NEW TECHNOLOGIES IN EMERGENCY SITUATION: FOCUSING ON HEALTHCARE INCLUDING ARTIFICIAL INTELLIGENCE

Soon-Joo Wang
Hallym University[1]
wsjking@naver.com

Abstract

Every year, emergency situations including disasters impact human lives and make a significant socioeconomic damage in the world. Science plays a key role in reducing emergency risk and mitigating impact in this situation. Traditional medical responses in the event of a emergency situation are still effective, but existing emergency response may not be enough as the cause of the emergency is diversified and new technologies have been developed.

Until 20th century in the field of emergency medicine, the new technology was merely a remote mobile transmission of a electrocardiogram (ECG) which is the electrobiological image of human heart, and this academic field was called as emergency telemedicine. However, mobile image transmission through analogue network was changed to digital network, and in recent years, real-time video monitoring of emergency situations has been made possible. This is due to the fact that high-speed mobile data transmission is possible. The Social Network Service(SNS) can also provide connection among victims and family members under unstable communication environment, find missing family members, or exchange information simultaneously among emergency responders. In the emergency situation, the danger of the scene is no longer covered fully by human. The robots and drone are responsible for the search and rescue work in dangerous places in the field. There is no longer a need for human to go directly to search and rescue on dangerous sites in the case of radioactive or chemical contamination, but the problem is that robots and drones are not yet sufficient for enough medical function.

The sample applications are as follows; proper deployment and transport of ambulances, prediction of emergency situations, prediction of hazardous substances spread, requirement of psychological support, prediction of human behavior patterns of the crowd during emergency situation, automation of severity classification (Triage), reading of emergency imaging examination, diagnostic priorities and suggestions for treatment based on laboratory examination.

The emergence of this new technology does not replace the existing basic medical response in the emergency situation, but it can be a way to overcome the barrier of traditional emergency response, and its specific application is increasing.

Keywords: emergency, new technology, artificial intelligence, social network service, telemedicine

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[1] South Korea