

Security Issues and Solutions in the U-Health for the Disabled

- Focusing Medical Service Art and Privacy Protection Act –

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Abstract. This study aims to survey the legal system concerning information efficiency and privacy protection on the U-Health infrastructure construction to fulfill the medical need of the disabled. Methodology: Related provisions such as U-Health, legal definitions of the disabled, as well as Privacy Protection Act for security are analysed and studied. Results: Personal Information Control Right should be secured in the gathering, processing, use and provision of the medical information. Secondly, radical change in legislation contents and methods in order to secure free circulation of the medical information is required. Thirdly, legal norms to protect personal medical information leakage due to inadequate administrative and technical action are required.

Key Words: U-Health, Security, Personal Information Protection Policy, Personal Information Protection Act

1 Introduction

Government and local government should provide policies for the disabled including physical and mental rehabilitation services to learn or to restore their capabilities, and aids to make up for their disabilities (Article 18 of the Welfare Act for the Disabled). But a survey shows that along with the living standard security, medical issue is one of the major concerns for the disabled. Health and medical treatment system for the disable is insufficient in Korea, and studies in this field are also meager compared to those of welfare[1].

Also, as the need for the public medical service grows from medical treatment to the improvement of the quality of life including prevention and health promotion, laws related to remote medical services and U-Health are complementary. However, legislation and application time are inconsistent that they hinder simultaneous

diffusion of the U-Health. Scope of telemedicine in the Medical Act and the protection of personal information for security in the Privacy Protection Act should be improved for the activation[7].

Construction of the U-Health infrastructure, where both effective informatization to meet the need for medical needs of the disabled and privacy protection are harmonized, is required.

This study is a basic research to present security issues and solutions concerning personal information protection in U-Health for the disabled. Definition of U-Health and the disabled, and provisions in the Privacy Protection Acts of Korea concerning security are interpreted, analysed and studied.

2 Theoretical Backgrounds

2.1 U-Health

U-Health, abbreviation of the ubiquitous health, is a medical service which provides prevention, diagnosis, treatment, and follow-up care without visiting doctor at anytime and anywhere. With the development of the medical technology, it has advanced from the medical treatment and follow-up care to the prediagnosis and prevention of the diseases, and it widens the scope of the concept including enhanced quality of medical services and sustainable healthy life.

2.2 Disability

In Korea, legality of the disability is defined and limited by medical model.

2.3 Privacy Protection of the Personal Health (or Public Medical Services) Information

2.3.1 Personal Health (or Public Medical) Information

Personal medical information is a very sensitive issue, but its proper use for the advancement of medical service or public health also should be considered[6].

2.3.2 Personal Information Protection Policy

For the protection of the privacy, rule for personal information processing to meet the international standard both in the public and private sector should be defined, and national relief scheme for the violation of privacy should be reinforced.

2.3.3 Personal Information Protection and U-Health

U-Health care service requires medical information exchange and sharing between related organizations and users so as to promote the BINT technology fusion as well as to provide more correct and various medical services. There is more serious concern for security, because U-Health care service handles very sensitive information comparing to other ubiquitous computer technology and various domains or service partakers share information. Therefore, various security issues and reasonable solutions should be concerned in order to promote reliable U-Health care services[5].

3 Research Findings

The use of personal medical information concerning U-Health of the disabled should be expanded beyond the medical institution, and should be promoted as an industry. Therefore, legislation and revision concerning medical information protection are required as follows.

First of all, personal information control right concerning gathering, process, use and provision of medical information should be guaranteed. Comparing Medical Act and Privacy Protection Act, privacy protection and access right to read and copy personal information is restricted. Therefore, right to correct or delete medical information and right to express one's objection should be reflected.

Secondly, free distribution of medical information should be guaranteed. As the processing environment of the medical information (especially, increase in medical information use and medical institution) changes, clauses for the use and provision of medical information should be regulated by detailed legislation and radical changes in legislation contents and method are required. New legislation (Medical Information Protection Act) would be required in order to promote healthy development of medical information industry and to regulate procedures for use and provision of medical information[2].

Thirdly, legal criteria for the personal medical information leakage by incomplete administrative and technical action are required. Article 29 of the Information Protection Act guarantees 'safeguard duty' stipulating that "personal information processor should take technical, administrative and physical measures following the executive order, including internal management plan, and access records storage to secure personal information from loss, robbery, leakage, falsification or damage." However, as the medical network system between medical institutions is not same, technical and administrative measure is not easy and standardization would be unsuitable. Furthermore, even when the medical institution doesn't take measure due to financial or other reasons, regulation cannot be urged[4].

4 Conclusion

With the actual application of telemedical service such as U-Health care, medical service would not be provided in stationary positions. Relative instrument and system including home medical devices for telemedicine, mobile medical devices, electronic prescriptions, informatization of medical institutions, clinical information sharing, information application system for personal disease management, provision of health-related contents should be developed[3].

Concerning the distribution of medical information, specific regulation should be established. Reading and use of the patient's medical history information should be restricted to limited persons (medical doctor, and protector of patient, minor, quasi-incompetent, or incompetent) in order to secure privacy. Specific definition for medical information should be given, range of knowledge for the public medical services within the Framework Act on Health and Medical Services should be specified, and the notion of accessibility should be stipulated[8].

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