

## ICT Design for Technology License of Animal Hospital

Su-Yeon Han and Dea-Woo Park

Department of Convergence Science Technology, Hoseo Graduate School of Venture, Asan, Korea

**Abstract:** In order to live a healthy and quality life of a pet living with a person, periodic health checks according to species, sex, age are necessary. Recently single furniture and elderly households are increasing and furniture to live by raising pets is also increasing. It also affects the lives of people living together with pet's healthy living. For this reason, the role of animal hospitals that inspect pet health, treat diseases and take care of health is becoming more important. However, despite this reality, nurses at animal hospitals are not recognized as professionals. Therefore, this study analyzed the work of nurses at animal hospitals and explained the reason why they should have professional national qualifications. In addition, we studied Information Communication Technology (ICT) such as blood pressure measurement, blood test, ultrasonic examination, radiological examination, CT (Computed Tomography), MRI (Magnetic Resonance Imaging), etc., necessary for health check and diagnosis at animal hospital. We expanded the medical technology and ICT technology necessary as an animal hospital nurse and designed the requirements for national license.

**Key words:** Information and communications technologies, privacy security, database, technology license of animal hospital, nurses, health

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### INTRODUCTION

In with the development of science and medicine and technology, human life has reached the age of 100 years old. In addition, the number of generations sharing communion with companion animals is increasing as the living pattern of living alone increases. According to the 2017 current status of Pets National Recognition Survey Report, 28.8% of the total households in South Korea are living with cats or dogs as companion animals.

Currently, the doctor is in charge of treating the person and the nurse is in charge of the treatment. Therefore, the pet is also treated by the veterinarian but a nurse is needed to assist the veterinarian in the treatment. However, there is a real inconvenience because the veterinary assistant nurses are not recognized as veterinary practitioners and they are not recognized as professional occupations (Kim and Kim, 2016).

Pet owners need professional pet care managers because they lack expertise and experience in health screening. This professional manager must have a technology license and encourage pet owners to protect the health of companion animals. Therefore, the professional pet manager must apply advanced technology and information technology to the technology license, the government should establish the database and manage the companion animal through the communication network using ICT.

In this study, we study the contents and requirements of the companion animal technology license. The requirements of the companion technology license must be able to support the veterinary practice of the veterinarian. This study will contribute not only to companion animals but also to basic data that utilize science technology and ICT technology to improve human life quality.

**Literature review; Definition of Companion animals (or Pet) (Pet Wikipedia, 2018):** A pet or companion animal is an animal kept primarily for a person's company, protection or entertainment rather than as a working animal, livestock or laboratory animal.

Two of the most popular pets are dogs and cats. Other animals commonly kept include: rabbits, ferrets, pigs; rodents such as gerbils, hamsters, chinchillas, rats and guinea pigs; avian pets such as parrots, passerines and fowl; reptile pets, such as turtles, lizards and snakes; aquatic pets such as fish, freshwater and saltwater snails and frogs and arthropod pets such as tarantulas and hermit crabs. Small pets may be grouped together as pocket pets while the equine and bovine group include the largest companion animals.

**Type of private licenses on companion animal in South Korea:** At present, the types of civilian licenses related to animals are animal nursing care workers (veterinary nursing care workers), companion animal managers,

companion animal funeral directors, companion animal behavior corrector, animal school supervisors, animal mediation counselors, animal mediation workers, pet care counselors and so on (Kim and Kim, 2016).

**Veterinary law (Anonymous, 2016a, b):** Article 10 (Prohibition of unlicensed medical treatment) An animal cannot be treated unless it is a veterinarian. Provided, however, that the case where a person who has been licensed under the Fisheries Disease Control Act under Article 37-2 of the Marine Organisms Disease Control Act treats marine organisms in accordance with the same Act and other medical treatment prescribed by the presidential decree shall be excluded.

**Animal registration system in Korea:** The animal registration system of the animal protection management system, implemented from 2014, shall register dogs older than 3 months old and must register only dogs (Anonymous, 2014).

**MATERIALS AND METHODS**

**ICT design for Pet Bio Life Care and Technology License of Animal Hospital**

**Setting the official title of the animal hospital nurse in Korea:** Nurses at South Korean Animal Hospital do not have a formal title yet because they have not yet been officially recognized as professional (Anonymous, 2016a, b). However, they are working on taking care of patients at animal hospitals just like human hospital nurses. Their full name would be a veterinarian technician.

**Necessity of technology license of animal hospital nurses:** It is illegal for a person other than a veterinarian to do medical treatment under Article 10 of the Veterinary Law. Veterinarian technicians to manufacture medicines in accordance with veterinary prescriptions may also be considered illegal under current law (Lee, 2016). In reality, however, they assist veterinarians in their care. Therefore, they should be recognized and cultivated as professional workers and given the education and certification corresponding to their profession.

At present, there are more than 100 private licenses related to animals but there is professionalism and public confidence low some are accused of being used only as a means of making money (Lee, 2017). In order to improve the problems of this reality, veterinary technicians should be given national qualifications through professional education (Kang *et al.*, 2009). And the veterinary technician should be classified as a professional like a human hospital nurse. In animal hospitals, nurses are

Table 1: Nurse vs. animal hospital nurse

Divisions	Human nurse	Animal hospital nurse
Title	Nurse	No office title
Duty	Assist the doctor patient care medical equipment management etc	Assist and support veterinary medical services. Regular physical examination of companion animals share and share information with your caregiver on the health status of your companion animal, correct information about your companion animal ensure accurate and smooth communication between the veterinarian and pet owner
License	National license	Private license

Table 2: Current database and the data to be added

Divisions	Current database on the system	Additional data on the system
Pet owner information	Name, social security No. address, phone No.	Emergency contact No. or network
Dog information	Name, kind, color, gender, date of birth, date of adoption, neutrality or not	Vaccination record Medical check-up record Immigration record

applying ICT technology developed for animal care and health screening. Therefore, a nurse needs a technology license to handle and master the equipment such as ultrasound, radiation, CT, MRI, etc.

**Role of veterinarian technician:** The current job analysis of veterinarian technician are help and support health care services for vets, check and manage pet regular health examination schedules, share their health information with pet owners and obtain accurate information about pets and ensure accurate and smooth communication between the veterinarian and the pet owner. Table 1 compares the duty of human nurses and animal hospital nurses and their current situation.

**Animal registration system requires additional database:** The animal registration system which is obligatory, since, 2014 is aimed at dogs and it is required to register the names of the dogs of the dogs, birthday date of birth and whether they are neutered. Since, current registration information is not sufficient for the management of companion animals, information such as vaccination records, medical check-up records and immigration record should be additionally registered in the database ICT design for technology license of animal hospital. We have arranged the contents in Table 2.

**ICT design technology license of animal hospital:** nurses who treat animals should have ICT skills in addition to medical knowledge and experience such as veterinarian care and treatment surgery to play a role as a nurse in animal hospitals. Therefore, a veterinarian technician who has achieved the technology license of animal hospital by designing ICT as follows must be present at the animal hospital.

### **Healthcare technology, database and network design for ICT hospital technology licensing**

**Design ICT technology for pet health checks:** We design ICT technology with regard to the items of pet health examination, regular inoculation every year-ICT technology related to health checkup and management, blood pressure measurement, blood test, ultrasound, radiology, CT, MRI.

**Design database:** The database will include information on owners, animal companions, vaccination records, timing of medical checkups and medical examination results.

Owner information is name, telephone number, address, social security number, emergency contact number. Pet information is name, type, age, sex. Pet vaccination records are basic type of inoculation, date of vaccination scheduled. Pet health examinations are health examination plan, schedule of medical examination, health examination item, health examination results save, modify or delete.

**Design a network:** A network for owner and animal hospitals (and government) to share health information about pets is designed for mobile and PC use. We design websites for animal health examination, treatment and medical history (privacy protection is required). Design a platform for information letters, message, video delivery and remote management. Design an extension of module development for ongoing guidance and management after a health examination.

**Design healthy life for pets:** Considering the age of pets and their health conditions, we design examination items, timing and interval, so that, they can lead a healthy and good quality life.

Health examination items should be designed according to the age of companion animals. Health examination items and intervals should be designed for the current physical condition. If pets have a disease, appropriate test items and cycles should be designed appropriately.

### **CONCLUSION**

Those who work as nurses at animal hospitals need national qualifications. They are professionals who help veterinarians take care of animal patients and treat them. However, as a realistic problem in South Korea, the role of nurses at animal hospitals and nurses at human hospitals must be distinguished.

Therefore, nurse national qualifications at animal hospitals are designed not only by the medical technicians needed by nurses but also by using ICT technology, designing schedule management, management of screening results, record management of screening, etc., using ICT technology health check items and cycles were designed according to the health condition of the animal.

We designed the network, so that, pet owners and hospitals can share information. In some cases, it must be able to share pet health information with the government. For example, when pet leaving and entering the country, if we share their health information with the immigration office, we can reduce the procedures and costs that are currently taking place.

### **RECOMMENDATION**

In future research, it is necessary to study licensing acquisition method, license management method, update method.

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