



Radiation Emergency Medicine Human Resources Development Project

Overview

The Hirosaki University Graduate School of Health Science has been developing a project called "Advanced Human Resources Development Project for Radiation Emergency Medicine" since 2016.

This project has been running as a continuation of Ministry of Education's special academic research project, launched in 2008, which consists of four divisions: "Radiation Emergency Medicine (REM) Education and Training Division," "Radiological Nursing Education Division," "Education of Radiation Risk Communication Division," and "Global Human Resources Development Division." Each division has been working on various activities aiming to ensure the following on a permanent basis: the base expansion of human resources who can handle the radiation emergency medicine and offer guidance of radiation risk communication; the development of more advanced and practical human resources development program for radiation emergency medicine; and the formation of a hub of cultivating "glocal" human resources for training advanced radiological nursing specialists, in compliance with the international standards.

Radiation Emergency Medicine (REM) Education and Training Division

We offer a short-term educational program to promote the training of current medical professionals to develop more REM professionals. The 2-day program, including e-learning preparation, consists of lectures on the REM perspective as well as exercises on the ways of handling irradiated and/or contaminated patients.

Radiological Nursing Education Division

We provide an advanced nursing education program in radiological nursing, which is a Master's level program. We have established the "Radiological Nursing Educational Support Center," which offers seminars and advice on radiological nursing for professionals.

Education of Radiation Risk Communication Division

We continue the base expansion and improvement of the education of radiation risk communication by offering such services as recurrent education for specialists and students in the radiation risk communication field, and awareness activities for the general public.

Global Human Resources Development Division

We foster internationalism among instructors in the Graduate School of Health Sciences and promote the admission of international students to the Graduate School by actively promoting personnel and academic exchanges with institutions involved in REM in Japan and around the world. Furthermore, we strengthen collaborations with neighboring countries in terms of radiation emergency medicine.

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Graduate School Courses

Introduction to Radiological Health Science Course · Certified Nurse Specialist Program in Radiological Nursing

At the Graduate School of Health Sciences, we established a Master's Course Radiological Emergency Medicine (REM) program in 2010 in order to develop future medical specialists involved in REM. This program includes such topics as the handling of irradiated and/or contaminated patients, and knowledge and skills related to contamination countermeasures and decontamination, dosimetry, and special clinical examinations. It has produced many great individuals with a sophisticated knowledge of radiation emergency medicine.

Furthermore, we established a Doctoral Course REM program and a Master's level Radiological Nursing Specialist Education in 2015, aiming to develop individuals who can exhibit leadership skills and provide appropriate medical responses during serious emergencies, such as large-scale radiation disasters. We also aim to develop individuals who can promote education and research in terms of knowledge related to radiation and crisis-management systems in REM, and who can facilitate collaboration between multiple specialists.

Radiological Health Science Course

Radiological Health Science Course (Master's Course)

Aims of the Program

To cultivate REM specialists and leaders who can prepare for radiation emergency accidents, and to nurture educators/researchers who can contribute to the development of this field of study.

Education Objective

1. To acquire specialized knowledge and skills related to REM.
2. To cultivate the leadership skills required for the practice of REM.
3. To acquire educational and research abilities related to REM.



Radiological Health Science Course (Doctoral Course)

Aims of the Program

To cultivate high-level educators or researchers in radiation emergency medicine, and to nurture individuals who can contribute to the development of this field of study.

Education Objective

1. To acquire specialized knowledge and skills related to REM.
2. To cultivate the research methods required for the practice of REM.

For those who complete this program, certificates will be given: as a "Radiological Health Scientist" in the Master's Course, and as a "Senior Radiological Health Scientist" in the Doctor's Course.

Program of Certified Nurse Specialist in Radiological

Aims of the Program

This program aims to develop Radiological Nursing Specialists (RNS) who have specialized knowledge of and skills in radiation and radiological nursing. Such professionals should not only be engaged in radiological protection, but also conduct advanced nursing practices for individuals, families, and communities with complicated health issues related to radiation exposure.

Education Objective

1. To utilize their knowledge and skills related to radiation exposure and radiation protection, and then to perform advanced nursing practice on patients impacted by radiation.
2. To conduct precise clinical assessment and radiation exposure control as low as possible.
3. To educate and advise individuals and communities on radiation and how to protect themselves.
4. To educate and consult with nurses about the knowledge and skills necessary for radiological nursing.
5. To coordinate the educational and medical system needed for radiological nursing.
6. To make decisions effectively on ethical problems related to radiological nursing and to support the solution.
7. To research to contribute to the improvement of academic knowledge and nursing skills in radiological nursing.



For those who complete this program, a certificate as a "Radiological Nursing Specialist" will be given. This program has been certified as an educational curriculum of radiological nursing in the Japan Association of Nursing Programs in Universities (February, 2017).



The logo of Program of Certified Nurse Specialist in Radiological Nursing takes cherry blossoms as its motif. The petals represent 6 roles of certified nurse specialists, and the gradation from pink to blue means the process of becoming the specialists who study in the city of cherry blossoms, Hiroasaki, and blossom into a Certified Nurse Specialist in Radiological Nursing.

Radiation Emergency Medicine (REM) Education and Training Division

Overview

Since 2010, we have been offering a short-term educational program to train current nurses and radiological technologists in the basic knowledge and techniques of REM. This was originally offered as a 3-day program; however, since 2013, we have incorporated preparatory learning through e-learning, and have shortened the course to a 2-day program. This training course offers lectures to enhance each specialty from the perspective of REM, as well as exercises on the ways of handling irradiated and/or contaminated patients. We have been periodically reviewing the program and its systems, based on the student questionnaires, in order to ensure the program improves and becomes more successful in the future.

REM Training Program

《Educational objectives》

This program aims to impart required REM knowledge to nurses and radiological technologists, and to develop medical professionals who can cooperate, respond appropriately, and safely manage medical situations.

《Programs offered and number of participants recruited》

- **Programs offered**
Nursing program
Radiological technologist program
- **Number of participants recruited:**
Approximately 20 participants across both programs.

《Educational Program》

- Nursing program (2 days)
- Radiological technologist program (2 days)

Lectures, hands-on seminars, and exercises are provided.

Simulation exercises are conducted on the final day. A certificate of completion is issued to all program participants.

《Lectures and drills》



Lectures are offered jointly to the participants of both programs



Drill :
"How to use a survey meter"



Drill :
"REM Team Organization"



Drill :
"Handling radiation-exposed patients"

《Number of Participants》

	2010	2011	2012	2013	2014	2015	2016
Nursing program	15	15	12	7	14	18	15
Radiological technologist program	3	6	9	11	16	4	19
Total	18	21	21	18	30	22	34
Participants awarded a certificate	16	20	21	18	30	22	33

《Features》

- In the e-learning module, the participants gain basic knowledge of radiation and the principles of REM, putting on and taking off protective clothing, methods of decontaminating the wound site, etc.
- All participants participate in the exercise, "How to decontaminate / How to put on and take off protective clothing." The participants learn to assess and decontaminate contaminated wounds.
- We offer lectures related to the present conditions in Fukushima, by inviting lecturers from the Fukushima Medical University Education Center for Disaster Medicine.
- We have also incorporated a tour of the Radiation Emergency Medicine Facility at Advanced Critical Care Center, Hirosaki University School of Medicine and Hospital.

Education of Radiation Risk Communication Division

Overview

First, risk communication refers to achieving mutual understanding of risks through the exchange of information and opinions among individuals or groups. Doing so requires numerous abilities, including collecting information and identifying risks quickly through listening and verbalizing the necessary skills for understanding and conveying information. Second, what about radiation? Radiation offers a variety of benefits, but it also comes with the risk of adverse effects. At present, however, no system has been established for training radiation risk communicators - namely, human resources able to provide support for the risk of radiation. We aim to promote the continuation and evaluation of the education and practice of radiation risk communication, and to cultivate human resources for radiation risk communication.

Education · Evaluation

We provide the following lectures as radiation risk communication education in practice.

- **Liberal arts**
"Understanding Radiation Risk Communications" (2016~)
- **Undergraduate education program**
"Nuclear Medicine Technology III" (2015~)
"Public Health Nursing, Campus Lab I" (2014~)
- **Cross-departmental teaching subject**
Practical Seminar for the Teaching Profession
- **Postgraduate education program**
"Radiological Nursing" (2015~)
- **Workshop and Course for the Teacher Qualification Renewal System**
"Radiation and Risk Communication" (2015~)
- **Workshop**
We held a 2-hour workshop on three occasions at A town, Aomori, in 2015.

Development of Educational Program

- "Experimental Study" of radiation using radiation laboratory equipment
- "Card Game" to understand the diversity of recognition
- "Roleplay study" that uses the family as an example
- "Research study" to answer questions about radiation
- Presentation of risk communication



Practice · Evaluation

We promote activities related to risk communication for people of B-town in Fukushima where we have established a partnership agreement with Hirosaki University, and we utilize such opportunities for education.

Health Consultation

Radiation Risk Communication "Discussion Meeting"
"Mental Health Seminar" for restoration supporters
Health Consultation for public staff

Press release

Presenting the achievements of our activities at an academic meeting
Reporting our activities on our university website
Distributing an electronic newsletter for residents



Radiological Nursing Education Division

Overview

We aim to develop Radiological Nursing Specialists (RNS) by offering a Master's course. We also provide educational programs, such as radiological nursing seminars, to support radiation emergency education for current nurses. The "Radiological Nursing Educational Support Center," founded in 2017, has been running activities aimed at the establishing and developing the field of radiological nursing.

Main activities

1. Establishing a support system for radiological nursing education

The division aims to provide education for "Radiological Nursing Specialist" and produce its graduates, to offer conferences and consultations on radiological nursing for current nurses and teachers, to support radiological nursing education and other universities launching education in this field, and so forth.

2. Education in Practice for the "Certified Nurse Specialist Program in Radiological Nursing (Master's course)"

Hirosaki University Graduate School of Health and Sciences established a Master's course, the "Program of Certified Nurse Specialist in Radiological Nursing" in 2015. This program cultivates nurses who practice advanced nursing in the field of radiological nursing, with a subspecialty in "Nursing for Radiation Emergency Medicine" and "Nursing for Medical Radiation."

<Subspecialty>

"Nursing for Radiation Emergency Medicine"

Students who take this program are expected to play a leading role in preparing for a medical facility founded as a center of radiation emergency medicine. This program also aims to develop human resources who can carry out healthcare for residents and radiation risk communication as a specialist with expert knowledge of radiation exposure and protection. Furthermore, they are expected to become individuals who can not only take action in the event of a nuclear hazard, but also prepare and deal with radiation accidents and nuclear terrorism.

"Nursing for Medical Radiation"

Students who take this program are expected to acquire an expert knowledge of radiation for the safety and security of radiology patients and their families, and the lowering of medical, public, and occupational radiation exposure. Additionally, this program aims to develop future nurses who provide high quality nursing care for patients suffering somatic effects of radiation and those who feel unsafe about radiation exposure.



• Exercise using patient simulators



• Distance learning: connect to the university from your work or home for a real-time lesson

The vision and future activities of the "Certified Nurse Specialist Program in Radiological Nursing"

"Radiological Nursing" was classed as a field of educational curricula for certified nurse specialists by the Japan Association of Nursing Programs in Universities in June, 2016. We launched the Advanced Radiological Nursing Specialist Education Program in 2017, after being certified as a Radiological Nursing Education Program.

We will continue to expand our activities with a view to receiving acknowledgement for "Radiological Nursing" as an educational field for Certified Nurse Specialist by the Japan Nursing Association.

Seminar for Radiological Nursing

Since 2013, we have held radiological nursing seminars for nurses and nursing teachers, which have been cosponsored with other institutions, such as the Radiological Nursing Society of Japan and the National Institute of Radiological Sciences. As one of only a limited number of educational centers for radiological nursing, we will continue to provide educational support to people concerned by radiological nursing and its education.



• The 1st Radiological Nursing Seminar 2016

<Subjects of previous seminars>

- "Education and vision for pursuing the sophistication and specialization of radiological nursing"
- "Advanced Practice Nurse & Cancer Clinical Investigation"
- "Recent evidence for usage of medical radiology, and nursing consultation about radiological examination"
- "Recent evidence necessary for nursing in radiological diagnosis"
- "Would you like to learn the basics of radiation? Necessary radiation knowledge for nurses."

Global Human Resources Development Division

Overview

We foster internationalism among instructors in the Graduate School of Health Sciences and promote the admission of international students to the Graduate School by actively promoting personnel and academic exchanges with institutions involved in REM in Japan and around the world.

Objectives

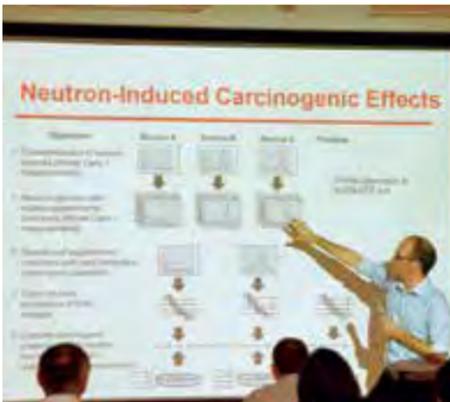
1. Creating and promoting exchange among younger researchers and students as well as creating the systems to support such exchange
2. Supporting the development of human resources capable of creating systems for international exchange and cooperation
3. Developing an educational program to train human resources in REM, open to overseas students
4. Accepting exchange students in the REM course and Radiological Nursing Specialist Education Program

Performance and Plans

- Dispatching young researchers to the CELOD training course of the Stockholm University
- Hosting the "Educational Symposium on Radiation and Health by young scientists"(ESRAH)
- Participating in KIRAMS disaster drills and observation of KIRAMS
- Supporting travel expenses for graduate students to participate in international conferences and workshops
- Holding a joint workshop with Chiang Mai University on health science, and inviting staff from the Faculty of Associated Medical Sciences at Chiang Mai University
- Holding a bilateral exchange seminar with the University of Yaounde I and inviting young researchers from the university
- Conducting observation and research at the University of Hawaii's Translational Health Science Simulation
- Holding lectures on advanced radiological sciences, and inviting front-line researchers from overseas



Lecture on advanced radiological sciences



Educational lecture at ESRAH2016



REM training with KIRAMS