

## 論 文 要 旨

**( Supporting the early detection of disease onset and change using document vector analysis of nursing observation records. )**

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Nursing records are an account of patient condition and treatment during their hospital stay. In this study, we developed a system that can automatically analyze nursing records to predict the occurrence of diseases and incidents (e.g., falls). Text vectorization was performed for nursing records and compared with past case data on aspiration pneumonia, to develop an onset prediction system. Nursing records for a patient group that developed aspiration pneumonia during hospitalization and a non-onset control group were randomly assigned to definitive diagnostic (for learning), preliminary survey, and test datasets. Data from the preliminary survey were used to adjust parameters and influencing factors. The final verification used the test data and revealed the highest compatibility to predict the onset of aspiration pneumonia (sensitivity = 90.9%, specificity = 60.3%) with the parameter values of size = 80 (number of dimensions of the sentence vector), window = 13 (number of words before and after the learned word), and min\_count = 2 (threshold of wordcount for word to be included). This method represents the foundation for a discovery/warning system using machine-based automated monitoring to predict the onset of diseases and prevent adverse incidents such as falls.