



# NATIONAL VETERINARY LABORATORY

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## NEWSLETTER COVID-19 Pandemic- At 3 Years<sup>©</sup>

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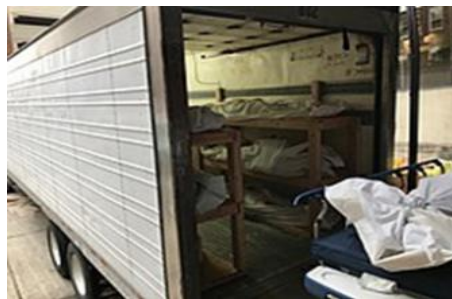
In the Fall 2022 issue of the NVL Newsletter, I will discuss the zoonotic COVID-19 pandemic that began, almost to the day, 3 years ago. A recent study now reports that the first COVID-19 case occurred on November 17, 2019.<sup>1</sup> Since then, the toll on the world is almost incalculable in lives lost, economic effects, political and societal upheavals, multiple animal species infected and even a few [spillback](#) infections. I (Dr. Hardy) will place the last 3 years in context- if that is possible. During evolution, pathogens have arisen within species and some have been able to “jump” from their original species to other species. This effect seems to be speeding up presently due to numerous factors. I will discuss COVID-19 at 3 years: 1) **Where we were**, 2) **Where we are**, and 3) **Where we will be**. When I use the term “case” it will mean infection with SARS-CoV-2 not the disease COVID-19.

### Where We Were:

A 55-year-old man from Hubei province in China may have been the first person to have contracted COVID-19. The case occurred on Nov. 17, 2019, according to the South China Morning Post.<sup>1</sup> Another report published in the medical journal *The Lancet* by Chinese doctors from Jinyintan Hospital in Wuhan, which treated some of the earliest patients, put the date of the first known infection at December 1, 2019.<sup>2</sup> Both infected individuals had no exposure to the Wuhan wet animal market, and in May 2020 China CDC director George Gao, indicated the wet market was not the origin of the original case, as the market’s animal samples had tested negative for the virus. In addition, the earliest three patients with symptom onset had no known history of exposure to the Hunan market.<sup>1,2</sup> Therefore, there may have been multiple sources of the original SARS-CoV-2.

Attempts to contain the early cases failed, allowing the virus to spread worldwide within weeks. The World Health Organization (WHO) declared the outbreak a pandemic on March 11, 2020. Scientists have concluded, the SARS-CoV-2 coronavirus, originated in a bat and somehow infected another animal, possibly a

pangolin, which then zoonotically infected humans. The disease is now spreading worldwide between people without any needed animal intermediary, although that has still happened.



Deceased in a refrigerated "mobile morgue" outside a hospital in Hackensack, New Jersey, U.S., in April 2020. Wikipedia: [www.wikipedia.org/wiki/coronavirus](http://www.wikipedia.org/wiki/coronavirus)

The first case in the US occurred on January 23, 2020. Since then, 97,995,355 cases and 1,074,485 deaths have occurred to November 12, 2022.<sup>3</sup> The pandemic was especially severe in the NY/NJ metropolitan area where the National Veterinary Laboratory is located. The truck pictured above was only ~8 miles from our laboratory. I lost 2 high school friends within the first 4 months of the pandemic.

As of November 12, 2022, the pandemic had caused more than 634 million cases and 6.6 million confirmed deaths worldwide, making it one of the deadliest in history.<sup>3</sup>

### Five Pandemics Since 1918

Year	Pandemic	Deaths	% of World Pop
1918	Spanish Flu <sup>+</sup>	~50 million	2.68%
1957	Asian Flu <sup>*</sup>	~1.5 million	0.05%
1968	Hong Kong Flu <sup>*</sup>	1 million	1.03%
2009	Pandemic Flu <sup>*</sup>	300,000	0.004%
2019	COVID-19 <sup>**</sup>	6.6 million	0.08%

<sup>\*</sup> Influenza A virus

<sup>\*\*</sup> Coronavirus SARS-CoV-2- the second most deadly and first Coronavirus pandemic.<sup>4</sup>

<sup>+</sup> I lost my aunt (an infant) in the 1918 pandemic.

Approximately 163,000 Covid-19 deaths in the U.S. could have been prevented by vaccination between June to December 2021.<sup>5</sup> The virus is one of the leading causes of death in all age groups, according to research by the Kaiser Family Foundation.<sup>5</sup>

Of the 33,000 Covid-19 deaths in November, 2021, the Kaiser Family Foundation estimates 29,100 were among unvaccinated adults and could have been prevented with vaccines, as determined using a CDC study showing vaccination to be 91% effective at preventing Covid-19 deaths.<sup>5</sup>

### Where We Are:

Antarctica was the last continent where a case of COVID-19 occurred.<sup>6</sup>



The Antarctic Peninsula, Photo credit- WD Hardy, Jr.<sup>©</sup>

Is the pandemic over as President Biden recently stated? On November 11, 2022, the World Health Organization reported that deaths since the month of February have dropped 90%. Director-General Tedros Adhanom Ghebreyesus said this was "cause for optimism".<sup>7</sup> Most people realize the number of cases and deaths have decreased substantially but there are still significant numbers of cases and deaths. The US COVID-19 deaths are the 3<sup>rd</sup> highest in the world, but is the highest for a developed nation. On November 11, 2022, the US had 326 deaths and a case fatality ratio of 1.1%. The world population total is expected to reach 8 billion people on November 15, 2022 and the US population about 330 million.<sup>8</sup>

An endemic disease occurs constantly or usually in a defined geographical area. It certainly appears that COVID-19 is now endemic in the US, and will probably remain so. However, world-wide COVID-19 remains a dangerous pandemic. The US has made tremendous progress in controlling COVID-19. Now there are accurate tests for the virus, both laboratory and in-home tests, which can help to prevent spread and enable infected people to get therapy early to prevent severe disease and/or death.

Unfortunately, there are still a large number of people who refuse to get vaccinated, some of whom spread false information about the vaccines and the disease. During the January 2022 COVID spike, 80% of people who were dying from COVID were unvaccinated. This is a dangerous problem that is still with us and unvaccinated people are a threat to themselves, to their families, as well as to everyone else in the world since they are more likely to spread their infections and are possible sources of new and more deadly viral SARS-CoV-2 variants. Some famous entertainers and sports figures are publicly refusing to become vaccinated and influencing other people in that direction.



Waiting after receiving the SARS-CoV-2 bivalent booster.

There are now updated COVID-19 bivalent vaccine boosters specific for the 2 new SARS-CoV-2 variants now dominating transmissions. Unfortunately, the Kaiser Family Foundation September 2022 survey found that: **only 5% of eligible people have received this booster**, 27% will get the booster as soon as possible, 18% will wait and see, 10% will take the booster only if required, **12% will definitely not get the booster** and 27% were not yet eligible for the booster.<sup>5</sup>

Based on Johns Hopkins University statistics, the global case fatality rate (CFR) is 1.04 percent (6,608,713 deaths for 634,588,209 cases) as of November 11, 2022.<sup>3</sup> The number varies by region and has generally declined over time.

### Animals and COVID-19 (SARS-CoV-2)<sup>9,10</sup>

A large number of animals, from diverse species, are susceptible to infection from people. This susceptibility increased markedly from the original Wuhan isolate to the more current Delta and Omicron variants. Susceptible animals are: **Pet animals:** cats (**spillback the virus to people**), dogs, ferrets, and hamsters (**spillback**).<sup>9</sup> **Wild animals:** Large cats- lions, tigers, cougars, snow leopards, cheetahs; **Subhuman primates:** gorillas, rhesus monkeys, cynomolgus macaques, common marmosets, **Others:** tree shrews, grivets, fox, hyenas, pangolins, armadillos and a hippopotamus, **Peridomestic animals:** Deer mice, house mice, striped skunk, ferrets, fruit bats, white-tailed deer (**spillback**) racoons, bushy-tailed wood rats, cottontail rabbits, black-tailed prairie dogs, and fox squirrels. **Farm animals:** Pigs, sheep, and mink (**spillback**).<sup>10</sup>

A study of infected owner transmission to household pet dogs and cats found transmission was associated with food sharing. The authors suggest an important role of fomites associated

with food as well as aerosol transmission was responsible.<sup>11</sup> For some time I have worried about **spillback** (transmission back to people from pet animals) and fortunately, to date, only one incident has been reported from a cat to a veterinarian through the ocular route.<sup>9</sup>

A current study finds significantly higher SARS-CoV-2 infection among dogs and cats in multi-person households with 2 or more infected people compared to multi-person households with only 1 infected person. It is somewhat concerning that cats infected in these households were shedding SARS-CoV-2 for up to 35 days. Good news was there was no evidence of **spillback** within multi-person households, no severe clinical signs in the infected dogs and cats, and no pet-to-pet transmission between households.<sup>12</sup>

### Where We Will Be:

Some have posited that “**we are only safe when everyone is safe.**” As veterinarians, we know well the effects of vaccines in controlling animal diseases. An excellent example is rabies vaccines for pet dogs and cats. These vaccines control rabies outbreaks to sporadic outbreaks whereas unvaccinated feral animals have endemic rabies, such as the high occurrence of rabies in stray dogs in India and some third-world countries. It might be a good idea for veterinarians to become active in educating people to the benefits of all approved vaccines for people and animals in the One Health concept.<sup>13</sup>

This country, and other developed countries, must make COVID-19 vaccines available to those countries that lack the testing and vaccine resources so that all people in the world can become vaccinated in order to prevent new infections, but more importantly, to save their lives and prevent the generation of new, more virulent and/or more infectious, SARS-CoV-2 variants.

We must produce enough vaccine doses for the countries who desperately need and want them. What is needed now is effective, science-based leadership, and an effective anti-viral therapy to help control the pandemic, much like with AIDS.

### Commentary: Dr. Anthony Fauci

I have known Dr. Anthony Fauci for more than 40 years since the beginning of the AIDS pandemic. I first met Tony in the 1980s in a van traveling from the Bozeman MT airport to the Rocky Mountain Laboratories in Hamilton MT for an AIDS think-tank meeting. In the van was the current director of the National Institute of Allergy and Infectious Diseases, Tony Fauci who would soon become the director, Luc Montagné who would receive the Nobel Prize for the discovery of the cause of AIDS, the Human Immunodeficiency Virus (HIV) and me, a

veterinarian working on the feline leukemia virus at Memorial Sloan Kettering Cancer Center in NYC. I attended AIDS meetings where Tony was an organizer and/or a key presenter. He directed much of the AIDS research, along with Robert Gallo, which brought the AIDS pandemic under control with testing and excellent therapies.

Dr. Fauci is a member of the White House Coronavirus Task Force on the 2019 coronavirus pandemic. President Joe Biden appointed Dr. Fauci to serve as Chief Medical Advisor to the President. He is the recipient of many prestigious awards including the Presidential Medal of Freedom.

That Dr. Fauci has been attacked by politicians during the COVID-19 pandemic is shameful. He and his family received threats to their lives for doing his job of recommending courses of action. I feel all of his real-time recommendations about the COVID-19 pandemic helped to save many lives. He will be retiring next month and deserves the thanks of the entire nation for his expertise and service.

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