Charles Sturt University

Biosafety Manual

Booklet 3 - Appendices

IN THIS BOOKLET

1. Appendices to Booklets 1 and 2

2. Appendix 1. Risk Groups of Microorganisms

Note: Some organisms which are risk group 2 can be particularly hazardous to certain individuals and so a thorough understanding of the routes/ risk of infection, diseases caused is essential before any work is conducted with any microorganism. For example, Rubella, *Toxoplasma gondii* and cytomegalovirus are all RG2 but are known to be teratogenic, so pregnant women or women that may be pregnant should not work with or be exposed to these organisms. Careful consideration of whether individuals that are immunosuppressed or on chemotherapy and or radiotherapy should be undertaken as these individuals may be at increased risk of infection. This list is not fully inclusive and is modified from that in the Curtin University Biosafety manual.

Bacteria

Scientific name	Risk Group
Acinetobacter spp.	2
Aeromonas hydrophila	2
Bacillus anthracis	3
Bacillus cereus	2
Bartonella henselae, quintana, vinsonii, elizabethiae, weisii	2
Bartonella bacilliformis	3
Bordetella pertussis	2
Borrelia spp.	2
Brucella ovis	2
Brucella spp.	3
Burkholderia pseudomallei	2
Burkholderia mallei	3
Campylobacter coli, fetus, jejuni	2
Chlamydia spp.	2
Chlamydia psittaci (avian)	3
Clostridium botulinum	2
Clostridium tetani	2
Corynebacterium diphtheriae	2
Corynebacterium renale, pseudotuberculosis	2
Coxiella burnetii (smears and serum samples)	2
Coxiella burnetii (cultures and concentrates)	3
Edwardsiella tarda	2
Eikenella tarda	2
Enterococcus spp. (Vancomycin-resistant strains)	2
Erysipelothrix rhusiopathiae	2

Escherichia coli (pathogenic strains)	2
Escherichia coli VTEC strains (O157, O111)	2
Francisella tularensis type A	3
Fusobacterium spp.	2
Gardnerella vaginalis	2
Haemophilus influenzae, ducreyi	2
Helicobacter pylori	2
Klebsiella spp.	2
Legionella spp.	2
Leptospira interrogans	2
Listeria monocytogenes	2
Listeria spp.	2
Moraxella spp.	2
Mycobacterium spp.	2
Mycobacterium tuberculosis complex	2
Mycobacterium tuberculosis multi-drug resistant	3
Mycoplasma pneumoniae, fermentans	2
Neisseria gonorrhoeae	2
Neisseria meningitidis (except serogroup B)	2
Neisseria meningitidis (serogroup B)	2
Nocardia spp.	2
Pasteurella spp.	2
Rickettsia spp.	3
Salmonella serovars	2
Salmonella typhi	2
Shigella spp.	2
Shigella dysenteriae type 1	2
Staphylococcus aureus	2
Streptobacillus moniliformis	2
Streptococcus pyogenes, pneumoniae	2
Treponema pallidum, pertenue	2
Ureaplasma ureolyticum	2
Vibrio cholerae, parahaemolyticus, vulnificus	2
Yersinia spp.	2

Yersinia pestis	3

Parasites – Infective stages only

Scientific name	Risk Group
Ancylostoma duodenale	2
Ascaris lumbricoides	2
Babesia divergens, microti	2
Cryptosporidium spp.	2
Echinococcus spp.	2
Entamoeba histolytica	2
Giardia lamblia	2
Hymenolepsis diminuta, nana	2
Leishmania spp.	2
Loa loa	2
Nagleria fowleri	2
Necator americanus	2
Plasmodium spp.	2
Strongyloides stercoralis	2
Taenia saginata, solium	2
Taenia ovis	2
Toxocara canis	2
Toxoplasma gondii	2
Trichinella spiralis	2
Trypanosoma brucei, cruzi	2
Wuchereria bancrofti	2

Fungi

Scientific name	Risk Group
Aspergillus fumigatus, flavus	2
Blastomyces dermatitidis	3
Candida albicans	2
Coccidioides immitis	3
Cryptococcus neoformans	2
Epidermophyton floccosum	2
Histoplasma spp.	3
Microsporum spp.	2
Paracoccidioides brasiliensis	3
Phytophthera cinnamoni	3
Sporothrix schenckii	2
Trichophyton spp.	2

Viruses and Prions

Scientific name	Risk Group
Adenoviridae	
Adenovirus	2
Arenaviridae	
Arenavirus	
○ Guanarito	**4**
○ Junin	**4**
○ Lassa	**4**
○ Lymphocytic choriomeningitis (LCM)	2
○ LCM neurotropic strains	3
○ Machupo	**4**
○ Mopeia viruses	**4**
Sabia	4
Bunyaviridae	
Group C	
○ Oropouche	3
○ Phlebovirus	3
○ Hantavirus	3
○ Hantaan and related viruses	**4**
Nairovirus	
○ Crimean-Congo hemorrhagic fever	4
Hazara	
Caliciviridae	
Feline calicivirus	2
Norwalk-like	2
Sapporo-like	2
Largovirus	
○ Rabbit haemorrhagic disease	2

Coronaviridae	
Coronavirus	2
Filoviridae	
Ebola	**4**
Marburg	4

Scientific name	**Risk Group**
Flaviviridae	
Flavivirus	
○ Absettarov	**4**
○ Central European encephalitis	**4**
○ Dengue 1, 2, 3, 4	2
○ Japanese encephalitis (Nakayama)	2
○ Japanese encephalitis	3
○ Hanzalova	**4**
○ Hypr	**4**
○ Kumlinge	**4**
○ Kunjin	2
○ Kyasanur Forest disease	**4**
○ Murray Valley encephalitis	2
○ Omsk hemorrhagic fever	**4**
○ Russian spring summer encephalitis	**4**
○ St Louis encephalitis	3
○ Tick-borne viruses	3
○ Tick-borne encephalitis	**4**
○ West Nile	3
○ Yellow fever (17D)	2
Hepacivirus	
○ Hepatitis C	2
Hepadnaviridae	
○ hepatitis B	2
Herpesviridae	
Alpaherpesvirinae	
○ Herpes virus simiae (B virus)	**4**
○ Simplex	2
○ Varicella	2
Betaherpesvirinae	
○ Cytomegalovirus	2
Gammaherpesvirinae	
○ Herpes 6, 7	2
Lymphocryptovirus	2
Orthomyxoviridae	
Influenza	2

Scientific name	Risk Group
Paramyxoviridae	
Paramyxovirinae	
○ Henipaviru s Hendra	**4**
Nipah	**4**
○ Morbillivirus Measles	2
○ Rubulavirus Mapuera	3
Menangle	2
Mumps	2
Newcastle disease (non-virulent)	2
Newcastle disease (exotic strains)	3
○ Pneumovirus Respiratory syncytial virus	2
○ Respirovirus Parainfluenza 1, 2, 3, 4	2
Parvoviridae	
Human parvovirus	2
Picornaviridae	
Encephalomyocarditis virus	2
Enterovirus	
○ Coxsackie	2
○ Echo	2
○ Entero	2
○ Parecho	2
○ Polio 1, 2,	2
3 Rhinovirus	2
Hepatovirus	
○ Hepatitis A	2
Poxviridae	
Orthopoxvirus	
○ Vaccinia	2
Parapoxvirus	
○ Orf	2
Prions	
Gerstmann-Straussler syndrome	2
Kuru	2
Creutzfeldt-Jakob	2

Reoviridae	
Orbivirus	
○ Bluetongue viruses	2
Rotavirus	
○ Rotavirus	2
Retroviridae (clinical samples)	
Oncovirinae	
○ Human lymphotropic virus 1	2
○ Human lymphotropic virus	2
2 Lentivirinae	
○ Human immunodeficiency virus	2
Retroviridae (cultures and concentrates)	
Oncovirinae	
○ Human lymphotropic virus 1	3
○ Human lymphotropic virus	3
2 Lentivirinae	
○ Human immunodeficiency virus	3
Rhabdoviridae	
Lyssavirus	
○ Australian bat	3
lyssavirus Rabies fixed strain (CVS II)	3
Togaviridae	
Alphavirus	
○ Eastern equine encephalitis	3
○ Barmah Forest	2
○ Ross River	2
○ Semliki Forest	2
○ Western equine encephalitis	3
○ Venezuelan equine	3
encephalitis Arterivirus	
○ Equine viral arteritis	2
Rubivirus	
○ Rubella	2
Unclassified	
Hepatitis D	2
Hepatitis E	2

3. Appendix 2. Guide to security sensitive biological agents and legislative requirements for SSBA dealings.

Introduction

The deliberate release of harmful biological agents with the potential to cause significant damage to human health, the environment and the Australian economy has been of growing concern to the Federal Government and has led to the development of new federal legislation and the establishment of a national regulatory scheme-the Security Sensitive Biological Agent (SSBA) Regulatory Scheme.

The objective of the SSBA Regulatory Scheme is to establish controls (including a National Register) for the security of certain biological agents that could be used as weapons, so that opportunities for acts of bioterrorism or biocrime are limited. The regulation of security sensitive biological agents (SSBAs) commenced on 31 January 2009 and any entities and facilities handling SSBAs must now comply with the requirements of the National Health Security (NHS) Act 2007, National Health Security Regulations 2018 and the SSBA standards. Compliance is monitored by the Australian Centre for Disease Control (CDC), contact via email ssba@cdc.gov.au. Tier 1 and 2 SSBAs are shown earlier in this manual.

Definitions (from NHS Act 2007)

Entity: Those people or bodies likely to handle SSBA. The term has been broadly defined to capture individuals, corporations and government bodies. An entity is required to comply with the reporting requirements and the SSBA Standards provided in the NHS Act. An entity is also liable for the offences provided in the NHS Act. An easy way to identify the Entity, is to align it to the ABN used by the Facility. For facilities within CSU, the entity is Charles Sturt University.

Facility: The range of physical structures where SSBA may be handled and includes buildings, parts of buildings and laboratories, including mobile laboratories.

Handling: Handling an SSBA includes

a) Receiving, holding, using and storing the SSBA

b) Any operation incidental to, or arising out of, any of those operations.

The National Register

The National Register of SSBAs was established under the NHS Act and records details of registered entities and facilities handling SSBAs and suspected SSBAs.

The Data Collection System

The Data Collection System (DCS) is a web based system that allows entities and facilities to submit information to Health online as an alternative to paper forms. The DCS is only available once a facility has a registration number (after initial registration or following first notification of a suspected SSBA by a non-registered facility). https://www.health.gov.au/internet/dcs/publishing.nsf/Content/Login

Handling SSBAs or Suspected SSBAs Registered Facilities

All facilities handling known SSBAs must be registered with the CDC (except where an exemption applies, see https://www.cdc.gov.au/resources/publications/ssba-fact-sheet-4-exemptions). Within the context of CSU, this relates to any Facility using or storing an agent on the List of SSBA's for research or teaching purposes.

An initial registration application must be received by the CDC within two business days of starting to handle an SSBA. This application must be a hard copy report sent to the CDC by Australia Post's registered post service or courier.

Initial registration forms can be found here https://www.cdc.gov.au/resources/publications/ssba-form-initial-registration. Each Facility (within an Entity) must complete a separate initial registration form to register with the CDC. Facility registration should be done in consultation with the Presiding Officer, Biosafety Committee as contact details will need to include the Biosafety email address and the approval of the PVCRI as the Responsible Officer. Once the CDC has received the registration via registered post the Facility Contact Officer (usually the facility manager) will be emailed a confirmation of receipt. Following this, the Facility will be issued with a registration number and all future notifications may be submitted online via the Data Collection System (DCS).

Registered Facilities will be required to:

1. Undergo an inspection by the CDC appointed SSBA inspectors within the first 12 months of registration. Tier 1 handling facilities will then be inspected every 18 months and Tier 2 facilities every 2 years.
2. Undergo spot checks and desktop inspections as determined by Health.
3. Report events as they occur:
    a. Starting to handle an SSBA that you are not registered to handle (*Start to Handle a New SSBA*)
    b. Ceasing to handle an SSBA that you are registered to handle (*Changes to Purpose for Handling an SSBA*)
    c. Handling a registered SSBA after a period of inactivity (*Start to Handle a New SSBA*)
    d. Changing [1], ceasing or adding a purpose for handling an SSBA that you are already registered to handle (*Changes to Purpose for Handling an SSBA*)
    e. Transferring an SSBA including reporting an unsuccessful transfer (sending or receiving) (*Transfer In* or *Transfer Out*)
    f. Changing Responsible Officer or Deputy Responsible Officer details (*Change of Responsible Officer Details*)
    g. The disposal of your entire holdings of an SSBA or if the remaining amount of toxin handled falls below the reportable quantity stated in the List of SSBAs (either via the *Destruction* or *Transfer Out* forms depending on the method of disposal).
    h. Administrative changes to entity and facility details. (*Change of Entity and Facility Details*)
4. Report events when they are discovered:
    a. Unauthorised access or an attempt to access an SSBA or sensitive information relating to an SSBA
    b. Theft or attempted theft of an SSBA
    c. Accidental release of an SSBA
    d. Loss of SSBAs either from the facility or during transfer (e.g. the package does not arrive at the final destination)
    e. A person is affected by an SSBA as a result of the entity's SSBA handlings.

A registered facility that temporarily handles a known SSBA it is not registered for must report to Health within 2 business days that it is handling the SSBA. The facility will be permitted 7 business days from initial receipt to complete the handling and dispose of the agent (disposal must be reported to Health). If the facility intends to continue handling the agent past 7 days, it must register to handle that SSBA.

A reporting flowchart for registered facilities can be found at https://www.cdc.gov.au/resources/publications/ssba-guideline-2-registered-facility-reporting-requirements

Non-Registered Facilities

Facilities that may occasionally receive an SSBA or a suspected SSBA can choose to be Non-Registered Facilities. Human and veterinary pathology laboratories which may receive occasional specimens suspected of containing a SSBA are examples of facilities that operate as non-registered.

Non-Registered Facilities that receive an SSBA need to decide whether they will:

a. Become registered (lodge Initial Registration Form via registered post)
b. Destroy the SSBA
c. Transfer the SSBA to another facility willing to accept it.

Non-Registered Facilities that receive a suspected SSBA need to either

a. Destroy the suspected SSBA
b. Confirm the agent is an SSBA (in house confirmatory testing) and then destroy it
c. Transfer the SSBA to another facility for external confirmatory testing

While not subject to the same inspection protocols as Registered Facilities, Non-Registered Facilities must still provide Health with all information on dealings with SSBAs or suspected SSBAs. The first notification to the CDC will need to be via one of the paper-based reporting forms sent by registered mail. This first notification must be

done within 2 business days of forming a suspicion of a SSBA or receiving an SSBA.

https://www.cdc.gov.au/resources/publications/ssba-form-initial-registration

Once the first report has been submitted to the CDC in hard copy, the Facility will be provided with access details for the DCS. All subsequent reports can then be provided to the CDC either electronically via the DCS or by paper based forms.

A reporting flowchart for non-registered facilities can be found at https://www.cdc.gov.au/resources/publications/ssba-guideline-9-non-registered-facility-report-and-requirements

SSBAs or suspected SSBAs received by CSU Facilities (Non-Registered)
CSU does not have any facilities registered to handle SSBAs but it does have laboratories notifying the CDC as Non- Registered Facilities.

As well as reporting to the CDC, there is also an internal process to follow when a CSU facility receives or suspects an SSBA (please contact the IBC for further information).

Links

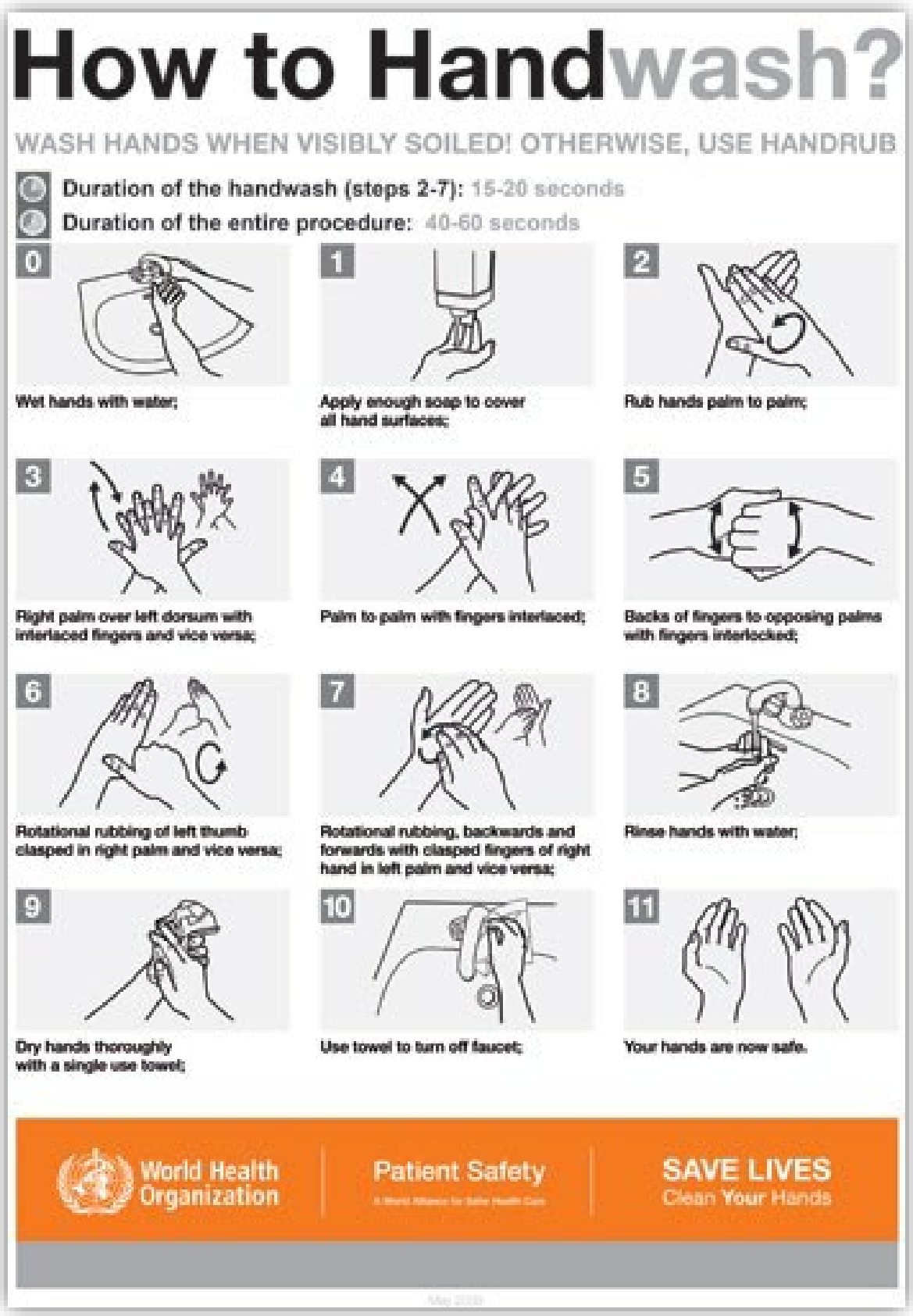
SSBA website https://www.cdc.gov.au/topics/communicable-diseases-prevention-and-control/security-sensitive-biological-agents-ssba-regulatory-scheme

SSBA Standards:

National Health Security Act 2007	https://www.legislation.gov.au/C2007A00174/latest/text
National Health Security Regulations 2018	https://www.legislation.gov.au/F2018L01247/latest/text

4. Appendix 3. Good Handwashing Technique

Source: World Health Organisation



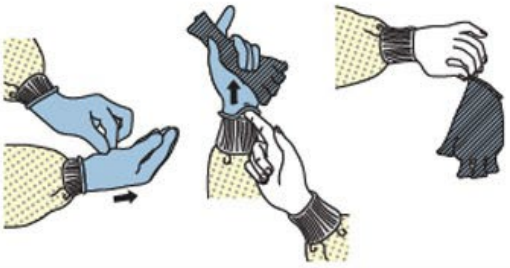
5. Appendix 4. Step by Step procedure for safe removal of PPE - Source: CDC

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container



2. GOGGLES OR FACE SHIELD

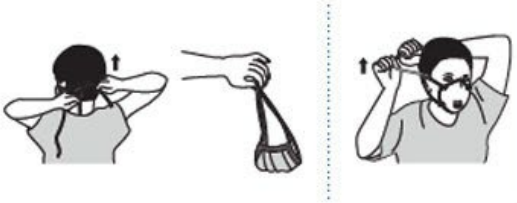
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. GOWN

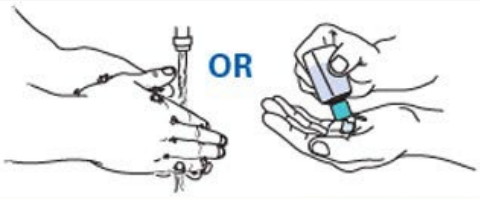
- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

CS250672-E

6. Appendix 5. Procedures for dealing with biological spills

SCOPE

The following procedures are applicable to all facilities at Charles Sturt University conducting experiments with potentially biohazardous material. **Prior to any work being commenced with such material, an appropriate risk assessment shall be undertaken, which will include standard working procedures for all activities to be conducted, and incorporate *project-specific* procedures for dealing with maximum conceivable accidents/incidents.**

DEFINITIONS

Accident	An accident is defined as an uncontrolled or unintentional release of a biological agent, either within a contained facility or into the environment, and/or contamination of personnel, which *seems likely to result in injury or illness* to the personnel so exposed
Incident	An *incident* is defined as an uncontrolled or unintentional release of a biological agent which, although not actually causing injury/harm to personnel or to the environment, *had the potential to do so*
Biohazardous Material	*Biohazardous Material* is defined as any agent of biological origin which has the capacity to produce deleterious effects on humans and/or the environment. The *degree* of the hazard (and, consequently, the response to any accidental spillage) will depend on the *Risk Group, form* and *volume* of the material involved.
Risk Group	Micro-organisms are classified according to their degree of risk to individuals, the community or the environment. The *Risk Groups* for some classes of micro-organisms are outlined in the Australian Standard AS 2243.3 (2010): "*Safety in Laboratories – Microbiological Safety and Containment"*. These University procedures are particularly relevant when dealing with micro-organisms of **Risk Group 2 and above**
Risk Level of Spillage	The risk level of the particular spillage is determined by the nature of the biological material involved and the level of containment
Low Risk Spillage	A *Low Risk Spillage* involves a biohazardous material release which is contained within a biological safety cabinet or within a facility which is appropriate for the Risk Group of the micro-organism involved.
High Risk Spillage	A *High Risk Spillage* involves two possible scenarios: • a release of a biohazardous material outside of the appropriate level of containment; **or** • a release of a biohazardous material which creates a risk to human health
Genetically Modified Organism (GMO)	The term *GMO* is as defined in the Commonwealth Gene Technology Act 2000 and the Gene Technology Regulations 2001 (available via the Biosafety Committee Home Page. The term includes tissue culture cell lines, micro- organisms, viruses and any other biological entity which has undergone genetic manipulation, apart from those classes of organism declared by the regulations *not* to be GMOs

For *any* spill, complete an accident/ incident report form

First aid should be applied by trained personnel after accessing the risk level of the biohazardous material.

Immediately notify the supervisor/ facility manager.

Follow up within 24 hrs by submitting an accident/incident form to the Division of Safety, Security and Wellbeing via the online system Protecht.

If the material involves GMOs the Biosafety Committee will forward a copy of the report to the Office of the Gene Technology Regulator(OGTR).

(Note : Where there is a risk to human health or the environment, the accident must be reported to the Regulator immediately, with a copy to the Biosafety Committee.)

BIOLOGICAL SPILL KITS

All facilities conducting work with potentially biohazardous materials shall store and maintain a *Biological Emergency Spill Kit* (conveniently located close to, but *outside*, the laboratory in a location known to all staff).

As a minimum, this kit shall contain:

- 'DO NOT ENTER' signs; 'BIOHAZARD' signs;
- suitable supplies of disinfectant (see clause 6.2 below for recommended disinfectants); absorbent materials;
- protective clothing including spare laboratory coats (preferably disposable, hydrophobic coveralls), rubber boots or overshoes and gloves;
- appropriate containers, including biohazard bags; and barrier tape.

Additional equipment may need to be included where the particular facility conducts work with Risk Group 2 micro-organisms requiring special precautions; for example, respirators.

Planning for the control of spillages is vital. **All staff, especially new staff, working in containment facilities shall read and understand the standard operating procedures for the facility, and acknowledge this fact by signing the staff training record sheet accordingly.**

Again, it must be emphasised that a detailed Risk Assessment should be undertaken before the work commences. This process will highlight any special procedures or equipment necessary.

EMERGENCY CONTACT NUMBERS

Low risk spillages may often be cleaned up immediately with a paper towel soaked in an effective chemical disinfectant. In the event of a high risk spillage outside of a biological safety cabinet, the situation becomes a lot more complex.

Should a high risk spillage occur, contact university security, ring emergency services and ask for a Hazmat team.

For Emergency Services call 000
For security **call 1800 931 633**

NB: If there is a risk to human health or the environment from an unintentionally released GMO (such as a needle-stick injury), the accident must be reported to the Regulator immediately.

Email: ogtr@health.gov.au, with a copy to the Biosafety Committee biosafety@csu.edu.au. This information will also be included in the University's Annual Report to the Regulator.

In addition, any accident involving injury or contamination to staff, students or visitors must be reported to Safety, Security and Wellbeing via the online reporting system Protecht.

Procedures for dealing with low risk spillages

In the event of a Low Risk Spillage within a biological safety cabinet, or within a defined low risk containment facility

a. put on gloves.
b. ensure that the cabinet remains operating to remove aerosols if applicable.
c. place absorbent material soaked in disinfectant over the spill and leave for 10 minutes.
d. disinfect gloved hands and remove gloves in the cabinet if applicable.
e. if clothing is contaminated, remove for sterilisation.
f. wash hands and arms.
g. put on clean gloves and laboratory coat for remainder of clean up.
h. remove any sharp objects with forceps and place in sharps container, soak up excess fluid with absorbent material and discard into a container for sterilisation.
i. ***do not autoclave*** materials soaked with *hypochlorite solution* due to the risk of toxic gas being produced. This material should be placed into a metal pan for disposal.
j. discard any solid material, petri dishes and culture bottles into an appropriate container.
k. wipe down floor, cabinet work zone and other equipment with fresh disinfectant solution (see clause 6.2 for recommended disinfectants).
l. report spill to supervisor and submit a Protecht report within 24 hours.

Procedures for dealing with high risk spillages

In the event of a High Risk Spillage:

a. do not breath the aerosol.
b. evacuate others working in the area.
c. advise others working in surrounding areas including your supervisor.
d. close the door and place the 'Do Not Enter' and 'Biohazard' signs on it.
e. remove and dispose of contaminated clothing.
f. if material has soaked through clothing, take full emergency body shower. Otherwise, wash hands and face thoroughly.
g. stay out of area for at least 30 minutes to permit aerosol particles to be dispersed.
h. consider isolating ventilation system.
i. assemble *biological spill clean-up team* of three: one to direct procedure, others to clean up.
j. put on laboratory coats, rubber boots/overshoes and gloves. Respirators and eye protection may also be required if a high risk infectious material is involved.
k. determine the area of contamination.
l. place paper towels saturated with disinfectant over the spill and wait at least 10 minutes.
m. remove any harp objects with forceps and place in sharps container. Dispose of all contaminated material.
n. *do not autoclave materials soaked in hypochlorite solution*).
o. disinfect the area surrounding the spill site with fresh disinfectant solution.
p. discard PPE prior to leaving the area.
q. submit a Protecht report within 24 hours.
r. **If the spillage has involved GMOs, the Biosafety Committee will forward the report to the OGTR.**

Procedure for Biological Spills

Contact Security and Laboratory Managerif more than 3 litres

Low Risk
Risk Group 1 and Risk Group 2 under 1 Litre

- Notify Personnel in the lab; seek help if required
- Identify spilled material (If unknown treat as High Risk)
- Perform Risk Assessment of Situation
- Use available Virkon™ or; obtain Spill kit
- Don PPE. Laboratory coat/gown, gloves, safety glasses and respirator (if infectious by aerosol)
- Shake disinfectant granules over spill working in from the outside until all liquid has been absorbed
- Keep spill covered for 10 minutes disinfection time
- Use tongs to remove sharp objects and discard into sharps container
- Scoop and discard clean up material in biohazard bin
- Re-wipe spill area and equipment with disinfectant and discard into biohazard bin
- Remove PPE and place disposables in biohazard bin
- Wash hands thoroughly
- Notify Lab Supervisor
- Fill out Biological Accident/Incident Report form and forward to Biosafety Committee within 24 hrs if spill is more than 100ml

High Risk
Risk Group 3 only in a PC3 Lab

- Notify Personnel in the lab, notify lab supervisor
- Evacuate the area immediately and hit the emergency power isolation switch
- Stay out of spill area for 30 mins for aerosols to settle
- Remove contaminated PPE and shoes and place in biohazard bag
- Place a "DO NOT ENTER" sign on the door
- If clothing has been contaminated, take a full body shower
- Obtain spill kit,Don PPE. Coverall, rubber boots/ overshoes, gloves, eye protection and respirator.
- Assemble a clean up team of 2-3 persons if required
- Shake disinfectant granules over spill working in from the outside until all the liquid has been absorbed
- Keep spill covered for 10 minutes disinfection time
- Use tongs to remove sharp objects and discard into sharps container
- Scoop and discard clean up material in biohazard bin
- Re-wipe spill area with disinfectant and discard into biohazard bin
- Remove and place PPE into biohazard bag for decontaminating or disposal
- Wash hands thoroughly
- Does room require fumigation/surface decontamination?
- Fill out Biological Accident/Incident Report form and forward to Biosafety Committee within 24 hrs.