

## Research Center for Medical Sciences

### Division 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 development, 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,” the first such software to be covered by insurance in Japan. The research investigates factors, including the cost-effectiveness provided by communication in the field of stroke treatment, in which the time leading to diagnosis and treatment is especially important.

##### *Research and development of a health support application*

We are researching and developing a software application called “MySOS.” When an emergency occurs, this application seeks help from nearby people and helps make the decision whether to go to a hospital, referring to emergency manuals for adults and children. Future development will focus on enabling linkage with hospitals.

##### *Internet of Things development (such as checking blood pressure with a smartphone)*

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 wristwatch-type blood pressure meters and band-type electroencephalograms, we are advancing development from the standpoint of storing large amounts of personal medical information in the cloud via smartphones, and defending against illness.

##### *Mobile phone electromagnetic wave effects*

We are doing research related to the effects of smartphones on medical equipment. The research will determine whether there are issues with using smartphones at medical care facilities. We are publishing a paper on this subject.

*Medical equipment development (such as intracranial stents)*

We are conducting discussions on 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 physician-led clinical trials, so that the health care industry in Japan can be self-sufficient.

*Introducing ICT medical care*

We are doing various studies on the introduction of ICT medical care. Using ICT in various aspects of nursing and caregiving might improve work efficiency. The aim is to put ICT medical care into practice.

*Medical results of using robots*

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