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Knowledge Management of Healthcare Team with Clinical-Pathways

— Action Research in Miyazaki University Hospital —

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Abstract

This action research is building a theoretic model of knowledge management for the healthcare team working using clinical-pathways in Miyazaki University hospital.

Clinical-pathways have been developed in healthcare as team working care plans that outline the sequence and timing of actions necessary for achieving expected patient outcome and organizational goals regarding quality, costs, patient satisfaction and efficiency. Therefore, many types of healthcare staff including doctors, nurses, and pharmacists compose clinical-pathways to share their knowledge about healthcare activities. However, the design of clinical-pathways has not sufficiently taken into consideration the fact that different types of healthcare staff assume different purposes of clinical practice, among others, based on their expertise and conception of healthcare.

The aim of this action research is a better support for knowledge management among different kind of medical staff through clinical-pathways using ontology engineering.

The clinical path of Miyazaki University hospital has been improved using ontology engineering. The improved clinical-pathways visualized the healthcare staff's' contextual knowledge. Miyazaki University hospital's healthcare staffs of the practiced the improved clinical-pathways for the patients. Evaluation of the improved clinical-pathways is estimated by the results of the investigation (quantity and quality) of the clinical-pathways users.

Four major findings are as follows. First, clinical-pathway users have recognized the difference among healthcare staffs' standpoints by ontology engineering. Second, clinical-pathway users have responded to patient's individuality using their contextual knowledge with the contents of a clinical-pathway. Third, patients and clinical-pathway users are changing their knowledge by the process of healthcare. Fourth, the observer (action

researchers) is extracted integrated knowledge from an individual knowledge change of patients and clinical-pathway users.

Theoretical implications are as follows. The model as a “knowledge management of healthcare team with clinical-pathways” is proposed. First, this model provides continuously patients with individual care treatment by clinical-pathway. Second, patients are comprised in the healthcare team members with this model. Third, this model consists of four phases, “Integrating,” “Implementing,” “Expressing,” “Evaluating,”. At each phase, useful knowledge to clinical-pathway is created by the interaction between different types of knowledge. Fourth, this dynamic model produces clinical-pathway as unified knowledge from diverse knowledge. Therefore, this model indicates evolution of integrated knowledge in healthcare team (included patients) by clinical-pathway.

As for practical implication, the interdisciplinary healthcare team using clinical-pathway is reflecting diversified viewpoints in clinical path activities.

In the future, more research about other medical professionals than doctors and nurses should be conducted to refine the model. If it becomes so, evolution of the unified knowledge with the clinical-pathway will become further possible.