Fu Jen Catholic University
Biosafety Emergency Response Plan

102.7.16 環安衛中心
105.12.29 生物安全會議修訂
111.6.17 生物安全會議修正通過
Passed by the Environmental Health and Safety Committee on July 16, 2013
Amended by the Biosafety Committee on December 29, 2016
Amended by the Biosafety Committee on June 17, 2022

1. Project background

This Biosafety Emergency Response Plan was created in accordance with the following pieces of legislation: Article 6 of the Occupational Health and Safety Act, which requires employers to take steps to prevent hazards caused by animals, plants, or microorganisms, as well as create appropriate plans and adopt necessary measures to allow for evacuation, first-aid treatment, proper rest, and other guarantees to protect the physical and mental health of workers; and Article 26 of the Regulations Governing Management of Infectious Biological Materials, which stipulates that laboratories and storage facilities should set up emergency response plans.

2. Goals

This Biosafety Emergency Response Plan has the following goals: to prevent infectious biological materials from infecting personnel after an accident, to prevent leakage of said materials in bio-related laboratories, and to draw up preventive safety measures for handling, notification and response procedures for possible hazards involving laboratory animals or infectious biological materials for when an incident occurs.

3. Scope

Laboratories and storage facilities that hold and use pathogens and biotoxins of hazard level II or higher must develop their own biosafety and biosecurity emergency response plans with reference to this plan and send them to the Biosafety Committee for approval.

1. General laboratory information

1) General information Date of creation: ___year ___month ___day

Department (institute)	Laboratory number and name (e.g. MD000-Microbiology lab)	
Laboratory phone:	Laboratory safety level	□ BSL-1 □ BSL-2 □ ABSL-1 □ ABSL-2
Person in charge: Emergency telephone number: On-campus extension number E-mail:		
☐ Floor escape route map (please include escape routes)		
☐ Laboratory floor plan (please include escape routes)		

2. Laboratory facilities (equipment) information

1） List of biomaterials (for reference)

Biomaterial supervisor Name: Telephone: E-mail:		
Person who handled the biomaterials (to be filled in personally)		
Name	Telephone	E-mail

Biomaterials breakdown

Item	Name (English)	Name (Chinese)	Category	Source	Risk group note 1	Storage location note 2	Pathogen Safety Data Sheets (PSDS) hazard description note 3
1			□Bacteria □Virus □Fungus □Prion protein □Parasite □Biotoxin	□Person □Animal □Plant □Microorganism	□RG1 □RG2		Pathogenicity: Laboratory hazard: Exposure control / personal protection: Sterilization method:
2			□Bacteria □Virus □Fungus □Prion protein □Parasite □Biotoxin	□Person □Animal □Plant □Microorganism	□RG1 □RG2		Pathogenicity: Laboratory hazard: Exposure control / personal protection: Sterilization method:
3			□Bacteria □Virus □Fungus □Prion protein □Parasite □Biotoxin	□Person □Animal □Plant □Microorganism	□RG1 □RG2		Pathogenicity: Laboratory hazard: Exposure control / personal protection: Sterilization method:

Note 1. Hazard classification: Please refer to the list of hazard groups in the table listing the Essentials in Infectious Biomaterial Management Practice of the Ministry of Health and Welfare. The FJCU Biosafety Committee does not approve the use of biomaterials above RG3.

Note 2. Please fill in the storage location of the biomaterial, e.g. Room MD000 - 80 degree refrigerator.

Note 3. Visit the website of the Ministry of Health of Canada to download and print the Pathogen Safety Data Sheets (http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php). Paper copies are kept in the laboratory folder for reference.

2）Laboratory Emergency Response Materials Management & Placement (reference format)

Emergency response materials manager information		
Name	Telephone	E-mail

Emergency response material (including first-aid medicine, protective equipment, and disaster response equipment)	Amount	Storage location (location in the laboratory)
Ex.: Emergency kit	___box(es)	
Ex.: Gloves	___box(es)	
Ex.: Face mask	___box(es)	
Ex.: Goggles	___unit(s)	
Ex.: Proper concentration of disinfectant solution (1:10 diluted bleach/75% alcohol)	___bottle(s)	
Ex.: Sterilization indicator tape	___roll(s)	
Ex.: Biomedical waste disposal bags	___bag(s)	

3. Laboratory Personnel Registration and Contact Information

1. In case of emergency, the designated assembly area for laboratory personnel is _____
2. Laboratory personnel registration and contact information (all laboratory personnel)

Name	Position	Telephone	E-mail	Conducting biological experiment
Chen Hsiao-ming	Ex.: 1st year MA student			No
Chang Hsiao-hua	E.g.: Assistant			Yes

4. Emergency response teams and tasks

Task division	Response team	University unit	Work description
On-site director	Dean/department (institute) unit head		1. Commanding and deploying on-site disaster relief and chemical substance and infectious biomaterial treatment operations. 2. Submitting assistance requests. 3. Mobilizing and deploying assistance.
Notification team	Laboratory supervisor; unit safety and health manager	Security room; Campus Safety Center; Environmental Protection, Health and Safe Center	1. Issuing emergency alarms and reporting of on-site treatment status. 2. Contacting the on-site command center as instructed. 3. Requesting assistance from relevant units.
Disaster relief team	Person in charge of the laboratory; unit safety and health manager; disaster relief team members of the unit	Environmental Protection, Health and Safe Center; Office of General Affairs	1. Assisting in providing disaster analysis, safety data sheets, and disaster protection and relief equipment. 2. Providing professional and technical support. 3. Providing on-site disaster relief and situation control, and handling chemical substances and infectious biomaterials (recovery, spills, containment and repair).
Planning team	Planning team members of the unit	Environmental Safety Center; Biosafety Committee	Providing consultation on safety, protection, biohazard prevention, poison prevention, SDS, and PSDS in experimental sites and maintaining their safety.
Evacuation guidance team	Evacuation guidance team members of the unit; teaching or administrative supervisor of the building	Military Education and Student Safety Division	Evacuating personnel and controlling access in case of emergency
On-site control team	On-site control team members of the unit	Security Room; Military Education and Student Safety Division	Carrying out on-site isolation and placing warning signs
Medical treatment team	Medical treatment team members of the unit	Office of Student Affairs Division of Sanitary	Providing first aid and medical assistance for the injured

Task division	Response team	University unit	Work description
Public relations team	Public relations team members of the unit	Office of Public Affairs	Collecting and releasing disaster information
Mobile support team	Mobile support team members of the unit	Office of General Affairs; Office of Student Affairs	1. Assisting operational and response groups at the scene 2. Carrying out firefighting and ambulance traffic guidance

5. Hazard category & hazard level identification and risk assessment

Note: Biosafety hazard level, description, report and steps to take

Hazard level	Description	Examples	Report	What to do
High	Leakage of an infectious biological substance is limited to a laboratory or storage area, posing a risk of infecting or harming personnel.	1. Disasters such as earthquakes, floods, or fires, or man-made disasters that result in hazard level II to IV pathogens and/or biotoxins escaping from the laboratory or storage area. 2. Improper operations, inadequate protection or hardware abnormalities result in a worker unknowingly becoming infected and then carrying a hazard level II to IV pathogen or biotoxin out of the laboratory. 3. Infected experimental	1. The person in charge or whoever discovers the leak must report it immediately to the supervisor of the laboratory or storage area, and produce a written record of the leak for reference. 2. In response to the epidemic control of specific pathogens, if a biosafety accident occurs during the establishment of a central competent authority for the control of a specific pathogen, the person in charge or whoever discovers the incident must report it to	1. Handle the situation by following the Biosafety Emergency Response Plan for laboratories and Storage Areas created by your program/division. 2. The central government may direct and coordinate efforts to handle the situation. 3. The program/division must promptly assist in arranging medical treatment for anyone who may be infected. Special personnel must be assigned to conduct daily health surveillance on those potentially infected during the incubation period of the disease that may be caused by the pathogen or biotoxin to which they have been exposed. 3.1 If a person is diagnosed by a physician as having an infectious disease and is confirmed to have been exposed to a pathogen: (i) They must immediately follow the “report” process listed on the left. (ii) The Biosafety Committee of the program/division must complete a preliminary investigation report within 10 days after the day of the notification to the local and central competent authorities under the name of the

Hazard level	Description	Examples	Report	What to do
		animals have escaped from their containment and cannot be found.	the Biosafety Committee. 3. The supervisor of the laboratory or storage area must immediately report to the Biosafety Coordinator of the program/division; this coordinator must immediately report to the Director of the Biosafety Committee. 4. The facility must make a report to the local and central competent authorities within 24 hours after discovery.	program/division. (iii) Within one month from the date of the preliminary investigation report, the Biosafety Committee must submit a complete investigation report, a report on how the situation is being handled, and a report on how future risks will be mitigated in the name of the program/division to the competent authority and the central authority. 3.2 If a person is diagnosed by a physician as not having an infectious disease: (i) The person must notify the supervisor of the laboratory or storage unit immediately after being informed; the supervisor then must immediately notify the Biosafety Coordinator of the program/division, who then must immediately notify the Director of the Biosafety Committee. The facility must make a report to the local and central competent authorities within 3 days. (ii) The supervisor of the laboratory or storage unit must send the investigation report together with the report on how the situation is handled

Hazard level	Description	Examples	Report	What to do
				and the report on future risk mitigation to the Biosafety Committee for review within one month after being informed that there is no concern of infection. (iii) The Biosafety Committee must submit the investigation report together with the report on how the situation is handled and the report on future risk mitigation in the name of the program/division to the local and central competent authorities within seven days after the reports have been reviewed.
Moderate	Leakage of an infectious biological substance is limited to a laboratory or storage area, posing a risk of infecting or harming personnel.	1. Earthquakes, floods, fires, or manmade incidents resulting in the release of hazard level II to IV pathogens or biotoxins outside the safety area of the laboratory or storage area or inside of the work area. 2. Improper operation, improper protection, or hardware abnormalities resulting in exposure of personnel by hazard level II to IV	1. The person in charge or whoever discovers the leak must report it immediately to the supervisor of the laboratory or storage area, and produce a written record of the leak for reference. 2. if a biosafety accident occurs during the establishment of a central competent authority for the control of a specific pathogen, the person in	The same procedure as for a high level hazard applies.

Hazard level	Description	Examples	Report	What to do
		pathogens or biotoxins, during which personnel is aware of the potential exposure risk and takes immediate notification and treatment measures. 3. Escape of an infected experimental animal from a containment device which is detected by laboratory personnel after which the animal is caught inside the laboratory.	charge or whoever discovers the incident must report it to the Biosafety Committee. 3. The supervisor of the laboratory or storage area must immediately report to the Biosafety Coordinator of the program/division; this coordinator must immediately report to the Director of the Biosafety Committee. 4. The facility must notify the local and central competent authority within 3 days after discovery (or within 24 hours if the central competent authority has established a central epidemic command center for infectious diseases caused by the pathogen).	
Low	Leakage of an infectious biological substance is limited to the safety equipment of a laboratory or storage area, posing a	1. Leakage or spillage of hazard level II to IV pathogens or biotoxins by personnel operating in the biosafety cabinet. 2. A rupture of the centrifuge tube while the centrifuge is being used, resulting in	1. The person involved in the incident should report to the director of the laboratory or storage area within 48 hours from the time of the incident, and keep a written record for reference. 2. the director of the laboratory or storage area	1. Handle the situation by following the Biosafety Emergency Response Plan for laboratories and Storage Areas created by your program/division. 2. The director of the laboratory or storage area reports the cause of the incident and measures for improvement to the Director of the Biosafety Committee within the deadline stipulated in the Biosafety Committee of the program/division. 3. The Director of the Biosafety Committee of the program/division reports the cause of the incident and

Hazard level	Description	Examples	Report	What to do
	risk of infecting or harming personnel.	leakage of hazard level II to IV pathogens or biotoxins into the interior of the centrifuge.	should report to the head of the Biosafety Coordinator of the program/division.	measures for improvement at the next meeting of the Biosafety Committee.
Other	Personnel in a laboratory or storage area is injured by a sharp object, posing a risk of infecting or harming other personnel.	1. While conducting animal experiments, personnel got injured by a needle containing hazard level II to IV pathogens or biotoxins. 2. Personnel got bitten while restraining an infected experimental animal. 3. Personnel got accidentally stabbed or cut while cleaning broken glass containing hazard level II to IV pathogens or biotoxins.	The same reporting procedure as for a moderate level hazard applies.	The same procedure as for a high level hazard applies.

6. Accident alert, notification & response mechanism

1. Laboratory notification and response process

A) Low hazard

1. Involved parties must immediately follow the Laboratory Biosafety Emergency Response Plan of their unit as necessary.
2. Involved parties must report to the supervisor of the laboratory as well as to the Environmental Safety and Health Center, and submit the Fu Jen Catholic University Laboratory Biosafety Incident Report Form within 48 hours for reference. If anyone has been injured, they should fill out the Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form.

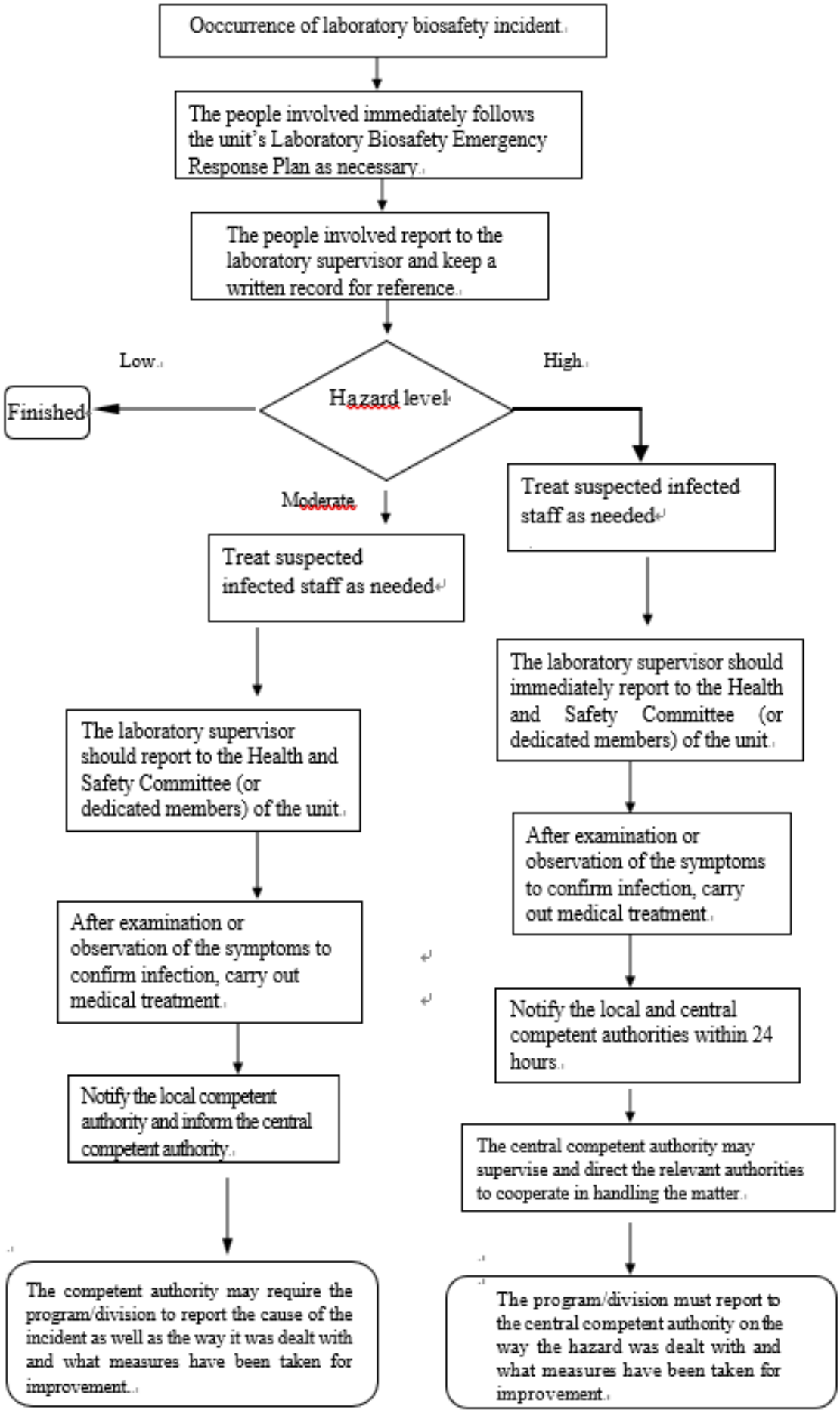
B) Moderate hazard

1. Involved parties must immediately follow the Laboratory Biosafety Emergency Response Plan of their unit as necessary.
2. Involved parties must report to the supervisor of the laboratory as well as to the Environmental Safety and Health Center, and submit the Fu Jen Catholic University Laboratory Biosafety Incident Report Form within 24 hours to the university, who shall then report to the competent authorities. If anyone has been injured, they should fill out the Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form.
3. Possible infections must first be dealt with: after examination and observation of symptoms of possibly infected people to confirm infection, medical treatment must first be provided.
4. The laboratory supervisor must report to the Biosafety Committee of the program/division.
5. If there is a suspected infection of laboratory personnel in the facility, the Environmental Safety and Health Center must be informed, who will then report this to the local competent authority while also informing the central competent authority.
6. The competent authority may require the program/division to report the cause of the incident as well as the way it was dealt with and what measures have been taken for improvement.

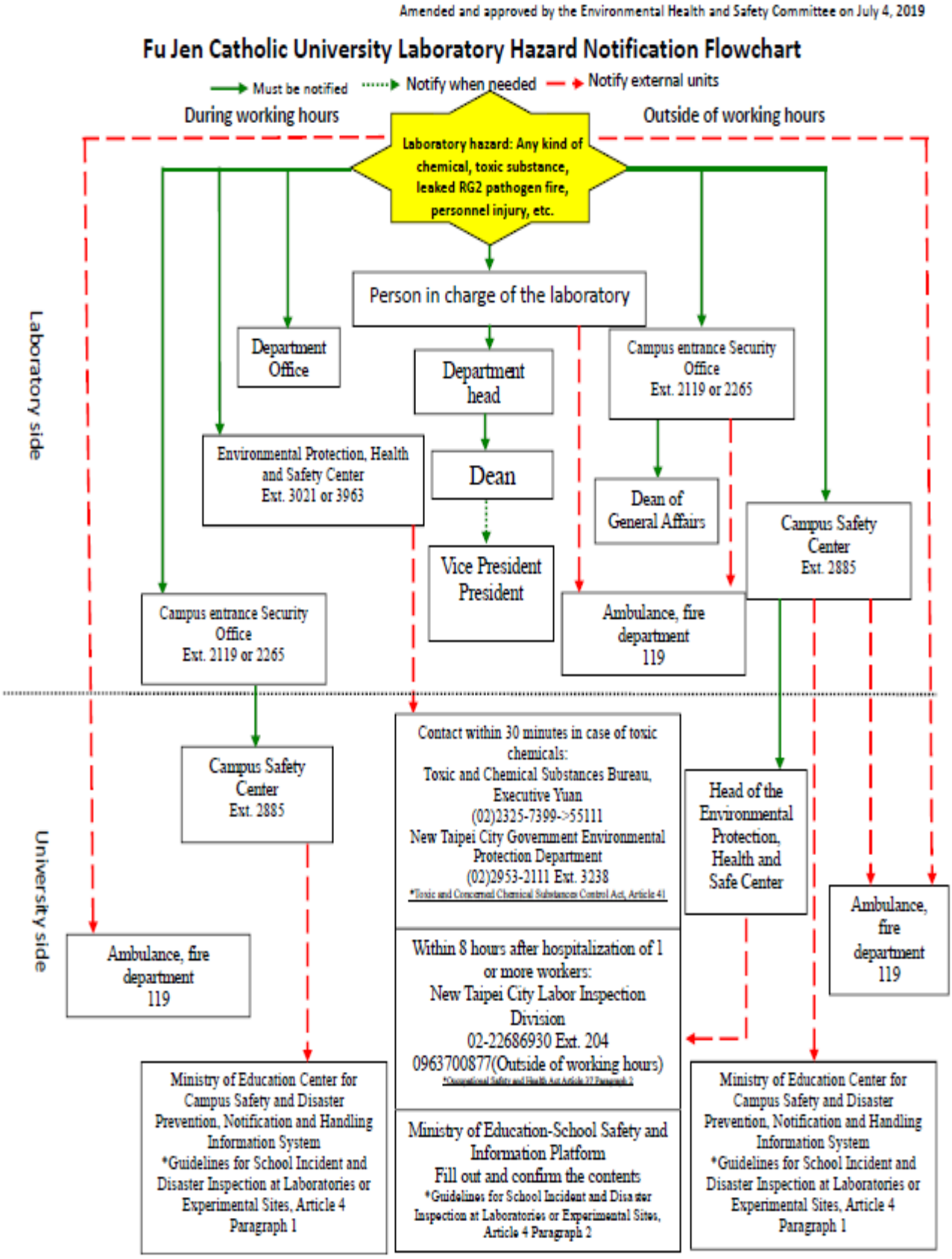
C) High hazard

1. Involved parties must immediately follow the Laboratory Biosafety Emergency Response Plan of their unit as necessary.
2. Involved parties must report to the supervisor of the laboratory as well as to the Environmental Safety and Health Center, and submit the Fu Jen Catholic University Laboratory Biosafety Incident Report Form within 24 hours to the university, who shall then report to the competent authorities. If anyone has been injured, they should fill out the Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form.
3. Possible infections must first be dealt with: after examination and observation of symptoms of possibly infected people to confirm infection, medical treatment must first be provided.
4. The laboratory supervisor must report to the Biosafety Committee of the program/division.
5. After the Biosafety Committee has been informed, the local and central competent authorities must be informed within 24 hours.
6. The central competent authority may supervise and direct the relevant authorities to cooperate in handling the matter.
7. The program/division must report to the central competent authority on the way the hazard was dealt with and what measures have been taken for improvement.

2. Laboratory Biosafety Incident Notification Process



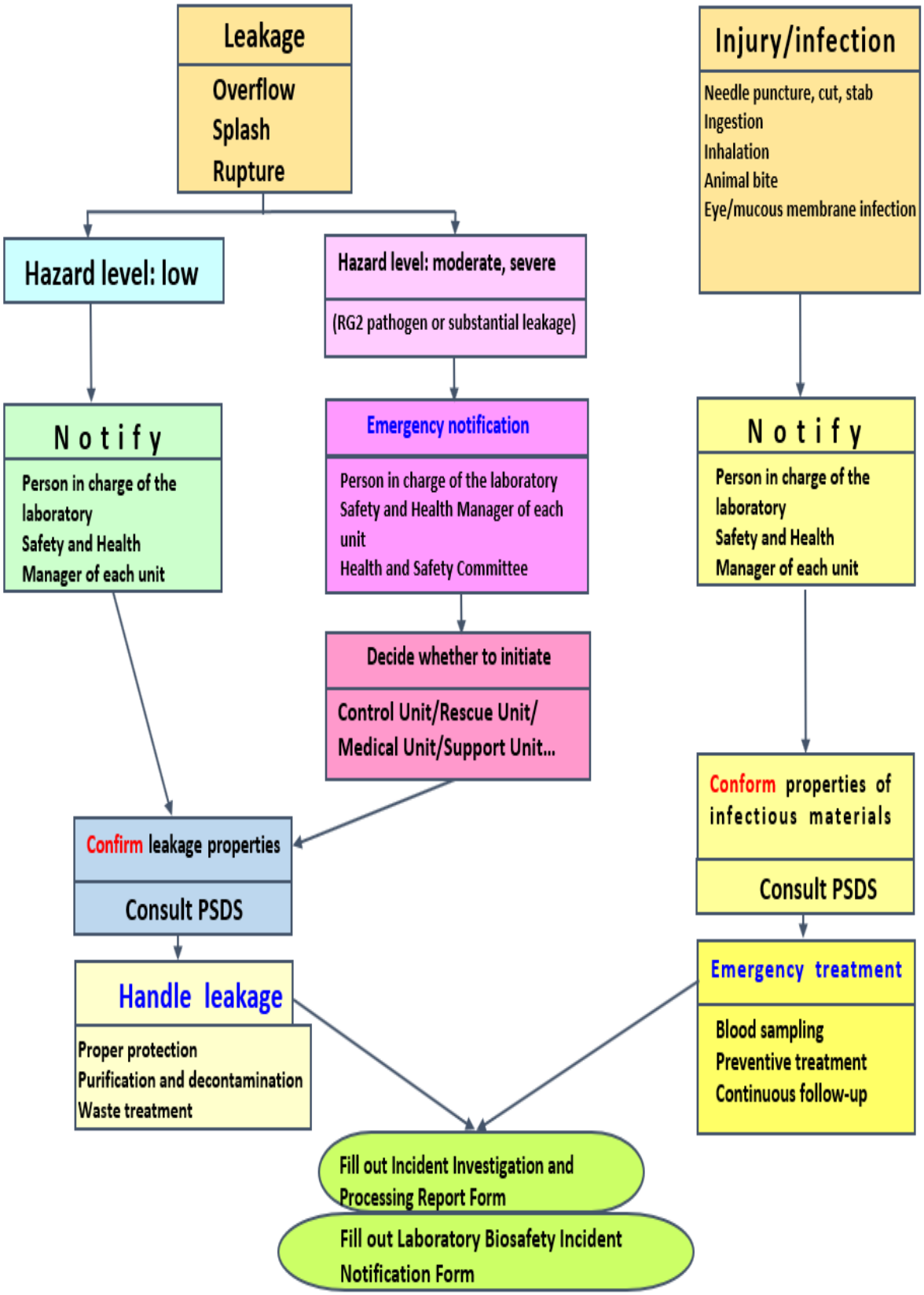
3. Fu Jen Catholic University Laboratory Hazard Notification Flowchart



Note 1: To save time, notifications regarding injured personnel or fire outbreaks to 119 will be reported directly by the laboratory. If a hazard is discovered by a security guard or campus security authority during non-working hours, the Security Room or Campus Safety Center will assist in reporting the hazard to the outside.

Note 2: When reporting a hazard, the person, event, time, place, and substance must be clearly and fully described.

4. Fu Jen Catholic University Biosafety Emergency Response Flowchart



5. Biosafety & Security Hazards —Internal Report Process for Laboratories

1. Report process for laboratories

1. General incidents:

   Internal laboratory report → person in charge of the laboratory → unit of the department/institute → university (Environmental Safety and Health Center)

2. Health and safety incidents (suspected infection of personnel):

   Internal laboratory report → person in charge of the laboratory → unit of the department/institute → university (Environmental Safety and Health Center) → Biosafety Committee

3. Abnormal health and safety incidents:

   Internal laboratory report → person in charge of the laboratory → unit of the department/institute → university (Environmental Safety and Health Center) → Biosafety Committee

2. Principles of Emergency Response to Laboratory Incidents

1. General incidents:

   Obtain correct information about the hazard (person, event, time, place, substance) → Report to the person in charge of the laboratory, the unit of the department/institute, and the Biosafety Committee → prioritize treating the injured (assess severity and determine whether hospitalization is required, notify family if necessary → evacuate laboratory personnel.

2. Abnormal health and safety incidents:

   Obtain correct information about the hazard (person, event, time, place, substance) → report to the person in charge of the laboratory/RG2 site manager, and the Biosafety Committee → start immediate investigation to determine the situation → report to the Biosafety Committee.

3. Notification methods

1. Telephone
2. E-mail
3. Radio broadcast
4. Other reliable and fast methods

4. Content

1. Name, unit, and position of the person reporting
2. Time and location of the incident
3. Description of the incident

4. Casualties
5. Measures that have been or will be implemented
6. Other
7. Fill out the FJCU Laboratory Biosafety Incident Report Form
8. If anyone has been injured, they should fill out the Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form

6. Laboratory Biosafety Incident Report Form

Fu Jen Catholic University Laboratory Biosafety Incident Report Form

Date: ___year ___month ___day

Form completed by:		Position:	
Telephone:		Fax:	
E-mail:			
Location:	___year ___month ___day ___hour ___minute Building name: Laboratory number: Laboratory name:	Number of infected persons: ___	
Cause of the incident	A. □Biomaterial(□RG2, name:_____) , Category: □Bacteria □Virus □Fungus □Prion protein □Parasite □Biotoxin □ Location: □Inside/□Outside the biosafety cabinet □Rupture of centrifuge tube inside the centrifuge □Loss □Personnel cuts or puncture wounds (□None/□In contact with infectious biomaterials) □Escaped infectious experimental animal (□Caught in experimental work area/□Escaped and missing) B. □Fire C. □Earthquake D. □Other:		
How was the situation dealt with	Briefly describe the process and results:		
Lab manager (signature)		Biosafety Council Executive Director (signature)	

※CDC Notification Fax: (02)23919524; Email: cdcbiosafe@cdc.gov.tw

7. Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form

Fu Jen Catholic University
Campus/Laboratory Incident Report and Investigation Form

Amended by the Environmental Health and Safety Committee on October 9, 2014
Amended by the Environmental Health and Safety Committee on April 14, 2016

Program/Division:	
Form completed by:	Name: Position: Telephone: Date:

Details of the incident (to be reported in accordance with the Occupational Safety and Health Act and laboratory regulations)

- Location: ☐inside laboratory ☐outside laboratory

A. Report Required Within 8 Hours

☐1. Accident resulting in death
☐2. Accident injuring at least three people
☐3. Accident resulting in the hospitalization of at least one person

(Please call the Environmental Health and Safety Center: 2905-3021, 2905-3963. Outside of regular office hours please notify FJCU Security Center: 29052885 and the New Taipei City Labor Standards Inspection Office: 0963700877.)

Failure to report to the Labor Standards Inspection Office by the deadline may result in a fine of NT$30,000 to NT$300,000. Except where necessary for rescue purposes, the scene of an accident may not be altered or destroyed. Anyone who alters or destroys the scene may be punished with a prison sentence of up to one year, detention, or detention and fine of up to NT$180,000.

B. Report Required Within 24 Hours

☐1. Damage to property in excess of NT$100,000 (includes damage to buildings, facilities, teaching resources, and products of research).
☐2. Incident has gained media coverage.

C. Within 7 days (minor injuries)

☐1. Someone has sustained a physical injury (which does not require a hospital stay and recovery takes less than 1 day).
☐2. Equipment was damaged due to improper use (NT$100,000 or less in damages)
☐3. Fire (including fires that were extinguished immediately)
☐4. Reaction of an experiment exceeded predictions
☐5. Electrocution
☐6. A close call (i.e. the incident could have caused injury, death, or greater damage if the situation had been slightly different)

Date of incident: (YYYY/MM/DD) Time:
☐Incident occurred during operations
☐Incident occurred while no one was present

Date of incident: (YYYY/MM/DD) Time: ☐Incident occurred during operations ☐Incident occurred while no one was present	
Location of Incident	
Financial losses	NT$

Casualties
Death:
Number of Faculty/Staff Members:_____ Number of Students:_____
Serious Injury:
Number of Faculty/Staff Members:_____ Number of Students:_____
Minor Injury:
Number of Faculty/Staff Members:_____ Number of Students:_____
Total Number of Casualties:

Was hospitalization required: ☐Yes ☐No
If yes, please write the number of people hospitalized:
Faculty/Staff:_____
Students:_____

Response	Person who handled the situation	Name:	Position:	Telephone:
	Please detail how the situation was handled and what outcomes were produced			

Details of the incident	Name of Injured: Position: Gender: Birth Date: Age:	
	Work Experience Years: Months:	Dates of Injury Leave: From _____ until _____
	Location of Incident: Body Part Injured:	
	What external factor caused the incident? ☐none ☐power system ☐power transmission device (e.g. transmission shaft, gears) ☐welding equipment ☐furnace ☐woodworking machine (e.g. circular saw, band saw) ☐semi-automatic tool ☐radiation ☐chemical equipment ☐transported object ☐power generating machine (e.g. lathe, lapping machine, press, shear, centrifuge) ☐vehicle ☐hoisting machinery (e.g. crane, elevator, windlass) ☐pressure vessel (e.g. boiler, pressurized object) ☐electrical equipment (e.g. transmission and distribution line, electrical devices) ☐transport equipment (e.g. truck, forklift, conveyor belt) ☐materials (e.g. metal, wood, bamboo) ☐tool/apparatus (e.g. ladder) ☐causative organism ☐environment (e.g. high or low-temperatures) ☐hazardous/harmful material (e.g. explosive substance, flammable gas, harmful toxin) ☐other	
	Describe the incident: (If more than one person was injured, each additional person must complete Appendix I)	
Nature of injury	☐fall/tumble ☐trip ☐collision ☐falling object ☐collapsed object ☐struck by object ☐pinch/roll ☐abrasion/scratch/scrape ☐foot injury (e.g. pierced by sharp object) ☐drowning (resulting in death)	

	☐contact with high or low temperature ☐contact with hazardous substance ☐electrocution ☐explosion ☐breach ☐fire ☐incorrect movement ☐oxygen deficiency ☐dust hazard ☐biohazard ☐chemical hazard ☐poisoning ☐local vibration ☐radioactive exposure/contamination ☐traffic accident (including on public roads/train tracks/boats/airplanes, etc.) ☐burn ☐needle puncture ☐incised wound ☐bite ☐leak or spill of biological agent ☐other
How did the accident happen?	☐improper use of equipment ☐improper tool used ☐radiation exposure ☐incorrect posture while lifting ☐protective equipment not worn/used incorrectly ☐ equipment/materials transported ☐ failure of safety equipment ☐defective machinery/equipment ☐fire or explosion ☐loud noise ☐hazardous atmospheric environment ☐improper protection/supports ☐ineffective warning system ☐unauthorized use of equipment ☐insufficient lighting ☐insertion or retrieval of material from machine in operation ☐untidiness ☐incorrect posture while working ☐consumption of alcohol/narcotics ☐crowded work space ☐machine operated at improper speed ☐improper management of contractor ☐potential danger unknown in advance ☐standard operating procedures were not followed ☐insufficient skill ☐no pre-work plan exists ☐playing or joking during work ☐fatigue/lack of concentration ☐insufficient air flow ☐poor physical or mental condition ☐failure to follow Workplace Safety Rules ☐other
Countermeasures to prevent a similar occurrence	☐re-train injured personnel ☐install protective equipment ☐create pre-work plan ☐educate and remind about safety ☐increase routine inspections ☐create workplace safety rules ☐temporary injury leave ☐conduct repairs ☐de-clutter the work space ☐provide protective equipment ☐investigate similar situations ☐implement work guidance and safety training ☐eliminate potential dangers ☐other

Supervisor	Environmental Health and Safety Center Program Representative	Program Director	Dean/Primary Administrator

1. After an incident occurs, a report by telephone must be made within the designated timelines. The Incident Report and Investigation Form must also be submitted. A minor injury must be reported within seven days. This form must be submitted to the dean or primary administrator of the college as well as the Environmental Health and Safety Center.
2. The form must be completed accurately and in detail. The following details must be included if the incident involved an infectious biological substance: the name of the pathogen, source, amount, and number of people infected.

Confirmed causes behind the incident: Direct cause: Indirect cause: Fundamental cause:

Labor Representative*	Environmental Health and Safety Member	Environmental Health and Safety Director

*A labor representative is only required if an occupational accident is involved with faculty, staff, or students.

Appendix I: Additional Injury Report Form (Please modify the layout of the form if space is insufficient)

Details of Incident	Name: Position: Gender: Birth Date: Age:	
	Work Experience Years: Months:	Dates of Injury Leave: From _____ until _____
	Body Part(s) Injured:	
	What external factor caused the incident? ☐none ☐power system ☐power transmission device (e.g. transmission shaft, gears) ☐welding equipment ☐furnace ☐woodworking machine (e.g. circular saw, band saw) ☐semi-automatic tool ☐radiation ☐chemical equipment ☐transported object ☐power generating machine (e.g. lathe, lapping machine, press, shear, centrifuge) ☐vehicle ☐hoisting machinery (e.g. crane, elevator, windlass) ☐pressure vessel (e.g. boiler, pressurized object) ☐electrical equipment (e.g. transmission and distribution line, electrical devices) ☐transport equipment (e.g. truck, forklift, conveyor belt) ☐materials (e.g. metal, wood, bamboo) ☐tool/apparatus (e.g. ladder) ☐causative organism ☐environment (e.g. high or low-temperatures) ☐hazardous/harmful material (e.g. explosive substance, flammable gas, harmful toxin) ☐other	
	Please describe the incident:	

<table>
<tr><td rowspan="4">Details of incident</td><td colspan="2">Name: Position: Gender:
Birth Date: Age:</td></tr>
<tr><td>Work Experience
Years:
Months:</td><td>Dates of Injury Leave:
From _____ until _____</td></tr>
<tr><td colspan="2">Body Part(s) Injured:</td></tr>
<tr><td colspan="2">What external factor caused the incident?
☐none ☐power system
☐power transmission device (e.g. transmission shaft, gears)
☐welding equipment ☐furnace
☐woodworking machine (e.g. circular saw, band saw)
☐semi-automatic tool ☐radiation
☐chemical equipment ☐transported object
☐power generating machine (e.g. lathe, lapping machine, press, shear, centrifuge)
☐vehicle ☐hoisting machinery (e.g. crane, elevator, windlass)
☐pressure vessel (e.g. boiler, pressurized object)
☐electrical equipment (e.g. transmission and distribution line, electrical devices)
☐transport equipment (e.g. truck, forklift, conveyor belt)
☐materials (e.g. metal, wood, bamboo) ☐tool/apparatus (e.g. ladder)
☐causative organism ☐environment (e.g. high or low-temperatures)
☐hazardous/harmful material (e.g. explosive substance, flammable gas, harmful toxin)
☐other</td></tr>
<tr><td colspan="2">Please describe the incident:</td></tr>
</table>

8. Designated emergency procedures for laboratory incidents

1. Personal injury or exposure
    1) All equipment placed in a Tier 2 or higher laboratory must be treated as if contaminated. If any stab wounds, cuts or abrasions occur, drain (or squeeze) the blood or body fluids from the injured area, immediately wash hands and wounds, and disinfect with povidone-iodine or appropriate skin disinfectant.
    2) If eyes, mucous lining or skin wounds are contaminated, the exposed parts must be rinsed immediately with water.
        1. Eyes: Rinse with clean water or a saline solution for 15 minutes.
        2. Mucous lining (nose and mouth) or skin wounds: Rinse with clean water for 15 minutes.
    3) Check the properties of the contaminant and the Pathogen Safety Data Sheet (PSDS).
    4) After initial decontamination, leave the laboratory immediately and in an appropriate manner to avoid outside contamination, and report immediately to the laboratory manager, unit supervisor and emergency response team after reaching a safe area so that emergency personnel can provide assistance and the problem can be further handled. If necessary, visit the FJCU Clinic for treatment, medical personal of the emergency unit shall assess the injury of the infected person, take blood samples for examination, and provide appropriate medical treatment as fast as possible. Within 24 hours of the incident, a written report must be completed so that the cause of the incident can be reviewed, and measures can be formulated.
2. Cleanup of spills of biohazardous substances
    1) In case of a spill occurring inside the biosafety cabinet
        1. Chemical decontamination should be carried out immediately after the incident, and the biosafety cabinet should be kept in operation to avoid further contamination outside the cabinet.
        2. In case of a spill, it is recommended to immediately cover the contaminated area with a wipe to absorb the liquid, and carefully wipe the liquid from the outside to the center with an appropriate concentration of disinfectant solution (or a 1:10 bleach solution), leaving if for 30 minutes. (Avoid pouring the disinfectant solution directly onto the contaminated area, as it may produce air bubbles, droplets, or splashing)
        3. Leave the laboratory during the acting time and move to the safety area; then, notify the person in charge of the laboratory, unit safety and health manager and the Environmental Safety and Health Center.
        4. Decontamination personnel must confirm that they are wearing full personal protection gear (gloves, mask, lab coat) before entering the area for

decontamination. After finishing decontamination, use tweezers to put the contaminants into sterilization bags; then, the sides of the biosafety cabinet, work area, equipment and other areas that may be contaminated must be wiped with paper towels soaked with disinfectant solution. Finally, use a solution of 70% alcohol or water to wipe the remaining disinfectant solution clean (wiping from the outside to the center).

5. If the spill spreads to the front cover of the biosafety cabinet, the front cover must be opened after decontamination and wiped with a tissue containing an appropriate concentration of diluted disinfectant, after which the cover can be placed back.
6. Finally, turn on an ultraviolet (UV) lamp for about 1 hour.
7. After finishing the treatment, put all the waste in sterilization bags and treat them with high temperature and high pressure sterilization. If this cannot be done, the waste must be treated with an appropriate concentration of disinfectant solution (or a 1:10 diluted bleach solution).

2) In case of a spill occurring outside of the biosafety cabinet

1. Operators should immediately evacuate the contaminated area, close the door, and place warning signs to alert other personnel to avoid accidental entry and infection.
2. Remove contaminated personal protective equipment from the clean area, and thoroughly wash hands and any areas that may be exposed to contamination.
3. Move to the safety area and wait at least 30 minutes for droplets to settle. During this time, notify the person in charge of the laboratory, unit safety and health manager and the Environmental Safety and Health Center.
4. Wear clean protective gear before entering the contaminated zone. Cover the contaminated areas with absorbent cotton (to absorb the liquid) and carefully wipe the liquid from the outside to the center with an appropriate concentration of disinfectant solution (or a 1:10 bleach solution), leaving if for 30 minutes. (Avoid pouring the disinfectant solution directly onto the contaminated area, as it may produce air bubbles, droplets, or splashing)
5. After finishing decontamination, use tweezers to put the contaminants into sterilization bags in order to minimize the risk of hand or area contact. Then, wipe the areas that may be contaminated with a paper towel soaked in disinfectant, such as the work surface, nearby walls and equipment (if there are broken glass bottles, do not try to pick up any broken glass). Use a solution of 70% alcohol or water to wipe up any residual disinfectant.
6. After finishing the treatment, put all the waste in sterilization bags and treat them

with high temperature and high pressure sterilization. If this cannot be done, the waste must be treated with an appropriate concentration of disinfectant solution (or a 1:10 diluted bleach solution).

3. In case the biosafety cabinet fails during an experiment
   1) Immediately suspend the experiment, pull down the door of the biosafety cabinet and turn off the power.
   2) Make sure that personal protective equipment (gloves, mask, lab coat etc.) has been properly worn; then, pack up the materials used for the experiment properly, place a label to indicate the cabinet is faulty, and notify the biosafety cabinet manufacturer immediately for repair.
4. In case of abnormalities with the autoclave
   1) Immediately suspend operation, cover the autoclave and turn off the power.
   2) Confirm that personal protective equipment has been properly worn; then, place a label to indicate the autoclave is faulty, and immediately notify the manufacturer for repair.
5. In case of centrifuge malfunction
   1) When using the centrifuge, operational precautions (e.g. do not overfill, balance the weight and position of the centrifuge tube and keep symmetry, lock the cap of the tube tightly, etc.) should be followed to reduce the chance of leakage of infectious substances.
   2) If a rupture or suspected rupture of the centrifuge tube occurs while the centrifuge is in operation, immediately turn off the power to stop its rotation and keep the centrifuge closed for at least 30 minutes to allow the droplets to settle.
   3) After doing so, immediately exit the contaminated area and move to the safety area; then, report to the person in charge of the laboratory, the unit supervisor, and the emergency response team.
   4) Make sure you are wearing personal protective equipment (e.g. gloves, mask, lab coat) before starting decontamination. If there are possible glass fragments, wear thick gloves (e.g. thick rubber gloves) and use tweezers or tweezers combined with cotton to clean up the glass fragments. Additionally, an observer needs to be present to ensure the safety of the decontamination team.

   [If a rupture occurs in the centrifuge tube of a closed centrifuge container]
   5) Move the closed centrifuge container to the biosafety cabinet and disassemble it; the original centrifuge tube should be kept in the container, and any specimens you wish to retain can be placed in a new container; then, fill the centrifuge container with disinfectant (or a 1:10 diluted bleach solution), leave it for a few minutes for disinfection, and then pour out the waste solution together with the ruptured centrifuge tube, and pour in a 70% alcohol solution for disinfection. The remainder of the lid and the surrounding area of the container that may have come into contact with infectious substances can be

sterilized with disinfectant (or a 1:10 diluted bleach solution) and a 70% alcohol solution.

[If a rupture occurs in the centrifuge of a closed centrifuge container

6) Disassemble the rotor, centrifuge container and other parts and soak them in disinfectant (or a 1:10 diluted bleach solution) or disinfect them according to the centrifuge's original instructions. Wipe and disinfect the inside of the centrifuge at least twice (wiping the contaminated area from the outside to the center), and then wipe with a 70% alcohol solution or water when dry.

7) Waste generated from contamination treatment shall be treated as infectious waste.

6. How to act in case of fire

1) When an earthquake occurs, experiments should be suspended immediately (when working with incubators, samples should be returned to the incubator as soon as possible) and leave the laboratory so that the biosafety cabinet can continue operating without risking contamination outside of the cabinet.

2) If the fire originates inside of the laboratory, the alarm should be activated immediately. Take initial firefighting measures, and report to the person in charge of the laboratory, unit supervisor and emergency response team for assistance.

3) If the fire originates in other units, the fire should be monitored at all times to ensure that it does not spread to the laboratory, and contingency measures should be taken.

7. How to act in case of an earthquake

1) When an earthquake occurs, experiments should be suspended immediately (when working with incubators, samples should be returned to the incubator as soon as possible) and leave the laboratory so that the biosafety cabinet can continue operating without risking contamination outside of the cabinet.

2) When an earthquake occurs, the main dangers are glassware and heavy objects falling from shelves. Personnel should immediately move away from biosafety cabinets and low-temperature freezers, and lean against solid walls and columns for shelter or hide under protective covers to minimize injuries.

3) When the earthquake subsides, check immediately for spattering of biological or chemical substances, and first clean up all areas without safety concerns.

4) If there are any safety concerns for the area with spatters or if spatters occur in a biosafety cabinet, follow the cleanup guidelines described above. After the spill has been properly handled, leave the laboratory as soon as possible and report to the person in charge of the laboratory, the unit supervisor, and the emergency response team.

8. How to act in case of flooding

If flooding occurs during an experiment, after ensuring that there are no safety concerns, first confirm whether there is any leakage of biohazardous substances and handle the situation according to the "In case of a spill occurring inside the biosafety cabinet" or "In case of a spill

occurring outside of the biosafety cabinet" explained above.

9. How to act in case of power failure

   1) With prior notice

      Ensure all personnel ceases operations and check whether all instruments are in normal condition when the power is restored.

   2) Without prior notice

      The person to realize a power failure should immediately notify the person in charge of the laboratory and the department office to resolve the issue and restore the power supply as soon as possible, while also trying to find the cause. Ask anyone conducting experiments to stop as soon as possible, and prevent personnel from starting up new experiments.

10. In case of abnormalities in the preservation of biomaterials

    When abnormalities such as discrepancies in contents, quantity, absence or damage are discovered in held or stored microorganisms or biotoxins of hazard level II or higher, immediately notify the person in charge of the laboratory and the Environmental Safety and Health Center, and report to the Biosafety Committee immediately.

11. How to act in case of escaped animals

    1) Escape prevention

       1. When entering or leaving the animal feeding area, please manually close each door; when entering or leaving, personnel must close the first door before the second door is opened.
       2. To prevent animals from escaping, make sure to properly operate and close the lid of the feeder each time you use it.

    2) After animals have escaped

       1. If an animal escapes during an animal experiment, it should be caught immediately.
       2. If you are unable to catch the animal immediately, close the door of the area first and put a warning sign on the door ("animal escaped" + time of escape) on the door before leaving, then call or go to the office for assistance.
       3. When capturing escaped animals, prioritize the safety of personnel. Use protective tools such as gloves, animal handling gloves or towels, and do not pull the animal's tail or the end of its limbs, as this may cause the animal to fight back, get injured, get stressed or even die.
       4. If personnel gets injured, seek help first and close the door to the animal room. For the procedures on wound treatment and hospitalization, please refer to the Emergency Medical Treatment Process.
       5. After the animal is found, it should be placed in a new box, a new feeding card

should be filled out, a card should be hung on the box to indicate the abnormality and be labeled “animal escape” with the escape time. In addition, the office should be notified, and the Fu Jen Catholic University Laboratory Biosafety Incident Report Form should be filled out. Confirm whether the animal shows any abnormalities in its appearance or appetite, and ideally observe for one week before continuing experiments.

6. After an animal has escaped from the infectious experimental animal area, the cleaning and disinfection protocol of the area should be improved.
7. If an animal cannot be found, it should be reported to the person in charge of the laboratory and the Environmental Safety and Health Center. In addition, the Fu Jen Catholic University Laboratory Biosafety Incident Report Form should be filled out within 12 hours for the University to report to the competent authorities.
8. If a person gets injured, they should fill out the Fu Jen Catholic University Campus/Laboratory Incident Report and Investigation Form.

3) How to act if escaped animals have died

After wrapping up the deceased animal and filling in the information, place the carcass in a 4ºC refrigerator for temporary storage, and notify the staff and management for follow-up processing.

12. Precautions for biohazard relief personnel
    1) Regardless of who arrives at the scene of an incident, safety is the main consideration.
    2) First identify the types and characteristics of biomaterials (using information such as PSDS, the emergency response guide, etc.) to avoid being infected, and pay special attention to the spread of aerosols (gel).
    3) Anyone without protective equipment should not enter contaminated areas; those handling the hazard should wear protective equipment which needs to be decontaminated afterwards.
    4) Get to understand the situation and draw up a contingency plan; when the incident expands or the situation is unknown, the local or central competent authority may be contacted to request assistance and notification.
    5) During normal operations, make sure to familiarize yourself with the use of personal protective equipment and rescue equipment, and maintain them regularly.
13. Steps and precautions for disposal of used needles and sharp objects
    1) Dispose of used needles immediately.
    2) Make sure to not put back needles. If this is not possible, put back needles with one hand to reduce the danger.
    3) A designated needle collection bin should be installed, made of a hard material that is not easily penetrated or prone to leakage, with a biomedical waste label on the outside for

identification.

4) Needle collection bins should be closed and disposed of as infectious waste when they are about 80% full.
5) Anyone using needles should develop good working habits by disposing of needles and syringes together into the needle collection bin after use.
6) The needle collection bin should be placed at a distance that is convenient for needle users to dispose of needles in order to reduce the possibility of needle sticks caused by negligence during busy experiments.
7) Under no circumstances should needles be placed in the pockets of work clothes or lab coats.

7. Medical Treatment Procedures in case of Emergency

1. In accordance with the FJCU principles of emergency medical care, the following procedures will be followed for the notification, medical care, and hospitalization:

1) During office hours: Notify the Health Center (ext. 2995).
2) Outside of working hours: Notify the Campus Safety Center (ext. 2885).
3) The campus ambulance unit or on-duty staff will go to the scene to treat injuries and assess whether hospitalization is necessary. For serious emergencies or in case the injured is unable to sit down, the 119 emergency hotline should be contacted first. Those with non-life-threatening injuries will be placed in the Health Care unit or the FJCU Clinic for rest and observation.

2. Fu Jen Catholic University Emergency Injury and Medical Treatment Process

9 Personnel of bio-related laboratories (including those in charge of the laboratory) should read these instructions carefully and sign in person afterwards.