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Functional Analysis of Health Information System in Public Health Centers Focusing on Health Business Programs

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Abstract

The purpose of this study is to analyze the functionalities of Health Information System in Public Health Centers focused on Health Business Program. Field research was performed in accordance with the business guidelines of the Ministry of Health and Welfare. After analyzing the users' requirement and the functionalities of the system, we suggest a model of functionalities for interoperable EHR system. This will help to promote application of health information system and to improve efficiency of Public Health Centers.

Keywords:

Health Information System, public health Centers, health business program, health electronic health record

Methods

There were many Health Business Programs in Public Health Centers. To analyze function, we had to choose several Health Business Programs, which were considered as a important business and each had different work processes.

Nine Health Business Programs which recognized as key Health Business Programs in Public Health Care were selected.

Then, they have classified into following three categories: The First includes the Health Business Program which was managed by the local Health Information System. Second category includes the Health Business Program which was not managed by the local Health Information System but was managed by web system in common. Consequently, the personnel in charge of Health Business Program can't manage the cases by using their own Health Information System. Third category includes the Health Business Program has no Health Information System, so it was performed manually.

The methods of this study are as follow.

Analysis of the work process

Questionnaires and field interview survey were conducted at six Public Health Centers in Korea. And people in charge of each health business program named business manager were interviewed. After their work processes were inspected carefully, the functions of health information system and works performed manually using MS Excel or Word were investigated.

To show the functionalities, Unified Modeling Language (UML) was used, which showed the work process functionally.

Analysis the system of health business programs

The functions of business process of Health Information System that the manager use were analyzed. Functions were categorized into following three: mega process, major process and sub process.

Results

Analysis the work process

The health business managers perform the work of Health Business Program. They register the clients in Health Business Program and perform it. For example, they visit client's home and provided health care service. They also support the medical finance to the clients that allowed to reimbursement. And then the business managers report the results and statistics to the superior part . By these process, the clients are managed.

In short, it was analyzed that they have three mega processes. We called these functions as "registration", "acting" and "management"(Figure 1).

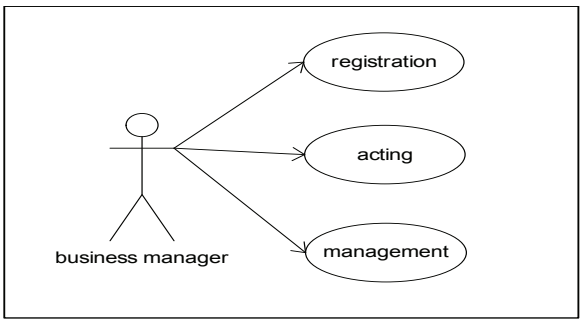

Figure 1 - Usecase Diagram: Health Business Program

Each Mega process was analyzed more detail level as following usecase diagram.(Figure2, 3, 4)

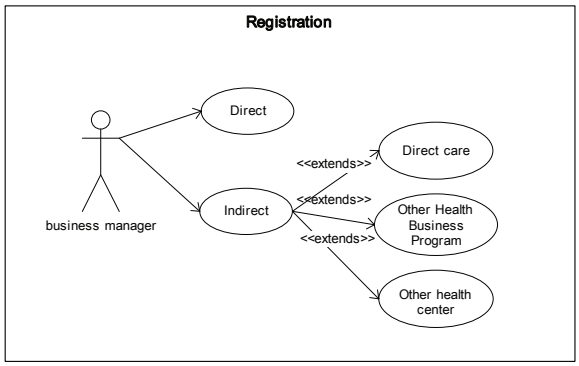

Figure 2 - Usecase Diagram: Registration

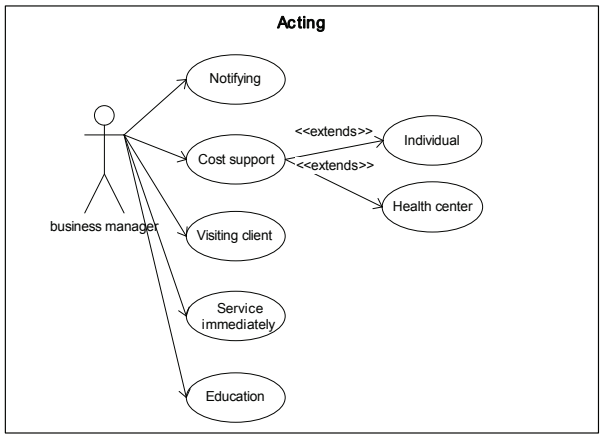

Figure 3 - Usecase Diagram: Acting

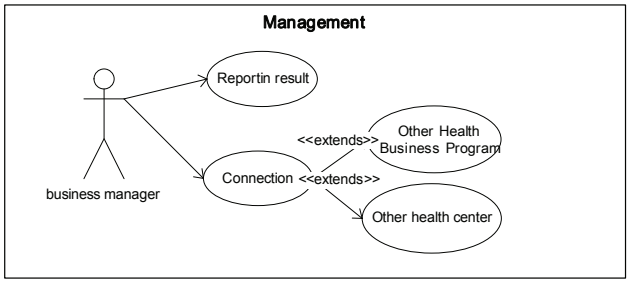

Figure 4 - Usecase Diagram: Management

Analysis the system of Health Business Programs

In Health Business Program, Health Information System hardly has been developed . Even in the case that the Health Information System has been developed, the business managers rarely use Health Information System., because the Health Information system in Public Health Centers couldn't support the functions that can interface among other Health Business Programs, and communicate between Public Health Center and other Health Centers. They are the most important functions for the business managers to perform their work. The functions of interface also are the core functions for the interoperable EHR system.

So, several symbols are marked. A Mark "" means that the function was performed by using Heath Information System in Public Health Center. A Mark "" means that the function was performed by using website in common system. Finally a mark "" means that the function doesn't have any Health Information System, so business managers performed manually.

Health Information System should be developed reflecting the end users' requirements. Our study could be helpful to engineers who develop Health Information System , so they could have a good understanding of medical domain. And that can help to reflect the users' requirements. Furthermore, the Health Information System would be adopted various Health Business Programs. Eventually these make increasing the efficiency of the user's business and make sure the implementation of interoperable Electronic Health Record System.

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