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AIDS HELPLINE: 0800-0123-22 Prevention is the cure

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GOVERNMENT NOTICE
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DEPARTMENT OF LABOUR
DEPARTEMENT VAN ARBEID

No. R. 1390 **27 December 2001**

OCCUPATIONAL HEALTH A ND SAFETY ACT, 1993

REGULATIONS FOR HAZARDOUS BIOLOGICAL AGENTS

The Minister of Labour has under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) on the recommendation of the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

SCHEDULE

Definitions

1. In these Regulations any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context indicates otherwise—

"biological agent" means any micro-organism, cell culture or human endoparasite, including any which have been genetically modified, which may cause an infection, allergy or toxicity, or otherwise create a hazard to human health;

"decontamination" means to remove, as far as is reasonably practicable, all inanimate objects by way of sweeping, cleaning, washing, ventilating or any other process aimed at removing the contaminant;

"diagnostic laboratory" means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials;

"disinfect" means to render non-viable virtually all recognised pathogenic micro-organisms, but not necessarily all microbial forms;

"engineering control measures" means control measures that remove or reduce the exposure of persons at the workplace by means of engineering methods;

"Facilities Regulations" means the Facilities Regulations promulgated by Government Notice No. R. 2362 of 5 October 1990 under section 43 of the Act;

"General Administrative Regulations" means the General Administrative Regulations promulgated by Government Notice No. R.1449 of 6 September 1996 under section 43 of the Act;

"HBA" means hazardous biological agents which are micro-organisms, including those that have been genetically modified, pathogens, cells, cell cultures and human endoparasites that have the potential to provoke an infection toxic effects, subdivided into the following groups:

(*a*) Group I HBA are HBA that is unlikely to cause human disease;

(*b*) Group 2 HBA are HBA that may cause human disease and be a hazard to exposed persons, which is unlikely to spread to the community and for which effective prophylaxis and treatment is usually available;

(*c*) Group 3 HBA are HBA that may cause severe human disease, which presents a serious hazard to exposed persons and which may present a risk of spreading to the community, but for which effective prophylaxis and treatment is available;

(*d*) Group 4 HBA are HBA that causes severe human disease and is a serious hazard to exposed persons and which may present a high risk of spreading to the community, but for which no effective prophylaxis and treatment is available.

"micro-organisms" means microbiological entities, cellular or non-cellular, capable of replication or of transferring genetic material;

"monitoring" means the planning and carrying out of the measurement programme and the recording of the results thereof;

"respiratory protective equipment" means a device which is worn over at least the mouth and nose to prevent the inhalation of airborne hazardous biological agents, and which conforms to a standard, acceptable to the chief inspector;

"safety equipment" means a contrivance or a device designed to as far as possible try and prevent injury;

"standard precautions" means a synthesis of the major features of Universal Precautions (UP) and Body Substance Isolation (BSI) and applies to all persons coming into contact

with potentially infected persons, animals or animal products and potentially contaminated blood and other body fluids in health care facilities or elsewhere and—

(*a*) apply to—

(i) all blood;

(ii) all body fluids, secretions and excretions, except sweat, regardless of whether they contain visible blood or not;

(iii) non-intact skin;

(iv) mucous membranes; and

(v) tissues; and

(*b*) are designed to reduce the risk of transmission of HBA from both recognised and unrecognised sources of infection in workplaces;

"the Act" means the Occupational Health and Safety Act,1993 (Act No. 85 of 1993)

Scope of application

2. (1) Subject to subregulation (*2*), these Regulations shall apply to every employer and self-employed person at a workplace where—

(*a*) HBA is deliberately produced, processed, used, handled, stored or transported; or

(*b*) an incident, for which an indicative list is given in Annexure A to these Regulation occurs that does not involve a deliberate intention to work with a HBA but may result in persons being exposed to HBA in the performance of his or her work.

(2) Regulations 8, 14, 15, 16 and 17 shall not apply to an employer or self-employed person at a workplace where the exposure is restricted to a Group I HBA.

Classification of biological agents

3. (1) The chief inspector may publish in the *Government Gazette* for the purpose of these regulations a document, which may be revised or reissued from time to time, entitled "Categorisation of Biological Agents according to hazard and categories of containment" (Annexure B) to these Regulation containing a list of biological agents together with the classification of each agent.

(2) Where a biological agent has not been assigned a classification, the employer and

self-employed person shall provisionally classify that agent in accordance with subregulation (3) below, having regard to the nature of the agent and the properties of which he or she may reasonably be expected to be aware.

(3) When provisionally classifying a biological agent, the employer and self-employed person shall assign that agent to one of the groups and if there is according to its level of risk of infection doubt as to which of two alternative groups would be most appropriate, the HBA shall be assigned to the higher of the two.

Information and training

4.(1) An employer shall, before any employee is exposed or may be exposed to HBA and after consultation with the health and safety committee established for that section of the workplace, ensure that the employee is adequately and comprehensively informed and trained, on both practical aspects and theoretical knowledge with regard to—

(a) the contents and scope of these Regulations;

(b) the potential risks to health caused by the exposure;

(a) the measures to be taken by the employer to protect an employee against any risk of being exposed;

(d) the importance of good housekeeping at the workplace and personal hygiene requirements;

(e) the precautions to be taken by an employee to protect him- or herself against the health risks associated with the exposure, including the wearing and use of protective clothing and respiratory protective equipment;

(f) the necessity, correct use, maintenance and potential of safety equipment, facilities and engineering control measures provided;

(g) the necessity of medical surveillance;

(h) the safe working procedures regarding the use, handling, storage, labelling, and disposal of HBA at the workplace;

(i) the procedures to be followed in the event of exposure, spillage, leakage, injury or any similar emergency situation, and decontaminating or disinfecting contaminated areas; and

(j) the potential detrimental effect of exposure on the human reproductive process.

(2) An employer or a self-employed person shall give instructions in writing of the procedures contemplated in subregulation (1)(*i*) to the drivers of vehicles carrying the HBA.

(3) Every employer and every self-employed person shall ensure that he or she or any person who in any manner assists him or her in the carrying out or conducting of his or her business has the necessary information and has undergone sufficient training in order for him or her to identify the potential risks and the precautions that should be taken.

Duties of persons who might be exposed to HBA

5.(1) Any person who is or might be exposed to HBA, shall obey any lawful instruction given by or on behalf of th employer of a self-employed person regarding—

(*a*) the prevention of an uncontrolled release of a HBA;

(*b*) the adherence to instructions regarding environmental and health practices, personal hygiene and good housekeeping;

(*c*) the wearing of personal protective equipment and clothing as prescribed by these Regulations;

(*d*) the wearing of personal samplers, when necessary, to measure personal exposure to airborne hazardous biological substances;

(*e*) the disposal of materials containing HBA and the disinfection and decontamination of any site contaminated by an HBA;

(*f*) the reporting during normal working hours for such medical examination or test as contemplated in regulation 8(1); and

(*g*) information and training as contemplated in regulation 4.

(2) Any person shall immediately report to the employer, the health and safety representative or self-employed person any possible accidental exposure to a HBA at the workplace, and the employer or self-employed person shall ensure that such incident is investigated and recorded in accordance with regulation 8 of the General Administrative Regulations.

Risk assessment by employer or self-employed person

6.(1) An employer or a self-employed person contemplated in regulation 2 shall, after consultation with the relevant health and safety representative or relevant health and safety committee, cause a risk assessment to be made and thereafter at intervals not exceeding two years, to determine if any person might have been exposed to a HBA.

(2) An employer shall inform the relevant health and safety representative or health and safety committee in writing of the arrangements made for the assessment contemplated in subregulation (1), give them reasonable time to comment thereon and ensure that the results of the assessment are made available to the relevant health and safety representative or health and safety committee, which may comment thereon.

(3) When making the assessment, the employer or self-employed person shall keep a record of the assessment and take into account matters such as—

(*a*) the nature and dose of the HBA to which an employee may be exposed and the suspected route of exposure;

(*b*) where the HBA might be present and in what physical form it is likely to be;

(*c*) the nature of the work, process and any reasonable deterioration in, or failure of, any control measures;

(*d*) what effects the HBA can have on an employee; and

(*e*) the period of exposure.

(4) An employer or a self-employed person shall cause the risk assessment to be conducted on the basis of all available information as far as is reasonably practicable, including—

(*a*) classification of the HBA into the relevant risk group, according to its level of risk of infection;

(*b*) recommendations from the manufacturer, supplier or a competent person regarding the control measures necessary in order to protect the health of persons against such agents as a result of their work;

(*c*) information on diseases that may be contracted as a result of the activities at the workplace;

(*d*) potential allergenic or toxic effects that may result from the activities at the

workplace; and

(*e*) knowledge of diseases from which an employee might be suffering and which may be aggravated by conditions at the workplace.

(5) An employer shall review the assessment required by subregulation (1) forthwith if there—

(*a*) is a reason to suspect that the previous assessment is no longer valid; or

(*b*) has been a change in a process involving a HBA or in the methods, equipment or procedures in the use, handling, control or processing of HBA, and the provisions of subregulations (2), (3) and (4) shall apply.

Monitoring exposure at workplace

7. An employer shall ensure that the exposure of employees to a HBA is monitored in accordance with a suitable procedure that is standardised, sufficiently sensitive and of proven effectiveness in any case which it is—

(*a*) requisite for ensuring the maintenance of adequate control of the exposure of employees to HBA; or

(*b*) otherwise requisite for protecting the health of employees.

Medical surveillance

8.(1) An employer shall ensure that an employee is under medical surveillance if—

(*a*) the results of the assessment referred to in regulation 6 indicate that an employee might have been exposed to HBA;

(*b*) the exposure of the employee to any HBA hazardous to his or her health is such that an identifiable disease or adverse effect to his or her health may be related to the exposure, there is a reasonable likelihood that the disease or effect may occur under the particular conditions of his or her work and there are techniques such as pre-clinical biomarkers where appropriate for detecting sensitisation to allergens or an inflammatory response associated with exposure to diagnose indications of the disease or the effect as far as is reasonably practicable; or

(*c*) an occupational health practitioner recommends that the relevant employee should be under medical surveillance, in which case the employer may call upon an occupational medicine practitioner to ratify the appropriateness of such

recommendation.

(2) In order to comply with the provisions of subregulation (1), the employer shall after extensive counselling and education offer the employee the opportunity to have—

(a) an initial health evaluation, which should be carried out by an occupational health practitioner immediately before or within 14 days after a person commences employment, where any exposure exists or might exist, which comprises—

(i) an evaluation of the employee's medical and occupational history;

(ii) a physical examination; and

(iii) any biological tests and other appropriate medical tests or any other essential examination that in the opinion of the occupational health practitioner is desirable in order to enable the practitioner to do a proper evaluation;

(b) periodic medical examinations and tests in cases where a HBA is known to be capable of causing persistent or latent infections which—

(i) in the light of present knowledge, are undiagnosable, until signs or symptoms develop;

(ii) can have particularly long incubation periods;

(iii) can result in an illness which is recurrent in spite of treatment; and

(iv) are known to have serious long-term effects.

(c) All tests and examinations as contemplated in paragraphs *(a)* and *(b)* shall be conducted according to a written medical protocol.

(3) The employer shall, in accordance with regulation 8 of the General Administrative Regulations, investigate and record all incidents that result or might result in infections or the death of an employee.

(4) All occupational health practitioners shall submit to the health and safety committee for approval a written protocol for procedures to be followed when dealing with abnormal results.

Records

9.(1) An employer shall—

(*a*) keep records of all assessments, monitoring results and medical surveillance reports required by regulations 6, 7 and 8 respectively: Provided that personal medical records shall be made available only to an occupational health practitioner;

(*b*) subject to the provisions of paragraph (*c*), make the records contemplated in paragraph (*a*), excluding personal medical records, available for inspection by an inspector;

(*c*) subject to the formal written consent of an employee, allow any person to peruse the records with respect to that particular employee;

(*d*) make the records of all risk assessments and monitoring results available for perusal by the health and safety representative or health and safety committee;

(*e*) keep all records of risk assessments and monitoring results for a minimum period of 40 years;

(*f*) keep all medical surveillance records for a minimum period of 40 years, and if the employer ceases activities, all those records shall be handed over or forwarded by registered post to the relevant provincial director; and

(*g*) keep a record of the examinations and tests carried out in terms of regulation 12(*b*) and of any repairs resulting from these investigations and tests, which records shall be kept for at least three years;

(2) A self-employed person shall keep records of all risk assessments for a minimum period of 40 years, and if the self-employed person ceases activities, all those records shall be handed over or forwarded by registered post to the relevant provincial director.

Control of exposure to HBA

10.(1) An employer and self-employed person shall ensure that the—

(*a*) exposure of persons to HBA in the working environment is either prevented or, where this is not reasonably practicable, adequately controlled; and

(b) standard precautions contained in Annexure C to these Regulation are implemented to reduce the risk of transmission of HBA from recognised and

unrecognised sources of infection in a workplace.

(2) Where reasonably practicable, the employer or self-employed person shall control the exposure of persons to a HBA in the working environment by applying the following measures where appropriate:

(*a*) Limiting the amount of HBA used which might contaminate the working environment;

(*b*) limiting the number of employees who will be exposed or might be exposed;

(*c*) introducing engineering control measures for the control of exposure, which may include the following:

(i) Process separation, automation or enclosure;

(ii) the installation of local extraction ventilation systems to processes, equipment and tools for the control of emissions of an airborne HBA;

(iii) separate workplaces for different processes;

(iv) proper access control to prevent unauthorized access; and

(v) immediate personal or environmental disinfection.

(*d*) introducing appropriate work procedures that employees must follow where materials are used, processes are carried out, or incidents might occur that could give rise to the exposure of an employee to HBA, and such procedures shall include written instructions to ensure—

(i) the safe handling, use and disposal of HBA;

(ii) the proper use and maintenance of process machinery, installations, equipment, tools and local extraction and general ventilation systems;

(iii) the regular cleaning of machinery and work areas by vacuum cleaners fitted with a suitable filter that prevents contamination of the environment; and

(iv) that a system whereby changes in work procedures and processes that indicate the need for early corrective action can be readily identified;

(*e*) ensuring that emissions to the atmosphere comply with the provisions of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965);

(*f*) displaying the biohazard sign shown in Annexure D to these Regulation and other relevant warning signs; and

(*g*) specifying procedures for taking, handling and processing samples that might contain HBA.

Personal protective equipment and facilities

11. (1) If it is not reasonably practicable to ensure that the exposure of an employee is adequately controlled as contemplated in regulation 10, the employer shall in the case of—

(*a*) airborne HBA, provide the employee with suitable respiratory protective equipment and protective clothing; and

(*b*) HBA that can be absorbed through the skin, provide the employee with suitable impermeable personal protective equipment.

(2) Where respiratory protective equipment is provided, the employer shall ensure that—

(a) the relevant equipment is capable of preventing the exposure to the HBA concerned;

(*b*) the relevant equipment is correctly selected and properly used;

(*c*) information, instructions, training and supervision which would be necessary with regard to the use of the equipment are known to the employees; and

(*d*) the equipment is kept in good condition and efficient working order.

(3) An employer shall as far as is reasonably practicable—

(*a*) not issue personal protective equipment which has been used to an employee, unless it is capable of being decontaminated and sterilised prior to use;

(*b*) provide separate containers or storage facilities for personal protective equipment and protective clothing when not in use; and

(*c*) take steps to ensure that all protective equipment and protective clothing not in use are stored in a demarcated area with proper access control.

(4) An employer shall as far as is reasonably practicable, ensure that all contaminated personal protective clothing issued is cleaned and handled in accordance with the following procedures:

(a) Where such clothing is cleaned on the premises of the employer, care shall be taken to prevent contamination during handling, transporting and cleaning;

(*b*) where the clothing are sent off the premises to a contractor for cleaning

purposes, the clothing shall be placed in impermeable, tightly sealed colour coded containers and such containers shall be clearly identified with a boihazard label as depicted in Annexure D to these Regulations as contaminated; and

(*c*) ensure that the contractor as contemplated in subregulation (4)(*b*) is fully informed of the requirements of these Regulations and the precautions to be taken regarding the handling of contaminated clothing.

(5) Subject to the provisions of subregulation (4)(*b*), an employer shall ensure that no person removes dirty or contaminated personal protective equipment and personal protective clothing from the premises: Provided that where contaminated personal protective equipment has to be disposed of, it shall be treated as HBA waste as contemplated in regulation 17.

(6) Subject to the provisions of the Facilities Regulations an employer shall, where reasonably practicable, provide employees using personal protective equipment and clothing as contemplated in subregulation (1) with—

(*a*) adequate washing facilities which are readily accessible and located in an area where the facilities will not become contaminated, in order to enable the employees to meet the standard of personal hygiene consistent with the adequate control of exposure, and to avoid the spread of HBA;

(*b*) two separate lockers labelled "protective clothing" and "personal clothing" respectively, and ensure that the clothing is kept separately in the locker concerned; and

(*c*) separate "clean" and "dirty" change rooms if the employer uses or processes HBA to the extent that the HBA could endanger the health of persons outside the workplace.

Maintenance of control measures, equipment and facilities

12. An employer shall ensure that—

(*a*) all control measures, equipment and facilities provided in terms of regulations 10 and 11 are maintained in good working order; and

(*b*) thorough examinations and tests of engineering control measures are carried out at intervals not exceeding 24 months by an approved HBA inspection authority or by a person whose ability to do the measurements, analysis and tests is verified

by such an approved HBA inspection authority.

Prohibitions

13.(1) No person shall—

(*a*) use compressed air to remove HBA from any surface or person;

(*b*) eat, drink, smoke, keep food or beverages or apply cosmetics in an HBA workplace or require or permit any other person to eat, drink, smoke, keep food or beverages or apply cosmetics in such a workplace; or

(*c*) leave a controlled area without prior removal of protective or contaminated clothing and equipment.

(2) An employer or self-employed person shall cause a notice to be posted at a conspicuous place prohibiting the provision of (*a*), (*b*) and (*c*).

Labelling, packaging, transporting and storage

14. An employer or self-employed person shall, as far as is reasonably practicable, take steps to ensure that—

(*a*) all HBA under his or her control in storage, transit or being distributed, are properly contained and controlled to prevent the spread of contamination from the workplace;

(*b*) the colour coded containers in which HBA are transported are clearly marked with a bio-hazard sign as depicted in Annexure D to these Regulation and other relevant warning signs that identify the contents; and

(*c*) the driver is trained in and equipped with a certificate in emergency procedures.

Special measures for health and veterinary isolation facilities

15.(1) Subject to the provisions of regulation 6, every employer and self-employed person shall, in the case of health and veterinary isolation facilities, take into account—

(*a*) uncertainties about the presence of HBA in a patient or animal and the materials and specimens taken from them;

(*b*) the hazard represented by HBA known or suspected to be present in a patient, animal, materials and specimens taken from them; and

(c) the risks posed by the nature of the work.

(2) An employer or self-employed person as contemplated in subregulation (1) shall ensure that the correct containment measures as indicated in Annexures C and E to these Regulation are selected for persons and animals in isolation facilities that are suspected of being infected with Group 3 or Group 4 HBA in order to minimise the risk of infecting others.

Special measures for laboratories, animal rooms and industrial processes

16. In the case of laboratories, animal rooms and industrial processes the employer or self-employed person contemplated in regulation 2 shall ensure that the containment measures required in—

(a) Annexure C and E are implemented in laboratories and in rooms for laboratory animals, including diagnostic laboratories, and in rooms for laboratory animals that have been deliberately infected with Group 2, 3 and 4 HBA or where laboratory animals are suspected of carrying such agents;

(b) Annexure C and E are implemented in laboratories handling materials in respect of which uncertainty prevails about the presence of HBA that may cause human disease, but that do not have as their aim working with HBA as such: Provided that the containment measures that are required for Group 3 or 4 are implemented where it is known or suspected that it is necessary; and

(c) Annexure C and F are implemented where Group 2, 3 or 4 HBA are used in industrial processes: Provided that where it has not been possible to carry out a conclusive assessment of HBA, but where the use envisaged might involve a serious health risk for persons, such activities may be carried out only in workplaces where the containment measures correspond to the requirement for Group 3 HBA.

Disposal of HBA

17. An employer or self-employed person as contemplated in regulation 2 shall—

(a) lay down written procedures for appropriate decontamination and disinfection;

(b) implement written procedures enabling infectious waste to be handled and disposed of without risk;

(c) ensure that all fixtures and equipment including vehicles, re-usable containers

and covers which have been in contact with HBA waste are disinfected and decontaminated after use in such a manner that it does not cause a hazard inside or outside the premises concerned;

(*d*) ensure that all HBA waste that can cause exposure is disposed of only on sites specifically designated for this purpose in terms of the Environmental Conservation Act, 1989 (Act No. 73 of 1989), in such a manner that it does not cause a hazard inside or outside the site concerned;

(*e*) ensure that all employees involved in the collection, transport and disposal of HBA waste and who may be exposed to that waste are provided with suitable personal protective equipment; and

(*f*) ensure that if the services of a waste disposal contractor is used, a provision is incorporated into the contract stating that the contractor shall comply with the provisions of these Regulations.

Offences and penalties

18. Any person who contravenes or fails to comply with any provisions of regulation 3 to 17 shall be guilty of an offence and liable on conviction to a fine or to imprisonment for a period not exceeding 12 months and, in the case of a continuous offence, to an additional fine of R200 for each day on which the offence continues or additional imprisonment of one day for each day on which the offence continues: Provided that the period of such additional imprisonment shall in no case exceed 90 days.

Short title

19. These Regulations shall be called Regulations for Hazardous Biological Agents.

ANNEXURE A

[Regulation 2(1)(b)]

INDICATIVE LIST OF INCIDENTS)

Incidents or exposure during work—

(*a*) in a food production plant;

(*b*) where there is contact with animals or products of animal origin;

(*c*) in health care, including isolation and post-mortem units;

(*d*) in clinical, veterinary and diagnostic laboratories;

(*e*) in sewage purification installations; and

(*f*) in a general workplace.

ANNEXURE B
HAZARDOUS BIOLOGICAL AGENTS GIUDELINES

CATEGORISATION OF BIOLOGICAL AGENTS ACCORDING TO HAZARD AND CATEGORIES OF CONTAINMENT:

INTRODUCTION

1. The attached list must be read in conjunction with the *Hazardous Biological Agents,* and in particular regulation 3.

2. Agents listed are categorised on the basis of their ability to cause disease by infection.

3. In allocating agents to a hazard group in the list no account is taken of particular effects on those whose susceptibility to infection may be affected for one or other reason such as pre-existing disease, medication, compromised immunity, pregnancy or breastfeeding. Additional risk to such workers should be considered as part of the assessment required by the *Hazardous Biological Agents.*

4. Biological agents that have not been classified for inclusion into Group 2 to 4 in the list are not implicitly classified in Group I.

5. If more than one species of any particular agent is known to be pathogenic to humans, the most prominent of these is generally named, together with the wider reference 'species' (spp) to indicate the fact that the other species of the same genus may be hazardous. If a whole genus is mentioned in this way, it is implicit that species and strains that are non-pathogenic to humans are excluded.

6. When a strain is attenuated or has lost known virulence genes, the containment required by the classification of its parent strain need not necessarily apply, subject to assessment appropriate to the risk in the workplace, for example when such strain is used as a product or as part of a product for prophylactic or therapeutic purposes. (See 2)

7. All viruses that have been isolated in humans and that have not been assessed and allocated to a group in the list are to be classified in Group 2 as a minimum, except where there is evidence that they are unlikely to cause disease in humans.

8. The requirements as to containment consequent upon the classification of parasites apply only to stages in the life cycle of the parasite in which it is liable to be infectious for humans.

9. The list also gives a separate indication where biological agents are capable of causing allergic or toxic reactions, where an effective vaccine is available.

   The following notations identify the indications:

   A: Possible allergic effects;
   T: Toxin production;

V: Effective vaccine available;
NIV: National Institute of Virology.

The selection of control measures for biological agents should take into account the fact that there is no exposure limits for them. Their ability to replicate and to infect at very small doses means that exposure may have to be reduced to levels that are diminishingly low.

For each activity the first consideration should be whether it could be carried out in a way that involves exposure to a less harmful biological agent. This may be practicable, for example, in teaching and some types of research. If there is more than one way of carrying out the activity then the method carrying the least risk should be chosen.

If the least harmful alternative still involves exposure or potential exposure to biological agent, or the nature of the activity is such that there is no choice, and it is not reasonably practicable to prevent exposure by some other means, then exposure should be adequately controlled. All of the measures listed in Annexure E should be considered, and each should be used where and to the extent that—

(*a*) it is applicable; and
(*b*) the assessment carried but under regulation 6 shows that it will lead to a non-negligible reduction in risk.

Not all the listed measures will be required in every case. The assessment may indicate, for example, that a specific mode of transmission and route of infection is required, a susceptible host is needed, there is low prevalence of the infection in that particular activity, and that illness is easily treatable, leading to rapid and complete recovery.

In such a case the risk would be relatively low and the control measures required less stringent. Another factor that will determine whether controls are to be applied will be the extent to which the activity involves the handling or deliberate use of a biological agent, or exposure is incidental to the main purpose of the work. However, the level of risk should be the principal consideration - if the risk is sufficiently high and can be reduce by some of the listed measures, they should be applied in full.

Certain special measures are required in health and veterinary care facilities, laboratories, animal rooms and industrial processes to ensure that biological agents are not transmitted to workers or outside the controlled area. For laboratories, animal rooms and industrial processes rules are laid down for the derivation of containment level from the hazard classification of the agent, or from what is suspected about the possible presence of an agent. Laboratories screening for an agent which falls in Group 3 and 4, but which is not ordinarily expected to be present (for example a microbiological laboratory in a food factory screening for salmonella, with the possibility of finding *Salmonella typhi*), should achieve at least containment level 2, but switch to the appropriate higher level if the agent is found and if work is to continue with it. In a laboratory that does not deliberately work with biological agents, but where the presence of agents calling for containment levels 3 or 4 is nevertheless known or suspected, those containment levels should be used.

Agents with reduced virulence may be used at a lower than normal level of containment

if the alteration has effectively changed their classification.

A biological agent that falls or is treated as falling into Hazard Group I may be a Group 3 genetically modified organism, because of environmental risks associated with it or because, though now unlikely to cause human disease, it is derived by genetic modification from a pathogenic parental organism. In the latter case, the selection of containment measures appropriate to the agent's reduced virulence and corresponding group may be permitted. Where there is a mismatch, as in the case of a genetically modified organism or biological agent which is non-hazardous to humans, but environmentally harmful, more stringent requirements should be followed.

Where the rules as set out lead to a particular containment level for an activity, all the measures appropriate to that level should normally be used. Some selection may be done, however, to suit individual circumstances, provided that the risk is not increased by doing so.

Regulation 11 sets out additional requirements in respect of personal protective equipment used to protect employees against biological agents. The object of these requirements is to prevent the equipment itself from acting as the means by which agents are transmitted, and they should be followed accordingly.

Where workers are exposed to biological agents the information and instructions given to them, if applicable, should be set down in the form of written instructions, outlining procedures to be followed after a serious incident involving the handling of a biological agent as well as the procedure for handling any Group 4 agent.

If the nature of the workplace and the activity are such that employees may need instant access to this information, or where a reduction in risk may be expected by having the information conspicuously displayed in the workplace, it should also be set out on notices displayed in the workplace.

BACTERIA

Key:

A: allergic effects
T: Toxic effects
V: Vaccine available
NIV: National Institute of Virology

Biological Agent	**Classification**	**Notes**
Acinetobacter calcoaceticus	2	
Acinetobacter lwoffi	2	
Actinobacillus actinomycetem-comitans	2	
Actinomadura madurae	2	

Actinomadura pelletieri	2	
Actinomyces spp	2	
Aeromonas hydrophila	2	
Alcaligenes spp	2	
Arcanobacterium haemolyticum (*Corynebacterium haemolyticum*)	2	
Arizona spp	2	
Bacillus anthracis	3	V
Bacillus cereus	2	
Bacteroides spp	2	
Bartonella spp (*Rochalimaea* spp)	2	
Bordetella bronchiseptica	2	
Bordetella parapertussis	2	
Bordetella pertussis	2	V
Borrelia burgdorferi	2	
Borrelia spp	2	
Brucella spp	3	
Burkholderia cepacia	2	
Burkholderia mallei (*Pseudomonas mallei*)	3	
Burkholderia pseudomallei (*Pseudomonas pseudomallei*)	3	
Burkholderia spp	2	
Campylobacter spp	2	
Cardiobacterium hominis	2	
Chlamydia pneumoniae	2	

Chlamydia psittaci (non-avian strains)	2	
Chlamydia psittaci (avian strains)	3	
Chlamydia trachomatis	2	
Clostridium botulinum	2	T, V
Clostridium perfringens	2	
Clostridium tetani	2	T, V
Clostridium spp	2	
Corynebacterium diphtheriae	2	T, V
Corynebacterium minutissimum	2	
Corynebacterium pseudo-tuberculosis	2	
Corynebacterium spp	2	
Coxiella burnetii	3	
Edwardsiella tarda	2	
Ehrlichia sennetsu (*Rickettsia sennetsu*)	3	
Ehrlichia spp	3	
Eikenella corrodens	2	
Enterobacter spp	2	
Enterococcus spp	2	
Erysipelothrix rhusiopathiae	2	
Escherichia coli (with the exception of non-pathogenic strains)	2	
Flavobacterium meningosepticum	2	

Fluorobacter bozemanae (formerly *Legionella*)	2	
Francisella tularensis (Type A)	3	V
Francisella tularensis (Type B)	2	
Fusobacterium spp	2	
Gardnerella vaginalis	2	
Haemophilus ducreyi	2	
Haemophilus influenzae	2	
Haemophilus spp	2	
Helicobacter pylori	2	
Klebsiellla oxytoca	2	
Klebsiella pneumoniae	2	
Klebsiella spp	2	
Legionella pneumophila	2	
Legionella spp	2	
Leptospira interrogans (all serovars)	2	
Listeria ivanovii	2	
Listeria monocytogenes	2	
Moraxella catarrhalis	2	
Moraxella lacunata	2	
Morganella morganii	2	
Mycobacterium africanum	3	V
Mycobacterium avium/intracellulare	3	
Mycobacterium bovis (BCG strain)	2	
Mycobacterium bovis	3	V
Mycobacterium chelonae	2	

Mycobacterium fortuitum	2	
Mycobacterium kansasii	3	
Mycobacterium leprae	3	V
Mycobacterium malmoense	3	
Mycobacterium marinum	2	
Mycobacterium microti	3	
Mycobacterium paratuberculosis	2	
Mycobacterium scrofulaceum	3	
Mycobacterium szulgai	3	
Mycobacterium simiae	3	
Mycobacterium tuberculosis	3	V
Mycobacterium ulcerans	3	
Mycobacterium xenopi	3	
Mycoplasma hominis	2	
Mycoplasma pneumoniae	2	
Neisseria gonorrhoeae	2	
Neisseria meningitidis	2	V
Nocardia spp	2	
Pasteurella spp	2	
Peptrostreptococcus spp	2	
Plesiomonas shigelloides	2	
Porphyromonas spp	2	
Prevotella spp	2	
Proteus mirabilis	2	
Proteus penneri	2	

Proteus vulgaris	2	
Providencia spp	2	
Pseudomonas aeruginosa	2	
Pseudomonas mallei - see *Burkholderia mallei*	3	
Pseudomonas pseudomallei - see *Burkholderia pseudomallei*	3	
Rhodococcus equi	2	
Rickettsia spp	3	
Rochalimaea quintana - see *Bartonella* spp	2	
Rochalimaea spp - see *Bartonella* spp	2	
Salmonella arizonae	2	
Salmonella enteritidis	2	
Salmonella (other serovars)	2	
Salmonella paratyphi A, B, C	2	
Salmonella typhi	3	V
Salmonella typhimurium	2	
Serpulina spp	2	
Serratia liquefaciens	2	
Serratia marcescens	2	
Shigella boydii	2	
Shigella dysenteriae (Type 1)	3	T
Shigella dysenteriae (other than Type 1)	2	
Shigella flexneri	2	
Shigella sonnei	2	

Staphylococcus aureus	2	T
Stenotrophomonas maltophilia	2	
Strepobacillus moniliformis	2	
Streptococcus spp	2	
Treponema spp	2	
Ureaplasma urealyticum	2	
Vibrio cholerae (including El Tor)	2	T, V
Vibrio parahaemolyticus	2	
Vibrio spp	2	
Yersinia enterocolitica	2	
Yersinia pestis	3	V
Yersinia pseudotuberculosis	2	
Yersinia spp	2	

VIRUSES

Biological Agent	**Classification**	**Notes**
Adenoviridae	2	
Alphavirus	2* (contact NIV)	V
Arenaviridae:		
Ippy 2		
Lassa fever	4	
Lymphocytic chloriomeningitis	3	
Mobala	2	
Mopeia	3	
Astroviridae	2	
Bunyaviridae:		
Akabane	3	
Bunyamwera	2	
Germiston	3	
Hantaviruses [contact NIV]		
Nairoviruses:		

Bhanja	3	
Crimean/Congo haemorrhagic fever	4	
Hazara	2	
Phleboviruses:		
Rift Valley fever	3	V
Other Bunyaviridae known to be pathogenic	2* [contact NIV]	
Caliciviridae:		
Hepatitis E	3	
Norwalk	2	
Other Caliciviridae	2	
Coronaviridae	2	
Filoviridae:		
Ebola Reston (Siena)	4	
Ebola Sudan	4	
Ebola Zaire	4	
Ebola Ivory Coast	4	
Marburg	4	
Flaviviridae:		
Flaviviruses		
Dengue viruses Type 1-4	3	
Israel turkey meningitis	3	
Spondweni	3	
Wesselsbron	3	
West Nile fever	3	
Yellow fever	3	V
Hepatitis C group viruses:		
Hepatitis C	3	
Other Flaviviruses known to be pathogenic	2* [contact NIV]	
Hepadnaviridae:		
Hepatitis B	3	V
Hepatitis D (delta)	3	V
Herpesviridae:		
Cytomegalovirus	2	
Epstein-Barr virus	2	
Herpes simplex types 1 and 2	2	
Herpesvirus varicella-zoster	2	
Herpesvirus simaie (B virus)	3	
Human herpesvirus type 6 – HHV6	2	

Human herpesvirus type 7 – HHV7	2	
Orthomyxoviridae		
Influenza types A, B and C2	2	V (for A, B)
Tickborne orthomyxoviridae:		
Dhori and Thogoto	2	
Papovaviridae:		
BK and JC viruses	2	
Human papillomaviruses	2	
Paramyxoviridae		
Measles	2	V
Mumps	2	V
Newcastle disease	2	
Parainfluenza (Types 1 to 4)	2	
Respiratory syncytial virus	2	
Rinderpest	4	
Canine distemper		
Parvoviridae:		
Human parvovirus (B19)	2	
Picornaviridae		
Acute haemorrhagic conjunctivitis		
Virus (AHC)	2	
Coxsackie viruses	2	
Echoviruses	2	
Polioviruses	2	V
Rhinoviruses	2	
Hepatoviruses:		
Hepatitis A		
(Human enterovirus type 72)	2	V
Poxviridae:		
Buffalopox	2	
Cowpox	2	
Milker's nodes	2	
Molluscum contagiosum virus	2	
Monkeypox	3	V
Orf 2		
Vaccinia	2	
(including strains originally classified		
as rabbitpox virus)		

Variola (major and minor) (all strains, including "white virus")	4	V
Yatapox (Tana & Yaba)	2	
Reoviridae:		
Coltivirus	2	
Human rotaviruses	2	
Orbiviruses	2	
(includes - African horsesickness serogroup L - Blue tongue serogroup L		
Reoviruses	2	
Retroviridae:		
Human immunodeficiency viruses	3	
Human T-cell lymphotropic viruses (HTLV) types 1 and 2	3	
Simian immunodeficiency virus	3	
Rhabdoviridae:		
Lagos bat	3	
Duvenhage	3	
Makola	3	
Rabies	3	V
Togaviridae:		
Alphaviruses:		
Chikungunya	3	
Middelburg	2	
Ndumu	3	
O'nyong-nyong	2	
Semliki forest	3	
Sindbis	2	
Rubiviruses:		
Rubella	2	V
Toroviridae*	2	
Unclassified viruses:		
Blood-borne hepatitis viruses not yet identified	3	
Equine morbillivirus	3	
Unconventional agents:		
- Associated with:		
Creutzfeldt-Jakob disease	3	
Gerstmann-Strussler-Scheinker syndrome	3	
Kuru	3	

- Including strains isolated from cats and exotic species e.g. elephants, cheetahs.
- Including strains originally classified as rabbitpox virus.
- All strains including "whitepox virus".

PARASITES

Biological Agent	**Classification**	**Notes**
Acathamoeba spp	2	
Ancylostoma duodenale	2	
Angiostrongylus cantonensis	2	
Angiostriongylus costaricensis	2	
Ascaris lumbriciodes	2	A
Ascaris suum	2	A
Babesia divergens	2	
Babesia microti	2	
Balantidium coli	2	
Blastocystis homines	2	
Brugia spp	2	
Capillaria spp	2	
Clonorchis - see *Opisthorchis*		
Cryptosporidium spp	2	
Cyclospora cayetanensis	2	
Cyclospora spp	2	
Dientamoeba fragilis	2	
Dipetalonea – see *Mansonella*	2	
Diphyllobothrium latum	2	

Dracunculus medinensis	2
Echinococcus granulosus	3
Echinococcus multilocularis	3
Echinococcus vogeli	3
Entamoeba histolytica	2
Enterobius vermicularis	2
Enterocytozoon bieneusi	2
Fasciola gigantica	2
Fasciola hepatica	2
Fasciolopsis buski	2
Giardia lamblia (*Giardia intestinalis*)	2
Hymenolepis diminuta	2
Hymenolepis nana	2
Isopora belli	2
Leishmania brasiliensis	3
Leishmania donovani	3
Leishmania major	2
Leishmania tropica	2
Leishmania spp	2
Loa loa	2
Mansonella ozzardi	2
Mansonella perstans	2
Mansonella streptocerca	2
Naegleria fowleri	3
Necator americanus	2

Onchocerca volvulus	2
Opisthorcis sinensis (*Chlonorchis sinensis*)	2
Opisthorchis viverrini (*Clonorchis viverrini*)	2
Opisthorchis felineus	2
Opisthorchis spp	2
Paragonimus spp	2
Plasmodium falciparum	3
Plasmodium spp (human & simian)	2
Sarcocystis suihominis	2
Schistosoma spp	2
Strongyloides spp	2
Taenia saginata	2
Taenia solium	3
Toxocara canis	2
Toxocara cati	2
Toxoplasma gondii	2
Trichinella nativa	2
Trichinella nelsoni	2
Trichinella pseudospiralis	2
Trichinella spiralis	2
Trichomonas vaginalis	2
Trichostrongylus orientalis	2
Trichostrongylus spp	2
Trichuris trichiura	2

Trypanosoma brucei brucei	2
Tryposoma brucei gambiense	2
Trypanosoma brucei rhodesiense	3
Trypanosoma cruzi	3
Trypanosoma rangeli	2
Wuchereria bancrofti	2

ANNEXURE C

[Regulations10(1)*(b), 15(2) and 16(a), (b)* and *(c)*]

PRECAUTIONS FOR WORKPLACES

FIVE MAIN ROUTES OF TRANSMISSION:

1. **Contact**

The most important route of transmission in a workplace is by—

(*a*) direct contact with an infected or contaminated body surface or fluid; and

(*b*) indirect contact via contact with an object previously contaminated with organisms from an infected person or animal.

2. **Droplet Transmission**

Droplets are generated during coughing, sneezing, talking and during procedures such as suctioning.

Droplets may carry organisms that can infect a new host if they are deposited on conjunctivae, nasal mucosa or the mouth.

Droplets do not remain suspended in the air.

Droplets do not travel more than one metre.

3. **Airborne Transmission**

Small particles (droplet nuclei) that remain suspended in air for long periods of time have a far greater potential for spreading disease than large droplets.

Few organisms are carried by this route, the most important being *Mycobacterium tuberculosis* and the viruses causing measles and chickenpox.

Prevention of spread requires an enclosed area with at least six air changes per hour, or an open window that provides adequate ventilation.

4. **Common Vehicle Transmission**

Transmission by items such as food, water, devices and equipment.

Normal hygienic practices and proper sterilisation or disinfection of equipment should make this type of spread a rare event in certain workplaces, e.g. hospitals.

5. **Vector-Borne Transmission**

Vectors such as mosquitoes, flies, fleas, etc. are hopefully not frequently encountered in workplaces as a cause of outbreaks.

In areas where there is a problem the appropriate measures, e.g. screens on windows and the use of insecticides must be instituted.

Two levels of precautions are recommended:

(*a*) **Standard Precautions**

These are applied at all times to all patients irrespective of their diagnosis. All body fluids (except sweat) are regarded as potentially infectious.

(*b*) **Transmission-Based Precautions**

These are applied when a specific infectious disease is diagnosed or suspected.

The route by which the disease is transmitted will determine the category of precautions that must be applied.

PRECAUTIONS

A. Administrative Controls

1. Education and Training
2. Adherence to precautions

B. Precautionary measures

1. Standard Precautions
2. Airborne Precautions
3. Droplet Precautions
4. Contact Precautions
5. Formidable Epidemic Disease (e.g. viral haemorrhagic fevers) Precautions

A. ADMINISTRATIVE CONTROLS

1. EDUCATION AND TRAINING

A system must be developed to ensure that hospital patients, employees, contractors and visitors are educated about:

* the use of precautions.
* their responsibility for adhering to the precautions.

2. ADHERENCE TO PRECAUTIONS

Periodic evaluation of adherence to precautions must be carried out. The findings are to be used to implement improvements.

B. PRECAUTIONARY MEASURES

1. STANDARD PRECAUTIONS

Standard precautions are used for the protection of all people exposed to HBA.

1.1 HAND WASHING

* Wash hands after touching blood, body fluid, secretions, excretions and contaminated items, whether or not gloves are worn.

* Wash hands (when working with patients):

  ➢ immediately after gloves are removed.

  ➢ between patient contact.

  ➢ where indicated to prevent cross-contamination of different body sites.

* Use plain (non-antimicrobial) soap for routine hand washing.

* Use an antimicrobial agent or an alcohol hand disinfectant for specific circumstances (e.g. control of outbreaks or hyperendemic infections) as defined by the infection control program. (See contact precautions.)

1.2 GLOVES

• Wear gloves (clean, intact non-sterile gloves are adequate) when touching blood, body fluid, secretions, excretions and contaminated items.

* Put on clean intact gloves just before touching mucous membranes and non-intact skin.

* Change and dispose of gloves between tasks and procedures—

  ➢ on the same person.

  ➢ after contact with material that may contain high concentration of micro-organisms.

* Remove gloves promptly after use—

  ➢ before touching non-contaminated items and environmental surfaces.

  ➢ before attending to another person.

* Wash hands immediately to avoid transfer of micro-organisms to other persons and environments.

1.3 MASK, EYE PROTECTION, FACE SHIELD

* Wear a mask and eye protection or a face shield—

  ➢ to protect mucous membranes of the eyes, nose and mouth.

  ➢ during procedures and activities that are likely to generate splashes or

sprays of blood or body fluid, secretions and excretions.

1.4 PROTECTIVE CLOTHING

* Wear appropriate protective clothing to protect skin and to prevent soiling of clothing during procedures and activities that are likely to generate splashes or sprays of blood, body fluid, secretions and excretions.

* Select protective clothing that is appropriate for the activity and amount of fluid likely to be encountered.

* Remove soiled protective clothing as promptly as possible and consider it contaminated.

* Wash hands immediately after removal of protective clothing to avoid transfer of micro-organisms to other people or environments.

1.5 PATIENT-CARE EQUIPMENT

* Handle patient-care equipment soiled with blood, body fluids, secretions and excretions in a manner that prevents—

  ➢ skin and mucous membrane exposures.

  ➢ contamination of clothing.

  ➢ transfer of micro-organisms to other environments.

* Ensure that reusable equipment is not used for the care of another patient until—

  ➢ it has been cleaned.

  ➢ it has been reprocessed appropriately.

* Ensure that:—
  ➢ sufficient disposable syringes and needles are at all times available for use.

  ➢ provision is made for their safe disposal.

1.6 ENVIRONMENTAL CONTROL

* Ensure that adequate procedures are in place for routine care, cleaning and disinfection of environmental surfaces, and other frequently used or potentially contaminated surfaces.

* Disinfection of environmental surfaces is not routinely required. Simple cleaning is adequate unless there has been significant soiling by potentially infectious body fluids.

1.7 LINEN

* Process, handle and transport used linen contaminated with blood, body fluid, secretion and excretions in colour coded, impervious containers and all possible measures should be observed to prevent—

  - ➢ skin and mucous membrane exposure.
  - ➢ contamination of clothing.
  - ➢ transfer of micro-organisms to other persons and environments.

1.8 OCCUPATIONAL HEALTH

1.8.1 **Injuries**

* Take care to prevent injuries when—

  - ➢ using needles, scalpels and other sharp instruments or devices.
  - ➢ handling sharp instruments after a procedure.
  - ➢ cleaning instruments.
  - ➢ disposing of used needles.

Never

* Re-cap needles or manipulate them using both hands, if it is absolutely necessary to resheath a needle. A variety of mechanical devices that are commercially available must be used.

* Use any other technique that involves directing the point of a needle toward any part of the body.

Do not

* Remove used needles from disposable syringes by hand.

* Bend or break or otherwise manipulate needles by hand.

Do

* Place used disposable syringes and needles, scalpel blades and other sharp objects in appropriate puncture-proof containers that are as close as possible to the area in which the procedure is carried out.

* Transport them safely to the disposal area.

1.8.2 **Resuscitation**

Use mouthpieces, resuscitation bags or other ventilation devices as an alternative method to mouth-to-mouth resuscitation in areas where the need for resuscitation is predictable.

1.9 PATIENT PLACEMENT

* Place in an isolation area (single or private room) patients who—

  - contaminate the environment.

  - do not or cannot be expected to assist in maintaining appropriate personal hygiene or environmental control.

* If an isolation area is not available, consult infection control professionals regarding patient placement or other alternatives.

2. AIRBORNE PRECAUTIONS

In addition to Standard Precautions, use Airborne Precautions for—

* patients known or suspected of being infected with micro-organisms transmitted by airborne droplet nuclei, i.e. small particle residue of evaporated droplets containing micro-organisms that—

  - remain suspended in the air;

  - can be widely dispersed by air currents within a room or over a long distance.

2.1 PATIENT PLACEMENT

Ideally place patients in a private room that has—

* monitored negative air pressure in relation to the surrounding areas.

* 6 -12 air changes per hour.

* Appropriate discharge of air outdoors or monitored high-efficiency filtration

of room air before the air is circulated to other areas of the hospital.

Where this is not possible

* Use—

  - a room with a simple extraction fan providing at least six air changes per hour.

  - a room with an open window, and adequate ventilation.

* When an isolation area is not available, place the patient in a room with another patient who has active infection with the same micro-organism, and no other infection, unless otherwise recommended.

* When a private room is not available and cohorting is not desirable, consultation with infection control professionals is advised before patient placement.

* Keep the patient in the room and keep the door closed.

2.2 RESPIRATORY PROTECTION

Tuberculosis:

* Respiratory protection may be worn when entering the room of a patient known or suspected to have infectious pulmonary tuberculosis.

* Measles (rubeola) and chickenpox (varicella).

* Susceptible persons should not enter the room of patients known or suspected of having measles or varicella if other immune caregivers are available.

* If susceptible persons must enter the room they must wear respiratory protection.

* Persons immune to measles or varicella need not wear respiratory protection.

2.3 PATIENT TRANSPORT

Movement and transport of the patient should be kept to a minimum.

* If transport or movement is necessary, the patient must wear a surgical mask to minimise dispersal of droplet nuclei.

2.4 ADDITIONAL PRECAUTIONS FOR PREVENTING TRANSMISSION OF TUBERCULOSIS

* Respirators—

  - must be worn by all who enter the room.
  - must be able to filter particles 1 micron or less in size with a filter efficiency of 95%.

* Effective treatment of the patient

* Isolation—

  - there is significant clinical improvement in the patient's condition.
  - ideally, two negative acids fast bacilli smears must be obtained.
  - ideally a smear positive patient will require isolation for a minimum of two weeks.

3. DROPLET PRECAUTIONS

In addition to Standard Precautions, use Droplet Precautions for patients known or suspected to be infected with micro-organisms transmitted by droplets (large particle droplets that can be generated during coughing, sneezing, talking or respiratory therapy).

3.1 PATIENT PLACEMENT

Place the patient in an isolation area, e.g. private or single room

* When a private room is not available and cohorting is not achievable, maintain spatial separation of at least one metre between the infected patient and other patients and visitors.

* Additional ventilation measures are not necessary and the door may remain open.

3.2 MASKS

Wear a mask when working within one metre of the patient. However, logistically some hospitals may want to implement the wearing of a mask to enter the room.

3.3 PATIENT TRANSPORT

Movement and transport of the patient from the room should be kept to a minimum. If transport or movement is necessary, minimise dispersal of droplets by masking the patient.

4. CONTACT PRECAUTIONS

In addition to Standard Precautions use Contact Precautions for—

specified patients known or suspected to be infected or colonised with epidemiologically important micro-organisms that can be transmitted by direct contact with the patient (hand to skin contact occurs when performing patient care activities that required touching the patient's dry skin) - or indirect contact (touching) environmental surfaces or patient care items in the patient's environment.

4.1 PATIENT PLACEMENT

Place the patient in an isolation area, e.g. private or single room

* When a private room is not available, place the patient in a room with patients who have active disease with the same microorganism but no other infection (cohorting).

* When neither a private room nor cohorting is achievable, consider the epidemiology of the microorganism and the patient population when determining patient placement.

Consultation with infection control professionals is advisable before patient placement.

4.2 GLOVES AND HAND WASHING

In addition to wearing gloves and washing hands as outlined in Standard Precautions—

* Wear clean gloves when entering the room.

* Change gloves after having contact with infective material.

* Remove gloves before leaving the patient's environment.

* Wash hands immediately after glove removal with an antimicrobial or an alcohol hand rub.

* Ensure that hands do not touch potentially contaminated environmental surfaces or items in the patient's room to avoid transfer of micro-organisms to other patients or the environment.

4.3 PROTECTIVE CLOTHING

In addition to wearing a gown or plastic apron as outlined in Standard Precautions—

* Wear a clean, non-sterile gown and/or plastic apron as appropriate—

  - when entering a room where soiling of clothing is anticipated.
  - following substantial contact with the patient.
  - following contact with environmental surfaces or items in the patient's room.
  - if the patient is incontinent or has diarrhoea, an ileostomy or a colostomy.
  - where wound drainage is not contained by a dressing.

* Remove the gown or plastic apron before leaving the patient's environment.

* After gown or plastic apron removal, ensure that clothing does not make contact with potentially contaminated environmental surfaces to avoid transfer of micro-organisms to other patients or environments.

4.4 PATIENT TRANSPORT

* Movement and transport of the patient from the room should be minimised.

* Ensure that precautions are maintained to minimize the risk of transmission of micro-organisms to other patients and contamination of environmental surfaces or equipment.

4.5 PATIENT-CARE EQUIPMENT

Where possible dedicate the use of non-critical patient-care equipment to a single patient (or cohort of patients infected or colonised with the pathogen requiring precautions).

Avoid sharing equipment between patients

- If the use of common equipment or items is unavoidable, then these must be cleaned and disinfected before use for another patient.

4.6 ADDITIONAL PRECAUTIONS FOR PREVENTING THE SPREAD OF MULTI-DRUG-RESISTANT MICRO-ORGANISMS

* Limit antibiotic use and prevent misuse.

* Educate staff.

* Detect multi-drug-resistant micro-organisms early by laboratory and infection control surveillance.

* Consult an Infection Control Practitioner regarding further management.

5. FORMIDABLE EPIDEMIC DISEASE (FED) ISOLATION

* Standard and contact precautions plus additional items such as respirators, visors, water repellent gowns and boots, caps, double gloves are required.

* Standard precautions are adequate during the non-haemorrhagic phase in cases of haemorrhagic fevers, such as Ebola and Congo-Crimean haemorrhagic fever.

5.1 ISOLATION AREA

* This may be a dedicated viral haemorrhagic fever (VHF) unit or a dedicated sideward or private room, preferably with an anteroom.

* The door must be kept closed, and strict access control must be implemented.

5.2. GOWNS

* Impervious disposable gowns must be worn over a theatre scrub suit.

5.3 GLOVES

* Two pairs are worn, the one pair on top of the other.

* Sterile latex gloves are used because of the thicker quality and longer non-roll cuff.

5.4 BOOTS

* Impervious boots or overshoes are worn in the isolation room.

They must be—

- high enough to cover the area of skin below the trouser legs.
- strong enough to withstand wear and tear.

5.5 THEATRE CAPS/GOGGLES OR VISORS

* Worn inside the isolation room.
* Theatre caps.

A theatre cap worn with a visor providing full protection of the head and neck is preferred.

5.6 MASKS AND RESPIRATORS

* Masks – good quality, high-filtration respirators are necessary.

5.7 Formidable Epidemic Disease Pack (FED Pack)

A FED pack contains all the isolation gear necessary, must be safely stored in an area not accessible to unauthorised persons. The FED pack must be immediately replenished after every usage.
This pack is available immediately, is portable and is used until the patient is diagnosed or transferred to an isolation unit or an infectious diseases hospital. The pack is kept in a box or in a trolley. The box (or trolley) is distinctive and kept in an easily accessible place. The pack contents are replenished as required by the infection control staff.

Instruction posters provide instructions for untrained personnel until infection control professionals arrive to provide guidance and instruction in VHF procedures.

Contents—

* Sterile latex gloves of varying sizes.
* Disposable impermeable gowns.
* Goggles or visors.

* Masks.

* Shoe covers (half-leggings).

‡Theatre caps.

* Blood tubes, labels, bio-hazard plastic specimen bags, a rigid, walled container for transportation of specimens and bio-hazard stickers.

* Masking tape used for—

  - sealing boxes of refuse.
  - fixing instruction posters to the wall.
  - securing tops of plastic shoe covers.

* Plastic refuse bags for contaminated refuse.

* Autoclavable bags for non-disposable items.

* Clear plastic bags.

* Sodium-hypochlorite sachets of powder (NaOCl) and liquid 1% hypochlorite.

* Plastic-covered instruction posters containing detailed instructions on how to—

  - put on isolation gear.
  - undress safely.
  - collect and handle specimens safely.
  - mix disinfectants.
  - disinfect and handle contaminated equipment.
  - dispose of linen and refuse.
  - deal with a blood spill.

5.8 The infection control professionals must ensure that staff follows correct procedures and that equipment is available for disposal of refuse.

* All refuse bags are colour coded, double bagged and are placed into cardboard boxes.

* Refuse bags are sealed and labelled with bio-hazard stickers and tape.

* Containers are escorted to the incinerator.

* Their immediate incineration is ensured.

5.9 Transporting VHF specimens

These specimens require a special container and packaging:

- The specimen is placed in a bio-hazard bag.
- The patient's label is placed in the outer pouch.
- The specimen is then wrapped in absorbent material and placed in an unbreakable screw-top container.
- The container is labelled with a bio-hazard sticker and the destination (name of the receiving laboratory).
- It is preferably delivered by hand.
- If the specimen has to be posted or sent by courier a second unbreakable container is used and labelled accordingly.

5.10 Management of soiled linen, refuse and equipment

Bedding

* All bedding used is either disposable or condemned linen that is subsequently incinerated.

* Mattresses must be covered with durable plastic covers

  - The covers are disposable.
  - If the mattress becomes soiled with blood or body substance it must be destroyed.

Linen and Refuse

* All linen (disposable and condemned) is placed into plastic refuse bags

  - The person inside the cubicle or room takes the sealed bag and places it in a second bag held by another person outside the room.
  - This bag is then sealed and sent for incineration.

Terminal disinfection of equipment

* All equipment is washed down well with a hypochlorite-detergent.

* It is then dried, using a paper towel.

If the equipment is not autoclavable, it must be wrapped in clear plastic bags, then—

- double bagged into a clean bag held by a second person outside the cubicle.
- clearly labelled with the contents and a biohazard sticker attached.
- sent to Central Sterilizing Service Department (CSSD) for ethylene oxide gas sterilization.

* Autoclavable items must be placed in Asepto type bags—
  - labelled as above.
  - sealed in clean plastic bags for transport to CSSD.
  - autoclavable plastic bags may be used if available.

Furniture or environment

* All furniture, walls and floors are washed down well with hypochlorite-detergent.

TABLE 1

Infection/Condition	Precautions Type*	Duration†
Abscess		
Draining, major[a]	C	D1
Draining, minor or limited[b]	S	
AIDS[c]	S	
Actinomycosis	S	
Adenovirus infection, in infants and young children	D, C	D1
Amebiasis	S	
Anthrax		
Cutaneous	S	
Pulmonary	S	
Antibiotic-associated colitis (see C *difficile)*		
Arthropodborne viral encephalitides (eastern, western, Venezuelan equine encephalomyelitis: St Louis, California encephalitis)	S[d]	
Arthropodborne viral fevers (dengue, yellow fever, Colorado tick fever)	S[d]	
Ascariasis	S	
Aspergillosis	S	
Babesiosis	S	
Blastomycosis, North American, cutaneous or pulmonary	S	
Botulism	S	
[a]No dressing or dressing does not adequately contain damage		
[b]Dressing covers and adequately contains drainage.		
Bronchiolitis (see respiratory infections in infants and young children)		
Brucellosis (undulant, Malta, Mediterranean fever)	S	
Campylobacter gastroenteritis (see gastroenteritis)		
Candidiasis, all forms including mucocutaneous	S	

Cat-scratch fever (benign inoculation lymphoreticulosis)	S	
Cellulitis, uncontrolled drainage	C	D1
Chancroid (soft chancre)	S	
Chickenpox (varicella) (see F[e] for varicella exposure)	A, C	F[e]
Chlamydia trachomatis		
Conjuctivitis	S	
Genital	S	
Respiratory	S	
Cholera (see gastroenteritis)		
Closed-cavity infection		
Draining, limited or minor	S	
Not draining	S	
Clostridium *spp*		
C. botulium	S	
C. difficile	C	D1
C. perfringens		
Food poisoning	S	
Gas gangrene	S	
Coccidiodomycosis (valley fever)		
Draining lesions	S	
Pneumonia	S	
Colorado tick fever	S	
Congenital rubella	C	F
Conjunctivitis		
Acute bacterial	S	
Chlamydia	S	
Conococcal	S	
Acute viral (acute hermorhagic)	C	D1
Coxsackie virus (see enteroviral nfection)		
Creutzfeldt-Jakob disease	S[d]	
Croup (see respiratory in infants and young children)		
Cryptococcosis	S	
Cryptosporidiosis (see gastroenteritis)		
Cysticercosis	S	
Cytomegalovirus infection neonatal or immunosuppressed	S	
Decubitus ucler, infected		
Major[a]	C	D1
Minor or limited[b]	S	
Dengue	S[d]	
Diarrhea acute-infective etiology suspected (see gastroenteritis)		
Diptheria		
Cutaneous	C	CN[n]
Pharyngeal	D	CN[n]
Ebola viral hemorrhagic fever	C	D1
Echnococcosis (hydatidosis)	S	
Echovirus (see enteroviral enfection)		
Encephalitis (see enteroviral infection)		
Encephalitis or encephalomyelitis (see specific etiologic agents)		
Endometritis	S	
Enterobiasis (pinworm disease, oxyuriasis)	S	
Enterococcus species (see multidrug-resistant organisms if epdidemiologically significantorvancomycin resistant)		
Enterocolitis. C. difficile	C	D1
Enteroviral infctions		
Adults	S	
Infants and young children	C	D1
Epiglottitis caused by H. influenzea	D	U[24 hrs]
Epstein-Barr virus infection, including infectious mononucleosis	S	
Erythema infectiosum (also see Parvovirus B19)	S	
Escherichia coli *gastroenteritis (see gastroenteritis)*		
Food poisoning		
Botulism	S	
Clostridium perfringens or welchii	S	
Staphylococcal	S	
Furunculosis-staphylococcal		
Infants and young children	C	D1
ngrene (gas gangrene)	S	
Gastroenteritis		
Campylobacter sp	S[i]	
Cholera	S[i]	
C. difficile	C	D1
Cryptosporidium *species*	S[i]	
E. coli		

Enterohemorrhagic O157.H7	S[l]	
Diapered or incontinent	C	D1
Other species	S[l]	
Giardia lamplia	S[l]	
Rotavirus	S[l]	
Diapered or incontinent	C	D1
Salmonella *species (including S. typhi)*	S[l]	
Shigella species	S[l]	
Diapered or incontinent	C	D1
Vibrio parahamolyticus	S[l]	
Viral (if not covered elsewhere)	S[l]	
Yersinia enterocolitica	S[l]	
German measles (rubella)	D	F[v]
Giardiasis (see gastroenteritis)		
Gonococcal ophthalmia neonatorum (gonorrheal ophtalmia acute conjunctivitis of newborn)	S	
Gonorrhea	S	
Granuloma inguinale (donovanosis, granuloma venereum)	S	
Guillain-Barre syndrome	S	
Hand, foot and mouth disease (see enterviral infection)		
Hantavirus *pulmonary syndrome*	S	
Helicobacter pylori	S	
Hemorrhagic fevers (for example Lassa and Ebola)	C[l]	D1[l]
Hepatitis, viral		
Type A	S	
Diapered or incontinent patients	C	F[k]
Type B-HBsAg positive	S	
Type C and other unspecified, non-A, non-B	S	
Type E	S	
Herpangina (see enteroviral infection)		
*Herpes simplex (*Herpesvirus hominis*)*		
Encephalitis	S	
Neonatal[l] (see F[l] for neonatal exposure)	C	D1
Mucocutaneous disseminated or primary severe	C	D1
Mucocutaneous, recurrent (skin, oral, genital)	S	
Herpes zoster (varicella zoster)		
Localized in immunocompromised patient or disseminated	A, C	D1[m]
Localized in normal patient	S[m]	
Histoplasmosis	S	
HIV (see human immunodeficiency virus)	S	
Hookworm disease (ancyclostomiasis, uncinariasis)	S	
Human immunodeficiency virus (HIV) infection[c]	S	
Impetigo	C	U[24 hrs]
Infectious mononucleosis	S	
Influenza	D[n]	D1
Kawasaki syndrome	S	
Lassa fever	C	D1
Legionnaires disease	S	
Leprosy	S	
Leptospirosis	S	
Lice (pediculosis)	C	U[24 hrs]
Listeriosis	S	
Lyme disease	S	
Lymphocytic choriomeninggitis	S	
Lymphogranuloma venereum	S	
Malaria	S	
Marburg virus disease	A	D1
Measles (rubeola) all presentations	A	D1
Meliodiosis all forms	S	
Meningitis		
Aseptic (non bacterial or viral meningitis) (also see enteroviral infections)	S	
Bacterial, gram-negative enteric in neonates	S	
Fungal		
H. influenzea, *known or suspected*	D	U[24 hrs]
Listeria monocytogenes	S	
Neisseria meningitidis (meningococcal) known or suspected	D	U[24 hrs]
Pneumococcal	S	
Tuberculosis	S	
Other diagnosed bacterial	S	
Meningococcal pneumonia	D	U[24 hrs]
Meningococcal (meningococcal sepsis)	D	U[24 hrs]
Molluscum contagiosum	S	
Mucormycosis	S	

Multidrug-resistant organisms, infection or colonization[2]		
Gastrointestinal	C	CN
Respiratory	C	CN
Pneumococcal	S	
Skin, wound or burn	C	CN
Mumps (infections parotitis)	D	F[2]
Mycobacteria non tuberculosis (atypical)		
Pulmonary	S	
Wound	S	
Mycoplasma *pneumonia*	D	D1
Necrotizing enterocolitis	S	
Nocardiosis draining lesions or ther presentations	S	
Norwalk agent gastroenteritis (see viral gastroenteritis)		
Orf	S	
Parainfluenza virus infection, respiratory in infants and young children	C	D1
Parvovirus B19	D	F
Pediculosis (lice)	C	U[24 hrs]
Pertussis (whooping cough)	D	F[3]
Pinworm infection	S	
Plague		
Bubonic	S	
Pneumonic	D	U[72 hrs]
Pleurodynia (see enterovival infection)		
Pneumonia		
Adenovirus	D.C	DI
Bacterial not listed elsewhere (including gram –negative bacterial)	S	
Burkholderia cepacia in patience with CF including respiratory tract colonization	S	
Clamydia	S	
Fungal		
H. influenzae		
Adults	S	
Infants and children (any age)	D	U24 hrs
Legionella	S	
Meningococcal	D	U24 hrs
Multidrug – resistant bacterial (see multidrug- resistant organisms)		
Mycoplasma *(primary atypical pneumonia)*	D	DI
Pneumococcal		
Multidrug- resistant (see multidrug –resistant organisms)		
Pneumocystis carinii	S	
Pseudomonas cepacia (see Burkholderia cepacia)	S	
Staphylococcus aureus	S	
Streptococcus, *Group A*		
Adults	S	
Infants and children	D	U24hrs
Viral		
Adults	S	
Infants and young children (see respiratory infectious disease, acute)		
Poliomyelitis	S	
Psittacosis (ornithosis)	S	
Q fever	S	
Rabies	S	
Rat-bite fever (Streptopacillus moniliformis disease. Spirillum minus disease)	S	
Relapsing fever	S	
Resistant bacterial infection or colonization (see multidrug resistant organisms)		
Respiratory infectious disease acute (if not covered elsewhere)		
Adults	S	
Infants and young children[6]	C	DI
Respiratory syncytial virus infection in infants and young children and immunocompromisedadults	C	DI
APPENDIX A.		
Reye's syndrome	S	
Rheumatic fever	S	
Rickettsiai fever, tickborne (Rocky Mountain spotted fever, tickborne typhus fever)	S	
Rickettsiaipox (vesicular rikettsiosis)	S	
Ringworm (dermatophytosis, dermatomycosis, tinea)	S	
Ritter's disease (staphylococcal scalded skin syndrome)	S	
Rocky Mountain spotted fever	S	
Roseola infantum (exanthum subitum)	S	
Rotavirus infection (see gastroenteritis)		
Rubella (German measles) (also see congenital rubella)	D	Fv
Salmonellosis (see gastroenteritis)		
Scabies	C	U24 hrs
Scalded skin syndrome, staphylococcal (Ritter's disease)	S	
Schistosomiasis (bilharziasis)	S	

Shigellosis (see gastroenteritis)		
Sporotrichosis	S	
Spirillium minus *disease (rat-bite fever)*	S	
Staphylococcal disease (S. aureus)		
Skin wound or burn		
Major	C	DI
Minor or limited	S	
Enterocolitis	S	
Multidrug resistant(see multidrug-resistant organisms)		
Pneumonia	S	
Scalded skin syndrome	S	
Toxic shock syndrome	S	
Streptobacillus moniliformis disease (rat-bite fever)	S	
Streptococcal disease (group A *Streptococcus*)		
Skin wound or burn		
Major	C	U24 hrs
Minor or limited	S	
Endometritis (puerperal sepsis)	S	
Pharyngitis in infant and young children	D	U24 hrs
Pneumonia in infant and young children	D	U24 hrs
Scarlet fever in infant and young children	D	U24 hrs
Streptococcal disease (group B Streptococcus) neonatal	S	
Streptococcal disease (not group A or B) unless covered elsewhere	S	
Multidrug-resistant bacterial (see multidrug-resistant organisms)		
Strongyloidiasis	S	
Syphilis		
Skin and mucous membrane including congenital primary secondary	S	
Latent (tertiary) and seropositivity without lesions	S	
Tapeworm disease		
Hymenolepis nana	S	
Taenia soluim (pork)	S	
Other	S	
Tetanus	S	
Tinea (fungus infection dermatophytosis dermatomycosis ringworm)	S	
Toxoplasmosis	S	
Toxic shock syndrome (staphylococcal disease)	S	
Trachoma acute	S	
Trench mouth (Vincent angina)	S	
Trichinosis	S	
Trichomoniasis	S	
Trichuriasis (whipworm disease)	S	
Tuberculosis		
Extrapulmonary draining lesion (including scrofula)	S	
Extrapulmonary mengitis	S	
Pulmonary confirmed or suspected or laryngeal disease	A	F[w]
Skin-test positive with no evidence of current pulmonary disease	S	
Tularemia		
Draining lesion	S	
Pulmonary	S	
Typhoid *(Salmonella typhi)* fever (see gastroenteritis)		
Typhus endemic and epidemic	S	
Urinary tract infection (including pyelonephritis) with or without urinary catheter	S	
Varicella (chickenpox)	A.C	F[v]
Vibrio parahaemolyticus (see gastroenteritis)		
Vincent's angina (trench mouth)	S	
Viral deceases		
Respiratory (if not covered elsewhere)		
Adults	S	
Infants and young children (see respiratory infectious disease acute)		
Whooping cough (pertussis)	D	F[s]
Wound infections		
Major	C	DI
Minor or limited	S	
Yersinia entercolitica gastroenteritis (see gastroenteritis)		
Zoster (varicella-zoster)		
Localized in immunocompromised patient, disseminated	A.C	DI[m]
Localized in normal patient	S[m]	
Zygomycosis (phycomycosis mucormycosis)	S	

Abbreviations used

Type of precautions:

Standard precautions (S) are applied at all times in addition to either:

A Airborne
C Contact
D Droplet
VHF Viral haemorrhagic fever

Duration of precautions:

CN until antibiotics are discontinued and culture-negative

DH duration of hospitalisation

DI duration of illness (with wound lesions, DI means until they stop draining)

U until time specified in hours (hrs) after initiation of effective therapy.

F footnote number under type

Meaning of superscript number (i.e. F^{E} Standard precaution is applied at all times)

[a]No dressing, or dressing does not contain drainage adequately.

[b]Dressing covers and contains drainage adequately.

[c]Also see syndromes or conditions listed in Table 2.

[d]Install screens in windows and doors in endemic areas.

[e]Maintain precautions until all lesions are crusted. The average incubation period for varicella is 10 to 16 days, with a range of 10 to 21 days. After exposure, use varicella-zoster immune globulin (VZIG) when appropriate and discharge susceptible patients if possible. Place exposed susceptible patients on Airborne Precautions beginning 10 days after exposure and continuing until 21 days after last exposure (up to 28 days if VZIG has been given). Susceptible persons should not enter the room of the isolated patient on precautions if other immune caregivers are available.

[f]Isolate all infants on precautions during any admission until one year of age, unless nasopharyngeal and urine cultures are negative for virus after age three months of age.

[g]Additional special precautions are necessary for handling and decontamination of blood, body fluids and tissues, and contaminated items from patients with confirmed or suspected disease.

[h]Until two cultures are taken at least 24 hours apart are negative.

[i]Consult the National Institute of Virology for guidelines issued by provincial health departments. Use Contact Precautions for diapered or incontinent children less than six years of age for duration of illness. Maintain precautions in infants and children under three years of age for duration of hospitalisation; in children three to fourteen years of age, until two weeks after onset of symptoms; and others, until one week after onset of symptoms. For infants delivered vaginally or by Caesarean section and if mother has active infection and membranes have been ruptured for more than four to six hours.

[m]Persons susceptible to varicella are also at risk for developing varicella when exposed to patients with zoster lesions; therefore, susceptibles should not enter the room if other immune caregivers are available.

[n]Many hospitals encounter logistic difficulties and suspected or diagnosed limitations when admitting multiple patients with suspected influenza during community outbreaks. If sufficient private rooms are unavailable, consider cohorting patients or, at the very least, avoid room sharing with high-risk patients.

[o]Patients should be examined for evidence of current (active) pulmonary tuberculosis. If evidence exists, additional precautions are necessary (see tuberculosis 3).

[p]Resistant bacteria judged by the infection control program, based on current state, regional or national recommendations, to be of special clinical and epidemiologic significance.
For nine days after onset of swelling.
Maintain precautions for duration of hospitalisation when chronic disease occurs in an immunodeficient patient. For patients with a transient plastic crisis or red cell crisis, maintain precautions for seven days.
Maintain precautions for five days after patient is placed on effective therapy.
Avoid cohorting or placement in the same room with a cystic fibrosis (CF) patient who is not infected or colonised with *B. cepacia*. Persons with CF who visit or provide care and are not infected or colonised with *B. cepacia* may elect to wear a mask when within one metre of a colonised or infected patient.
Avoid placement in the same room with an immunocompromised patient.
Until seven days after onset of rash.
Discontinue precautions only when TB patient is improving clinically and has three consecutive negative sputum smears collected on different days or TB is ruled out.
Maintain all precautions until the patient stops bleeding.

TABLE II

CLINICAL SYNDROMES OR CONDITIONS WARRANTING ADDITIONAL EMPIRIC PRECAUTIONS TO PREVENT TRANSMISSION OR EPIDEMIOLOGICALLY IMPORTANT PATHOGENS PENDING CONFIRMATION OF DIAGNOSIS*

Clinical Syndrome or Condition**	Potential Pathogens	Empiric Precautions
Diarrhoea		
Acute diarrhoea-like infections: Contact cause in an incontinent or diapered patient.	Enteric pathogens***	Contact
Diarrhoea in an adult with a history of recent antibiotic use	Clostridium	Droplet
Rash or exanthems, generally, etiology unknown		
Petechial or ecchymotic with fever	*Neisseria meningitidis*	Droplet
Vesicular	Varicella	Airborne and contact
Maculopapular with coryza and fever	Measles	Airborne
Respiratory infections		
Cough/fever/upper lobe pulmonary infiltrate in an HIV-negative patient or a patient at low risk for HIV infection	*Mycobacterium tuberculosis*	Airborne
Cough/fever/pulmonary infiltrate in any lung location in an HIV-infected patient or a patient at high risk of HIV infection	*Mycobacterium tuberculosis*	Airborne
Paroxysmal or severe persistent cough during periods of pertussis activity	*Bordella pertussis*	Droplet
Particularly bronchiolitis and croup in infants and young children	Respiratory syncytial virus or parainfluenza virus	Contact

Risk of multidrug-resistant micro-organisms

History of infection or colonisation with multidrug-resistant organisms	Resistant bacteria	Contact
Skin and wound if urinary tract infection in a patient with a recent hospital or nursing home stay in a facility where multidrug-resistant organisms are prevalent.	Resistant bacteria	Contact

Skin and wound infection

Abscess or draining wound that can not be covered	*Staphylococcus aureus,* Group A *streptococcus*	Contact

* Infection control professionals are encouraged to modify or adapt this table according to local conditions. To ensure that appropriate empiric precautions are always implemented, hospitals must have systems in place to evaluate patients routinely according to these criteria as part of their pre-admission care.

** Patients with the syndromes or conditions listed below may present atypical signs or symptoms (e.g. pertussis in neonates and adults may not have paroxysmal or severe cough). The clinician's index of suspicion should be guided by the prevalence of specific conditions in the community, as well as clinical judgement.

*** The organisms listed under "Potential Pathogens" are not intended to represent the complete, or even the most likely, diagnosis, but rather possible etiologic agents that require additional precautions beyond Standard Precautions until they can be ruled out.

SYNPOSIS OF TYPES OF PRECAUTIONS AND PATIENTS REQUIRING THE PRECAUTIONS[α]

Abbreviations used in list of precautions.

α See Table I for a complete list of infections requiring precautions, including appropriate footnotes.

ß Certain infections require more than one type of precaution.

Γ See "Guidelines for Preventing the Transmission of Tuberculosis in Health-Care Facilities" available from the Department of Health.

1. Standard Precautions

Use Standard Precautions for the care of all patients.

2. Airborne Precautions

In addition to Standard Precautions, use Airborne Precautions for patients known or suspected to have serious illnesses transmitted by the airborne droplet nuclei. Examples of such illnesses include—

- Measles
- Varicella (including disseminated zoster)[ß]
- Tuberculosis[Γ]

3. Droplet Precautions

In addition to Standard Precautions, use Droplet Precautions for patients known or suspected to have illnesses transmitted by large-particle droplet.

Examples of such illnesses include:

- Invasive *Haemophilus influenzae* Type B disease, including meningitis, pneumonia, epiglottitis and sepsis.
- Invasive *Neisseria meningitidis* disease, including meningitis, pneumonia and sepsis.

Other serious bacterial respiratory infections spread by droplet transmission, including:

- Diphtheria (pharyngeal)
- Mycoplasma pneumonia

- Pertussis
- Pneumonic plague
- Streptococcal pharyngitis, pneumonia or scarlet fever in infants and young children

Serious viral infections spread by droplet transmission, including—

- ➢ Adenovirus[6]
- ➢ Influenza
- ➢ Mumps
- ➢ Parvovirus B12
- ➢ Rubella

4. Contact Precautions

In addition to Standard Precautions, use Contact Precautions for patients known or suspected to have serious illnesses easily transmitted by direct contact or by contact with items in the patient's environment. Examples of such illnesses include—

- Gastrointestinal, respiratory, skin or wound infections or colonisation with multidrug-resistant bacteria judged by the infection control program, based on current state, regional, or national recommendations, to be of special clinical and epidemiologic significance.
- Enteric infections with a low infectious dose or prolonged environmental survival, including:
  - ➢ *Clostridium difficile*
- For diapered or incontinent patients: enterohaemorrhagic *Escherichia coli* O157: H7, Shigella, Hepatitis A or Rotavirus
- Respiratory syncytial virus, parainfluenza virus or enteroviral infections in infants and young children.

Skin infections that are highly contagious or that may occur on dry skin, including:

- Diphtheria (cutaneous)
- Herpes simplex virus (neonatal or mucocutaneous)
- Impetigo

- Major (non-contained) abcesses, cellulitis or decubitus ulcers
- Pediculosis (lice)
- Scabies
- Staphylococcal furunculosis in infants and young children.
- Zoster (disseminated or in the immunocompromised host)
- Viral/haemorrhagic conjunctivitis
- Viral haemorrhagic infections (Ebola, Lassa, Marburg, Congo-Crimean) (during early non-haemorrhagic stages)

5. Formidable Epidemic Disease (FED) Precautions

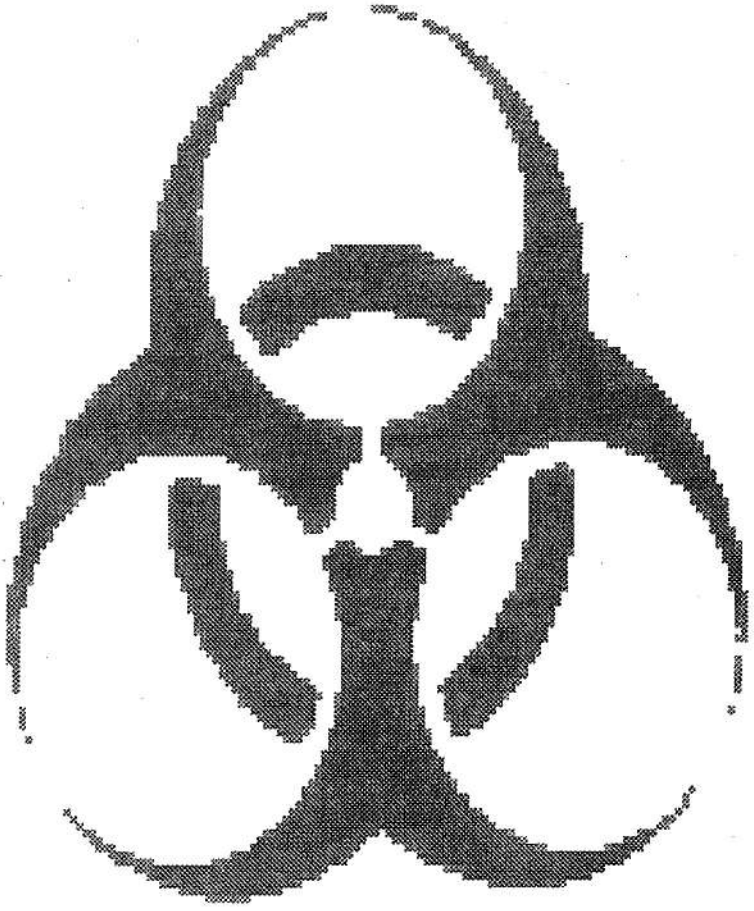
In addition to Standard Precautions and Contact Precautions, use FED precautions for persons proven or suspected of having a viral haemorrhagic fever. Examples of such diseases are:

- Ebola Viral Haemorrhagic Fever
- Marburg Haemorrhagic Fever
- Congo-Crimean Haemorrhagic Fever
- Lassa Fever

ANNEXURE D

[Regulations 10(2)(f), 11(4)(b) and14(b)]

BIO-HAZARD SIGN



ANNEXURE E

[Regulations 15(2) and 16(a) and (b)]

INDICATIONS CONCERNING CONTAINMENT MEASURES AND CONTAINMENT LEVELS

The measures contained in this Annexure shall be applied according to the nature of the activities, the assessment of risk and the nature of the HBA concerned.

	A. CONTAINMENT MEASURES	B. CONTAINMENT LEVELS		
		Level 2	Level 3	Level 4
1.	The workplace is to be separated from any other activities in the same building	No	Recommended	Yes
2.	Input air and extract air in the workplace are to be filtered using High Efficiency Particulate Air (HEPA) Filter or likewise.	No	Yes, or extract air and safe discharge of air	Yes, on input and extract air and safe discharge of air
3.	Access is to be restricted to authorised persons only.	Recommended	Yes	Yes, via airlock
4.	The workplace should be sealable in order to permit disinfection.	No	Recommended	Yes
5.	Specified disinfection procedures.	Yes	Yes	Yes
6.	The workplace is to be maintained at an air pressure negative to atmosphere.	No	Recommended	Yes
7.	Efficient vector control, e.g. rodents and insects.	Recommended	Yes	Yes
8.	Surfaces impervious to water and easy to clean.	Yes, for bench	Yes, for bench and floor	Yes, for bench, walls, floor and ceiling
9.	Surfaces resistant to acids, alkalis, solvents, disinfectants.	Recommended	Yes	Yes

10.	Safe storage of a biological agent.	Yes	Yes	Yes, secure storage
11.	An observation window or alternative is to be present so that occupants can be seen.	Recommended	Recommended	Yes
12.	A laboratory is to contain own equipment.	No	Recommended	Yes
13.	Infected material, including any animal, is to be handled in a safety cabinet or isolator or other suitable container.	Where appropriate	Yes, where infection is by airborne route	Yes
14.	Incinerator for disposal of animal carcasses.	Recommended	Yes (available)	Yes, on site

ANNEXURE F

[Regulation 16 C]

CONTAINMENT FOR INDUSTRIAL PROCESSES

Group 1 biological agents

For work with group 1 biological agents, including life-attenuated vaccines, the principles of good occupational safety and hygiene should be observed.

Group 2, 3 and 4 agents

It may be appropriate to select and combine containment requirements from different categories below on the basis of a risk assessment related to any particular process or part of a process.

A.	B.		
CONTAINMENT MEASURES	**CONTAINMENT LEVELS**		
	Level 2	**Level 3**	**Level 4**
1. Viable organisms should be handled in a system, which physically separates the process from the environment.	Yes	Yes	Yes
2. Extracted air from the closed system should be treated so as to—	minimise release	prevent release	prevent release
3. Sample collection, addition of materials to a closed system and transfer of viable organisms to another closed system should be performed so as to—	minimise release	prevent release	prevent release
4. Bulk culture fluids should not be removed from the closed system unless the viable organisms have been—	inactivated by validated means	inactivated by validated chemical or physical means	inactivated by validated chemical or physical means
5. Seals should be designed as to—	minimise release	prevent release	prevent release
6. Closed systems should be located within a controlled area.	Optional	Optional	Yes, and purpose-built

(a) Biohazard signs should be posted	Optional	Yes	Yes
(*b*) Access should be restricted to nominated personnel only.	Optional	Yes	Yes, via an airlock
(*c*) Personnel should wear protective clothing.	Yes, work clothing	Yes	A complete change
(*d*) Decontamination and washing facilities should be provided for personnel.	Yes	Yes	Yes
(*e*) Personnel should shower before leaving the controlled area.	No	Optional	Yes
(f) Effluent from sinks and showers should be collected and inactivated before release.	No	Optional	Yes
(*g*) The controlled area should be adequately ventilated to minimise air contamination.	Optional	Optional	Yes
(*h*) The controlled area should be maintained at an air pressure negative to atmosphere.	No	Optional	Yes
(*i*) Input air and extract air to the controlled area should be HEPA filtered.	No	Optional	Yes
(*j*) The controlled area should be designed to contain spillage of the entire contents of the closed system.	No	Optional	Yes
(*k*) The controlled area should be sealable in order to permit fumigation.	No	Optional	Yes

(/)	Effluent before final discharge.	Inactivated by validated means	Inactivated by validated chemical or physical means	Inactivated by validated chemical or physical means

No. R. 1390 **27 Desember 2001**

WET OP BEROEPSGESONDHEID EN VEILIGHEID, 1993 (WET NO. 85 VAN 1993)

REGULASIES OP GEVAARLIKE BIOLOGIESE AGENSE

Die Minister van Arbeid het kragtens artikel 43 van die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993), op aanbeveling van die Adviesraad vir Beroepsgesondheid en Veiligheid die regulasies in die Bylae uitgevaardig.

BYLAE

Woordomskrywing

1. In hierdie Regulasies beteken "die Wet" die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993), en het enige uitdrukking waaraan 'n betekenis in die Wet geheg word, daardie betekenis en, tensy dit uit die samehang anders blyk, beteken—

"Algemene Administratiewe Regulasies" die Algemene Administratiewe Regulasies wat ingevolge artikel 43 van die Wet gepubliseer is by Goewermentskennisgewing No. R.1449 van 6 September 1996;

"biologiese agens" enige mikro-organisme, selkultuur of menslike endoparasiet, met inbegrip van enige dié wat geneties verander is, wat 'n infeksie, allergie of toksisiteit kan veroorsaak of andersins 'n bedreiging vir menslike gesondheid kan inhou;

"dekontaminering" die verwydering so ver doenlik van alle nielewende voorwerpe deur uit te vee, skoon te maak, te was, te ventileer of enige ander proses gerig op die verwydering van die kontaminant;

"diagnostiese laboratorium" 'n werkplek waar diagnostiese of siftingsprosedures verrig word op bloed en ander potensieel besmetlike materiaal;

"die Wet" die Wet op Beroepsgesondheid en Veiligheid, 1993 (Wet No. 85 van 1993);

"Fasiliteiteregulasies" die Fasiliteiteregulasies wat ingevolge artikel 43 van die Wet gepubliseer is by Goewermentskennisgewing No. R. 2362 van 5 Oktober 1990;

"ingenieersbeheermaatreëls" beheermaatreëls wat die blootstelling van persone in die werkplek deur middel van ingenieersmetodes verwyder of verminder;

"gevaarlike biologiese agense" of "GBA" mikro-organismes, met inbegrip van dié wat geneties verander is, patogene, selle, selkulture en menslike endoparasiete wat oor die potensiaal beskik om 'n infeksie, allergie of toksiese uitwerking teweeg te bring, wat in die volgende groepe ingedeel kan word:

(*a*) Groep 1-GBA, GBA wat waarskynlik nie menslike siekte sal veroorsaak nie;

(*b*) Groep 2-GBA, GBA wat menslike siekte kan veroorsaak en 'n bedreiging kan inhou vir blootgestelde persone, wat waarskynlik nie na die gemeenskap sal versprei nie en waarvoor doeltreffende profilakse en/of behandeling gewoonlik beskikbaar is;

(*c*) Groep 3-GBA, GBA waternstige menslike siekte kan veroorsaak, wat 'n ernstige bedreiging vir blootgestelde persone inhou en wat 'n risiko van verspreiding na die gemeenskap inhou, maar waarvoor doeltreffende profilakse en/of behandeling beskikbaar is;

(*d*) Groep 4-GBA, GBA wat ernstige menslike siekte veroorsaak en 'n ernstige bedreiging vir blootgestelde persone inhou en wat 'n hoë risiko van verspreiding na die gemeenskap inhou, maar waarvoor daar geen doeltreffende profilakse en/of behandeling beskikbaar is nie;

"mikro-organismes" mikrobiologiese entiteite, sellulêr of niesellulêr, wat genetiese materiaal kan repliseer of oordra;

"monitering" die beplanning, uitvoer en aanteken van die uitslae van 'n meetprogram;

"ontsmet" om feitlik alle erkende patogene mikro-organismes, maar nie noodwendig alle mikrobiese vorms nie, onlewensvatbaar te maak;

"respiratoriese beskermende toerusting" 'n toestel wat oor minstens die mond en neus gedra word om die inaseming van gevaarlike biologiese agense in die lug te voorkom, en wat aan 'n standaard voldoen wat deur die hoofinspekteur goedgekeur is;

"standaardvoorsorgmaatreëls" 'n sintese tussen die belangrikste eienskappe van Universele Voorsorgmaatreëls (UV) en Liggaamstofisolering (LSI) en is dit van toepassing op alle persone wat in aanraking kom met potensieel geïnfekteerde persone, diere of diereprodukte, en potensieel gekontamineerde bloed en ander liggaamsvloeistowwe in gesondheidsfasiliteite of elders, welke standaardvoorsorgmaatreëls—

(*a*) van toepassing is op—
  (i) alle bloed;
  (ii) alle liggaamsvloeistowwe, sekresies en ekskresies, behalwe sweet, en ongeag of hulle sigbare bloed bevat;
  (iii) beskadigde vel;
  (iv) slymvliese; en
  (v) weefsel;

(*b*) daarop gemik is om die risiko van die oordrag van GBA van erkende en onerkende bronne van infeksie in werkplekke te verminder;

"veiligheidstoerusting" 'n apparaat of 'n toestel wat ontwerp is om besering te voorkom.

Toepassingsbestek

2.(1) Behoudens die bepalings van subregulasie (2) is hierdie regulasies van toepassing op elke werkgewer en persoon in eie diens in 'n werkplek waar—

(*a*) GBA doelbewus geproduseer, verwerk, gebruik, gehanteer, geberg of vervoer word; of

(*b*) 'n voorval waarvoor 'n aanwyserlys in Aanhangsel A van hierdie Regulasies gegee word, plaasvind waarby 'n doelbewuste voorneme om met 'n gevaarlike biologiese agens te werk nie betrokke is nie, maar wat kan uitloop op die blootstelling van persone aan 'n gevaarlike biologiese agens by die verrigting van werk.

(2) Die bepalings van regulasies 8, 14, 15, 16 en 17 is nie van toepassing nie op 'n werkgewer of persoon in eie diens in 'n werkplek waar die blootstelling tot Groep 1-GBA beperk is.

Klassifikasie van biologiese agense

3.(1) Die hoofinspekteur kan vir die doel van hierdie Regulasies 'n dokument in die *Staatskoerant* laat publiseer, wat van tyd tot tyd hersien of heruitgereik kan word, met die titel "Kategorisering van biologiese agense volgens gevaar en kategorieë van beperking" (Aanhangsel B), wat 'n lys biologiese agense saam met die klassifikasie van elke agens bevat.

(2) Waar daar nie 'n klassifikasie aan 'n biologiese agens toegewys is nie, moet die werkgewer en persoon in eie diens daardie agens voorlopig klassifiseer ooreenkomstig subregulasie (3), met inagneming van die aard van die agens en die eienskappe waarvan hy of sy redelikerwys verwag kan word om bewus te wees.

(3) Wanneer 'n biologiese agens voorlopig geklassifiseer word, moet die werkgewer en persoon in eie diens daardie agens aan een van die groepe toewys volgens sy vlak van infeksierisiko, en indien daar twyfel bestaan oor watter van twee alternatiewe groepe die toepaslikste is, moet die GBA aan die hoogste een van die twee toegewys word.

Inligting en opleiding

4.(1) Elke werkgewer moet voordat 'n werknemer blootgestel word of kan word en na oorleg met die gesondheids- en veiligheidskomitee wat vir daardie afdeling van die werkplek ingestel is, verseker dat die werknemer voldoende en omvattend ingelig en opgelei is, en daarna met tussenpose soos wat deur die gesondheids- en veiligheidskomitee aanbeveel word, ingelig en opgelei word ten opsigte van—

(*a*) die inhoud en bestek van hierdie Regulasies;
(*b*) die potensiële gesondheidsrisiko wat deur die blootstelling veroorsaak word;
(*c*) die maatreëls wat deur die werkgewer getref moet word om die werknemer teen enige risiko van blootstelling te beskerm;
(*d*) die belangrikheid van goeie huishouding in die werkplek en van persoonlikehigiënevereistes;
(*e*) die voorsorgmaatreëls wat deur 'n werknemer getref moet word om hom- of haarself te beskerm teen die gesondheidsrisiko's wat met die blootstelling verband hou, met inbegrip van die dra en gebruik van beskermende klere en respiratoriese beskermende toerusting;
(*f*) die noodsaaklikheid, korrekte gebruik, instandhouding en potensiaal van veiligheidstoerusting, fasiliteite en ingenieersbeheermaatreëls wat voorsien word;
(*g*) die noodsaaklikheid van mediese waaktoesig;
(*h*) die veilige werkprosedures betreffende die gebruik, hantering, berging, etikettering en wegdoening van die GBA in die werkplek;
(*i*) die prosedure wat gevolg moet word in die geval van blootstelling, storting, lekkasie, besering of enige soortgelyke noodgeval, en dekontaminering of ontsmetting van gekontamineerde gebiede; en
(*j*) die potensieel nadelige uitwerking van blootstelling op die menslike voortplantingsproses.

(2) 'n Werkgewer of persoon in eie diens moet skriftelike opdragte van die prosedures in subregulasie (1)(*i*) bedoel, gee aan die bestuurders van voertuie wat die GBA vervoer.

(3) Elke werkgewer en persoon in eie diens moet verseker dat hy of sy of enige persoon wat hom of haar op enige wyse bystaan in die verrigting of uitvoering van sy of haar besigheid, oor die nodige inligting beskik en genoegsame opleiding ondergaan het sodat hy of sy die potensiële risiko's en die voorsorgmaatreëls wat getref moet word, kan identifiseer.

Pligte van persone wat aan gevaarlike biologiese agense blootgetsel kan word

5.(1) Elke persoon wat aan GBA blootgestel word of kan word, moet enige wettige instruksie gehoorsaam wat deur of namens die werkgewer of persoon in eie diens gegee word betreffende—

(*a*) die voorkoming van 'n onbeheerde vrystelling van GBA;
(*b*) die nakoming van instruksies betreffende omgewings- en gesondheidspraktyke, persoonlike higiëne en goeie huishouding;
(*c*) die dra van persoonlike beskermende toerusting en klere soos by hierdie Regulasies voorgeskryf;
(*d*) die dra van persoonlike monsternemers, wanneer nodig, om persoonlike blootstelling aan luggedraagde GBA te meet;

(*e*) die wegdoening van materiaal wat GBA bevat en die ontsmetting en dekontaminering van enige perseel wat deur GBA gekontamineer is;
(*f*) die verslagdoening gedurende gewone werkure oor sodanige mediese ondersoek of toets as wat in regulasie 8(1) bedoel word; en
(*g*) inligting en opleiding soos in regulasie 4 bedoel.

(2) 'n Persoon moet onmiddellik aan die werkgewer, die gesondheids- en veiligheidsverteenwoordiger of die persoon in eie diens verslag doen oor enige moontlike blootstelling aan GBA in die werkplek, en die werkgewer en persoon in eie diens moet verseker dat sodanige voorval ondersoek word en aangeteken word ooreenkomstig regulasie 8 van die Algemene Administratiewe Regulasies.

Risikoberaming deur die werkgewer of persoon in eie diens

6.(1) Elke werkgewer of persoon in eie diens in regulasie 2 bedoel, moet na oorleg met die tersaaklike gesondheids- en veiligheidsverteenwoordiger of tersaaklike gesondheids- en veiligheidskomitee onmiddellik 'n risikoberaming laat doen en daarna met tussenpose van hoogstens twee jaar ten einde te bepaal of enigiemand aan GBA blootgestel kan word.

(2) Die werkgewer of persoon in eie diens moet die tersaaklike gesondheids- en veiligheidsverteenwoordiger of tersaaklike gesondheids- en veiligheidskomitee skriftelik in kennis stel van die reëlings wat vir die bepaling in subregulasie (1) bedoel, getref is en hulle redelike tyd gun om daarop kommentaar te lewer en seker maak dat die uitslae van die beraming beskikbaar gestel word aan die tersaaklike gesondheids- en veiligheidsverteenwoordiger of tersaaklike gesondheids- en veiligheidskomitee, wat daarop kommentaar mag lewer.

(3) Wanneer die beraming gedoen word, moet die werkgewer of persoon in eie diens 'n rekord van die beraming hou en aangeleenthede in ag neem soos—
(*a*) die aard en dosis van die GBA waaraan die werknemer blootgestel kan word, en die verdagte roete van blootstelling;
(*b*) waar die GBA teenwoordig kan wees en in watter fisiese vorm dit waarskynlik voorkom;
(*c*) die aard van die werk of proses en enige redelike agteruitgang of mislukking van enige beheermaatreëls;
(*d*) watter uitwerkings die GBA op 'n werknemer kan hê; en
(*e*) die tydperk van blootstelling.

(4) Die werknemer of persoon in eie diens moet die risikoberaming laat doen op die grondslag van alle beskikbare inligting, sover dit redelikerwys uitvoerbaar is, met inbegrip van—
(*a*) die klassifisering van die GBA in die tersaaklike risikogroep volgens sy vlak van infeksierisiko;
(*b*) aanbevelings van die vervaardiger, verskaffer of 'n bevoegde persoon betreffende die beheermaatreëls wat nodig is ten einde die gesondheid van persone te beskerm teen sodanige agense as gevolg van hulle werk;
(*c*) inligting oor siektes wat opgedoen kan word as gevolg van die werksaamhede in die werkplek;
(*d*) potensiële allergeniese of toksiese uitwerkings wat uit die werksaamhede in die werkplek kan spruit; en

(*e*) kennis van siektes waaraan 'n werknemer ly en wat vererger kan word deur toestande in die werkplek.

(5) 'n Werkgewer moet die beraming wat by subregulasie (1) vereis word, onverwyld hersien indien—

(*a*) daar rede bestaan om te vermoed dat die vorige beraming nie meer geldig is nie; of

(*b*) daar 'n verandering was in 'n proses waarby GBA betrokke is of in die metodes, toerusting of prosedures by die gebruik, hantering, beheer en verwerking van die GBA, en die bepalings van subregulasies (2), (3) en (4) van toepassing is.

Monitering van blootstelling in die werkplek

7. Die werkgewer moet verseker dat die blootstelling van werknemers aan GBA gemonitor word ooreenkomstig 'n geskikte prosedure wat gestandaardiseer is, voldoende sensitief is en van bewese doeltreffendheid is, in enige geval waar—

(*a*) dit 'n vereiste is vir die versekering van die handhawing van genoegsame beheer oor die blootstelling van werknemers aan GBA; of

(*b*) dit andersins 'n voorvereiste is vir die beskerming van die gesondheid van werknemers.

Mediese waaktoesig

8.(1) 'n Werkgewer moet verseker dat 'n werknemer onder mediese waaktoesig is indien—

(*a*) die uitslae van die bepaling in regulasie 6 bedoel, aandui dat 'n werkgewer aan GBA blootgestel kan word; of

(*b*) die blootstelling van die werknemer aan enige GBA wat 'n bedreiging vir sy of haar gesondheid inhou, sodanig is dat 'n identifiseerbare siekte of neweeffek op sy of haar gesondheid verband kan hou met die blootstelling, daar 'n redelike waarskynlikheid bestaan dat die siekte of effek kan voorkom in die bepaalde toestande van sy of haar werk en daar tegnieke is om indikasies van die siekte of die effek te diagnoseer, sover dit redelikerwys uitvoerbaar is, soos prekliniese biomerkers waar gepas vir die opsporing van sensitering vir allergene of 'n inflammatoriese reaksie wat met blootstelling verband hou; of

(*c*) 'n beroepsgesondheidspraktisyn aanbeveel dat die betrokke werknemer onder mediese waaktoesig moet wees, in welke geval die werkgewer die hulp van 'n beroepsgeneeskundige kan inroep om die toepaslikheid van sodanige aanbeveling te bevestig.

(2)Ten einde aan die bepalings van subregulasie (1) te voldoen, moet die werkgewer na uitgebreide raadpleging en opleiding aan die werknemer die geleentheid bied om —

(*a*) onmiddellik voor of binne binne 14 dae na iemand diens aanvaar, waar enige blootstelling bestaan of kan bestaan, 'n aanvanklike gesondheidsevaluering te hê wat deur 'n beroepsgesondheidspraktisyn gedoen moet word wat bestaan uit—

(i) 'n evaluering van die werknemer se mediese en beroepsgeskiedenis;

(ii) 'n liggaamlike ondersoek; en

(iii) enige biologiese toetse of enige ander gepaste ondersoek wat na die mening van die beroepsgesondheidspraktisyn wenslik is ten einde die praktisyn in staat te stel om 'n behoorlike evaluering te doen;

(*b*) periodieke mediese ondersoeke en toetse te hê in gevalle waar dit bekend is dat die GBA nawerkende of latente infeksie kan veroorsaak wat—

(i) in die lig van huidige kennis ondiagnoseerbaar is totdat tekens of simptome ontwikkel;

(ii) 'n besonder lang inkubasietydperk kan hê;

(iii) op 'n siekte kan uitloop wat terugkerend is ten spyte van behandeling; of

(iv) daarvoor bekend is dat dit ernstige langtermyngevolge het.

(*c*) Alle toetse en ondersoeke in paragrawe (*a*) en (*b*) bedoel, moet volgens 'n skriftelike mediese protokol gedoen word.

(3) Die werknemer moet alle voorvalle wat op infeksies of die dood van 'n werknemer uitloop of kan uitloop, ooreenkomstig regulasie 8 van die Algemene Administratiewe Regulasies ondersoek en aanteken.

(4) Alle beroepsgesondheidspraktisyns moet 'n skriftelike protokol vir prosedures wat by die hantering van abnormale resultate gevolg moet word, aan die gesondheids- en veiligheidskomitee voorlê vir goedkeuring.

Rekords

9.(1) Elke werkgewer moet—

(*a*) rekord hou van alle beramings, moniteringsuitslae en mediesewaaktoesigverslae wat by onderskeidelik regulasies 6, 7 en 8 vereis word: Met dien verstande dat persoonlike mediese rekords slegs aan 'n beroepsgesondheidspraktisyn beskikbaar gestel mag word;

(*b*) behoudens die bepalings van paragraaf (*c*), die rekords in paragraaf (*a*) bedoel, uitgesonderd persoonlike mediese rekords, beskikbaar stel vir inspeksie deur 'n inspekteur;

(*c*) enigiemand toelaat om, onderworpe aan die formele skriftelike toestemming van die werknemer, insae in die rekords ten opsigte van daardie bepaalde werknemer te verkry;

(*d*) die rekords van alle risikoberamings en moniteringsuitslae ter insae beskikbaar stel aan die gesondheids- en veiligheidsverteenwoordiger of gesondheids- en veiligheidskomitee;

(*e*) alle rekords van risikoberamings en moniteringsuitslae vir 'n minimum tydperk van 40 jaar hou;

(*f*) alle mediesewaaktoesigrekords vir 'n minimum tydperk van 40 jaar hou, en indien die werkgewer aktiwiteite staak, moet al daardie rekords oorgegee of per geregistreerde pos aangestuur word aan die betrokke provinsiale direkteur; en

(*g*) 'n rekord hou van die ondersoeke en toetse watingevolge regulasie 12 (*b*) gedoen word en van enige herstelwerk as gevolg van hierdie ondersoeke en toetse, en die rekords moet vir minstens drie jaar gehou word.

(2) 'n Persoon in eie diens moet vir 'n minimum tydperk van 40 jaar rekords hou van alle risikoberamings, en indien die persoon in eie diens aktiwiteite staak, moet al daardie rekords oorgegee of per geregistreerde pos aangestuur word aan die betrokke provinsiale direkteur.

Beheer van blootstelling aan GBA

10.(1) Elke werkgewer en persoon in eie diens moet verseker dat—

(*a*) die blootstelling van persone aan GBA in die werkomgewing óf voorkom word óf, waar dit nie redelikerwys uitvoerbaar is nie, genoegsaam beheer word; en

(*b*) standaardvoorsorgmaatreëls, soos in Aanhangsel C verduidelik, geïmplementeer word om die risiko van GBA-oordrag van erkende na onerkende bronne in die werkplek te verminder.

(2) Waar redelikerwys uitvoerbaar moet die werkgewer of persoon in eie diens die blootstelling van persone aan GBA in die werkomgewing beheer deur die volgende maatreëls, waar toepaslik, toe te pas:

(*a*) Beperk die hoeveelheid GBA wat gebruik word, wat die werkomgewing kan kontamineer;

(*b*) beperk die aantal werknemers wat blootgestel sal of kan word;

(*c*) voer ingenieersbeheermaatreëls in vir die beheer van blootstelling, wat die volgende kan insluit:

(i) Prosesskeiding, outomatisering of insluiting;

(ii) die installering van plaaslike suigventilasiestelsels by prosesse, toerusting en gereedskap vir die beheer van emissies van luggedraagde GBA;

(iii) afsonderlike werkplekke vir verskillende prosesse;

(iv) behoorlike toegangsbeheer om ongemagtigde toegang te voorkom; en

(v) onmiddellike ontsmetting van persone/omgewing;

(*d*) voer toepaslike werkprosedures in wat werknemers moet volg waar materiaal gebruik word, prosesse uitgevoer word of voorvalle kan voorkom wat aanleiding kan gee tot die blootstelling van 'n werknemer aan GBA, en sodanige prosedures moet skriftelike instruksies insluit om die volgende te verseker—

(i) Die veilige hantering, gebruik en wegdoening van GBA;

(ii) die behoorlike gebruik en instandhouding van prosesmasjinerie, installasies, toerusting, gereedskap en plaaslike suig- en algemene ventilasiestelsels;

(iii) die gereelde skoonmaak van masjinerie en werkplekke deur stofsuiers toegerus met 'n geskikte filter wat kontaminasie van die omgewing voorkom; en

(iv) dat 'n stelsel waardeur veranderinge in werkprosedures en prosesse wat die behoefte aan vroeë regstellende optrede aandui, geredelik geïdentifiseer kan word;

(*e*) verseker dat die emissies na die atmosfeer aan die bepalings van die Wet op Voorkoming van Lugbesoedeling, 1965 (Wet No. 45 van 1965); voldoen;

(*f*) vertoon die biogevaarteken in Aanhangsel D getoon, en ook ander tersaaklike waarskuwingstekens; en

(*g*) spesifiseer prosedures vir die neem, hantering en verwerking van monsters wat GBA kan bevat.

Persoonlike beskermende toerusting en fasiliteite

11.(1) Indien dit nie redelikerwys uitvoerbaar is om te verseker dat die blootstelling van 'n werknemer genoegsaam beheer word nie soos in regulasie 10 bedoel, moet die werkgewer—

(*a*) in die geval van'n luggedraagde GBA, die werknemer voorsien van geskikte respiratoriese beskermende toerusting en beskermende klere; en

(*b*) in die geval van GBA wat deur die vel geabsorbeer kan word, die werknemer voorsien van geskikte ondeurlatende persoonlike beskermende toerusting.

(2) Waar respiratoriese beskermende toerusting voorsien word, moet die werkgewer verseker dat—

(*a*) die betrokke toerusting blootstelling aan die betrokke GBA kan voorkom;

(*b*) die tersaaklike toerusting korrek geselekteer en behoorlik gebruik word;

(*c*) die inligting, instruksies, opleiding en toesig wat nodig is ten opsigte van die gebruik van die toerusting, aan die werknemers bekend is; en

(*d*) die toerusting in goeie toestand en doeltreffende werkende orde gehou word.

(3) 'n Werkgewer—

(a) mag nie gebruikte persoonlike beskermende toerusting aan 'n werknemer uitreik nie, tensy dit voor gebruik gedekontamineer en gesteriliseer is nie;

(*b*) moet afsonderlike houers of bergingsfasiliteite verskaf vir persoonlike beskermende toerusting en beskermende klere wanneer dit nie gebruik word nie; en

(*c*) moet stappe doen om te verseker dat alle beskermende toerusting en beskermende klere wat nie in gebruik is nie, geberg word in 'n afgebakende gebied met behoorlike toegangsbeheer.

(4) 'n Werkgewer moet sover redelikerwys uitvoerbaar verseker dat alle gekontamineerde persoonlike beskermende klere wat uitgereik is, skoongemaak word en gehanteer word ooreenkomstig die volgende prosedures:

(*a*) Waar sodanige klere op die perseel van die werkgewer skoongemaak word, moet sorg gedra word om kontaminasie gedurende hantering, vervoer en skoonmaak te voorkom;

(*b*) waar die klere vir skoonmaakdoeleindes van die perseel van die werkgewer af weggestuur word na 'n kontrakteur, moet die klere in ondeurlatende, dig verseëlde houers met kleurkodes geplaas word, en sodanige houers moet duidelik met 'n biogevaarteken, soos in Aanhangsel D by hierdie Regulasies uitgebeeld, geïdentifiseer word as gekontamineer; en

(*c*) daar moet verseker word dat die kontrakteur in subregulasie (4)(*b*) bedoel, ten volle ingelig is oor die vereistes van hierdie Regulasies en die voorsorgmaatreëls wat getref moet word vir die hantering van die gekontamineerde klere.

(5) Behoudens die bepalings van subregulasie (4)(*b*) moet 'n werkgewer verseker dat geen persoon vuil of gekontamineerde persoonlike beskermende toerusting en persoonlike beskermende klere van die perseel af verwyder nie: Met dien verstande dat waar gekontamineerde persoonlike beskermende toerusting weggedoen moet word, dit as GBA-afval gehanteer moet word soos in regulasie 17 bedoel.

(6) Behoudens die bepalings van die Fasiliteiteregulasies moet 'n werkgewer werknemers wat persoonlike beskermende toerusting en klere gebruik, soos in subregulasie (1) bedoel, voorsien van—

(*a*) genoegsame wasfasiliteite wat geredelik toeganklik is en geleë is in 'n gebied waar die fasiliteite nie gekontamineer sal raak nie, ten einde die werknemers in staat te stel om aan die standaard van persoonlike higiëne te

voldoen wat bestaanbaar is met die genoegsame beheer van blootstelling, en om die verspreiding van GBA te vermy;

(*b*) twee afsonderlike sluitkaste wat onderskeidelik gemerk is "beskermende klere" en "persoonlike klere", en verseker dat die klere apart gehou word in die betrokke sluitkas; en

(*c*) afsonderlike "skoon" en "vuil" kleedkamers indien die werkgewer GBA gebruik of verwerk in die mate dat die GBA die gesondheid van persone buite die werkplek in gevaar kan stel.

Handhawing van beheermaatreëls

12. 'n Werkgewer moet verseker dat—

(*a*) alle beheertoerusting en -fasiliteite wat ingevolge regulasies 10 en 11 voorsien word, in goeie werkende toestand in stand gehou word; en

(*b*) deeglike ondersoeke en toetse van ingenieersbeheermaatreëls met tussenpose van hoogstens 24 maande gedoen word deur 'n goedgekeurde inspeksie-owerheid of deur iemand wie se vermoë om die metings en toetse te doen, deur 'n goedgekeurde inspeksie-owerheid geverifieer word.

Verbodsbepalings

13.(1) Geen persoon mag—

(*a*) druklug gebruik om GBA vanaf enige oppervlak of persoon te verwyder nie;

(*b*) eet, drink, rook of voedsel of koeldrank hou of grimering aanbring in 'n GBA-werkplek nie of enige ander persoon laat eet, drink, rook of voedsel of koeldrank hou of grimering aanbring of toelaat dat 'n persoon dit doen nie in sodanige werkplek; of

(*c*) 'n beheerde gebied verlaat sonder dat beskermende of gekontamineerde klere vooraf verwyder word nie.

(2) Elke werkgewer of persoon in eie diens moet 'n kennisgewing wat die bepalings van paragrawe (*a*), (*b*) en (*c*) verbied, op 'n opvallende plek laat aanbring.

Etikettering, verpakking, vervoer en berging

14. Elke werkgewer of persoon in eie diens moet, sover redelikerwys uitvoerbaar, stappe doen om te verseker dat—

(*a*) alle GBA onder sy of haar beheer wat geberg, vervoer of versprei word, behoorlik beperk is en beheer word om die verspreiding van kontaminering van die werkplek te voorkom;

(*b*) die houers met kleurkodes waarin GBA vervoer word, duidelik gemerk is met 'n biogevaarteken, soos in Aanhangsel D getoon, en ander tersaaklike waarskuwingstekens wat die inhoud identifiseer; en

(*c*) die bestuurder opgelei is en toegerus is met 'n sertifikaat in noodprosedures.

Spesiale maatreëls vir gesondheids- en veeartsenykundige afsonderingsfasiliteite

15.(1) Behoudens die bepalings van regulasie 6 moet elke werkgewer en persoon in eie diens, in die geval van gesondheids- en veeartsenykundige afsonderingsfasiliteite, ag slaan op—

(*a*) onsekerhede oor die aanwesigheid van GBA in 'n pasiënt of dier en die materiaal en monsters wat van hulle geneem is;
(*b*) die bedreiging wat gebied word deur 'n GBA wat aanwesig is of vermoedelik aanwesig in 'n pasiënt of dier en materiaal en monsters wat van hulle geneem is; en
(*c*) die risiko as gevolg van die aard van die werk.

(2) Die werkgewer of persoon in eie diens in subregulasie (1) bedoel, moet verseker dat die korrekte beperkingsmaatreëls, soos aangedui in Aanhangsels C en E, geselekteer word vir persone en diere in afsonderingsfasiliteite wat vermoedelik deur Groep 3- of Groep 4-GBA geïnfekteer is, ten einde die risiko om ander te infekteer, te minimeer.

Spesiale maatreëls vir laboratoriums, dierekamers en nywerheidsprosesse

16. In die geval van laboratoriums, dierekamers en nywerheidsprosesse moet die werkgewer en persoon in eie diens in regulasie 2 bedoel, verseker dat—

(*a*) die beperkingsmaatreëls wat by Aanhangsels C en E vereis word, geïmplementeer word in laboratoriums en in kamers vir laboratoriumdiere, met inbegrip van diagnostiese laboratoriums, en in kamers vir laboratoriumdiere wat doelbewus met Groep 2-, 3- of 4-GBA geïnfekteer is of waar laboratoriumdiere vermoedelik sodanige agense dra;
(*b*) die beperkingsmaatreëls wat by Aanhangsels C en E vereis word, geïmplementeer word in laboratoriums wat materiaal hanteer ten opsigte waarvan daar onsekerheid bestaan oor die aanwesigheid van GBA wat menslike siekte kan veroorsaak, maar wat nie die werk met GBA as sodanig as doel het nie: Met dien verstande dat die beperkingsmaatreëls wat vir Groep 3- of 4-GBA vereis word, geïmplementeer word waar dit bekend is of vermoed word dat dit nodig is; en
(*c*) die beperkingsmaatreëls wat by Aanhangsels C en F vereis word, geïmplementeer word waar Groep 2-, 3- of 4-GBA in nywerheidprosesse gebruik word: Met dien verstande dat waar dit nie moontlik was om 'n beslissende bepaling van 'n GBA te gedoen het nie, maar waar die beoogde gebruik 'n ernstige gesondheidsrisiko vir persone kan inhou, sodanige aktiwiteite verrig mag word slegs in werkplekke waar die beperkingsmaatreëls ooreenstem met die vereistes vir Groep 3-GBA.

Wegdoening van GBA

17. 'n Werkgewer of persoon in eie diens in regulasie 2 bedoel, moet—

(*a*) skriftelike prosedures voorskryf vir gepaste dekontaminering en ontsmetting;
(*b*) skriftelike prosedures implementeer waarvolgens besmetlike afval sonder risiko gehanteer en weggedoen kan word;
(*c*) verseker dat alle vaste toebehore en toerusting, insluitende voertuie, herbruikbare houers en bedekkings, wat in aanraking met GBA-afval was, na gebruik op so 'n wyse ontsmet en gedekontamineer word dat dit nie 'n bedreiging binne of buite die betrokke perseel inhou nie;
(*d*) verseker dat alle GBA-afval wat blootstelling kan veroorsaak, weggedoen word slegs op terreine wat spesifiek aangewys is vir hierdie doel ingevolge die Wet op Omgewingsbewaring, 1989 (Wet No. 73 van 1989), op so 'n wyse dat dit geen bedreiging binne of buite die betrokke perseel inhou nie;

(*e*) *verseker* dat alle werknemers wat betrokke is by die versameling, vervoer en wegdoening van GBA-afval, wat aan daardie afval blootgestel kan word, voorsien word van geskikte persoonlike beskermende toerusting; en

(*f*) verseker dat, indien daar van die dienste van 'n afvalwegdoenkontrakteur gebruik gemaak word, 'n bepaling in die kontrak opgeneem word wat meld dat die kontrakteur aan die vereistes van hierdie Regulasies moet voldoen.

Misdrywe en strawwe

18. Enige persoon wat enige bepalings van regulasie 3 tot 17 oortree of versuim om daaraan te voldoen, is skuldig aan 'n misdryf en by skuldigbevinding strafbaar met 'n boete of gevangenisstraf vir 'n tydperk van hoogstens 12 maande en, in die geval van 'n volgehoue misdryf, aan 'n bykomende boete van R200 vir elke dag waarop die misdryf voortduur of bykomende gevangenisstraf van een dag vir elke dag waarop die misdryf voortduur: Met dien verstande dat die tydperk van sodanige bykomende gevangenisstraf in geen geval 90 dae mag oorskry nie.

Kort titel

19. Hierdie Regulasies heet die Regulasies op Gevaarlike Biologiese Agense.

AANHANGSEL A

[Regulasie 2(1)(*b*)]

AANWYSERLYS VAN VOORVALLE

Voorvalle of blootstelling gedurende werk—

(*a*) in 'n voedselproduksieaanleg.

(*b*) waar daar kontak is met diere en/of produkte van dierlike oorsprong.

(*c*) in gesondheidsorg, met inbegrip van afsonderings- en lykskouingseenhede.

(*d*) in kliniese, veeartsenykundige en diagnostiese laboratoriums.

(*e*) in rioolsuiweringsinstallasies.

(*f*) in 'n algemene werkplek.

AANHANGSEL B

KATEGORISERING VAN BIOLOGIESE AGENSE VOLGENS BEDREIGING EN KATEGORIEË VAN BEPERKING

INLEIDING

1. Die aangehegte lys moet gelees word saam met die *Regulasies op Gevaarlike Biologiese Agense*, veral regulasie 3.

2. Agense in die lys word gekategoriseer op grond van hulle vermoë om siekte deur infeksie te veroorsaak.

3. By die toewysing van agense aan 'n gevaargroep in die lys word bepaalde gevolge vir diegene wie se vatbaarheid vir infeksie om die een of ander rede beïnvloed word, byvoorbeeld deur reeds bestaande siekte, medikasie, gekompromitteerde immuniteit, swangerskap of borsvoeding, nie in ag geneem nie. Bykomende risiko vir sodanige werkers moet in ag geneem word as deel van die bepaling wat by die *Regulasies op Gevaarlike Biologiese Agense,* vereis word.

4. Biologiese agense wat nie vir insluiting in Groepe 2 tot 4 in die lys geklassifiseer word nie, word nie by implikasie in Groep 1 geklassifiseer nie.

5. Indien dit bekend is dat meer as een spesie van enige bepaalde agens patogeen vir mense is, word die prominentste hiervan gewoonlik genoem, saam met die breër verwysing 'spesies' (spp.) om die feit aan te dui dat die ander spesies van dieselfde genus gevaarlik kan wees. Indien 'n hele genus op hierdie wyse genoem word, is dit implisiet dat spesies en stamme wat niepatogeen vir mense is, uitgesluit word.

6. Waar 'n stam verswak is of bekende virulente gene verloor het, hoef die beperking wat volgens die klassifisering van sy ouerstam vereis word, nie noodwendig van toepassing te wees nie, onderworpe aan evaluering wat toepaslik is vir die risiko in die werkplek, byvoorbeeld waar sodanige stam as 'n produk of as deel van 'n produk vir profilaktiese of terapeutiese doeleindes gebruik word (sien 2).

7. Alle virusse wat by mense geïsoleer is en wat nie geëvalueer en aan 'n groep toegewys is nie, moet in minstens Groep 2 geklassifiseer word, behalwe waar daar bewyse is dat hulle waarskynlik nie siekte by mense sal veroorsaak nie.

8. Die vereistes betreffende beperking wat volg op die klassifisering van parasiete, is van toepassing slegs op stadia in die lewensiklus van die parasiet waarin dit infektief vir menses kan wees.

9. Die lys gee ook 'n afsonderlike aanwysing waar biologiese agense allergiese of toksiese reaksies kan veroorsaak waar 'n doeltreffende vaksiene beskikbaar is.

Die aanwysers word deur die volgende noterings geïdentifiseer:

A: Moontlike allergiese reaksies
T: Toksiese effek
V: Doeltreffende vaksiene beskikbaar

NIV: Nasionale Instituut vir Virologie.

By die selektering van beheermaatreëls vir biologiese agense moet die feit in ag geneem word dat daar geen blootstellingsperke daarvoor is nie. Hulle vermoë om teen baie klein dosisse te repliseer en te infekteer, beteken dat blootstelling dalk gereduseer moet word tot op al hoe laer vlakke.

Vir elke aktiwiteit moet die eerste oorweging wees of dit gedoen kan word op 'n wyse wat blootstelling aan 'n minder skadelike biologiese agens behels. Dit kan uitvoerbaar wees, byvoorbeeld by onderrig en sommige soorte navorsing. Indien daar meer as een wyse is om die aktiwiteit uit te voer, moet die metode met die minste risiko gekies word.

Indien die mins skadelike alternatief steeds blootstelling of potensiële blootstelling aan 'n biologiese agens behels, of die aard van die aktiwiteit sodanig is dat daar geen keuse is nie, en dit nie redelikerwys uitvoerbaar is om blootstelling deur 'n ander middel te voorkom nie, moet blootstelling genoegsaam beheer word. Al die maatreëls in Aanhangsel E moet oorweeg word, en elkeen moet in die mate gebruik word wat—

(a) toepaslik is; en

(*b*) volgens die bepaling kragtens regulasie 6 toon dat dit tot 'n nie-onbeduidende risikovermindering sal lei.

Nie al die gelyste maatreëls sal in elke geval vereis word nie. Die beraming kan byvoorbeeld aandui dat 'n spesifieke oordragwyse en infeksieroete vereis word, 'n ontvanklike gasheer nodig is, daar 'n lae voorkoms van die infeksie in daardie bepaalde aktiwiteit is, en dat siekte maklik behandelbaar is, wat lei tot vinnige en volledige herstel.

In so 'n geval is die risiko betreklik laag en die beheermaatreëls wat vereis word minder streng. Nog 'n faktor wat sal bepaal of beheermaatreëls toegepas moet word, is die mate waarin die aktiwiteit die hantering of doelbewuste gebruik van 'n biologiese agens behels en of blootstelling bykomend by die hoofdoel van die werk is. Die risikovlak moet egter die hoofoorweging wees — indien die risiko hoog genoeg is en dit verlaag kan word deur sommige van die gelyste maatreëls, moet hulle volledig toegepas word.

Sekere spesiale maatreëls word by gesondheids- en veeartsenykundige fasiliteite, laboratoria, dierekamers en nywerheidsprosesse vereis om te verseker dat biologiese agense nie op werkers of na buite die beheerde gebied oorgedra word nie. Vir laboratoria, dierekamers en nywerheidsprosesse word reëls neergelê vir die afleiding van beperkingsvlak van die gevaarklassifikasie van die agens, of van wat vermoed word oor die moontlike aanwesigheid van 'n agens. Laboratoria wat ondersoek instel of daar 'n agens is wat in Groepe 3 en 4 val, maar wat gewoonlik nie verwag word dat dit aanwesig is nie (byvoorbeeld 'n mikrobiologielaboratorium in 'n voedselfabriek wat vir salmonella toets, met die moontlikheid om *Salmonella typhi* te vind), moet minstens beperkingsvlak 2 bereik, maar moet na die toepaslike hoër vlak oorskakel indien die agens gevind word en indien werk daarmee voortgesit moet word. In 'n laboratorium wat nie doelbewus met biologiese agense werk nie, maar waar die aanwesigheid van agense waarvoor beperkingsvlak 3 of 4

vereis word nietemin bekend is of vermoed word, moet daardie beperkingsvlakke gebruik word.

Agense met gereduseerde virulensie kan gebruik word teen 'n laer as normale beperkingsvlak indien die verandering hulle klassifikasie in effek verander het.

'n Biologiese agens wat in gevaargroep 1 val of behandel word asof dit daarin val, kan 'n geneties veranderde organisme van Groep 3 wees weens omgewingsrisiko's wat daarmee gepaard gaan of omdat dit, hoewel dit waarskynlik nie menslike siekte sal veroorsaak nie, deur genetiese verandering afgelei is van 'n patogene ouerorganisme. In laasgenoemde geval kan die selektering van beperkingsmaatreëls wat geskik is vir die agens se gereduseerde virulensie en ooreenstemmende groep, toegelaat word. Waar daar 'n wanpassing is, soos in die geval van 'n geneties veranderde organisme/biologiese agens wat nie vir mense gevaarlik is nie maar vir die omgewing nadelig is, moet strenger vereistes gestel word.

Waar die reëls tot 'n bepaalde beperkingsvlak vir 'n aktiwiteit lei, moet al die maatreëls wat vir daardie vlak toepaslik is, normaalweg gebruik word. 'n Mate van selektering kan egter wel gedoen word om by individuele omstandighede te pas: Met dien verstande dat risiko nie daardeur verhoog word nie.

Regulasie 11 sit bykomende vereistes uiteen ten opsigte van persoonlike beskermende toerusting wat gebruik word om werknemers teen biologiese agense te beskerm. Die oogmerk van hierdie vereistes is om te voorkom dat die toerusting self dien as middel waardeur agense oorgedra word, en hulle moet dienooreenkomstig nagekom word.

Waar werkers aan biologiese agense blootgestel word, moet die inligting en instruksies wat aan hulle gegee word, waar toepaslik, uiteengesit word in die vorm van skriftelike instruksies wat die prosedures uitstippel wat nagekom moet word na 'n ernstige voorval waarby die hantering van 'n biologiese agens betrokke was, asook die prosedure vir die hantering van enige Groep 4-agens.

Indien die aard van die werkplek en die aktiwiteit sodanig is dat werknemers onmiddellike toegang moet hê tot hierdie inligting, of waar 'n risikovermindering verwag kan word deur die inligting opsigtelik in die werkplek te vertoon, moet dit ook uiteengesit word in kennisgewings wat in die werkplek vertoon word.

BAKTERIEË

Sleutel:

A: Allergiese reaksies
T: Toksiese effek
V: Vaksiene beskikbaar
NIV: Nasionale Instituut vir Virologie.

Biologiese agens	**Klassifikasie**	**Notas**
Acinetobacter calcoaceticus	2	
Acinetobacter lwoffi	2	
Actinobacillus actinomycetem-comitans	2	
Actinomadura madurae	2	
Actinomadura pelletieri	2	
Actinomyces spp.	2	
Aeromonas hydrophila	2	
Alcaligenes spp.	2	
Arcanobacterium haemolyticum (*Corynebacterium haemolyticum*)	2	
Arizona spp.	2	
Bacillus anthracis	3	V
Bacillus cereus	2	
Bacteroides spp.	2	
Bartonella spp. (*Rochalimaea* spp.)	2	
Bordetella bronchiseptica	2	
Bordetella parapertussis	2	
Bordetella pertussis	2	V
Borrelia burgdorferi	2	
Borrelia spp.	2	

Brucella spp.	3	
Burkholderia cepacia	2	
Burkholderia mallei (*Pseudomonas mallei*)	3	
Burkholderia pseudomallei (*Pseudomonas pseudomallei*)	3	
Burkholderia spp.	2	
Campylobacter spp.	2	
Cardiobacterium hominis	2	
Chlamydia pneumoniae	2	
Chlamydia psittaci (nievoëlstamme)	2	
Chlamydia psittaci (voëlstamme)	3	
Chlamydia trachomatis	2	
Clostridium botulinum	2	T, V
Clostridium perfringens	2	
Clostridium tetani	2	T, V
Clostridium spp.	2	
Corynebacterium diphtheriae	2	T, V
Corynebacterium minutissimum	2	
Corynebacterium pseudo-tuberculosis	2	
Corynebacterium spp.	2	
Coxiella burnetii	3	
Edwardsiella tarda	2	
Ehrlichia sennetsu (*Rickettsia sennetsu*)	3	
Ehrlichia spp.	3	

Eikenella corrodens	2	
Enterobacter spp.	2	
Enterococcus spp.	2	
Erysipelothrix rhusiopathiae	2	
Escherichia coli (met uitsondering van niepatogene stamme)	2	
Flavobacterium meningosepticum	2	
Fluorobacter bozemanae (voorheen *Legionella*)	2	
Francisella tularensis (Tipe A)	3	V
Francisella tularensis (Tipe B)	2	
Fusobacterium spp.	2	
Gardnerella vaginalis	2	
Haemophilus ducreyi	2	
Haemophilus influenzae	2	
Haemophilus spp.	2	
Helicobacter pylori	2	
Klebsiellla oxytoca	2	
Klebsiella pneumoniae	2	
Klebsiella spp.	2	
Legionella pneumophila	2	
Legionella spp.	2	
Leptospira interrogans (alle serovars)	2	
Listeria ivanovii	2	
Listeria monocytogenes	2	
Moraxella catarrhalis	2	

Moraxella lacunata	2	
Morganella morganii	2	
Mycobacterium africanum	3	V
Mycobacterium avium/intracellulare	3	
Mycobacterium bovis (BCG-stam)	2	
Mycobacterium bovis	3	V
Mycobacterium chelonae	2	
Mycobacterium fortuitum	2	
Mycobacterium kansasii	3	
Mycobacterium leprae	3	V
Mycobacterium malmoense	3	
Mycobacterium marinum	2	
Mycobacterium microti	3	
Mycobacterium paratuberculosis	2	
Mycobacterium scrofulaceum	3	
Mycobacterium szulgai	3	
Mycobacterium simiae	3	
Mycobacterium tuberculosis	3	V
Mycobacterium ulcerans	3	
Mycobacterium xenopi	3	
Mycoplasma hominis	2	
Mycoplasma pneumoniae	2	
Neisseria gonorrhoeae	2	
Neisseria meningitidis	2	V
Nocardia spp.	2	
Pasteurella spp.	2	

Peptrostreptococcus spp.	2	
Plesiomonas shigelloides	2	
Porphyromonas spp.	2	
Prevotella spp.	2	
Proteus mirabilis	2	
Proteus penneri	2	
Proteus vulgaris	2	
Providencia spp.	2	
Pseudomonas aeruginosa	2	
Pseudomonas mallei - sien *Burkholderia mallei*	3	
Pseudomonas pseudomallei - sien *Burkholderia pseudomallei*	3	
Rhodococcus equi	2	
Rickettsia spp.	3	
Rochalimaea quintana - sien *Bartonella* spp.	2	
Rochalimaea spp. - sien *Bartonella* spp.	2	
Salmonella arizonae	2	
Salmonella enteritidis	2	
Salmonella (ander serovars)	2	
Salmonella paratyphi A, B, C	2	
Salmonella typhi	3	V
Salmonella typhimurium	2	
Serpulina spp.	2	
Serratia liquefaciens	2	
Serratia marcescens	2	

Shigella boydii	2	
Shigella dysenteriae (Tipe 1)	3	T
Shigella dysenteriae (uitgesonderd Tipe 1)	2	
Shigella flexneri	2	
Shigella sonnei	2	
Staphylococcus aureus	2	T
Stenotrophomonas maltophilia	2	
Streptobacillus moniliformis	2	
Streptococcus spp.	2	
Treponema spp.	2	
Ureaplasma urealyticum	2	
Vibrio cholerae (insluitende El Tor)	2	T, V
Vibrio parahaemolyticus	2	
Vibrio spp.	2	
Yersinia enterocolitica	2	
Yersinia pestis	3	V
Yersinia pseudotuberculosis	2	
Yersinia spp.	2	

VIRUSSE

Biologiese agens	Klassifikasie	Notas
Adenoviridae	2	
Alphavirus	2* (kontak NIV)	V
Arenaviridae:		
Ippy 2		
Lassa-koors	4	
Limfositiese choriomeningitis	3	
Mobala	2	
Mopeia	3	
Astroviridae	2	
Bunyaviridae:		
Akabane	3	
Bunyamwera	2	
Germiston	3	
Hantavirusse [kontak NIV]		
Nairovirusse:		
Bhanja	3	
Kongo-Krim- hemoragiese koors	4	
Hazara	2	
Flebovirusse:		
Slenkdalkoors	3	V
Ander Bunyaviridae wat patogeen is	2* [kontak NIV]	
Caliciviridae :		
Hepatitis E	3	
Norwalk	2	
Ander Caliciviridae	2	
Coronaviridae	2	
Filoviridae:		
Ebola Reston (Siena)	4	
Ebola Soedan	4	
Ebola Zaïre	4	
Ebola Ivoorkus	4	
Marburg	4	
Flaviviridae:		
Flavivirusse		
Dengue-virusse Tipe 1-4	3	

Israel-kalkoenmeningitis	3	
Spondweni	3	
Wesselsbron	3	
Wes-Nyl-koors	3	
Geelkoors	3	V
Hepatitis C-groep-virusse:		
Hepatitis C	3	
Ander Flavi-virusse wat patogeen is	2* [kontak NIV]	
Hepadnaviridae:		
Hepatitis B	3	V
Hepatitis D (delta)	3	V
Herpesviridae:		
Sitomegalovirus	2	
Epstein-Barr-virus	2	
Herpes simplex tipes 1 en 2	2	
Herpesvirus varicella-zoster	2	
Herpesvirus simaie (B virus)	3	
Menslike herpesvirus tipe 6 HHV6	2	
Menslike herpesvirus tipe 7 HHV7	2	
Orthomyxoviridae		
Influensa tipes A, B en C2	2	V (vir A, B)
Bosluisgedraagde Orthomyxoviridae:		
Dhori en Thogoto	2	
Papovaviridae:		
BK- en JC-virusse	2	
Menslike papilloomvirusse	2	
Paramyxoviridae		
Masels	2	V
Pampoentjies	2	V
Newcastle-siekte	2	
Para-influensa (Tipes 1 tot 4)	2	
Respiratoriese sinsitiale virus	2	
Runderpes	4	
Hondesiekte		
Parvoviridae:		
Menslike parvovirus (B19)	2	
Picornaviridae		
Akute hemoragiese konjunktivitis Virus (AHC)	2	
Coxsackie-virusse	2	

Echovirusse	2		
Poliovirusse	2		V
Rinovirusse	2		
Hepatovirusse:			
Hepatitis A			
(menslike enterovirus tipe 72)	2		V
Poxviridae:			
Buffelpokke	2		
Koeipokke	2		
Melkersnodules	2		
Molluscum contagiosum-virus	2		
Aappokke	3	V	
Orf 2			
Vaccinia	2		
(insluitende stamme oorspronklik geklassifiseer as haaspokvirus)			
Variola (major en minor)	4		V
(alle stamme, insluitende "wit virus")			
Yatapokke (Tana en Yaba)	2		
Reoviridae:			
Colti-virus	2		
Menslike rotavirusse	2		
Orbivirusse	2		
(sluit in: Afrika-perdesiekte serogroep L - Bloutong serogroup L			
Reovirusse	2		
Retroviridae :			
Menslike immunogebrekvirusse	3		
Menslike T-sel limfotropiese virusse (HTLV) tipes 1 en 2	3		
Aap-immunogebrekvirus	3		
Rhabdoviridae :			
Lagos-vlermuis	3		
Duvenhage	3		
Makola	3		
Hondsdolheid	3		V
Togaviridae:			
Alfavirusse:			
Chikungunya	3		
Middelburg	2		

Ndumu	3	
O'nyong-nyong	2	
Semliki-woud	3	
Sindbis	2	
Rubivirusse:		
Rubella	2	V
Toroviridae*	2	
Ongeklassifiseerde virusse:		
Bloedvervoerde hepatitisvirusse nog nie geïdentifiseer nie	3	
Perde-morbillivirus	3	
Onkonvensionele agense		
- geassosieer met:		
Creutzfeldt-Jakob-siekte	3	
Gerstmann-Strussler-Scheinker-sindroom	3	
Kuru	3	

- Insluitende stamme geïsoleer by katte en ander spesies, bv. olifante, jagluiperds.

- Insluitende stamme oorspronklik geklassifiseer as haaspokvirus.

- Alle stamme, insluitende "witpokkiesvirus".

PARASIETE

Biologiese agens	**Klassifikasie**	**Notas**
Acathamoeba spp.	2	
Ancylostoma duodenale	2	
Angiostrongylus cantonensis	2	
Angiostriongylus costaricensis	2	
Ascaris lumbriciodes	2	A
Ascaris suum	2	A
Babesia divergens	2	
Babesia microti	2	
Balantidium coli	2	
Blastocystis homines	2	
Brugia spp.	2	
Capillaria spp.	2	
Clonorchis - sien *Opisthorchis*		
Cryptosporidium spp.	2	
Cyclospora cayetanensis	2	
Cyclospora spp.	2	
Dientamoeba fragilis	2	
Dipetalonea sien *Mansonella*	2	
Diphyllobothrium latum	2	
Dracunculus medinensis	2	
Echinococcus granulosus	3	
Echinococcus multilocularis	3	
Echinococcus vogeli	3	

Entamoeba histolytica	2
Enterobius vermicularis	2
Enterocytozoon bieneusi	2
Fasciola gigantica	2
Fasciola hepatica	2
Fasciolopsis buski	2
Giardia lamblia (*Giardia intestinalis*)	2
Hymenolepis diminuta	2
Hymenolepsis nana	2
Isopora belli	2
Leishmania brasiliensis	3
Leishmania donovani	3
Leishmania major	2
Leishmania tropica	2
Leishmania spp.	2
Loa loa	2
Mansonella ozzardi	2
Mansonella perstans	2
Mansonella streptocerca	2
Naegleria fowleri	3
Necator americanus	2
Onchocerca volvulus	2
Opisthorchis sinensis (*Chlonorchis sinensis*)	2
Opisthorchis viverrini (*Clonorchis viverrini*)	2
Opisthorchis felineus	2

Opisthorchis spp.	2
Paragonimus spp.	2
Plasmodium falciparum	3
Plasmodium spp. (mens en aap)	2
Sarcocystis suihominis	2
Schistosoma spp.	2
Strongyloides spp.	2
Taenia saginata	2
Taenia solium	3
Toxocara canis	2
Toxocara cati	2
Toxoplasma gondii	2
Trichinella nativa	2
Trichinella nelsoni	2
Trichinella pseudospiralis	2
Trichinella spiralis	2
Trichomonas vaginalis	2
Trichostrongylus orientalis	2
Trichostrongylus spp.	2
Trichuris trichiura	2
Trypanosoma brucei brucei	2
Tryposoma brucei gambiense	2
Trypanosoma brucei rhodesiense	3
Trypanosoma cruzi	3
Trypanosoma rangeli	2
Wuchereria bancrofti	2

AANHANGSEL C

[Regulasie 10(1)(*b*),15(2) en 16(*a*), (*b*) en (*c*)]

VOORSORGMAATREËLS VIR WERKPLEKKE

VYF HOOFROETES VAN OORDRAG:

1. Kontak

Die belangrikste oordragroete in 'n werkplek is deur—

(*a*) regstreekse kontak met 'n besmette of gekontamineerde liggaamsoppervlak of -vloeistof; en

(*b*) onregstreekse kontak via kontak met 'n voorwerp wat voorheen gekontamineer is met organismes vanaf 'n geïnfekteerde persoon of dier.

2. Oordrag deur druppeltjies

Druppeltjies word gegenereer wanneer daar gehoes, genies of gepraat word en gedurende prosesse, byvoorbeeld suiging.

Druppeltjies kan organismes dra wat 'n nuwe gasheer kan infekteer indien hulle op konjunktiva, neusslymvliese of die mond neerslaan.

Druppeltjies bly nie swewend in die lug nie.

Druppeltjies trek nie verder as een meter nie.

3. Oordrag deur die lug

Klein deeltjies (druppelkerne) wat lang tydperke swewend in die lug bly, het 'n veel groter potensiaal om siekte te versprei as groot druppeltjies.

Daar is min organismes wat langs hierdie roete vervoer word, en die belangrikste is *Mycobacterium tuberculosis* en die virusse wat masels en waterpokkies veroorsaak.

Om verspreiding te voorkom, moet daar 'n ingeslote gebied wees met minstens ses lugwisselings per uur, of met 'n oop venster wat voldoende ventilering bied.

4. Oordrag deur algemene faktore

Oordrag deur items soos voedsel, water, toestelle en toerusting.

Normale higiënepraktyke en behoorlike sterilisering of ontsmetting van toerusting behoort hierdie soort verspreiding 'n seldsame gebeurtenis in sekere werkplekke, bv. hospitale, te maak.

5. Oordrag deur verkore

Vektore soos muskiete, vlieë, vlooie, ensovoorts, word nie gereeld in werkplekke teëgekom as oorsaak van uitbrekings nie.

In gebiede waar daar 'n probleem is, moet die toepaslike maatreëls, bv. gaas oor vensters en die gebruik van insekdoders, ingestel word.

Twee vlakke van voorsorgmaatreëls word aanbeveel:

(a) **Standaardvoorsorgmaatreëls**

Hierdie maatreëls word te alle tye toegepas op alle pasiënte ongeag hulle diagnose. Alle liggaamsvloeistowwe (behalwe sweet) word as potensieel besmetlik beskou.

(*b*) **Oordraggebaseerde voorsorgmaatreëls**

Hierdie maatreëls word toegepas wanneer 'n spesifieke aansteeklike siekte gediagnoseer of vermoed word.

Die roete waarlangs die siekte oorgedra word, sal die kategorie voorsorgmaatreëls bepaal wat toegepas moet word.

VOORSORGMAATREËLS

A. Administratiewe beheermaatreëls

1. Opvoeding en opleiding
2. Nakoming van voorsorgmaatreëls

B. Voorsorgmaatreëls

1. Standaardvoorsorgmaatreëls
2. Voorsorgmaatreëls vir Lug
3. Voorsorgmaatreëls vir Druppeltjies
4. Voorsorgmaatreëls vir Kontak
5. Voorsorgmaatreëls vir Formidabele Epidemiese Siekte (bv. virale hemoragiese koorse)

A. ADMINISTRATIEWE BEHEERMAATREËLS

1. OPVOEDING EN OPLEIDING

'n Stelsel moet ontwikkel word om te verseker dat hospitaalpasiënte, -werknemers, -kontrakteurs en –besoekers onderrig word oor -

* die gebruik van voorsorgmaatreëls.
* hulle verantwoordelikheid om die voorsorgmaatreëls na te kom.

2. NAKOMING VAN VOORSORGMAATREËLS

Die nakoming van voorsorgmaatreëls moet periodiek geëvalueer word. Die bevindings moet gebruik word om verbeterings te implementeer.

B. VOORSORGMAATREËLS

1. STANDAARDVOORSORGMAATREËLS

Standaardvoorsorgmaatreëls word gebruik vir die beskerming van alle mense wat aan GBA blootgestel word.

1.1 WAS VAN HANDE

- Was hande nadat bloed, liggaamsvloeistowwe, sekresies, ekskresies en gekontamineerde items aangeraak is, ongeag of handskoene gedra word al dan nie.
- Was hande (wanneer met pasiënte gewerk word)—

- ➢ onmiddellik nadat handskoene uitgetrek is.
- ➢ tussen kontakte met pasiënte.
- ➢ waar aangedui word om kruiskontaminasie van verskillende liggaamsplekke te voorkom.

- Gebruik gewone (nie-antimikrobiese) seep om hande roetinegewys te was.
- Gebruik 'n antimokrobiese agens of 'n alkoholhandontsmettingsmiddel vir spesifieke toestande (bv. beheer van uitbreek van hiperendemiese infeksies) soos omskryf deur die infeksiebeheerprogram. (Sien Voorsorgmaatreëls vir Kontak.)

1.2 HANDSKOENE

- Dra handskoene (skoon en heel niesteriele handskoene is voldoende) wanneer aan bloed, liggaamsvloeistof, sekresies, ekskresies en gekontamineerde items geraak word.
- Trek skoon handskoene aan net voordat slymvliese en beskadigde vel aangeraak word.
- Wissel handskoene tussen take en prosedures ten opsigte van—
  - ➢ dieselfde persoon
  - ➢ ná kontak met materiaal wat 'n hoë konsentrasie mikro-organismes kan bevat.
- Verwyder handskoene onverwyld ná gebruik
  - ➢ voordat niegekontamineerde items en omgewingsoppervlakke aangeraak word.
  - ➢ voordat aandag aan iemand anders geskenk word.
- Was hande onmiddellik om die oordrag van mikro-organismes na ander persone en omgewings te voorkom.

1.3 MASKER, OOGBESKERMING, GESIGSKERM

- Dra 'n masker en oogbeskerming of gesigskerm—
  - ➢ om die slymvliese van die oog, neus en mond te beskerm.

- gedurende prosedures en aktiwiteite waartydens bloed of liggaamsvloeistowwe, sekresies en ekskresies waarskynlik sal spat of spuit.

1.4 BESKERMENDE KLERE

- Dra geskikte beskermende klere om die vel te beskerm en om die besoedeling van klere te voorkom gedurende prosedures en aktiwiteite waartydens bloed, liggaamsvloeistof, sekresies en ekskresies waarskynlik sal spat of spuit.
- Dra beskermende klere wat geskik is vir die aktiwiteit en hoeveelheid vloeistof wat waarskynlik teëgekom sal word.
- Verwyder besoedelde beskermende klere so gou doenlik en beskou dit as gekontamineer.
- Was hande onmiddellik na verwydering van beskermende klere om die oordrag van mikro-organismes na ander mense of omgewings te voorkom.

1.5 PASIËNTSORGTOERUSTING

- Hanteer pasiëntsorgtoerusting wat met bloed, liggaamsvloeistowwe, sekresies en ekskresies besoedel is, op 'n wyse wat die volgende voorkom:
  - Blootstelling van vel en slymvliese.
  - Kontaminering van klere.
  - Oordrag van mikro-organismes na ander omgewings.
- Verseker dat herbruikbare toerusting nie vir die versorging van 'n ander pasiënt gebruik word nie, totdat -
  - dit skoongemaak is.
  - dit toepaslik herverwerk is.
- Verseker dat—
  - voldoende wegdoenbare spuite en naalde te alle tye beskikbaar is vir gebruik.
  - daar voorsiening gemaak word vir die veilige wegdoening daarvan.

1.6 OMGEWINGSBEHEER

- Maak seker dat daar genoegsame prosedures is vir roetinesorg, skoonmaak en -ontsmetting van omgewingsoppervlakke en ander

oppervlakke wat dikwels gebruik word of potensieel gekontamineer kan wees.

- Ontsmetting van omgewingsoppervlakke word nie roetinegewys vereis nie. Blote skoonmaak is voldoende tensy daar beduidende besoedeling deur potensieel besmetlike liggaamsvloeistowwe was.

1.7 LINNE

- Hanteer, vervoer en verwerk gebruikte linne wat met bloed of liggaamsvloeistof, sekresies en ekskresies besoedel is, in ondeurlatende houers met kleurkodes en kom alle moontlike maatreëls na om die volgende te voorkom—

  - ➢ Blootstelling van vel- en slymvliese.
  - ➢ Kontaminering van klere.
  - ➢ Oordrag van mikro-organismes na ander persone en omgewings.

1.8 BEROEPSGESONDHEID

1.8.1 **Beserings**

- Wees versigtig om beserings te voorkom wanneer—

  - ➢ naalde, skalpels en ander skerp instrumente of toestelle gebruik word.
  - ➢ skerp instrumente na 'n prosedure gehanteer word.
  - ➢ instrumente skoongemaak word.
  - ➢ gebruikte naalde weggedoen word.

Moet nooit—

- naalde se doppies terugsit of hulle met albei hande manipuleer nie, indien dit absoluut noodsaaklik is om 'n naald te herbedek. 'n Verskeidenheid van meganiese toestelle wat in die handel beskikbaar is, moet gebruik word.
- enige ander tegniek gebruik wat die rig van die punt van die naald op enige deel van die liggaam behels nie.

Moenie—

- gebruikte naalde van wegdoenbare spuite met die hand verwyder nie.

- naalde met die hand buig of breek of andersins manipuleer nie.

Jy moet—

- gebruikte wegdoenbare spuite en naalde, skalpellemme en ander skerp voorwerpe in geskikte lekdigte houers plaas wat so na moontlik aan die gebied is waarin die prosedure uitgevoer word.
- dit veilig vervoer na die herverwerkings- of wegdoeningsgebied.

1.8.2 **Resussitering**

Gebruik mondstukke, resussiteringsakke of ander ventileringstoestelle as alternatiewe metode vir mond-tot-mond-resussitering in gebiede waar die behoefte aan resussitering voorspelbaar is.

1.9 PASIËNTPLASING

- Plaas pasiënte wat—
  - ➢ die omgewing kontamineer; en
  - ➢ nie kan help of van wie nie verwag kan word om te help met die handhawing van toepaslike persoonlike higiëne of omgewingsbeheer nie,

  in 'n afsonderingsgebied (enkel- of dubbelkamer).
- Indien 'n afsonderingsgebied nie beskikbaar is nie, moet professionele infeksiebeheerbeamptes geraadpleeg word betreffende pasiëntplasing of ander alternatiewe.

2. VOORSORGMAATREËLS VIR LUG

Benewens die Standaardvoorsorgmaatreëls, gebruik Voorsorgmaatreëls vir Lug vir pasiënte van wie dit bekend is of vermoed word dat hulle geïnfekteer is met mikro-organismes wat deur druppeltjiekerne in die lug oorgedra word, d.w.s. klein partikelresidu's van verdampte druppeltjies wat mikro-organismes bevat wat—

- ➢ swewend in die lug bly.
- ➢ wyd versprei kan word deur lugstrominge binne 'n kamer of oor 'n lang afstand.

2.1 PASIËNTPLASING

Plaas pasiënte ideaal gesproke in 'n private kamer wat die volgende het—

- Gemoniteerde negatiewe lugdruk vergeleke met die omringende gebied.
- 6 tot 12 lugwisselings per uur.
- toepaslike vrylating van lug buitenshuis of gemoniteerde hoëdoeltreffendheidsfiltrering van kamerlug voordat die lug na ander gebiede van die hospitaal gesirkuleer word.

Waar dit nie moontlik is nie

- Gebruik—
  - 'n kamer met 'n eenvoudige suigwaaier wat minstens ses lugwisselings per uur voorsien.
  - 'n kamer met 'n oop venster en genoegsame ventilasie.
- Wanneer 'n afsonderingsgebied nie beskikbaar is nie, plaas die pasiënt in 'n kamer met 'n ander pasiënt wat aktiewe infeksie met dieselfde mikro-organisme het, maar geen ander infeksie nie, tensy andersins aanbeveel.
- Wanneer 'n private kamer nie beskikbaar is nie en saaldeling nie wenslik is nie, word raadpleging van professionele infeksiebeheerbeamptes voor pasiëntplasing aanbeveel.
- Hou die pasiënt in die kamer en hou die deur toe.

2.2 RESPIRATORIESE BESKERMING

Tuberkulose:

- Dra respiratoriese beskerming wanneer die kamer van 'n pasiënt binnegegaan word van wie dit bekend is of vermoed word dat hy of sy besmetlike pulmonêre tuberkulose het.

Masels (rubeola) en waterpokkies (varicella):

- Vatbare persone moet nie die kamer van pasiënte binnegaan van wie dit bekend is of vermoed word dat hulle masels of varicella het indien ander immune gesondheidsorgwerkers nie beskikbaar is nie.
- Indien vatbare persone die kamer moet binnegaan, moet hulle respiratoriese beskerming dra.
- Persone wat immuun is teen masels of varicella, hoef nie respiratoriese beskerming te dra nie.

2.3 PASIËNTVERVOER

Die beweging en vervoer van die pasiënt moet tot die minimum beperk word.

- Indien vervoer of beweging nodig is, moet die pasiënt 'n chirurgiese masker dra om die verspreiding van druppeltjiekerne te minimeer.

2.4 BYKOMENDE VOORSORGMAATREËLS OM DIE OORDRAG VAN TUBERKULOSE TE VOORKOM

- Respirators—
  - ➢ moet deur almal wat die kamer binnekom, gedra word.
  - ➢ moet partikels van 1 mikron of kleiner met 'n filtreerdoeltreffendheid van 95% kan filtreer.
- Doeltreffende behandeling van die pasiënt
- Afsondering—
  - ➢ Afsondering moet gehandhaaf word totdat daar beduidende kliniese verbetering in die pasiënt se toestand is.
  - ➢ Ideaal gesproke moet twee negatiewe suurvaste bacilla-smere verkry word.
  - ➢ Ideaal gesproke moet 'n smeerpositiewe pasiënt minstens twee weke in afsondering gehou word.

3. VOORSORGMAATREËLS VIR DRUPPELTJIES

Benewens Standaardvoorsorgmaatreëls, gebruik Voorsorgmaatreëls vir Druppeltjies of 'n ekwivalent vir pasiënte van wie dit bekend is of vermoed word dat hulle geïnfekteer is met mikro-organismes wat oorgedra kan word deur middel van druppeltjies (grootpartikeldruppeltjies wat gegenereer kan word deur te hoes, te nies of te praat of deur respiratoriese terapie).

3.1 PASIËNTPLASING

Plaas die pasiënt in 'n afsonderingsgebied, bv. 'n private of enkelkamer.

- Wanneer 'n private kamer nie beskikbaar is nie en saaldeling nie haalbaar is nie, handhaaf ruimtelike skeiding van minstens een meter tussen die geïnfekteerde pasiënt en ander pasiënte en besoekers.
- Bykomende ventileringsmaatreëls is nie nodig nie en die deur kan oop bly.

3.2 MASKERS

Dra 'n masker wanneer binne een meter van die pasiënt gewerk word. Logistiekgewys kan sommige hospitale egter vereis dat maskers gedra word wanneer die kamer binnegegaan word.

3.3 PASIËNTVERVOER

Die beweging en vervoer van die pasiënt vanaf die kamer moet tot die minimum beperk word. Indien vervoer of beweging nodig is, moet die verspreiding van druppeltjies geminimeer word deur vir die pasiënt 'n masker aan te sit.

4. VOORSORGMAATREËLS VIR KONTAK

Benewens Standaardvoorsorgmaatreëls, gebruik Voorsorgmaatreëls vir Kontak vir—
gespesifiseerde pasiënte van wie dit bekend is of vermoed word dat hulle geïnfekteer of gekoloniseer is met epidemiologies belangrike mikro-organismes wat deur regstreekse kontak met die pasiënt oorgedra kan word (hand-tot-vel-kontak vind plaas wanneer pasiëntsorgaktiwiteite plaasvind wat vereis dat die pasiënt se droë vel aangeraak word) of deur onregstreekse kontak (aanraking) met omgewingsoppervlakke of pasiëntsorgitems in die pasiënt se omgewing.

4.1 PASIËNTPLASING

Plaas die pasiënt in 'n afsonderingsgebied, bv. 'n private of enkelkamer.

- Wanneer 'n private kamer nie beskikbaar is nie, plaas die pasiënt in 'n kamer met pasiënte wat aktiewe siekte met dieselfde mikro-organisme het, maar geen ander infeksie nie (saaldeling).

- Wanneer nóg 'n private kamer nóg saaldelinghaalbaar is, oorweeg die epidemiologie van die mikro-organisme en die pasiëntpopulasie wanneer pasiëntplasing bepaal word.

Raadpleging van professionele infeksiebeheerbeamptes voor pasiëntplasing word aanbeveel.

4.2 HANDSKOENE EN HANDEWAS

Benewens die dra van handskoene en die was van hande soos uiteengesit in die Standaardvoorsorgmaatreëls—

- dra skoon handskoene wanneer die kamer binnegegaan word.

- wissel handskoene na kontak met infekterende materiaal.

- verwyder handskoene voordat die pasiënt se omgewing verlaat word.

- was hande met 'n antimikrobiese of 'n alkoholhandewasmiddel onmiddellik nadat die handskoene verwyder is.

- maak seker dat hande nie aan potensieel gekontamineerde omgewingsoppervlakke of items in die pasiënt se kamer raak nie om die oordrag van mikro-organismes na ander pasiënte of die omgewing te voorkom.

4.3 BESKERMENDE KLERE

Benewens die dra van 'n oorjas of plastiekvoorskoot soos uiteengesit in die Standaardvoorsorgmaatreëls—

- Dra 'n skoon, niesteriele oorjas /of plastiekvoorskoot waar toepaslik—

  - ➢ wanneer 'n kamer binnegaan word waar besoedeling van klere verwag word.

  - ➢ ná wesenlike kontak met die pasiënt.

  - ➢ ná kontak met omgewingsoppervlakke of items in die pasiënt se kamer.

  - ➢ indien die pasiënt inkontinent is of diaree, 'n ileostomie of 'n kolostomie het.

  - ➢ waar wonddreinering nie deur 'n verband beperk word nie.

- Verwyder die oorjas of plastiekvoorskoot voordat die pasiënt se omgewing verlaat word.

- Nadat die oorjas of plastiekvoorskoot verwyder is, maak seker dat klere nie met potensieel gekontamineerde omgewingsoppervlakke kontak maak nie om die oordrag van mikro-organismes na ander pasiënte of omgewings te voorkom.

4.4 PASIËNTVERVOER

- Die beweging en vervoer van die pasiënt vanaf die kamer moet geminimeer word.

- Maak seker dat voorsorgmaatreëls gehandhaaf word om die risiko van die oordrag van mikro-organismes na ander pasiënte en die kontaminering van omgewingsoppervlakke en toerusting te voorkom.

4.5 PASIËNTSORGTOERUSTING

Waar moontlik, gebruik niekritieke pasiëntsorgtoerusting net vir 'n enkele pasiënt (of groep pasiënte wat geïnfekteer of gekoloniseer is met die patogeen wat voorsorgmaatreëls verg).

Voorkom dat pasiënte toerusting deel.

- Indien die gemeenskaplike gebruik van toerusting of items onvermydelik is, moet dit skoongemaak en ontsmet word voordat dit vir 'n ander pasiënt gebruik word.

4.6 BYKOMENDE VOORSORGMAATREËLS VIR DIE VOORKOMING VAN DIE VERSPREIDING VAN MULTIMIDDELBESTANDE MIKRO-ORGANISMES

- Beperk die gebruik van antibiotika en voorkom die misbruik daarvan.
- Onderrig personeel.
- Speur multimiddelbestande mikro-organismes vroegtydig op deur laboratorium- en infeksiebeheerwaaktoesig.
- Raadpleeg 'n infeksiebeheerpraktisyn betreffende verdere bestuur.

5. AFSONDERING VAN FORMIDABELE EPIDEMIESE SIEKTE (FES)

- Standaardvoorsorgmaatreëls en Voorsorgmaatreëls vir Kontak plus bykomende items word vereis, byvoorbeeld respirators, gesigskerms, waterwerende oorjasse en stewels, musse en dubbele handskoene.
- Standaardvoorsorgmaatreëls is voldoende gedurende die niehemoragiese fase in gevalle van hemoragiese koorse, byvoorbeeld Ebola- en Kongo-Krim-hemoragiese koors.

5.1 AFSONDERINGSGEBIED

- Dit kan 'n eenheid wees wat toegewy is aan virale hemoragiese koors (VHK) of 'n afgesonderde sykamer of private kamer, verkieslik met 'n wagkamer.
- Die deur moet toe gehou word en streng toegangsbeheer moet ingestel word.

5.2 OORJASSE

- Ondeurlatende, wegdoenbare oorjasse of 'n eenstukoorpak moet oor die teaterpak gedra word.

5.3 HANDSKOENE

- Twee paar word gedra, die een oor die ander.
- Steriele latekshandskoene word gebruik weens die beter gehalte en langer moue.

5.4 STEWELS

- Ondeurlatende stewels of oorskoene word in die afsonderingskamer gedra.
- **Hulle moet**—
  - ➢ hoog genoeg wees om die vel onder die broekspype te bedek.
  - ➢ sterk genoeg wees om slytasie te weerstaan.

5.5 TEATERMUSSE/STOFBRILLE OF GESIGSKERMS

- Word binne die afsonderingskamer gedra.
- Teatermusse
  - ➢ 'n Teatermus wat saam met 'n gesigskerm gedra word wat volledige beskerming van die kop en nek bied, word verkies.

5.6 MASKERS EN RESPIRATORS

- Maskers – respirators van goeie gehalte en met 'n hoë filtreervermoë is noodsaaklik.

5.7 PAK VIR FORMIDABELE EPIDEMIESE SIEKTE (FES)

'n FES-pak bevat al die nodige afsonderingstoebehore en moet veilig bewaar word in 'n gebied wat nie vir ongemagtigde persone toeganklik is nie. Die FES-pak moet onmiddellik aangevul word na elke gebruik.

Hierdie pak is onmiddellik beskikbaar, is draagbaar en word gebruik totdat die pasiënt gediagnoseer is of oorgeplaas word na 'n afsonderingseenheid of 'n hospitaal vir aansteeklike siektes. Hierdie pak word in 'n boks of trollie gehou. Die boks (of trollie) is maklik uitkenbaar en word op 'n maklik toeganklike plek gehou. Die pakinhoud word aangevul soos vereis deur die infeksiebeheerpersoneel.

Instruksieplakkate verstrek instruksies aan onopgeleide personeel totdat professionele infeksiebeheerbeamptes opdaag om leiding en instruksies in VHK-prosedures te gee.

Inhoud—

- Steriele latekshandskoene van verskillende groottes.
- Wegdoenbare ondeurlatende oorjasse.
- Stofbrille/gesigskerms.
- Maskers.

- Skoenbedekkings (halfkamaste).
- Teatermusse.
- Bloedbuise, etikette, biogevaar-plastiekmonstersakke, 'n houer met stewige wande vir die vervoer van monsters en biogevaarplakkers.
- Maskeerband om—
  - ➢ bokse afval te verseël.
  - ➢ instruksieplakkate teen mure te plak.
  - ➢ die bostukke van plastiekskoenbedekkings vas te heg.
- Plastiekafvalsakke vir gekontamineerde afval.
- Outoklaafbare sakke vir niewegdoenbare items.
- Deursigtige plastieksakke.
- Sakkies natriumhipochlorietpoeier (NaOCl) en 1% vloeibare hipochloriet.
- Plastiekbedekte instruksieplakkate wat instruksies bevat oor hoe om—
  - ➢ afsonderingsdrag aan te trek.
  - ➢ veilig te verklee.
  - ➢ monsters veilig te versamel en te hanteer.
  - ➢ ontsmettingsmiddels te meng.
  - ➢ gekontamineerde toerusting te ontsmet en te hanteer.
  - ➢ linne en afval weg te doen.
  - ➢ bloedstortings te hanteer.

5.8 SPESIFIEKE INFEKSIEBEHEERVERANTWOORDELIKHEID

Die professionele infeksiebeheerbeamptes is verantwoordelik om te verseker dat personeel die regte prosedures volg en dat toerusting beskikbaar is vir die wegdoening van afval.

- Alle afvalsakke moet in dubbelsakke in kartonbokse geplaas word.
- Afvalsakke moet met biogevaarplakkers en band verseël en geëtiketteer word.
- Houers moet na die verbrandingsoond vergesel word.

- Die onmiddellike verbranding daarvan moet verseker word.

5.9 VERVOER VAN VHK-MONSTERS

Hierdie monsters vereis 'n spesiale houer en verpakking:

- Die monster word in 'n biogevaarsak geplaas.
- Die pasiënt se etiket word in die buitesakkie geplaas.
- Die monster word dan in absorberende materiaal toegedraai en in 'n onbreekbare skroeftophouer geplaas.
- Die houer word geëtiketteer met 'n biogevaarplakker en die bestemming (naam van die ontvangslaboratorium).
- Dit word verkieslik per hand afgelewer.
- Indien die monster gepos of per koerier gestuur moet word, moet 'n tweede onbreekbare houer gebruik word en dienooreenkomstig geëtiketteer word.

5.10 BESTUUR VAN BESOEDELDE LINNE, VULLIS EN TOERUSTING

Beddegoed

- Alle beddegoed wat gebruik word, is óf wegdoenbare óf onbruikbare linne wat na gebruik verbrand word.
- Matrasse moet met duursame plastiekoortreksels bedek word—
  - die oortreksels is wegdoenbaar.
  - indien die matrasse besoedel raak met bloed of liggaamstowwe, moet dit vernietig word.

Linne en vullis

- Alle linne (wegdoenbaar en onbruikbaar) word in plastiekvullissakke geplaas—
  - die persoon binne die hokkie of kamer neem die verseëlde sak en plaas dit in 'n tweede sak wat deur 'n ander persoon buite die kamer vasgehou word.
  - hierdie sak word dan verseël en vir verbranding weggestuur.

Terminale ontsmetting van toerusting

- Alle toerusting word goed afgewas met 'n hipochlorietreiniger.
- Dit word dan met 'n papierhanddoek afgedroog.

Indien die toerusting nie outoklaafbaar is nie, moet dit in deursigtige plastieksakke toegedraai word en—

- ➢ in dubbelsakke in 'n skoon sak gesit word wat deur 'n tweede persoon buite die hokkie vasgehou word.
- ➢ duidelik geëtiketteer word met die inhoud, en 'n biogevaarplakker moet aangebring word.
- ➢ na die sentrale steriliseringsdiensdepartement (SSDD) gestuur word vir sterilisering met etileenoksiedgas.

- Outoklaafbare items moet in "Asepto"-tipe sakke geplaas word—
  - ➢ geëtiketteer soos hierbo.
  - ➢ in skoon plastieksakke verseël vir vervoer na die SSDD.
  - ➢ outoklaafbare plastieksakke kan gebruik word indien beskikbaar.

Meubels/omgewing

- Alle meubels, mure en vloere word goed afgewas met hipochlorietreiniger.

TABEL I

TIPE EN DUUR VAN VOORSORGMAATREËLS VIR GESELEKTEERDE INFEKSIES EN TOESTANDE

Infeksie/Toestand	Voorsorgmaatreëls Tipe	Duur
Abses		
-Dreinering, major[a]	C	D1
-Dreinering, minor of beperk[b]	S	
Verworwe immunogebreksindroom[c]	S	
Aktinomikose	S	
Adenovirusinfeksie, by babas en jong kinders	D, C	D1
Amebiase	S	
Antraks		
- Kutaan	S	
- Pulmonêr	S	
Antibiotikaverwante kolitis (sien *Clostridium difficile*)		
Anthropoda-gedraagde irale ensefalitis	S[d]	
Arthropoda-gedraagde virale koorse (dengue, geelkoors)	S[d]	
Askariase	S	
Aspergillose	S	
Babesiose	S	
Blastomikose	S	
Botulisme	S	
Brongiolitis (sien respiratoriese infeksies by babas en jong kinders)		
Brusellose (golwende, Malta-, Mediterreense koors)	S	
Campylobacter-gastroënteritis (sien gastroënteritis)	S	
Kandidiase, alle vorms, insluitende mukokutaan	S	
Katkrapkoors	S	
Sellulitis, onbeheerde dreinering	C	DI

Sjankroïed (sagte sjanker)	S	
Waterpokkies (varicella; sien F[e]) vir varicella-blootstelling)	A, C	F[e]
Chlamydia trachomatis		
- Konjunktivitis	S	
- Genitaal	S	
- Respiratories	S	
Cholera (sien gastroënteritis)		
Gesloteholtebesmetting		
- Dreinering, beperk of minor	S	
- Dreineer nie	S	
Clostridium		
- *C. botulinum*	S	
- *C. difficile*	C	D1
- *C. perfringens*		
- Voedselvergiftiging	S	
- Gasgangreen	S	
Kongenitale rubella	C	F
Kokkidiodomikose		
Dreineer wonde	S	
Longontsteling	S	
Konjunktivitis		
- Akuut bakteries	S	
- *Chlamydia*	S	
- Gonokokkaal	S	
- Akuut viraal hemoragies	C	D1
Coxsackie-virussiekte (sien enterovirale infeksie)		
Creutzfeldt-Jakob-siekte	S[d]	
Kroep (sien respiratoriese infeksies by babas en jong kinders)		
Kriptokokkose	S	
Kriptosporidiose (sien gastroënteritis)		
Sistiserkose	S	
Sitomegalovirusinfeksie, neonataal of immuno-onderdruk	S	

Dekubitus-ulkus, geïnfekteer		
- Major [a]	C	DI
- Minor of beperk [b]	S	
Dengue	S[d]	
Diaree, akuut - infektiewe etiologie vermoed (sien gastroënteritis)		
Difterie		
- Kutaan	C	CN
- Faringeaal	D	CN
Virale hemoragiese Ebola-koors	C[9]	D1
Eginokokkose (hidatidose)	S	
Echovirus (sien enterovirale infeksie)		
Ensefalitis of ensefalomeïlitis (sien spesifieke etiologiese agense)		
Endometritis	S	
Enterobiase (draadwurmsiekte)	S	
Enterokokkus-spesie (sien multimiddelbestande organismes indien epidemiologies beduidend of vankomisienbestand)		
Enterokolitis, *Clostridium difficile*	C	D1
Enterovirale infeksies		
- Volwassenes	S	
- Babas en jong kinders	C	D1
Epiglottitis, weens *Haemophilus influenzae*	D	U (24 uur)
Epstein-Barr-virusinfeksie, insluitende infektiewe mononukleose	S	
Erythema infectiosum (sien ook Parvovirus B19)	S	
Escherichia coli-gastroënteritis (sien gastroënteritis)		
Voedselvergiftiging		
Botulisme	S	
Clostridium perfringens of *welchii*	S	
Stafilokokkus	S	
Furunkulose - stafilokokkus		
Babas en jong kinders	C	D1

Gangreen (gasgangreen)	S	
Gastroënteritis		
- *Campylobacter*-spesie	S[i]	
- Cholera	S[i]	
- *Clostridium difficile*	C	D[1]
- *Cryptosporidium*-spesie	S[i]	
- *Escherichia coli*		
- Enterohemoragies 0157:H7	S[i]	
- Doeke of inkontinent	C	D[1]
- Ander soorte	S[i]	
- *Giardia lamblia*	S[i]	
- Rotavirus	S[i]	
- Doeke of inkontinent	C	D1
- *Salmonella*-spesie (insluitende *S. typhi*)	S[i]	
- *Shigella*-spesie	S[i]	
- Doeke of inkontinent	C	D[1]
- *Vibrio parahaemolyticus*	S[i]	
- Viraal (indien nie elders gedek)	S[i]	
- *Yersinia enterocolitica*	S[i]	
Duitse masels (rubella)	D	F[VHF]
Giardiase (sien gastroënteritis)		
Gonokokkale oftalmie van pasgeborene (gonoreale oftalmie, akute konjunktivitis van pasgeborene)	S	
Gonoree	S	
Inguïnale granuloom (donovanose, granuloma venereum)	S	
Guillain-Barré-sindroom	S	
Hand-, voet- en mondsiekte (sien enterovirale infeksie)		

Pulmonêre hantavirussindroom	S	
Helicobacter pylori	S	
Hemoragiese koorse (byvoorbeeld Lassa en Ebola)	C[l]	D1
Hepatitis, virale		
- Tipe A	S	
- Doeke of inkontinent	C	F[11]
- Tipe B-HbsAg-positief	S	
- Tipe C en ander ongespesifiseerde nie-A, nie-B	S	
- Tipe E	S	
Herpangina (sien enterovirale infeksie)		
Herpes simplex (Herpes-virus hominis)		
- Ensefalitis	S	
- Neonataal (12)	C	D1
- Mukokutaan, gedissemineerd of primêr, erg	C	D1
- Mukokutaan, terugkerend (vel, oraal, genitaal)	S	
Herpes zoster (varicella-zoster)		
- Gelokaliseer in immuno-gekompromitteerde pasiënt, of gedissemineer	A, C	D1[m]
- Gelokaliseer in normale pasiënt	S[m]	
Histoplasmose	S	
MIV (sien menslike immunogebreksindroom)	S	
Haakwurmsiekte	S	
Menslike immunogebrekvirus (MIV)-infeksie[c]	S	
Impetigo	C	U (24 uur)
Infektiewe mononukleose	S	
Influensa	D[n]	D[1]
Kawasaki-sindroom	S	
Lassa-koors	C	D1

Legioensiekte	S	
Melaatsheid	S	
Leptospirose	S	
Luise (pedikulose)	C	U[24(UUR)]
Listeriose	S	
Sandsiekte	S	
Limfositiese choriomeningitis	S	
Limfgranuloma venereum	S	
Malaria	S	
Marburg-virussiekte	A	D1
Masels (rubeola), alle presentasies	A	D1
Melioïdose, alle vorms	S	
Meningitis		
- Asepties (niebakteriële of virale meningitis; sien ook enterovirale infeksies)	S	
- Bakterieel, Gram-negatief enteries, by pasgeborenes	S	
- Fungus		
Haemophilus influenzae, bekend of vermoed	D	U (24 uur)
- *Listeria monocytogenes*	S	
- *Neisseria meningitidis* (meningokokkaal) bekend of vermoed	D	U (24 uur)
- Pneumokokkaal	S	
- Tuberkulose	A	
- Ander gediagnoseerde pneumonie	S	
- Meningokokkale pneumonie	D	U (24 uur)
Meningokokkemie (meningokokkale sepse)	D	U (24 uur)
Molluskum kontagiosum	S	
Mukormikose	S	
Multibestande organismes, infeksies of kolonisering[2]		
- Gastroïntestinaal	C	CN
- Respiratories	C	CN
- Pneumokokkaal	S	
- Vel, wond of brand	C	CN
Pampoentjies (besmetlike parotitis)	D	F[2]

Mikobakterieë, nietuberkulose (atipies)		
- Pulmonêr	S	
- Wond	S	
Mikoplasmapneumonie	D	DI
Nekrotiserende enterokolitis	S	
Nokardiose, dreinerende letsels of ander presentasies	S	
Norwalk-agens-gastroënteritis (sien virale gastroënteritis)		
Orf		
Para-influensavirusinfeksie, respiratories by babas en jong kinders	C	DI
Parvovirus B19	D	F
Pedikulose (luise)	C	U (24 uur)
Pertussis (kinkhoes)	D	F[2]
Draadwurminfeksie	S	
Pes		
- Builepes	S	
- Pneumonies	D	U (72uur)
Pleurodinie (sien enterovirale infeksie)		
Pneumonie		
- Adenovirus	D, C	DI
- Bakterieel nie gelys (insluitende Gram-negatief bakterieel)	S	
- *Burkholderia cepacia* by sistiese fibrose (SF)-pasiënte, insluitende kolonisering van respiratoriese kanaal	S	
- Chlamidia	S	
- Fungus		
- *Haemophilus influenzae*		
- Volwassenes	S	
- Babas en kinders (enige ouderdom)	D	U (24 uur)
- Legionella	S	
- Meningokokkaal	D	U (24 uur)
- Multimiddelbestande bakterieel (sien multimiddelbestand)	S	
- Mikoplasma (primêre atipiese pneumonie)	D	DI
- Pneumokokkaal (insluitende multimiddelbestand)	S	

- *Pneumocystis carinii*	S	
- *Pseudomonas cepacia* (*Burkholderia cepacia*)	S	
- *Staphylococceus aureus*	S	
- Streptokokkus, Groep A (*S. pyogenes*)		
- Volwassenes	S	
- Babas en jong kinders	D	U (24 uur)
-Viraal		
- Volwassenes	S	
- Babas en jong kinders (sien respiratoriese infektiewe siekte, akuut)	C	D[1]
Poliomiëlitis	S	
Psittakose (ornitose)	S	
Q-koors	S	
Rotbytkoors (*Streptobacillus moniliformis*-siekte, *Spirillum minus*-siekte)	S	
Terugvalkoors	S	
Weerstandige bakteriële infeksie of kolonisering (sien multimiddelbestande organismes)	S	
Respiratoriese infektiewe siekte, akuut (indien nie elders gedek)		
- Volwassenes	S	
- Babas en jong kinders (3)	C	D[1]
Respiratoriese sinsitiale virusinfeksie, by babas en jong kinders, en immunogekompromitteerde volwassenes	C	D[1]
Reye se sindroom	S	
Rumatiekkoors	S	
Rickettsia-koorse [SA bosluiskoors]	S	
Rickettsia-pokkies (vesikulêre rickettsiose)	S	
Omloop (dermatofitose, dermatomikose, tinea)	S	
Ritter se siekte (stafilokokkusbrandvelsindroom)	S	
Roseola infantum (extanthem subitum)	S	
Rotavirus-infeksie (sien gastroënteritis)		

Rubella (Duitse masels, sien ook kongenitale rubella)	D	F[v]
Salmonellose (sien gastroënteritis)	S	
Skabies	C	U(24 hrs)
Brandvelsindroom, stafilokokkaal	S	
Skistosomiase (bilharziase)	S	
Shigellose (sien Herpes zoster)		
Gordelroos (sien Herpes zoster)	S	
Sporotrigose	S	
Spirillum minus-siekte (rotbytkoors)	S	
Stafilokokkussiekte (*S. aureus*)		
Vel, wond of brand		
- Major	C	D[1]
- Minor of beperk	S	
-Brandvelsindroom	S	
-Toksieseskoksindroom	S	
Streptobacillus moniliformis-siekte (rotbytkoors)		
Streptokokkus-siekte (groep A streptokokkus)		
- Vel, wond of brand		
- Major	C	U (24 uur)
- Minor of beperk	S	
- Endometritis (puerperale sepse)	S	
- Faringitis by babas en jong kinders	D	U (24 uur)
-Pneumonie by babas en jong kinders	D	U (24 uur)
-Skarlakenkoors by babas en jong kinders	D	U (24 uur)
Streptokokkussiekte (groep B-streptokokkus) neonataal	S	
Streptokokkussiekte (nie groep A of B nie) tensy elders gedek	S	
Multimiddelbestande streptokokki (sien multimiddelbestande organismes)		
Strongiloïase	S	

Sifilis		
- Vel en slymvlies, insluitende kongenitale, primêre, sekondêre	S	
- Latente (tersiêre) en seropositiwiteit sonder letsels	S	
Lintwurmsiekte		
- *Hymenolepis nana*	S	
- *Taenia solium* (vark)	S	
- Ander	S	
Tetanus	S	
Bosluiskoors (Rickettsiaal)	S	
Tinea (fungusinfeksie, dermatofitose, dermatomikose, omloop)	S	
Toksoplasmose	S	
Toksieseskoksindroom (stafilokokkussiekte)	S	
Tragoom, akuut	S	
Loopgraafmond (Vincent se angina)	S	
Triginose	S	
Trigomoniase	S	
Triguriase (sweepwurmsiekte)	S	
Tuberkulose		
- Ekstrapulmonêre, dreinerende letsel (insluitende skrofula)	S	
- Ekstrapulmonêre, meningitis	S	
- Pulmonêre, bevestig of vermoed of laringeale siekte	A	F^w
Veltoets positief met geen spoor van huidige pulmonêre	S	
Tularemie		
- Dreinerende letsel	S	
- Pulmonêr	S	
Maagkoors (*Salmonella typhi*-koors) (sien gastroënteritis)	S	
Tifus, endemies en epidemies	S	

Urienweginfeksie (insluitende piëlonefritis), met of sonder urienkateter	S	
Varicella (waterpokkies)	A, C	F[e]
Vibrio parahaemolyticus (sien gastroënteritis)		
Vincent se angina (loopgraafmond)	S	
Virale siektes - Respiratories (indien nie elders gedek) - Volwassenes - Babas en jong kinders (sien respiratoriese infektiewe siekte, akuut)	S	
- Hemoragiese koorse	S, VHK	F
Kinkhoes (pertussis)	D	F[g]
Wondinfeksies - Major - Minor of beperk	C S	D[1]
Yersinia enterocolitica-gastroënteritis (sien gastroënteritis)	S	
Sigomikose (fikomikose, mukormikose)	S	
Zoster (varicella-zoster)		
- Gelokaliseer in immunogekompromitteerde - pasiënt, gedissemineer - Gelokaliseer in normale pasiënt	A, C S[m]	D[m]

Afkortings wat gebruik word

Tipe voorsorgmaatreëls:

Standaardvoorsorgmaatreëls (S) word te alle tye toegepas benewens een van -

A Lug

C Kontak

D Druppeltjie

VHK Virale hemoragiese koors

Duur van voorsorgmaatreëls:

CN totdat antibiotika gestaak word en kultuurnegatief is

DH duur van hospitalisasie

D1 duur van siekte (met wondletsels beteken D1 totdat hulle ophou dreineer)

U tot tyd gespesifiseer in ure na aanvang van doeltreffende terapie.

F Voetnootnommer onder tipe

Betekenis van boskrifnommer (bv. F[e] voorsorgmaatreël word te alle tye toegepas)

a Geen verband, of verband beperk dreinering nie genoegsaam nie.

b Verband bedek en beperk dreinering genoegsaam.

c Sien ook sindrome of toestande gelys in Tabel 2.

d Installeer gaas in vensters en deure in endemiese gebiede.

e Handhaaf voorsorgmaatreëls totdat alle letsels rowe het. Die gemiddelde inkubasietydperk vir varicella is 10 tot 16 dae, met 'n span van 10 tot 21 dae. Gebruik varicella zoster-immuunglobulien (VZIG) waar toepaslik na blootstelling en ontslaan vatbare pasiënte indien moontlik. Plaas blootgestelde vatbare pasiënte op Voorsorgmaatreëls vir Lug vanaf 10 dae na blootstelling en sit voort tot 21 dae na laaste blootstelling (tot en met 28 dae indien VZIG gegee is). Vatbare persone mag nie die kamer van die afgesonderde pasiënt op voorsorgmaatreëls binnegaan indien ander immune gesondheidsorgwerkers beskikbaar is nie.

f Sonder alle babas tot een jaar oud op voorsorgmaatreëls af by opname vir enige doel, tensy nasofaringeale and urinekulture negatief is vir virus na ouderdom drie maande.

g Bykomende spesiale voorsorgmaatreëls is noodsaaklik vir die hantering en dekontaminering van bloed, liggaamsvloeistowwe en weefsel, en gekontamineerde items van pasiënte met bevestigde of vermeende siekte.

h Totdat twee kulture wat minstens 24 uur uit mekaar geneem is, negatief is.

I Raadpleeg die Nasionale Instituut vir Virologie vir riglyne wat deur provinsiale gesondheidsdepartemente uitgereik is. Gebruik Voorsorgmaatreëls vir Kontak vir die duur van die siekte vir kinders wat minder as ses jaar oud is en wat in doeke of inkontinent is.
Handhaaf voorsorgmaatreëls by babas en kinders onder drie jaar oud vir die duur van hospitalisasie; by kinders van drie tot 14 jaar oud, tot twee weke na die aanvang van simptome; en ander, tot een week na die aanvang van simptome.
Vir babas wat vaginaal of deur 'n keisersnee gebore is en indien die moeder aktiewe infeksie het en membrane geskeur is, vir meer as vier tot ses uur..

m Persone wat vatbaar is vir varicella, loop ook die risiko om varicella te ontwikkel waar blootgestel aan pasiënte met zoster-letsels; daarom moet vatbare persone nie die kamer binnegaan indien immune gesondheidsorgwerkers beskikbaar is nie.

n Baie hospitale ondervind logistieke probleme en vermeende of gediagnoseerde beperkings wanneer groot getalle pasiënte met vermeende influensa toegelaat word gedurende gemeenskapsuitbrekings. Indien voldoende private kamers nie beskikbaar is nie, oorweeg saaldeling deur pasiënte of vermy ten minste dat kamers met hoërisikopasiënte gedeel word.

o Pasiënte moet ondersoek word vir tekens van huidige (aktiewe) pulmonêre tuberkulose. Indien tekens daarvan bestaan, is bykomende voorsorgmaatreëls noodsaaklik (sien tuberkulose 3).

p Bestande bakterieë wat volgens die infeksiebeheerprogram, gegrond op huidige staats-, streek- of nasionale aanbevelings, van spesiale kliniese en epidemiologiese belang is.
Vir nege dae na die aanvang van swelling.
Handhaaf voorsorgmaatreëls vir die duur van hospitalisasie wanneer chroniese siekte voorkom by 'n pasiënt met 'n immuniteitsgebrek. Vir pasiënte met 'n kortstondige plastiekkrisis of rooiselkrisis, handhaaf voorsorgmaatreëls vir sewe dae.
Handhaaf voorsorgmaatreëls vir vyf dae nadat pasiënt op doeltreffende terapie geplaas is.
Vermy saaldeling of plasing in dieselfde kamer met 'n sistiesefibrose (SF)-pasiënt wat nie met *B. cepacia* geïnfekteer of gekoloniseer is nie. Persone met SF wat besoek aflê of sorg verskaf en wat nie met *B. cepacia* geïnfekteer of gekoloniseer is nie, kan kies om 'n masker te dra wanneer binne een meter vanaf 'n gekoloniseerde of geïnfekteerde pasiënt.
Vermy plasing in dieselfde kamer met 'n immunogekompromitteerde pasiënt.
Tot sewe dae na die aanvang van 'n huiduitslag.
Staak voorsorgmaatreëls slegs wanneer TB-pasiënt klinies verbeter en drie opeenvolgende negatiewe spuugsmere op verskillende dae versamel is of TB uitgesluit is.
Handhaaf alle voorsorgmaatreëls totdat die pasiënt ophou bloei.

TABEL II

KLINIESE SINDROME OF TOESTANDE WAT BYKOMENDE EMPIRIESE VOORSORGMAATREËLS REGVERDIG OM OORDRAG VAN EPIDEMIOLOGIES BELANGRIKE PATOGENE TE VOORKOM HANGENDE BEVESTIGING VAN DIAGNOSE*

Kliniese sindroom of toestand**	**Potensiële patogene**	**Empiriese Voorsorgmaatreëls**
Diaree		
Akute diareeagtige infeksies: Kontakoorsaak by 'n pasiënt wat inkontinent of in doeke is.	Enteriese patogene***	Kontak
Diaree by 'n volwassene met 'n geskiedenis van onlangse antibiotikagebruik	Clostridium	Druppeltjie
Huiduitslag of eksanteme, algemeen, etiologie onbekend		
Petigiaal/echimoties met koors	*Neisseria meningitidis*	Druppeltjie
Vesikulêr	Varicella	Lug en kontak
Makulopapulêr met verkoue en koors	Masels	Lug
Respiratoriese infeksies		
Hoes/koors/bolob- pulmonêre infiltraat by 'n MIV-negatiewe pasiënt of 'n pasiënt met lae risiko vir MIV-infeksie	*Mycobacterium tuberculosis*	Lug
Hoes/koors/pulmonêre infiltraat in enige longligging by 'n MIV-geïnfekteerde pasiënt of 'n pasiënt met hoë risiko van MIV-infeksie	*Mycobacterium tuberculosis*	Lug
Paroksismale of erge nawerkende hoes gedurende tydperke van pertussis-aktiwiteit	*Bordella pertussis*	Druppeltjie

Veral brongiolitis en kroep by babas en jong kinders	Respiratoriese sinsitiale virus of para-influenza-virus	Kontak

Risiko van multimiddelbestande mikro-organismes

Geskiedenis van infeksie of kolonisering met multimiddelbestande organismes	Bestande bakterieë	Kontak
Vel en wond indien urienweginfeksie by 'n pasiënt met 'n onlangse verblyf in hospitaal- of verpleeginrigting in 'n fasiliteit waar multimiddelbestande organismes algemeen is	Bestande bakterieë	Kontak

Vel- en wondinfeksie

Abses of dreinerende wond wat nie bedek kan word nie	*Staphylococcus aureus,* Groep A-*streptococcus*	Kontak

Professionele infeksiebeheerbeamptes word aangemoedig om hierdie tabel te verander of aan te pas volgens plaaslike toestande. Om te verseker dat toepaslike empiriese voorsorgmaatreëls altyd geïmplementeer word, moet hospitale stelsels hê om pasiënte roetinegewys volgens hierdie kriteria te evalueer as deel van hulle vooropnamesorg.

** Pasiënte met die sindrome of toestande wat hieronder gelys word, kan atipiese tekens of simptome toon (bv. pertussis by pasgeborenes, en volwassenes hoef nie paroksismale of erge hoes te hê nie). Die klinikus se vermoede-indeks moet gelei word deur die voorkoms van spesifieke toestande in die gemeenskap, asook deur kliniese oordeel.

Die organismes gelys onder "Potensiële patogene" is nie bedoel om die volledige, of selfs die waarskynlikste, diagnose te verteenwoordig nie, maar eerder die moontlike etiologiese agense wat verdere voorsorgmaatreëls verg bykomend by Standaardvoorsorgmaatreëls totdat hulle uitgesluit kan word.

OPSOMMING VAN TIPES VOORSORGMAATREËLS EN PASIËNTE WAT VOORSORGMAATREËLS VEREIS□

Afkortings in lys voorsorgmaatreëls

α Sien Tabel I vir 'n volledige lys infeksies wat voorsorgmaatreëls vereis, insluitende toepaslike voetnote.

ß Sekere infeksies vereis meer as een tipe voorsorgmaatreël.

□ Sien "Guidelines for Preventing the Transmission of Tuberculosis in Health-Care Facilities", verkrygbaar van die Departement van Gesondheid.

1. Standaardvoorsorgmaatreëls

Gebruik Standaardvoorsorgmaatreëls vir die versorging van alle pasiënte.

2. Voorsorgmaatreëls vir Lug

Benewens die Standaardvoorsorgmaatreëls, gebruik Voorsorgmaatreëls vir Lug vir pasiënte van wie dit bekend is of vermoed word dat hulle ernstige siektes het wat deur luggedraagde druppeltjiekerne oorgedra word. Voorbeelde van sulke siektes sluit in:

- Masels
- Varicella (insluitende gedissemineerde zoster)[ß]
- Tuberkulose[□]

3. Voorsorgmaatreëls vir Druppeltjies

Benewens Standaardvoorsorgmaatreëls, gebruik voorsorgmaatreëls vir druppeltjies vir pasiënte van wie dit bekend is of vermoed word dat hulle siektes het wat deur grootpartikeldruppeltjies oorgedra word.

Voorbeeld van sulke siektes sluit in:

- Indringende *Haemophilus influenzae*-Tipe B-siekte, insluitende meningitis, pneumonie, epiglottitis en sepse.
- Indringende *Neisseria meningitidis*-siekte, inlsuitende meningitis, pneumonie en sepse.

Ander ernstige bakteriële respiratoriese infeksies wat deur druppeltjieoordrag versprei word, insluitende:

- Difterie (faringeaal)

- Mikoplasmapneumonie
- Pertussis
- Pneumoniese pes
- Streptokokkusfaringitis, pneumonie of skarlakenkoors by babas en jong kinders.

Ernstige virusinfeksies wat deur druppeltjieoordrag versprei word, insluitende:

- Adenovirus[8]
- Influensa
- Pampoentjies
- Parvovirus B12
- Rubella

4. Voorsorgmaatreëls vir Kontak

Benewens die Standaardvoorsorgmaatreëls, gebruik Voorsorgmaatreëls vir Kontak vir pasiënte van wie dit bekend is of vermoed word dat hulle ernstige siektes het wat deur regstreekse kontak of deur kontak met items in die pasiënt se omgewing oorgedra word. Voorbeelde van sulke siektes sluit in:

* Gastroïntestinale, respiratoriese, vel- of wondinfeksies of kolonisering met multimiddelbestande bakterieë wat volgens die infeksiebeheerprogram, gegrond op huidige staats-, streek- of nasionale aanbevelings, as van spesiale kliniese en epidemiologiese belang beskou word.

* Enteriese infeksies met 'n lae infektiewe dosis of verlengde omgewingsoorlewing, insluitende:

- *Clostridium difficile*
  - Vir pasiënte wat in doeke of inkontinent is: enterohemoragiese *Escherichia coli* O157: H7, Shigella, Hepatitis A of Rotavirus
  - Respiratoriese sinsitiale virus, para-influensavirus of enterovirale infeksies by babas en jong kinders.
  - Velinfeksies wat hoogs aansteeklik is of wat op droë vel kan voorkom, insluitende:
    - Difterie (kutaan)
    - Herpes simplex-virus (neonataal of mukokutaan)
    - Impetigo

- Major (nie-afgeslote) absesse, sellulitis of dekubitus-ulkusse
- Pedikulose (luise)
- Skabies
- Stafilokokkale furunkulose by babas en jong kinders.
- Zoster (gedissemineer of by die immunogekompromitteerde gasheer)
- Virale/hemoragiese konjunktivitis
- Virale hemoragiese infeksies (Ebola, Lassa, Marburg, Kongo-Krim) (gedurende vroeë niehemoragiese stadia)

5. Voorsorgmaatreëls t.o.v. Formidabele Epidemiese Siekte (FES)

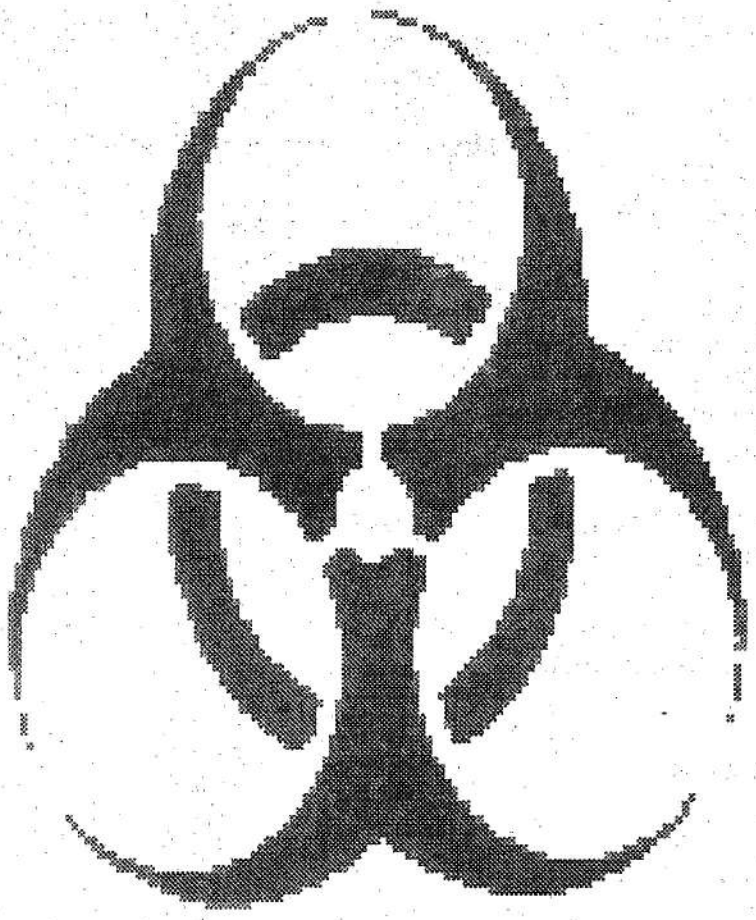
Benewens die Standaardvoorsorgmaatreëls en Voorsorgmaatreëls vir Kontak, gebruik FES-voorsorgmaatreëls vir persone van wie dit bekend is of vermoed word dat hulle 'n virale hemoragiese koors het. Voorbeelde van sulke siektes is:

- Virale hemoragiese Ebola-koors
- Hemoragiese Marburg-koors
- Hemoragiese Kongo-Krim-koors
- Lassa-koors

AANHANGSEL D

[Regulasies 10(2)(*f*),11(4)(*b*) en 14(*b*)]

BIOGEVAARTEKEN



AANHANGSEL E

[REGULASIES 15(2) en 16(*a*) en (*b*)]

AANWYSERS BETREFFENDE BEPERKINGSMAATREËLS EN BEPERKINGSVLAKKE

Die maatreëls vervat in hierdie Aanhangsel moet toegepas word volgens die aard van die aktiwiteite, die risikoberaming en die aard van die betrokke GBA.

A. BEPERKINGSMAATREËLS	B. BEPERKINGSVLAKKE		
	Vlak 2	**Vlak 3**	**Vlak 4**
1. Die werkplek moet afgesonder wees van enige ander aktiwiteite in dieselfde gebou.	Nee	Aanbeveel	Ja
2. Lug wat in die werkplek ingelaat of daaruit gesuig word, moet gefiltreer word met behulp van hoë-doeltreffendheidlugfilters (HEPA) of soortgelyke maatreëls.	Nee	Ja, of uitsuig en veilige vryvrylating van lug	Ja, of inlaat en uitsuig en veilige vryvrylating van lug
3. Toegang moet tot gemagtigde persone beperk word.	Aanbeveel	Ja	Ja, via lugslot
4. Die werkplek moet verseëlbaar wees om ontsmetting moontlik te maak.	Nee	Aanbeveel	Ja
5. Gespesifiseerde ontsmettingsprosedures.	Ja	Ja	Ja
6. Negatiewe lugdruk ten opsigte van die atmosfeer moet in die werkplek gehandhaaf word.	Nee	Aanbeveel	Ja
7. Doeltreffende vektorbeheer, bv. knaagdiere en insekte.	Aanbeveel	Ja	Ja
8. Oppervlakke wat waterdig is en maklik om skoon te maak.	Ja, vir bank	Ja, vir bank en vloer	Ja, vir bank, mure, vloer en plafon
9. Oppervlakke wat weerstand bied teen sure, alkali's, oplosmiddels en ontsmettingsmiddels.	Aanbeveel	Ja	Ja
10. Veilige berging van 'n biologiese agens.	Ja	Ja	Ja, veilige berging

11. 'n Observasievenster of alternatief moet beskikbaar wees sodat okkupeerders gesien kan word.	Aanbeveel	Aanbeveel	Ja
12. 'n Laboratorium moet eie toerusting bevat.	Nee	Aanbeveel	Ja
13. Geïnfekteerde materiaal, met inbegrip van enige dier, moet hanteer word in 'n veiligheidskabinet of isolator of ander geskikte houer.	Waar toepaslik	Ja, waar infeksie deur die lug geskied	Ja
14. Verbrandingsoond vir die wegdoening van dierekarkasse.	Aanbeveel	Ja (beskikbaar)	Ja, ter plaatse

AANHANGSEL F

[REGULASIE 16(*c*)]

BEPERKING VIR BEDRYFSPROSESSE

Groep 1 biologiese agense

Vir werk met groep 1 biologiese agense, met inbegrip van lewende verswakte vaksiene, moet die beginsels van goeie beroepsveiligheid en -higiëne nagekom word.

Groep 2, 3 en 4 biologiese agense

Dit kan raadsaam wees om beperkingsvereistes uit verskillende kategorieë hieronder te selekteer en te kombineer op grond van 'n risikobepaling met betrekking tot enige bepaalde proses of deel van 'n proses.

A. BEPERKINGSMAATREëLS	B. BEPERKINGSVLAKKE		
	Vlak 2	**Vlak 3**	**Vlak 4**
1. Lewensvatbare organismes moet in 'n stelsel hanteer word wat die proses fisies van die omgewing skei.	Ja	Ja	Ja
2. Lug wat uit 'n geslote stelsel gesuig word, moet behandel word ten einde—	vrylating te minimeer	vrylating te voorkom	vrylating te voorkom
3. Monsterversameling, byvoeging van materiaal tot 'n geslote stelsel, en die oordrag van lewensvatbare organismes na 'n ander geslote stelsel moet uitgevoer word ten einde—	vrylating te minimeer	vrylating te voorkom	vrylating te voorkom
4. Kultuurvloeistof in groot maat mag nie uit 'n geslote stelsel verwyder word nie tensy die lewensvatbare organismes—	geïnaktiveer is deur bevestigde metodes	geïnaktiveer is deur bevestigde chemiese of fisiese metodes	Geïnaktiveer is deur bevestigde chemiese of fisiese metodes
5. Seëls moet ontwerp wees om—	vrylating te minimeer	vrylating te voorkom	vrylating te voorkom

6. Geslote stelsels moet binne 'n beheerde gebied geleë wees.	Opsioneel	Opsioneel	Ja, en doelgebou
(a) Biogevaartekens moet vertoon word.	Opsioneel	Ja	Ja
(b) Toegang moet tot benoemde personeel beperk word.	Opsioneel	Ja	Ja, via 'n lugslot
(c) Personeel moet beskermende klere dra.	Ja, werkklere	Ja	'n Volledige verkleding
(d) Dekontamineringsen wasfasiliteite moet vir personeel voorsien word.	Ja	Ja	Ja
(e) Personeel moet stort voordat beheerde gebied verlaat word.	Nee	Opsioneel	Ja
(f) Uitvloeisel uit wasbakke en storte moet opgevang en geïnaktiveer word voor vrylating.	Nee	Opsioneel	Ja
(g) Die beheerde gebied moet genoegsaam geventileer wees om lugkontaminering te voorkom.	Opsioneel	Opsioneel	Ja
(h) Negatiewe lugdruk ten opsigte van die atmosfeer moet in die beheerde gebied gehandhaaf word.	Nee	Opsioneel	Ja
(i) Lug ingelaat en uitgesuig in die beheerde gebied moet met hoëdoeltreffendheidlugfilters gefiltreer word.	Nee	Opsioneel	Ja
(j) Die beheerde gebied moet ontwerp wees om storting van die hele inhoud van die geslote stelsel te bevat.	Nee	Opsioneel	Ja
(k) Die beheerde gebied moet verseëlbaar wees om beroking moontlik te maak.	Nee	Opsioneel	Ja

(l) Uitvloeisel moet behandel word voor finale vrylating.	Onaktivering deur bevestigde metodes	Onaktivering deur bevestigde chemiese of fisiese metodes	Onaktivering deur bevestigde chemiese of fisiese metodes

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