from social isolation while completing the reserve rotation.

To address the uncertainty and frequent schedule changes, department and residency leadership adopted novel communication strategies. The residents praised administrative efforts to provide timely pandemic-related updates, which kept everyone informed of the latest recommendations.

As the residents adapted to new routines, many used the time on the reserve rotation to further their education and improve self-care and well-being. Some studied for board exams. Others embraced the opportunity for reduced commute time, as in-person didactic sessions were replaced by Zoom meetings or asynchronous learning. Several developed lifestyle routines that increased productivity, improved their diets or opportunities for exercise, or developed support systems including virtual dinners and movie/game nights via Zoom. All participants mentioned increased communication with family, friends, and colleagues.

### Discussion

This study highlights the experiences of FM residents and their feelings of burnout and well-being as they

**Table 1: Resident Block Rotation Schedules**

Rotation	Time Frame	Responsibilities
Inpatient	2 weeks	Family medicine inpatient service, family medicine night float, emergency medicine, medical intermediate care unit, newborn nursery, obstetrics, and inpatient pediatrics rotations
Outpatient	2 weeks	In person or telehealth care at their designated continuity office
Reserve*	2 weeks	Asynchronous well-being and humanities curriculum, COVID-19 reserve rotation curriculum

\*Residents were also scheduled for remote telehealth ambulatory encounters during the reserve rotation depending on scheduling and preceptor ratios.

**Table 2: Survey Themes, Codes and Representative Quotes Relating to the COVID-19 Pandemic Adaptations for Residents**

Superordinate Theme 1	Uncertainty/Fear of the Unknown: Pervasiveness of Pandemic-Related Fears Created Inner Emotional Unrest and External Operative Barriers
Subthemes	Supporting Quotes
Heightened health hygiene	“Every time we go to the hospital, come back, we shower to avoid exposing our day care facility, we have to go back home first, shower and then go pick up our kid. So, that adds a lot of time.” – Participant #3
Limited engagement with friends and family	“Well I mean, just the challenges that the pandemic has created just in terms of staying in touch with my family who lives out of state that’s been a challenge not being able to see them for the past three months. Especially because they’re, you know, grandparents and they want to see our kids.” – Participant #5
Psychological toll of uncertainty	“But, you know, the emotional toll was fairly difficult because, you know, there’s a lot of at first anger and then frustration and then fear about potentially getting ill, and then finding out being one of the essential workers that I would ultimately be returning to work and potentially be exposed to what I’m learning is to be a deadly pandemic type of a virus.” – Participant #1
Superordinate Theme 2	Schedule/Life Changes: Burnout Versus Relief Caused Conflicting Attitudes Toward Reallocated Time Spent on Patient Care, Education and Personal Life During the COVID-19 Pandemic
Subthemes	Supporting Quotes
Forfeited educational experiences	“I was a little disappointed. I didn’t get to do some of the electives that I had wanted to do. I really wanted to do a cardiology elective, but I didn’t get to do that.” – Participant #2
Unanticipated lifestyle modifications	“I can’t sit in a lecture very long so the online curriculum has helped with that. I can also do it at different hours of the day, if I wanted to make sure that I got sleep, then I could stay up later doing it instead. So my hour shifted more to my schedule instead of maybe the set nine to five.” – Participant #6
Social isolation and quarantine were initially a source of stress	“And I just felt very lonely, because now I was also told that I really couldn’t leave my home and I hadn’t made preparations otherwise to do that, meaning grocery shopping and whatever else.” – Participant #1
Superordinate Theme 3	Communication: Novel Communication Strategies Among Hospital and Departmental Leadership, as Well as Toward Patients: Adaptation Versus Logistical Obstacles
Subthemes	Supporting Quotes
Administrative efforts to relay pandemic-related updates	“I felt like the communication was really good and as clear as it could be because everything kept changing so rapidly, especially at the beginning.” – Participant #2
Improved access to communication, with lasting impact	“We do get, you know, every single level of communication from the system, GME family medicine department, the residency.” – Participant #3
Barriers to effective patient care	“I think there was definitely a learning curve at the beginning, trying to figure out how to do a physical exam and assessment over the phone. I think that there were a few times where I felt limited in my ability to diagnose something accurately and still able to listen if there’s any red flags that need urgent or emergent evaluation.” – Participant #5

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Table 4: Continued

Superordinate Theme 4	Adapting to the New Routine: As Residents Adapted to Their New Routines, They Used the Time to Further Their Education and to Improve Well-being.
Subthemes	Supporting Quotes
Self-care and other conventional social support systems	“The residents themselves have been really great in kind of providing support for one another during this time. Like even though we haven’t been able to see each other, we’ve had numerous activities that all the residents could participate in. Like we’ve had the movie nights where we use this application called Netflix party so all of us can watch the same movie at the same time and then we’re all on our little Zoom together.” – Participant #2
Educational opportunities	“We worked less than we normally did and I had time to catch up on some projects that I didn’t necessarily have time for before. I got to actually study for boards.” – Participant #6
Decreased stress and burnout	“I actually definitely feel like it improved my burn or like improved my burnout. I was pretty tired and I was exhausted. And this allowed me to have some reserved time that actually let me catch up on some of my work that I hadn’t been able to do. And still be able to sleep, exercise and communicate with family and friends. I probably talked to them more than I did before. I actually got some time back and I would say it decreased my burnout.” – Participant #6
Increased productivity and time management	“And then, you know, as we were nearing, getting ready to move and you know, complete residency, my wife and I were able to plan during that time, what the next steps were going to be. I was able to negotiate and finalize my employment contract. And, you know, have some meetings with my financial planner and things, thinking about things moving forward. So that was also very productive and enjoyable time.” – Participant #4

navigated unprecedented challenges early in the pandemic. While uncertainty and disruptions in work and home life were significant obstacles, this cohort demonstrated adaptability and resilience during this stressful period.

The reserve rotation and related schedule disruptions were of particular interest regarding resident well-being. Historically, alterations in schedules have been associated with increased burnout.<sup>4,6,8</sup> Therefore the reserve rotation might be expected to worsen symptoms of burnout, and was initially a source of stress from social isolation. However, as residents adapted to new routines they reported feeling rejuvenated and “ready to get back on the treadmill,” with improved well-being and decreased feelings of burnout. Given the known positive correlation between work hours and burnout,<sup>10</sup> one potential source of improved well-being may have been the decreased clinical workload, as seen in residents’ stated appreciation of more time for self-care and social connection. This may suggest value in scheduled downtime to improve resident well-being and burnout.<sup>6</sup>

Uncertainty and fear of the unknown were prevalent themes in these interviews, in addition to isolation from friends and family. These findings corroborate research on the negative influence of the pandemic on wellness, burnout, and career satisfaction among residents in other specialties.<sup>8,11</sup> Residents relied upon their social networks to adapt to these challenges, especially support between residents, which has previously been associated with reduced burnout.<sup>12</sup>

Communication was a significant issue, generating negative and positive responses. Some mentioned an initial email/communication overload was burdensome. This improved with development of a concise, daily COVID-19 brief that residents found beneficial. Concise, consistent, organizational communication may be valuable for residents under similar circumstances.

Limitations included a small sample in a specific residency, which may impact generalizability.

The pandemic placed additional burdens on residents, and while uncertainty and disruptions in work and home life were significant

stressors, this cohort demonstrated adaptability and resilience facilitated by peer support, effective communication, and a reserve rotation with decreased clinical responsibilities. Further study might explore scheduled downtime, facilitating social connectivity, and the use of reserve rotations as interventions to improve resident well-being and reduce burnout, especially during times of increased stress.

**FINANCIAL SUPPORT:** Dr Eric Messner was supported by the Inter-professional Education Incentive Award (Office of Inter-professional Collaborative Education and Teamwork): The Longitudinal Interfacing of Interdisciplinary Learners with Patients to Improve Transitions of Care.

**PRESENTATIONS:** This research was presented in poster format at the 2022 STFM Annual Spring Conference in Indianapolis Indiana, April 30-May 4.

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