

Educational Development

Throughout the past few decades, both health care delivery and medical education have undergone extensive changes. As a result, our department has been actively involved in educational development, in that we are expected to suggest strategies to reform medical education on the basis of attainment targets. We are also responsible for the execution of proper educational evaluation. Our university has obtained several awards from Grant-in-Aid educational programs supported by the Ministry of Education, Culture, Sports, Science and Technology. Our department has been involved in the preparation of applications, execution and assessment of these programs.

Professor:

Hitoshi Sohma, Ph.D.

Interests: Medical education,
Interprofessional education,
Biomarker, Proteomics

Associate Professor

Wataru Ukai, Ph.D.

Interests: Medical education,
Neuroscience of communication and
social cognition

Assistant Professor

Masaki Sugimura, M.D., Ph.D.

Interests: Medical education, Obstetrics
and Gynecology, Gynecological
cancers

Assistant Professor

Mayumi Sugiura, R.N., Ph.D.

Interests: Medical education,
Instructional design

To date, the university has accumulated a number of achievements, including high recruitment and retention rates of its graduates within Hokkaido. Both schools carry out facility and clinical training with community health care as their primary focus.

1. Interprofessional Education (IPE)

Hokkaido Prefecture, one of the four main islands, is located in the northern part of Japan, and covers a vast geographical area. Hokkaido has an area of 83,000km², nearly equal to that of Austria or twice the size of the Netherlands. The population of Hokkaido is about 5.3 million, similar to that of Denmark or Finland. The population density is 64 people/km² which is very low being 1/7 of the value for the entire country. Hokkaido is a cold place with the average temperature at 9.5°C and covered with snow in winter. It is notable that Hokkaido has many remote areas where medical resources are scarce.

To confront the medical problems in Hokkaido, we have stressed that cooperation among various health professions is vital, and the involvement of not only medical doctors but also a wide range of medical professionals is essential. Thus, since 2005, we have conducted an interprofessional education (IPE) and residential community internship programs in remote areas.

The IPE goals are: 1) strengthening students' interest in community health care; 2) developing a deeper understanding of the community; 3) obtaining an appreciation and sense of empowerment; 4) developing a sense of mission and commitment to community health care. IPE and collaborative practice can contribute to alleviating some of the world's most urgent health problems. Through effective collaboration, health workers can jointly identify the key strengths and expertise of each member, which leads to resolving these problems.

2. Faculty Development (FD)

Increasing demands on faculty to be creative and effective teachers, successful researchers and productive clinicians requires the faculty to obtain new knowledge, skills, and abilities in a relatively short period of time. Faculty development (FD) is recognized by many medical educational organizations as an essential support framework provided to faculty members to assist them in responding to the challenges of their multiple roles and evolving responsibilities. Our department is expected to play supportive roles in organizing FD programs such as teaching workshops and assessment, tutor-training programs and other developmental programs. Currently, FD programs are executed 5-6 times a year.

3. Curriculum Reform

In the last two decades, we have introduced problem-based learning, outcome-based approaches and clinical clerkships. Our department is involved in curriculum reform in cooperation with the executive committee.

4. Educational Evaluation

Educational evaluation is directly linked to the improvement of education, increasing student motivation and teaching effectiveness. Our department plays a central role in conducting educational evaluation. We also aggregate evaluation data and investigate effective evaluation methods to encourage faculty self-improvement.

5. Educational Grants

Procuring educational grants supported by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) is very important in the development of our medical education, especially regarding community health care in Hokkaido. Our department is involved in not only application procedures, but also program execution after grants have been received. We also investigate the effectiveness of evaluations regarding the progression of program execution.

6. Individual Research

a) Hitoshi Sohma

We have implemented a 3.5-year joint IPE program in community health care for undergraduate students within the departments of medicine, nursing, physical therapy and occupational therapy. As an evaluation tool for measuring the effects of IPE for undergraduate students has not yet been developed, we have been attempting to develop an effective assessment method for IPE. There is great interest in exploring what constitutes effective collaborative practice. In addition, I have also engaged in medical research regarding biomarkers for dementia. Loss of cellular Ca²⁺-homeostasis is thought to be one of the causes of cell damage in neurodegenerative diseases such as Alzheimer's disease. Focusing on the several proteins increased in the expression level due to Ca²⁺-damage, I have investigated the functional properties of the protein marker candidates using proteomic and cell biological analyses.

b) Wataru Ukai

I'm in charge of the lower class medical education consisting of community medicine, health care education and IPE programs. The goals of these programs include understanding of the essential role of primary care and team-based medical activity in community medicine, along with interprofessional recognition behavior that recognizes individual self-profession and mutual respect/enhancement among different health professions. To better understand preventive/social medicine and community health, we are conducting regional stay medical education programs for various fields in Hokkaido. For superior understanding of interprofessional behavior, we are conducting various types of group studies for building personal relationships with other professionals between individuals and medical staffs. I am also engaged in neuroscience research, especially focusing on neural network mechanisms of human communication and cognitive function in healthy subjects and mentally ill patients, which I believe will lead to better understanding and development of a methodology to foster deep empathic communication with others, which will allow patients to open their hearts.

c) Masaki Sugimura

1. We implement our community-based undergraduate medical training program upon entry to the university. For the development of the program, we have conducted qualitative studies in view of the issues in remote and depopulated areas. Through evaluation of the present program, we expect that undergraduate program links to postgraduate and life-long education, will lead to the development of the community.

2. In spite of the fact that many reports on education technique for medical communication of nurses have been published, reports pertaining to general communication education for medical students are lacking. Therefore, we offer an educational method based on students' acquisition of medical interview techniques. We also focus on development of systematic, comprehensive communication skills of students before they start to take professional communication education. To develop communicative education we are engaged in the qualitative and quantitative analyses of this subject matter.

3. Simulation-based medical education (SBE) is an important method for stimulating students to learn through experience, repetitive practice and reflection (Benjamin WB. 2013). I have a key role in planning and management of OSCE/CBT and Post-clinical-clerkship (Post-CC) OSCE as well as a training evaluator.

4. Institutional Research (IR) refers to "research conducted within a higher education organization to provide information to support the planning, policy-making, and decision-making." A new IR-office is being established, and I have a key role in preparation of the specific contents of its activities in order to implement IR in this university.

d) Mayumi Sugiura

Instructional Design (ID) aims to optimize the efficiency, effectiveness and *appeal* of instructional learning experiences. ID models provide frameworks to facilitate gaining materials and systems for e-learning, in which designs as well as techniques are needed for needs analysis, development, and implementation. Instructional designers use these models to guide the creation of engaging learning activities based on the science of how people learn. We have developed educational practices based on ID. For example, we examined the effectiveness of the courses with Goal-Based Scenario (GBS) on emergent situations after using contrast media with participation of nurses and radiological technologists. It was demonstrated that nurses with any learning styles in the GBS condition showed significantly higher test performances, compared with ordinary lecture condition results. We also developed teaching material to improve the competence of the preceptor in providing support for a novice nurse, and implemented a training course where video, reflection, lecture, and role-playing are combined. We identified a positive change in the confidence levels of the preceptor through the training course, possibly leading to conceptualization of the preceptor's role.

List of Main Publications from 2013-2018

- 1) Sugiura M, Kogo T. (2013) The Long-term Effect of the Scenario Type Video Learning Materials with Practice in First Aid, Japan journal of educational technology 36(4): 429-438.
- 2) Sohma H. (2014) Community health care training to establish greater mutual understanding between medical students and the community. Symposium at the 5th Global Forum on Human Resources for Health. Prince Mahidol Award Conference 2014, January, Bangkok, Thailand.
- 3) Takahashi Y, Yamamoto T, Sohma H, et al. (2014) Effectiveness of Community-Based Interprofessional Education in the First Academic Year. 8th AAAH Conference, October, Weihai, China
- 4) Kigawa Y, Ukai W, Saito T, et al. Stem cell therapy: a new approach to the treatment of refractory depression. J Neural Transm. 121: 1221-1232, 2014.
- 5) Sohma H, Kokai Y. (2016) Plasma biomarkers in Alzheimer's disease. Update on Dementia. Moretti DV Ed. ISBN 978-953-51-2654-6, Publisher: InTech
- 6) Akasaka H, Sohma H, Miura T, et al. (2017) The Serum Level of KL-6 Is Associated with the Risk of Insulin Resistance and New-onset Diabetes Mellitus: The Tanno-Sobetsu Study. Intern Med, 56(22):3009-3018.
- 7) Sugiura M, Kogo T. (2017) Development of the Course for Preceptors Based on Needs of the Novice Nurses, Japan journal of educational technology 40(4): 337-347.
- 8) Kaneta H, Ukai W, Kawanishi C, et al. Antipsychotics promote GABAergic interneuron genesis in the adult rat brain: Role of heat-shock protein production. J Psychiatr Res. 92: 108-118, 2017
- 9) Abe H, Yada H, Yamamoto T, Sohma H. Development of the Undergraduate Version of the Interprofessional Learning Scale (UIPLS), J Allied Health (in press).