

## The initial response of the laboratory diagnosis team to SARS-CoV-2 in Japan and the current situation

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In December 2019 a pneumonia outbreak by the novel coronavirus, SARS-CoV-2, occurred in Wuhan City, China. The disease was named as COVID-19. Information on the SARS-CoV-2 genomic sequence was first released on 10 January 2020. We urgently started development of genetic diagnostic methods for SARS-CoV-2. On 14 January, soon after receiving the prototype designed primers, we have received the first clinical specimens suspected for COVID-19. We urgently started assessment of the primers and the laboratory diagnosis testing for SARS-CoV-2 in a parallel way. After the nightlong assessment/testing, the first COVID19 case in Japan was confirmed. The patient was a returnee from Wuhan. Until 22 January, we have established the nested RT-PCR diagnostic method/protocol for SARS-CoV-2, and urgently distributed the primer set/protocol to ~ 80 prefectural public health laboratories (PHLs) nationwide, because the Chun Jie holidays starts in China on 24 January and many Chinese tourists visit Japan. As we concerned, sporadic COVID-19 cases with an epidemiological linkage to Wuhan have detected in Tokyo, Aichi, Nara, Hokkaido, and Osaka prefectures after 24 January. Following the nested RT-PCR method, we have established the real-time RT-PCR diagnostic methods for SARS-CoV-2, and distributed the primer/probe set to ~ 80 PHLs on 30–31 January. However, the laboratory workload increased dramatically, because Japan has started to accept 829 returnees (15 were shown to be SARS-CoV-2-positive later) from Wuhan using government chartered flights on 29 January and screen ~3,500 passengers and crew (>600 were shown to be SARS-CoV-2-positive later) on a cruise ship quarantined in Yokohama for SARS-CoV-2. About one month and a half has passed, a significant number of COVID-19 cases via unknown infection route are currently detected in many prefectures in Japan (total 239 cases, as of 2 March 2020).