Sasakawa Nursing Fellow
Progress Report

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1. Background and Academic Goal

Clinical Informatics (CI) is a transformative discipline at the intersection of technology and healthcare. Its essence lies in creating meaningful connections for patient-centered care through industry-driven innovations and applied academic healthcare delivery. In the balance between industry and academia, CI bridges the gap between startups, legacy software companies, academic medical centers, community hospitals, and private practices - all focused on improving the healthcare experience for both providers and patients with technology.

My journey in the Master of Management in Clinical Informatics (MMCi) program at Duke University School of Medicine is driven by a fundamental belief in this interdisciplinary approach. Having worked in the financial and healthcare industries in Japan, I recognized the pressing need for greater efficiency, improved quality, and strategic cost mitigation in healthcare delivery.

1) Program Overview

The MMCi program is a one-year, full-time degree program that equips professionals from diverse backgrounds with the knowledge and skills to tackle the challenges of modern healthcare. By blending healthcare business principles with clinical informatics, the program fosters innovation in patient care delivery. Additionally, the program emphasizes teamwork, leadership, and ethical decision-making, critical components for navigating the complexities of healthcare informatics.

2) Coursework

Coursework this year included the following key subjects:

- Health IT Business Solutions
- Applied Data Science
- Foundations of Data Analysis
- Data, Information, and Knowledge Representation
- Introduction to Operations and Supply Chain Management
- Cost and Managerial Accounting
- Ethics and Equity
- Healthcare Finance
- Digital Health Informatics

2. Progress for Academic Goal

To achieve my goals, I am focusing on the following objectives:

1) Understanding the Role of Technology in Healthcare – Interoperability and Climate Change Impact

Interoperability is the backbone of modern healthcare systems, enabling the seamless exchange of health data across different platforms and organizations. Through my coursework and practical experiences, I have gained a deeper understanding of its critical role in improving patient outcomes and operational efficiency.

Additionally, climate change presents a significant challenge to healthcare systems globally, with relevance to Japan. As an island nation, Japan faces unique vulnerabilities to climate-related health risks, such as increased frequency of extreme heat events with summer temperatures rising by approximately 1.3°C over the past century, more frequent and intense typhoons leading to increased risk of flooding and associated health impacts, and shifting disease vectors including the potential expansion of mosquito-borne diseases for instance dengue fever.

At ViVE 2025 in Nashville, I collaborated with the Climate Health Innovation & Learning Lab (CHILL) to coordinate a critical panel addressing these challenges. Working alongside distinguished healthcare leaders, we explored innovative technological approaches to mitigate climate change's health impacts. The panel specifically highlighted the private sector's crucial role in addressing climate health challenges, especially in the context of reduced federal support. This approach resonates deeply with Japan's need for adaptive healthcare strategies in the face of environmental changes.

2) Understanding the U.S. Healthcare System and Governance

The U.S. healthcare system's robust policy framework, including the Meaningful Use program and the Meaningful Use program and the Medicare Access and CHIP Reauthorization Act (MACRA), has been instrumental in promoting certified EHR technology. These policies have driven a nationwide adoption rate of approximately 96%, enabling more coordinated and data-driven care.

At the HIMSS Global Health Conference in Las Vegas, I gained deeper insights into the technological and policy frameworks driving U.S. healthcare innovation. The conference underscored the potential for knowledge transfer to Japan's healthcare system, which currently has a 62.5% EHR adoption rate in large hospitals.

3) Ethical Challenges in Healthcare Technology

The integration of technology into healthcare raises complex ethical questions around privacy, equity, and accountability. For example, how do we ensure patient consent when integrating continuous data streams into EHRs? How do we prevent biases in algorithms used for clinical decision support? Through coursework and discussions, I have explored these critical issues, recognizing that ethical frameworks must evolve alongside technological advancements.

4) Team Collaboration

The MMCi program has provided a dynamic environment for mastering teamwork within diverse, multidisciplinary settings. With an average cohort age of 38, most of my classmates are experienced working professionals. Collaborating closely with peers from varied backgrounds has allowed me to learn extensively from their unique perspectives and expertise, making this journey exceptionally rewarding.

3. Activities and Experiences

1) Conferences

The HIMSS Global Health Conference in Las Vegas provided an unparalleled opportunity to engage with global leaders in healthcare technology. I participated as a Student Ambassador, connecting with 50 fellow students from universities nationwide who share similar aspirations in healthcare innovation.

At ViVE in Nashville, I helped coordinate a groundbreaking panel discussion focused on the impact of climate change on health. Collaborating with CHILL, we explored how technology can advance sustainable, patient-centered care—an issue of critical significance to both Japan and the US.

Additionally, at the Ed Hammond Celebratory Scientific Symposium: "From Foundations to Future of Informatics in Health," I presented a poster titled "PharmaSee", outlining a digital inventory platform designed to address drug shortages.

2) Projects

Under the mentorship of Dr. Mina Boazak, I am currently developing a digital therapeutic (DTx) platform aimed at improving mental health outcomes. This project encompasses comprehensive

needs assessment, clinical validation, and a detailed analysis of the regulatory landscape. Additionally, under the mentorship of Dr. Ed Hammond, I continue my role as a research assistant with the Galileo Project, contributing toward the pursuit of an optimal healthcare system. Initiated in 2020 at Duke Medical Center, the Galileo Project was created in response to the numerous challenges and inefficiencies within our current healthcare system.

3) Club Activities

Balancing academic rigor with personal well-being has always been a priority. At Duke, I joined the university's Triathlon Club, which has helped me maintain my mental and physical health while building connections with a diverse group of individuals. In October 2024, I competed in a triathlon and achieved first place in my age group.

4. Use of Scholarship Funds

Scholarship funds were allocated toward tuition, housing, health insurance, conference registration fees, transportation expenses, textbooks, and other educational necessities, all of which supported my academic and professional development throughout the year.

5. Acknowledgement

I am profoundly grateful to the Sasakawa Health Foundation for their generous support, which has made my academic journey at Duke University possible. I am also deeply appreciative of the faculty, peers, and mentors who have guided and inspired me throughout this transformative experience.