

# TSUKUBA FRONTIER

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## Exploring the Quality of Health Services Using Data Analysis

### Health Services Research Bridging Medical Care and Daily Life

When considering the concept of *medical care*, we typically envision treatments received in hospitals. However, health-related services cover a much broader spectrum, including disease prevention, post-treatment support, and nursing care. These services are interconnected in daily life; as a social system, however, they are frequently fragmented and lack a seamless continuum of care. Health services research aims to identify and address these issues by analyzing various data to ultimately improve the quality of these services.

#### Connecting Medical Care to Daily Life

After returning home from hospital treatment, ensuring that patients continue to receive proper care can be challenging for doctors. Similarly, individuals diagnosed with health issues during checkups may not always receive the necessary follow-up treatment at home. Facilities and professionals responsible for checkup, treatment, rehabilitation, and nursing care typically operate independently, which leads to insufficient information sharing. Advanced treatments and checkups cannot be truly effective if they are expensive and do not lead to sustained health and support.

While the importance of coordination among healthcare services is widely recognized, concrete solutions require objective and quantitative identification of actual issues. Health services research intends to analyze healthcare-related data to enhance the quality of services based on findings.

#### Identifying Areas for Institutional Improvement Through Data Analysis

With the growing prominence of data science, expertise in statistics and data analysis is increasingly becoming crucial in medical fields. This knowledge aids in understanding treatment outcomes and tracking the spread of infectious diseases. In addition, hospitals and university medical schools need specialists who are capable of conducting diverse data analyses ranging from individual patient conditions to population-wide epidemiological studies.

Among the various types of medical data, receipts (medical fee statements) and government statistics, such as the National Survey of Basic Living Standards, are particularly valuable. Although processing these data for analyses can be challenging, access has significantly improved. The results are not only published in academic papers but also inform proposals for enhancing national medical services, which leads to tangible changes, including reimbursement for particular medical services. We also



#### Department of Health Services Research, Institute of Medicine, University of Tsukuba

The abovementioned department was established in 2017 at University of Tsukuba as the first laboratory in Japan related to the field of health services research. It aims to comprehensively and scientifically evaluate and analyze the quality of various services in healthcare (e.g., long-term care, healthcare, and welfare). It also intends to improve the quality of services and help realize healthcare in harmony with people's lives using interdisciplinary research results based on empirical data. It also conducts research that addresses big data at the national scale and aims to support research using various data and focus on the promotion of health services research.



analyze data on regional healthcare plans commissioned by local governments.

#### Bringing Health Services Research to Japan

My journey with health services research began at the Harvard School of Public Health in the United States. As a clinician, I became concerned about the lack of follow-up information on my patients, which prompted me to pursue this field of study. At the time, health services research was not established in Japan, thus I went to the United States, where it was a recognized academic discipline. Courses included statistics and data analysis, and results were applied to real-world policies, which highlights the importance of this research.

Upon returning to Japan, I initially faced challenges in conducting research, which was expected. However, recent advancements in public data utilization and big data analysis have provided a favorable environment for this field of research.

#### Better Medical Services

In this evolving landscape, health services research has increasingly attracted attention in Japan. Our laboratory attracts diverse groups of healthcare professionals and students, including doctors, nurses, and physical therapists, who are driven by their research interests. Our research themes are varied and cover topics such as post-operative patient outcomes, medication use among the elderly, ambulance-transported patient care, collaboration between university hospitals and local healthcare providers, and needs for home medical care. Graduates from our laboratory are currently contributing to



Making a difference through high-quality HSR is the motto of our research.

hospitals and universities nationwide, and we are receiving positive feedback regarding our efforts toward human resource development.

Additionally, the University of Tsukuba established the Health Service Development Research Center in 2017, which aims to foster collaboration with local governments and companies to expand regional medical care and long-term care services. We also have an on-site facility on campus that provides authorized researchers with microdata (questionnaire information) extracted from official statistics. As pioneers in health services research, we are committed to advancing better health services.

#### PROFILE

Professor TAMIYA is a Professor at the Institute of Medicine, University of Tsukuba. Graduated from the University of Tsukuba Medical School (1986). Doctor of Medicine Graduate School of Medicine, University of Tokyo (1990). Master of Science, Harvard University School of Public Health (1994). Director, Minami Yamato Geriatric Health Care (1999). Lecturer, Department of Public Health, Teikyo University School of Medicine (2000). Professor, Department of Health Services Research, University of Tsukuba (2003). Director, Health Services Development Research Center, University of Tsukuba (2017). She also served as board member of the Japan Society of Public Health (2017–present) and President of the 82nd Annual Meeting of the Japan Society of Public Health in 2023 at Tsukuba.