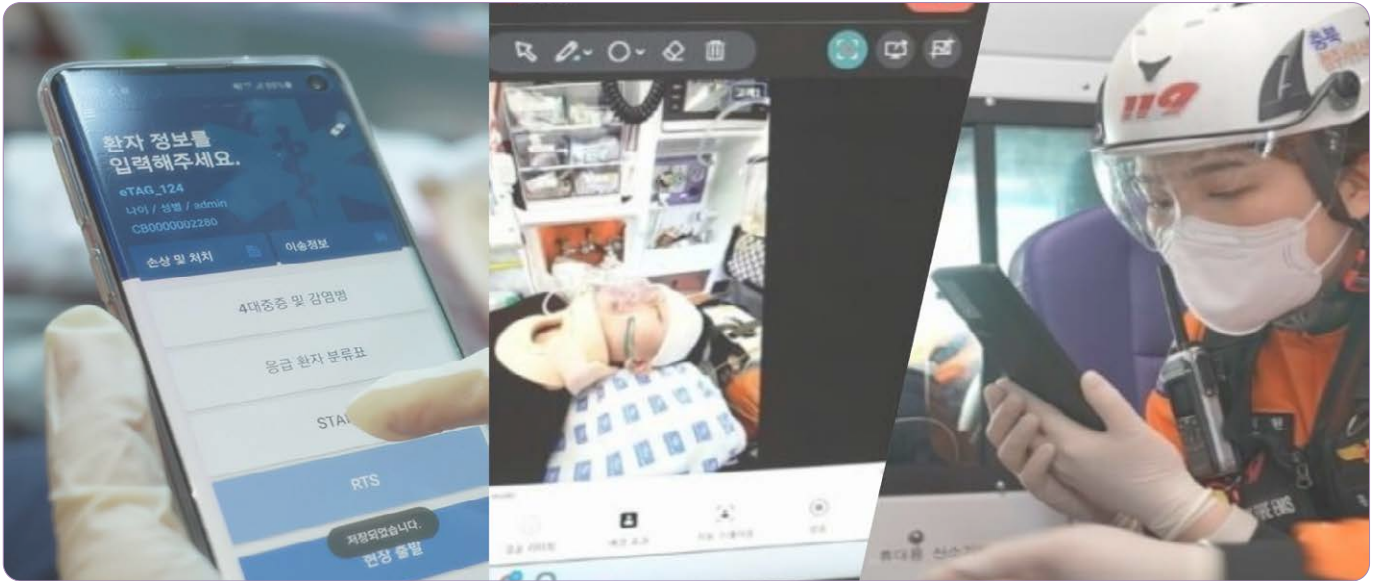


Smart Emergency Medical System (SEMS)

SEMS is a technology that secures the golden hour by enabling real-time sharing of patients' vital signs and hospital emergency resource information between 119 emergency response teams and receiving hospitals when emergency patients are transported.

This system improves the quality of emergency medical services during hospital transport and secures the golden hour for emergency patients by preventing patient re-transfer and reducing transport time.



▲ The 119 paramedic is sharing the patient's condition in real-time with doctors from inside the ambulance.

Issues to Tackle

- ☑ Persistent chronic problem of missing the golden hour due to the re-transfer of severe emergency patients.
- ☑ Limited medical information sharing and operational coordination between agencies * due to dual management systems at each stage of emergency patient transport.

* Ministry of Health and Welfare, National Fire Agency, local governments, Emergency Medical Centers, etc.

Expected Benefits

- ☑ Reduction in emergency patient transport time.
- ☑ Improvement in patient re-transfer rates.
- ☑ Early recognition of patient condition before hospital arrival.

💡 Key Services

- Emergency medical technicians automatically classify patient severity using e-triage.
- Real-time sharing of emergency patient information among emergency sites, 119 control centers, and hospitals.
- Automatic selection of the nearest appropriate hospital considering medical facility resources such as ER occupancy rates.
- Remote emergency medical guidance by medical staff based on vital signs for severe emergency patients.
- Automated support for emergency medical records.

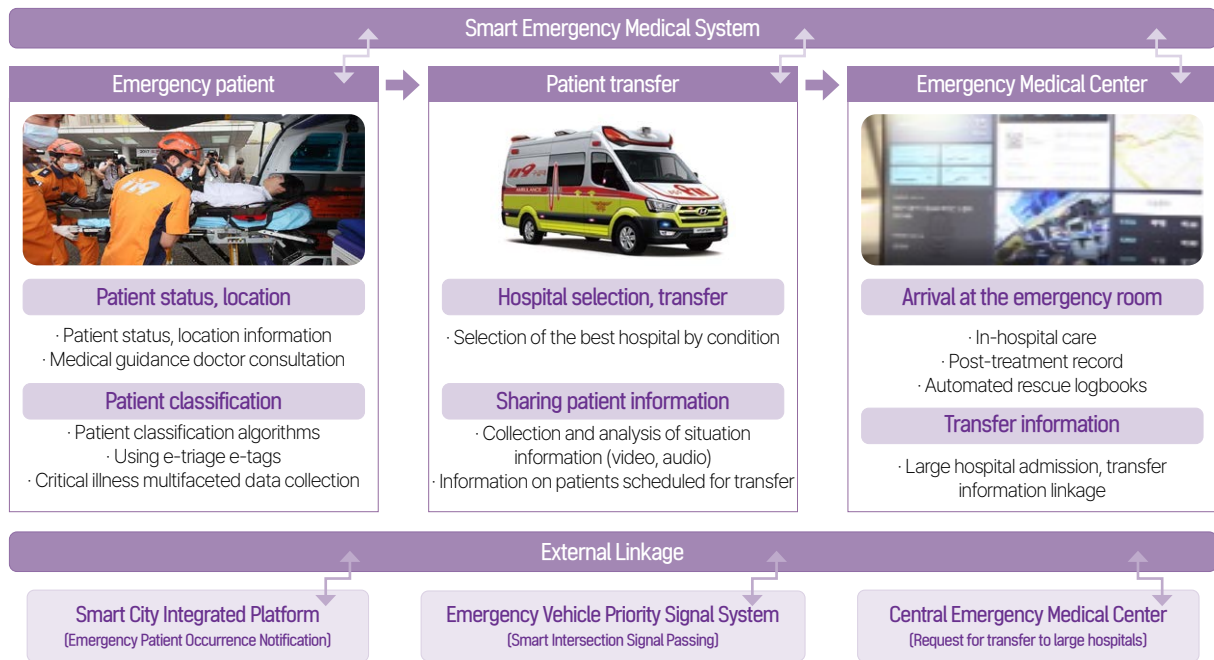
⚙️ Use Cases

- In 2021, the Yonsei Medical Center Project Group developed an 'Artificial Intelligence (AI) Emergency Medical System' and applied it to approximately 3,400 emergency patient rescues in Eunpyeong-gu, Mapo-gu, and Seodaemun-gu in Seoul, Goyang-si in Gyeonggi-do, and Gwangju Metropolitan City, reducing average transport time from 14 minutes 38 seconds to 11 minutes 27 seconds.
- In 2023, the Chungbuk Smart Emergency Medical Project Group operated 'Smart Emergency Medical Services' in Osong-eup, Cheongju-si, and Chungbuk Innovation City, Chungcheongbuk-do, applying it to 38,832 emergency patient rescues, reducing retransfers and shortening the transfer time by 3 minutes 6 seconds.

* Applies to all fire stations, 23 hospitals and 13 nursing hospitals in Chungcheongbuk-do.

Key Components

Configuration



Technology

- Emergency information collection based on IoT and AI**
 - Emergency medical technicians (EMTs) collect vital signs while assessing patient severity according to symptoms.
- Real-time emergency information sharing based on e-triage**
 - Providing integrated functions for patient triage and optimal hospital recommendation through fire department-hospital data linkage.
- Big data analysis regarding response to emergency patients**
 - Analyze emergency medical data to support statistics and data related to local emergency medical care.

Electronic patient triage using e-triage tag

- EMTs input patient conditions and receive medical facility information using the 'e-Triage' (electronic tag classification) system.
- The patient's condition is classified as Critical, Emergency, Non-emergency, or Deceased by placing a triage tag around the patient's neck.

Patient severity information

- Critical: Flashing red
- Emergency: Flashing yellow
- Non-emergency: Flashing green
- Deceased (delayed): Flashing colorless

GCS score display
Display of GCS score from RTS severity classification

RTS score display
Display of RTS score from RTS severity classification

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