

# SARS-CoV-2 From the Trenches: A Perspective From New York City

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**OBJECTIVE.** The response to coronavirus disease (COVID-19) is evolving in New York City. We would like to share our experiences, thoughts, and perspectives on coping with the pandemic.

**CONCLUSION.** This article presents experiences that are meant to help foster discussion as the wave of COVID-19 continues. Thoughtful leadership and careful continuous communication will help us minimize anxiety and frustration during this difficult time.

**A**s the response to coronavirus disease (COVID-19) evolves in New York City, where we live and practice as cardiothoracic radiologists, we would like to share our experiences, thoughts, and perspectives on coping with the pandemic. We are on the upslope of the curve of patients infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), with hundreds of patients in our hospital system, many of whom are on ventilators.

## Stress

Stress is the 800-pound gorilla in the room. It takes on many forms with many sequelae. On the personal level, there is worry about contracting COVID-19 at work or contracting it outside of work on the streets of New York, from food deliveries, or in the grocery store line. There is worry of infecting others, particularly family members, should we get sick. The simple act of getting to and from work has become a major concern. Once we arrive home, worry shifts to how to keep our families safe from potentially lingering virus on clothes, bags, badge, or other surfaces.

More altruistically, stress can arise from concern about how to best serve the referring clinicians and our patients. What will happen to the workload? What else might we be asked to do, should the clinical caseload become unbearable? What else are we comfortable doing? How do we rise to the occasion? How good is the infrastructure? How secure

is my job? Added stress comes from the 24-hour news cycle.

By no means is the stress experienced by a radiologist comparable with that of our fellow intensivists, internists, emergency department clinicians, or radiology technologists. It is however, palpable, and the sequelae need to be anticipated and managed to help maintain some semblance of performance and normalcy. Classic stress-related responses continue to emerge: altered sleep habits, altered eating habits, difficulty maintaining concentration, and irritability. There are others; these common examples are meant to provide a starting point for dialogue with any radiologist who has or may soon have chest radiology responsibilities.

## Leadership (Top-Down Experiences)

Two qualities that have been greatly appreciated in leadership at our institution are a high level of agility and frequent (but not too frequent) communication. Not 6 months ago, our department began to distribute full-fledged home workstations. Purchases and deployment took place in batches. When the predictions of SARS-CoV-2 came into greater focus, including quarantining, our leaders quickly pivoted. The information technology team was mobilized. Office desktop computers were repurposed to function as workstations, and a slew of diagnostic-quality monitors were delivered directly to the homes and apartments of attending radiologists. In short order and well before the virus

**Keywords:** coronavirus disease (COVID-19), pandemic, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), stress

doi.org/10.2214/AJR.20.23302

Received April 5, 2020; accepted without revision April 7, 2020.

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AJR 2020; 215:1–2

ISSN-L 0361–803X/20/2151–1

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started to peak, everyone in the department had home workstations.

### Communication

Every evening, our department chair provides an update that reflects the changes from the day, the status of the healthcare system, and clear requests and expectations from the practice moving forward. Any ambiguity is quickly addressed and dissipated. Section meeting frequency has shifted from twice monthly to twice weekly, providing the group with additional opportunities to discuss departmental directions, to offer section-related ideas, and sometimes to simply vent concerns and frustrations. These meetings also allow each of us to clarify information to make sure we have the most up-to-date and accurate data.

### Workflow

The system in which we work serves multiple hospitals and over 30 imaging centers. We are, or rather were, predominantly an outpatient service, with less than 30% of our overall volume related to inpatient and emergency department studies. A distributed series of lists was created to share the volume among the 15 subspecialty-trained cardiothoracic radiologists. However, in the early days of the COVID-19 crisis, when it was clear that the volume and types of cases were going to change dramatically, the group returned to a communal reading worklist. The design of the distributed lists had fundamental assumptions that were based on patient location, which would no longer be valid. The expected decrease in total volume decreased the risk of imbalance among those reading from the communal list, and, in any event, improving rapid turnaround of reports for patients with COVID-19 was paramount. As the patient volume in the ICU increases and new attending physicians and house staff start to run the units, the potential for misplaced lines, barotrauma, and the like will increase. The coverage shift changed as the crisis worsened, moving from one attending physician covering the thoracic service in the evening to three staggered shifts. Hours of coverage have increased from 14 hours per day to 18 hours per day. Thus far, the only scheduling issue has been too many volunteers to cover the off shifts.

Redeployment of the interventional pulmonary team to the ICUs has left the thoracic interventional team as the only ones to obtain tissue for patients with primary lung cancer and metastatic disease. Navigating government mandates around outpatient procedures has been a serious challenge, requiring regular conversation with institutional leadership, but ensuring the safety of patients, interventionalists, and interventional radiologist teams remains of paramount importance.

### Reporting

Several suggestions have been made by various bodies and experts about contents of radiology reports; however, these decisions may be best made locally. After discussion among our local stakeholders, we decided not to include the term “COVID-19” in radiology reports. When COVID-19 arrived in force, there were, and still are, many cases of influenza circulating in New York City. COVID-19 has significant radiologic overlap not only with these entities and all atypical pneumonias but also with radiation fibrosis, drug reaction, organizing pneumonia, and pulmonary involvement from connective tissue disease, to list just a few. Imaging patients with complex medical histories about whom we might not have all relevant data makes definitive diagnosis of COVID-19 more challenging that some of the literature suggests.

As an aside, although there may be a typical radiologic appearance of COVID-19, numerous cases do not follow those rules. Findings in those cases have included unilateral involvement, dense consolidation, upper lobe–predominant involvement, and bandlike atelectasis appearance on chest radiography, with normal findings on CT performed in a short time interval. Just as the 800-pound gorilla gets to sit anywhere in the room it wants, COVID-19 can look like anything it wants. It can coexist with anything.

The phrase “cannot exclude COVID-19” was purposefully avoided in chest radiography reports so as not to encourage midlevel providers to order CT for better characterization. Once one embraces that COVID-19 can look like anything and that CT findings may even be completely normal for the first several days of the symptomatic stage of infec-

tion, the value of imaging by CT approaches zero. Chest radiographs and CT images have never been able to be used to exclude or rule out pneumonia; these studies are supportive rather than diagnostic. In light of those considerations and the fact that many patients have rapid access to their imaging reports, it was deemed best to avoid confusion stemming from a report that includes COVID-19 in the differential diagnosis. With limited access to SARS-CoV-2 testing and overlap of imaging findings, reports that suggest COVID-19 is a possibility can create anxiety for patients. Additionally, how is a layperson to interpret a negative polymerase chain reaction test for SARS-CoV-2 but a chest imaging report suggesting COVID-19?

Early in the pandemic, a “do not call for positive COVID-19-like findings” request was made by our emergency department physicians. They were (and are) busy managing very ill patients, all of whom were assumed to have COVID-19. Radiographs serve to provide a baseline assessment of extent of involvement and to evaluate alternative or concurrent diagnoses (e.g., shortness of breath caused by pneumothorax). Direct communication on behalf of outpatients continues to be more nebulous in terms of desirability. By the established protocol, any patient with symptoms of COVID-19 should be directed to the emergency department, but carriers of the virus who do not have symptoms may present to a clinic for other indications that would necessitate chest radiography.

### Conclusion

This article presents what we feel are some of our more pertinent experiences to consider; they are meant to help foster discussion as the wave of COVID-19 continues. There are still more questions than answers, and each impacted environment will have different challenges. The new normal has yet to present itself, and the future remains out of focus for each of us in one way or another. Communication, flexibility, social distancing, and hand washing are the orders of the day. Thoughtful leadership and careful continuous communication will help us all get through what is coming with as little anxiety and frustration as possible.