

An indigenous approach to combat pandemic by telemedicine and sophisticated virtual instrumentation techniques

As the novel coronavirus disease 2019 (COVID-19) continues to spread across countries, the need to combat pandemic by providing high-quality patient care and manage its spread has become more needed. The use of telemedicine and virtual software offers promising potential in the fight against COVID-19. Telemedicine and virtual software are capable of decreasing emergency room visits, safeguarding healthcare resources, and lessening the spread of COVID-19 by remotely treating patients during and after the COVID-19 pandemic. Telemedicine incorporating ICT to deliver healthcare digitally can be adopted to limit physical human interaction. Telemedicine use has been increasing during the COVID-19 pandemic, being a tool that reaches patients' home. Telemedicine and virtual software platforms offer affordable, effective, and attractive option. Thus, they can be utilized to manage the pandemic. In the present COVID-19 pandemic, social distancing and quarantine have been adopted as effective methods to reduce the spread of COVID-19. Also, due to the current stay at home measure put in place by governments, telemedicine and virtual software platforms are suggested to provide health services. Adoption of telemedicine and virtual instrumentation platforms provides medical practitioners with reliable information platform that outlines factual information, allowing attending physician to obtain authentic information in real time. In response to the current COVID-19 pandemic, medical centers are adopting telemedicine and virtual software platforms to provide after hours health coverage from 6 pm to 8 am. Virtual instrumentation platforms are deployed to provide asynchronous and synchronous support both for outpatients. Also, these virtual instrumentation platforms provide synchronous real-time audiovisual-enabled visits and are easy to use for physicians, patients, and attending staff scheduling appointments, allowing for patient treatment via smart phone computer, or tablet, and conforms to patient privacy laws. Other emerging virtual software platforms such as voice-interface systems (e.g., Google Voice, Amazon Alexa, Apple Siri) or mobile sensors such as thermometers, smartwatches, or oxygen monitors can be adopted for treatment at home. Although adopting these virtual software platforms in severe situation poses difficulties, many medical-based health systems are already leveraging existing telemedical platforms in their response for treatment of patients. Physicians use virtual software platforms, specifically synchronous audio and video applications equipped with high definition videos and digital otoscopes, stethoscopes, dermatoscopes, and ophthalmoscopes used for examining and monitoring patients. Telemedicine provide rapid access to medical-care remotely during health emergency. A user friendly virtual environment has to be created providing confidentiality of patient data. An effective telemedicine requires reliable access to seamless data connection, a safe, accessible, and convenient medical-care.