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**Global  
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## Seoul, Measure professional resuscitations

*Implementation of metropolitan city-level EMS CPR quality monitoring and feedback system in Seoul, South Korea*



### **BRIEF BACKGROUND**

Seoul is a metropolitan city with approximately 4,500 out-of-hospital cardiac arrests (OHCAs) per year. The emergency medical service (EMS) system in Seoul is exclusively operated by the Seoul Metropolitan Fire Department, which operates 25 EMS agencies across the city. To improve EMS cardiopulmonary resuscitation (CPR) quality, the Seoul Metropolitan Fire Department has actively distributed feedback CPR devices on a project basis since 2015; however, the usage of feedback CPR devices has not been sufficient.

### **STEPS TAKEN**

In 2019, the Seoul Metropolitan Fire Department introduced a new quality control program to measure professional resuscitation. The Seoul Metropolitan Fire Department required EMS providers to rapidly deploy CPR feedback devices on all patients with OHCA who received CPR. In addition, EMS personnel were required to fill out items on ambulance run sheets regarding the use of feedback devices. Furthermore, since 2020, CPR quality summary reports for all CPR cases have been centrally aggregated and used by the Seoul Metropolitan Fire Department to monitor and provide feedback to affiliated EMS agencies on a monthly basis. In 2022, the Seoul Metropolitan Fire Department designated the proportion of compressions with adequate depth, compressions with adequate rate, and the chest compression fraction generated from the data mentioned above as key performance indicators and were assessed quarterly for all 25 EMS agencies in Seoul.

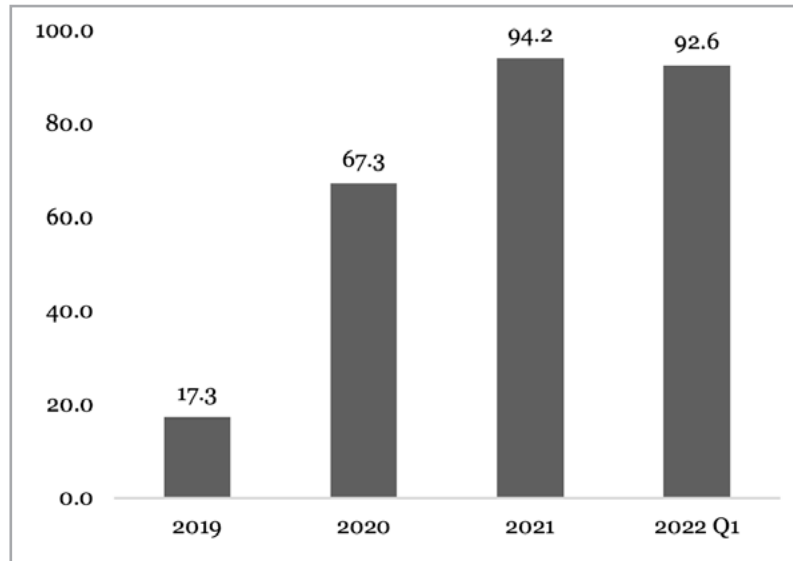
### **CHALLENGES**

Challenges were encountered in aggregating summary data monthly and developing a uniform feedback format for data generated from three different CPR feedback device manufacturers. In addition, an increase in EMS workload due to the coronavirus disease 2019 (COVID-19) pandemic has impeded training related to the use of equipment.

### **RESULTS**

Seoul established a metropolitan city-level CPR quality monitoring and feedback system, where over 90% of all EMS-treated OHCAs utilized CPR feedback devices.

The proportion of patients with OHCA utilizing CPR feedback device by EMS per year (%)



## OUTLOOK

A focus on improving EMS CPR quality using CPR feedback devices is warranted, including data-driven feedback for individual OHCA cases to EMS personnel by medical directors, as well as system-level feedback. In addition, we plan to identify prehospital resuscitation phases prone to low-quality CPR using CPR feedback device-generated data and provide strategies for improvement.

