

Kyushu University

Guidelines for Safety in Education

-- Outdoor Activities --

(Ver. 2)

April 2022

【Working Group to Study Course-related Safety Management】

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Introduction

As education at universities and other educational institutions has grown more sophisticated and diverse in recent years, those institutions have come to provide various experience-based learning environments. Although experience-based educational activities provide valuable educational outcomes that cannot be gained through book learning alone, they also entail risks that can lead to serious accidents as a result of things like participant inexperience and inadequate preparation. Consequently, whenever experiments, practicums, drills, fieldwork or other experience-based educational activities are undertaken, it is essential that careful attention be paid to safety/health management and accident prevention/response. For that reason, Kyushu University began work on drafting university-wide educational safety guidelines with the creation of a Working Group (“WG”) to Study Course-related Safety Management under the Education Planning Committee in November 2016.

Given the difficulty of creating general safety guidelines to cover the wide range of experience-based educational activities and the lack of practical application that all-encompassing safety guidelines would entail, it was decided to divide experience-based educational activities into the following three categories and create safety/health management and accident prevention/response guidelines for each.

➤ Outdoor Activities

These include educational activities conducted in a natural environment, whether on or off campus, and educational activities related to primary sector industries (agriculture, forestry, livestock industry, fishery, etc.) that are conducted outdoors or at production sites (plastic greenhouses, livestock barns, boats, etc.).

➤ Off-Campus Activities

These include educational activities conducted off campus, such as interviews in the humanities and social sciences and travel to educational sites, fieldwork, and stays (including overseas research).

➤ Laboratory Activities

These include course and research-related educational activities that are conducted using laboratories.

The Educational Safety Guideline for Outdoor Activities was released in AY2016 (Ver.1). The one for “Laboratory Activities” was released in AY2018 (Ver.1) and that for “Off-Campus Activities” was released in AY2019 (Ver.1). This volume is the English version of the Educational Safety Guideline for Outdoor Activities.

Appropriate safety/health management and accident prevention/response requires meticulous preparation before activities, careful attention during activities, appropriate response in case of an accident, and post-activity reflection and improvement plan review. Consequently, these safety guidelines will be revised as needed. Additionally, various media and opportunities will be used to raise awareness of the safety guidelines, while more practical, education-related safety management will be promoted in the future through courses, training sessions, faculty development (FD), handbooks and so on.

April 2022

Working Group to Study Course-related Safety Management
Kyoichi Otsuki, WG Leader

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Reference Material*:

On the Accidental Death during Kyushu University General Education Course “Introduction to Scientific Field Research: Yakushima Program” ~Causal Investigation and Recurrence Prevention Report (Excerpted)~

*The suggestions and requests to prevent accidents excerpted from the above-mentioned report (hereafter referred as the “Accident Review Report (Excerpted)”).

Chapter 1 **Basic Considerations When Conducting Outdoor Activities**

As education at universities and other educational institutions has grown more sophisticated and diverse in recent years, those institutions have come to provide various experience-based learning environments. Experience-based educational activities are meaningful because they produce valuable educational outcomes that cannot be gained through book learning alone by seeking to impart practical knowledge and strengthen skills through activities like direct observation and examination of objects of learning as well as interviews and hands-on experiences.

On the other hand, experience-based educational activities are accompanied by various dangers and entail risks that can lead to serious accidents. In fact, accidents during experience-based educational activities have been reported across Japan, including some that have involved instances of serious injury and even loss of life. At Kyushu University, there was an accident on September 6, 2016 in which a first-year School of Letters student died (drowned) during “Introduction to Scientific Field Research: Yakushima Program” at the Anbo River in the town of Yakushima in Kumage, Kagoshima prefecture (see the attached reference material “On the Accidental Death During Kyushu University General Education Course 'Introduction to Scientific Field Research: Yakushima Program' ~ Causal Investigation and Recurrence Prevention Report (Excerpted)~”). Consequently, whenever experiments, practicums, drills, fieldwork, hands-on learning or other experience-based educational activities are undertaken, it is essential that careful attention be paid to safety/health management and accident prevention/response.

For that reason, Kyushu University began work on drafting university-wide educational safety guidelines with the creation of a Working Group (“WG”) to Study Course-related Safety Management under the Education Planning Committee in November 2016. Yet such educational activities are wide ranging. This makes it difficult to create general safety guidelines to cover them all, while any such all-encompassing safety guidelines would lack practicality. For that reason, the WG decided to focus on educational activities that comprise experience-based educational activities and divide them into the following three categories with safety/health management and accident prevention/response guidelines for each. While these safety guidelines do include student-initiated outdoor research activities that are conducted as part of their graduation thesis, master's thesis, or doctoral dissertation, or to complete reports for lectures and practicums, these guidelines do not currently include extracurricular or volunteer activities as a part of experience-based educational activities.

➤ **Outdoor Activities**

These include educational activities conducted in a natural environment, whether on or off campus, and educational activities related to primary sector industries (agriculture, forestry, livestock industry, fishing, etc.) that are conducted outdoors or at production sites (plastic greenhouses, livestock barns, boats, etc.).

➤ **Off-Campus Activities**

These cover regular educational activities conducted outside the university. These include educational activities in interpersonal and social relations, as well as transit to, surveys of, and stays at educational sites (including traveling to conduct surveys overseas). Specifically, they are such as interviews, (participation) observation, measurements, clinical training, clinical practice, internships, etc.

➤ **Laboratory Activities**

These include course and research-related educational activities that are conducted using laboratories.

This volume provides safety/health management and accident prevention/response-related guidelines for education-related “outdoor activities.”

For outdoor activities, appropriate safety/health management and accident prevention/response requires:

- Meticulous preparation before activities
- Careful attention during activities
- Appropriate response to an accident
- Post-activity reflection and improvement plan review

No matter how meticulous the preparations or how careful the attention paid, there will be accidents and disasters that occur from unforeseeable circumstances. While endeavoring as much as possible to prevent accidents, we must also be ready to respond to an accident by having procedures in place, establishing chains of responsibility and communication, and conducting emergency drills and simulations.

This guideline provides common safety guidelines for Kyushu University as a whole, as follows:

- Chapter 2, “Before and After Outdoor Activities,” including preparation and planning prior to activities, and post-activity reporting and points-of-improvement review
- Chapter 3, “Safety Measures for Outdoor Activities,” including important points to note about outdoor activities in practice
- Chapter 4, “Safety Measures against Harmful Animals and Plants,” including important points to note about them
- Chapter 5, “When an Accident Has Occurred,” including how to respond to an accident during an activity
- Chapter 6, “Emergency Resuscitation,” including emergency resuscitation procedures for victims

The guideline intends to aid individual schools in safety/health management and accident prevention/response when conducting outdoor activities.

Chapter 2 Before and After Outdoor Activities

2.1 Pre-Activity Survey and Readiness

Practicums and fieldwork involving outdoor activities should anticipate different risks depending on the nature and location of the activities. Therefore, it is very important that leaders (lead faculty members and accompanying faculty and staff) and participants both have a solid understanding of the following:

- What kind of area is the destination?
- What kinds of activities will be conducted?
- What risks are expected during the activities?
- What knowledge, preparations, and readiness are needed to avoid the expected risks?
- What steps should be taken when an accident occurs?

In outdoor activities that are a component of university education, it is to be expected that there will be “first-time” and “inexperienced” participants. Consequently, outdoor activity leaders must prepare an educational program that ensures safety after having understood the participants’ experiences and how much necessary knowledge they possess. Likewise, participants need to properly inform leaders and accompanying participants about the extent of their experience and knowledge related to their outdoor activities and to follow the leaders’ instruction and supervision.

Outdoor activities also require basic management of one's physical strength and condition, so prospective participants need to understand the nature of the activities and keep their physical condition in mind. In some cases, it may even be necessary for them to forgo participation.

For information on the safety management system for students’ overseas travel, such as study abroad, please refer to “Kyudai Seven Steps: Guidelines for the Development of a University-Wide Crisis Management System for Students' Overseas Travel.” And for information on the Covid-19 management, please refer to “Covid-19 Updates and Resources.”

Reference URL

- Kyudai Seven Steps: Guidelines for the Development of a University-Wide Crisis Management System for Students' Overseas Travel (Japanese)

<http://www.kyushu-u.ac.jp/ja/international/abroad/travel/>

- Covid-19 Updates and Resources.

<https://www.kyushu-u.ac.jp/en/crisismanagement/riskmanagement/coronavirus/>

2.2 Safety Management System and Outdoor Activity Planning

2.2.1 Regarding Safety Management System

Safety management of education-related outdoor activities at Kyushu University falls under the general supervision of the Executive Vice President of Education.

Schools serving as the “administrative unit” for Kyushu University courses involving outdoor activities are shown in Fig. 2.1, while the applicable school dean serves as **chief administrator**. The chief administrator supervises safety management for outdoor activities in the given courses.

“school dean” in this guideline refers not only to faculty directors as defined under Article 25 of the Regulations of Kyushu University, but also to center directors as defined under Article 26 of the Regulations.

- (1) The administrative unit for school curriculum and educational programs is the school that organizes the given curriculum, etc. (undergraduate school, graduate school, or center).
- (2) The administrative unit for KIKAN education is the Faculty of Arts and Sciences.
- (3) Item (2) notwithstanding, for KIKAN education courses conducted by the individual schools (undergraduate schools: general education course and certain courses for sophomores and above; graduate schools: special skill development courses), the administrative unit will be the school.

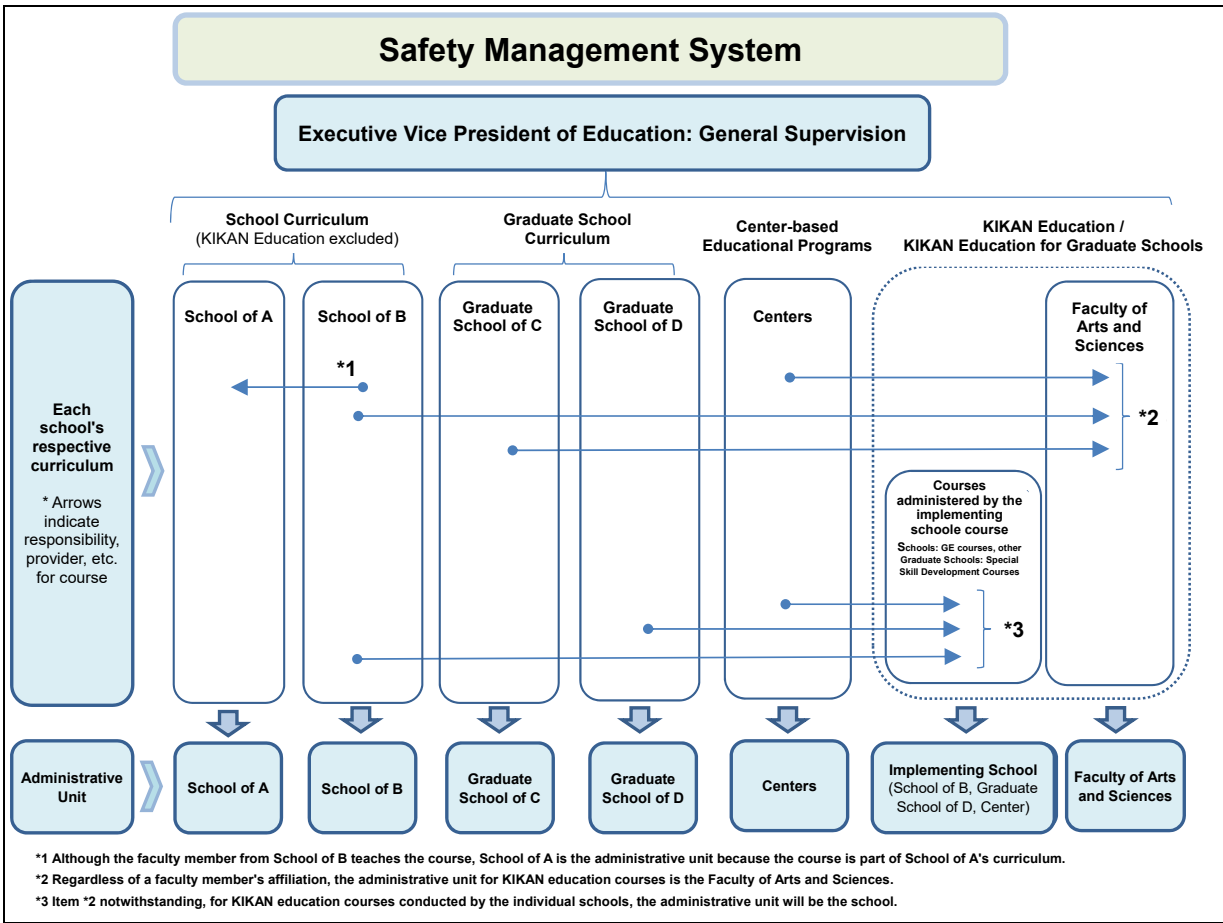


Fig. 2.1 Safety Management System for Outdoor Activities

2.2.2 Regarding Outdoor Activity Planning

The lead faculty member responsible for a course that involves outdoor activities is the **course administrator**. The course administrator will create an outdoor activity plan that includes accident prevention and safety measures through the following processes.

- (1) The course administrator will provide information regarding the nature and location of the outdoor activities on the syllabus, etc as meticulous as possible.
- (2) The course administrator will gather thorough information on the activity site that specifically includes potential risks and accident cases when planning the outdoor activity.
- (3) The course administrator will review the gathered information to determine whether the activity site is appropriate and, depending on the situation, may cancel the outdoor activity or change the activity site.
- (4) The course administrator will arrange for accompanying personnel (faculty, staff, TAs, etc.) based on the number of participants (for instance, one person per 10 participants), assign normal and emergency roles to these leaders, and review their respective duties with all of them. Because leaders themselves may fall victim to an accident, backup roles should also be assigned.

2.2.3 Regarding Notifications Related to Outdoor Activity Plans and Implementations

Outdoor activities are divided into “education-related outdoor activities” and “student-initiated outdoor research activities” with respect to notifications related to outdoor activity plans and implementations.

➤ Education-related Outdoor Activities

These are outdoor activities conducted for a course (e.g. lecture, practicum, drill, hands-on learning) that are accompanied by a faculty or TAs in charge.

➤ Student-initiated Outdoor Research Activities

These are student-initiated outdoor research activities conducted as part of a student's graduation thesis, master's thesis, or doctoral dissertation, or to complete reports for lectures and practicums.

(1) Submitting Activity Planning Forms and Activity Notifications for Education-related Outdoor Activities

When education-related outdoor activities are to be conducted, the lead faculty member (“course administrator”) will develop a plan that includes accident prevention and safety measures for the site and submit an “Activity Planning Form for Education-related Outdoor Activities” to obtain prior approval from the school dean (“chief administrator”). For KIKAN education courses, the approval is to be obtained from the dean of the Faculty of Arts and Sciences (regarding schools that serve as the administrative unit for KIKAN education, see 2.2.1).

Details regarding the outdoor activity itinerary, participants, etc. will be submitted subsequently using an “Activity Notification for Education-related Outdoor Activities.”

1) Submitting Activity Planning Forms (p. 9) for Education-related Outdoor Activities

- (1) The course administrator will develop a plan that includes accident prevention and safety measures for the site and submit an Activity Planning Form for Education-related Outdoor Activities (“Planning Form (Form 1)”) to the chief administrator.

- (2) The period for course administrators to submit the form will generally be during the semester prior to the planned course activity, with actual deadlines to be set by the school.
- (3) The number of accompanying faculty and staff (TAs included) required among participants should be determined according to safety measures to be taken based on the nature of the participants and outdoor activities. For instance, it is advisable that the school establish a concrete standard reflecting the nature of the activities, such as “one supervisor/assistant per 10 participants.”
- (4) The chief administrator will verify whether the activity plan is appropriate for the outdoor activities from a safety perspective, which may include checking with other faculty involved in outdoor activities for their opinions, depending upon the substance of the plan. Based on this review, the chief administrator will decide whether to approve the activity.
- (5) When deciding whether or not to approve the activity, the chief administrator may identify deficiencies in the plan that need improving based on the risks entailed by the activity in terms of the number of faculty and staff (supervisors, assistants), necessary equipment, and advance preparations (including safety measures). If so, the course administrator will be directed to make changes. If such changes cannot be made, the activity will not be approved.
- (6) When reviewing the Planning Form (Form 1) for appropriate safety management, it is advisable to have the leaders of the outdoor activity cross check it.
- (7) Methods of communicating with the course administrator after approval by the chief administrator are determined by the school.
- (8) Any additional requirements regarding the Planning Form (Form 1) are determined by the school.

2) Submitting Activity Notifications (p. 11) for Education-related Outdoor Activities

- (1) After receiving approval per (1) above, the course administrator submits to the chief administrator an Activity Notification for Education-related Outdoor Activities (“Activity Notification (Form 2)”) for the activity to be conducted.
- (2) The period for submitting the Activity Notification (Form 2) will be as early as possible prior to the outdoor activity, with actual deadlines (e.g. “at least one week prior to the start of the activity”) to be set by the school.
- (3) The chief administrator may identify deficiencies that need improving based on changes vis-à-vis the Planning Form (Form 1). If so, the course administrator will be directed to make changes.
- (4) Regarding participants, the appropriate school administrator will verify whether any students require accommodations for a disability, etc. and provide the necessary information to the course administrator.
- (5) Any additional requirements regarding the Activity Notification (Form 2) are determined by the school.

Regarding the forms for the above Planning Form and Activity Notification, schools are permitted to add items for additional information specific to the school's needs. Regarding emergency contact information under “Method of Emergency Contact: Local Site → University” on the Activity Notification (Form 2), an emergency contact liaison within the school (see p. 53) will be decided and that person's phone number will be included on the form.

Ex. During business hours: **, Student Affairs Section Head, Office: 092-802-**
 Outside business hours: **, Student Affairs Section Head, Mobile: 090-***-**

(2) Notifications for Student-initiated Outdoor Research Activities

Regarding student-initiated outdoor research activities conducted as part of their graduation thesis, master's thesis, or doctoral dissertation, or to complete reports for lectures and practicums, students are required in advance to submit a Student Activity Pre-Notification for Education-related Outdoor Activities ("Student Activity Notification (Form 3)"). Using the Student Activity Pre-Notification (Form 3) provided on page 15, schools will set and follow their own administrative procedures based on the specific nature of the outdoor research activities, including how to utilize the notification form and make students aware of the policy.

2.2.4 Notice When Conducting Outdoor Activities

When outdoor activities are to be conducted, the lead faculty member ("course administrator") will carefully read chapters 3 through 6 for important information and accident safety precautions related to outdoor activities and undertake thorough precautions to ensure safety based thereon.

- (1) The course administrator will provide advance instruction and guidance regarding outdoor activities to participants and ensure full understanding of safety/health management and accident prevention/response during outdoor activities.

*See Chapter 3, "Safety Measures for Outdoor Activities" and Chapter 4, "Safety Measures against Harmful Animals and Plants"

- (2) To avoid confusion and stragglers when there are large numbers of people participating, it is advisable to divide participants into teams, each with its own team leader and deputy leader, and establish a sense of mutual understanding within the team using self-introductions or the like.

*Safety checks and accident response in group activities are conducted more smoothly at the team level.

Groups can become separated in an accident or disaster, so it may also become necessary for students to respond individually to accidents, etc. (See Chapter 5 for information about what to do "When an Accident Has Occurred")

- (3) The course administrator will collect participant questions and concerns during the advance instruction/guidance and revise the planned safety measures to reflect student perspectives.
- (4) Once revised to reflect student perspectives, the course administrator will review the safety measures with all activity leaders.
- (5) Because pre-notifications and permissions may be required depending on the nature and location of the activities, including notifications to fire and police services, the designated procedures must be reviewed and completed well in advance of the activity.

2.2.5 Actions to Take after Outdoor Activities

After an outdoor activity, the lead faculty member ("course administrator") will complete the following steps.

- (1) Return Arrival Report

As necessary, the course administrator will promptly submit a return arrival report to the school following completion of an outdoor activity.

(2) Reflection Meeting

After an outdoor activity, the course administrator will hold a reflection meeting with activity leaders and others to compile reflections on safety measures (using information from student surveys and elsewhere as well) and produce an improvement plan that can be used to better conduct future outdoor activities.

(3) Near-miss Information

Near-miss Information (Form 4) should be submitted to the school if there is information that would contribute to outdoor activity safety measures.

2.2.6 Insurance

As a general rule, students should enroll in Personal Accident Insurance for Students Pursuing Education and Research (PAS, Gakkensai in Japanese) in case of injury as participants and Liability Insurance coupled with PAS (LSR, Futaibaisai in Japanese) in case of causing damage to property or injury to another party, or insurance equivalent to these. Depending on the nature of the course, enrollment in insurance will be treated as a condition for taking it.

PAS and LSR cover compensation for on- or off-campus accidents that occur during practical training conducted as classes. Moreover, enrollment in insurance may be a condition for participation in programs such as internships, while accidents during extracurricular events or travel to or from university are also eligible for compensation; therefore, the university recommends that students enroll as soon as they matriculate. However, as compensation coverage under PAS is limited, it is also necessary to consider other insurance appropriate to the nature of the off-campus activity and its location.

Verification of PAS and LSR, etc. enrollment by students participating in an outdoor activity will be conducted by the school using the “official use only” section of the Activity Notification (Form 2)..

* Reference

- Personal Accident Insurance for Students Pursuing Education and Research (PAS) / Liability Insurance coupled with PAS (LSR)

Japan Educational Exchanges and Services website (Japanese):

<http://www.jees.or.jp/gakkensai/index.htm>

- Examples of off-campus activity insurance and mountain-climbing insurance: Montbell off-campus activity insurance and mountain-climbing insurance (Japanese)

<http://hoken.montbell.jp>

(No.)

Planning Form (Form 1)

Date: MM/DD/YY

To: Dean (Chief Administrator)

Dean Approval Column

Affiliation: _____

Position: _____

Lead Fac. Mem. (Course Adm.): _____

Tel. (Ext.): _____

E-mail : _____

*Depending on the course,
approval by dean or center director

Planning Form for Education-related Outdoor Activities

Course Name		
Course Session	Spring / Summer / Fall / Winter / 1st Semester / 2nd Semester / Other ()	
Period of Outdoor Activity		
(Expected Participants in Outdoor Activity) Number of Students and Instructors	Students: person(s)	Instructors: person(s) (Details:)
Outdoor Activity Overview (Location, Activity, Etc.)		
Safety Measures for Outdoor Activity	{For individual items that need consideration, provide concrete information and precautions}	
Other Important Information to Note	{Provide other important information to note related to the course, including past near-miss incidents and instances of accidents}	
Official Use Only	- Faculty contacted after approval by dean () - Activity Notification (Form 2) submitted ()	

- This form must be submitted to the school by the designated deadline.
- **After submitting this form, an Activity Notification (Form 2) must be submitted to the school by the designated deadline.**

(No.)

{Example}

Planning Form (Form 1)

Date: MM/DD/YY

To: Dean (Chief Administrator)

Affiliation: Department of **, School of **

Position: Professor

Lead Fac. Mem. (Course Adm.): KYUDAI Taro

Tel. (Ext.): 092-802-**** (99-****)

E-mail:@m.kyushu-u.ac.jp

Dean Approval Column

*Depending on the course,
approval by dean or center director

Planning Form for Education-related Outdoor Activities

Course Name	*** Fieldwork Practicum II	
Course Session	Spring / Summer / Fall / Winter / 1st Semester / 2nd Semester / Other ()	
Period of Outdoor Activity	July (3 days)	
(Expected Participants in Outdoor Activity) Number of Students and Instructors	Students: 15 person(s) approx.	Instructors: 3 person(s) (Details: 2 faculty, 1 technician)
Outdoor Activity Overview (Location, Activity, Etc.)	Students will study animal and plant life at Mt. *** in *** District, *** Prefecture and examine the distinctive ecosystem of the *** region.	
Safety Measures for Outdoor Activity	{For individual items that need consideration, provide concrete information and precautions} - Prior to the on-site practicum, students will receive advance instruction on risks and safety measures in the area - Before conducting the practicum, several instructors will visit to the site to verify its safety - Precautions against heat-related illnesses: We will take care to rest in the shade, maintain fluid intake, and maintain sodium intake. - Precautions against bees: We will take care to avoid provoking any bees we encounter, move quietly to a safe distance, and keep away from the nest. In the event someone is stung, we will have a poison remover on hand. - During the outdoor activity, we will use hard hats and other safety equipment.	
Other Important Information to Note	{Provide other important information to note related to the course, including past near-miss incidents and instances of accidents} - In the past, a student slipped in the mud and fell down.	
Official Use Only	- Faculty contacted after approval by dean () - Activity Notification (Form 2) submitted ()	

- This form must be submitted to the school by the designated deadline.
- **After submitting this form, an Activity Notification (Form 2) must be submitted to the school by the designated deadline.**

(No.)

Activity Notification (Form 2)

Date: MM/DD/YY

To: Dean (Chief Administrator)

Official Verification

Affiliation: _____

Position: _____

Lead Fac. Mem. (Course Adm.): _____

Activity Notification for Education-related Outdoor Activities

Course Name	
Period of Outdoor Activity	
Itinerary (Please be as specific as possible and/or include attachments)	
With/Without Overnight Stay	Without / With (location, contact information, etc.:)
Changes to Plan (*1)	{Complete this section if any changes are being made to the outdoor activity “overview,” “safety measures,” “important information to note,” “number of instructors,” or other sections of the Planning Form (Form 1)}
Method of Emergency Contact (Contact information, means of contact, telephone number, etc.)	(* Local Site → University:
	University → Local Site:
If Outside Japan: Contact Information for the Japanese embassy, consulate or permanent mission (or equivalent) in the country	
Other Important Information to Note	
Official Use Only	- Planning Form (Form 1) submitted () - PAS & LSR enrollment for participating students ()
	- Students needing accommodations for disability, etc. () If yes → Information has been provided to course administrator ()
	- (*1) Changes to plan, if any, reported to dean () - Return arrival verification ()

(*1) To be completed in advance by the school

List of Participants (Faculty/Staff: person(s); Students: person(s))

- List leader (faculty/staff/TA) and students separately.
- Leader fills in name, affiliation, and mobile phone number etc.
- If there are multiple leaders, place a © mark next to the course administrator.
- Write “TA” next to the names of TAs.
- The student list (students' names, student numbers, mobile phone numbers) should be obtained from the student affairs section.
- If there is a change in the list information (absence, mobile phone number, etc.), the course administrator will correct the change and submit a copy of the corrected participant list to the department student affairs section.
- The course administrator and an emergency contact liaison within the school keep the same list of participants and prepare for emergencies.
- A separate sheet can be attached to the student list.

(No.)

{Example}

Activity Notification (Form 2)

Date: July 1, **

To: Dean (Chief Administrator)

Official Verification

Affiliation: , Department of **, School of **

Position: Professor

Lead Fac. Mem. (Course Adm.): KYUDAI Taro

Activity Notification for Education-related Outdoor Activities

Course Name	*** Fieldwork Practicum II
Period of Outdoor Activity	Date: July 15, 20** - July 17, 20**
Itinerary (Please be as specific as possible and/or include attachments)	See attached
With/Without Overnight Stay	With (location, contact information, etc.) -Hotel: Minshuku **, -Address: ** 1-8, ** District, ** Prefecture, Japan -Tel.: 095-**-****
Changes to Plan (*1)	{Complete this section if any changes are being made to the outdoor activity "overview," "safety measures," "important information to note," "number of instructors," or other sections of the Planning Form (Form 1)} - Instructor details: Change from technician → TA (meeting with TA has been completed)
Method of Emergency Contact (Contact information, means of contact, telephone number, etc.)	(*) Local Site → University: During business hours: KYUDAI Hanako, Student Affairs Section Head, Office: 092-802-**** Outside business hours: KYUDAI Hanako, Student Affairs Section Head, mobile: 090-1234-**** University → Local Site: Prof. KYUDAI Taro, mobile: 090-2233-****
If Outside Japan: (Contact Information for the Japanese embassy, consulate or permanent mission or equivalent in the country)	
Other Important Information to Note	
Official Use Only	- Planning Form (Form 1) submitted () - PAS & LSR enrollment for participating students () - Students needing accommodations for disability, etc. () If yes → Information has been provided to course administrator () - (*1) Changes to plan, if any, reported to dean () - Return arrival verification ()

(*) To be completed in advance by the school

{Example}

Notification (Form 2, backside)

List of Participants

(Faculty/Staff: 2 person(s); TA: 1 person(s); Students: 16 person(s))

- List leader(faculty/staff/TA) and students separately.
- Leader fills in name, affiliation, and mobile phone number etc.
- If there are multiple leaders, place a ☉ mark next to the course administrator.
- Write “TA” next to the names of TAs.
- The student list (students' names, student numbers, mobile phone numbers) should be obtained from the student affairs section.
- If there is a change in the list information (absence, mobile phone number, etc.), the course administrator will correct the change and submit a copy of the corrected participant list to the department student affairs section.
- The course administrator and an emergency contact liaison within the school keep the same list of participants and prepare for emergencies.
- A separate sheet can be attached to the student list.

Faculty, staff, etc.

☉ ** ** (Prof., School of **) 090-***-***
 ** ** (Prof., School of **) 080-***-***
 ○○○○(TA) 090-○○○-○○○

Students	Name	ID	Mobile	Legal Guardian contact (tel.)
(1)	*****	*****	090-△△△-△△△	090-○○-○○
(2)	*****	*****	080-△△△-△△△	092-○○-○○
.				
.				
.				
(16)	*****	*****	090-△△△-△△△	080-○○○○-○○

(No.)

{Reference}

(Form 3)

Date: MM/DD/YY

To:

Student Name: _____

Student ID: _____

Instructor: _____

Student Activity Pre-Notification for Education-related Outdoor Activities

Activity Period	
Outdoor Activity Overview (Location, Activity, Etc.)	
Safety Measures for Outdoor Activity	
Schedule (Please be as specific as possible and/or include attachments)	
With/Without Overnight Stay	Without / With (location, contact information, etc.:)
Students or Other Accompanying Persons	
Method of Emergency Contact (Contact information, means of contact, telephone number, etc.)	Local Site → University:
	University → Local Site:
If Outside Japan: (Contact Information for the Japanese embassy, consulate or permanent mission or equivalent in the country)	
Insurance Name/Type	
Other Important Information to Note	

Note: A form like this would be used by students to give notification regarding education-related student-initiated outdoor activities. Using this form as a reference, schools should set and follow their own administrative procedures, including the form, as suits their specific needs.

Near-miss Information (Form 4)

Date: MM/DD/YY

Near-miss Information (Education-related Outdoor Activities)

Course Name				
Number of Participants	Faculty/staff: person(s)	TA: person(s)	Students: person(s)	Other: person(s)
Reporter	<input type="checkbox"/>			
Date & Time				
Location				
Description, Countermeasures, Outcomes				
Recommendations				
Remarks				

- This is not an accident report. Please provide any information that you think will contribute to better safety measures.
- The reporter's name will not be disclosed. In the case the WG needs to contact, if you do not mind, please check the box.
- Content for release from "Description, Countermeasures, Outcomes" and "Recommendations" will be edited by the WG.

Near-miss Information (Education-related Outdoor Activities)

Course Name				
Number of Participants	Faculty/staff: 4 person(s)	TA: 1 person(s)	Students: 30 person(s)	Other: 0 person(s)
Reporter	<input type="checkbox"/> KYUDAI Taro			
Date & Time	MM/DD/YY, approx. 14:00-16:00			
Location	Mt. **, ** Village, ** County, ** Prefecture			
Description, Countermeasures, Outcomes	<p>During the practicum, we were attacked by hornets. We immediately retreated to a location where the hornets would not follow, but one faculty member and three students were stung by hornets.</p> <p>Although we were carrying a poison remover, we had only one set, so it took a long time (20 minutes) to remove the venom and apply first aid to all the members who were stung.</p> <p>We were aware that one student and the one faculty member had no bee/wasp antibodies, but it was unknown where the remaining two students possessed antibodies because they had not undergone antibody testing.</p> <p>No one suffered an allergic reaction to the venom, but we still sought treatment quickly at the nearest medical facility. * Travel time from outdoor activity site to the medical facility: 1h20m</p> <p>Faculty, staff, TAs and students who were not stung stopped the practicum for the day and returned to the lodgings.</p>			
Recommendations	<ul style="list-style-type: none"> • When a group is attacked by bees/wasps, there is a chance that more than one person will be stung. Consequently, it is advisable that multiple people carry poison removers and first-aid kits. * For example, in the case of our practicum, this would have meant one set carried by the leader, and one set per each team (total of five sets). • When there is a chance of being stung by bees/wasps during a practicum, it is advisable that participants undergo bee/wasp antibody testing in advance 			
Remarks				

- This is not an accident report Please provide any information that you think will contribute to better safety measures.
- The reporter's name will not be disclosed. In the case the WG needs to contact, please check the box if you do not mind.
- Content for release from "Description, Countermeasures, Outcomes" and "Recommendations" will be edited by the WG.

Chapter 3 Safety Measures for Outdoor Activities

3.1 General Safety Measures

In the outdoors, even small accidents during activities can lead to fatalities. Never overestimate your experience and always endeavor to ensure safety, respond to disasters, manage health, and gather information in the ways described below. To be prepared for unexpected events, it is essential to have an adequate number of leaders for the given number of participants, and to moderate activities with remaining energy. Important information regarding outdoor activities in general is provided below.

3.1.1 Safety Measures at the Planning Stage

The following are important points to keep in mind during the process of planning outdoor activities.

- (1) The lead faculty member (“course administrator”) and accompanying faculty and staff will thoroughly discuss the content of the activities with each other and create a detailed plan of action to be written up on the Planning Form (Form 1) and submitted to the school dean (“chief administrator”).
- (2) Regarding student-initiated outdoor research activities related to degree work, etc., the student and supervisor will thoroughly discuss the activities with each other and create a plan of action that will be submitted by the student on the Student Activity Notification (Form 3).
- (3) Outdoor activities are often constrained by time, so overly ambitious plans should be avoided. In particular, when many of the participating students have little experience with outdoor activities, the itinerary should not be a rushed or tight one.
- (4) As necessary, the course administrator should visit the outdoor activity site in advance to check for hazardous spots and then supervise participants to ensure they avoid them.
- (5) If the fieldwork/research will be conducted at a location not frequently used for activities, information about the site should be gathered in advance.
- (6) An emergency contact network (between participants, between the local site and the university, etc.) should be put in place.
- (7) To be ready in the event of an accident, information about the emergency hospital nearest to the activity site should be researched, including its distance (travel time), contact information, and the time it takes for emergency services (e.g. ambulance) to arrive.
- (8) While mobile phones and walkie-talkies can be useful means of communication in an emergency, there are locations where they do not work, so means of communication in an emergency should be confirmed in advance.
- (9) Equipment, safety gear, first-aid kits, etc. for the outdoor activity should be prepared and inspected. Damaged items should be repaired or replaced, and missing items should be re-supplied.

3.1.2 Safety Measures Prior to Outdoor Activities

Prior to conducting outdoor activities, prepare for the outdoor activities with the following points in mind.

- (1) The lead faculty member (“course administrator”) should complete the Activity Notification (Form 2)

based on the Activity Planning Form (Form 1) and submit it to the dean (“chief administrator”).

- (2) When listing the names of participants on the Activity Notification (Form 2), be sure to include contact information (mobile phone number, etc.) for both the participants and their legal guardians. Contact information may have changed between the time participants enrolled and the time of their participation in the outdoor activity, so the participants should be asked to confirm their information. Any international students participating in the activity should be consulted to establish a method of contacting their legal guardian in the event of an emergency.
- (3) The participants are generally required to enroll in Personal Accident Insurance for Students Pursuing Education and Research (PAS, Gakkensai in Japanese) and Liability Insurance coupled with PAS (LSR; Futaibaisai in Japanese) or equivalent insurance. The Student Affairs Section of the school keeps records of PAS & LSR enrollment, so the participants enrollment in PAS & LSR should be verified through the Student Affairs Section when the Activity Notification (Form 2) is submitted. Depending on the nature of the course, the insurance may be required as a condition of enrollment in the course by the course administrator.
- (4) If students requiring an accommodation for a disability or other such reason are participating in the outdoor activities, their needs should be reviewed, and preparations should be made to address them.
- (5) The emergency contact network (between participants, between the local site and the university, etc.) to be used during the outdoor activity should be verified.
- (6) The course administrator should arrange for an adequate number of accompanying leaders (faculty, technicians, TAs, etc.) based on the number of participants to ensure enough attention can be paid to the safety management of all participants by reducing the burden on individual leaders.
- (7) The leaders should thoroughly discuss the activities with each other, strengthen their mutual understanding of safety management, and clarify their respective roles. Because leaders themselves can also fall victim to an accident, backup roles should also be designated.
- (8) The leaders should prepare and re-inspect the equipment, safety gear, first-aid kits, etc. for the outdoor activity. Damaged items should be repaired or replaced, and missing items should be re-supplied.
- (9) In anticipation of an emergency during which an ambulance may not be available, the leaders should know emergency treatment and have a basic first-aid kit on hand for such emergency treatment.
- (10) The participants should be directed to prepare personal-use equipment and clothing suitable to the outdoor activity. Some number of extra personal-use equipment and clothing items should be brought, just in case any participants forget to bring their own personal-use equipment and/or clothing.
- (11) Because there is always some risk of a traffic accident occurring en route to the site or some other sudden accident occurring at the site, the participants should be directed to bring with them their health insurance cards or photocopy thereof.
- (12) The participants should be reminded to take good care of their health so they will be healthy enough at the time of the outdoor activity to participate. Students with chronic conditions should be consulted with in advance regarding their ability to participate.
- (13) During the orientation, etc. at the start of activities, good relationships to enable communication between the participants should be built using greetings, self-introductions, ice breakers or the like. Relationships should be created not only so leaders know the names of participants but also so participants can address

each other by name.

- (14) To avoid confusion and stragglers when there are large numbers of people participating, it is advisable to divide the participants into teams, each with its own team leader and deputy leader, and to create a system for safety at the team level.

3.1.3 Safety Measures at the Start of Outdoor Activities

The following are important points to keep in mind at the start of outdoor activities.

- (1) The lead faculty member (“course administrator”) will collect weather forecast information for the period of the outdoor activity and cancel the activity if it is determined that the outdoor activity will be difficult to conduct.
- (2) The leaders will thoroughly review the information on the Activity Planning Form (Form 1) and Activity Notification (Form 2).
- (3) The leaders will check to see that the necessary equipment, safety gear, first-aid kits, etc. are ready.
- (4) All participants are advised to wear name tags.
- (5) The purpose and procedures for the activity, as well as important information and roles regarding safety management, should be reviewed with all participants.
- (6) The current health of participants should be verified. The students whose current health makes it impractical to participate in the outdoor activities should be stopped from participating.
- (7) As necessary, the leaders should distribute the equipment, safety gear, first-aid kits, etc. to the participants, explain how to use the items, and have participants use them when necessary.
- (8) The leaders should check that the participants have the equipment, clothing, and nourishment expected to carry for personal use. If they are missing any personal-use equipment, clothing, or nourishment, these should be provided to them for the duration of the activity from the supply of extra items.
- (9) It is important to ensure physiological needs of participants are met. The location of restrooms and time they can be used should be communicated.
- (10) Depending on the activity, warm-up exercises should be conducted.

3.1.4 Safety Measures during Outdoor Activities

The following are important points to keep in mind during outdoor activities.

- (1) The leaders should carry copies of the Activity Planning Form (Form 1) and Activity Notification (Form 2) and review the information contained in them.
- (2) The participants should always act to ensure safety.
- (3) The activities should be conducted with attention to the participants inexperienced at the outdoor activities.
- (4) Refraining from overly exhausting activities, the activities should be conducted in good health.
- (5) Wear appropriate equipment and clothing for the outdoor activities and avoid wearing accessories, perfumes, etc. (to prevent accidents and keep from attracting insects, etc.).
- (6) Avoid solitary action. If solitary action cannot be avoided, give Notification in advance.
- (7) When traveling outdoors by car where often road surfaces are poor and the road shoulders may tend to

crumble, great care should be exercised while driving.

- (8) It is important to realize that unpredictable circumstances can arise in weather-related disasters. It is very important to track weather conditions in the region where the outdoor activities are held. When conducting outdoor activities, weather conditions should be checked when possible by mobile phone, radio, etc., with careful attention paid to sudden changes in weather. Careful attention should also be paid to changing weather conditions during the activities themselves. When weather conditions change suddenly, do not stubbornly press ahead with activities.
- (9) During the outdoor activities, keep in mind that small risks can lead to major accidents. Anyone who notices a potential risk, no matter how small, should mention it to fellow participants.
- (10) If any machinery or equipment will be used, the operating instructions should be reviewed so it is used properly without accident.
- (11) During the outdoor activities, take timely a roll call of the participants and confirm the safety of them.

3.1.5 Safety Measures after Outdoor Activities

After an outdoor activity, the lead faculty member (“course administrator”) will complete the following steps.

- (1) Return Arrival Report

As necessary, the course administrator will promptly submit a return arrival report to the school following completion of an outdoor activity.

- (2) Reflection Meeting and Survey

After the outdoor activity, the course administrator will administer a survey to participants asking about their concerns during the outdoor activity and what could be improved to ensure safety and prevent accidents. The course administrator will also hold a reflection meeting with the accompanying leaders to compile their reflections and produce an improvement plan based on student surveys and other information, as well as record the details of any accidents that occurred, and apply them to safety measures in future outdoor activities.

- (3) Near-miss Information

Near-miss Information (Form 4) should be submitted to the Student Affairs Department Student Affairs Planning Division through the school if there is information that would contribute to outdoor activity safety measures.

- (4) Organizing Equipment and Supplies

All equipment, safety gear, first-aid kits, etc. that were taken to the activity should be inspected. Damaged items should be repaired or replaced, and missing items should be re-supplied. The items should then be stored properly for use in future outdoor activities.

3.2 Activity-specific Safety Measures

In addition to the general safety measures discussed in the previous section, outdoor activities require safety measures that are specific to the location and nature of the activities to be conducted. These guidelines divide outdoor activities into the two broad categories of land and water environments and describes various safety measures for outdoor activities specific to each of these environments.

3.2.1 Land Environments

(1) Forests and Mountains

Forest and mountain activities are conducted at various times of the year for various purposes in areas with vastly different natural conditions, from low-lying areas to mountains with elevations of several thousand meters. Consequently, safety measures vary widely depending on the nature of the activities and the conditions in which they are conducted. To ensure thorough safety/health management and accident prevention, adequate preparation and appropriate action for the various imaginable risks is required. This section provides general instruction specific to activities in forests and mountains.

1) Prior to Activities

- (1) When conducting activities in forests and mountains, prior permissions and notifications are often required. Before completing the Planning Form (Form 1), verify the condition of the activity area by contacting the administration office of the activity area and complete any designated procedures in advance.
 - When using University Forests of Kyushu University or other Universities for activities, a request for permission should be made in advance to the University Forest office.
 - *For Kyushu University Forest: Permissions for test use, entering forests, staying dormitory etc. should be obtained.
 - URL <http://www.forest.kyushu-u.ac.jp/index.php?riyounotebiki>
 - For activities at the Conserved Green Areas in Kyushu University Ito Campus: Permission to use should be obtained in advance from the Kyushu University Campus Planning Office.
 - For national parks, quasi-national parks, prefectural nature parks, etc.: Notifications required by the Ministry of the Environment or prefectural parks office should be verified and submitted if necessary.
 - For activities in national forests: Since permission for entering the forests is generally required, consultation with the district forest office or branch office in advance should be made.
 - *Most of national parks in mountain area are national forests.
 - To entry privately owned forests: Permission is required from the owner.
 - If activities entail mountain climbing, a Mountain Climbing Registration Form (Notification) should be completed and submitted to the local police for the mountain climbing area, the mountain climbing notification box placed near the trailhead, or one's workplace, and so on.
 - Restricted areas should be verified in advance with local governments, etc. If applicable, conducting the activities after obtaining permissions from the organization in charge.
- (2) When completing the Planning Form (Form 1) and Activity Notification (Form 2) for the activities conducted in forests or mountains, the following items in particular should be considered in addition to general safety measures.
 - To the extent possible, information should be gathered about the local terrain features, whether there are walking paths and forest trails, road conditions, modes of transportation, mobile phone signal reception, the nearest medical facilities, past accidents and disasters, and so on, to consider potential risks and how to deal with them. In particular, the latest information should always be

obtained regarding weather, river, and road conditions.

- The plan is not proceeding on schedule frequently because travel to the destination takes longer than expected, and bad weather interfere the activity. Particularly when many of the participating students have little experience with outdoor activities, things will often take much longer than expected. Thus, setting a schedule with sufficient time having spare day. A shortened schedule should also be prepared in advance in case things do not go according to the planned schedule.
 - Mountain weather can change suddenly and activities after dark are hazardous, so activities should be planned around an early departure and early return.
 - In the case of student-initiated outdoor activities, students with little outdoor activity experience should avoid doing activities by themselves and be accompanied by faculty, staff, or very experienced student. Because accidents can happen, activities are better conducted in groups, rather than by oneself (groups of three or more are advisable, so that one person can provide aid while another calls for help).
 - For the activities involving camping, rock climbing, or snow trekking, someone with experience should always be accompanied. A detailed plan should be made, and adequate safety equipment should be prepared.
 - For the activities that require a long-term stay, optional extra days and rest days should be included.
 - While mobile phones can be useful means of communication in an emergency, there are locations deep in the mountains and upstream where they do not work. Therefore, other means of communication such as two-way radios and satellite phones should be considered. An adequate supply of extra batteries and/or charging devices should also be packed.
 - Clarify the faculty and staff at the university headquarters to contact/respond in the event of an accident. These faculty and staff should have a full understanding of the activity itinerary in advance and be prepared to respond promptly in the event of an emergency.
- (3) Conditions in forest and mountain areas are always changing. Until just before the start of activities, information and weather conditions of activity area should be collected. If adequate safety cannot be ensured, the activity plans should be changed or suspended. Information is often provided by police, local governments, and other governmental agencies via the internet. Publicly available live webcam images are also useful. For lectures and practices, the activity area should be visited just before the activities to identify any hazardous locations. If any exist, such hazards should be mitigated by putting up signs, marking the area a no-entry zone, modifying course plans, or other such means to keep participants away.
- (4) By reading books related to mountaineering, etc., regularly learn about natural disasters and dangerous/venomous plants and animals, and how to deal with them.
- Weather-related disasters: Typhoons, torrential downpours, mudslides, gusting winds, lightning strikes, etc. In winter, snowstorms, deep snow, cold, avalanches, etc.
 - Volcano-related disasters: Eruption, release of toxic gases.
 - Slope-related disasters: Falling rocks, slides, avalanches, etc.
 - Valley and creek-related disasters: Rising water (flash floods), sudden depths, waterfall basins, mud, snowy ravines, etc.

- Animal-related disasters: Bears, boars, mamushi pit vipers, bees/wasps (hornets and paper wasps), centipedes, moths (tussock moths, *Monema flavescens*), trombiculid mites, hard ticks, mountain leeches, etc.
 - Toxic plant-related disasters: Lacquer trees, *Urtica thunbergiana*, thorny plants, *Sasamorpha borealis* bark, cedar and cypress pollen, Japanese larch bark, bamboo stumps, etc.
- (5) Forest and mountain activities require physical stamina. Efforts to strengthen basic physical stamina should be made regularly to be in good shape prior to participation.
 - (6) In hinterlands and mountain areas, ambulances are often not readily available in an emergency. Guidelines for emergency resuscitation should be read carefully, and first-aid measures should be learned by taking life-saving courses.

2) Supplies and Equipment

A checklist for the following types of supplies and equipment should be made, and the items should be prepared in advance. If any machinery or equipment will be used, it should undergo inspection and maintenance in advance to ensure they work properly. Required supplies and equipment will vary depending on the location, timing, and nature of the activities involved, so supplies and equipment should be supplemented as needed.

- (1) Basic clothing includes long pants and long-sleeve shirts to keep skin from being exposed, a hat, and gloves (work gloves, rubber, leather), purpose-appropriate shoes (trekking shoes, rubber boots, work tabi, safety shoes, hiking boots). Short socks (ankle socks) should not be worn because they are often unable to protect skin. Accessories, perfumes, etc. should be avoided (to prevent accidents and keep from attracting insects, etc.).
- (2) Rain gear, a change of clothes, and warm clothing should be prepared in the weather turns suddenly bad.
- (3) Hypothermia can occur in mountain areas even in summer. Therefore, rain gear preparations and measures to keep warm that are appropriate to the conditions should be undertaken.
- (4) When engaging in activities on snowy mountains, items such as crampons, ice axes, beacons, probes, etc. should be worn/carried as needed. However, first-time users should take pre-training in advance.
- (5) Shoes should be checked in advance for holes and tears, as well as wear on the soles. In particular, special care must be paid to old hiking boots, which often have problems with the soles separating from the shoe.
- (6) Helmet should always be worn where there is risk of falling rocks, tree branches or other falling objects, risk of falling trees, or risk of tripping.
- (7) Life jackets should be worn if the schedule includes crossing rivers without bridges and there is a risk of being submerged in water by slipping or falling.
- (8) Items such as bug spray, masks, goggles, sunglasses, eye-drops, sunscreen, GPS device, compasses, topographical maps, ropes, headlamps, flashlights, etc. should be carried as needed.
- (9) When engaging in activities at high altitude, pulse oximeters and painkillers should be carried. For long-term activities, taking items such as oxygen supply devices and Diamox tablets should be considered.
- (10) For emergency communications, devices such as mobile phones, two-way radios, or even satellite phones (depending on the location) should be carried. However, be aware that there may be areas where

even these will not work.

- (11) For the activities in a distant or high mountain, carrying tarps or tents for shelter should be considered, depending on objectives and the season.
- (12) Even on day trips, items such as water, food, headlamps, and protection against cold should be readied in case of unforeseen circumstances.
- (13) First-aid kits for emergency treatment should be carried. Poison remover is useful in case that someone is stung by a bee/wasp, etc. Individuals previously diagnosed by a medical facility as susceptible to anaphylactic shock should carry an auto-injector (EpiPen) for emergency use if stung by a bee/wasp.

3) Important Information to Note during Activities

Revision or cancel of the plans are required for forest and mountain activities in some cases depending the weather, participant health, and work progress. The lead faculty member (“course administrator”) and accompanying leaders must prioritize safety/health and accident prevention over educational objectives.

- (1) Mobile phones and radios should be used to track weather conditions, and careful attention should be paid to any changes in the weather. When sudden changes are forecast, do not stubbornly press ahead with activities. If it is raining, or rain is in the forecast, pay attention to rising water levels and flash floods along creeks. Pay special attention to weather conditions upstream. If thunder is heard, take prompt refuge in a safe place. During snow season, pay careful attention to snowstorms and avalanches.
- (2) Forest and mountain activities generally take place under challenging conditions, so attention must be paid to the following symptoms of fatigue and various forms of impairment that can arise.
 - Physical exhaustion: Physical strength can suddenly diminish as the result of prolonged activity under stressful conditions, lack of sleep, etc.
 - Gastrointestinal disorders: When physically exhausted, hard-to-digest foods can cause indigestion that further diminish a person's strength.
 - Psychological stress: As various impairments converge, psychological stress builds up, resulting in a diminished ability to make sound decisions.
 - Injury: Contusions, fractures, sprains, torn Achilles tendon, cuts, sunburn, burns, frostbite, snow blindness, etc. Appropriate treatment for these conditions should be given using the first-aid handbook as a reference.
 - Sunburn: Sunshine and UV rays are strong at higher elevations. Therefore, the use of sunscreen and sunglasses is essential to protect the skin and eyes. Broad-brimmed hats are also effective.
 - Heat-related illnesses: There are various categories of illness, including sunstroke and heatstroke, all caused by excessive sweating under hot-temperature conditions or prolonged activity beyond the body's ability to regulate its temperature. Attention should be paid to resting in the shade and maintaining fluid and sodium intake.
 - Hypothermia: This refers to a condition in which a person's core temperature has fallen below 35°C. The lower the body temperature, the more severe the illness becomes. Advanced hypothermia (28°C and below) can be life-threatening, as breathing can stop and lethal arrhythmia can occur. Hypothermia can occur when cold winds hit a person whose body has gotten wet in heavy rains, etc. Towels and a change of clothes should be packed and used to dry off and change.

- Frostbite (cold-temperature injury): Frostbite occurs when a portion or all of a person's body is exposed to low temperatures. Necessary treatment involves soaking the body in lukewarm water, but an expert should be consulted.

The course administrator and accompanying leaders should always be aware of participants' physical condition. If a participant appears not to be feeling well prior to an activity, the person should be stopped from participating, made to rest, or even taken to a medical facility, as appropriate. If a person becomes unable in the middle of an activity to continue as a result of fatigue, not feeling well, an injury, etc., some number of the accompanying leaders should stay with the person to treat their condition or the activity itself should be suspended.

- (3) Because activities at high elevations (above 2000m) are likely to cause headaches, nausea, dizziness, sleep impairment or other symptoms of altitude sickness (mountain sickness), the schedule must take altitude acclimatization into consideration. When full-scale high-altitude activities are to be undertaken, bringing a pulse oximeter and taking Diamox tablets should be considered. When altitude sickness occurs, symptoms like mild headaches can be effectively treated with Loxonin or other such painkillers. If symptoms are serious, the person should rest quietly, and oxygen should be administered. If symptoms do not clear up, it may be necessary to move the person to a lower elevation.
- (4) For group activities, faculty leaders and/or experienced members should be at the front and back of the group to ensure none of the participants get lost.
- (5) During activities, attention should be paid to dangerous/poisonous animals and plants, such as bees/wasps, venomous snakes, bears, lacquer trees and so on (see Chapter 4).
- (6) On cliffs and steep slopes, attention should be paid to falling rocks, sliding, etc. When climbing slopes in groups, people in the lead should be careful not to release rocks behind them. People climbing behind others on the slope should look out for falling rocks from above. If rocks are falling, a warning should be called out in a loud voice.
- (7) Activities in valleys and around creeks require careful attention. Attention should be paid to rocks that are wet or covered in moss as they are especially slippery.
- (8) Do not lean on trees carelessly as trees may be rotted or dead, have thorns, or have harmful insects.
- (9) If any machinery or equipment will be used to take measurements or perform work, the operating instructions should be reviewed to ensure proper use.
- (10) When traveling by car on mountain roads, an experienced driver should drive the car with fastidious care as mountain roads are often poorly maintained and the shoulders tend to crumble. On gravel roads, drive slowly with great care as cars can be surprisingly hard to control and accidents are not uncommon.
- (11) If getting lost and unable to use a mobile phone, do not roam around. Instead, get to the most visible location available and wait calmly for help. With such situations in mind, careful consideration should be given to clothing and gear with colors that are easily identifiable.
- (12) Mountain ridges should be avoided when camping or bivouacking (sleeping in the open) as they can be hazardous.
- (13) If a campfire was made, be sure it is completely extinguished using dirt or water.

(2) Farmland

1) Ensuring Safety

Safety measures for research activities on farmland are essentially similar to those for other outdoor activities, except:

- (1) Work-appropriate clothing should be worn. Basic items include long pants, long-sleeve shirts, and hats, as well as shoes that are suited to the type of field (rubber boots, water tabi, etc.). Accessories, perfumes, etc. should be avoided (to prevent accidents and contamination of agricultural products, and to keep from attracting insects, etc.).
- (2) Weather conditions should be checked, and work suspended if lightning strikes are in the forecast.
- (3) Permission from a field's manager should be obtained before conducting research in a field, and the area should be checked to be sure no agricultural work is being done.
- (4) The field's shape should be checked, and any hazardous spots identified, including the location of irrigation/drainage channels and ditches in the case of paddy and other agricultural fields, and any slopes in the field in the case of orchards. Do not take the liberty of approaching hazardous spots.
- (5) Pesticide application histories should be confirmed, and fields avoided where pesticides have been recently applied.
- (6) Use only safe machinery and equipment by making sure to perform inspections and maintenance. Farming implements (hoes, sickles, pruning shears, etc.) should be cared for properly. Also, count the number of items taken into the field and be sure to check that no items get left behind.

2) Health Management

- (1) Anyone with a physical ailment needs to report it (they should also heed information related to allergies or other existing conditions).
- (2) Find a shady area to rest. If no shade will be available, pack a tent or parasol that can be used to take a rest while working.
- (3) Watch out for high temperatures and high humidity and be sure to take adequate fluids. Timely breaks and fluid intake are especially important if working in a hot house.
- (4) Rain gear and cold-weather protection should be used whenever raining or cold.
- (5) Always have a first-aid kit on hand and use it to treat the ailment or injury. Additionally, a report to the chief administrator should be made promptly and medical attention sought at a medical facility as soon as possible.

(3) Grasslands and Wilderness

There are times to visit mountains and remote islands for research on wild animals, grass, and plants. Basic safety measures for research activities in grasslands and wilderness are generally the same as for (1) Forests and Mountains. For grasslands and wilderness, the followings cares should be taken in addition:

- (1) Weather forecasts should be checked, and careful attention paid to the weather. If heavy rains and strong winds are in the forecast, or if thunder is occurring, the fieldwork should not be conducted.
- (2) Access roads to grasslands may not be well maintained. Boulders and other fallen debris, cracks, potholes, and bumps in the road, crumbling shoulders, and so on may be encountered. Information from local people should be obtained in advance and great care exercised.

- (3) The area should be left immediately when the weather changes suddenly or earthquakes occur, as these can cause boulders to fall from road embankments or the ground to split.
- (4) Heavy rains can raise water levels to the point that access roads become flooded, so information should be obtained in advance and the topographic features carefully noted.
- (5) Wet ground and grassy surfaces are slippery, so there is a risk that vehicles unwittingly driven into such areas may become stuck. Vehicles should proceed with due caution.
- (6) Pastureland must not be entered without forethought due to domestic animal infectious disease measures and management. Permission must be obtained from the manager.
- (7) Many plants, such as *Ranunculaceae* and *Euphorbiaceae*, contain toxins. Some even contain toxin levels that are hazardous. Some wild plants, such as *Anemone flaccida* (which is edible) and *Aconitum* (which is poisonous), are easily confused. A thorough knowledge of plants should be exercised, and plants should not be put in one's mouth casually.
- (8) Exercise caution in grasslands and wilderness as there may be creeping or climbing plants with thorns that can injure a person or damage clothing. Thin leather gloves are effective at preventing injury to the palms of one's hands.
- (9) Dangerous creatures may be encountered in grasslands and wilderness, such as bees/wasps, ticks, arachnids, snakes, bears, and boars. For precautions against these creatures, see Chapter 4. Hard ticks will often penetrate clothing through small openings and make bites that are not immediately noticed. For that reason, it is advisable to use a repellent over clothing as well. In northern grasslands and wilderness, foxes and other animals, and their feces, can be carriers of disease. Care should be taken to avoid accidentally encountering them or stepping on their feces.
- (10) Grasslands and wilderness often provide no protection from the sun. If engaging in hours-long observations, adequate care should be paid to preventing heat-related illnesses.

(4) Geological Surveys

Geological surveys entail the identification of strata and rocks in areas of exposed rock and the observation and recording of geological structure, as well as the collection of rock and fossil samples. Consequently, geological surveys are often conducted in areas where rocks are generally exposed, such as streams, rivers, coastlines and other water environments and forest roads and hiking trails in mountainous areas. Please refer to other sections of the guidelines for important information on these different areas. This section provides important information specific to geological surveys.

1) Prior to Survey

- (1) At the stage when the survey plan is being drafted, the area to be surveyed should be checked to see whether it has been designated a protected area. If it has, then a check should be made to see what kind of protected area is entailed. Because geological surveys collect samples, permission to enter, survey and collect samples must be obtained from the appropriate state or local government agency in accordance with their procedures when the location involves a quasi-national or national park, geopark, natural monument, world heritage site, etc. Geological information on national parks, quasi-national parks, natural monuments, and other such sites can be obtained on the Geological Society of Japan website (<http://www.geosociety.jp/outline/content0064.html>).

- (2) Permission to enter mines and quarries must be obtained in advance by contacting the manager (or company). Abandoned and closed mines must not be entered without permission. When entering a mine or quarry, the “Acceptance Safety Education Standards” and important information/written warnings from the manager must be strictly observed.
- (3) The most up-to-date information should always be obtained on the area to be surveyed. It is especially important to know the weather, temperature, tide levels, etc. for the day of the survey and to forgo the survey if the weather is bad. By no means should a survey be conducted if there is a possibility of lightning strikes, given that hammers are carried as a part of geological surveys.

2) Equipment

- (1) While geological surveys are conducted in areas of different kinds, the following equipment should always be carried no matter what kind of area in an effort to ensure the safety of the survey.
 - Hammer, chisel, clinometer (clinocompass), magnifying glass, sample bags, camera, topographical map, field notebook, rain gear (raincoat), first-aid kit, pack, mobile phone, health insurance card or photocopy thereof
 - If needed, a hard hat, goggles, extra glasses, GPS, rope, headlamp, satellite phone, etc. should also be brought.
- (2) Shoes will vary depending on the site. Trekking shoes and hiking boots are basic, while rubber boots may be needed in some situations. In water environments (e.g. streams, rivers, coastlines), it is advisable to use shoes or work tabi with felt or spiked soles. If needed, spats and gaiters should be worn.
- (3) For surveys in hot weather, precautions against heat-related illnesses should be taken, including protecting the head from direct sunlight using hats, hard hats, towels, etc. An adequate supply of fluids should also be brought, and care should be taken to ensure timely fluid intake.
- (4) For surveys in cold areas, adequate protection from the cold as needed should be brought and emergency rations, bivouac sack, etc. should also be prepared just in case.

3) During Surveys

- (1) When outdoors, current location and direction should always be known using a topographic map, clinometer, GPS or other such means. In groups, information should be confirmed by all group members.
- (2) Once an exposure has been observed, samples collected, slopes measured, and so on, move promptly away from the rock face. It is advisable to record notes and perform other such work away from the rock face and never turn one's back to it.
- (3) When striking rock with a hammer, first check that there is no one in the vicinity. Next, if the rock breaks, check that neither you nor others are at risk from falling rocks. It is especially important to watch out for falling rocks when taking rock samples from a slope. Goggles should be worn as needed to protect the eyes and area around them from fragments of flying rock.
- (4) It is advisable to wear gloves when using a chisel to collect rock samples. Never use the edge of a pick hammer in place of a chisel as it can damage the hammer and lead to injury.
- (5) Rocks collected from exposures often have sharp surfaces so adequate caution should be exercised when handling them. Collected rock samples should be placed in a sample bag and carried in one's pack so both hands remain free while moving.
- (6) If surveying rock exposures along roadways, pay careful attention to automobile traffic. When done

surveying the exposure, take care that any scattered rock fragments have been cleaned up so no passing vehicles suffer a flat tire.

- (7) At former and abandoned mines where debris, etc. may fall or slide hazardously into pits, a hard hat should always be worn and careful attention paid when walking, observing, and collecting samples.
- (8) Faces should not be approached because there is a risk they may collapse. If a face must be approached for some reason, the mine should be consulted, and thorough safety measures taken as needed.
- (9) Stay away from large vehicles and conveyor belts at mines and quarries.

4) Accommodations

- (1) Accommodation sites should be secured prior to the survey. If utilizing a facility for accommodations, the emergency exits should be checked upon arrival. If the same facility will be used for long-term accommodations, a storage area for rock samples should be procured.
- (2) If tents will be used for accommodations during an outdoor survey, necessary equipment should be brought based on a general assessment of the circumstances, including method of arrival (automobile, walking), nature of the site (camp site, other), and number of people in the group. Careful attention should be paid to tent selection and food, including extra. For long-term surveys, plans also need to be made for storing rocks at the base camp and shipping them back.
- (3) When camping, special care should be taken when using fire. Leftovers and food that might attract animals should be stored inside the tent before going to sleep. While sleeping, pay careful attention to rainfall, snowfall, lightning strikes, etc.

(5) Volcanic Surveys

When surveying an area with a volcano, especially an active volcano, it is necessary to anticipate and prepare for dangers specific to volcanic activity in addition to the important information on geological surveys provided in (4). One is to be prepared for the regularly occurring geothermal energy and volcanic gas; another is to be prepared for unexpected eruptions. Either can potentially lead to serious accidents and it is best to act in groups, rather than independently, for the sake of perceiving dangers and performing rescues swiftly.

1) Advance Precautions

- (1) The state of volcanic activity should be verified with the Japan Meteorological Agency (JMA) and local government and regular communication maintained with them throughout the survey. Attention should be especially paid to the state of volcanic activity and volume of volcanic gas at the volcano. Always check JMA information on active volcanoes ahead of time.

http://www.data.jma.go.jp/svd/vois/data/tokyo/STOCK/activity_info/map_0.html

- (2) Confirm the location of the evacuation facility on a map.
- (3) Check the weather conditions ahead of time. Wind speed and direction are also important information.
- (4) Prepare gear (two-way radios, hard hat, gas mask, flashlight, headlamp).

2) Geothermal Energy and Volcanic Gas Precautions

- (1) In geothermal areas, the earth's surface becomes soft as it undergoes argillic alteration; and it is not rare that temperatures 10cm below the surface reach 100°C. Always watch where you walk, as a careless step can submerge your foot into the ground where high temperatures may cause a burn. Be especially careful not to jump.

- (2) Small pools of hot water can lay hidden out of view beneath grasses, so always pay attention.
- (3) Always carry work gloves and be sure to wear thick rubber gloves whenever measuring high-temperature hot springs and hot gases.
- (4) Carry a mask (gas mask, if possible) and a gas monitor.
- (5) Pay attention to surrounding vegetation and keep away from sources of volcanic gas (sources of volcanic gas will often have no vegetation or dead vegetation).
- (6) Never enter a basin or channel when no wind is blowing (volcanic gas is heavier than air and may accumulate).
- (7) Be mindful of smells in the air (hydrogen sulfide and sulfur dioxide are odoriferous volcanic gases).
- (8) If you step into the ground and you believe the high temperatures have caused a burn, immediately remove your shoe and sock and chill your foot in water. Confirm the locations of cold water ahead of time.

3) Eruption Precautions

- (1) During a survey, confirm the locations of evacuation huts, shelters, rock shelters, and other places suitable for evacuation.
- (2) Evacuate in a direction away from the crater (however, do not head into a channel or basin; this is to avoid pyroclastic flows).
- (3) If volcanic ash and cinders are falling heavily, remain in a safe place.
- (4) Watch for cinders and avoid being struck (especially in a 1-2 km range from the crater).
- (5) Use a pack, hard hat, etc. to protect your back and head.
- (6) Cover your mouth with a wet towel to avoid inhaling hot air and smoke.
- (7) Use the two-way radio to communicate whether you are safe and where you are located.
- (8) Flashlights and headlamps are useful if smoke from the eruption is blocking the sun.

4) Other

- (1) Unconsolidated volcanic ejecta and lava domes are unstable, so watch out for debris avalanches and falling rocks from above (attention must be paid when smaller rocks come rolling down even in windless conditions.).
- (2) For the reasons in (1), take care to avoid falls, sprains, and fractures when transporting measurement devices or other heavy equipment.

(6) Forestry Activities

When performing forestry activities and forest management (e.g. logging, silviculture, etc.), field trip and investigation, the following items should be kept in mind in addition to the safety measures for forests and mountains in (1).

1) Ensuring Safety

- (1) In addition to clothing and equipment listed in (1), protective gear appropriate to the work should also be used. Certified safety headgear (hard hat) should also be worn.
- (2) Before the work begins, procedures should be discussed, as well as how vehicle operators and surrounding workers will communicate.
- (3) Safety signs should be placed in highly visible places within the work area and entry should be restricted

only to those involved.

- (4) When performing work, such as logging, that involves hazardous disturbances, the area should be cleared of obstructions and safety verified prior to commencing the work. Every effort should be made to prevent disasters before they happen by ensuring the environment has been readied, including securing a place to take shelter, just in case something happens.
- (5) Care should be taken to provide places to rest out of the sun (e.g. under shade trees) when working in hot summertime conditions, and in heated facilities when working in wintertime.
- (6) Adequate space between people should be maintained when traveling to work locations or walking around work areas. When walking on slopes or slippery surfaces, care should be taken to carry machinery and equipment in a way that makes it possible to react if need be.
- (7) When working on slopes, adequate spacing should be maintained to avoid working directly above or below others.
- (8) When performing work at a height of 2m or more, always wear a safety belt. Additionally, no one should enter the area directly below (hazard area).

2) Preventing Fires

- (1) Never use fire near a place where fuel or flammable chemicals are stored. Refueling should be performed on a level surface with the engine stopped, and fuel should not be spilled.
- (2) Cigarette butts and burnt matches should not be discarded on the ground.
- (3) If a campfire was made, be sure it is completely extinguished using dirt or water.

3) Using Work Machinery and Equipment

Various kinds of work machinery and equipment are used in forest management and support operations for forest-related educational activities. Such machinery and equipment are used in accordance with the Industrial Safety and Health Act and related regulations, yet various dangers do exist, and sometimes serious accidents may even occur. Important information is provided below.

- (1) Machinery and equipment operators must have completed a skill training course, special education, or safety and health education as prescribed by the Industrial Safety and Health Act.
- (2) The following kinds of machinery and equipment inspection and maintenance must be regularly performed.
 - Safety inspections must be performed before and after hoes, sickles, hatchets and other such kinds of equipment are used.
 - When using chainsaws, weed cutters, etc., the blades must be properly sharpened. In addition to inspecting them before and after use, regular monthly inspections should also be performed.
 - Periodic inspections must be performed on machinery requiring periodic inspection in accordance with laws and regulations.
- (3) Machinery and equipment should be stored in a safe place and care should always be taken to keep the area tidy and organized.
- (4) A pre-operation inspection should always be performed prior to using the machinery or equipment and the general operating precautions should be strictly followed.
- (5) Machinery and equipment should not be operated more than their stipulated capacities and output. When setting down machinery or equipment momentarily during work, be sure the machinery or equipment

is stable.

- (6) Stay outside the turning radius of machinery and stay out from under suspended loads.

For more information, consult “Safety Manual, 3rd Edition” by Kyushu University Forest.

URL <http://www.forest.kyushu-u.ac.jp/pdf/anzenmanyual3.pdf>

(7) Agricultural Activities

When engaging in agricultural activities, keep the following points in mind in addition to the farmland-related safety measures provided in section (3).

1) Ensuring Safety (General)

- (1) Persons engaging in agricultural work should seek to raise their awareness of safety through active participation in agricultural work-related training workshops and courses and to engage safely in agricultural work through strict adherence to the Labor Standards Act, Industrial Safety and Health Act, Agricultural Chemicals Control Act, Road Transport Vehicle Act, Road Traffic Act, and other related laws and regulations.
- (2) Work-appropriate clothing should be worn. Basic items include long pants, long-sleeve shirts, and hats, as well as shoes that are suited to the type of field (rubber boots, water tabi, etc.). Items that might become caught in machinery, such as neck towels, neck scarves, headband towels, etc., should not be worn. Take the initiative to wear protective gear, including protective head and foot gear. Accessories, perfumes, etc. should be avoided (to prevent accidents and contamination of agricultural products, and to keep from attracting insects, etc.).
- (3) While working, keep in mind dangers posed to other workers and people around you and pay careful attention to whether safety is adequately ensured.
- (4) To the extent possible, when very hazardous work is being performed, the work should not be performed by one person alone. Rather, an assistant should be assigned to reduce the workload and call early attention to hazardous conditions. If a person must work alone for unavoidable reasons, steps necessary to ensure the early discovery of any accidents should be taken, such as providing clear information to others about the nature and location of the work.
- (5) Weather conditions should be checked, and work suspended if lightning strikes are in the forecast.

For general information on agricultural work safety, see also “Agricultural Machinery Operation Safety Manual” (2007, pp. 3-11) by the Kyushu University Farm.

2) Ensuring Safety (Agricultural Machinery and Farm Tools)

- (1) Persons without the necessary qualifications to operate machinery will not use the machinery to perform work.
- (2) Make sure that regular inspections and maintenance are performed on machinery and equipment. Whenever an irregularity is found in the safety mechanisms or elsewhere, necessary adjustments or repairs or other such steps should be taken.
- (3) Prior to use, machinery and equipment should be inspected, including any safety mechanisms such as safety guards and protective covers, and their method of operation and installation should be reviewed in advance. Thought should also be given to potential accidents.
- (4) Exposure to the vibrations and noise that accompany the operation of machinery is both physically and

mentally tiring, so long periods of work should be avoided, and breaks should be taken appropriately.

- (5) Farming implements (hoes, sickles, pruning shears, knives, etc.) should be cared for properly and caution exercised when using them. Also, be sure to check that no items get left behind in the fields.

For detailed instructions on specific work machinery and equipment, see “Agricultural Machinery Operation Safety Manual” (2007, pp. 12-32 and p. 34) by the Kyushu University Farm.

3) Ensuring Safety (Agricultural Chemicals)

- (1) The label and safety data sheet (SDS) for agricultural chemicals should be read carefully and the standards for use strictly followed.
- (2) Maintain a use log and consider storage location. The storage cabinet for poisonous and toxic substances must be locked. Large quantities of agricultural chemicals should not be purchased at a single time, and unneeded chemicals should be disposed of promptly.
- (3) Chemical-resistant work clothes that cover the body should be worn, as should rubber or plastic gloves, goggles, and mask when dissolving or spreading chemicals (to avoid exposing skin).
- (4) Towels and water should be at the ready to immediately wash one's hands and face and gargle, in the event agricultural chemicals get into the eyes or mouth. Be prepared to make contact immediately when an accident has occurred.
- (5) Do not spread chemicals in hot weather, when feeling ill, or after consuming alcohol or medicine.
- (6) Pay careful attention the surrounding environment when spreading chemicals, including keeping the time of day and wind direction in mind. If conditions are poor, do not spread them.
- (7) After use, the agricultural chemicals container should be disposed of properly according to the warnings on the label and safety data sheet (SDS).
- (8) After spreading chemicals, wash hands and face with soap and gargle. Clothing used when spreading agricultural chemicals should be washed separately from other clothes.

For more information, see “Agricultural Machinery Operation Safety Manual” (2007, p. 33) by the Kyushu University Farm.

4) Health Management

Health management during agricultural activities is comparable to health management on farmlands in subsection 2) of section (3), except:

- (1) Persons engaged in agricultural work need to make a regular effort to manage their health, including adequate rest and periodic physical examinations. When a person is ill, a medical doctor or other health management specialist should be consulted to decide, based on the condition of the person's health, what steps to take to ensure no accidents occur, such as excusing the person from the work or adjusting work procedures and responsibilities.
- (2) Expectant and nursing mothers as well as young persons should not handle chemicals or perform work that entails high risk, such as lifting heavy items, working high up, or working in an environment with significant vibration.

In addition to the above, see “University Farm Practicum Instruction Handbook, 1st Edition” (2014, pp. 3-5) by Japanese University Farm Council (<https://jufc1949.sakura.ne.jp/publications.html>)

(8) Livestock Activities

1) Ensuring Safety

- (1) During activities, wear easy-to-work-in clothes, work attire, boots, and rain gear that suits your body and the weather condition.
- (2) Be aware of weather conditions and temperatures and avoid outdoor training when lightning or other hazards are expected.
- (3) When handling livestock, a faculty or staff member must attend the activities to prevent accidents.
- (4) The handling of livestock should only be allowed after the behaviors and traits of the livestock have been thoroughly explained and understood.
- (5) Always implement activities with taking steps to improve safety.
- (6) Before activities begin, the work area safety should be verified, and the environment arrangement should be properly readied.
- (7) Before activities begin, faculty and staff should provide a thorough discussion of the activities so that the activities are performed with thorough mutual understanding of what the activities entails and how safety will be ensured.
- (8) When going out, permission must be obtained from a faculty or staff member, who should be told the destination and purpose. Faculty and staff will stress the importance of ensuring safety while out.
- (9) To ensure safety in an emergency (volcano, earthquake, etc.), the location of evacuation areas and storage area for hard hats and dust masks should be verified.
- (10) Hard hats and dust masks should always be kept at accommodations facilities and practicum sites. Dust masks should be replaced with new ones every two years.
- (11) Use only safe machinery and equipment by making sure to perform inspections and maintenance.
- (12) An AED should always be available and inspected regularly to ensure it is always ready for use in an emergency.
- (13) In anticipation of an emergency during which an ambulance may not be available, emergency resuscitation procedures should be known, and essential first-aid items should always be on hand, including adhesive bandages, gauze, triangular bandage cloth, antiseptics, bandages, antipyretics, and anti-diarrheal medication.

2) Health Management

- (1) Find a shady area to rest.
- (2) In high temperatures, be sure to rest appropriately and take adequate fluids.
- (3) In cold temperatures, be sure to take measures against the cold.
- (4) Always have a first-aid kit on hand and use over-the-counter medications as appropriate when not feeling well. If symptoms are severe, call an ambulance or be seen at the nearest medical facility.

3) Infectious Disease Management

- (1) Thorough precautions against infectious disease should be taken around livestock barns in accordance with the Act on Domestic Animal Infectious Diseases Control.
- (2) A hygiene management area should be set, and entry restricted to involved persons only.
- (3) When entering the hygiene management area, car tires, boots, etc. should always be disinfected and special work clothes worn.
- (4) The rules regarding infectious disease control should clearly indicated and entry to the hygiene

management area allowed only after they have been explained outside the area.

- (5) In principle, except when necessary, persons having already entered elsewhere related to other livestock on the same day, as well as persons having returned from overseas within the past week, are prohibited from entering the hygiene management area.
- (6) In principle, clothing and shoes used overseas within the past four months should not be allowed inside the hygiene management area.
- (7) Bird netting should be installed at the entry to the cowshed. Efforts should also be made to have measures in place to prevent rats from getting in, including the use of rat control substances or other materials.
- (8) Livestock barns and other areas within the hygiene management area should be thoroughly disinfected with lime.
- (9) If any abnormalities in the livestock are noticed, the livestock should be examined a veterinarian. If an infectious disease is detected, it should be immediately reported to the livestock hygiene service center and take steps in accordance with laws and regulations.

3.2.2 Water Environments

(1) Water Environments in General

In water environments, small accidents during fieldwork can result in fatalities. Differences in water and body temperature can cause even strong swimmers to lose strength and end up in life-threatening situations. Never overestimate your experience and always be sure to take safety equipment and gather advance information in the ways described below. To be prepared for unexpected events, there should be an adequate number of leaders for the given number of participants, and activities should be conducted while everyone still has energy. Safety measures for water environments in general are provided below.

1) Ensuring Safety

- (1) In water environments, wear safety gear that provides buoyancy, such as a wetsuit or life jacket. Everyone participating in an activity should be made to wear safety gear. When wearing waders, the belt should be securely tightened to prevent water from entering the waders and a life jacket with extra buoyancy should be worn. This will ensure buoyancy in the event a person falls in the water. Safety measures appropriate to the surroundings should be taken, such as wearing a hard hat in places where falling rocks are a risk.
- (2) When performing work outside the water, temperature-adjustable, easy-to-work clothing that fits well should be worn (e.g. long pants, long-sleeve shirt, rain gear, hat, etc.) and a lifebuoy or rope kept on hand for rescue in the event something unexpected happens. It is advisable to wear a life jacket during work or in locations where slipping or falling into the water can be occurred.
- (3) Even in summer, wearing long pants, a long-sleeve shirt, and a hat will help prevent being stung by insects or getting cut by thorny plants along riverbeds (in a fall, injuries should also be less severe).
- (4) As a precaution against heat-related illnesses in the summer, careful attention should be paid to fluid intake. In winter, when working in the water, not only should steps be taken to protect oneself against the cold (e.g. wearing an underlying beneath a wetsuit, wearing a drysuits, etc.) but work times should

also be shortened to prevent body temperature from falling. To prevent hypothermia and frostbite, even if working on land such as riverside or sand bar, special care should be taken to maintain proper body temperature and immediate steps should be taken if a person gets wet.

- (5) Always check the weather, river water levels, sea conditions, etc. in advance to ensure that activities can be undertaken in safe conditions. If stormy weather is forecast, outdoor activities should not be undertaken. It is also important to visit the site in advance. It is also extremely helpful to ask local experts and residents about prior accidents and to understand in advance the potential dangers in a particular water environment.
- (6) Be prepared for unexpected situations when undertaking outdoor activities in water environments. Work should be performed by two or more people and there should be an adequate organizational structure in place so rescue help can be called immediately when the unexpected happens.
- (7) While devices like mobile phones and walkie-talkies can be a useful means of communication in an emergency, there are locations where they do not work, so means of communication should be considered in advance. In anticipation of an emergency during which an ambulance may not be available, emergency resuscitation procedures should be known, and a first aid kit should be on hand.
- (8) When working in water environments, gloves and tabi with felt or spiked soles are recommended for hands and feet. However, footwear must be chosen appropriately for the situation (e.g. athletic shoes and boots may be more comfortable and safer for work in very shallow areas and along riverbeds, while spiked tabi are not suitable for work on boats). Be aware of the many things that might injure hands and feet, such as glass shards on river bottoms, oyster shells around estuaries, and barnacles around rocky reefs. If items must be carried, a backpack or other solution should be used so hands can be kept as free as possible. In the rain, it is advisable to use a raincoat, rather than an umbrella.
- (9) In water environments, careful attention should always be paid during activities to where one steps, whether in the water or on land. Whether in the water or on land, moss and algae can grow around streams, rocks, and concrete structures, making them dangerously slippery. Not only can beds of loose rock and gravel be slippery with moss and algae but they can also shift under a person's weight, causing the person to lose footing. In locations where sand has collected immediately after dredging, the river bottoms can be soft to the point that feet sink deeply into them. Near estuaries where silt has collected, feet can sink into the ground, making it difficult to walk. Proceed slowly.
- (10) In water environments, special attention should be paid to the following kinds of natural disasters. Most are affected by the weather, so never fail to check weather conditions. Also, disasters related to forests and forestry that are the same are not mentioned here, so please read that section carefully. The most effective means of preventing disasters is always to pay careful attention at the local site and act with caution. Additionally, accidents occurring in water environments (e.g. near-drowning) are life-threatening, so a basic knowledge of emergency resuscitation procedures needs to be learned. Likewise, emergency treatments for poisonous animals should also be researched.
 - Weather-related disasters: Rising waters in a torrential rain, flash floods, mudslides, gusting winds, lightning strikes, high waves, tsunamis, etc.
 - Animal-related disasters: Red stingrays, devil stingers, striped eel catfish, blue-ringed octopuses, mamushi pit vipers, bees/wasps (hornets and paper wasps), trombiculid mites, hard ticks, etc.

- (11) For education in water environments, it is important to provide opportunities for pre-activity education. It is advisable to provide detailed instruction on a laboratory or class basis to students have recently joined a laboratory or have no fieldwork experience. Classroom learning is not enough for some kinds of work, such as fieldwork using fishing gear and diving operations. In such cases, it is important to provide training opportunities prior to conducting actual fieldwork activities to develop enough technique to perform the work safely.

2) Health Management

In water environments, care should be taken to avoid overly strenuous activities since challenging natural conditions during activities can exert a heavy physical and mental toll, leading to the following kinds of fatigue and various impairments. To be in good physical condition for the fieldwork, efforts such as avoiding excessive alcohol consumption and getting adequate sleep the day before should also be made.

- (1) Heat-related illnesses: There are various categories of illness, including sunstroke and heatstroke, all caused by excessive sweating under hot-temperature conditions or prolonged activity beyond the body's ability to regulate its temperature. Attention should be paid to resting in the shade and maintaining fluid and sodium intake.
- (2) Hypothermia: Heat is lost in water at a rate 20 times faster than in air, so hypothermia is a concern during prolonged work and in winter when water temperatures are low. When working in water under conditions such as those above, it is advisable to wear a highly insulated wetsuit or a drysuits that keeps water out. If a person begins to shiver, they should stop working, use a towel to dry completely off, change into dry clothes, and move to a warm location.
- (3) Seasickness: Seasickness is caused by the motion of a vessel on the waves. It can be avoided by getting good sleep the day before and, for people who tend to suffer from motion sickness, by taking motion sickness medication ahead of time.
- (4) Decompression sickness, burst lung, and nitrogen sickness: These are conditions that a diver may suffer. With decompression sickness, the person should be transported immediately to a medical facility with a recompression chamber. With burst lung, the person should be seen by a doctor. Oxygen inhalation is effective for emergency treatment of decompression sickness and burst lung. Nitrogen sickness generally occurs during dives at depths of 40m or more and resolves itself in a short time if the diver promptly resurfaces. When resurfacing, the diver should stay calm and resurface at the appropriate speed.
- (5) Other: Exhaustion, gastrointestinal disorders, psychological stress, contusions, fractures, sprains, torn Achilles tendon, cuts, sunburn, burns, frostbite, snow blindness, etc. (see also the health management section for land environments).

(2) Streams and Rivers

When engaging in outdoor fieldwork at streams and rivers, there are specific precautions, such as responding to rising water levels and falls from steep slopes, that need attention in addition to the safety measures for "Water Environments in General." This section discusses specific items that need attention in water environments involving streams and rivers. If using a boat on the river, see also the section below on "Boat Activities."

- (1) One major risk that can arise in stream environments is falling or slipping from embankments and steep slopes, so caution must be exercised, including safety equipment. A thorough preliminary inspection of the water environment should also be conducted before entering the area. A safe access route helps to prevent falls and slips. Downstream river features (location of weirs, waterfalls, riffles and pools, shoals, etc.) in the area to be surveyed should also be checked. It is important in advance to have a place on land that can be accessed easily in the event someone is swept downstream.
- (2) When there is rainfall with rising water levels or lightning strikes, outdoor activities should not be conducted. Rivers can have places where the flow rate fluctuates wildly, so caution should always be paid to the current. If the water level begins to rise, suspend work and immediately evacuate to a location such as a riverbed or dike to avoid any water threats.
- (3) When engaged in activities on a river, immediately get to land if the dam's water release sirens are ever sounded. Whether a dam exists or not, always check the normal water level in advance and pay careful attention to any changes in water level during the fieldwork. On land, keep a mobile phone or radio on the riverbed or elsewhere and actively check weather conditions to stay alert to sudden changes in weather. Even if it is not raining at the survey site, always keep in mind that a precipitous rise in water level or increase in the flow rate because of a sudden downpour upstream.
- (4) When engaged in activities in the river, always pay attention to the water depth and changes to current speed in each area. Even in shallow areas, strong currents can cause a person to lose their footing; even in slow currents, the water depth can change suddenly and trap a person in deep water. Water in areas around man-made structures such as weirs, sluice gates, and dikes are dangerous, not only because they can be deep and the currents fast but also because the currents change suddenly. The area around permeable structures such as sluice gates is especially dangerous because the structures suck water and everything strongly. Stay as far away as possible from these structures. Also pay attention to waterfall basins and mud.
- (5) As the tide rises in estuaries, a salt wedge forms between the incoming salt water and outgoing freshwater. Due to differences in the upper and bottom layers of water, peculiar currents can form beneath the surface. As the tide falls, saltwater and freshwater both flows out, so the currents are faster compared than when the tide is rising. Water levels also change significantly with the tide. Tide tables should be consulted in advance and careful attention paid to changing currents and water levels depending on the time.
- (6) When walking along riverbeds, a distance of 2-3m should be maintained between persons and careful attention paid to whipping branches. If steep slopes or sharp cliffs are present, pay careful attention to falling rocks.
- (7) Even if swept downstream by a rapid current, never panic. Life-threatening conditions can be avoided by wearing safety equipment (e.g. life jacket) and acting without panic. In such an event, protect your head from submerged rocks and man-made structures while calmly regulating your breath. Then, after, you should attempt to reach land or shore from someplace where the current is weaker.

(3) Ocean Environments, Lakes and Marshes

This section provides especially important information for ocean environments as well as lakes and marshes.

Safety measures provided in the section on "Water Environments in General" should also be read carefully. If using a boat, see also the section below on "Boat Activities."

- (1) In ocean environments, lakes, and marshes, always keep in mind during activities that the surroundings can change dramatically, as when waves shift due to the direction and strength of the wind. When working in the water near beaches and reefs, careful attention is always required, as the drag of the waves can make it easy to lose one's footing. Attention should also be paid to waves caused by the wake of passing ships.
- (2) Because water depths can change suddenly, careful attention must be paid to changes in water depth when moving from land into the water. Even on land, pay careful attention while working, safety equipment included, as moss and algae can make surfaces slippery. Pay attention to sharp rocks and attached creatures such as barnacles and oysters, as it is easy to be hurt by them.
- (3) The direction and strength of tidal currents can vary depending on the tide and topography, so check tide tables when conducting fieldwork in ocean environments.
- (4) Careful attention should be paid to rip currents, which can occur at large beaches and near structures like dikes.
- (5) In mudflats, the tide can come in quickly, so work must be performed with careful attention to tide levels. When the area of a mudflat being surveyed is offshore, enough time must be allowed to return to shore after the survey.
- (6) Evacuation routes in tsunami hazard areas should be confirmed prior to practicums and fieldwork. When work undersea is entailed, it is advisable for one assistant to remain on land and carry an emergency radio and megaphone (with siren).
- (7) Even if swept out by a rip current in shallow waters, never panic. Life-threatening conditions can be avoided by wearing safety equipment (e.g. life jacket) and acting without panic. In the event it happens, the rip current can be escaped by swimming parallel to the shore. Do not swim against the rip current. After escaping the rip current, then swim back to shore.

(4) On-Board Activities

To safely conduct educational activities that require work on boats, it is advisable to use a research boat owned by the university or research institute. When doing so, the university or institute's respective sea vessel safety guidelines should be followed. If hiring a boat through a fishing cooperative or other organization for research purposes, verify that the vessel can carry passengers and hold thorough discussions with the boat captain and fishing cooperative prior to boarding. To operate a sea vessel, the operator must have obtained the appropriate license for the size of the boat (e.g. small-sized vessel license) and must possess the knowledge required to navigate safely, including the Act on Preventing Collision at Sea, Act on Port Regulations, Maritime Traffic Safety Act, and River Act. This section provides important information related to boat activities in general, but it is important that appropriate precautions be taken based on the size of the boat and nature of the work.

Thorough discussions should be held between the instructional faculty, boat captain, and participants and an action plan be drafted that is detailed and not overly ambitious. Weather will affect the vessel's speed and evacuations during departure or return may become necessary. The plan should allow ample time for the activity. There should also be an adequate number of personnel to conduct the work safely and, if the work is expected to

take a long time, there must be adequate personnel to work in shifts. Safety equipment installed on the vessel being used should also be checked. If items are missing, bring your own. Small-size vessels do not always have toilets, so arrangements should be discussed in advance.

- (1) Gear and devices to be brought on board and used for fishing and measurements should also be discussed in advance. Their handling and operation should also be mastered in advance.
- (2) On board, attention should always be paid to instructions from the captain and crew and their instructions must be followed. Although the captain will check information on weather and ocean conditions, all participants should also obtain accurate information since it may necessitate sudden changes during the work.
- (3) A life jacket (wetsuit or drysuits when traveling by boat for diving operations) with a determined buoyancy (ability to float) must be worn. Depending on the structure of the boat and nature of the on-board work, gloves, and very safe footwear (long boots, safety boots, etc.) should also be worn. Work such as operating a winch should be undertaken in clothing that is suited for the work to avoid getting caught.
- (4) When boarding or disembarking, be careful that your hands do not get pinched between the side of the boat and pier, embankment, or adjacent boat. Also, walk slowly and pay careful attention not to slip. Boarding and disembarking while carrying items is dangerous. To transport such items, arrange to have a person on shore pass the items to a person on the boat.
- (5) When bringing measurement devices on board, use ropes and non-slip mats to hold them in place to minimize movement as the boat rocks. Be careful of measurement devices and other equipment, as they can move when the boat rocks. Also, be careful not to let hats, towels, etc. get blown away by the wind. Even in cabins on large research ships, any belongings or devices brought on board should be secured ahead of time to prevent them from falling, etc.
- (6) During work on the boat or when setting anchor, be careful that arms, legs, or clothing do not get caught in wires, cables, ropes, etc. When casting rope to lower measuring devices into the water or anchoring, there is a risk of arms and legs getting caught in the rope and the person being pulled into the water. Never put arms or legs through a wound rope, and always approach ropes with caution. Be careful of wires and ropes that have tension. When performing work that involves pulling on ropes or cables, do not lean over the boat.
- (7) Whenever working with heavy machinery such as cranes or winches, always pay attention to surroundings and have an escape area ready. Especially when a crane is operating, always stay out from under the suspended load.
- (8) Multiple individuals should be checking safety as work is performed. Steps such as assigning a lookout should also be taken to improve safety. On large ships with cabins, it is advisable to stay off the deck when not working, at night, and during stormy weather. Even while underway, work is best performed by multiple individuals. In the rare event that a person falls overboard, steps should be taken immediately to respond.
- (9) When a person's judgment is impaired by sea sickness or the like, the person should stop working and have someone else take over. People susceptible to sea sickness should take motion sickness medication ahead of time. When seasick, avoid throwing up over the edge of the boat as it may result in falling

overboard. Instead, use a gutter, toilet or plastic bag (prepared in advance) to throw up.

- (10) On a small research vessel without cabins, whenever possible remain seated and hold onto handrails to avoid being thrown out if the boat bounces suddenly while moving. Do not sit on the edge of the boat. Because the boat may bounce significantly when another one passes by, special attention should be paid not to be thrown from the boat, for instance, by stopping work momentarily. Also, avoid sitting anywhere in the cabin that may block a window, as this may interfere with the captain's ability to operate the boat safely. While moving, alert the captain if any obstructions (e.g. driftwood) are observed in the direction the boat is heading.
- (11) If operating a small outboard motor vessel is necessary, it should be operated by someone with a small-sized vessel license and used in safer water environments on days when the weather is good. Oars for rowing the boat must also be taken. As needed, extra fuel should also be packed.
- (12) Even if operating a motorized boat or inflatable boat that do not require a small-sized vessel license, it is advisable to possess the knowledge required to navigate safely, including the Act on Preventing Collision at Sea, Act on Port Regulations, Maritime Traffic Safety Act, and River Act. Be aware that safety performance can decline and therefore thorough safety measures should be taken.
- (13) Whenever these vessels are to be operated, be sure to inspect and maintain their machinery and equipment and use only fully functioning ones. When using an outboard motor vessel, check for hull damage, rope abnormalities, leaking water, and fuel leaks, as well as fuel levels and safety equipment, before embarking. With inflatable boats, check that the boat has adequate air pressure and no tears or holes on the sides or bottom; and to prevent the boat from being damaged during use, cover it with protective cover of its own whenever possible.
- (14) Always check the weather conditions (especially for waves, winds, and lightning strikes) in advance to ensure that activities can be undertaken in safe conditions. If stormy weather is forecast, do not set out in these kinds of small or inflatable boats. If the weather deteriorates suddenly (e.g. lightning strikes, high waves, gusts of wind), it is important to cease work immediately and return to port. In even waves that normally would be navigable, there are times when boats cannot be towed given the types of research instruments and fishing gear being used. Do not be overly ambitious and instead seek to embark in weather in which the work can be safely performed.

(5) Diving Operations

To dive using scuba or other diving gear, a person must acquire advanced diving skills and knowledge. Licenses (“C-cards,” i.e. certification cards) obtainable at diving schools teach a person the various skills needed to scuba dive and they are widely recognized. Obtaining a certification card is required to engage in diving activities.

Students who will be diving for practicums or research activities must consult with and obtain permission from a faculty member knowledgeable about diving operations (someone who has obtained diver's license under the Industrial Safety and Health Act and certification card, and who has substantial diving experience). Instructional faculty should not overestimate the scuba diving experience of students and take steps to verify and improve their skills and knowledge in advance through training and coursework. Diving activities as part of educational outdoor activities will be joined by a person possessing a diver's license under the Industrial Safety and Health Act.

When a faculty or staff member will be participating in education-related diving activities as part of their work

duties, the faculty or staff member will obtain a diver's license and follow all laws and regulations, as a matter of safety under the Industrial Safety and Health Act. Diving activities by students or post-doctoral fellows can even come up against this act. For instance, even when activities are educational, the diver's license may be required depending on whether or not the activities are work duties and, therefore, should be confirmed with the appropriate school administrator. If required, the diver's license must be obtained.

Safety measures specific to scuba diving, the most common form of diving, are provided below. When using other types of diving equipment, always follow the Industrial Safety and Health Act and take thorough safety measures (refer as well to the safety measures for water environments).

- (1) Divers should be fully aware of the risks associated with diving, including drowning and underwater entanglement, and the illnesses that can occur when diving, such as decompression sickness, burst lung, and nitrogen sickness, and should understand countermeasures for each. The nearest medical facility with a recompression chamber should be identified.
- (2) Always have a good understanding of your physical condition and take steps to maintain your health on a regular basis. In particular, pressure differences when diving and resurfacing can strongly impact air pockets in the head, including the ears and sinuses. Inflammation of the nose or throat as the result of a cold can make it hard to pop one's ears and cause sinus squeeze. In such cases, do not be overly ambitious and instead cancel the dive. Cavities can also become a cause of tooth squeeze, so get them treated.
- (3) Divers should be put into groups of two or more and continually monitored by personnel to be sure they are okay. Alternatively, utilize buddy diving. When there is a person on land (on board) to monitor the divers, a signal for emergencies should be discussed in advance. A dive plan should be established in advance and the nature of the work to be performed in the water, the distance and maximum depth to be covered, and the planned time to resurface should be confirmed between buddies or with the on-land (on-board) monitor.
- (4) As much as possible, perform no-compression dives. When the maximum dive depth will exceed 10m, the maximum depth and work time should be confirmed, and decompression stops planned using a decompression dive table. In addition to checking a decompression dive table in advance, it is also advisable to carry a dive computer.
- (5) Whenever possible, avoid same-day repetitive dives. If a repetitive dive is planned for unavoidable reasons, ample above-water rest time should be taken, and the decompression dive table must be used to determine the allowed time for the repetitive dive.
- (6) Divers should generally carry a dive watch, pressure gauge, depth gauge, underwater compass, knife (to escape underwater entanglement), and buoyancy compensator (BC).
- (7) Always be aware of weather, ocean and other natural conditions and pay careful attention to changes in the weather and ocean, even while working. When weather or ocean conditions change suddenly, do not chance a dive.
- (8) Everyone involved in the diving operation should verify the pressure of the tanks to be used and confirm with each other the time allowed for the dive.
- (9) Before starting the dive, have a buddy or on-board monitor check your equipment air leaks.
- (10) Equipment should be used to ensure a safe descent and ascent (e.g. dive line or its equivalent). Depth markers should be placed at each depth prescribed by law. The use of equipment to ensure a safe descent

and ascent (e.g. dive line or its equivalent) is advisable. When descending or ascending, always be aware of the depth using a depth gauge.

- (11) Working divers should use their pressure gauge and compass to check their remaining air and direction as they work underwater.
- (12) Working divers should ascend at a rate no faster than 10m per minute and perform a safety stop even if within the no-decompression limit.
- (13) After the dive, do not board airplanes or travel at high altitudes until the body's residual nitrogen has returned to a safe level.
- (14) Diving equipment (regulator, depth gauge, dive watch, etc.) should be inspected.
- (15) Diving accidents can be life threatening. Do not overestimate your experience. Even within the particular ocean environment where the dive takes place, underwater conditions (current, clarity, etc.) in that ocean environment will differ based on weather and ocean conditions. Even the direction and strength of currents may differ at the surface and ocean floor. These conditions can even change during the dive. Updated information should be obtained from people familiar with the particular ocean environment (fishermen, divers) and, if need be, such people should be invited to accompany the group. Always be aware of currents and other ocean conditions when diving and visualize the safest route of ascent from your current dive location to your destination (e.g. entry point, boat, etc.).
- (16) Although no license is required to snorkel, the fact that there are no laws and regulations means that an even greater degree of self-responsibility in safety management is needed. Snorkel in groups and with experienced snorkelers. When making observations, it is easy to become absorbed in what you are doing and drift far away. To avoid this kind of thing, periodically lift your head from the water to check your position. Careful attention also needs to be paid to river currents and coastal rip tides.
- (17) It is also advisable for divers to review diving-related laws, including the Act on Port Regulations, Labor Standards Act, and Industrial Safety and Health Act (High Pressure Work Ordinance).
- (18) Instructional faculty should not overestimate the scuba diving experience of students and take steps to improve their skills and knowledge in advance through training and coursework.
- (19) When faculty or staff will be participating in education-related diving activities as part of their work duties, they will obtain a diver's license and follow all laws and regulations, as a matter of safety under the Industrial Safety and Health Act.

Chapter 4 Safety Measures Against Harmful Animals and Plants

4.1 Land Environments

4.1.1 Arthropods

(1) Bees/Wasps

Trouble from hornets and paper wasps is anticipated. Bee and wasp venom not only cause swelling and pain but can also induce life-threatening anaphylactic shock depending on the type of venom and number of stings.

- (1) Avoid wearing black and yellow clothes and instead wear clothing that is whitish in color.
- (2) Do not wear pure wool, fur, or other such clothing that tends to flutter.
- (3) Do not use hair spray, hair tonic, perfume, or other strongly scented product.
- (4) The body should be protected by wearing protective headgear, protective netting, long sleeves, gloves, and so on. A spray-type insecticide should also be carried.
- (5) Bee and wasp nests are often found at the base of trees, in the ground, under bridges, or under eaves. If a nest is discovered being made in early spring, it should be dealt with while still small.
- (6) If a nest is discovered, use warning tape to indicate the presence of the nest or announce its location verbally.
- (7) Keep away from bee and wasp nests. If a nest is encountered, immediately lower your posture, and move away. Do not make any sudden movements nearby. Even if a bee or wasp flies up close, do not swat at it. If you are attacked by bees or wasps, do not flee in panic. Rather, crawl along the ground to escape. If being stung, protect your head and neck, where symptoms can become severe.
- (8) Leftover food, plastic bottles, empty cans, etc. can provide bait for bees and wasps, so they should be carried out without littering.
- (9) Participants should be tested at a medical facility in advance for bee/wasp antibodies and anyone with an allergy to venom should carry an adrenaline auto-injector (EpiPen).
- (10) If stung by a bee or wasp, extract the venom with a poison remover and cool the area with water. Next, apply a topical steroid cream with antihistamines. If symptoms of anaphylaxis appear (e.g. hives, headache, nausea, dizziness, difficulty breathing, irregular pulse), seek immediate attention at the nearest medical facility.

(2) Hard Ticks

When hard ticks suck blood, they may transmit infectious diseases such as Severe Fever with Thrombocytopenia Syndrome (SFTS), Lyme disease, and Japanese spotted fever.

- (1) Long pants and long-sleeve shirts should be worn to keep from exposing the skin.
- (2) Insect or tick repellent should be applied to exposed areas of skin.
- (3) Keep away from dead animals. Ticks will wait in nearby grass to attach themselves to a new host.
- (4) In general, if bitten by a hard tick, do not forcibly remove it. Rather, seek treatment at a medical facility. If medical treatment is unavailable, use tweezers to grab the tick by its head to remove it. If symptoms such as fever or hives appear, seek immediate medical attention at the nearest medical facility.

4.1.2 Reptiles and Amphibians

(1) Snakes

Attention must especially be paid to venomous snakes, i.e. mamushi pit vipers, tiger keelbacks, and habu pit vipers.

- (1) If bitten by a venomous snake, use a poison remover to extract the venom.
- (2) If bitten by a mamushi pit viper or tiger keelback, seek attention at the nearest medical facility and receive venom antiserum.

4.1.3 Mammals

(1) Bears

In Japan, troubles from Asiatic black bears in Honshu and Shikoku and brown bears in Hokkaido are anticipated.

- (1) Whenever information about a bear sighting, encounter, capture or other related information in or around a forest is obtained, it should be immediately reported to the person in charge and activities in that area should be suspended.
- (2) To avoid trouble from bears, carry bells, whistles, radios, bear spray, and so forth when entering the mountains.
- (3) While working, keep the following in mind.
 - While entering/exiting the mountain and while working, be on the lookout for bear tracks and bear scat. If found, observe how much time seems to have passed since the tracks or scat were left. If relatively fresh, the bear may still be nearby. Stop work immediately, leave the area carefully, and report it to the person in charge.
 - While entering/exiting the mountain and while working, converse in as loud a voice as possible. Periodically sound bells, whistles, or radios as well to indicate that people are around.
 - Leftover food, plastic bottles, empty cans, etc. should be carried out, not thrown away.
- (4) Important Points to Remember in an Emergency Situation
 - When making an emergency retreat, maintain contact by blowing whistles, etc.
 - When retreating, slowly walk backwards without turning around to leave the area. Drop items one at a time while retreating (bears will often stop to smell an item, which provides more time to get away).
 - If nothing can be done and the bear is coming at you, shoot bear spray directly at the bear's face (spray range is about 3m).
 - When retreating, never turn sideways or show your back.
 - If in a group, do not run away individually.

(2) Wild Boars

- (1) If a wild boar is encountered, do not provoke it by raising your voice or throwing things. Walk backwards slowly and leave the area. If a wild boar is clacking its teeth or its hairs are standing on end, it means that the boar is riled up and caution must be exercised.
- (2) When retreating from a wild boar, food or other strong-smelling items should be thrown to the ground as you flee.
- (3) If the wild boar charges, climb a tree. If no trees can be climbed, hide behind a large tree or otherwise place an obstruction of some kind between you and the boar so it cannot charge at you.

(3) Monkeys

- (1) If a monkey is encountered, do not provoke it by raising your voice or throwing things. Do not look the monkey in the eyes, as it will take this as a threat. Walk backwards slowly and leave the area.
- (2) When retreating from a monkey, food or other strong-smelling items should be thrown to the ground as you flee.

4.1.4 Other

(1) Mountain Leeches

- (1) Long pants and long-sleeve shirts should be worn to keep from exposing the skin.
- (2) Pant legs should be tucked into socks, and jacket bottoms tucked into pants.
- (3) Repellent should be applied not to the skin but rather to shoes, socks, pant hems, gloves, jacket, and so on.
- (4) If bitten by a mountain leech, use a lighter to burn it off or douse it in salt or rubbing alcohol to remove it. Once removed, quickly kill the mountain leech.
- (5) When sucking blood, mountain leeches release a substance called hirudin that prevents blood from coagulating. After a poison remover has been used to thoroughly extract the blood, the area should be disinfected and a topical steroid cream with antihistamines applied.

(2) Echinococcus

- (1) Do not consume untreated water or eat wild berries that have not been properly washed.
- (2) After returning home from outdoors, always wash your hands.
- (3) Do not feed or touch foxes.

4.1.5 Trees

(1) Lacquer Trees

- (1) As much as possible, avoid contact with lacquer trees, mountain lacquer trees, mountain wax trees, wax trees, and Asian poison ivy.
- (2) If cutting such trees is unavoidable, be careful that your body does not meet the sap they excrete.
- (3) Long pants and long-sleeve shirts should be worn to keep from exposing the skin.
- (4) After the work, face and hands should be properly washed. If a rash appears, apply a topical steroid cream with antihistamines.
- (5) If the rash is extreme, seek attention at the nearest medical facility.

4.2 Water Environments (Especially Ocean Environments)

Animals that may be harmful to people are different from one ocean environment to the next, so naturally the measures to take are different, too. These guidelines primarily discuss animals to watch out for in the ocean environments of the Kyushu area. When performing underwater work in other ocean environments, be aware in advance of the kinds of dangerous animals to expect and have measures in place for each by contacting organizations familiar with the particular ocean environment, such as a university or other research institute,

fisheries experiment station, or diving shop.

Land water environments on land, such as rivers, share much in common with land environments, so that section should be studied carefully.

4.2.1 Fish

(1) Striped Eel Catfish and Other Fish with Venomous Stingers (Glands) on Their Fins

- (1) In addition to the striped eel catfish, this category of fish also includes scorpionfish, stonefish, stingfish, rabbitfish, and others.
- (2) Spines on the dorsal and pectoral fins contain venom and are sometimes sharp enough to pierce gloves, etc. Stings are accompanied by severe pain and prolonged swelling so these fish should not be touched directly, whether alive or dying. It is advisable to hold them using tweezers or the like.
- (3) If stung, check that spines are out. If not, remove any remaining spines with tweezers. Next, regardless of the spines, soak the stung area in hot water (40-50°C) for 60-90 minutes.
- (4) If the pain does not stop, seek medical attention.

(2) Red Stingrays and Other Fish with Venomous Tail Stingers

- (1) These fish possess a serrated venomous stinger that begins on their backside at the midpoint of their long tails and is sharp enough to tear through gloves easily. Stings are accompanied by severe pain and prolonged swelling. They can also induce anaphylactic shock in people with allergies, so these fish should not be touched directly, whether alive or dying. It is advisable to hold them using tweezers, tongs, or the like.
- (2) If stung, check that the spine is out. If not, remove the remaining spine with tweezers. Next, regardless of the spine, soak the stung area in hot water (40-50°C) for 60-90 minutes.
- (3) If the pain does not stop, seek medical attention.

(3) Sharks

- (1) Sharks can injure people by biting them as they swim. In northern parts of Kyushu, smooth hammerhead sharks can be found in coastal areas. If you see one, leave the area quietly and get to land or boat.
- (2) They do not possess venom. If someone is bitten, apply pressure to stop any bleeding and have the person transported by emergency vehicle to a medical facility.

4.2.2 Jellyfish

(1) *Carybdea brevipedalia*

- (1) When touched, the venomous tentacles cause severe pain and welt-like swelling. In severe cases, headaches, nausea, and difficulty breathing can result. To avoid contact with tentacles, avoid exposing skin by wearing long-sleeve shirts.
- (2) When using dragnets or other such fishing gear, broken tentacles can get caught in the netting and cause the same symptoms if touched, so gloves should be worn.
- (3) If stung, rinse the area well with sea water and check that none of the tentacle remains, then apply an

over-the-counter anti-itch medicine.

- (4) If the pain does not stop, seek medical attention.

(2) Portuguese man o'war (*Physalia physalis*)

- (1) The cnidocytes on its long tentacles are venomous. Stings cause severe, electrical shock-like pain and welt-like swelling. Fatalities from shock have occurred. To avoid contact with tentacles, avoid exposing skin by wearing long-sleeve shirts.
- (2) They can be found washed up on the Pacific Ocean side of Japan and should not be touched.
- (3) If stung, rinse the area well with sea water and check that none of the tentacle remains, then chill the skin with cold water and seek medical attention.

4.2.3 Other

(1) Swimming Crabs

- (1) Crabs pincers are sharp. The strong pincers of *Charybdis japonica* can result in injury if pinched by them. Gloves should be worn.
- (2) They do not possess venom. If the injury is big, seek medical attention.

(2) Long-spine Sea Urchins

- (1) These sea urchins have long spines with venomous tips. Stings cause a strong burning sensation with prolonged reddish swelling and throbbing. In severe cases, paralysis of arm and leg muscles and difficulty breathing can result.
- (2) If stung, check that the spines are out. If not, remove any remaining spines with tweezers. Next, regardless of the spines, soak the stung area in hot water (40-50°C) for 60-90 minutes.
- (3) If the pain does not stop, seek medical attention.

(3) Blue-ringed Octopuses

- (1) This small-size octopus emits bright colors when threatened. Its bite, which contains the neurotoxin tetrodotoxin, paralyzes nerves, causes difficulty breathing, and even leads to death in the worst of cases. Although a southern species, frequent sightings have been reported in the Kyushu area in recent years. Never touch them, never trap them.
- (2) If someone is bitten, make a small incision, extract the venom, and apply pressure to the wound, then have the person transported by emergency vehicle. Keep the person still to prevent the venom from circulating.

(4) Newts

- (1) This amphibian inhabits areas such as paddies and slow rivers. They do not attack even if touched, but they do secrete tetrodotoxin. No fatalities have been reported.
- (2) Anyone touching a newt should wash their hands without fail and be careful not to touch their eyes or other such areas.

(3) In the rare event that venom gets into the eyes, seek immediate medical attention.

Chapter 5 When an Accident Has Occurred

5.1 On-site Participant Response to an Accident

5.1.1 Assessing and Addressing the Accident Situation

When a personal injury has occurred in an accident or disaster, do not panic and keep calm and address the situation safely, quickly, and simply. When an accident has occurred, follow the procedures below to address the situation.

- (1) Assess the accident situation
- (2) Ensure and verify participant safety
- (3) Ensure rescuer safety
- (4) Approach victims
- (5) Ensure rescuer and victim safety
- (6) Verify condition of victim injuries
- (7) Notify 119 or transport victim to medical facility
- (8) Perform emergency resuscitation (first aid, basic life support)

Never address the situation alone in an accident or disaster. Instead, delegate responsibilities by designating, for instance,

- Someone who leads, i.e. supervises everything and issues instructions
- Someone who performs emergency resuscitation on victims
- Someone who acts to prevent the further spread of damage from the accident or disaster
- Someone who notifies 119 and communicates with medical facilities

While the course administrator will generally serve as leader, there may be times when the course administrator is a victim. Consequently, when the pre-determined assignment of roles cannot be followed, either backup assignments should be deployed, or the roles of leader and assistant should be determined on the spot based on the conditions.

If assistance can be obtained from non-participants in the area, ask for their help.

(1) Assessing the Accident Situation

Gain an understanding of the accident situation as quickly and as accurately as possible.

(2) Ensuring and Verifying Participant Safety

Verify risks and safety at the accident site. Based on conditions, evacuate participants, ensure participant safety, and verify the safety of participants.

(3) Ensuring Rescuer Safety

When deciding whether to directly provide rescue aid to a victim, keep safety foremost in mind and make a reasoned decision that considers whether you can give aid and whether you may end up a secondary victim. Whenever providing rescue aid to victims, always ensure your own (rescuer) safety first. The number one principle

whenever attempting a rescue is ensuring the safety of the rescuer.

(4) Approaching Victims

Once rescuer safety has been ensured, methods of approaching the victim(s) should be examined. If it is determined that the victim can be approached safely, then do so. If the victim cannot be safely reached, then do not approach the victim and instead notify 119 and wait for the fire department or other specialized rescue unit to perform the rescue.

(5) Ensuring Rescuer and Victim Safety

After reaching the victim(s), move as needed to a location that ensures both rescuer and victim safety (see section 6.2, “Ensuring Victim Safety, Victim Position”).

(6) Verifying Condition of Victim Injuries

Speak to the victim to verify consciousness (responsiveness). Notify 119 or transport the victim to a medical facility promptly when the following symptoms are present (The University of Tokyo Division for Environment, Health and Safety Fieldwork Accident and Disaster Measures Working Group, 2011).

- Is unconscious or confused (response is slow even when spoken to in a loud voice)
- Breathing is weak or is rapid and chaotic
- Cannot stop coughing
- Is sweating and face has lost color
- Keeps partially yawning
- Significant bleeding (will not stop even when pressure is applied)
- Four limbs are paralyzed (motion is impaired)
- Fractures or dislocation suspected
- Extensive burns (entire upper limbs, half or more of lower limbs, 1/4 or more of body)
- Facial burns caused by flames
- Eye injury

(7) 119 Notification or Transport of Victim to Medical Facility

Request assistance when a rescue or medical transport is needed. [119 for emergencies, 110 for police, 118 for marine accidents]

When notifying 119 to request assistance, be prepared to provide accurate information to the following kinds of questions.

- Fire or emergency?
- Accident or sudden illness?
- What happened to whom? (Accident situation)
- Victim's gender and age
- State of injuries, conscious or unconscious
- Caller's name and phone number

When calling from a mobile phone, the call may not always be directed to the nearest fire station. Keep calm

and explain as accurately as possible the location of the incident (the address and, as needed, landmarks, signs, geographical features, etc.). Once 119 has been notified, follow the procedures below to coordinate with the ambulance.

- Await the ambulance.

If there is a rescuer to coordinate with the ambulance, have the person wait for the ambulance near a landmark or noticeable location near the accident site. If there is no rescuer to coordinate with the ambulance, place a sign to identify the accident site near a landmark or noticeable location near the accident site (share this information when notifying 119).

- Once the ambulance arrives, provide the following information.

- Treatment applied prior to arrival of the ambulance
- Victim's condition prior to arrival of the ambulance

- Ride together in the ambulance

If there is a rescuer to coordinate with the ambulance, have the person ride together in the ambulance.

(8) Emergency Resuscitation (First Aid, Basic Life Support)

As needed, emergency resuscitation (first aid, basic life support) should be performed on the victim. Emergency resuscitation should be performed using the emergency resuscitation procedures provided in chapter 6. If emergency resuscitation instructions are provided over the call to 119, follow those instructions.

5.1.2 Report to University and On-site Subsequent Response to an Accident

The course administrator or leader (“leader”) will give priority in an accident to ensuring participant safety and victim aid, then make arrangements to contact the emergency contact for the course (university).

When contacting, make clear that it is an emergency communication and provide information on the accident situation, including.

- Date, time, and location of the incident
- Victim's name (student or employee)
- Accident description
- Victim's condition
- Where the victim was transported

Also provide

- Leader's name
- Name of local contact
- Contact information for local contact (e.g. phone number where calls can be received at any time)
- Local place of stay

After consulting with the university, take next steps locally.

The leader should appoint a record-keeper at the site who will maintain a log of related information (descriptions, times, etc.).

- Accident

- Response
- Contacts
- Medical facility treatment

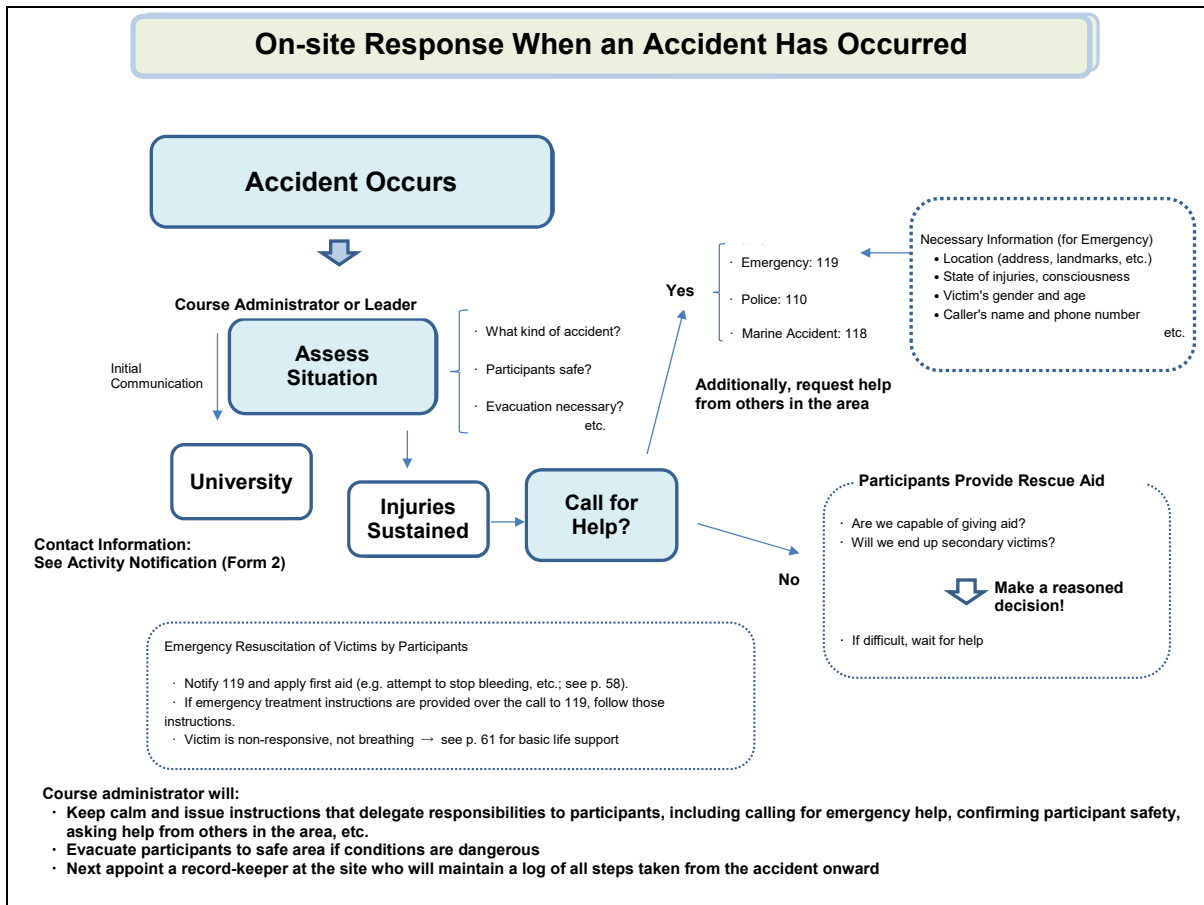


Fig. 5.1 On-site Response When an Accident Has Occurred

5.2 University Response to an Accident

5.2.1 Receiving the Initial Report

- (1) Once the school's emergency contact liaison has received the initial communication from the local site, the liaison will confirm the following and then inform the dean (chief administrator) via the emergency contact network within the school.
 - Accident description
 - Date, time, and location of the incident
 - Victim's name (student or employee)
 - Condition and where transported
 - Local contact's name and place of stay
 - Phone number to contact at any time
- (2) The dean (chief administrator) will ensure a means of contacting the local site, etc. at any time and

prepare the subsequent response (e.g. creation of a response team).

- (3) In the event of a serious accident (e.g. fatal accident, a wreck, victim is in critical condition, etc.), the school will immediately set up the Response Team and contact the university headquarters communication liaison (Deputy Head, Student Affairs Planning Division).

[Contact Information] During business hours: 092 (802) 5917 Outside business hours: Each school to be notified separately

- (4) The university headquarters communication liaison will use the emergency contact network to report essential information to the Executive Vice President of Education and the President via the relevant the parties within the university.

5.2.2 Establishment of a Response Team

- (1) In the event when outdoor activity participant(s) have serious accidents (e.g. fatal accident, a wreck, victim is in critical condition, etc.), not only will the school dean sets up a response team but the university headquarters may also take organizational action in consultation with the school as needed to respond to the situation depending on the circumstances of the accident.
- (2) To avoid complicating the post-accident on-site response, communications among the university, the site and victim's legal guardian(s) will be channeled through the response team in principle.
- (3) After the initial communication, the response team will ongoingly gather information, and undertake the measures to provide necessary support by consulting with the local site and university headquarters.
- (4) The response team will maintain a log of all activities related to the accident and provide information as appropriate to relevant parties on campus.
- (5) The response team will make every effort to provide the victim's legal guardian(s) with detailed information.
- (6) Any necessary coordination with mass media will be performed by the university headquarters (General Affairs Division).

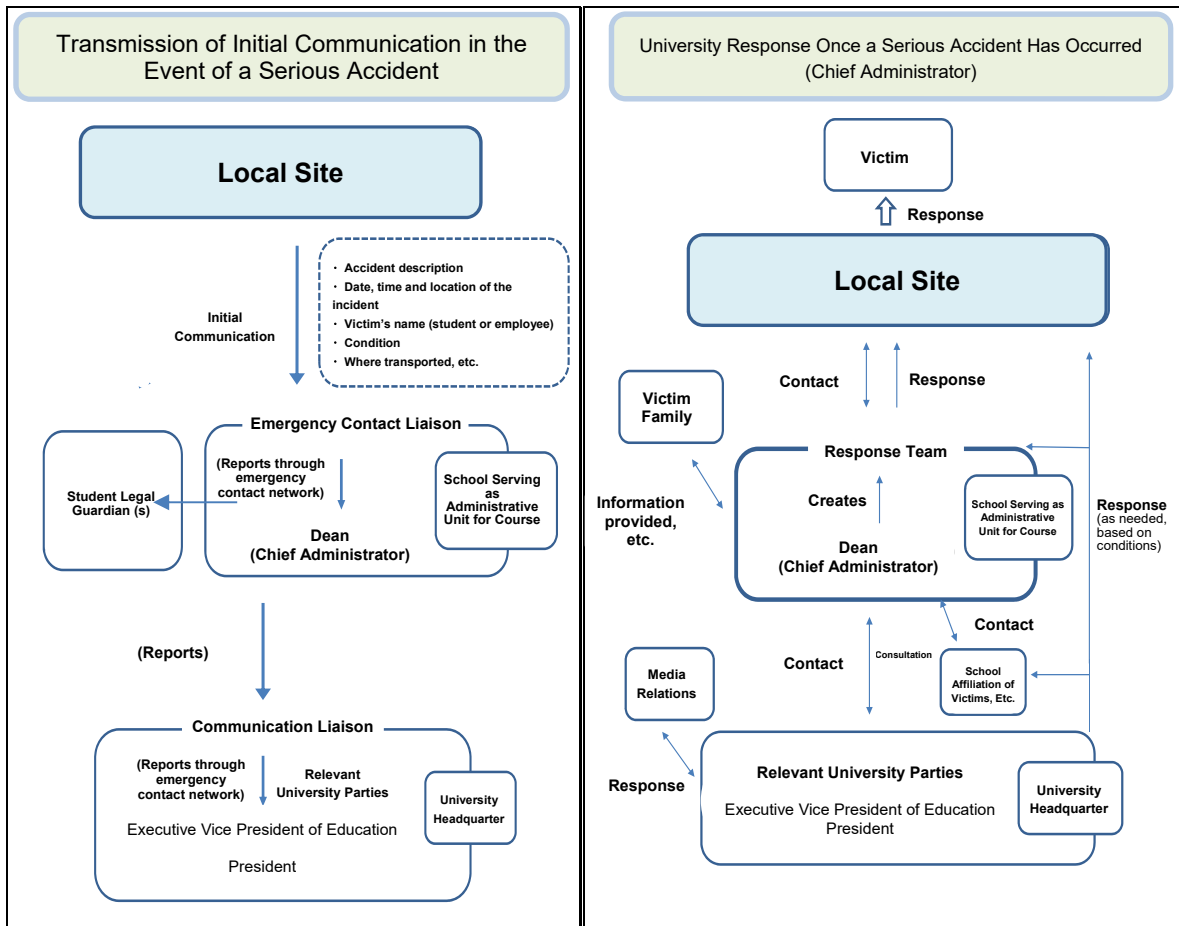


Fig. 5.2 Communication and Response Structure When a Serious Accident Has Occurred

5.2.3 Other

Even with minor accidents, it is advisable for schools to require submission of accident reports, etc.

Chapter 6 Emergency Resuscitation

When a personal injury has occurred in an accident or disaster, emergency resuscitation makes it possible to stop injury and sickness from worsening. Emergency resuscitation includes first aid and basic life support. First aid refers to the first actions taken to help someone who is injured or has fallen suddenly ill. Basic life support refers to emergency life-saving treatment to help someone whose heart or breathing has stopped by using an AED (automated external defibrillator) and CPR (cardiopulmonary resuscitation) involving chest compressions and artificial respiration.

6.1 Basics of Emergency Resuscitation

When a personal injury has occurred in an accident or disaster, do not panic, and keep calm. Address the situation safely, quickly, and simply. Emergency resuscitation should be performed according to the steps below. Emergency resuscitation can be performed relatively easily even by someone without a special credential but be sure that notification to 119 and transport to a medical facility are not delayed for that reason.

- (1) Assess the accident situation
- (2) Ensure and verify participant safety
- (3) Ensure rescuer safety
- (4) Approach victims
- (5) Ensure rescuer and victim safety
- (6) Verify condition of victim injuries
- (7) Notify 119 or transport victim to medical facility
- (8) Perform emergency resuscitation (first aid, basic life support)

6.2 Ensuring Victim Safety, Victim Position (Resuscitation Committee of the Japanese Foundation for Emergency Medicine, 2015)

After approaching the victim(s), move as needed to a location that ensures both rescuer and victim safety.

Help the victim keep still in a comfortable position. If CPR is necessary, lay the person on their back (supine position). While laying the person on their back, be sure to support their head so that their head and neck (cervical vertebrae) do not twist.

If the injured person is unresponsive but breathing normally, lay them on their side (in the recovery position) to prevent the air passage at the back of their throat from contracting or becoming blocked by vomit. With the person in the recovery position, extend their under-side arm straight in front of them and bend their upper-side arm so as to rest their head on the backside of their hand. To stabilize the person's position on their side, bend their upper-side leg 90° at the knee and extend it forward (see Fig. 6.1).

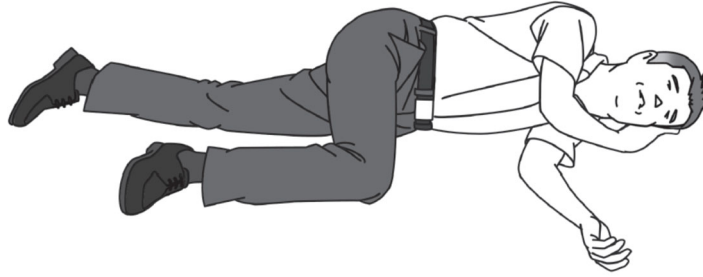


Fig. 6.1 Recovery Position

(Ministry of Health, Labor and Welfare, 2015)

If a person has been hit by a car, fallen from a high elevation, or otherwise severely injured their face or head, there is a chance they have hurt their neck (cervical vertebrae). In such cases, it is necessary to keep the injured person's neck still. Using both hands to support the injured person's head on both sides, make sure their head moves as little as possible (Fig. 6.2). Do not pull on their head or attempt to straighten their neck if it is bent. Rather, keep it just where it is.

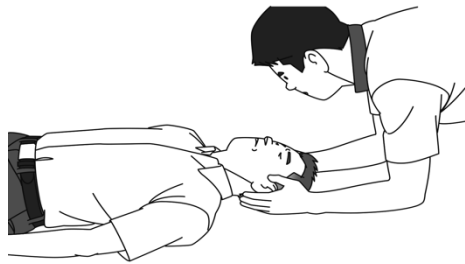


Fig. 6.2 Using Two Hands to Support the Head so it Does Not Move

(Ministry of Health, Labor and Welfare, 2015)

6.3 First Aid (Resuscitation Committee of the Japanese Foundation for Emergency Medicine)

6.3.1 Treating Abrasions and Cuts

If left uncleaned of dirt and sand, wounds can fester and not heal properly. There is also concern that tetanus may occur later if a person has not been immunized or their immunization was long ago. If possible, the wound should promptly be washed thoroughly with tap water or other clean, running water. If the cut is deep or extremely dirty, keep the rinsed wound as clean as possible and seek prompt medical attention.

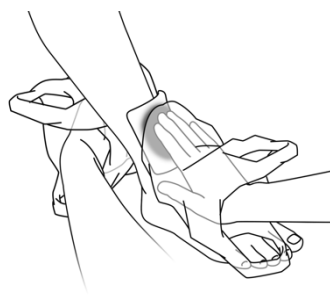
6.3.2 Treating Bleeding

Significant blood loss from an injury can be life threatening so it is best to stop bleeding as quickly as possible. Once the source of the bleeding is found, attempt to stop the bleeding by applying direct downward pressure using gauze, handkerchief, or towel (direct pressure method). If bleeding will not stop even when pressure is applied, it may be that the pressure is not directly over the source of the bleeding or that the pressure is not strong enough. Continue to apply firm pressure to the source of the bleeding until emergency medical services arrive.

Although the risk is very small that a rescuer will contract an infectious disease from contact with the injured person's blood while attempting to stop the bleeding, it is a good idea for the rescuer, if possible, to wear plastic gloves or use plastic bags instead of gloves (Fig. 6.3).



With plastic gloves on, gauze or other material is used to apply pressure to the bleeding area



Plastic bags can be used instead of gloves

Fig. 6.3 Direct Pressure Method (Ministry of Health, Labor and Welfare, 2015)

When direct pressure fails to stop the bleeding, a belt or other such item can be used as a tourniquet to stop the flow of blood through the arm or leg, but given the risk of nerve or other damage, this method is only recommended for use by people who have undergone training.

6.3.3 Treating Sprains, Bruises (Contusions), and Fractures

Ice sprains and bruises (contusions) using a cold pack or ice water. Icing injured areas reduces internal bleeding and swelling. When using a cold pack, keep a thin cloth between it and the skin so they do not come into direct contact.

If the leg or arm is misshapen from the accident, a fracture is likely. Immobilizing the misshapen leg or arm serves to reduce pain while moving and protect it from further injury. A splint or triangular cloth can be used to immobilize the injury. It is unnecessary to put the misshapen limb back into shape.

6.3.4 Treating Heat-related Illnesses

Extreme symptoms of heat-related illness are a life-threatening emergency. If symptoms are limited to lightheadedness, cramps, and heavy sweating, cool the sick person's body by having them keep still in a cool place and consume liquids containing sodium (e.g. oral rehydration solution, sports drink, etc.). If symptoms include headaches, nausea, and exhaustion, seek medical attention. If the person's consciousness is weak or body temperature extremely high, immediately notify 119 and continue to cool the person's body until emergency medical services arrive.

When using an ice bag or cold pack to cool the person's body, apply them to the armpits, base of the thighs, and neck; but a safer, more effective method is to remove the person's clothes, wet their body, and blow air at them using a hand fan or electric fan.

6.3.5 Treating Burns

Immediately cooling burns prevents them from getting worse and accelerates healing. Promptly cool burns in running tap water until the pain subsides (at least 10 minutes). Icing burns with ice or ice water can make the burns worse. If the burns are over a wide area, seek medical attention as soon as possible. In such cases, the person's body temperature can drop precipitously if cooled for too long, so avoid excessive cooling.

Blisters serve to protect the wound. If blisters appear, cool the area gently without touching them to keep them from popping.

6.3.6 Treating Frostbite

Frostbite is a condition in which extremities and skin are damaged from exposure to very cold temperatures. Begin by stopping body temperature from dropping further by removing all wet or damp clothing and covering the person in dry blankets or clothes. Next, without rubbing the affected area, warm it in lukewarm water, unless there is a chance the frostbitten area may be exposed to cold temperatures again or if a medical facility is nearby. In that case, seek prompt medical attention without warming the area. Do not compress the affected area. If legs are affected, do not put any weight on them.

6.3.7 Treating Near-Drowning

Rescuing a person who is drowning should generally be left to firefighters, lifeguards, or other professional rescuers. If you see someone drowning, contact 119 (or 118 if at sea) to notify professional rescuers. If the person is floating at the surface and calling for help, throw them something they can hold onto to float. If a rope is available, throw them the rope and pull them in. If the person sinks, figure out some marker to identify where they sank. When the professional rescuers arrive, tell them about the marker.

If the environment is a safe one (e.g. shallow pool) in which to perform a rescue, then do not wait for professional rescuers and instead pull the sunk person from the water. Do not enter the water if there are currents, the bottom is not visible, or the water's depth is unknown. Once the person is pulled from the water, follow the procedures for basic life support (see Chapter 6.4) and check if the person is responsive and breathing. There is no need to press on the person's abdomen to force them to spit up water.

6.3.8 Treating Anaphylaxis

A severe allergic reaction to a particular substance is called anaphylaxis. Anaphylaxis can be life threatening when it prevents breathing by restricting the airway (passage that provides air to the lungs) or causes a severe drop in blood pressure. Immediately notify 119 if such symptoms occur.

If it happens, adrenaline (epinephrine) should ideally be administered as soon as possible. For this reason, persons who have had severe anaphylactic symptoms in the past will sometimes carry an adrenaline (epinephrine) auto-injector (EpiPen®: Fig. 6.4) prescribed by a physician (e.g. forest workers with a high probability of being stung by bees/wasps, people with food allergies, etc.). If the sick person cannot operate the device on their own, assist them in using the EpiPen®.



Press the EpiPen® against the skin

Fig. 6.4 EpiPen® (Ministry of Health, Labor and Welfare, 2015)

6.3.9 Other

As needed, information will need to be collected on field-specific concerns that require consideration, including things like altitude sickness, photokeratitis (“snow blindness”), decompression sickness, and vector-borne diseases.

6.4 Basic Life Support

BLS (Basic life support) refers to emergency treatment, including CPR (cardiopulmonary resuscitation) and the use of an AED (automated external defibrillator), that is given to help individuals whose heart or breathing has stopped. In the context of BLS, this section explains, respectively, how to perform CPR and how to use an AED.

6.4.1 Cardiopulmonary Resuscitation Procedures

(1) Verify Safety

If you witness someone collapse suddenly or discover someone who collapsed, first verify that the surrounding area is safe. Depending on the conditions (e.g. cars are passing by, smoke is filling the room), take appropriate steps to ensure safety. Ensuring your own safety takes priority over helping the afflicted person. If you are at risk of being assaulted, getting caught in a fire, or being electrocuted, it is often best not to approach the afflicted person and instead wait for police and firefighters to arrive.

(2) Verify Responsiveness

Once safety has been verified, check if the afflicted person is responsive. If, when you gently pat their shoulders and speak to them in a loud voice, they respond by opening their eyes or moving with purpose, then they are determined to be “responsive.” Immediately after sudden cardiac arrest, the person may experience twitching (spasms), but since they are not responding to your voice, they are determined to be “unresponsive.”

If you determine them to be “unresponsive” or your determination is uncertain, act as if the person may have experienced cardiac arrest. In a loud voice, call for help (“I need help! Someone has collapsed!”)

(3) Notify 119 and Prepare AED

If someone is nearby, ask that person to notify 119. If an AED is located nearby, also ask that person to bring it. Use concrete language, if possible, when making the request (“You, please call 119,” “You, please bring an AED,” etc.).

Remain calm when notifying 119 and not only communicate the location as precisely as possible but also inform them that the person is not responding to your voice. If known, the person's approximate age and condition (e.g. “collapsed suddenly,” “has spasms,” “body is not moving,” “face has lost its color,” etc.) should also be communicated.

When notifying 119, you and others helping you will be given instructions over the phone about what steps to take. They may also be able to tell where to find an AED, if one is located nearby. You will be asked over the phone if you can perform chest compressions. If you are unsure, ask for instructions and follow them calmly.

If, even after you have screamed for help, no one comes, then you will have to notify 119 and prepare the AED on your own before beginning CPR. Knowing that you must leave the person alone while you fetch the AED may worry you. If you know where a nearby AED is located, you should go and fetch yourself.

(4) Observe Breathing

When the heart stops, normal breathing stops, too.

To observe the afflicted person's breathing, watch their chest and abdomen for movement (they will rise and fall as the person breathes). If the chest and abdomen are not moving, the person is determined to be not breathing. If the person is not breathing, their heart has stopped, and chest compressions should be started.

On the other hand, it is not uncommon immediately after sudden cardiac arrest for there to be “agonal respiration,” characterized by a convulsive gasping for air. Such breathing should be taken as evidence of cardiac arrest and chest compressions should be started. If you are uncertain whether breathing is normal, begin chest compressions.

Observe breathing for no more than 10 seconds. If you remain unable to decide after 10 seconds, assume that breathing is not normal and that their heart has stopped.

If the person is unresponsive but breathing normally, keep an eye on them and wait for support and/or emergency medical services. Pay special attention to their breathing and, if you no longer observe breathing or the person's breathing is no longer normal, assume that their heart has stopped and immediately begin chest compressions.

(5) Perform Chest Compressions

If you determine based on an observation of a person's breathing that their heart is stopped, immediately begin chest compressions.

(1) Compression Point

Directly in the middle of the chest is a long, flat bone called the breastbone. Pressure is applied to the lower half of this bone. Locate this bone at the midpoint (midpoint between the two sides, as well as between the top and bottom) of the chest (Fig. 6.5).

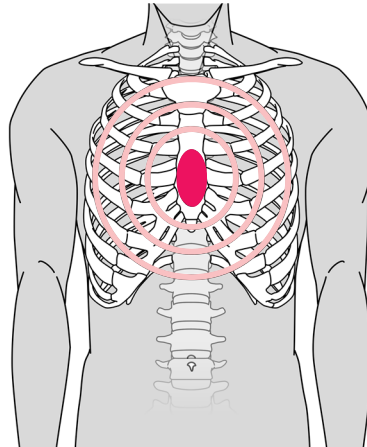


Fig. 6.5 Chest Compression Placement (Ministry of Health, Labor and Welfare, 2015)

(2) Compression Method

Place the heel of one hand on the lower half of the breastbone and rest the other hand on top of the first one. It can help to lock fingers. Pressure is applied using not the entire palm of the hand but rather just the heel. Applying pressure to the breastbone with the fingers or entire palm is not good. Adopt a posture that applies your weight downward by straightening your arms with your shoulders directly over the compression point (your palms).

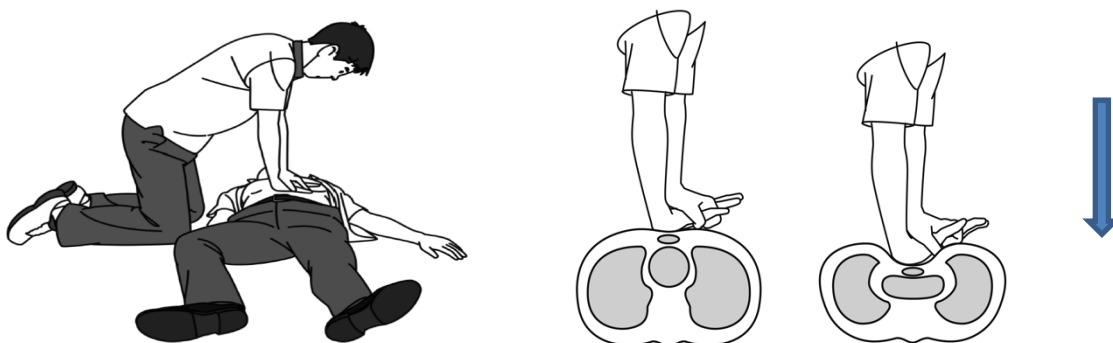
(3) Compression Depth and Tempo

Press repeatedly at a rapid pace on the afflicted person's chest with enough strength to depress it approximately 5cm (Fig. 6.6).

Compression will not be effective if you do not press hard enough, so press hard. In the case of children, press the chest enough to depress about 1/3 the thickness of the child's chest. Timidly pushing on a person's chest, whether adult or child, will not be effective because the compressions will not be deep enough.

Be sure to use strong, rapid pushes. However, on small bodies, two hands may be too strong. In that case, use one hand.

The tempo should be around 100-120 pushes per minute. To the extent possible, chest compression should be performed continuously without interruption.



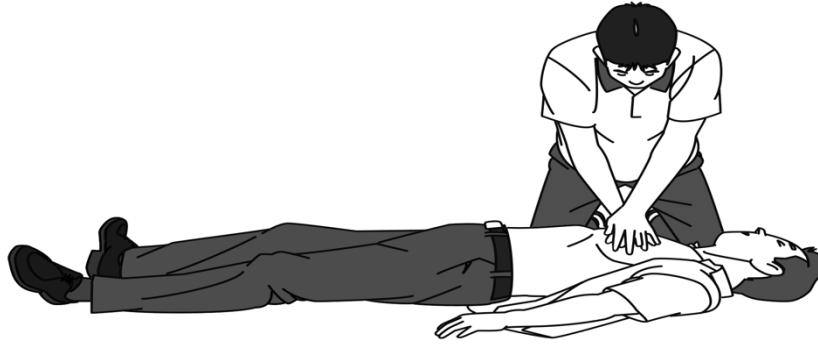


Fig. 6.6 Chest Compression Method (Ministry of Health, Labor and Welfare, 2015)

(4) Releasing Pressure

Between compressions (when pressure is not being applied), it is important to release pressure sufficiently so the chest can return to its normal height. However, there is a risk of losing the compression point if one's hands are removed entirely from the afflicted person's chest to release pressure, so careful attention is required.

(5) Substituting Rescuers

It takes stamina to repeatedly apply enough to depress an adult's chest by 5cm. As a rescuer tires, they will tend to push with less force and their tempo will grow slower without even realizing it, so always keep it in mind as you make strong, rapid pushes. If someone else is there to help you, switch roles every 1-2 minutes. It is critical to keep to a minimum interruption during the switch. Rescuers will tire even more quickly when chest compressions are being performed without artificial respiration, so substitutions will need to be performed more frequently.

(6) Combining 30 rounds of chest compression with two rounds of artificial respiration

If someone who has taken classes and learned artificial respiration techniques decides to use artificial respiration, then artificial respiration can be combined with chest compressions. The ratio of chest compression to artificial respiration is 30:2 and this combination should be repeated continuously until emergency medical services take over.

If you do not have the confidence to perform artificial respiration or are hesitant to touch your mouth to the mouth of the afflicted person, then just continue to perform chest compressions.

(7) Using an AED

The AED has audio messages and lights that provide instructions on the steps to be followed. Unless unavoidable, as when using the AED for electro-cardiogram (ECG) analysis or to deliver an electrical shock, it is important to continue chest compressions uninterrupted if possible, even when using an AED.

Please review "AED Use Procedures" below.

(8) Continuing CPR

It is important to continue CPR until emergency medical services take over. Even if you think it is having no effect, do not stop.

If the afflicted person begins to breath normally and responds to your voice or moves with purpose, CPR should be suspended; but if in doubt, do not stop. If you suspend CPR, continue to check the person's responsiveness and breathing as you wait until emergency medical services arrive. If the person stops breathing or their breathing is no longer normal, immediately resume CPR.

6.4.2 AED Use Procedures

(1) Retrieve AED

In most cases, AEDs are found in dedicated boxes with prominently displayed AED logos, as shown in Fig. 6.7. When the box is opened to remove the AED, an alarm will sound. It is fine to let the alarm continue to ring, so return immediately to the afflicted person.



Fig. 6.7 Examples of Installed AED Boxes (Ministry of Health, Labor and Welfare, 2015)

(2) Prepare AED

During CPR, switch immediately to preparing the AED once it arrives. Place the AED near the afflicted person's head (Fig. 6.8).



Fig. 6.8 AED Placement (Near Afflicted Person's Head) (Ministry of Health, Labor and Welfare, 2015)

(3) Switch Power On

Turn on the AED. Depending on the model, it will be either the type that has a button that needs to be pressed to power the unit on or the type that will power on automatically once the lid is opened (and has no power button). Once the power is on, operate the AED according to its audio messages and lights.

(4) Apply Defibrillator Pads

Expose the afflicted person's chest by removing clothing from the person's chest area. If buttons and hooks prevent you from removing the person's clothing, you will need to cut the clothing away.

Remove the defibrillator pads in the AED case from their bag. Referring to the illustration included on the defibrillator pad bag (Fig. 6.9), apply the two defibrillator pads directly to the person's skin as shown (Fig. 6.9). The illustration will show that one pad should be placed in the upper right area of the person's chest (below the collarbone on the right-hand side of breastbone) and the second pad placed under the person's left breast (5-8 cm below the armpit, diagonally below the nipple). Continue chest compressions even as the defibrillator pads are being attached.

Attach the defibrillator pads securely to the afflicted person's skin. Pockets of air between the defibrillator pads and skin can impede the flow of electricity (Fig. 6.10).

Depending on the model, you may need to plug the wires from the defibrillator pads into the socket in the AED device. Follow the AED's audio messages to operate the device.

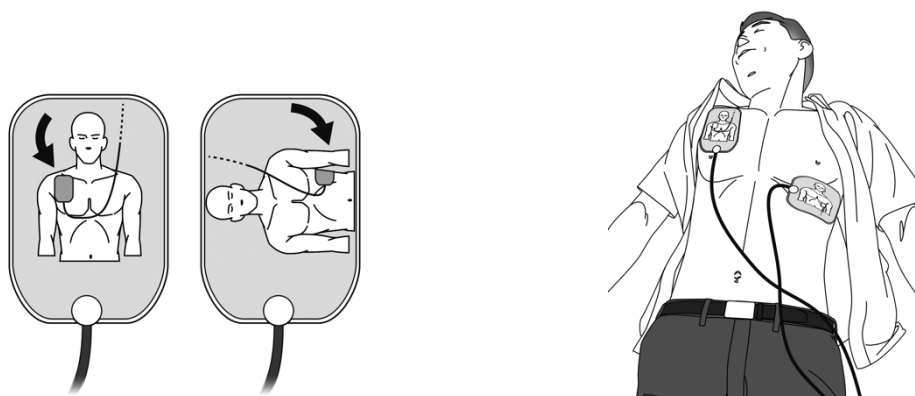


Fig. 6.9 Defibrillator Pad Placement

Expose the person's chest and apply the defibrillator pads to the skin.
(Ministry of Health, Labor and Welfare, 2015)



This is no good because of the gaps.

Fig. 6.10 Attach the Defibrillator Pads Securely to the Skin

(Ministry of Health, Labor and Welfare, 2015)

(5) Electro-cardiogram Analysis

Once the defibrillator pads are securely attached, the AED will automatically detect the connection and initiate electro-cardiogram (ECG) analysis with an audio message telling you to back away from the person's body.

Tell anyone else near the afflicted person to back away and verify that no one is in contact with the person's body. If anyone is touching the afflicted person's body, ECG analysis may not function properly.

(6) Deliver Electrical Shock and Resume Cardiopulmonary Resuscitation

(1) If Electrical Shock is Indicated

The AED automatically analyzes the ECG and determines if electrical shock is necessary. If it is, the AED will automatically begin charging with an audio message telling you that an electrical shock is necessary. Tell the people nearby not to touch the afflicted person's body and verify once more that no one is in contact with the person's body.

Once charged, the AED will begin beeping and the shock button light will come on, together with an audio message telling you to press the shock button. Press the button to deliver the shock as indicated. When the button is pressed, a strong electrical current will pass through the afflicted person's body, causing it to tense briefly.

After the shock, immediately begin chest compressions to resume CPR, as indicated by the audio message telling you to begin chest compressions immediately.

(2) If Electrical Shock is Not Indicated

If the AED audio message indicates that a shock is not necessary, immediately begin chest compressions to resume CPR. Just because a shock is unnecessary does not mean that CPR is unnecessary. Do not get confused.

(7) Repeat Cardiopulmonary Resuscitation and AED Procedures

The AED will begin automatic ECG analysis every two minutes. Each time, an audio message will remind you to back away from the body. During CPR, listen carefully for this audio message and, when you hear it, remove your hands from the afflicted person and tell the people around you to back away as well, then verify that everyone has backed away.

Keep repeating these CPR and AED procedures.

(8) Transfer to Emergency Medical Services

Keep repeating the CPR and AED procedures until emergency medical services takes over.

If the afflicted person begins to breath normally and responds to your voice or moves with purpose, suspend CPR and observe their condition. Because the AED may still be needed if their heart stops again, do not detach the AED defibrillator pads from the person's chest and leave the power on.

6.5 Emergency Supplies

General emergency supplies that should be carried during outdoor activities are listed below (The University of Tokyo Division for Environment, Health and Safety Fieldwork Accident and Disaster Measures Working Group, 2011). Depending on the nature of the outdoor activities, additional emergency supplies may be needed. Such

supplies should be added as appropriate for the given outdoor activities. Emergency supplies should be stored in a first-aid kit, or the like, and participants should know where to find the first-aid kit.

- (1) Adhesive bandages (large and small sized ones)
- (2) Clean gauze (in unopened package)
- (3) Bandaging
- (4) Elastic bandaging (to immobilize joints in the case of sprain, etc.)
- (5) Triangular cloth (for fractured or dislocated shoulders and arms)
- (6) Poison remover (to be used on bee/wasp stings, snake bites, etc.)
- (7) Rubber gloves, plastic gloves (to treat injured people who are bleeding, etc.)
- (8) Thermometer
- (9) Sterile distilled water (for washing wounds)
- (10) Iodoform-based disinfectant (e.g. povidone-iodine disinfectant)
- (11) Hydrogen peroxide disinfectant (oxydol disinfectant, pyrozone disinfectant, etc.)
- (12) Poultice, anti-inflammatory ointment
- (13) Antihistamine ointment (for insect bites, etc.)
- (14) Corticosteroid ointment (for rashes, etc.)
- (15) Antibiotic ointment

If possible, it is advisable to prepare the following as well.

- (16) EpiPen auto-injector (to be used for anaphylactic shock due to bee/wasp stings, etc.)

6.6 Psychological First Aid

If an accident or disaster causes a personal injury or a feeling of physical or mental danger, psychological support is needed for those affected by the accident. The following are notes on psychological support when an accident occurs during outdoor activities.

(1) Target person

The reaction and feeling of encountering a crisis event vary from person to person. Upsets may be greater if you have a similar painful experience in the past or if your physical and mental health is poor at the time of the crisis.

- (1) Persons who have experienced accidents or crisis situations
- (2) Who witnessed it
- (3) Person who was shocked by seeing and hearing closely

are also included. In addition to dealing with the full range of people affected by the crisis, there is a need for individual engagement with those who are particularly upset.

(2) How to get involved

The key is to be close to them and just listen ~~to them~~ if they are trying to talk or accept them if they are silent. It is inappropriate to force them to talk about the experiences and feelings or to ask them many questions. It is reasonable to ask, "Do you have anything that you are concerned about?"

- (1) Try to nod so that they know you are listening to their story.
- (2) When listening individually, ensure their privacy.

(3) Providing water and snack (or light meal) may ease their tension.

(4) There are times when the other party wants to know the information. Rather than guessing the answers, it is better to be honest and say “I’m afraid that I don’t know”.

(3) Managing caregiver’s own mental and physical condition

In crisis, caregivers themselves are often anxious, upset, or physically and mentally fatigued. It is important to be aware of your mental and physical condition and try to rest and not to overdo it.

(4) Take over to Campus Life and Health Support Center

After leaving the area, take over to the Campus Life and Health Support Center.

Reference URL

- WHO Psychological First Aid (PFA)

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The University of Tokyo Division for Environment, Health and Safety Fieldwork Accident and Disaster

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**Regarding the Accidental Death During Kyushu University General Education Course
“Introduction to Scientific Field Research: Yakushima Program”: Causal Investigation
and Recurrence Prevention Report
(Excerpted)**

March 31, 2017 (in Japanese)

Kyushu University Yakushima Fieldwork Student Accident Review Committee

Introduction

On September 6, 2016, Kyushu University freshman School of Letters student Shojiro Haraguchi died (drowned) in the Anbo River in the Town of Yakushima in Kumage, Kagoshima prefecture during the “Introduction to Scientific Field Research: Yakushima Program.”

That very same month, the Kyushu University Yakushima Fieldwork Student Accident Review Committee (“Review Committee”) was formed with the Senior Vice-President of Risk Management as chair to investigate the circumstances and causes behind the accidental drowning of the student during the program (“the Accident”) and to issue recommendations to prevent such accidents from recurring in the future. Committee members heard not only from the Senior Vice-President of Education, faculty engaged in fieldwork-based education and research, physicians and other relevant campus personnel but also from experts and others outside the university. The Review Committee met a total of seven times during the review, including three on-site inspections, informational hearings with involved parties, and opinion hearings with experts. This document reports on the findings of the Review Committee.

Concurrent to the review, a “Working Group to Study Course-related Safety Management” under the direction of the Senior Vice-President of Education was also formed by the Review Committee. The resulting Kyushu University “Educational Safety Guidelines: Outdoor Activities” drafted by the WG have been attached to this document as an appendix.

This document comprises the following seven main sections.

1. Introduction to Scientific Field Research: Yakushima Program
2. Outline of Events Leading to the Fatal Accident During the Yakushima Program
3. Circumstances that Likely Contributed to the Accident
4. Causes of the Accident Based on Investigation of Section 3
5. Investigation from the Perspective of General Preventative Measures for Water-related Accidents
6. Preventing Accidents: Safety Management and Safety Education for Students
7. Requests to Kyushu University

6. Preventing Accidents: Safety Management and Safety Education for Students

In 2004, Kyushu University established Rules for Faculty and Staff Safety and Health Management at Kyushu University, effective April 1. The rules established the Office for Promotion of Environmental Management, Health and Safety under the direction of the Executive Vice-President/Senior Vice-President in charge of health, safety, and risk management to promote safety and health management. Safety and health management for the university, as well as its various accident prevention-related initiatives, are found in Kyushu University's "Safety and Health Guidelines," "Disaster Preparedness Manual," and elsewhere. Focusing on "safety management and safety education for students," this report describes the prevention-related responsibilities of the university, schools serving as administrative units, and faculty and staff in charge of courses, as well as the steps to be followed by students enrolled in courses.

1) Safety Education and Safety Management Directed at Students

Safety and health education for faculty and staff at Kyushu University is written about in the "Safety and Health Guidelines" as follows.

Safety and health education exists to ensure employee safety and health and create a comfortable work environment by cultivating awareness and transmitting knowledge and skills. Safety and health education is extremely important for safety and health management at the university and, therefore, the following measures must be properly executed.

- (1) Employees will undergo safety and health-related education provided by the university.
- (2) Anyone working with radiation, handling experiment-related animals or research-related microorganisms or performing genetic recombination experiments will beforehand undergo education and training provided by the university.
- (3) Other safety and health education will be conducted by an employee's direct supervisor or person who effectively has supervisory authority.
- (4) Safety and health education will be performed not only at the time of appointment but also as needed, for instance, when work procedures change or at the time of periodic inspections.

In keeping with the above, students will also normally (1) undergo safety and health education for the courses they take, (2) undergo education and training beforehand when working with radiation, experiment-related animals/research-related microorganisms, or genetic recombination experiments, (3) undergo any special safety and health education conducted by their instructors or others for an experiment or practicum, as necessary to take a course or conduct experiments, and (4) undergo safety and health education as needed at the time of matriculation or advancement.

Most experiments and practicums that are offered in campus laboratories and seminar rooms by around the third year of undergraduate study are standardized. They are conducted with proper guidance using manuals or other materials based on many years of instruction and experience. Moreover, students will have normally received information and guidance, including measures to take, in the event an accident occurs.

On the other hand, undergraduate thesis research and graduate-level thesis research by master's and doctoral students, which are conducted mainly in laboratories and related facilities, entail a wide range of devices, from the

standardized to the cutting-edge, and wide range of activities, from something as simple as the handling of commonplace chemicals to something that involves strictly regulated substances. For this reason, safety and health education relies on the discretion of instructional faculty and exists in many forms and at many levels. The fundamental approach is to create safer educational environments by fostering a greater awareness of safety among instructional faculty.

2) Preventing Accidents in Courses Entailing Fieldwork

Important lessons from the Yakushima Program accident are relevant to educational and research activities involving fieldwork in general. Rather than tell ourselves that safety management must be fine because we have no accidents on record, we should stop and ask ourselves if safety management and safety education are being overlooked because no accidents have happened in recent years. Rather than tell ourselves that everything is okay because a near accident ended without incident, we should be reminding ourselves that we have been lucky to avoid accidents so far, but there is every possibility of things ending badly in the future. These lessons are important for us all—for the university, administrative units, course administrators, course instructors, and enrolled students.

From the circumstances that likely contributed to the accident during the Yakushima Program and our investigation of them, the following were revealed as ways in which the measures taken were under-prepared, inadequate, or belated.

- Guidance from the administrative unit and centralized management of program conditions
- Deliberation over whether the course should have been offered
- Management of program conditions for an introduction to scientific field research
- Centralized management across all programs
- Information-sharing between course instructors
- Information gathering activities related to conditions at Anbo River
- Description of the “Hands-on Experience at Anbo River” in the syllabus and informational materials
- Information on the “Hands-on Experience at Anbo River” for participants
- Number of leaders
- Emergency readiness, including life preservers and canoes
- Awareness of accident
- Request for emergency assistance

When necessary measures are fully implemented in advance, fieldwork-based education and research become even more rewarding in terms of their content and outcomes because of a greater sense of security. With the previously discussed findings of our investigation into the Yakushima Program in mind, we hope that Kyushu University, schools serving as administrative units, course administrators, course instructors, enrolled students, and others will take the recommendations on “Preventing Accidents in Courses Entailing Fieldwork” offered below and implement necessary measures and reforms in order to conduct even more rewarding fieldwork-based courses.

There were many shortcomings at the time of the accident, including in terms of communication to the university and legal guardians from the local site following the accident and in how the university responded after the accident had happened. Such post-accident measures should also be made a clear part of the accident recurrence countermeasures.

(1) Kyushu University

The Executive Vice President of Education will be the chief administrator for the university. The chief administrator for the university designates the school serving as administrative unit for the fieldwork-based course and centralizes management of the conditions under which fieldwork-based courses conducted by the school serving as administrative unit are managed.

The chief administrator for the university will write “Safety Guidelines for Courses that Entail Fieldwork” (tentative title) to provide basic information common to courses that entail fieldwork and will give guidance to the administrative units of such courses. Each administrative unit will supplement the “Safety Guidelines for Courses that Entail Fieldwork” (tentative title) and assess whether the unit is performing proper safety management and safety education by writing safety guidelines per the “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School” described below. The chief administrator for the university will centralize the management of administrative units by requiring them to report to the chief administrator for the university any accidents, or conditions/issues that might have led to an accident, and by providing guidance on reforms that may be required.

Kyushu University's “Safety and Health Guidelines” will be updated with important fieldwork-based education and research-related information based on the “Safety Guidelines for Courses that Entail Fieldwork” that are written by the university.

(2) Schools Serving as Administrative Units

A school's dean will be the chief administrator for the school. The chief administrator for the school will establish a committee or other body to deliberate whether or not a fieldwork-based course administered by the school should be offered and then decide based on the committee's report of its deliberations whether or not the course will be offered. The committee deliberates based on the pre-activity survey report for the fieldwork site, the status of safety education and safety measures to be taken, and past accidents, issues and improvement plan described in the request to offer the course. If the course does not meet the standards set forth by the committee, the course offering will not be approved.

Additionally, the chief administrator for the school will centralize management of course program conditions by requiring an annual report on safety management and safety education. The chief administrator for the school will be required to report to the chief administrator for the university any accidents or conditions/issues that might have led to an accident, including measures taken and plans for improvement.

It would be difficult in the “Safety Guidelines for Courses that Entail Fieldwork” (tentative title) written by the chief administrator for the university to cover all safety guidelines specific to the wide range of fieldwork sites and course program content. The chief administrator for the school will supplement the “Safety Guidelines for Courses that Entail Fieldwork” (tentative title) by establishing “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School” and provide guidance to course instructors.

The chief administrator for the school assess whether course instructors are performing proper safety management and safety education according to “Safety Guidelines for Courses that Entail Fieldwork” and “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School.” The chief administrator for the school will centralize the management of fieldwork-based courses administered by the school by requiring course

instructors to report to the chief administrator for the school any accidents, or conditions/issues that might have led to an accident, and by providing guidance on reforms that may be required.

(3) Faculty of Arts and Sciences

A committee or other body will be established to deliberate whether or not a course should be offered, with the dean of the Faculty of Arts and Sciences then deciding based on the committee's report of its deliberations whether or not the course will be offered. For general education course that entail fieldwork, the committee deliberates based on the pre-activity survey report for the fieldwork site, the status of safety education and safety measures to be taken, and past accidents, issues and improvement plan described in the request to offer the course. If the course does not meet the standards set forth by the committee, the course offering will not be approved.

Most KIKAN education courses are offered for first and second-year undergraduates, so they include many inexperienced students and therefore require even more meticulous safety management and safety education.

(4) Course Instructors

Course instructors will conduct the course according to “Safety Guidelines for Courses that Entail Fieldwork” and “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School,” as well instructions from the chief administrator for the school in the school serving as administrative unit. Instructors will also add any course-specific measures they deem necessary for safety management and safety education. Course instructors will be required to report to the chief administrator for the school any accidents or conditions/issues that might have led to an accident, including measures taken and plans for improvement.

If a course has multiple instructors, one instructor will be designated the course administrator. The course administrator will centralize management of the course by assessing each instructor's safety management and safety education practices and requiring them to report to the course administrator any accidents or conditions/issues that might have led to an accident, including measures taken and plans for improvement.

(5) Students Enrolled in the Course

Prior to enrolling, students enrolling in a course that entails fieldwork should carefully read the sections of the “Safety Guidelines for Courses that Entail Fieldwork” and “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School” that pertain to enrolled students and fully understand the course-specific safety guidelines provided by the course instructor, all of which must be followed by students enrolled in the course. Additionally, students must attend the course guidance session as well as seek on their own to acquire knowledge that will help to avoid risks, understand the risks entailed in the course, and actively participate in their own safety management.

During the course, students will not only take steps to follow directions given by their instructors but also immediately report to their instructors any accidents or hazardous situations that may occur or have already occurred.

3) Preventing Accidents in Fieldwork-based Education and Research When a Research Lab is the Administrative Unit

Compared to normal fieldwork-based coursework, undergraduate thesis research and graduate-level thesis research by master's and doctoral students take place mainly in research labs and encompass a wider of fieldwork sites, as well as a more advanced and diverse range of activities at those sites. Moreover, it is not unusual for fieldwork to be conducted independently by undergraduate and graduate students without a supervising faculty member with them. Out of a respect for the autonomy and authority of scholarship and research, safety management and safety education essentially rely on the discretion and responsibility of the faculty member or other person supervising the research. For this reason, there are differences of degree and quality in how safety management and safety education are currently practiced.

Field research must be conducted in accordance not only with the “Safety Guidelines for Courses that Entail Fieldwork” and “Safety Guidelines Specific to Fieldwork-based Courses Administered by the School” but also with any necessary safety management and safety education practices specific to the fieldwork that are established by the faculty member supervising the research. Any accidents during field research, or conditions/issues that might have led to an accident, including measures taken and plans for improvement, must be reported to the school administrator in the school to which the faculty supervisor belongs.

4) Preventing Water-related Fieldwork Accidents

Much of the education and research at Kyushu University takes place in or around marshlands, rivers, ponds, lakes, harbors, the ocean and other water-related fieldwork sites. The Review Committee investigated the safety management and safety education practices during such education and research.¹⁵

For this inquiry, the committee received reports on a total of 63 educational and research activities. The activities took place at a variety of locations, including streams, rivers, lakes/marshes, and ocean environments, with the majority taking place in or around aquatic environments near land. That said, more than a small number of activities were boat-based, using research boats from Nagasaki University, Kagoshima University, Tokyo University of Marine Science and Technology, the Japan Agency for Marine-Earth Science and Technology, the Japan Agency of Maritime Education and Training for Seafarers, or elsewhere. Likewise, while the vast majority of activities took place in Japan and were short-term (from a few hours to few days), there were some relatively long activities in places like the Okinawa Trough and some overseas activities in places like the East China Sea, the northern Pacific Ocean, Mongolia, Indonesia and elsewhere.

The ratio in most of the 63 cases ranged from one to ten students per leader. Some reported activities for master's and doctoral thesis research involved only students, but in such cases the students had been instructed to work in groups. In general, topographical maps, information on weather, waves, marine weather, and routes, and so forth were collected on the day prior to and/or before the start of activities. In virtually all cases, there were information sessions on the practicum site and activities held in advance for safety management and safety education, and participants were required depending on the activities to wear hard hats, gloves, cleated work tabi, waders, wetsuits, life jackets, and so forth. As needed, they also included university and museum specialists, state-licensed divers, and personnel with diver certification cards (“C-cards”), boating licenses, or other credentials, as well as personnel who had completed the fire department's course on rescue techniques. In the majority of cases, there was an emergency contact system in place, as well as mobile phones, two-way radios, etc., to ensure means of communication. In some cases, faculty and students were also kept on-call on land in case an emergency arose.

As this indicates, safety management and safety education are generally practiced across the board. That said, there was substantial variance in the information provided in the reports submitted by supervising faculty and faculty groups, including activities where the information sessions were only conducted verbally without any reference materials; activities that depended exclusively on the supervising faculty member's personal experience; joint activities with other universities for which it is unclear whether responsibilities entrusted to the other university's faculty members were ever verified; and activities that had no communication system for emergencies and accidents. Moreover, there were too few reports clearly indicating that information on hazards at the site had been collected beforehand, that near-miss situations during past activities had been used to make improvements, and that training in water rescue and first-aid measures had been actively undertaken.

It is time now for faculty, the schools and other administrative units, and the university to reexamine and comprehensively systematize their safety management and safety education practices related to education and research at water-related fieldwork sites.

7. Requests to Kyushu University

A tragic accident such as this must never happen again, and it must never be forgotten. We reaffirm that safety management and safety education for students, faculty, and staff is the responsibility of the university and hope that fieldwork-based education and research activities will be made even more robust through full implementation of the accident-prevention measures described in section 6. In support of these policy measures, we ask the following.

- (1) Funding, or the creation of a fund, to support safety management and safety education activities for fieldwork-based courses.
- (2) Creation of a “Fieldwork-based Education and Research Safety Management and Education Day” (tentative title), including support for its activities, to strengthen safety management and safety education in fieldwork-based courses. At this event, examples of past accidents and near-miss situations during fieldwork-based education and research, as well as information on what measures to take and ideas for improving them, would be shared by faculty and students, while specialists and organizations would lead educational activities to promote fieldwork-related safety management and safety education.