

# 2024 HICARE/IAEA Internship Report

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## 1. Overview

Period: April 1st, 2024 ~ June 30th, 2024

Dispatch source: Hiroshima International Council for Health Care of the Radiation

Exposed (HICARE)

Dispatch destination: International Atomic Energy Agency (IAEA)

Assigned department: Director's office, Division of Human Health, Department of Nuclear Sciences and Applications

Purpose: To understand the significance and necessity of medical treatment for the victim of the atomic bomb from a global point of view. To develop human resources who will inherit the research results and results of medical treatment for the radiation-exposed in Hiroshima.

With the generous support of HICARE, I had the opportunity to participate in a three-month internship at the International Atomic Energy Agency (IAEA) in Vienna, Austria.

## **2. Activities during the Internship**

The activities I undertook during this internship are as follows:

- (1) Conducted a literature review on the effectiveness of Stereotactic Body Radiotherapy (SBRT) for oligometastatic breast cancer
- (2) Collected and analyzed data related to AFRONET
- (3) Compared and evaluated the new and old versions of strategic guidelines
- (4) Participated in various events for staff members

Details are as follows.

### **(1) Conducted a literature review on the effectiveness of Stereotactic Body**

#### **Radiotherapy (SBRT) for oligometastatic breast cancer**

Through discussions with my supervisor at the IAEA, Dr. May Abdel-Wahab, we decided to conduct a literature review. After reading several papers on topics suggested by Dr. May, we decided to focus on the effectiveness of Stereotactic Body Radiotherapy (SBRT) for oligometastatic

breast cancer.

Radiotherapy has become increasingly precise in recent years.

Stereotactic Body Radiotherapy (SBRT) has been developed and introduced into clinical practice, allowing high-dose radiation to be delivered to tumors from multiple directions in a three-dimensional manner while reducing the dose to adjacent at-risk organs. Oligometastasis refers to a condition where there are only a few distant metastases (1-5 lesions). Traditionally, systemic therapy has been used for cancer patients with distant metastases to prolong survival. However, recent studies have shown that if the cancer is in an oligometastatic state, long-term survival may be possible by adding appropriate local treatments such as SBRT. Despite this, there have been relatively few studies examining the significance of local treatments for oligometastasis of specific cancers. Therefore, I focused on investigating the effectiveness of SBRT specifically for breast cancer.

Choosing the theme took some time, and there were difficulties in making progress when other tasks became busy. However, under the guidance of Dr. May and Professor Yuji Murakami from the Department of Radiation Oncology at Hiroshima University, I successfully completed a poster

presentation at Hiroshima University.

## **(2) Collected and analyzed data related to AFRONET**

AFRONET (Africa Radiation Oncology NETwork) is a project aimed at enhancing human resource development and improving the quality of medical care by providing online case discussions and workshops for radiation oncology professionals in Africa, where there are reportedly limited opportunities for case studies and practical training due to a lack of human and material resources. Since 2012, AFRONET has held online meetings approximately once a month, involving participants not only from Africa but also from various member countries. However, there had been no comprehensive analysis of the achievements of AFRONET or the current issues with its system over its 12-year history. Upon recommendation from Dr. May, I was introduced to the project manager, Ms. Soha, and was tasked with collecting and analyzing data related to AFRONET.

Specifically, I extracted information from a database that recorded the participants of past online meetings into an Excel sheet and analyzed data such

as participants' countries of origin, native languages, genders, and the topics covered in each meeting. The analysis revealed that there were significantly fewer participants from Central African countries and countries where French is the primary language. This finding suggested that there was insufficient awareness about AFRONET and that the use of English as the language of communication in the online meetings created a barrier, leading to inequalities in access to this project even within the African region.

Based on these findings, proposals were made to change the methods of promotion, such as sending emails to counterparts in each country to encourage broader participation from within member countries. Through this task, I realized that radiation therapy is still a difficult-to-access medical treatment in many parts of Africa. However, I also felt that international organizations like the IAEA can help facilitate cross-border and regional collaboration to provide more substantial support for such issues.

Additionally, although AFRONET has been running for approximately 12 years, the process of organizing and analyzing data revealed that there are still areas for improvement. This experience taught me the importance of regular reflection and evaluation of outcomes when advancing projects.

### **(3) Compared and evaluated the new and old versions of strategic guidelines**

During my internship, the latest version of the "Strategic Guidelines on Partnerships and Resource Mobilization," which outlines the regulations for forming new partnerships with other organizations, was released by the IAEA. I was tasked with obtaining the previous version and conducting a comparative review with the new version.

Since the previous version was not available in the archives or other accessible sources, I had to directly contact the department responsible for public relations to acquire it, which involved several steps and challenges.

Through this task, I gained insight into the organizational structure of the IAEA and how administrative processes are carried out.

### **(4) Participated in various events for staff members**

The Vienna International Centre (VIC), where various international organizations, including the IAEA, are headquartered, hosts a wide range of events. Among the events I participated in during my internship, the ones that left a lasting impression on me were "Daughter's Day" and the "Long Night of Research."

"Daughter's Day" is an initiative promoted throughout Vienna, where companies related to fields such as STEM, where female participation is still relatively low, organize tours for female students from elementary to high school. At the VIC, tours were also conducted for the daughters of staff members, and I volunteered to help guide them. Accompanying groups of girls, we toured various locations within the VIC, including observing how the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) monitors nuclear tests in real-time and participating in workshops organized by IAEA departments working on environmental issues. Though I participated as a guide, it was a valuable learning experience that allowed me to see the efforts of other organizations and departments that I would not normally have the chance to observe.



←Certificate of Recognition for volunteering on Daughter's Day

The "Long Night of Research" is an event held from around 5 p.m. to 11 p.m., during which scientific institutions throughout Austria host tours and events for the general public. At the VIC, various booths were set up by departments including NAHU, with a focus on the IAEA, showcasing their ongoing research activities and investigations in a workshop format, such as radiation therapy and water quality testing.



There was also a booth from the Seibersdorf Laboratories, and this event provided an opportunity to learn about the initiatives of departments and organizations that I do not usually have the chance to interact with in my regular duties.

### **3. What I Learned from the Internship**

Through this internship, I had the opportunity to gain a wide range of experiences over the course of three months. Engaging directly in the work allowed me not only to learn about the role the IAEA plays as an international organization but also to have valuable experiences interacting with fellow interns, friends from the student dormitory, and Japanese staff members from various departments and



organizations. Each person had a diverse background, not just in terms of nationality but also in career paths, and I greatly enjoyed hearing different stories from various people during the internship.

Additionally, outside of the IAEA, I had a memorable experience when several people in the dorm where I lived asked me, upon learning that I am from Hiroshima, whether there are still lingering effects of radiation from the atomic bomb. The dorm was for university students in Vienna, and there were many international students with whom I had the chance to talk. While most of them knew of Hiroshima as a site of the atomic bombing, they seemed to be less aware of the actual damage caused and the effects of radiation.

As the sense of urgency regarding the threat of nuclear weapons increases, I strongly felt the need to disseminate more accurate information both domestically and internationally about the damage caused by nuclear weapons.

#### **4. Acknowledgements**

I am deeply grateful for the invaluable opportunity to undertake an internship at the IAEA, which allowed me to understand the vital role that international organizations play through practical experience. Additionally, connecting with

individuals from diverse backgrounds has been an irreplaceable aspect of this internship.

I would like to extend my heartfelt thanks to Dr. May, who provided exceptional guidance during the internship, as well as to everyone who supported me in my role as an intern. I also deeply appreciate the warm welcome from the Japanese staff, who made me feel at ease during my first experience living abroad, and the fellow interns who supported me both professionally and personally. My sincere gratitude goes to HICARE and all the individuals who provided significant support before, during, and after my stay, as well as to Professor Sakaguchi and the faculty at Hiroshima University for their crucial role in my placement.



↑ with Dr. May



↑ Vienna International Centre(VIC)