HOSPITAL KANOWIT

DOCUMENT: PREVENTION AND CONTROL OF INFECTION POLICIES AND PROCEDURES	
DOCUMENT NO:	**EDITION: 5TH**
EFFECTIVE DATE : 28.11.2023 **EXPIRED DATE** : 28.11.2026	**NO. OF PAGE: 93**

DOCUMENT: Departmental Operational Policies and Procedures – Infection Control Unit

OBJECTIVE: To create a conducive and safe environment for patients, healthcare workers and visitors

	REVISED BY	APPROVED BY
SIGNATURE & CHOP:	PAULINE ANAK GUNDI JURURAWAT U32 (TBK1) LJM NO : 46910 HOSPITAL KANOWIT	DR. BERNADETTE SYONNIA BT JARU SAWAT PENGARAH HOSPITAL KANOWIT 96700 KANOWIT SARAWAK MMC NO : 61590
DATE:	28.11.2023	28.11.2023

1

1. PREVENTIVE AND CONTROL PROCEDURES FOR ALL ASEPTIC TECHNIQUES AND PRACTICES RELATED TO STERILISATION AND DISINFECTION

1.1. DECONTAMINATION

A process which removes or destroys microorganisms to render an object safe for further use. It includes cleaning, disinfection and sterilization. The choice of method depends on a number of factors including type of material of object, number and types of organisms involved and risk of infection to patient and staff.

1.2. CLEANING

A process which removes foreign material (dust, soil), microorganisms and organic matter (faeces, blood) from an object. Cleaning is an essential prerequisite to disinfection and sterilization. In general cleaning should use soap and water.

1.3. DISINFECTION

A process which reduces the number of vegetative microorganisms but not spores.

1.4. STERILIZATION

A process, which destroys all types of microorganism but not all microbial forms.

1.5. DISINFECTANT

A chemical compound used to inactivate vegetative microorganism but not all microbial forms.

1.6. ANTISEPTIC

A low-level disinfectant formulated for use on skin or tissue. Should not be used to decontaminate inanimate objects.

1.7. HIGH LEVEL DISINFECTION

Level of disinfection required when processing semi critical items. Destroy vegetative bacteria, mycobacteria, fungi and enveloped (lipid) and non-enveloped (non lipid) viruses but not necessarily bacterial spores. Items must be thoroughly cleaned prior to high level disinfection.

1.8. INTERMEDIATE LEVEL DISINFECTION

Level of disinfection required for some semi critical items. Kills vegetative bacteria, most viruses and most fungi but not resistant bacterial spores.

1.9. LOW LEVEL DISINFECTION

Level of disinfection required when processing noncritical items or some environmental surfaces. Kills most vegetative bacteria and some fungi as well as enveloped (lipid) viruses but do not kill mycobacteria or bacterial spores. Typically used to clean environmental surfaces.

1.10. CLASSIFICATION OF DEVICES AND INSTRUMENTS ACCORDING TO CLINICAL USE

Categories of devices	Criteria
Critical items	a. An object that enters sterile tissue or vascular system. b. Items should be purchased as sterile or should be sterilized.
Semi critical items	a. An object that comes in contact with mucous membranes or skin that is not intact. b. Should be free of all microorganisms. c. Require high level disinfection with chemical disinfectant.
Non critical items	a. An object that comes in contact with intact skin but not mucous membranes. b. Low level disinfectants are used for non-critical items

1.11. LEVELS AND TYPES OF DISINFECTANTS USED IN CLINICAL PRACTICE

Disinfection	Category of devices	Examples of item	Disinfectant
High level	Semi critical items	- Flexible/Rigid scope - Laryngoscope blades - Respiratory therapy equipments - Nebulizer cups - Anaesthetic delivery system - Nasal specula - Ear syringe nozzle - Vagina specula - Vagina probes	Preferred: a) Aldehydes - 2% glutaraldehyde - 0.55% Orthophthaldehyde b) Others: - 6% hydrogen peroxide - Peracetic acid - Chlorine 0.1% solution
Intermediate level	Some semi critical items	- Glass thermometer - Electronic thermometer - Hydrotherapy tanks - Bath tubs in burn units	- Alcohol - Hypochlorite solutions - Iodophors - Phenolics
Low level	Reusable Equipment	- Stethoscopes	- Alcohol

Disinfection	Category of devices	Examples of item	Disinfectant
Low level	All reusable equipment	- Bedpans - Urinals - Blood pressure cuffs - Ear specula - Equipment surface - Trolley surface - Floor, walls and furniture - Intravenous poles - Wheelchairs - Beds - Basinets	- Alcohol - Quaternary ammonium compounds - Phenolics - Hypochlorite solutions

1.12 GENERAL PRINCIPLES FOR DISINFECTANT USAGE

1.12.1. Follow the manufacturer's instructions (concentration/dilution/usage)
1.12.2. Check the expiry date of the solutions
1.12.3. Ensure that the optimum dilution is used
1.12.4. Always wash and clean instruments before disinfection
1.12.5. Adequate contact time and complete immersion
1.12.6. Do not refill disinfectant containers. Topping up is not allowed.
1.12.7. Where disinfectants are indicated for use on surfaces, Wipe- do not soak.

1.13 WHEN DISINFECTANT SHOULD NOT BE USED:

1.13.1. Where sterility is necessary
1.13.2. Where heat treatment is possible
1.13.3. Where cleaning is sufficient
1.13.4. On single use (disposable) items which should be discarded after use
1.13.5. For the storage of sterile instruments
1.13.6. As cleaning agent or deodorant

1.14 WHEN DISINFECTANTS MAY BE USED:

Disinfectants should only be used if reduction in microbial load is needed, disinfection by heat is impossible and cleaning is insufficient. These are usually applicable for:

1.14.1. Treatment of skin and mucous membranes (use antiseptics only)
1.14.2. The disinfection of instruments when physical methods cannot be used making potentially infective items safe for subsequent handling
1.14.3. The decontamination of surfaces where indicated

1.15. THE FOLLOWING POINTS MUST BE CONSIDERED WHERE DISINFECTANTS ARE USED:

1.15.1. MAKING UP THE DISINFECTANTS

Disinfectants be used at their correct recommended in use dilutions. Arrange for the disinfectant to be distributed at the correct use dilution whenever possible and date of issue and expiry date must be indicated. All dilution should take place preferably in the pharmacy (controlled condition) and supplied as small containers of in use dilution. Both the diluent and the disinfectant must be measured to produce a final solution at the recommended dilution. Written instructions for preparing solutions should be posted in all areas where this work is done. The instructions should state the concentration to be made up and give a detailed description of the way in which that concentration is to be measured. Disinfectants should not be mixed with detergents, as they may be incompatible with each other.

1.15.2. CONTAINERS (INCLUDING STOPPERS)

Containers, including stoppers used for making up, distributing and storing disinfectants should be maintained in a hygiene condition. They should preferably be made of plastic which can withstand 100% boiling water. The containers when empty should first be cleaned with low lather detergent before heat treatment (autoclave if autoclavable or filled up with boiling water, allowed to stand for 20 minutes, then pour the water away) before refilling. Cleaning alone is insufficient. Containers must be cleaned regularly and should not be topped up with fresh disinfectants as the level drops. Containers which cannot easily be cleaned or which cannot withstand heat treatment must not be used for disinfectants. Large drums, stone jars and wooden tubs are unsuitable. Suitable sized containers should be used. Wards should ask for required quantity of necessary disinfectant and use it judiciously.

1.15.3. SUPERVISION

In every department where disinfectants are used, a disinfectant record book should be kept to show the number of containers, the names of disinfectants and their concentration in use. The containers should be as few as possible and extra unofficial ones should not be allowed. In each department, a senior member of the staff may be responsible for the disinfectant record book, and for monitoring the use of the solutions once a week, preferably late in the week. The containers in the department should be counted, recorded in the book and the method of preparation noted. The book should be available for regular inspection and it should be signed after inspection.

1.15.4. MONITORING

In use test is to monitor the proper use of disinfectants. It should only be done during outbreak. For in use testing: collect aseptically about 2 ml of disinfectant from containers into sterile bottles, label and send promptly to the microbiology laboratory.

1.15.5. USAGE

This guideline deliberately limits the number of types of disinfectants to be used so as to increase cost effectiveness, enhance safety, encourage familiarity with the products and ensure adequacy of supplies. This guideline should be used for their specific purposes.

1.15.6. CHOICE

All disinfectants in used and to be purchase must be approved by the hospital committee. It is advisable to request the manufacturers of endoscopes to specify the range of disinfectants that are compatible with their endoscopes before purchasing.

1.16 RECOMMENDATIONS FOR METHODS OF DISINFECTION

Items	**Recommendations**	**Minimum frequency/cleaning process**	**Remarks**
Airway tubing Nasal prong Face mask Venti mask High flow mask Nebuliser mask Nebulizer cups	Single use only	Single patient use only, disposed after 24 hours	If single use is NOT possible, wash with detergent, rinsed thoroughly with clean water and then air dried after each use.
Spacers	Wash with detergent, rinsed thoroughly with tap water and air dried.	Daily	
Bottle for humidifier	Disinfect with low level disinfectant	Weekly	
Anaesthetic delivery system: Removable Part -ventilator tubing -Ambu bag	- Wash with enzymatic detergent -Rinsed thoroughly with tap (clean) water -Soak with High level disinfectant or send for sterilization.	Between patients	Use of antibacterial filters are recommended
Bath tubs in burn units	Low level disinfectant e.g 0.1% hypochlorite.	Daily Clean after each patient	Dry before use
Bed frames	Clean between patients with low level disinfectant e.g. 0.1% hypochlorite.		-
Bedpans and urinals	Mechanical washer disinfector at 80’C for 1 min	Clean after each use if designated to patient	Remove gross soil and fluids before cleaning.

		Between patients	In absence of disinfecto, use soap and brush. Rinse with tap water.
Blood pressure cuffs	Wipe with low level disinfectant e.g.70% alcohol and dry.	Daily When soiled	Ideally stays with patient until discharge
Biopsy forceps and endoscopic brushes	Preferable use disposable		Sterilized if reuse
Catheters (urinary and suction)	Single use		Do not sterilized
Call bells	Wipe with soap and water except for infectious cases to use LLD	Daily Between patients	
Cardiac monitors	Wipe with low level disinfectant e.g. 70%alcohol or hypochlorite solution or wipes	Daily When soiled	Ideally stays with patient until discharge
Cast cutting Blades Saws	Clean only (water & detergent) Clean only	When soiled	

Items	**Recommendations**	**Minimum frequency/cleaning process**	**Remarks**
Ceiling and walls Ceiling lights Air inlet and outlet Exhaust fan	Wipe with clean damp cloth periodically. High dust vacuum or cleaning with cobweb brush. Wipe with clean damp cloth with detergent water.	Twice a month Upon request	High risk area e.g.OT,HDU,Maternity should be carried out once a week preferable to use a vacuum cleaner. Wallpaper is not recommended.
Cupboards, shelves and bedside lockers	Wipe with clean damp cloth with detergent and water daily.	Daily After discharge of patient When visibly dirty Between patients	Wash with detergent and water once a week and after discharge of discharge of patient. Patient with MDRO-use low level disinfectant.
Chairs	Wipe with low level disinfectant	Daily When soiled	Known MDRO patients
Clippers	Sterilize		
Dressing trays and trolleys including medication trolley	Wipe with low level disinfectant e.g. 70% alcohol and dry.	After each use	Wash with detergent when soiled.
Diagnostic Imaging Portable grid/Xray cassette	Damp dust or clean with water and anionic detergent Wipe with disinfectant wipes/70% alcohol and dry.	Weekly Weekly	Apply plastic cover for patients with MDRO or with skin lesions.

Doppler Transducer Probes	Dam wipe with water Wipe with disinfectant wipes.	Daily In between patients	Apply plastic cover for patients with MDRO or with skin lesions.
ECG machines and cables	Dam dust mop or clean with warm water and anionic detergent or low level disinfectant 0.1% hypochlorite for routine cleaning.	Daily In between patients	Patients with MDRO or with skin lesions Remove gel prior to disinfect.
Floors, furniture and fittings	Dust mop or vacuum. Use clean water containing multi purpose detergent for routine cleaning. Use low level disinfectant 0.1% hypochlorite	3 times daily (all wards and patients area) ETD,OT,HDU,ID ward – when visibly dirty 4 times daily	Floors, furniture and fittings Do not use broom Freshly laundered mop for each use.
Flowmeter oxygen	Wipe with low level disinfectant 70 % alcohol or hypochlorite solution or wipe.	Daily In between patients	
Glucometer	Wipe with low level disinfectant 70 % alcohol and dry.	After each use	
Incubators / Bassinette	Wipe interior and exterior with sterile water using sterile water using sterile cloths daily when in use. On discharge, wipe incubators with 0.1% hypochlorite solution followed by using clean cloth and sterile water.	Daily When soiled In between patients	-
Intravenous Pumps, poles & warmers	Use low level disinfectant with 0.1% hypochlorite.	Daily When soiled In between patients	
Laryngoscope Handle Blade	Wipe with low level disinfectant with 70% alcohol and dry.	In between patients When soiled.	
Mattresses and pillows	Protect with waterproof plastic/PVC covers. Wipe the plastic covers with 1% hypochlorite	Clean in between patient	Change the plastic cover on patient discharge
Nebulizers and humidifier	1. Use disposable as far as possible / Single use OR 2. Discard fluids. Clean with detergent and water. Rinse with hot water(80'C).	In between patient	Dry before reused.
Opthalmoscope	Wipe with low level disinfectant 70 % alcohol or	In between patient	

	Hydrogen peroxide 0.5% wipes.		
Orthopaedic equipment e.g. crutches, traction etc.	Use low level disinfectant e.g. 0.1% hypochlorite.	In between patient	
Otoscope Handle	Wipe with low level disinfectant 70 % alcohol or Hydrogen peroxide 0.5% wipes.	In between patient	
Ear speculum Otoacoustic Emission screening tips	Wipe with 70 % alcohol Disposable		
Oximeter probe	Low level disinfectant following manufacturers instruction or disposable	Daily In between patient	
Resuscitation cart/trolley/defibrillator and tray	Use low level disinfectant 0.1 hypochlorite	Daily After each use	Avoid taking Cart into contact precautions room. Have a designated person to pass supplies as required.
Suction machine	Use low level disinfectant 0.1% hypochlorite.	When soiled In between patient	
Stethoscope	Wipe with 70 % alcohol OR Disposable cover	In between patient	Use designated stethoscope for infectious or high risk patients.
Syringes	Use sterile disposable syringe		
Razors for shaving	Single use only		
Skin preparation for injections, blood culture, Intravenous infusion	Alcohol swab for 30 seconds. Allow to dry. Povidone iodine or chlorhexidine are required for certain procedures such as central line or pacemaker insertion (chlorhexidine alcohol swab if available)		Central venous lines insertion should use full surgical aseptic technique.
Hand disinfectant dispensers	Preferably foot operated wall dispensers for liquid disinfectant.		Do not top up. Use disposable container.
Tables Cardiac Bedside	Use 0.1% hypochlorite	Daily Between patients When soiled	
Telephone	Wipe with 70% alcohol during each shift.	Daily.	
Thermometer	Use sheath cover or wipe with 70% alcohol	After every use	Use an individual thermometer for each patient if possible Store dry

Digital Thermometer	Use disposable ear probe cover. Wipe with 70% alcohol.(If ear probe cover not available)		-
Tourniquet	Advise for disposable band		
Transport equipment Walker Wheelchair Stretcher	Use low level disinfectant e.g. 0.1% hypochlorite.	After each use	
Walls	Wipe with clean damp cloth with detergent and water.	Weekly In between	Wallpaper is not recommended. High risk area should be carried out once a week

1.17 ADVERSE EFFECT AND CAUTION LEVELS

No	Disinfectants	Adverse effect	Caution levels
1.	Glutaraldehyde	Nausea, headache, eye irritation, dermatitis. Hypersensitivity.	a. Use low allergy latex gloves for short term use or nitrile gloves for longer periods. b. Masks/respirators e.g. organic vapour masks, for short term possible high exposure. c. Goggles are compulsory. d. Do not smoke, eat, and drink in the area. e. Small spills can be neutralised with ammonia. Larger spills require a special clean up team. f. Should not be disposed of by draining into a sewer system or natural waterways.
2.	Orthophthaldehyde 0.55%	Nausea, headache, eye irritation, dermatitis. Hypersensitivity.	
3.	Formaldehyde	Contact dermatitis. Irritation to eyes, nose and upper respiratory tract.	
4.	Peracetic acid	Corrosive to skin and instrument.	Can be corrosive with aluminium.
5.	Hydrogen peroxide 7.35% with peracetic acid 0.23%	Skin and mucous membrane irritation.	-
6.	Chlorhexidine 0.05% - 0.5%	Irritation to skin, conjunctiva and sensitive tissue.	a. Should not be used routinely on individuals who have wounds involving more than the superficial layers of the skin.

			b. Chlorhexidine gluconate preparations that are alcohol based should not be exposed excessive heat (i.e temperatures exceeding 40'C) and should be kept away from flames or devices that may generate an electric spark. c. When used for hand antisepsis, these alcohol based Chlorhexidine gluconate preparations dry rapidly as the hands are rubbed together and are no longer flammable after drying.
6.	Chlorhexidine 0.05% - 0.5%	Irritation to skin, conjunctiva and sensitive tissue.	a. Should not be used routinely on individuals who have wounds involving more than the superficial layers of the skin. b. Chlorhexidine gluconate preparations that are alcohol based should not be exposed excessive heat (i.e temperatures exceeding 40'C) and should be kept away from flames or devices that may generate an electric spark. c. When used for hand antisepsis, these alcohol based Chlorhexidine gluconate preparations dry rapidly as the hands are rubbed together and are no longer flammable after drying.
7.	Alcohol 90%	Skin irritation. Dry skin	Volatile. Evaporation may diminish concentration. Inactivated by organic material. May harden rubber or cause deterioration of glues. Use in the OR is contraindicated.
8.	Alcohol 70%		
9.	Cetrimide Lotion 1%	Skin irritation	-

10	Crystal violet strength: Gentian violet 0.5% solution 1%, 2%	Mucous membrane irritation	a. Avoid breathing dust. b. Store in a tightly closed container. c. Use with adequate ventilation. d. Wash thoroughly after handling. e. Do not get in eyes. f. Avoid contact with skin and clothing. g. Should not be used in the presence of extensive excoriation or ulceration.
11.	Flavine lotion 1:1000 (Acriflavine - acridine + flavine)	Teratogenic. May cause damage to the unborn child.	Harmful if swallowed, inhaled or absorbed through the skin.
12.	Hydrogen Peroxides 20 volume	Eye irritation	Avoid contact with eyes. Keep container closed. Wash thoroughly after handling.
13	Potassium permanganate Lotion 1.5%	Skin and eye irritation	a. Keep from contact with clothing and other combustible materials. b. Do not store near combustible materials. c. Remove and wash contaminated clothing promptly. d. Do not get in eyes, on skin, or on clothing. e. Do not breathe dust. f. Keep container closed. g. Use only with adequate ventilation. h. Wash thoroughly after handling clothing and shoes. i. Wash clothing before reuse.

1.18 SAFETY PRECAUTIONS IN USE OF DISINFECTANTS

Compound	PPE	Preparation room	Others
1. **ALCOHOLS** Eg.Isopropyl Alcohol Workplace exposure limit OSHA: PEL 400 ppm average over 8 hour workshift PEL 500 ppm, not to be exceeded during any 15 minutes work period. *PEL- Permissible esposure limit *PPM – parts of a substance per million part of air.	- Gloves - Face shields - Suits - Footwear - Headgear - Splash-proof safety Goggles - Respirators (if local exhaust ventilation or enclosure is not available)	Enclose operations Local exhaust ventilation at site of chemical release Eyewash fountains Emergency shower facilities.	- Ongoing education and training - Soap - Mild detergent - Tap water
2. CHLORINE **Workplace exposure limit** **OSHA:** 1ppm (not to be exceeded at any time) **NIOSH:** 0.5ppm (0.3 mg/m3)	- Splash proof safety goggles - Gloves - face shields - Full length clothing - Footwear - Headgear - Respirators (if local exhaust ventilation or enclose operations not available)	Enclose operation Local exhaust ventilation. Eyewash fountains Emergency shower facilities.	- Ongoing education and training - Soap - Mild detergent - Tap water
3. IODINE/IODOPHOR **Workplace exposure limit**	- Rubber gloves - Face shields - Apron - Chemical goggles - Full length clothing - Safety shoes - Respirator equipped with cartridge use condition generate mist/vapour	Local exhaust ventilation Eye wash fountains Emergency shower facilities.	- Ongoing education and training - Soap - Mild detergent - Tap water
4. PHENOLICS	- Gloves - Face shields - Splash- proof safety Goggles -Respirators	Exhaust ventilation Process enclosure Eye wash facility Emergency shower	- Ongoing education and training - Soap - Mild detergent - Tap water

	recommended if TLVS are exceeded	facilities	
5. QUATERNARY AMMONIUM COMPOUND Workplace exposure limit	-Waterproof gloves- -Splash proof goggles -Apron	Normal room Ventilation Eye wash facilities	- Ongoing Education and training - Soap - Mild detergent - Tap water
6. GLUTARALDEHYDE Workplace exposure limit 0.2 ppm (should not be exceeded at any time) When skin contact occurs, you may be overexposed, even though air levels are less than the limit listed above	- Gloves - Apron - Clothing - Footwear - Head gear - Mask - Goggles	Enclose Local exhaust ventilation at the site of chemical release Respirators should be worn if local exhaust ventilation or enclosure is not use. Emergency shower facility Eyewash facility Post hazard and warning information in the work area Label the chemical use in the workplace **Engineering controls are the most effective way of reducing exposure	- Ongoing education and training - Concerning chemical hazard and control - Soap/Mild detergent -Tap water
7. PERACETIC ACID Workplace exposure limit	- Gloves - Safety glasses	Normal room ventilation	- Ongoing education and training - Soap - Mild detergent - Tap water

Reference: 1. Ministry of Health guideline for selection and use of disinfectants December 2007.

2. Disinfection guidelines 2nd Edition 2019

2. FIGHT AGAINST ANTIMICROBIAL RESISTANCE.

PROPOSAL FOR ANTIMICROBIAL STEWARDSHIP (AMS) COMMITTEE AND TEAM IN KANOWIT HOSPITAL.

2.1. INTRODUCTION

Antimicrobial resistance has become one of the most serious public health concerns worldwide. Although circumstances may vary by region or country, it is clear that some Asian countries are epicenters of resistance, having seen rapid increases in the prevalence of antimicrobial resistance of major bacterial pathogens. In these locations, the public health infrastructure to combat this problem is very poor. (1) This alarmed us that we need to have a proper monitoring system on antibiotic sensitivity trend and usage from for our own local setting.

The injudicious use of broad spectrum antibiotics had exacerbated the development of resistance to many first line antibiotics. Different antibiotic policies in various regions have resulted in different degree of antibiotic resistance.
(2) Nowadays, the prevalence rates of methicillin resistant Staphylococcus aureus (MRSA), macrolide resistant Streptococcus pneumonia, and multidrug resistant enteric pathogens are very high due to the recent emergence of extremely drug resistant gram negative bacilli in Asia. Due to antimicrobial options for these pathogens are extremely limited, infections caused by antimicrobial resistant bacteria are often associated with inappropriate antimicrobial therapy and poor clinical outcomes.(1)

AMS is thus a coordinated systemic approach to improve the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, right choice of antimicrobial, right route of administration, right dose, right time, right duration and minimize harm to the patient and future patients.

Besides, by forming antibiotic stewardship team also able to monitor the increasing trends of resistance to specific antibiotics can also serve as early warnings and national policies may then be taken to arrest or reverse such trends. (4) Ongoing monitoring and prospective audits have been shown to improve patients care, decrease unnecessary antimicrobial use and microbial resistance and reduce pharmacy expenditures. AMS have demonstrated 22% - 36% decrease in antimicrobial use.

2.2. SURVEILLANCE AND FEEDBACK MECHANISM ON SPECIFIC ANTIMICROBIAL CONSUMPTION. (CORE STRATEGY)

Surveillance and feedback on antibiotic utilization should be conducted regularly or at least twice a year (every 6 monthly)

Currently Hospital antibiotic usage measured in Defined Daily Dose (DDD) is monitored by pharmacy unit every 6 monthly. Report of this surveillance and feedback must are submitted to

state and national level. In future we will also implement an antibiotic monitoring form which will involve all prescriber Medical officer as well as Medical Assistant, whereby will need to fill

in a simple monitoring form (appendix A) before they prescribed any antibiotic regardless is In patient Department (IPD) or Out Patient Department (OPD). The linked nurse will need to collect all the monitoring form and collect the data. The data will need to be filled into a form monthly, which able us to know the antibiotic usage and appropriateness (define as right dose, right indication, right frequency, right duration, rational) (Appendix B)

Laboratory in Hospital Kanowit will be responsible to collect data about culture and sensitivity of the bacteria isolated, as well as the bacterial resistance trend. This data need to be collected and sent to the infection controlled unit every monthly, and data will be presented together with DDD usage or our antibiotic usage during the antimicrobial committee meeting. (Appendix C). Necessary action will be taken based on surveillance finding and local resistance pattern.

2.3. IMPLEMENTATION OF PROSPECTIVE AUDIT AND FEEDBACK ACCORDING TO LOCAL NEEDS. (Core Strategy)*

Prospective audit and feedback such as antibiotic point prevalence survey should be conducted in response to incidences; e.g. when the quarterly usage of a specific antibiotic increase by more than 50% from the previous baseline of a particular antibiotic if the facility is an outlier for usage of a particular antibiotic in the state, region or nation.

Again this will based on the antibiotic surveillance and feedback mechanism, as for DDD Hospital with high IV antibiotic usage or outliner will be request to give justification on the high usage of antibiotic and will be justified by the medical officer in charge or pharmacist.

Locally, at hospital level, we will update our antimicrobial resistance pattern and total antibiotic usage in our SOP of antibiotic usage and any outliner of antibiotic usage will be monitor and investigate the cause and strategies will be implemented to counter the problems found.

According to the collection form are with remark to monitor and review the appropriateness of antibiotic usage among medical assistant and medical officer, this serve a importance surveillance to determine antibiotic prescribing pattern and what are the main factors which cause errors.

OBJECTIVES:

2.3.1. To improve patient outcomes (e.g. reduce morbidity and mortality from infection)
2.3.2. To optimize antimicrobial therapy, by promoting judicious use of antimicrobials, Optimizing antimicrobial selection, dosing, route and duration of therapy in order to maximize clinical cure or prevent infections.
2.3.3. To limit the unintended consequences such as the emergence of antimicrobial resistance and adverse drug events.
2.3.4. To reduce healthcare cost without adversely impacting quality of care.

Activities and strategies to be implemented:

2.4. Formulation of AMS committee and team in each hospital. (Core strategy)

Members of the AMS committee

Position	**Members**
Chairman PFH	Hospital Directors
Deputy Chairman 1	Head of Pharmacist
Deputy Chairman 2	Medical Officers
Doctors	All Medical Officers
Allied Health Professionals	Hospital Matron
	Hospital Sisters
	Hospital Infection Control & Linked Nurse/Personnal
	Hospital Medical Assistant
	Pharmacist
	Science Officer

2.5. Members of AMS team

Position	**Members**
Team Leaders	Medical Officers
Assistant Team Leaders 1	Medical Officers
Assistant Team Leaders 2	Pharmacist
Assistant Team Leaders 3	Hospital Infection Controlled & Linked Nurse/Personnal
Members	Hospital Staff Nurse
	Hospital Medical Assistant
	Science Officer

2.6. Formalize regular antimicrobial rounds by AMS team especially in Hospital (Core strategy)

Daily round will be done by the AMS team for all the cases which refer by the medical officer/medical assistant. The team would try to review all the patients with antibiotic usage in ward to monitor and ensure proper rational selection of antibiotic and usage.

2.7. Establishment of formulary restriction and pre-authorization/approval system 2. (Core strategy)

Currently, all “list A” antibiotic will need to fill in the appendix A (a form which sent to specialist for approval). The standard operational procedure of what antibiotic should get approval and when to get approval, and how to get the approval are well documented in the policy and procedure of antibiotic usage. Please refer for more details.

2.8. Establishment of antimicrobial order tools for restricted antimicrobials

Antimicrobial order tools should be completely filled by prescribers before sending it to pharmacy department. The similar form (appendix A) will be use to restricted ordering as well. This apply more toward outpatient department whereby the Medical Assistant will be restricted to prescribe antibiotic as they would need to justify the need of antibiotic, and before sending the prescription to pharmacy they will need medical officer to counter sign the prescription.

2.9. Streamlining the antibiotic usage

Appropriate selection of antimicrobial when there is a need to prescribe two or more intravenous antimicrobial simultaneously to prevent overlapping in the spectrum of antimicrobial coverage. Antimicrobial prescribing must be reviewed no later than the 72 hours after it has been initiated and de-escalated to narrow spectrum agents promptly when appropriate or based on microbiology results. Relevant data such as stop or review date, indication should be documented in the medical notes or on the drug chart. (Please refer the "Policy and Procedures of antibiotic usage for more details)

2.10. Antimicrobial selection and dose optimization of the antimicrobial

Antimicrobial selection and dose optimization should be based on clinical indication of individual patient and current clinical guidelines. (Please refer the "Policy and Procedure of antibiotic usage for more details)

2.11. Initiation of intravenous (IV) to oral (PO) switch program.

Intravenous antimicrobial therapy must be reviewed and switched to oral alternatives when clinical appropriate and available. (Please refer the "Policy and Procedure of antibiotic usage for more details)

2.12. Education on AMS program via continuous medical education (CME) and antibiotic awareness campaign.

Provide regular updates on antimicrobial prescribing, practice and usage for healthcare professionals. Schedule will be decided by the AMS committee/Team from time to time.

2.13. Encourage Formulation of local Guidelines & Clinical pathways

The common infectious which are included in the policy and procedure are UTI, URTI, LRTI,SSI and Pneumonia:

Appendix A

Antibiotic Monitoring Form
(Please attached this document with yellow prescription)

<table>
<tr><td colspan="2">Antibiotic prescribe: (Drug/Dose//Frequency/Duration)</td><td rowspan="2">Chop & sign by prescriber</td></tr>
<tr><td colspan="2">Indications of Antibiotic: (Diagnosis to start antibiotic)</td></tr>
<tr><td colspan="3">Justification: (Reasons to support initiation of antibiotic)</td></tr>
<tr><td>IV to Oral switch:</td><td>Doses of IV antibiotic given:</td><td rowspan="2">Chop & sign by prescriber</td></tr>
<tr><td colspan="2">Oral antibiotic: Drug/Dose/Frequency/Duration</td></tr>
</table>

Appendix B

Appendix B	Total of Antibiotic Usage (A)	Appropriate antibiotic Usage (B) = (A) – (C+D+E +F+G+H)	Inappropriate Antibiotic usage (C)	Inappropriate Dose (D)	Inappropriate Frequency (E)	Inappropriate Duration (F)	Inappropriate Justification (G)	Wrong diagnosis (H)	No Chop & sign (I)	No Weight (J)
Penicillin VK										
Penicillin G (Benzylpenicillin Aqueous)										
Benzathaine Benzylpenicillin										
Erythromicin Ethyl Succinate (EES)										
Bactrim (Sulphamethoxazole + Trimethoprim)										
Cephalexine										
Cloxacillin										
Amoxicillin										
Ampicillin (Bacampicin)										
Augmentin (Amoxicillin + Clavulanic acid)										
Unasyn (Ampicillin + Sulbactam)										
Cefuroxime										
Ceftriaxone										
Cefoperazone										
Ceftazidime										
Ciprofloxacin										
Clarithromycin										
Doxycycline										
Metronidazole										
Gentamicin										
Vancomycin										

Appendix C: Culture and sensitivity monitoring form:

Date	Source of sample	Bacteria isolated	Numbers of isolated case	Number of resistance	Number of resistance to antibiotic

References:

1. Cheol-In Kang and Jae-Hoon Song. Antimicrobial resistance in Asia: Current epidemiology and clinical implication; Infect Chemother 2013;45(1)22-31
2. Kian Joo Sia et.al.Antibiotic Sensitivity and spectrum of Bacterial Isolates in Otorhinolaryngological Infection; a Retrospective Study Med J Malaysia Vol 68 No 1 February 2013.
3. Y M Cheong et.al.Antimicrobial Resistance in 6 malaysian General hospital;Med J Malaysia Vol 49 No 4 Dec1994.
4.V K E Lim. Antibiotic resistance in the Community; Med J Malaysia Vol.58 No 2 June 2003
5. Polisi pengunaan antibiotic di negeri Sarawak: Penggunaan list A antibiotic di hospital tanpa pakar 2012
6. Polisi pengunaan antibiotic di Negeri Sarawak;Vancomycin prescribing policy 2012.
7. Prosedur operasi piawai untuk permohonan pengunaan ubat-ubatan kategori A oleh pegawai perubatan di hospital dan Klinik Kesihatan yang tidak mempunyai pakar (PPUA), JKNS.
8. JKNS (farmasi) antibiotic committee intravenous to oral swith program 2011.
9. Lexicomp Drug information handbook 21th edition 2012-2013.
10. Sanford guide antimicrobial therapy 41th edition 2011.
11. Ministry of health National antibiotic guidelines 2008.
12. Protocal on antibiotic stewardship program in healthcare facilities 1st edition, Ministry of health 2014.

3. USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

3. **PPE** are to protect staff and reduce opportunities for transmission of microorganisms in hospital. Select protective equipment on the basis of an assessment of the risk of transmission of microorganisms to the patient, and the risk of contamination of health care practitioners clothing and skin by patient blood, body fluids, secretions and excretions.

3.1 GLOVES

Glove wearing by HCWs is recommended for two main reasons:

3.1.1. To prevent microorganisms which may be infecting, commensally carried, or transiently present on HCWs hands from being transmitted to patients and from one patient to another and

3.1.2. To reduce the risk of HCWs acquiring infections from patients.

STERILE GLOVES INDICATED

- Any aseptic\surgical procedure; vaginal delivery; invasive radiological procedures; performing vascular access and procedures (central lines);preparing total parenteral nutrition and chemotherapeutic agents.

CLEAN GLOVES INDICATED IN CLINICAL SITUATIONS

Potential touching blood, body fluids, secretions, excretions and items visibly soiled by body fluids.
Direct patient exposure: contact with blood; contact with mucous membrane and with non-intact skin; potential presence of highly infectious and dangerous organism; epidemic or emergency situations; iv insertion and removal; drawing blood; discontinuation of venous line; pelvic and vaginal examination; suctioning non-closed systems of endotracheal tubes.
Indirect patient exposure: emptying emesis basins; handling/cleaning instruments; handling waste; cleaning up spills of body fluids.

GLOVES NOT INDICATED (except for contact precautions)

No potential for exposure to blood or body fluids or contaminated environment

Direct patient exposure: taking blood pressure , temperature and pulse; bathing; transporting patient; caring for eyes and ears (without secretion); any vascular line manipulation in absence of blood leakage.

Indirect patient exposure: using the telephone; writing in the patient chart; giving oral medications; distributing or collecting patient dietary trays; removing and replacing linen for patient bed; placing non-invasive ventilation equipment and oxygen cannula; moving patient furniture.

Gloves do not replace the need for hand washing. Contamination of the hands may occur when gloves are removed and some gloves have small perforation that may allow contamination of the hands.

Gloves must be discarded after each care activity for which they were worn in order prevent the transmission of microorganisms to other sites in that individual or to other patients. Wear gloves only when indicated. Otherwise they become a major risk for germ transmission.

3.2 ISOLATION GOWNS AND APRONS

3.2.1. Clinical and laboratory coats or jackets worn over personal clothing for comfort and / or purposes of identity are not considered PPE.
3.2.2. Disposable plastic apron should be worn when there is a risk that clothing or uniform may become exposed to blood, body fluids, secretions and excretions, with the exception of sweat.
3.2.3. Full body gowns need only be used where there is the possibility of extensive splashing of blood, body fluids, secretions or excretions and should be fliud repellent.
3.2.4. However, when contact precautions are used to prevent transmission of an MDRO, donning of both gown and gloves prior to room entry, regardless of the anticipated level of contact, may reduce unanticipated contact with an MDRO in the environment.
3.2.5. The practice of routine gowning upon entrance into an intensive care or other high risk area does not prevent colonization or infection of patients.
3.2.6. Removal of isolation gown before leaving the patient care area is advised to prevent opportunities for possible contamination outside the patients room.

3.3 FACE PROTECTION: MASKS GOGGLES,FACE SHIELDS

Mask are used for three primary purposes in healthcare settings:

3.3.1. To protect health care worker from contact with infectious material from patients e .g : respiratory secretions and sprays of blood or body fluids as defined in standard and droplet precautions.
3.3.2. Placed on healthcare workers when engaged in procedures requiring sterile technique to protect patients from exposure to infectious agents carried in a healthcare workers mouth or nose.
3.3.3. Placed on coughing patients to limit potential dissemination of infectious respiratory secretions from the patients to others (i.e: respiratory hygiene/ Cough Etiquette).
3.3.4. Procedures that generate splashes or of blood, body fluids, secretions, or excretions (e.g. endotracheal suctioning, bronchoscopy, invasive vascular procedures) require either a face shield (disposable or reusable) or mask and goggles.
3.3.5. Two types of mask available, the surgical and particulate respirator (N95) used to prevent inhalation of small particles that may contain infectious agents transmitted via airborne route.
3.3.6. Personal eyeglasses and contact lenses are Not considered adequate eye protection.

3.3.7. Disposable or non-disposable face shields may be used as an alternative to goggles. As compared with goggles, a face shield can provide protection to other facial areas in addition to the eyes.

3.3.8. Removal of a face shiel, goggles and mask can be performed safely after gloves have been removed, and hand hygiene performed.

3.4. RESPIRATOTY PROTECTION

3.4.1. Personal respiratory protection is required when dealing with microorganisms that spread by airborne route. Respirators are also currently recommended to be worn during the performance of aerosol-generating procedures (e. g: intubation, bronchoscopy, suctioning) patients with SARS Co-V infection, avian influenza, pandemic influenza and other unknown respiratory syndromes. In these instances, surgical masks are not effective protection.

3.4.2. Respiratory protection currently requires the use of a respirator with N95 or higher filtration.

3.5. RUBBER BOOTS/SHOES COVER

3.5.1. If gross contamination or spillage to foot/leg is expected

3.6. CAP

3.6.1. If gross contamination or spillage to head

References:

1. Policies and procedures on infection 2nd edition 2010
2. Pocket guideline for standard precaution 2nd edition 2005

4. CROSS- INFECTION AND ISOLATION (PATIENTS AND VISITORS)

4.1. The purpose of isolating patients is to prevent the transmission of microorganisms from infected or colonized patients to **other patients**, **hospital visitors**, and **health care workers.**

4.2. **Standard precautions** are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in the hospital. Standard precautions applies to all patients regardless of their diagnosis. Standard precaution shall be implemented when contact with any of the following are anticipated:

4.2.1. Blood
4.2.2. All body fluids, secretions and excretions, with the exception of sweat regardless of whether or not they contain visible blood.
4.2.3. Non-intact skin (this includes rashes)
4.2.4. Mucous membranes

4.3. Standard precautions practices

4.3.1. Hand hygiene
4.3.2. Appropriate use of personal protective equipment (PPE)
4.3.3. Housekeeping and management of spillage
4.3.4. Disinfection and sterilization
4.3.5. Management of soiled/Contaminated linen
4.3.6. Disposable sharp and infectious wastes
4.3.7. Additional precautions-Isolation practices
4.3.8. Disinfectants
4.3.9. Intravascular procedures
4.3.10. Collection and transportation of blood from patients

4.4. Transmission based

4.4.1 Airborne isolation

- Prevent the transmission of diseases by droplet nuclei (particles < 5um). Airborne precautions are indicated for patients with documented or suspected tuberculosis (pulmonary or laryngeal), measles, varicella (c. pork), or disseminated zoster.

Patient placement	1. Negative pressure room with ante room and en-suite bath 2. Single room (Nurse with door closed) and en-suite bath 3. Single room 4. Cohort (not recommended unless absolutely necessary) - consult Physicians/Microboilogists 5. If there is no exhaust system, off aircond and open window
Respiratory protection	Wear respiratory protection when entering the room of a patient with known or suspected infectious pulmonary tuberculosis.

	Susceptible persons should not enter the room of patients known or suspected to have measles or varicella if other immune caregivers are available. If susceptible persons must enter the room of a patient known or suspected to have measles or varicella, they should wear respiratory protection. Persons immune to measles or varicella need not wear respiratory protection.
Face shield/eye protection	As per standard precautions (For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions)
Gloves and hand washing	As per standard precautions (When touching blood, body fluids secretions, excretions, contaminated items, mucous membranes, non intact skin
Gown	As per standard precautions (For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions)
Patient transport	1. Restrict movement of patient e.g mobile x-ray required. 2. Minimise ward transfers. 3. Informed receiving department. 4. Control source as far as possible. 5. Reduce waiting time for patient. 6. Disinfect areas that had contact with patient. 7. Limit the movement and transport of the patient from the room to essential purposes only.

4.4.2. Droplet isolation

Designed to prevent the transmission of diseases by large particle (droplet) particles > 5um or dust particles containing the infectious agent. Unlike droplet nuclei, droplets are larger, do not remain suspended in the air, and do not travel long distances. They are produced when the infected patient talks, coughs, or sneezers, and during some procedures (e.g., suctioning and bronchoscopy). A susceptible host may become infected if the infectious droplets land on the mucosal surfaces of the nose, mouth or eye. Droplet precaution are indicated for patient with documented or suspected HINI, Influenza (duration of illness, SAR, diphtheria, Mumps (for 9 days after onset of swelling), Meningococcemia (until 24 hours after starting effective therapy), Meningitis (until 24 hours after starting effective therapy) & Pertussis (maintain precautions until 5 days after patient is placed on effective therapy).

Patient placement	No special air handling or ventilation required In descending order of preference; 1. Single room with en-suite bath 2. Single room 3. Cohort – place the patient in a room with a patients who ha active infection with the same microorganism but with no other infection. 4. In the general ward, but maintain a separation of at least 3

	feet between infected patient and other patients and visitors. 5. individual observation apparatus - B/P set - Stethoscope - Thermometer 6. Hand Rub 7. Clinical waste
Respiratory protection	Wear mask when working within within 3 feet of the patient. If placed in a single room, wear mask before entering the room.
Face shield/eye protection	As per standard precautions For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions.
Gloves and hand washing	
Gown	As per standard precaution For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions)
Patient transport	As per standard precaution When touching blood, body fluids secretions, excretions, contaminated items, mucous membranes, non intact skin.
Gown	As per standard precautions For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions)
Patient transport	Limit the movement and transport of the patient from the room to essential purposes only. If transport or movement is necessary, minimize patient dispersal of droplet nuclei by placing a surgical mask on the patient.

4.4.3. Contact Isolation

Used to prevent the transmission of epidemiologically important organisms from an infected or colonized patient through direct (touching the patient) or indirect (touching contaminated objects or surfaces in the patients environment) contact. Contact precaution are indicated for patients with documented or suspected MRO, MRSA, MDRO, HFMD, Cholera, typhoid and gastroenteritis.

Patient placement	In descending order of preference; 1. Single room with en-suite bath 2. Single room 3. Cohort- place the patient in a room with a patients who has active infection with the same microorganism but with no other infection. 4. In the general ward with an isolation tray/trolley beside
Respiratory protection	As per standard precautions For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions.
Face shield/eye protection	As per standard precautions

	For procedures/activities likely to generate splashes/sprays of blood, body fluids, secretions and excretions
Gloves and hand washing	- In addition to standard precautions, wear gloves (clean, non-sterile gloves are adequate) when entering the room. - During the course of providing care for a patient, change gloves after having contact with infective material that may contain high concentrations of microorganisms (fecal material and wound drainage) - Remove gloves before leaving the patients environment and wash hands immediately with soap or a waterless antiseptic agent. - After glove removal and hand washing, ensure that hands do not touch potentially contaminated environmental surfaces or items in the patients room to avoid transfer of microorganisms to other patients or environments.
Gown	- In addition to Standard precautions, wear a gown/apron (a clean, non-sterile gown/apron is adequate) when entering the room if you anticipate that your clothing will have substantial contact with the patient, environmental surfaces, or items in the patients room, or if the patient is incontinent or has diarrhea, an ileostomy, a colostomy, or wound drainage not contained by a dressing. - Remove the gown before leaving the patients environment. - After gown removal, ensure that clothing does not contact potentially contaminated environmental surfaces to avoid transfer of microorganisms to order patients or environments.
Patient care equipment	- Dedicate the use of noncritical patient care equipment such as thermometer, stethoscope, BP set to a single patient (or cohort of patients infected or colonized with the pathogen requiring precautions). - If these items must be shared, they should be cleaned and disinfected before reuse.
Patient transport	1. Restrict movement of patient e.g mobile x-ray required. 2. Minimise ward transfers. 3. Informed receiving department. 4. Control source as far as possible. 5. Reduce waiting time for patient. 6. Disinfect areas that had contact with patient. 7. Limit the movement and transport of the patient from the room to essential purposes only. If transport or movement is necessary, use clean linen. Cover all open wounds before transport.

4.5. Visitor policy for infection control

The support offered to patients by visitors is of great importance in their recovery and well being. A few simple principles will ensure the visitors and the patients safety from exposure to communicable diseases.

4.5.1. Visitor must report to nurse at the counter for information before entering isolation room.
4.5.2. Place signage.
4.5.3. Limit number of visitor.
4.5.4. Discourage children visitor.
4.5.5. Visitors are discouraged from entering isolation rooms of patients in airborne and droplet isolation. They are expected to wear the same PPE that a health care worker would wear performing the same activity.
4.5.6. All visitors who are involved in caring of patients should be educated on standard precautions, which include use of PPE and hand hygiene. This applies to activities such as such as changing bed linen, bathing or toileting.
4.5.7. Patients and family member/guardian must be counseled and given emotional support.
4.5.8. In outbreak situations unnecessary visits should be discourage. Those who choose to visit should wash their hands as they enter and leave the area and comply with all other hygiene practices in place. Alternative ways of communicating with the patient during this time include telephone and written notes.
4.5.9. Visitors with uncontrolled symptoms of coughing, sneezing, or diarrhea should refrain from visiting.

4.6. Dishes, glasses. Cups, Eating Utensils and medications

No special precautions are needed for dishes, glasses, cups, or eating utensils. The combination of hot water and detergents used in hospital dishwashers is sufficient to decontaminate dishes, glasses, cups, and eating utensils. If hot water or adequate conditions for cleaning utensils and dishes are not available, disposable products should be used.

4.6.1. Any medications/IV solutions, tube feedings or baby formula taken into an isolation room that is not used must be discarded when patient is discharged.

4.7. Equipment/supplies/signs, BHT, Isolation tray/trolley

4.7.1. As for as possible, dedicate the use of non-critical patient care equipments such as thermometer, BP set, stethoscope to a single patient.
4.7.2. Non-critical items, such as commodes, intravenous pumps, and BP sets, must be thoroughly cleaned and disinfected prior to use on another patient.
4.7.3. All disposable supplies or items that cannot be cleaned must be discarded when the patient is discharged from the isolation rooms.
4.7.4. Place appropriate signs on the door/patient screen/bed stand to indicate the type of isolation precaution required for the patient.
4.7.5. The case notes, X-ray and observation charts must not be taken into the isolation room or cohort areas.

4.7.6. An isolation tray/trolley is required to be placed outside each isolation room/area, unless an ante room with adequate storage facilities is available.

4.8. Transportation of patient to other department

4.8.1. Restrict movement of patient e.g. mobile X-ray if X-ray required.
4.8.2. Limit the movement and transport of patients who require isolation and ensure that such patients leave their rooms/isolated areas only for essential purposes.
4.8.3. When patient transport is necessary, it is important that, appropriate barriers (e.g., masks, impervious dressings) are worn or used by the patient to reduce the opportunity for transmission of pertinent microorganisms to other patients, personnel, and visitors and to reduce contamination of the environment.
4.8.4. Any patient with a draining wound or skin lesions should be dressed with a clean hospital gown before leaving the room. Cover all open wounds before transport.
4.8.5. Minimize ward transfers. Use routes of transport that minimize exposures of staff, other patients and visitors.
4.8.6. Personnel in the area to which the patient is to be taken must be notified of the impending arrival of the patient and of the precautions to be used to reduce the risk of transmission of infectious micro-organisms.
4.8.7. Procedures for these patients should be scheduled at times when they can be performed rapidly and when waiting areas are less crowded.
4.8.8. Control source as far as possible
4.8.9. Reduce waiting time for patient
4.8.10. Disinfect areas that had contact with patient

4.9. Cleaning

4.9.1. Isolation rooms are to be cleaned daily.
4.9.2. Cleaning MUST precede disinfection. Items and surfaces cannot be disinfected if they are not first cleaned of organic matter (patient excretions, secretions, dirt, soil, etc).
4.9.3. To facilitate daily cleaning, keep areas around the patient free of unnecessary supplies and equipment.
4.9.4. To facilitate cleaning, and to reduce the potential for aerosolization caused by use of a vacuum cleaner, isolate patients in uncarpeted rooms/areas.
4.9.5. Upon discharge of the patient, isolation rooms will receive terminal cleaning.

5. CENTRAL STERILIZING SUPPLY SERVICES

5.1. Introduction

The objective of the is to provide efficient and effective central sterilization service and supply sterile items required by the wards, theatre and clinical departments in hospital so as to efficiently prevent and control infection. It is responsible for the processing, sterilization and quality control of all sterile supplies and equipment used in the hospital.

5.2. Physical layout of CSSS

Central service are divided into two areas, designated as clean and dirty. These two areas are to be physically divided, and the integrity of each area to be maintained.

5.2.1. The clean area is use for processing and sterilization of clean items, to include the preparation and packaging of instrument and sets. The sterilizers are located in this area.

5.2.2. The dirty areas is use for decontamination of all soiled items, including the washing and drying of contaminated items.

5.2.3. Only clean items will be taken into the processing areas, and traffic will be strictly controlled. Only properly attired personal will enter the clean processing area and decontamination area. Central service personal are responsible for maintaining each area as designated.

5.3. Operational Policies

5.3.1. General

5.3.1.1. Sterilization of all instruments and material shall take place in the CSSS, except
- Pharmaceutical products
- Specimen container and media

5.3.1.2. All returned items shall be treated as potentially infectious / contaminated regardless whether they have been used or not.

5.3.1.3. Sterile supplies shall be issued from the sterile issuing area according to schedule.

5.3.1.4. All commercially packed items should have the outer cover eg. ‘soft good’ remove before placing in the vicinity of packing/sterile area.

5.3.1.5. All work and materials must follow the specific direction to prevent contamination.

5.3.2. Personnel

5.3.2.1. Staff should be trained in the field of sterilization and operating autoclave machine.

5.3.2.2. Staff should change to standard attire, including cap and foot wear.

5.3.2.3. Staff should follow the disinfection and sterilization policy and practice and standard precaution guideline practice.

5.3.2.4. Staff with skin ailments should not work in CSSS.

5.3.2.5. Long finger nails, inclusive of artificial nail and heavy make-up are not allowed in CSSS.

5.3.3. Safety

5.3.3.1. The department shall identify safety precaution and measures for work areas.
5.3.3.2. Personal Protective Equipment (PPE) must always be worn accordingly.
5.3.3.3. Equipment operating instrument shall be available at the site of the equipment.
5.3.3.4. Staff handling chemical should follow the manufacturer's guideline.

5.4. Instruments

5.4.1. Contaminated instrument following manufactures quideline.
5.4.2. Instrument used on Biohazard case must be double bagged, labelled biohazard and sent to CSSS as soon as possible after informing CSSS staff.
5.4.3. When the CSSS is closed, decontamination is carried out at users place following the guidelines 'disinfection and sterilization policy and practice'.

5.5. Packing

All packing methods and wrapping procedures must allow for removal of air and direct contact of the sterilant with the contents of the package. Sterilization wrapping paper should be use instead of linen as packaging material.

5.6. Sterilization

5.6.1. Heat sensitive items should be sterilized by low temperature sterilizer
5.6.2. All sterilized items shall have name of item, date of sterilization, code number of packer and load number of sterilizer on the package.
5.3.3. Sterility will be determined by inspecting the integrity of the package for sign of damage or contamination, handling and storage condition. Sterility is event-related; it is not time-related unless the package contains unstable components such as drug or chemical.
5.3.4. Re-processing of single used devices should be discouraged.

6.7. Storage and preparation rooms

6.7.1. Sterile store is used for storage of sterile items only
6.7.2. Only authorized personnel shall be allowed to enter the sterile store
6.7.3. Bulk store is used for storage raw materials with non-sterile consumables
6.7.4. Linen room is use for preparation and storage of linen only.

6.8. Maintainance

6.8.1. Ensure that all machines/equipment are maintained in good condition and planned preventive maintenances (PPM) carried out according to the schedule.
6.8.2. Safety check for autoclave accordingly
6.8.3. Breakdown shall be reported immediately and ensure that action is taken within the time stipulated.

6.9. Movement of instruments

6.9.1. Update record of inventory
6.9.2. Document movements of supplies

7. Waste management

7.1. Follow standard management of waste segregation and disposal.

References:

1. Policies and procedures on infection 2nd edition 2010

6. HOUSEKEEPING SERVICES

6. The housekeeping service is responsible for the regular and routine cleaning of all surfaces and maintaining a high level of hygiene in the facility. In collaboration with the Infection Control Committee it is responsible for:

6.1. Classifying the different hospital areas by varying need for cleaning

6.2. Developing policies for appropriate cleaning technique
- procedure, frequency, agents used, etc., for each type of room, from highly contaminated to the most clean, and ensuring that these practices are followed

6.3. Developing policies for collection, transport and disposal of different types of waste (e.g. containers, frequency)
6.4. Ensuring that liquid soap and paper towel dispensers are replenished regularly
6.5. Informing the maintenance service of any building problems requiring repair: cracks, defects in the sanitary or electrical equipment, etc.
6.6. Caring for flowers and plants in public areas
6.7. Pest control (insects, rodents)
6.8. Providing appropriate training for all new staff members and periodically for other employees, and specific training when a new technique is introduced
6.9. Establishing methods for the cleaning and disinfection of bedding (e.g. mattresses, pillows)
6.10. Determining the frequency for the washing of curtains, screening curtains between beds, ect.
6.11. Reviewing plans for renovations or new furniture, including special patient beds, to determine feasibility of cleaning.

There should be a continuing programme for staff training. This programme should stress personal hygiene, the importance of frequent and careful washing of hands, and cleaning methods (e,g.sequence of rooms, correct use of equipment, dilution of cleaning agents, ect). Staff must also understand causes of contamination of premises, amd how to limit this, including the method of action of disinfectants. Cleaning staff must know to contact staff health if they have a personal infection, especially infections of the skin, digestive tract and respiratory tract.

6.12. Role of maintenance

Maintenance is responsible for:

6.12.1. Collaborating with housekeeping, nursing staff or other appropriate groups in selecting equipment and ensuring early identification and prompt correction of any defect.
6.12.2. Inspections and regular maintenance of the plumbing, heating, and refrigeration equipment, and electrical fitting and air conditioning, records should be kept of this activity.
6.12.3. Developing procedures for emergency repairs in essential departments
6.12.4. Ensuring environmental safety outside the hospital.(e.g.waste disposal, water sources)

6.13. Additional special duties include:

6.13.1. Participation in the choice of equipment if maintenance of the equipment requires technical assistance.
6.13.2. Inspection, cleaning and regular replacement of the filters of all appliances for ventilation and humidifiers.
6.13.3. Testing autoclaves (temperature, pressure, vacuum, recording mechanism) and regular maintenance (cleaning the inner chamber, emptying the tubes)
6.13.4. Monitoring the recording thermometers of refrigerators in pharmacy stores, laboratories, the blood bank and kitchens.
6.13.5. Regularly inspecting all surfaces (walls, floors, ceiling) To ensure they are kept smooth and washable.
6.13.6. Repairing any opening or crack in partition walls or window frames.
6.13.7. Notifying infection control of any anticipated interruption of services such as plumbing or air conditioning.

6.14. Role of the infection control team (hospital hygiene service)

The infection control programme is responsible for oversight and coordination of all infection control activities to ensure an effective programme.

The hospital hygiene service is responsible for:
6.14.1. Organizing an epidemiological surveillance programme for nosocomial infections.
6.14.2. Participating with pharmacy in developing a programme for supervising the use of anti-infective drugs.
6.14.3. Ensuring patient care practices are appropriate to the level of patient risk.
6.14.4. Checking the efficacy of the methods of disinfection and sterilization and the efficacy of systems developed to improve hospital cleanliness.
6.14.5. Participating in development and provision of teaching programmes for the medical, nursing, and allied health personnel, as well as all other categories of staff.
6.14.6. Providing expert advice, analysis, and leadership in outbreak investigation and control.
6.14.7. Participating in the development and operation of regional and national infection control initiatives.

References:

1. http://www.who.int/emc

7. LINEN AND LAUNDRY SERVICES (LLS)

7. The laundry is responsible for:

7.1. The concession company shall manage the linen and laundry service for the hospital.

7.2. The laundry shall exchange and replace the linen supplied to the wards and departments on a regular basis.

7.3. Soiled linen from the wards and department are placed in special bags and sent to the laundry daily.

7.4. A minimum of three sets of patients linen per bed excluding stock shall be available at any one time.

7.5. Patients in inpatient wards are to use hospital clothing at all times.

7.6. Selecting fabrics for use in different hospital areas, developing policies for working clothes in each area and group of staff and maintaining appropriate supplies.

7.7. Soiled linen shall be deposited into respective containers or bags to be weighted and collected by concession company services personnel.

7.8. All linen used by infectious patients shall be put immediately in special bags (alginate bag) and sorted only after decontamination. All clinical waste from infectious patients shall be put in light blue plastic bag for disposal by autoclave.

7.9. Distribution of working clothes and if necessary managing changing rooms.

7.10. Developing policies for the collection and transport of dirty linen.

7.11. Defining, where necessary, the method for disinfecting infected linen, either before it is taken to the laundry or in the laundry itself.

7.12. Developing policies for the protection of clean linen from contamination during transport from the laundry to the area of use.

7.13. Developing criteria for selection of site of laundry services:

7.13.1. Ensuring appropriate flow of linen, separation of clean and dirty areas
7.13.2. Recommending washing condition (e.g.temperature, duration)
7.13.3. Ensuring safety of laundry staff through prevention of exposure to sharps or laundry contaminated with potential pathogens.

References:
1. http://www.who.int/emc

8. FOOD HANDLING

8. Procedure

8.1. All food operators are required to undergo a health check, a thyphim injection and follow the training of Food Controllers recognized by MOH.

8.2. Potential food operators cause food contamination report their health status and conduct clinical health checks if needed.

8.3. The chef should change the clean uniform in the dressing room provided and wearing apron, cap, and appropriate shoes when entering operating room.

8.4. The food operator should: -

a. Removing jewelry like bracelets, rings, brooches, watches, earrings, other accessories such as tag before entering the food preparation area.
b. Personal goods or clothing should not be stored in food processing.
c. There is no spraying of perfumes and the use of lotions after wearing uniforms.
d. Hair closed after dressing in uniform. Beards and mustaches are well kept.
e. False nails and fake eyelashes are not allowed. Nails are always short and no coloring nails.
f. The wounded parts of the body are covered with clean and waterproof bandages as well wearing gloves.
g. Individuals with abscesses in the exposed hands should be avoided controlling food.
h. Wear a clean personal protective clothing.
i. Glove and face mask are required when the food preparation process is served, cooking and serving food.
j. Do not sneeze, cough, spit, lick your finger, scratch your body, blow your nose, smok or chew the food or engage in the treatment that can cause food contamination.
k. Wash your hands the right way when: -

• At every start of food preparation activities.
• After using the toilet.
• After handling raw materials or contaminated materials.
• After doing (j) if it is inevitable.

8.5. For visitors / employees the concessionaire is required to comply with the following before entering the kitchen operating area: -

a. Report health status before entering into premises by using HK / US / GMP / FORM 12 (Version 01).

b. Removing jewelry such as bracelets, rings, brooches, watches, earrings and other accessories such as name tag before entering the food preparation area.

c. Wear personal protective clothing such as aprons, headgear, and shoe covers available. Glove and face mask are used if necessary.

d. Hand washing and always practicing Hygiene Practice as well as adhere to other regulations or any instructions while in the kitchen operation area.

e. Please make sure your personal protective clothing is removed and placed at the disposal site before leaving the kitchen.

8.6. Assistant Food Preparation Officer / Monitoring Officer

a. Removing jewelry such as bracelets, rings, brooches, watches, earrings and other accessories (if any) before entering the food preparation area.
b. Wearing complete personal protective clothing when conducting monitoring within operating area. The use of white coat for Monitoring Officer is permitted.
c. Wash hands before conducting monitoring and practicing personal hygiene while in the kitchen operation area.

d. Wear gloves and face masks if necessary.

8.7. Premises
Monitoring of cleaning work needs to be done by the officer on duty as follows:

a. Every shif - Refer Daily Daily cleansing form
b. Once a week - Consult the joint inspection form
c. Once a week - Refer Forms of garbage collection quotes
d. Once a week - Consult HK / US / GMP / FORM 08 (Version 01).
e. Cleaning procedures are as follows:

i. Use appropriate chemicals (Soaps and Detergents).
ii. The use of all detergents should be of type and dilution. Record Chemical Safety Data Sheet should be kept as a reference.
iii. All cleaning utensils and detergents or areas that have been reserved.
iv. All food and food preparation surfaces should be closed when doing a large scale cleaning.
v. All cleaning fixtures and fittings are done daily. Refer to cleansing schedule and frequency Form: CSF Rev 1.2
vi. Soap dispensers and wipes should be available at all times in all sinks hand sanitizer.
vii. Hand sanitizer should use elbow tap type.
viii. The use of floor mop is according to the preset color code. References the color coding mop needs to be kept and displayed.
ix. For Periodic Cleansing refer to the Schedule of Cleansing Schedule and Frequency-Form: CSF Rev 1.2
x. Submit a complaint to the concession Company in case of non-compliance.
xi. Monitoring of premises cleanliness is done once a month by using Form HK / US / GMP / Form 08 (Version 01)

8.8. Equipment

i. Washing all equipment used in the kitchen is done by the cook.
ii. All food residues found on the appliance are discarded and lubricated before it is washed.
iii. All equipment shall be washed and sanitized in accordance with the instructions as in Cleaning Unit Equipment Cleaning Procedure. Equipment hygiene monitoring shall be run on a daily basis.
iv. The washed equipment should be placed on the appropriate rack / place so it is easy to dry before it is stored in the original location.
v. Electrical equipment should be dried before and after use.

8.9 Waste Disposal

i. Garbage bins in the pre-preparation area, food preparation and washing should be rather than the Step On / Pedal Bin type.
ii. Garbage and excess food on the table, in the sink or on the floor is necessary cleaned and put in the bin.
iii. Garbage in the premises should be removed at least twice a day or as needed.
iv. The waste bin should be washed at least once a week.
v. Make sure the trash can be properly closed when the trash is removed from the inside premises and in accordance with specified routes.

8.10. Supplier vehicle controls

i. Food suppliers are from approved suppliers.
ii. The condition of transport to provide food must be in the proper state, clean and safe. (Version 01)
iii. Samples of wet and dry raw materials will be taken 4 times a year.

8.11. Control of receiving wet and dry food
i. Ensure that all raw food supplies are safe and secure contaminated as well as meet contract specifications.

8.12 Vegetables, fruits, fish, chicken, eggs

i. Make sure the vegetables are free from foreign matter before being immersed in mixed water salt / water for 10 minutes. Early cuts and vegetables should be stored in a covered container
ii. Chicken or fish cut according to size, rinsed with clean water. Save in a suitable container, covered and stored in the chiller (bottom) before cooking should not exceed 12 hours / flow under water flow.
iii. Remove all skin, fat, mucus, chicken feathers and foreign matter. Spread chicken inside closed container before cooking.
iv. Eggs need to be washed with water before cooking.

8.13 Cooking Material

i. Clean the ingredients, cover and store in covered containers.

8.14 Bread / Cake

i. Make sure the bread / cake is free from mildew, not watering (water vaporization).
ii. Expiry date should be checked on parcel.

8.15 Rice / Bean
i. Separate the ingredients of the cereal with a minimum of 3 consumes.

8.16 Provision of beverages
i. Make sure the beverage is brewed with boiling water.

8.17 Bihun / Mee / Kuew Teow
i. The above material should be soaked for 30 minutes and rinsed at least 3 times.

8.18. In-store storage

i. Dry food should be kept above the platform height of at least 20cm from the floor and stacking order not exceeding 2 feet from the ceiling.
ii. Damaged materials such as onions need to be stored no more than 1 week. Storage store must adopt the First Expired, First In First Out principle. Lighting and ventilation must be good and sufficient in the storage room dry food ingredients.

Reference:
1) Worker file / health check
2) Manual diet hospital 2016
3) Guideline hospital catering
4) Store Management Procedure 2009

9. HANDLING OF SHARP AND WASTE.

9.1 Hospital waste is categorized as clinical waste, radioactive waste, chemical waste, pressurized containers and general domestic waste. Privatized service shall collect it/ pooled worker, from the disposal room in specific coded plastic bags to the respective central points.

9.2 All clinical waste is considered as hazardous and shall be places in yellow bags or containers. It shall be sealed when three-quarter (3/4) full and collected daily. The methods of disposing the different types of clinical waste are;

i. GROUP A

Soiled surgical waste, dressing, swabs, human tissues and etc, shall be placed in yellow plastic bags. Waste from infectious case and human tissues such as placenta should be placed in double light blue plastic bags. Incineration most appropriates disposal method.

ii. GROUP B

Sharp equipment are to be placed in sharp containers and when three quarter (3/4) full, sealed by the hospital staff and placed into yellow plastic bags by the One Medicare.

iii. GROUP C

Waste from laboratories and post-mortem rooms that's are potentially infectious shall be disinfected before disposing into yellow plastic bags. If necessary the waste may be placed in light blue plastic bags for autoclaving and then sealed in yellow bags for disposal.

iv. GROUP D

Solid pharmaceutical waste to be place in yellow plastic bag and disposed of by incineration unless recommended otherwise by the manufacture e.g. for chlorates.

Small quantities of liquid Pharmaceutical waste may be diluted and disposed of through the sewerage system. Cytotoxic waste and associated contaminated materials (needles, vials, etc.) is to be placed in designated containers and then put into yellow plastic bags for incineration.

v. GROUP E

Used disposable bedpan liners, stoma bags, incontinence pads, etc. Is to be placed in yellow plastics bags.

9.3. The collection, proper labelling, storage and transportation of radioactive waste shall comply with the requirements of the Atomic Energy Licensing Act 1984.

9.4. Chemical waste may be hazardous (toxic, corrosive, flammable reactive) or (non-hazardous):

Hazardous chemical waste is to be disposed of the most appropriate means according to the nature of the hazard. Because it often has toxic or flammable properties, hazardous chemical waste is not to be disposed in the sewerage system;

Non-hazardous chemical waste may be disposed of along with general waste.

9.5. Pressurized containers chemical e.g. disposable aerosol is to be placed in black plastic bags and disposed of as general domestic waste.

9.6. General waste may be non-hazardous (paper, food, plastic, etc.) or hazardous (glass, chinaware, knives, tubes, lights, etc.);

Non-hazardous general waste shall be placed in black bags and disposed of by the local authority.

Hazardous general waste requires special handling. Light bulbs and fluorescent shall be collected unbroken by the local authority.

9.7. Private / pooled workers shall not handle waste in unseated or open bags and waste in light blue bags (prior to autoclaving).

10. PHARMACY SERVICES

10.1. In- patient medications shall be supplied by either method as follows:-

10.1. COMPLETE FLOOR STOCK

(including after office hour and emergency trolley medication):

- Under the Complete Floor Stock, the consuming unit shall place an order using the ward Requisition voucher and the pharmacist or pharmacist assistant shall determine the quantity supplied against the quantity ordered.

10.1.1. Requisition voucher is sent to pharmacy.

10.1.2. Pharmacist or pharmacist assistant received the voucher, screen the voucher make sure the vouchers are complete with date and signature of Medical Officer who approve and Staff Nurse who requested it.

10.1.3. Pharmacist or pharmacist assistant need to make sure that floor stocks requested is not more than the maximum quantity of floor stock allowed.

10.1.4. Pharmacist or pharmacist assistant need to determine the quantity supplied based on the stocks level.

10.1.5. Records down series number accordingly and the amount that supplied to ward in the Floor stocks supplied book and the voucher itself.

10.1.6. Keep the original copies of the voucher, and the wards will keep the carbon copies.

10.1.7. Record in PHIS system.

10.2. SUPPLY OF DANGEROUS DRUGS TO WARD:

Dangerous drugs shall be locked in the Dangerous Drug cupboards and indented by the wards and department according to schedules. The Pharmacist In-Charge and the ward nurse In-charge shall ensure that dangerous drugs are managed properly.

Supplies of DD to wards are carried out once a week by a pharmacist or pharmacist assistant. The SN will maintain a record of usage DD in the wards. All indenting of DD shall be done by a MO,NS/SN/MA only.

10.2.1. Receive indent form together with Ward DD record book on DD indent day (every Thursday) or by patient order with the prescription “Helaian Pendua”. (For those medications not in floor stock).

10.2.2. If there is any List A Items must attached with Appendix B upon every indent.

10.2.3. Check the usage in record book and contact staff nurse for any discrepancies or further clarification.

10.2.4. Generate the series number accordingly.

10.2.5. Determine the amount that supplied to wards.

10.2.6. Record the series number and quantity supplied in the pharmacy DD record book, indents voucher and ward DD record book in the respective pages or column for which drug is specified.

10.2.7. For the case indent by patients, for DD that is not floor stock, pharmacy staffs need generate the serial number and record into the prescription "Helaian pendua).

10.2.8. Photocopy it and keep in the DD supply file and record into the DD supply record book.

10.2.9. For the case, such as expired medication and ampoule or vials broken need to do a incident report and the waste need to be collected in a biohazard plastic bag.

10.2.10. Sent it back to pharmacy for exchange with the indent form with remarks.

10.2.11. NEVER discard any medications by yourself especially DD.

10.2.12. Enter the corresponding issues made in the pharmacy DD record book as follows:

- Date of supply
- Ward to which supply was made
- Amount of supplied
- Balance of DD stock
- Name of pharmacist supplied DD
-

10.2.13. Fill and supply the determined quantity.

10.2.14. Ensure quantity supplied does not exceed the pre-determined stock level.

10.2.15. Counter checking by others staf.

10.2.16. Call the end users to collect the medication.

10.2.17. Make sure the collecting staff counter check again all the items and quantity supply and sign at the indent voucher to avoid any medication errors.

10.2.18. File the copy of indent voucher.

10.2.19. Record in PHIS system.

10.3. UNIT DOSE SYSTEM

For Unit Dose System, there will be individual bins for patients in the medication cart. The medication cart carries the entire medication for all patients in the ward. The cart along with the original prescription written by the doctor will be brought to Inpatient Pharmacy for filling before 10 am everyday (except during weekends an PH) for Male and Female Ward, while Maternity and Paediatric Ward trolley will be sent in before 3 pm everyday (except during weekends an PH).

10.3.1. Receiving the prescriptions "Helaian Pendua" advice notes, and medication cart.

10.3.2. Pharmacists will screen the prescriptions, advice notes and UDS record files.

10.3.3. If there is any query, pharmacists need to call the Medical Officer to confirm on their amendment.

10.3.4. Update current patients records and medication.

10.3.5. Arrange the prescriptions according to patients bed number and file into the UDS record file.

10.3.6. For discharge patients, remove their profiles from the UDS record file.

10.3.7. One bin is allotted per patient. Each bin must be filled with the medication prescribed, with the correct quantity based on the prescription and in accordance with the administration times.

10.3.8. The medications of each patient shall be labelled with patients name and strength of the drug and date of dispensing.

10.3.9. All medications will be supplied daily, except for syrups, new prescriptions and supply over the weekends/PH. For new prescriptions, we will supply the remaining doses for the day itself, plus additional 1 dose for coming early morning for Male and Female Medical ward. For Maternity and Paediatric Ward, medications will be supplied as above mentioned but 2 extra doses will be given instead of 1. For weekends and public holidays, we will supply the medications the day before till next working day.

10.3.10. All supplies of medications shall be recorded in patients medication prescriptions and tally cards.

10.3.11. All the trolleys filled need to be counter checked by another staff.

10.3.12. The staff needs to make sure the dose, frequency and the quantity supplied to each patient are correct.

10.3.13. Staff nurse on duty should check the medications received and inform the pharmacy if there are any discrepancies. After checking the medication supply, staff nurse should acknowledge receipt by signing the receipt column of the prescriptions.

10.3.14. Make sure the medication cart is taken back to the ward as soon as possible before 12 pm for the morning session and 5 pm for the afternoon session.

10.3.15. Transcribe the prescriptions in PHIS system.

10.3.16. Same procedure for all the new prescription that sent in after the medication cart sent back to wards, except without using the medication cart.

10.3.17. For cases admitted after office hours, medication from the Floor Stock / After Office Hour shall be used and recorded in the medication chart.

10.3.18. If there is a need of medications other than floor stock or AOH medication pharmacist assistant on call should be informed.

10.3.19. An update list of patients name should be sent to pharmacy after wards round. This will enable the pharmacy to manage the supplies accordingly.

10.4. MEDICATIONS THAT MAY BE ADMINISTERED BY THE NURSING STAFF WITHOUT A MEDICAL PRACTIONERS ORDER:

10.4.1. One gram stat dose of Paracetamol will be given to patients without prescription and verbal ordered by the Medical Officer for the purpose of pain management right after delivery.

10.5. CALLING ORDER FROM WARDS:

10.5.1. Pharmacy will accept verbal order from Medical Officer in emergency / code blue situation.

10.5.2. Whereby pharmacy to supply the medication first before receiving the prescription or appendix A (if necessary).

10.5.3. This including Dangerous Drug supplied.

10.5.4. Emergency or code blue situation are as below but not limited as below: (Final decision will goes to the pharmacist on call)

- Insufficient floor stock. (e.g. dangerous Drug and Appendix A item—IV Midazolam use for intubation)

- The item are not included in the floor stock and urgently needed. (e.g.IV omeprazole, given during intubation)

10.5.5. The person responsible needs to make sure that the required documents are sent to pharmacy within 24 hour.

10.5.6. If there is any doubt, Pharmacist or pharmacist assistant need to call for confirmation.

10.5.7. Transcribe the prescription in PHIS system.

10.6. PATIENTS OWN DRUGS:

10.6.1. Patients maybe admitted to wards with medication that are not available in our hospital drug formulary.

10.6.2. Therefore all the hospital staff has the responsibility to inform patients or family member to bring along their own medication upon every admission or as soon as possible.

10.6.3. Medical officers are responsible to prescribe these drugs even though it is not available in our drug formulary. These prescription should be noted with "patient own drugs".

10.6.4. Pharmacy will still supply medications which are available in our hospital formulary during patient admission.

10.6.5. Patients need to return their medications and pharmacy will resupply to them upon discharge.

10.6.6. If there is any doubt, Pharmacist or pharmacist assistant need to call for confirmation.

10.7. OVER THE COUNTER AND BEDSIDE DISPENSING

10.7.1. Received discharged prescription.

10.7.2. Screen the prescription for any pharmaceutical care issues (PCI). Contact prescriber if there is any queries that need clarification.

10.7.3. Transcribe the prescriptions in PHIS. Print the label after transcribing.

10.7.4. Record the amount supplied on the tally card if required.

10.7.5. Fill the medication as prescribed and paste the label to the respective medication.

10.7.6. Counter checked by other staff.

10.7.7. Dispense the medication to discharge patients either over the counter or at bedside and provide counseling.

10.7.8. Reassess patients knowledge to make sure they are capable to take the medications correctly and / or use the medical devices competently.

10.7.9. Sign and file the prescription.

10.7.10. Record the counseling in PHIS system. The record will be kept in PHIS.

11. SURGICAL AND NURSING PROCEDURES.

11.1. PRE-OPERATIVE CHECK LIST

This check list is used before sending the patient to the theatre and at the reception area of the OT. The 'Patient Profile' section is filled in the ward by the ward nurse before sending the patient to the Operating Theatre (OT). The 'Pre-Tranfer Check' section under the `Ward' column is filled by the ward nurse before sending the patient to OT. The `OT' column is filled by the OT nurse at the Reception area of the OT. The lower section of the form, `INFORMATION ON OPERATING ROOM/ SURGEON / TIME OF SURGERY' is filled in the OR by the circulating Nurse.

11.2. OPERATING TEAM CHECK LIST

This is the check list adapted from 'WHO Surgical Safety Check List'. It is used in the Operating Room before starting till the completion of surgery. The Checklist Co-ordinator is usually the Circulating Nurse. It can also be other members of the team if agreed by the team. The operating surgeon may also take the lead as the Co-ordinator with the circulating nurse assisting in the check list entry.

11.2.a. THE `SIGN-IN'

This is preferably done before Induction Of Anaesthesia. The anaesthetist checks the items in this section. The checklist coordinator then counter-checks with him if it has been done. This section is checked with the anesthesia professional before induction of anaesthesia.

11.2.b. THE `TIME-OUT'

This section is done in the presence of the surgeon, scrub nurse and anaesthesia professional. This must be done before skin incison or preferably, before induction of anaesthesia. The adherence to this section of the checklist should eliminate the possibility of the patient being induced and kept waiting for the surgeon to turn up.

11.2.c. "WHITE BOARD"

The White Board in the operating room shall be used to display information on the current patient and operation. This includes – name of patient, diagnosis, procedure and members of the operating team; antibiotic requirement, implant size, special positioning, on-table x-rays and other special requirement or reminders. This should be done by the operating surgical team before the start of surgery.

11.2.d. INTRA-OPERATIVE COMMUNICATION

This is an additional section that encourages communication between team members during the surgery. It has 4 components.

11.2.e. CHECK-IN

The surgeon, after having completed the cleaning and draping process, communicates with the anaesthetist and scrub nurse to determine their readiness to commence surgery. Only when both have indicated so, should the surgeon initiate the skin incision. This is announced verbally and is usually agreed as the time `operation commenced'. In practice, the surgeon asks the anaesthetist and the scrub nurse, "can we start?'

11.2.f. PERIODIC UPDATES

For operations exceeding 1 hour in duration, if the surgery is running smoothly, it is a good practice to communicate the situation among the members of the operating team. This should be done at regular intervals such as half-hourly. The surgeon should inform the anaesthetist of the progress of the surgery. Similarly, the anaesthetist should update the surgeon about the patient's vital signs. This will include blood pressure, pulse, temperature and urine output, depending on the nature of the surgery.

11.2.g. SHOUT-OUT

This refers to the act of vocalising clearly to the appropriate team members about certain intra-operative events in order to obtain undivided attention of a specific team member to the event. An example is when a pack is inserted into the abdominal cavity, the surgeon should `shout-out' "ONE PACK IN!" The scrub nurse takes note of it and repeats the `shout-out' to the circulating nurse. The same is done when the pack is removed from the cavity. The surgeon should ` shoutout' "ONE PACK OUT!". This does not replace the system of tags placed at the end of packs or other forms of reminders already in place. Other events that deserve `shout-outs' are :- When instruments, gauzes have fallen off the operating field on to
the floor. When there is critical equipment malfunction, "diathermy not coagulating. When there is excessive bleeding, the surgeon should `shout-out ' to the anaesthetist so that he is aware of the situation. This will enable him to prepare for the worst. When the patient turns unstable, the anaesthetist should `shout-out' the situation to the surgeon. The surgeon may want to pause or review his actions.

11.2.h. PRE-CLOSURE DISCLOSURE

The surgeon informs members of the team of the conclusion of the procedure before commencing the closure of the surgical wound. This will enable the anesthetist to plan for reversal. The scrub nurse can commence the final swab and instrument count. She
will inform the surgeon when this is done and correct. This is also an appropriate time to plan for the calling of the next case.

11.2.i. THE `SIGN-OUT'

This is also called debriefing. The surgeon summarises the operative findings and procedure. He will verify what specimen will be sent and how it should be labelled. The anaesthetist will

discuss any special post-operative instructions with the team at this juncture. Any instrument issues to be addressed will be summarised.

11.2.j. INFORM THE RELATIIVES

Informing / communicating with relatives after the procedure is encouraged. How this is done depends on the local OT set-up and the public expectation. In some instances, operative specimens are also shown to the relatives. This usually enhances communication.

11.3. SWAB AND INSTRUMENT COUNT FORM

This is similar to most swab count forms in-use now. If two different operating teams operate on the same patient, two different swab count forms should be used. Any issues, incidences or instrument malfunctions in the Operating Room should be recorded in the "incidences" section of this form form. Example, blunt scissors, diathermy malfunction or unsatisfactory temperature/humidity. This is later transferred to a `Faulty Instrument' file for remedial action by the OT manager. If more than two scrub nurses scrub for the same case, just add the name after the first scrub nurse following a slash (/). The time that the 2nd nurse joined the team can be documented above the name. The same applies to the circulating nurse.

11.4. PRE-DISCHARGE CHECK

This is done by the Ward Nurse, together with the Recovery Room Nurse before the patient leaves the OT. **The completed Peri-Operative Check List Form will be put in the patient's case**

SUMMARY OF ROLES & RESPONSIBILITIES "Who to do What, Where & When						
Steps	**Location (Where)**	**When**	**Process (What)**	**Who "Checks"?**	**In the Presence of**	**Who "Writes" On The List**
1	Ward	Before sending the case to OT	Pre-Op Check (pg1)	Ward staff nurse	-	Ward staff nurse
2	Reception area in OT	On arrival in OT	Pre-transfer Check (pg1)	OT reception nurse	Ward staff nurse	OT reception nurse
3	Operating room	On arrival in OR	Information on OR & surgery (pg1)	Circulating nurse	-	Circulating nurse
4	Operating room	Before the surgeon enters	Sign In (pg2)	Anesthetist	Anesthetic assistant	Circulating nurse
5	Operating room	Before induction	Time out (pg2)	Surgeon	Scrud nurse / Anesthetist	Circulating nurse
6	Operating room	During procedure	Intra-Op	Surgeon / Anesthetist	Scrub nurse	Circulating nurse

			Communication (pg2)			
7	Operating room	After closure	Sign out (pg2)	Surgeon	Scrub nurse/ Anesthetist	Circulating nurse
8	Operating room	Before starting, before and after closure	Swab & instrument count (pg3)	Scrud nurse	Surgeon / Circulating nurse	Circulating nurse
9	Recovery area in OT	Before patient leaves OT	Pre-discharge Check (pg4)	Ward staff nurse	Recovery Room nurse	Ward staff nurse

Reference:
1) Safe surgery saves lives initiative. Nov 2009

12. PATHOLOGY SERVICES

12.1. ACCESS

12.1.1. The international biohazard warning symbol and sign must be displayed on the doors of the rooms.
12.1.2. Only authorized persons should be allowed to enter the laboratory working areas.
12.1.3. Laboratory doors should be kept closed.
12.1.4. Children should not be authorized or allowed to enter laboratory working areas.

12.2. PERSONAL PROTECTIVE

12.2.1. Laboratory coveralls, gowns or uniforms must be worn at all times. The coat/gown should be removed before leaving the laboratory and placed on the area provided.
12.2.2. Appropriate gloves must be worn for all procedures that may involve direct or accidental contact with blood, body fluids and other potentially infectious materials. After use, gloves should be removed aseptically and hands must then be washed.
12.2.3. Personnel must wash their hands after handling infectious materials and before leaving the laboratory working areas.
12.2.4. Protective devices must be worn whenever necessary to protect the eyes and face from splashes, impacting objects and sources of artificial ultraviolet radiation.
12.2.5. Any cuts, abrasions or other skin lesions must be properly covered to protect them against contamination before starting work.
12.2.6. Eating, drinking, smoking, applying cosmetics and handling contact lenses is prohibited in the laboratory working areas.
12.2.7. Storing human foods or drinks anywhere in the laboratory working areas is prohibited.

12.3. PROCEDURES

12.3.1. Materials must not be placed in the mouth.
12.3.2. Any technical procedures should be performed in a way that minimizes the formation of aerosols and droplets.
12.3.3. The use of hypodermic needles and syringes should be limited. They must not be used as substitutes for pipetting devices.
12.3.4. All spills, accidents and overt or potential exposures to infectious materials must be reported to the laboratory supervisor. A written record of such accidents and incidents should be maintained.
12.3.5. A written procedure for the clean up of all spills must be developed and followed.
12.3.6. Contaminated liquids must be decontaminated (chemically or physically) before discharge to the sanitary sewer. An effluent treatment system may be required, depending on the risk assessment for the agents being handled.
12.3.7. Written documents that are expected to be removed from the laboratory need to be protected from from contamination while in the laboratory.

12.4. LABORATORY WORKING AREAS

12.4.1. The laboratory should be kept neat, clean and free of materials that are not pertinent to the work.
12.4.2. Work surfaces must be decontaminated after any spill of potentially dangerous material. At the end of the working day all working surfaces must be decontaminated.
12.4.3. All contaminated materials, specimens and cultures must be decontaminated before disposal. Decontamination shall be done for any reusable materials.
12.4.4. Packing and transportation must follow applicable national and/or international regulations.

12.5. BIOSAFETY MANAGEMENT

12.5.1. It is the responsibility of the In-charge to ensure the development and adaption of a biosafety management plan and a safety or operational manual.
12.5.2. The laboratory supervisor should ensure that regular training in the laboratory safety is provided.
12.5.3. Personal should be advised of special hazards, and required to read the safety or operation manual and follow standard practices and procedures. The laboratory supervisor should make sure that all personnel understand these. A copy of the safety or operations manual should be available in the laboratory.
12.5.4. Appropriate medical evaluations, surveillance and treatment should be provided for all Personnel in the case of need, and adequate medical records should be maintained.

12.6. LABORATORY DESIGN AND FACILITIES

12.6.1. Ample space must be provided for the safe conduct of the laboratory work and for cleaning and maintenance.
12.6.2. Walls, ceiling and floors should be smooth, easy to clean, impermeable to liquids and resistant to the chemicals and disinfectants normally used in the laboratory. Floors should be slip-resistant.
12.6.3. Bench tops should be impervious to water and resistant to disinfectants, acids, alkalis, organic solvents and moderate heat.
12.6.4. Illuminations should be adequate for all activities. Undesirable reflections and glare should be avoided.
12.6.5. Laboratory furniture should be sturdy. Open spaces between and under benches, cabinets and equipment should be accessible for cleaning.
12.6.6. Storage space must be adequate to hold supplies for immediate use and thus prevent clutter in bench tops and in aisles. Additional long-term storage space, conveniently located outside the laboratory working areas, should also be provided.
12.6.7. Space and facilities should be provided for the safe handling and storage of solvents, radioactive materials, and compressed and liquefied gases.
12.6.8. Facilities for storing outer garments and personal items should be provided outside the laboratory working areas.
12.6.9. Facilities for eating and drinking and for rest should be provided outside the laboratory working areas.

12.6.10. Hand washing facilities, with running water if possible, should be provided in each laboratory room, preferably near the exit door.
12.6.11. Doors should have vision panels, appropriate fire rating, and preferably be self-closing.
12.6.12. An autoclave or other means of decontamination should be available in appropriate proximity to the laboratory.
12.6.13. Safety systems should cover fire, electrical emergencies, emergency shower and eyewash facilities.
12.6.14. First- aid areas or rooms suitable equipped and readily accessible should be available.
12.6.15. In the planning of new facilities, consideration should be given to the provision of mechanical ventilation systems that provide an inward flow of air without recirculation. If there is no mechanical ventilation, windows should be able to be opened.
12.6.16. Considerations should be given to the installation of a separate air conditioning system to control the heat gain from equipment with high heat outputs, e. g. fridges and incubators. It is preferable to use a sealed type of unit that re-circulates cooled air into the room.
12.6.17. A dependable supply of good quality water is essential. There should be no cross-connections between sources of laboratory and drinking water supplies. An anti-backflow device should be fitted to protect the public water system.
12.6.18. There should be reliable and adequate electricity supply and emergency lighting to permit safe exit. A stand-by generator is desirable for the support of essential equipment such as incubators, biological safety cabinets, freezer, etc.
12.6.19. There should be a reliable and adequate supply of gas. Good maintenance of the installation is mandatory.

12.7 LABORATORY EQUIPMENT

Technically with good procedures and practices, the used of safety equipment will help to reduce risks when dealing with biosafety hazards. The laboratory In- Charge should ensure that adequate equipment is provided and that it is used properly. Equipment should be selected to take account of certain general principles, i.e. it should be:

12.7.1. Design to prevent or limit contact between the operator and the infectious material.
12.7.2. Constructed of materials that are impermeable to liquids, resistant to corrosion and meet structural requirements.
12.7.3. Fabricated to be free of burrs, sharps edges and unguarded moving parts.
12.7.4. Designed, constructed and installed to facilitate simple operation and provide for ease of maintenance, cleaning, decontamination and certification testing, glassware and other breakable materials should be avoided, whenever possible.

12.8. ESSENTIAL BIOSAFETY EQUIPMENT

12.8.1. Biological safety cabinets, to be used whenever;

12.8.1.1. All infectious materials are handled, such materials may be centrifuged I the open laboratory if sealed centrifuge safety cups are used and if they are loaded and unloaded

in a biological safety cabinet.

12.8.1.2. There is an increased risk of airborne infection.

12.8.1.3. Procedure with a high potential for producing aerosols are used, these may include centrifugation, grinding, blending, vigorous shaking or mixing, sonic disruption and opening of containers of infectious materials.

12.8.2. Electric transfer loop incinerators may be used inside the biological safety cabinet to reduce aerosol production.

12.8.3. Screw-capped tubes and bottles.

12.8.4. Autoclaves or other appropriate means to decontaminate infectious materials.

12.8.5. Plastics disposable Pasteur pipettes, whenever available, to avoid glass.

12.8.6. Equipment such as autoclaves and biological safety cabinets must be validated with appropriate methods before being taken into use. Recertification should take place at regular intervals, according to the manufacturer's instructions.

12.9. HEALTH AND MEDICAL SURVEILLANCE

The employing authority, through the SMLT U32, is responsible for ensuring that there is adequate surveillance is to monitor for occupationally acquired disease. Appropriate activities to achieve these objectives are:

12.9.1. Provision of active or passive immunization where indicated.

12.9.2. Facilitation of the early detection of laboratory-acquired infections.

12.9.3. Exclusion of highly susceptible individuals (e.g. pregnant woman or immune-compromised individuals) from highly hazardous laboratory work.

12.9.4. Provision of effective personal protective equipment and procedures.

HANDLING MICROORGANISM

12.9.5. A pre-employment or pre-placement health check is necessary. The person's medical history should be recorded and a targeted occupational health assessment performed.

12.9.6 Records of illness and absence should be kept by the laboratory management.

12.10 WASTE DISPOSAL AND DECONTAMINATION

Identification and separation system for infectious materials and their containers should be adopted. Categories should include:

12.10.1. Non-contaminated (not infectious) waste can be reused or recycled or disposed of as general, "household".

12.10.2. Contaminated (infectious)"sharps"- hypodermic needles, scalpels, knives and broken glass. These should always be collected in puncture-proof containers fitted with covers and treated as infectious.

12.10.3. Contaminated material for decontamination by autoclaving and thereafter washing and reuse.

12.10.4. Contaminated material for autoclaving and disposal.
12.10.5. Contaminated material for direct incineration.

12.11. CHEMICAL, FIRE, ELECTRICAL, RADIATION AND EQUIPMENT SAFETY

A breakdown in the containment of pathogenic organisms may be indirect result of chemical, fire, electrical or radiation accidents. It is therefore essential to maintain high standards of safety in these fields in any microbiological laboratory.

Laboratory personnel must ship infectious substances according to applicable transport regulations. Compliance with the rules will:

12.11.1. Reduce the likelihood that packages will be damaged and leak, and thereby
12.11.2. Reduce the exposures resulting in possible infections
12.11.3. Improve the efficiency of package delivery.

<u>The basic triple packaging system</u>

12.11.4. This packaging system consists of three layers: the primary receptacle, the secondary packaging and the outer packaging.
12.11.5. The primary receptacle as to content. The primary receptacle is wrapped in enough absorbent materials to absorb all fluid in case of breakage or leakage.
12.11.6. A second water tight, leak proof packaging is used to enclose and protect the primary receptacles. Several wrapped primary receptacles may be placed in a single secondary packaging. Volume and weight limits for packaged infectious substances are included in certain regulatory texts.
12.11.7. The third layer protects the secondary packaging from physical damage while in transit. Specimen data forms, letters and other types of information that identify or describe the specimen and identify the shipper and receiver, and any other documentation required must also be provided.

12.12. TRAINING PROGRAMME

A continuous, safety training programme is essential to maintain safety awareness among laboratory and support staff. Laboratory In-Charge, with the assistance of the safety officer and resource persons, play the key role in staff training. The effectiveness of all safety and health training, depends on management commitment, motivational factors, adequate initial job training, good communications, and ultimately the organization’s goals and objectives.

13. ENGINEERING POLICIES

13.1. Facilities engineering maintenance services (FEMS) and Biomedical Engineering Maintenance Service (BEMS).

13.1.1. The concession company shall use the maintenance request forms when there are requests from the wards or departments.

13.1.2. The concession company shall be responsible for carrying out the agreed maintenance according to procedures recommended by the manufacturers or Ministry of Health.

13.1.3. However, the regular maintenance of mechanical, electrical and medical equipment within the warranty periods shall be undertaken by the contractor, after which it's taken over by the concession company.

13.1.4. The contractor shall rectify faults due to normal wear and tear or due to defects within the shortest possible time, with initial respond time not exceeding 48 hours. However, in the interim period the concession company shall do rectification works until the contractors arrives for repairs/services.

13.1.5. Any improvements and alteration works required shall be referred first to the hospital director for approval.

13.1.6. All departments shall maintain an updated inventory of the equipment and assets in the department. The head department shall ensure that this equipment are serviced regularly and maintained by the engineering department.

13.1.7. It is essential that the HIACC must be involved in the design, construction and commissioning of any new or upgraded building at an early stage. Therefore input from the HIACC at the planning stage and through the entire life of the project is essential to ensure that the new health care premises meet with infection control requirements.

13.1.8. The HIACC also play an important roel in educating architects, engineers and construction workers about potential infection control risks and appropriate methods for reducing them, as they are the only personnel from a clinical background working on construction project.

13.1.9. It is also important that the HIACC should visit the construction site on a regular basis to ensure that agreed plans are been adequately implemented. It is the responsibility of the hospital administrator to ensure that the policies and procedures set forth by the HIACC are incorporated into the contract.

Reference:
1) Manual of infection control procedures.2nd edition.page 17

14. VENTILATION SYSTEM

14.1. ISOLATION ROOMS

Patients who need airborne isolation should be placed in well ventilated areas with a directional airflow from health care worker to the patient. Adequate ventilation is commonly defined by air exchange rate. It is desirable to achieve ≥ 12 air change rates per hour (ACH). The air should flow from corridors (cleaner areas) into isolation rooms (less clean areas) to prevent spread of contaminants to other areas.

14.1.1. VENTILATION

This can be achieved by three possible strategies:

14.1.1.1. Natural ventilation

This may be an option provided the isolation areas are away from other parts of the hospital, and are built in places predicted to have good prevailing winds year round.

The air should be directed from patient caring areas to outside open areas not regularly Used for transit of persons.

Inside the airborne precaution room, the patient should be placed near the exterior wall, close to open windows, instead of close to the inner wall.

14.1.1.2. Use of exhaust fans

In places where natural ventilation is not suitable, and fully mechanically- ventilated airborne precaution rooms cannot be installed due to limited resources, the use of exhaust fans (with adequate pre-testing and planning) may help to increase ACH rates and generate negative pressure in the rooms.

The fans should be installed on exterior walls where room air can be exhausted directly to the outdoor environment free of transit of persons.

The size and number of exhaust fans needed depend on the targeted ACH, which must be measured and tested before use. The position of exhaust fans with relation to doors and windows should be carefully planned to avoid short circuiting.

14.1.1.3. Use of mechanical ventilation

The engineering requirements for a mechanically ventilated negative pressure rooms are as follows,

- Negative pressure (greater exhaust than supply air volume);
- Pressure differential of 2.5 Pa (0.01-in. water gauge);
- Air flow volume differential > 125-cfm exhaust versus supply;

- Well sealed room, approximately 0.5-sq.ft. leakage;
- Clean to dirty air flow;
- Continuous electronic monitoring of room pressure with (audible/visual) alarm
- > 12 air changes per hour (ACH) for new or renovation, 6 ACH for existing facilities
- Exhaust to outside or HEPA-filtered if re-circulated.
- Back-up emergency power supply fans, alarms and monitoring system.

14.1.2. INTERIOR OF ISOLATION ROOMS

The design, materials and construction of the interior surfaces of an isolation room must facilitate cleaning and minimize dust collection areas without compromising patient care and comfort.

Some of the desired elements include

- Continuous impervious flooring such as welded vinyl coved up the wall
- Minimization of horizontal surfaces
- Sealed, monolithic ceiling with sealed access panels
- Windows to the exterior to be locked shut and sealed
- Design considerations should allow for adequate view of the isolated patient, without health care personnel having to enter the room.
- Clinical hand wash basin
- Wall-mounted soap dispensers
- Hand rub dispensers
- Disposable towel holders
- Storage for clean personal protective equipment
- All building requirements pertaining to facilities should be referred to the technical guidelines from the planning division for further details.

14.1.3. PREPARATION OF THE ISOLATION ROOM/AREA

- Post signage on the floor.
- Before being allowed into the isolation areas, visitors should consult the nurse in charge.
- Remove all non-essential furniture, the remaining furniture should be easy to clean, and should not conceal or retain dirt or moisture within or around it.
- PPE supply and linen outside the isolation room area.
- Sink area supplies for hand washing and alcohol based hand rub near the point of care.
- Place appropriate waste bags in a bin. Use a touch free bin.
- Keep the patients personal belongings to a minimum. Keep water pitchers and cups, tissue wipes, and all items necessary for attending to personal hygiene within the patients reach.
- Stethoscope, thermometer, blood pressure cuff, and sphygmomanometer should be dedicated to the patient, non-critical patient care equipment if possible.

- Any patient care equipment that is required for use by other patients should be thoroughly cleaned and disinfected before use.
- Set up a trolley outside the door to hold PPE. A checklist may be useful to ensure that all equipment is available.
- Place an appropriate container with a lid outside the door for equipment that requires disinfection or sterilization.
- Keep adequate equipment required for cleaning or disinfection inside the isolation room/area and ensure scrupulous daily cleaning of the isolation room/area.
- Educational information on necessary precaution and procedures should be readily available and accessible (for example, in the form of information pamphlets, or posters, located adjacent to the isolation room) for staff, patients and visitors, while ensuring there is no breach of medical confidentiality.

14.1.4. SETTING UP TEMPORARY QUARANTINE AREAS IN OUTBREAK SITUATIONS REQUIRING AIRBORNE ISOLATION

Rooms with individual ventilation systems (e.g: room or window fan coil units that do not re-circulate to other parts of the building).

However the air should flow from corridors (cleaner areas) into isolation rooms (less clean areas) to prevent spread of contaminants to other areas. Inside the room the airflow must be from health care worker to the patient. In existing areas that are totally mechanically ventilated with central ventilation systems, the installation of additional controls/modifications may be the best choice.

Opening in a mechanically ventilated room not designed for natural ventilation is undesirable because the system is not designed for this practice and the ventilation features are not predictable. The modifications that can be carried out depend on the ventilation characteristics of the existing patient room and needs to discuss with the engineering support services.

14.1.5. THE GENERAL HOSPITAL ENVIRONMENT

Functional design of health care facilities should allow routine cleaning to be carried out efficiently. Surfaces, including walls, must be smooth, easy to clean and protected from damage. Unnecessary horizontal, textured and moisture-retaining surfaces, or inaccessible areas where moisture or soil will accumulate, should be avoided if possible. Where possible, all surfaces should be smooth and impervious.

To prevent dust accumulation, cupboards rather than shelves are recommended and cupboard doors should be easily washable. Consideration must be given to the design of radiators and other fixed or relatively immovable items, e.g. computer stations and their wiring, to ensure that all surfaces accessible for cleaning. When furnishings and fittings are being selected, they must be assessed against their potential exposure to disinfectants, and finishes durable enough to withstand the appropriate cleaning

frequently inappropriate for the hospital setting. In equipment-processing areas, work surfaces should be nonporous, smooth and easily cleaned.

14.1.5.1. Walls and ceilings

Walls and ceilings should have a smooth, impervious surface that is easy to clean with minimal likelihood of dust accumulation. In general, pathogenic microorganisms do not readily adhere to walls or ceilings unless the surface becomes moist, sticky, or damaged. Little evidence exists that walls and ceilings are a major source for hospital-acquired infection. Wall coverings should be fluid resistant and easily cleaned, especially in areas where contact with blood or body fluids may occur, e.g. delivery suite, operating rooms, and laboratories. Finishing around plumbing fixtures should be smooth and water resistant. In addition, pipe penetrations and joints should be tightly sealed. Acoustical tiles should be avoided in high-risk areas because they may support microbial growth when wet. False ceiling may harbor dust and pests that may contaminate the environment if disturbed and should be avoided in high-risk areas unless adequately sealed.

14.1.5.2. Floor

Bacteria on hospital floors predominantly consist of skin organisms, e.g. coagulase negative staphylococci, Bacillus spp. and diptheroids; S. aureus and Clostridium spp. can also be cultured. However, the infection risk from contaminated floors is small. Gram-negative bacteria are rarely found on dry floors, but may be present after cleaning or a spill. Nevertheless, the microorganisms tend to disappear as the surface dries. All floors should have non-slip coverings. Where there is likely to be direct contact with patients, or with blood and body fluids, the surface of floors and walls should be made of smooth, impermeable, seamless materials, such as welded vinyl. Flooring should be able to be easily cleaned, in good repair and water resistant.

14.1.5.3. Carpet

Carpet harbours large numbers of microorganisms, e.g. coagulase negative staphylococci, Bacillus spp., fungi and vancomycin resistant enterococci (VRE) These microorganisms can survive on carpets and may pose a greater risk of infecion especially in high-risk areas after vacuuming. Therefore, their use in clinical areas should be avoided. In addition, carpets are expensive to clean and maintain, difficult to disinfect and become smelly with time. If carpets are used in the health care facility, then they must be fitted with a moisture impermeable barrier. They should be well maintained to ensure that they are vacuumed daily and periodically steam cleaned. An appropriate choice of vacuum is important to minimize airborne dispersal of microorganisms.

14.1.5.4. Fixtures and fittings

All fixtures and fittings should be designed to allow easy cleaning and to discourage the accumulation of dust. When choosing material it is important to avoid porous or textured material. It must be durable, easy to clean, washable and able to withstand cleaning with abrasive disinfectant solutions.

14.1.5.5. Furniture

Various microorganisms have been recovered from furniture. Therefore, it is important that the furniture used by patients (beds, mattresses, chairs, tables etc.) must be durable and easily cleaned. Fabrics should be avoided, especially if soiling with blood and body fluids is possible. Upholstery and protective covers must be in good repair at all times and breaches in the material must be repaired or replaced immediately.

14.1.5.6. Curtains and blinds

Curtains must be easily washable and of a design that does not attract accumulated dust. Sufficient curtains must be purchased to enable single curtains to be replaced when soiled. There must also be a laundering programme in place, and the laundering process must not compromise the fire retardant finish. As there is no evidence to show that frequent changing produces any benefit; curtains need not be changed after discharge of every patient. Horizontal blinds carry a risk due to their high surface area with the potential for dust accumulation; vertical blinds are preferred.

14.1.6 PATIENTS ACCOMMODATIONS

14.1.6.1. Outpatient accommodation

Patient waiting areas should have provision for separating patients who may be highly infectious. A triage system should be in place to identify such patients. Outpatients should have a separate room for patients with known or suspected infection. Every effort should be made to see these patients as quickly as possible.

14.1.6.2. Inpatient accommodation

To minimize the risk of cross-infection, hospitals should, wherever possible, restrict the number of beds per room/bay (ideally not more than four beds per room/bay); there should be at least 3.6m between the centres of adjacent beds. Shared patient accommodation should include facilities such as toilets, baths and showers that are easy to clean and conveniently located to minimize unnecessary patient movement. Staff hand washbasins should also be located in patient areas.

14.1.7. HAND WASHING FACILITIES

Hand washing is the single most important method of prevention of cross-infection in hospital. Health care facilities should have an adequate number of hand washbasins. Each patient room, examination room, and procedure room needs at least one sink. There must be a minimum of one sink per single room or one sink per 4 to 6 bedded cubicles. They should be located conveniently (i.e. preferably near the entrance) for easy access by the health care worker.

Taps should be fitted with an anti-splash device. Hand washbasins should be fitted with soap dispensers (i.e. operated by elbow, knee or foot0 in order to further reduce possible cross-contamination.

14.1.8. OPERATING THEATERS

The function of operating theater ventilation system is to prevent airborne microbial contaminants are skin fragments released by staffs working in the theater. A proportion of these skin scales are contaminated with the normal skin flora (20 % are Staphylococcus aureas). The rate of dispersions is increased in movements and number of individuals present in the theater.

14.1.8.1. TYPES OF OPERATING THEATERS

14.1.8.1.1. Conventionally ventilated theatre

Minimum of 20 air changes per hour of filtered air should be delivered. The temperature of the room should be maintained at 18-25º C. The humidity should be maintained at 40-60% for staff comfort and to inhibit microbial growth. The minimum standard for microbiological air counts for the operating room is 30 cfu - ^{3} (colony forming units per cubic metre of air) when the theatre is empty, and less than 180 cfu m - ^{3} when in use.

14.1.8.1.2. Ultra clean air theatre

It is now accepted that ultra clean air (< 10 cfu - ^{3}) reduces the risk of infection in implant surgery. To achieve this, laminar flow systems (airflow 0.5ms - ^{1}) which deliver about 300 air changes per hour or special ventilation combined with bacteria impermeable clothing has to be used. The operating parameters for an ultra clean air theatre are different from those for a conventionally ventilated theatre, and depend upon the design of the system.

In a fully walled enclosure, the airflow 1 m from the filter face should not fall below 03.ms-^{1}, but in a partially walled enclosure, because there is a greater diffusion of air, the airflow at 1 m from the floor (above the level of the operating table surface), should not be less than 0.2ms - ^{1}. Bacterial count at 1 m from the floor should be less than 1.0 bcp m -^{3} (bacteria carrying particles per cubic metre of air) of air in an empty enclosure and when tested during an operation there should be less than 10 bcp m - ^{3} at the level of the operating table at the centre of the enclosure.

Additionally, if the system is partially walled, then on each of the four sides at the periphery ofm the enclosure, the bacteriological count should not exceed 10 bcp m - ^{3}.

14.1.9. INDICATION FOR AIR SAMPLING

14.1.9.1. On completion of new building
14.1.9.2. On completion of repair work done in OT
14.1.9.3. during investigation of Infectious Disease Outbreak

14.1.10. PLANNING FOR INFECTION CONTROL COMMISSIONING/ RE-COMMISSIONING

14.1.10.1. Receiver request to perform commissioning from authorized personal.
14.1.10.2. The following conditions have been:

- All new and refurbished work has been completed
- All engineering commissioning procedures has been completed.
- Full clean of all surfaces must be completed x 3.
- Ventilation system not be use during this time and no one allowed for 24 hours (must not in setback setting)
- The OT must not be use during this time and no one allowed to come during the sampling process.

14.1.10.3. Get information on OT conditions from One Medicare maintenance

- Temperature in the OT and related adjacent rooms i.e. (Scrub room, anesthetic room preparation room, disposal room & corridor)
- Humidity in OT room
- Pressure differentials between the rooms
- Air changes within each OT

14.1.10.4. Inform the OT Sister when the commissioning is to take place.

14.1.11. COOLING TOWERS AND WATER SYSTEM

Respiratory tract infection from Legionella spp. are exclusively acquired from the environment and hospital acquisition is well recognized. If the construction of new cooling towers in the health care facilities is planned, sited and directed as far as practicable from patient and public areas.

Drift must be directed away from the air intake system and drift eliminators should be installed. A written record must be kept of details maintenance, including environment test results. It is important that cooling towers should be drained when not in use.

They should be mechanically cleaned to remove scale and sediment at regular intervals. Appropriate biocides should be used on a regular basis to prevent the growth of slime-forming organisms. Despite the potential presence of Legionella in the water supply, routine culturing of water in the absence of proven or suspected hospital transmission is not recommended.

14.1.12. CONSTRUTION, RENOVATION AND DEMOLITION

Environmental disturbances caused by construction, renovation and demolition activities in and around hospital markedly increase the airborne Aspergillus spp. spore counts in the indoor air, thereby increasing the risk of acquiring aspergillosis among immunocompromised patients.

Although one case of healthcare associated aspergillus is often difficult to link to a specific environmental exposure, the occurrence of temporarily clustered cases increase the likelihood that an environmental source within the facility may be identified and corrected.

Therefore it is essential that all the activities related to construction, renovation and demolition should be planned and coordinated by a multi-disciplinary team to minimize the risk of airborne infection both during projects and after their completion.

Reference:
1. Policies and procedures on infection control.ms41
2. Manual of infection control procedures.ms17-24

15. FACILITY AND EQUIPMENT MAINTANANCE, AND ALL OTHERS.

15.1. MEDICAL INSTRUMENTS AND EQUIPMENT

15.1.1. All reusable medical items must be thoroughly decontaminated before disinfection or sterilization. If not adequately decontaminated, disinfectant or sterilization is not effective.

15.1.2. All packaged and wrapped sterile items must be transported and stored while maintaining the integrity of packs to prevent contamination. If a sterile item is suspected of being unsterile (e.g. damaged packaging) the item must not be used.

15.1.3. Reusable equipment must not be used for another patient until it has been appropriately cleaned and disinfected.

15.1.4. Each patient shall have his/her own set of bedside equipment e.g. stethoscope, BP cuff, thermometer.

15.1.5. Surfaces of computer, keyboards and non-critical medical equipment e.g. physiologic monitors, ventilators, infusion pumps shall be cleaned at least daily with a low or intermediate level instrument grade disinfectant and allowed to air dry. Use washable keyboard covers if feasible. Alternatively cover keyboard with 'clingwrap' and change daily.

15.2. RESPIRATORY EQUIPMENT

15.2.1. Use only sterile water/fluid for respiratory care e.g. suctioning, filling of humidifier and nebulizers.

15.2.2. Change the oxygen delivery system (tubing, nasal prongs or mask) that is in use on one patient when it malfunctions or become visibly contaminated or between uses on different patients.

15.2.3. Clean, disinfect, rinse with sterile water and dry nebulizer between treatments on the same patient. Replace nebulizer with those that have undergone sterilization or high level disinfection between uses on different patients.

15.2.4. Use only sterile fluid for nebulization, and dispense the fluid into the nebulizer aseptically. Use aerosolized medications in single dose vials whenever possible.

15.2.5. Change the mouthpiece of a peak flow meter or the mouthpiece and filter of a spirometer between uses on different patients.

15.2.6. Change the entire length of suction collection tubing and canisters between uses on different patients.

15.2.7. Closed suction system for tracheal suctioning is recommended for infectious respiratory cases.

15.3. WARD ENVIRONMENT

15.3.1. The ward shall be kept neat and tidy at all time.

15.3.2. Flowers and plants are not allowed in patients care areas.

15.3.3. Patients who are infected or colonized shall be nursed in isolation rooms if available or cohort in a designated area or cubicle.

15.3.4. The cleaning schedule shall be followed, with adequate daily cleaning of all work areas. Cleaning of all work areas. Cleaning tasks shall follow in the order from clean to dirty.

15.3.5. Floors shall be cleaned according to cleaning schedule or as necessary. Brooms shall not be used in clinical areas. Use dust retaining mop, which are specially treated or manufactured to attract and retain dust particles.

15.3.6. Clean and disinfect high touch areas (work areas, bedrails, drip stands, bedside nursing tables, keyboards, light switches, doorknobs) with medium level disinfectant at least daily or when visibly dirty.

15.3.7. Sinks, hand basin and surrounding floor and wall areas shall be cleaned at least daily, or more frequently as required.

15.3.8. Hand basin shall ideally be equipped with non-taps with anti splash devices. Antiseptic hand wash in non-refillable dispensers and disposable paper towels shall be readily available.

15.3.9. Clean wall, blinds or window in patient care areas when visibly dusty or soiled and when patients are discharged.

15.3.10. Curtains in patient care areas shall be changed weekly and when patients are discharged. Use plastic curtain that can be decontaminated regularly (e.g. daily) if feasible.

15.3.11. Protect mattresses and pillows with water impermeable material. Clean and disinfect between patients.

15.3.12. Standard precautions apply in spills management. Confine and contain the spill by using paper towels or disposable absorbent material to absorb the bulk of the blood or body substances. Spills shall be cleaned up before the area is disinfected. Avoid aerosolization of spilled material.

15.3.13. Terminal disinfectant must be done when a patient is discharged. The be, all reusable items and equipment in the room/area are to be cleaned and then disinfected. The bed can be used for the next patient only when it is completely dry. If possible, open the windows to air the room. The room can be used for the next admission only when it is completely dry.

15.4. SINGLE USE ACCESSORIES

Also called "disposable" these are provided in a sterile state ready for use. The opening of a sterile package implies immediate use, as is routine in surgery. After a single use device has been used, all materials should be properly disposed of. Under no circumstance should be a single use device be reused.

15.5. REUSABLE

All reusable accessories should be sterilized. The sterilization should be carried out after proper cleaning, as detailed below. Manufactures provide validated standard reprocessing parameters (dilution, temperature and time) for cleaning, disinfectant and sterilization.

Reference:
Policies and procedures on infection control.ms56,89-91

16. POLICY FOR CONTROL AND PREVENTION OF TB AMONG NURSING AND AUXILIARY STAFF

16. SCREENING FOR HEALTHCARE WORKERS

Health care workers should be screened for tuberculosis whenever they are symptomatic. Chest radiograph and Mantoux test are not routinely recommended. Ministry of health staff that are going to work in High Risk TB Area (HRTBA) will have to undergo the:

16.1. PRE-PLACEMENT MEDICAL EXAMINATION

16.1.1. Category of new staff who have to go for Pre-Placement Medical Examination includes (but not limited to) :-

- Medical Officers
- Staff Nurses / Community Nurses
- Medical Assistants
- Medical Laboratory Technologist (Microbiology Lab)

16.1.2. TYPE OF TESTS

- Symptoms screening
  - Cough persisting for more than 10 days
  - Cough with sputum which is occasionally blood stained
  - Loss of appetite
  - Loss of weight
  - Fever
  - Dypsnoea, night sweats, chest pain and hoarseness of voice
  - Immunization status (BCG vaccination status)
  - Past medical history with emphasis on previous TB infection or treatment
  - Routine general physical examination

- Mantoux test

- Interferon Gama release Assay (IGRA) when recommended by Chest Physician

- Chest X-ray (if newly MOH HCW had been radiographed in less than 6 month earlier, the chest radiograph may not need to be done. Instead, the report of the chest radiograph shall be provided to the Chest Clinic Medical Officer to complete the procedures.

16.2. PERIODIC MEDICAL EXAMINATION

- The pulmonary TB surveillance program should be based on the facility risk classification.

- TB status shall be certified by the attending Medical Officer. If the staffs are found to be TB positive, the management shall commence as appropriate. PTB symptoms screening yearly. Interferon Gama Release Assay (IGRA) Test when recommended by Chest Physician. Chest X-ray when HCWs are symptomatic or recommended by a clinician.

16.3. PRE-RETIREMENT/ / PRE-TRANSFERRED

- Pre-retirement/Pre-Transferred Out, Medical Examination shall be done for HCWs who are about to retire or transferred out of the Risk TB Area (HRTBA). The workflow shall be similar to Periodic Medical Examination.

16.4. MEDICAL LEAVE

- All HCWs confirmed to have active pulmonary TB infection should be given medical leave at least two weeks or until the sputum AFB is negative.

16.5. RETURN TO WORK POLICY

- HCW with Tb should be allowed to return to work when a physician has confirmed and document that the HCW is non-infectious.
- Criteria for return to work
  i. Worker receives adequate anti-Tb therapy
  ii. Cough has resolved
  iii. Results of three consecutive sputum acid-fast bacilli (AFB) smears negative. The sputum should be collected 8-24 hours apart, with at least one being an early morning specimen because respiratory secretions pool overnight.
- After the HCWs resume duty and while they remain on anti-TB therapy, regular monthly follow up is needed to ensure that effective drug therapy is maintained as recommended by the physician and DOT should be practiced.
- If the HCWs discontinue treatment, they need to be evaluated by the Chest Physician / General Physician for the possibility of active TB.

16.6. INVESTIGATION OF TB AMONG HCWs

- Interview the infected HCW to get the personal information, the occupational history and to inspect the work environment.

16.7. NOTIFICATION OF ACCUPATIONAL RELATED TB

- All cases of occupational related Tb infection should be notified within 7 days using the WEHUL1/L2 (JKKP7).

16.8. RECORD KEEPING

- A record of details on each Tb cases among the health care workers should be kept by the facilities within which they are working (at least 5 years)

16.9. GENERAL CONSIDERATION

- Infection Control policies for special healthcare settings should be developed, base on the community Tb risk assessment and reviewed regularly. The policies should include:

  - Appropriate screening for latent TB infection and active TB among HCWs
  - Education and training on the risk for transmission to the HCWs
  - HCW responsibilities in protecting themselves from contracting TB.
  - Provisions for detection and management of patients who have suspected or confirmed TB disease.

- Notice or signage to be put up at HC setting to remind infectious TB patients to wear mask all the time to reduce transmission to others.
- HCWs who use respiratory protection should be provided with the training on respirator use, care and fit testing.

16.10. INTENSIVE CARE UNIT (ICUs)

- ICU with a high volume of patients with suspected or confirmed TB disease should have at least on all room.
- Place ICU patients with suspected or confirmed infectious Tb disease in an All room, if possible.
- Where all is not available, air cleaning system should be installed in ICU wards.
- To help reduce the risk for contaminating a ventilator or discharging *M.tuberculosis* into the ambient air when mechanically ventilating TB patient, place, a bacterial filter on the patient's endotracheal tube (or at the expiratory side of the breathing circuit of a ventilator).
- In selecting a bacterial filter, give preference to models specified by the manufacture to filter efficiency of > 90% at the maximum design flow rates of the ventilator for the service life of the filter, as specified by the manufacture.

16.11. OPERATING THEATRE

- Postpone non-urgent surgical procedures on Tb patients until the patient is determined to be noninfectious.
- Procedures should be scheduled for patients with suspected or confirmed Tb disease when a minimum number of HCWs and other patients are present in the surgical suite, and at the end of the day to maximize the time available for removal of airborne contamination.
- If an OT has an anteroom, the anteroom should be either
  i. positive pressure compared with both the corridor and the OT (with filtered supply air) or
  ii. negative pressure compared with both the corridor and the OT.

- In the usual design in which an OT has no anteroom, keep the doors to the OT closed, and minimize traffic into and out of the corridor to ensure constant negative pressure.
- Air-cleaning systems can be placed in the room or in surrounding areas to minimize contamination of the surrounding after the procedure.
- Respiratory protection should be worn by HCWs to protect the sterile field and to protect HCWs from the infectious droplet nuclei generated from the patient. An N95 disposable respirator should be used. Do not use valve or pressure respirators, because they do not protect the sterile field.
- Post-operative recovery of a patient with suspected or confirmed TB disease should be in an All room in any location where the patient is recovering.
- If an All or comparable room is not available for surgery or postoperative recovery, air-cleaning technologies can be used. However, the infection control committee should be involved in the selection and placement of these supplemental controls.

Reference:
1. Policies and procedures on infection control.ms 142
2. Guidelines on prevention and management of tuberculosis for health care workers in Ministry Of Health Malaysia.

17. POLICY AND PROCEDURES FOR MANAGEMENT OF IMMUNE COMPROMISED PATIENTS

17.1. Keeping immune compromised patients safe from potential infections. The greater the impairment of the immune system, The greater the potential for infection. Reducing risk for infection combines strict attention to patient care practices and to maintenance of the inpatient environment.

17.2. DEFINITIONS

17.2.1. ABSOLUTE NEUTROPHIL COUNT (ANC):

The measure of the number of neutrophil granulocytes (also known as polymorphonuclear cells, PMN's, polys, granulocytes, segmented neutrophils or segs) present in the blood. Neutrophils are a type of white blood cell that fights against infection. The ANC is calculated from measurements of the total white blood cells (WBC), usually based on the combined percentage of mature neutrophils (sometimes called "segs" or segmented cells) and bands, which are immature neutrophils. ANC = (% neutrophils + % bands) x WBC. The unit of ANC is cells per microliter (abbreviated µL; a microliter is equal to one cubic millimeter) of blood. A normal ANC is 1,800 or more cells per microliter. An ANC less than 500 cell/ µL is defined as significant neutropenia and significantly increases the risk of infection.

17.2.2. IMMUNO COMPROMISED PATIENTS:

Patients who are receiving immunosuppressive drugs. Patients with ANC 500x10^6/L-1000x^6/L cells.

17.2.3. SEVERELY IMMUNO COMPROMISED PATIENTS

Patients with ANC<500x10^6/L cells.

17.2.4. NEUTROPENIC PRECAUTIONS

Precautions designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in healthcare settings.

Neutropenic precautions apply to adult and pediatric patients with ANC < 500 x106/L. For adult patients with hematologic malignancies and all pediatric patients regardless of underlying diagnosis with an ANC < 500 x 10^6/L Neutropenic Precaution will be instituted.

17.2.5. BLOOD AND MARROW TRANSPLANT (BMT) PRECAUTIONS:

Precautions designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in healthcare settings. BMT precautions may apply to allogenic transplant patients and to autologous transplant patients.

17.3. POLICY

17.3.1. BLOOD AND MARROW TRANSPLANT PRECAUTIONS:

BMT precaution are in addition to Standard Precautions. High Efficiency Particulate Air (HEPA) filtration recommended for room. Dietary restrictions: Dietary Guidelines for adult Bone Marrow Transplants Patients. Visitor screening for symptoms of communicable disease. If patient has ANC <500, children <12 are not allowed to visit. Adult BMT patients are confined to the BMT Unit even after ANC >500 and even if re-admitted if they have not recovered T cell immunity. Pediatric: Confinement to room when ANC is <500 x106/L except for emergencies. When ANC >500 x 106/L, may leave room but must stay in BMT Unit. Patients who are readmitted post-transplant must stay in room or may be in BMT Unit if ANC>500 x 106/L. Sterile drinking water. Live plants and flowers are not allowed. Patients wear a surgical mask when outside their room.

17.3.2. NEUTROPENIC PRECAUTIONS

Neutropenic precautions are in addition to Standard Precautions. Dietary restrictions: Dietary Guidelines for Adult Bone Marrow Transplant Patients Visitor screening for symptoms of communicable disease. Live plants and flowers are not allowed. Patient wears a surgical mask when outside their room.

17.3.3. HAND HYGIENE

All healthcare workers are required to follow the Infection Control hand Hygiene Policy. In the pediatric Oncology and BMT unit, all health care personnel and visitors are required to perform a two minute scrub from elbows to fingertips using antimicrobial soap. Upon entering and leaving the patient's room all individuals must either was hand with soap and water or use gel.

17.3.4. CENTRAL VENOUS CATHETER (CVC) CARE AND MAINTENANCE

Adult CVC Care and Maintenance Pediatric / Neonatal CVC Care and Maintenance

17.3.5. PLANTS AND FLOWERS RESTRICTION:

Vase water and soil in plants contain large concentrations of potential pathogens, and decaying organic matter may contain fungus. Live plants and flowers are restricted from intensive care unit patient rooms and immune compromised patient rooms. Fake plants and flowers are discouraged due to dust collection.

17.3.6. SIGNAGE

- Adult Unit: "IMMUNOCOMPROMISED PRECAUTION" signs are affixed outside the room of neutropenic patients and/or BMT patients.
- Signage can be initiated by Nursing following Provider order set
- Hospital will use the following signage for the respective indications: Low-Risk Immuno-compromised Isolation most patients admitted for routine chemotherapy.
- Solid Organ Transplant
  Standard-Risk Immunocompromised Isolation
  Autologous BMT patients being readmitted with ANC > 500 x 106/L
- Neutropenic patients (ANC < 500 x 106/L) on hematology/oncology service not meeting criteria for Low-Risk or Strict/High-Risk Immunocompromised Isolation.
- High-Risk Immunocompromised Isolation.
  Patients with AML (newly diagnosed, relapsed or refractory)
  Patients being admitted for re-induction of therapy for ALL.
- Other severely Immuno-compromised patients (e.g., being treated for GVHD, on immune-suppressive medication) may be considered for this category).
- Strict Immuno-Compromised Isolation
  All BMT patients from day of admission until at least until ANC > 500 x 106 cells/: for 3 consecutive days. BMT patients who have been readmitted and have not recovered T-cell immunity. Patients with a SCID diagnosis.

17.3.7. HEALTHCARE WORKERS:

Healthcare workers with acute infection are restricted from work to prevent transmission to patient: Infection Control Policy 3.2.

17.3.8. ROOM PLACEMENT

- Single occupancy room with hand washing sink and private bathroom are suggested;
  However,
- Pediatric patients on Low-Risk or Standard Risk or Standard Risk Immuno-Compromised Isolation do not require a private room.
- Pediatric patients on Strict/High-Risk Immuno-Compromised Isolation require a private room.

- For specifics on room screening refer to the Adult Blood and Marrow Transplant Program's SOP # CL 121.04 – Infection Control in the Adult BMT Patient (Under Revision).
- Patient Care Recommendations: Minimize invasive procedures (e.g., bladder catheterization, IV catheter insertions, or IV line entries). Pediatric patients should not have their temperature taken by either oral or rectal routes, axillary temperatures only. Oral temperature are acceptable in adult patients.

17.4. PROCEDURES

14.4.1. ENVIRONMENTAL CONTROLS:

Facilities Management inspects and performs preventive maintenance of duct and filter systems routinely. Facilities Management ensures dust mitigation measures must be utilized during all construction activities at the Medical Center. Dust-generating construction activities that disturb existing dust or create new dust must be conducted in enclosures that prevent the flow of particles into patient areas.

17.4.2. WATER SUPPLY SYSTEMS (Legionella spp. prevention)

In the event of waterborne of illness, HEIC may institute the following interventions: Restrict severely immune compromised patients from showering. Use water that is uncontaminated with Legionella spp. for hematopoietic stem cell transplant patient's sponge baths. Provide patients with sterile water for tooth brushing, drinking, and for flushing nasogastric tubing during a legionellosis outbreak.

References
1. Infection Control Policy on Hand Hygiene
2. Dietary Guidelines for Adult Bone Marrow Transplant Patients
3. Central Venous Catheter (CVC) Care and Maintenance (Adult)
4. Central Venous Catheter (CVC) Care and Maintenance (Pediatric / Neonatal)
5. Infection Control Policy on Healthcare Workers with infections
6. Infection Control Construction Policy
7. Facilities Management Building Services
8. Adult Blood and Marrow Transplant Program SOP # CL121.04 Infection Control in the Adult BMT Patient (Under Revision)

18. DEFINITION OF HEALTHCARE ASSOCIATED INFECTION (HCAI) OUTBREAK (EITHER ONE)

18.1. Two or more associated case occurs at the same time within same locality/department.

18.2. Greater than expected rate of infection compared with the usual background case for the place and time.

18.3. In certain newly emerging disease e.g. legionnaires infection or anthrax, will only require 0ne (1) single case.

18.4. STANDARD OPERATING PROCEDURE (SOP) INFECTION CONTROL DURING OUTBREAK

18.4.1. GENERAL PRINCIPLES

- Standard precaution should be practiced in the management of all infectious cases. Additional precautions maybe required depending on the pathogens suspected.
- At every level of care, there should be a designated officer (HIACC/Director) to coordinate and monitor the practice of infection control measures.
- The role of coordinator includes.
  - Ensuring adherence to infection control practices
  - Ensuring adequate supply and appropriate usage Personal Protective Equipment (PPE).
  - Surveillance among health care workers involved in the management of contagious Disease (registry of staff involved).

18.4.2. Infection control practices should involve all clinical areas/disciplines involved in patient care or patient movement.

18.4.3. Type of isolation required is depend on the mode of spread of the microorganism suspected. Placement of infectious case is often determined by the availability of isolation facilities in the health institution. In principle, placement of such case, should be in the following facilities:

- Single room with bathroom and adequate air exchange (6-8 exchange per hour)
- Nursed with room closed.

18.4.4. Cohort of patients

Patients confirmed with the same disease can be cohort. In general, suspected cases can be cohort only as a last option. When cohort, the following factors should be considered:

- Spacing between beds at least 6 feet
- Regular decontamination of common areas including bath facilities.
- Improved personal hygiene of patients including frequent hand hygiene.

- All patients should be provided with surgical mask 9if not contraindicated). Procedures that result in increase aerosolization of respiratory secretions (nebulization, chest physiotherapy) should be avoided.
- Adequate air exchanges in room of at least 6 exchanges/hour.

18.4.5. Infection control measures should be appropriately adjusted once pathogen/disease is identified or confirmed.

18.4.6. Time to confirmation of diagnosis is crucial; to reduce implementation of inappropriate infection control measures.

18.4.7. Each patient should be nursed using personalized equipment (thermometer, BP set, stethoscope). If sharing is necessary, appropriate decontamination should be performed.

18.4.8. Prophylaxis for close contact should be given when indicated for meningococcal meningitis and diphtheria.

INFECTION CONTROL BY SYNDROMIC APPROACH

Syndrome	Isolation	PPE	Specimen collection/transport/storage	Spillage contamination	Waste disposal
Acute Diarrheal Syndrome	Mode of spread; oral faecal **Recommendation:** Standard precaution/hand washing (see general principles 1.4) **Document:** 1.Policy and procedure of infection control, KKM(pgs.13-26)	Gloves Gown Boots Shoe cover	Leak proof container Double bagged **Document**: 1.Syndromic notification and Laboratory Investigation Manual 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.Disinfectant and sterilization policy and practice.	**Document:** 1.Disinfectant and sterilization policy and practice.
Acute Neurological syndrome	Mode of spread; oral faecal,droplets, close contact, vector borne **Recommendation:** Strict Isolation + extended *ppe (see general principles 1.4) **Document:** 1.Policy and procedure of infection control, KKM(pgs.13-26)	Gloves Gown Mask 3ply surgical Visors/goggles depending on procedures *Boots/Shoe cover	Leak proof container Double bagged **Document:** 1.Syndromic notification and Laboratory Investigation Manual 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.Disinfectant and sterilization policy and practice.	**Document:** 1.Disinfectant and sterilization policy and practice.
Acute Respiratory syndrome	Mode of spread; droplets, close contact **Recommendation:** As for SARS standard precaution /hand hygiene **Document:** 1.SARS management protocol	Gloves Gown Mask -N95 PAPR needed for more invasive procedures (bronchoscopy , intubation) Visors/goggles Boots/Shoe cover **Document:** 1.SARS management protocol	**Document:** 1.SARS management protocol 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.SARS management protocol	**Document:** 1. SARS management protocol

Syndrome	Isolation	PPE	Specimen collection/transport/storage	Spillage contamination	Waste disposal
Acute Dermatological Syndrome	Mode of spread; droplets close contact/airborne **Recommendation:** Strict Isolation + N95 nask, extended*PPEs(if smallpox suspected) or Strict Isolation + extended*PPEs(if not smallpox) **Document:** 1.Policy and Procedure of Infection Control , KKM (if not smallpox; pgs 12-26)	Gloves Gown Surgical mask Visors/goggl depending on procedures *Boots/Shoe cover. **Document:** 1.Policy and Procedure of Infection Control , KKM (if not smallpox; pgs 12-26)	1.Syndromic notification and Laboratory Investigation Manual 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.Disinfectant and sterilization policy and practice.	**Document:** 1.Disinfectant and sterilization policy and practice.
Acute Heamorrhagic Fever Syndrome	If history of travel to endemic area/counters with recent outbreak of exotic viral fevers (Africa) – as for SARS Management Protocol (Sect 7, pgs 7-9) If no relevant travel history, Standard precaution and hand washing recommended) **Document:** 1.Policy and procedure of infection control, KKM (pgs.1 2-26)	Gloves Gown	**Document:** 1.Syndromic notification and Laboratory Investigation Manual 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.Disinfectant and sterilization policy and practice.	**Document:** 1.Disinfectant and sterilization policy and practice.
Acute Jaundice Syndrome	**Recommendation :** Standard precaution And hand hygiene **Document:** 1.Policy and procedure of infection control, KKM (pgs.1 2-26)	Gloves Gown	**Document:** 1.Syndromic notification and Laboratory Investigation Manual 2.Protokol Keselamatan Makmal HKL (pgs 1-7)	**Document:** 1.Disinfectant and sterilization policy and practice.	**Document:** 1.Disinfectant and sterilization policy and practice.

Reference;
1. Policy and procedure of infection control, KKM
2. SARS management protocol
3. Syndromic notification and Laboratory Investigation Manual
4. Protokol Keselamatan Makmal HKL
5. Disinfectant and sterilization policy and practice.

18.3. STANDARD OPERATIONAL PROCEDURES FOR EMERGENCY AND TRAUMA DEPARTMENT (ETD)

18.3.1. AT THE ENTRANCE ETD

- Create a triage corner/area/room before the registration counter. This must be managed by trained paramedic/doctors who have to be listed in special registry.
- All patients who come to the clinic should be screened for suspected contagious disease at the area.
- The health staff conducting the triage must wear a mask and gloves.
- This area must NOT be air conditioned, window open and well ventilated.
- Information and instruction including posters regarding contagious disease should be displayed at all entrances.
- All suspected cases to be sent immediately to hospital.
- Create special route (where possible) for transfer of suspected cases direct to designated hospital with referral letter according to procedure spelt out in guidelines for transportation of patient.
- Keep registry of these cases

- Name
- Identification number (I/C no)
- Address
- Contact No/Handphone numbers
- Sign and symptoms
- History of travel, where and contacts
- Who are their immediate contacts

- The triage room must be disinfected after each suspected case.

18.3.2. GUIDELINES ON ROOM DISINFECTIONS

- Cleaner should wear mask, gown and glove.
- All spillage must be dealt with as soon as possible according to the procedure for decontamination of spillage.
- Disinfect spillage with sodium hypochlorite 10,000 ppm and leave for 5-15 minutes contact time. Wipe spillage with absorbent materials and discard as clinical waste. Decontaminate area by wiping sodium hypochlorite. Mops and buckets should be disinfected after removal of the spill.
- All surfaces should be wiped with sodium hypochlorite 1,000 ppm and left to air dry for at least three hours.

18.3.3. GUIDELINE MUST BE STRICTLY FOLLOWED

The guideline must be strictly followed:

- Designate one vehicle if possible.
- During transporting of patient, switch off the air conditioning and win down all windows.
- If possible not more than one staff (fully protected) to accompany the suspected case.
- Relatives should not accompany the patient in the same vehicle.
- Driver must also use proper PPE.
- Other patients should not share this vehicle.
- This vehicle must be disinfected after every case and air-dried with window wound down and park in designated lot.

18.3.4. PROTECTION FOR HEALTH STAFF

Besides the usual measures under standard precaution, health staff is required to take the following measures.

Personal hygiene
5 moment hand hygiene with clean water and soap

- Before patient contact
- Before aseptic task
- After body fluid exposure risk
- After patient contact
- After contact with patient surrounding
- After removing glove
- Avoid touching mucosal surfaces such as nose and eyes (it can be the route of infrction)
- Use alcohol hand rub – based skin disinfectant if hand washing is not feasible.

Personal protection
Wear PPE when handling suspected cases.

- Disposable gloves
- Mask
- Disposable gown
- Goggles
- Apron
- Boots or shoe cover

*Staff is advised to have a bath and change clothing before going home.

*Ensure good diet

*Daily and frequent monitoring of all health staff involved in the triaging.

*Look out for early signs and symptoms.

*Temperature recording twice daily

*Avoid traveling to affected areas (where relevant)

*Health care workers exposed to direct contact with suspected contagious patient should be monitored more closely. Provide early treatment where necessary.

Follow up suspected cases

Clinic that has referred any suspected case to the designated hospital is required to follow up with that hospital (by telephone, on the following day) on the diagnostic outcome of the case. If the case is confirmed, notify the Medical Officer of Health.

Reference:
1. Policies and procedures on infection control
2. Standard operating procedure

19. INFECTION CONTROL PRECAUTIONS FOR ALL HDU PATIENTS

19.1. Proper hand hygiene technique.

19.2. Wear disposable gloves when caring for the patient or touching the patient equipment. Ensure a supply of clean disposable gloves and clinical waste near each dialysis station.

19.3. Wash hands after gloves are removed and between patient contacts, as well as after touching blood, body fluids, secretions, excretions, and contaminated items.

19.4. A sufficient number of sinks with soap shall be available to facilitate hand washing.

19.5. If hands are not visibly soiled, use of a hand rub can be substituted for hand washing.

19.6. Items taken to a patient dialysis station, including those placed on top of dialysis machines, shall be disposed, dedicated for use only on a single patient, or cleaned and disinfected before being returned to a common clean area or used for other patients.

19.7. Unused medications or supplies (e.g. syringe, alcohol swabs) taken to the patients station shall not be returned to a common clean area or used on other patients.

19.8. Prepare medication in a room or area separated from the patient treatment area and designated only for medications.

19.9. Do not handle or store contaminated (used supplies, used equipment, blood samples, or biohazard containers0 in areas where medications and clean (unused) equipment and supplies are handled.

19.10. Deliver medications separately to each patient. Common carts shall not be used within the patient treatment area to prepare or distribute medications.

19.11. If trays are used to distribute medications, clean them before using for different patient.

19.12. Intravenous medication vials labelled for single use, including erythropoietin, shall not be punctured more than once. Once a needle has entered a vial labelled for single use, the sterility of the product can no longer be guaranteed.

19.13. Residual medication from two or more vials shall not be pooled into a single vial.

19.14. If common supply cart is used to store clean supplies in the patient treatment area, this cart shall remain in a designated area at sufficient distance from patient stations to avoid contamination with blood. Such carts shall not be moved between stations to distribute supplies.

19.15. Staff members shall wear gowns, face shields, eye wear or masks to protect themselves and prevent soiling of clothing when performing procedures during which spurting or spattering of blood might occur (e.g., during initiation and termination of dialysis, cleaning of dialyzers, and centrifugation of blood).

19.16. Such protective clothing or gear shall be changed if it becomes soiled with blood, body fluids, secretions or excretions.

19.17. Staff members shall not eat, drink, or smoke in the dialysis treatment area or in the laboratory.

19.18. Patients can be served meals or eat food brought from home at their dialysis station. The glasses, dishes and other utensils shall be cleaned in the usual manner; no special care of these items are needed.

19.19. Establish written protocols for cleaning and disinfecting surfaces and equipment in the dialysis unit, including careful mechanical cleaning before any disinfection process. If the manufacturer has provided instructions on sterilization or disinfection of the items; this instruction shall be followed. For each chemical sterilant and disinfectant, follow the manufacturer's instructions regarding use, including appropriate dilution and contact time.

19.20. After each patient treatment, clean environmental surfaces at the dialysis station, including the dialysis bed or chair, countertops and external surfaces of the dialysis machines, including containers associated with the prime waste. Use any soap, detergent, or detergent germicide.

19.21. Between uses of medical equipment (e.g., scissor, hemostats, clamps, stethoscopes, blood pressure cuffs), clean and apply a hospital disinfectant (i.e., low-level disinfection); if the items are visibly contaminated with blood, use a tuberculocidal disinfectant (i.e., intermediate-level-disinfection).

19.22. For a blood spill, immediately clean the area with a cloth soaked with a tuberculocidal disinfectant or a 1:100 dilution of household bleach (300-600mg/L free chlorine) (i.e, intermediate-level-disinfection). The staff member doing the cleaning shall wear Gloves, and the cloth shall be placed in a bucket or other leak proof container.

19.23. Published methods shall be used to clean and disinfect the water treatment and distribution system and the internal circuits of the dialysis machine, as well as to reprocess dialyzer for reuse.

19.24. These methods are designed to control bacterial contamination, but will also eliminate blood-borne viruses. For single-pass machines, perform rinsing and disinfection procedures at the beginning or end of the day.

19.25. For batch re-circulation machines, drain, rinse and disinfect after each use. Follow the same methods for cleaning and disinfection if a blood leak has occurred, regardless of the type of dialysis machine used.

19.26. Routine bacteriologic assays of water and dialysis fluids shall be performed according to the recommendations.

19.27. Venous pressure transducer protectors shall be used to cover pressure monitors and shall be changed between patients, not reused. If the external transducer protector becomes wet, replace immediately and inspect the protector. If fluid is visible on the side of the transducer protecter that faces the machine, have qualified personnel open the machine after the treatment is completed and check for contamination. This includes inspection for possible blood contamination of the internal pressure tubing set and pressure sensing port. If contamination has occurred, the machine must be taken out of service and disinfected using either 1:100 dilution of bleach (300-600mg/L free chlorine) or a commercially available, EPA registered tuberculocidal germicide before reuse.

19.28. Housekeeping staff members in the dialysis facility shall promptly remove soil and Potentially infectious waste and maintain an environment that enhance patient care.

19.29. All disposable items shall be placed in bags thick enough to prevent leakage. Wastes generated by the dialysis facility might be contaminated with blood and shall be considered infectious and handled accordingly.

Reference:
Adapted from CDC guideline

20. INFECTION CONTROL FOR SINGLE USED ITEM/MEDICAL DEVICES SHALL COMPLY WITH THE MANUFACTURES INSTRUCTIONS.

NO	ITEM	FREQUENCY	EXAMPLE
1.	IV drip set	72 Hours	Start : 7.3.2023 @1100 hrs Due : 10.3.2023 @1100 hrs
2.	IV Cannula	72 Hours	Start : 7.3.2023 @1100 hrs Due : 10.3.2023 @1100 hrs
3.	Extention tubing.e.g. dopamine, insulin infusion	72 Hours	Start : 7.3.2023 @1100 hrs Due : 10.3.2023 @1100 hrs
4.	Urine catheter	2 weeks	Start : 7.3.2023 @1100 hrs Due : 21.3.2023 @1100 hrs
5.	Urine bag	When in need (if urine bag dirty, blood stained urine, Murmur)	-
6.	Ryle's tube	2 weeks	Start : 7.3.2023 @1100 hrs Due : 21.3.2023 @1100 hrs
7.	Normal saline or sterile H2o for injection 500 mls: - Nebulizer - Dressing - Suction	24 hours	Start : 7.3.2023 @1100 hrs Due : 8.3.2023 @1100 hrs
8.	Silicon tubing for suction	Change after use	-
9.	Suction catheter / O2catheter	Discard straight away after used	-
10.	Minispike (Green0	24 hours	Start : 7.3.2023 @1100 hrs Due : 8.3.2023 @1100 hrs
11.	Transper spike (White)	24 hours	Start : 7.3.2023 @1100 hrs Due : 8.3.2023 @1100 hrs
12.	IV drip set for IV Flagyl	Discard immediately after used	-
13.	Micro drip chamber set	24 hour	Start : 7.3.2023 @1100 hrs Due : 8.3.2023 @1100 hrs
14.	Normal saline for oxygen humidifier if patient need 3 liter and above (continuously) If less than 3 liter not need to put normal saline in the oxygen humidifier (not continuously / pt refer to Sibu hospital)	24 hours /PRN	Start : 7.3.2023 @1100 hrs Due : 8.3.2023 @1100 hrs

21. COLOUR CODING FOR MOP **HEADS, DUST MOP AND LINEN FOR CLEANSING**

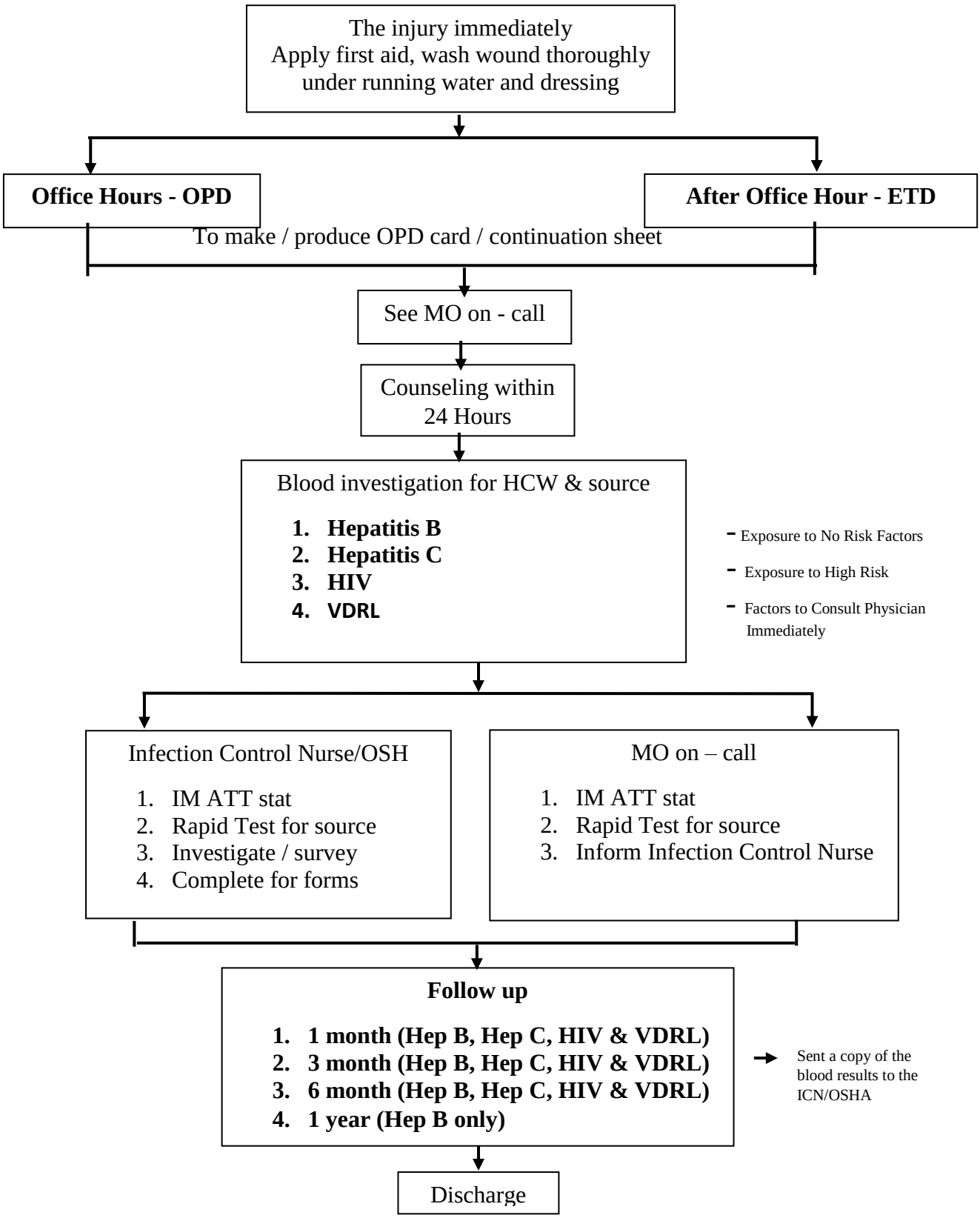
BLUE 	**FOR CLINICAL AREA / MEDICAL** **WARD, TREATMENT ROOM, CLINIC, EXAMINATION ROOM, AND PANTRY.**
YELLOW 	**FOR GENERAL AREA** **CORRIDORS, LOBBIES, OFFICES, KITCHEN, STORES, DINING, PAVEMENT, FOOTPATH, PANTRY WITHIN WARD, WASHING/DRYING AREA (PATIENT) WITHIN WARD, SISTERS ROOMS, DOCTORS ON CALL ROOM, NURSES STATION/COUNTER AREA, VISITORS LOUNGE WITHIN WARD, POLYCLINICS WITHIN THE CONTRACT HOSPITAL BOUNDARIES, LOUNDRIES, SEMINAR ROOMS, AUDITORIUMS, PHYSIOTERAPY UNIT, HOSTELS, QUARTERS MORTUARY AND ANY OTHER AREAS WITHIN THE CONTRACT HOSPITALS BOUNDARIES OTHER THAN MEDICAL AND SPECIALIST AREAS.**
GREEN 	**FOR CRITICAL AREA / SPECIALISED** **OPERATION THEATRE, STERILE SERVICES UNIT, BLOOD BANK, BURNS UNIT, ALL INTERSIVE CAREUNITS, HDU, CSSD, LABOUR ROOM, IODINE ROOM, SCOPE ROOM, IMAGING AND DIANOSTIC ROOMS / X-RAY, CHEMO ROOM, LABORATORIES, ISOLATION WARDS, ACCIDENT AND EMERGENCY UNIT, MILK ROOM &DENTAL DEPARTMENT/ CLINIC, PHARMACY AND SPILLAGE.**
RED 	**FOR TOILET** **TOILETS, DIRTY UTILITY AND SLUICE ROOM**
WHITE 	**FOR POLISHING**

22. POLICY FOR SHARPS INJURY AND MUCOSAL EXPOSURE KANOWIT HOSPITAL

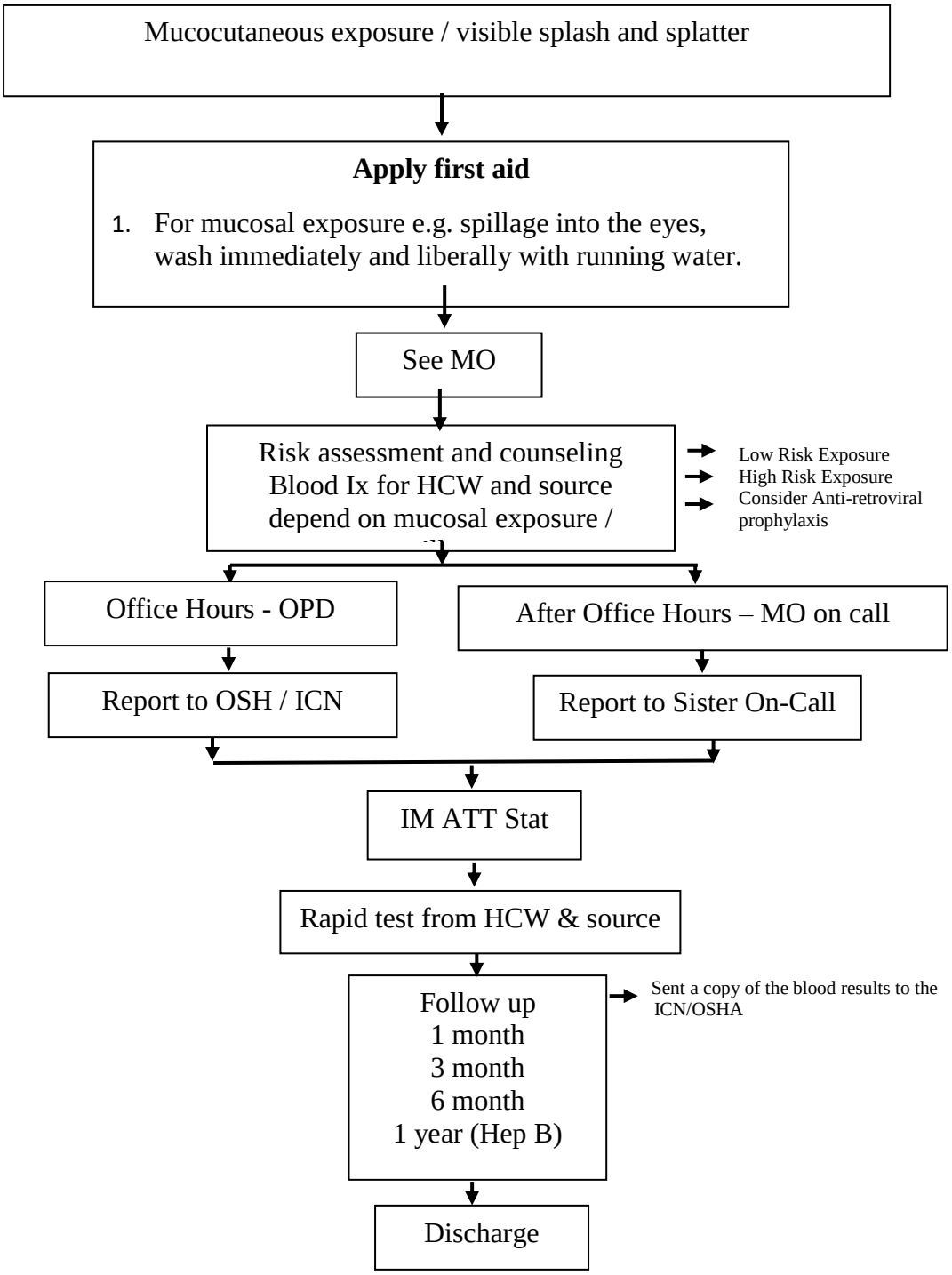
1. When a staff member sustain a sharps injury or mucosal exposure to blood and body fluids, **First Aid** in the ward should be applied immediately.
2. For sharps injury, wash immediately and thoroughly with soap and water and dressing. If the injury is severe proceed to the E&T after initial First Aid.
3. For mucosal exposure e.g. spillage into the eyes, wash immediately and liberally with running water.
4. Obtain a blood specimen from the involved patient and send it in a plain tube to the Laboratory **HbsAg, anti-Hbs, VDRL, HIV** (with consent).
5. Ascertian whether the involved patient belongs to high risk category for hepatitis/VDRL/HIV infection, if so, ensure the specimen is labeled "Biohazard".
6. The Laboratory request Form should specify the following information:
    i) URGENT REQUEST – SHARPS INJURY
    ii) Blood from source patient
    iii) "BIOHAZARD" warning if indicated
    iv) Name of injured staff
7. At this stage is not necessary to take blood from the staff member.
8. Anti-Tetanus booster immunization should be considered in all cases of sharps injury.
9. Report to the **Infection Control Nurse during office hours** or the **E&T after office hours**.
10. For cases reported to the E&T, the AMO of E&T will inform the ICN of the incident on the next working day.
11. The ICN will contact the involved staff for any further action to be taken. A blood specimen from the staff member may be requested for, depending on the status of involved patient.
12. If necessary the ICN will also refer the staff member to the Medical Officer for counseling and further management.
13. Subsequent actions to be taken are summarized in the flow chart on the next page.

Ref: Policy and Procedure of Infection and Antibiotic Control.KKM

MANAGEMENT OF POST OCCUPATIONAL EXPOSURE – NEEDLE STICK INJURY AMONG HEALTH CARE WORKERS AT HOSPITAL KANOWIT



MANAGEMENT OF POST OCCUPATIONAL MUCOCUTANEOUS EXPOSURE TO BLOOD BORNE
FOR HEALTH CARE WORKERS AT HOSPITAL KANOWIT



MANAGING NEEDLESTICK / SHARPS INJURY FOR ONE MEDICARE (OMC) WORKERS AT HOSPITAL KANOWIT