Department of Innovation for Medical Information Technology

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General Summary

This course deals broadly with information and communication technology (ICT), an area that has recently seen remarkable developments, including everything from basic research on its development to clinical application, with the aim of using ICT in medical care.

We are studying the development of wearable devices and artificial intelligence that link with telecommunications. We are also conducting research and development toward implementing ICT medical care in a wide variety of areas, including health management, emergency care sites, intrahospital networks, and chronic-phase rehabilitation and nursing care.

Research Activities

Research and development of a communication application for medical personnel
We are researching and developing a software program called "Join," which is to be covered by insurance in Japan. The research investigates such factors as the cost-effectiveness of communication in the treatment of patients with stroke, in which the time before diagnosis and treatment is especially important.

Research and development of a health support application
We are researching and developing a software program called "MySOS." During an emergency, this application seeks help from nearby people and helps decide whether trips should be made to a hospital by referring to emergency manuals for adults and children. Future development will focus on enabling linkage with hospitals.

Internet of Things development
We are going forward with the development of Internet of Things wearable devices as a means of accumulating large quantities of data. In the development of blood-pressure meters in smartphones or in devices resembling wristwatchs and band-type electroencephalograms, we are advancing development from the standpoint of storing large amounts of personal medical information into a vast Internet database ("the cloud") via smartphones and defending against illness.

Mobile phone electromagnetic wave effects
We are doing research on how smartphones affect medical equipment. The research will determine whether issues are related to the use of smartphones at medical care facilities. We are publishing a paper on this subject.

Medical equipment development

We are discussing the development of medical equipment and the practical development of intracranial stents. Currently, the Japanese medical equipment industry is heavily dependent on imports. Our ultimate goal is to contribute to the advancement of the domestic health care industry by offering various types of support and holding actual physician-led clinical trials, so that the health care industry in Japan can be self-sufficient.

Introducing ICT medical care

We are performing various studies of the introduction of ICT medical care. The use of ICT in various aspects of nursing and caregiving might improve work efficiency in these areas. The aim is to put this into practice.

Medical results of using robots

We are conducting research, using the human-shaped robot Pepper (SoftBank Corp., Tokyo, Japan), on the interaction between robots and people. We are studying what changes occur in health care facilities when people see and come into contact with robots.