Considering that the population aged 65 years and above is estimated to reach its peak at 39.35 million by 2042, and social security funds are under pressure, it is imperative to devise measures tailored to the unique aging situation in each municipality. One such measure is the Electronic Health Record (EHR), an information collaboration system designed to promote cooperation among parties involved in the provision of health, medical, and long-term care services and to efficiently provide customized high-quality services to each region. The EHR is a medical information coordination network established as a domestic initiative to share information among multiple significant medical institutions, and it can be implemented at the individual medical institution, municipal, secondary medical district, or prefectural level, depending on the extent of information dissemination required.

Collaborative networks play a crucial role in influencing the prevention of nursing care and serious illness among patients and residents by improving medical care coordination and information sharing for home care. However, there is a lack of consensus regarding the effectiveness of wide-area collaborative networks, and there are limited quantitative analyses available to support their efficacy.

In this study, we conducted a difference-in-differences analysis to investigate the impact of collaborative networks on the nursing care required by individuals in a given area. Specifically, we examined the research question, "How does a wide-area collaborative network contribute to the level of nursing care required by people in that area?" using the hypothesis that prefectures that have established a wide-area collaborative network have a lower rate of people requiring long-term care than those that have not, and that prefectures with an effective wide-area collaborative network have a lower rate of people requiring long-term care than those that do not.

Our analysis, which focused on the certification rate of individuals requiring long-term care, revealed that prefectures that have established wide-area networks experienced an increase in both the "light certification rate" and "severe certification rate," although the rate of change in the "severe certification rate" was statistically significantly reduced. Our findings also suggest that the "severe certification rate" may be lower in prefectures with an effective wide-area collaborative network. However, these effects were minor, and further efforts are required to increase the number of participating institutions and registered patients and to enhance the benefits of establishing a collaborative network.

This study's structure is as follows: Chapter 1 provides an overview of the background, Chapter 2 presents the research questions and hypotheses, Chapter 3 describes the survey methodology and analysis methodology, and Chapter 4 presents the results of the study. Finally, Chapter 5 offers policy recommendations and identifies future research areas.