Ambulatory Telemedicine and Article 44 of the Emergency Life-Saving Technician’s Act and Article 20 of the Medical Practitioner’s Act

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Abstract—This paper shall discuss the legal bases for mobile telecommunications-based medical supervision in Japan and bulletin from the Ministry of Health, Labour and Welfare. According to Article 44 of the Emergency Life-Saving Technician’s Act, an emergency technician shall not perform certain emergency medical procedures unless specifically authorized to do so by a medical practitioner. Actual conditions make these requirements unwieldy to put into practice. When requested to provide medical control in response to a call from an ambulance, a medical practitioner (i.e., a licensed physician), has no choice but to allow the emergency technician to administer medical care, despite the lack of the information needed to grasp actual conditions within the ambulance. These circumstances expose medical practitioners (licensed physicians) to significant legal risks and societal ramifications.

I. PURPOSE

This paper will take various legal approaches in analyzing the current risk of providing medical counsel to emergency vehicles and in discussing an implicit issue: how to implement such medical counsel under Article 21 of the Basic Act on Establishing a Networked Society Based on Advanced Information and Telecommunications.

II. BACKGROUND

If an AED incorporating artificial intelligence determines that an electrocardiogram has gone from flat to ventricular fibrillation for a successfully resuscitated patient, an electric shock is administered to the patient’s chest. However, in certain cases, patients defibrillated in an ambulance will complain of pain thereafter. This may occur because the electric shock is applied automatically, even in cases in which the patient maintains certain levels of cardiac output and brain blood flow. Guided by artificial intelligence, a defibrillator provided on board an ambulance converts electric potential by FFT for frequency spectrum analysis, then administers treatment in cases of frequencies above a specified level (which the defibrillator interprets as vt). Other readings are interpreted to indicate ventricular tachycardia. Note that no universally accepted diagnostic criteria exist for this demarcation. A patient’s complaint of pain indicates either that the artificial intelligence has misinterpreted vt as vf, despite cardiac output, or that vf has returned to vt on its own. Since patients with vt rarely return to normal so quickly, the latter explanation is unlikely. Such issues highlight the limitations on artificial intelligence when no medical practitioner is present to examine the patient in person.

III. DISCUSSION

The scope of activity of emergency technicians is specified by Article 21 of the Enforcement Regulations for the Emergency Life-Saving Technician’s Act and by notices issued hereunder by the Ministry of Health, Labour and Welfare. Medical practitioners are not always (or rarely, in fact) present on the spot; in most cases, emergency technicians must obtain instructions over the phone. These conditions require medical practitioners to issue specific instructions concerning patients they have never examined before, based solely on an oral account. In the author’s opinion, this does not comply with Article 20 of the Medical Practitioner’s Act, which bars medical practitioners from treating a patient without in person evaluation. It is reasonable to doubt whether an emergency technician, whose medical education includes a mere 250 hours of classroom lectures and a tour of an emergency medical center, can really act in place of a medical practitioner. The author believes broadband telecommunications can help resolve this issue. Article 21 of the Basic Act on Establishing a Networked Society Based on Advanced Information and Telecommunications appears to point to the establishment of a broadband mobile telecommunication environment that enables the monitoring of patients in ambulances. The current mobile telecommunications system, which cannot transmit large volumes of data from inside the ambulance to the medical practitioner, fails to satisfy Article 21 of the Act. The Japanese government leaves mobile infrastructure development to private-sector enterprises, which follow the principle of free competition or cream-skimming (i.e., developing infrastructures only in profitable urban areas, not in rural areas). Private-sector mobile public line networks are limited in coverage. The rate of dropped calls has risen since the earthquake, due to congestion. Accessibility has been limited. Dependence on market-based private-sector companies to provide mobile telecommunications for emergency medical care and disaster purposes suggests the national government is not fully aware of the importance of risk management.

IV. CONCLUSION

In light of Article 21 of the Basic Act on Establishing a Networked Society Based on Advanced Information and Telecommunications and Article 44 of the Emergency Life-Saving Technician’s Act, the Japanese government is obligated to mobilize the public and private sectors to work together in providing citizens with a broadband mobile telecommunication environment that enables remote medical consultations.

REFERENCES