# Why Autopsies Matter - Lessons Learned from the Early Days of COVID in NYC

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**Julie McDowell:**

By mid-2020 in New York, the state had more than 425,000 confirmed cases of coronavirus and 23,500 residents dead from the virus. Most of these cases occurred early on as the disease spread rampantly throughout New York City and other parts of the state. Amidst all this trauma, the autopsies from these early COVID patients revealed significant findings, explained Mount Sinai pathologist Dr. Mary Fowkes in this CAPcast. In this interview, Dr. Fowkes will discuss what's been gleaned from these autopsies as well as how she and her colleagues responded during those early months of the pandemic. Dr. Fowkes, who is also president of the New York State Society of Pathologists, will also add her perspective on the role of her state pathology society during the pandemic. Dr. Fowkes, can you take us back to the early days of the pandemic in New York City and describe the role that you and your colleagues in your pathology department played during that time?

**Dr. Mary Fowkes:**

Sure. We recognize the importance of autopsies with this new disease. We understand very well the significance of autopsies in helping understand disease processes, but especially with a new disease. So, despite the fear of potentially contracting COVID-19, we charged ahead and started performing autopsies and have done over a hundred COVID autopsies and six post-COVID autopsies by this date. When it started, we also were participating with setting up additional units. We had tents set up in Central Park, and we assisted with advising the clinicians as to what tests need to be ordered and things that they needed to think about as it relates to what we see in pathology, such as dealing with autopsy consents, especially autopsy consents when the patient is quarantined, and the family is quarantined. Talking to families about death over the phone. Speaking points to that, but we had other challenges that we hadn't anticipated, just the sheer fear of people coming into work and doing autopsies.

We normally have 28 pathologists that participate in autopsies, and we had only four of us were willing to volunteer to do autopsies on the COVID positive cases, but we did take all the necessary precautions recommended by the CDC.

**Julie McDowell:**

A little bit more about autopsies, what have you learned from them?

**Dr. Mary Fowkes:**

We've found three major findings. We did confirm that most lungs, in most of the cases, had diffused alveolar damage. If they died early in the disease, it was an acute presentation. And as they died later and later and later in the disease, the diffused alveolar damage goes through changes of healing. So that was kind of expected. But some of the things that we didn't expect were blood clots. We found blood clots throughout the body, but importantly, we were finding pulmonary emboli as well as blood clots in the brain causing both small and large strokes. And we also identified through clinical pathology that there's what's been described as a cytokine storm, a marked inflammatory infiltrate or inflammatory response relating to the virus. And I like to think of it almost as kind of like TB, where one organism can cause this massive response actually can cause more destruction or more problems than the organism itself. So those were the primary findings we ended up seeing.

**Julie McDowell:**

Can you discuss how findings from these autopsies has influenced our country's response to the pandemic?

**Dr. Mary Fowkes:**

I think it's highlighted the importance of autopsies, especially in situations where the disease is a new or newly emerging disease where we don't entirely understand how the disease is causing symptoms and resulting in death. Pathologists and autopsies clearly help identify the true changes that are occurring. It's the gold standard for understanding what a disease is doing. The sequence of events as to how the disease may progress. We know that clinicians are good at understanding cause of death, but there's major discrepancies in a large percentage of cases where we do autopsies. And so an autopsy is critically important, especially in these new diseases where our ability to be able to pinpoint what's happening in the exact cause of death is far less exact.

**Julie McDowell:**

Speaking as president of the New York State Society of Pathologists, what role has your State Society provided to pathologists in your state, and what challenges lie ahead for New York?

**Dr. Mary Fowkes:**

When this disease first presented itself, I did reach out to some of the other members within our state path society and let them know exactly what we were coping with. I reached out to some of the pathologists that I know in upstate New York and also let them know what we were dealing with. That it was important for them to have a mass fatality plan if they didn't have one in place already, and the issues relating to trying to do an autopsy. Some of the challenges that we're going to be facing going forward in New York State is support for pathologists. I think there's some real challenges at being able to have both financial support as well as personnel support for forensic pathology, as well as academic pathologists being able to do autopsies. Studies have shown that we truly, in order to understand this disease better, we need to do more advanced studies, which require validation and require multiple tests on multiple different organs to try and find out where this virus actually is, and that's costly.

And with an autopsy, there's no reimbursement. But personnel is also a key item. We know that if you don't have good morgue staff and enough morgue staff, you're going to run into problems as well.

**Julie McDowell:**

Finally, Dr. Folks, what should other states in the country learn from your experiences?

**Dr. Mary Fowkes:**

Autopsies are critically important. That the more autopsies we do going forward, the more information we're going to have about this disease or any disease that is a new emerging disease. Our caseload on COVID deaths has dropped dramatically, and we're now dealing with post-COVID patients. So, for those states that are dealing with this outbreak, having a dialogue with families, conveying to families that they can end up talking about an autopsy with their family, with their loved one. Have the discussion, just like you do with Health Care Proxy and Advance Directive. We can do the same thing with an autopsy. We can have that discussion early, and that will help make it so that we have cases that are rapid autopsies where you have very valuable tissue to be able to do advanced studies on molecular studies that can help fight this disease.

**Julie McDowell:**

Thank you very much for sharing your story, Dr. Fowkes. For more on the Pandemic and pathologist visit the COVID-19 information pages on cap.org. And to learn more about state pathology societies, go to cap.org/state. Thank you for listening to this CAPcast. Be sure to listen to our other CAPcasts from the CAP on our SoundCloud channel by downloading the SoundCloud app on your mobile device. And we're also on Apple Podcast and the Stitcher app. To find this podcast, search for the word CAPcast on these apps. Once you find our podcast, be sure to click the subscribe button so you don't miss new CAPcast episodes.