

# Perspectives on 2020

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At the start of 2020, the Nebraska Public Health Laboratory (NPHL) was performing routine public health testing to support national programs with a major role at that time to participate in the influenza surveillance program to monitor influenza activity within the state. Since one of the roles for all public health laboratories (PHLs) is to provide an early response to detect and manage any emerging infectious disease that might appear, the early reports of an outbreak of a "novel coronavirus" in Wuhan China was concerning to the laboratory. Since no cases of this virus early on were yet identified in the US, guidance from the CDC was still not available to the PHLs on how they might respond to this newly described pathogen.

Subsequently, in late January, NPHL was asked by UNMC campus leadership to begin preparations to provide diagnostic testing to detect the "novel coronavirus" for potential management of repatriated Americans from China to the National Quarantine Unit (NQU) on campus. To prepare, we began to procure the needed laboratory testing materials and, in collaboration with Nebraska Medicine laboratory personnel, researched the WHO assay that had been developed for use in Europe as a potential test to detect the "novel coronavirus". Early in February, following the declaration of a state-of-emergency in the US, the CDC released the first Food and Drug Administration-Emergency Use Authorization-approved assay which heightened the reality that diagnostic testing could commence at the NPHL once the assay was allocated. Within a couple of days, the CDC assay was released to all PHLs.

Once received, NPHL was one of only four PHLs in the US (to include the CDC) that were able to verify the CDC assay to meet regulatory requirements to test for what became known as the SARS-CoV-2. The availability of this test allowed for NPHL to support the first group of repatriated Americans to Omaha for quarantine, as well as monitor the exposed cruise-line individuals removed from the Diamond Princess who were quarantined and treated in our NQU. After the original testing of the cruise-line travelers, NPHL was evaluating one of the largest number of COVID-19 infected people that were present in the US at that time. For about the first month of the pandemic, NPHL was the only laboratory in Nebraska that met regulatory standards to test for COVID-19 and over the next four months of the pandemic, provided the majority of testing in Nebraska. In the ensuing months, NPHL collaborated with both local and national laboratories to help provide for expansion of testing in the state, which resulted in multiple private laboratories available to assist with COVID-19 diagnostics by mid-summer.

During the latter months of 2019, NPHL continued to provide high-volume diagnostics to screen and investigate for COVID-19 outbreaks. In December, the laboratory also evaluated processes for whole genome sequencing (WGS) to detect for viral mutations that were occurring locally. In addition to the continued detection of COVID-19 cases, WGS of COVID-19 positive specimens has now become a major part of the laboratories activities to screen for the SARS-CoV-2 variants-of-concern as we moved into 2021.