



Asia Remote Health Guidelines

Version 1.0

2015

Guidelines to promote the standardisation of
remote healthcare in Asia



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1. Introduction

With the rapid growth of the energy, mining and maritime industry in Asia there is an increasing awareness of the health conditions for workers in remote sites. This has led healthcare practitioners to focus on developing an international framework for remote site health in Asia. Such guidelines play a key role in promoting the standardisation of medical services for all workers who live and work in remote sites. Thus, the Asia Remote Site Committee (“ARHC”) has taken on the responsibility in building a guideline applicable to the medical infrastructure and system in Asia. Through the contribution and discussion of experts from various fields of remote health, ARHC and its partners have built this international guideline that aims to continuously improve the remote healthcare standards in Asia. This first version of the Asia Remote Health Guidelines focuses on the offshore oil and gas industries, while the subsequent versions will address further standards on mining and onshore industries.

2. Purpose

This document serves as a guideline for healthcare practitioners to implement medical services in remote sites, including but not limited to offshore, mining, manufacturing and other remote installations. The recommendations in the guideline are based on the healthcare system of several Asian countries, namely Singapore, Thailand, Malaysia, Vietnam, Indonesia, China and India. Due to different levels in medical development and as well as country policies, the guidelines may not be applicable in all countries in Asia, but to be used as a minimum standard for developing the remote site healthcare system.

In the guideline, we address the risk assessment for remote site installations, as well as the standardisation of healthcare practitioner’s competency which is based on their knowledge, skills and experiences. We also studied site clinic set-ups in various countries across Asia and to recommend the minimum medical supply system for healthcare professionals.

3. Who is this document for?

- Managers
- Supervisors
- Health professionals
- Health, safety and environment professionals
- Emergency response team members and service providers

4. Disclaimer

This document is based on subject leaders’ individual views\ derived from their involvement in providing healthcare in remote locations in energy industry and its associated activities. The views presented in this document do not necessary represent the views of the participants’ organisations. We advise you

to always refer back to the local regulatory or business requirements and ensure it is appropriate for your particular location, activities and risks management policies before adopting the guidelines produced by Asia Remote Health Committee.

5. Glossary of Terms

5.1 General

- a. **Remote Healthcare** – Remote healthcare areas are characterised by geographic isolation, a full range of extreme climatic conditions and limited medical care and transportation resources to tertiary medical centres. They are also often characterised by people from different nationalities, racial and religious backgrounds working together in a tight environment. Remote healthcare therefore demands comprehensive knowledge from multidisciplinary healthcare practitioners. It involves general practice in emergency medicine with an emphasis on public health and occupational healthcare.
- b. **Standard** – A standard is a statement of what is to be achieved. It is important that all practices are measurable so that the business can be monitored, measured and evaluated. In this guideline, to ensure that the recommended standards are applicable to as many countries in Asia as possible, we take generally accepted international qualifications and quantified measurements to apply the minimum criteria.
- c. **Competency** – Competency indicates the level of knowledge, skill and experience a health practitioner shall attain in order to show that he or she is capable to serve their role and provide appropriate medical service. It includes medical professional skills, understanding of safety regulations, medical and physical fitness.
- d. **Certification** – Certification is certified degree or qualification from registered medical schools, institutions or organisations to show the personnel are qualified with certain level of knowledge and skills corresponding to their degree or certification.
- e. **Working Experience** – Working experience indicates the personnel have worked in related fields and obtained corresponding skill sets to provide medical advice and treatment but without certification.
- f. **Awareness** – Awareness indicates the personnel are able to use correct terminology to describe the issues and to interpret the situation and cases.
- g. **Fitness Test** – Medical and physical tests to examine the fitness of staff to convey demanded activities in remote healthcare, such as supporting patients and equipments transportation.



5.2 Medical Emergency Response

- a. **Emergency Medicine** – Emergency medicine is the medical specialty dedicated to diagnosis and initial treatment of sudden illness or trauma (American College of Emergency Physicians “ACEP”).
- b. **First Aid** – basic set of medical treatment rendered to patients. The treatment may be given by lay persons or medical personnel. Personnel receiving First Aid treatment also requires training.
- c. First Aid treatment is often given by a lay person for the purpose of saving lives and reducing the consequences of illness and injury. For patients undergoing First Aid treatment, they would still be required to be attended to by a trained medical personnel with advanced resuscitative skills and/or transferred to a medical facility to undergo more complex treatment.
- d. First Aid treatment would also refer to treatment of minor illnesses or injuries where the expertise of medical personnel is not required.
- e. **Medical advice and management on site** – Cases whereby the nature of the illness / injury allow the patient to remain on site and the condition to be treated on site with the remote support of a Topside Doctor.
- f. **Medical Emergency Response Planning** – Better known as “MERP” and this refers to a set of Pre-deployment Plans to manage medical emergencies and medical evacuation in remote locations. The plan would contain the detail logistic and communications contacts and activation flow charts in management of the medical emergency.
- g. **Risk Assessment** — This generally results in a holistic view of tasks and positions in the organisation, and the associated health and safety hazards. Other risk assessment processes, including safety cases and HAZID (Hazard Identification) programmes, will result in a systematic assessment of activities and the identification of safety-sensitive positions (IPIECA).

5.3 Communication and Support

- a. **Remote Medical Support (Topside)** – The provision of health services beyond the traditional physical boundaries of the hospital or clinic through the use of specific trained medical personnel in remote medicine, supported by 24/7 communications technology, including telemedicine, telephone, internet or web-based healthcare to medical professionals familiar in remote medicine.
- b. **Telemedicine** – Telemedicine is the use of medical information exchanged from a remote site to a medical managing centre via electronic communications including voice communications, video communications, email and utilising communication technology from radios (Very High Frequency “VHF”, High Frequency “HF”), phones, smart phones/tablets, satellite communications, wireless tools and other forms of



telecommunications technology that enables providers to extend their reach, and improve their efficiency and effectiveness while still maintaining high quality care and attention to patient safety. It is the provision of medical advice and the direction of clinical treatment through Tele-monitoring and Tele-consultation.

5.4 List of Abbreviations

ARHC	Asia Remote Health Committee
ACLS	Advanced Cardiac Life Support
ACEP	American College of Emergency Physicians
BOSIET	Basic Offshore Safety Induction and Energy Training
HUET	Helicopter Underwater Escape Training
ITLS	International Trauma Life Support
AHA	American Heart Association
OSHA	Occupational Safety & Health Administration
IADC	International Association of Drilling Contractors
MERP	Medical Emergency Response Plan
IPIECA	The global oil and gas industry association for environmental and social issues
TtT	Train the Trainer
Medevac	Medical Evacuation



6. Health Risk Assessment

6.1 Introduction

Risk Assessment identifies potential hazard in remote installations, providing referential information for healthcare practitioners to develop appropriate medical support on the site.

Many organisations adopted the IRHC (Institute of Remote Health Care) **recommendation:**

- 4mins: to reach a First Aider (First Aid Kit and Automated External Defibrillator “AED”)
- 1 hour: to reach Remote Site Medical Personnel
- 4 hours: to reach shore based hospital

Measurement on the remoteness of the site is regarded as the key factor and standard to identify the needs of medical support. However, simplistic reliance on one key factor could lead to potential costly mitigations such as special medication, diagnostics, resuscitative methods and enforcement of timely medevac. In some scenarios, timely medevac is simply not possible due to geographical distance, or lack of air medevac resources. This gap is substituted by “ALARP” (As Low As Reasonably Practicable) Risk Mitigation methods.

In many locations in Asia, helicopters are simply not as available as in Europe or the United States. In addition, the nearest shore-based hospitals may not have the capacity to manage severe casualties. As such, utilising the measurement on the remoteness of the site to the nearest shore-based hospital may not be the best method to set the standard. Healthcare practitioners have realised that this methodology limits the understanding of the risk levels of each specific site and is not applicable to some remote installations, in particular in the Asia region. Therefore ARHC has adapted the following risk assessment methodology ^[1], which evaluates the risk level in a case by case basis.

Through this methodology, a healthcare practitioner can study the past data for each site, based on the impact of the hazard and the likelihood of an incident occurring at the particular remote site. Consequently, the healthcare practitioner could identify the needs and recommend the appropriate medical service.

[1] “A road Map to Health Risk Assessment in the Oil and Gas Industry”, *IPIECA*



6.2 Requirement of Health Risk Assessment

6.2.1 Activities Risk (Health & Safety Risk Approach)

- a. Hazards Analysis (Man-made Hazards: Physical, Electrical, Chemical, Biological and etc)
- b. Hazards Analysis (Natural Hazards: Typhoons, Earthquake, Floods, Landslides, Riots)
- c. Risk Analysis (Activities: Construction, Drilling, Deep Dive, Mining)
- d. Risk Mitigation Efforts: (Substitution, Automation, Replacement, PPE and etc)

6.2.2 Work Force Risk Analysis

- a. Age of Work Force
- b. Gender of Work Force
- c. Health Status: Body Mass Index (BMI)
 - (i) Smoking, Alcohol
 - (ii) Mental Stress
 - (iii) Chronic Illness (Diabetes, Hypertension, Heart Disease, Asthma)
 - (iv) Immunisation Status
- d. Fit to work screen

6.2.3 Supporting Medical Infrastructure

- a. On-site Clinics and Medical Personnel
- b. Nearest Hospital
- c. Nearest Centre of Medical Excellence
- d. Evacuating Assets (Ground Ambulance, Helicopters, Air Ambulance)
- e. Dedicated Medical Escorts

6.2.4 Site Health Audit

- a. Accommodation
- b. Water & Sanitation
- c. Food Storage
- d. Food Preparation & Serving
- e. Recreation Area
- f. Health Promotion Activity

6.2.5 Medical Emergency Response Plan

- a. Medical Facilities Location and Contact
- b. Escalation Procedure
- c. Evacuation Assets (Availability and Capability)
- d. Airport Support (Opening and Closing Timing)

- e. Land Road Access
- f. Sea Port Access
- g. Access to Telemedical Support (Basic and Advanced)

6.2.6 Protocol

- a. Single Casualty Protocol
- b. Mass Casualty Protocol
- c. HAZMAT

6.2.7 Analysis of Site Medical Statistic

- a. Mortality and Morbidity Stats
- b. Work Related Incidents and Lost Time Injury (LTI)
- c. Occupational Diseases
- d. Infectious Diseases
- e. Evacuation Statistics
- f. Outcome Measurements
 - (i) Medevac Timing vs Site-Hospital Distance
 - (ii) Survival Outcome (onsite and in hospital)

6.2.8 Recommendations

- a. Medical Capability (Medical Personnel)
- b. Medical Capability (Medical Equipment & Medications)
- c. Medical Capability (Escort Medical Team: 1 man vs 2 man vs Equip)
- d. Medical Capability (TOPSIDE Telemedicine: Basic vs Advanced)
- e. Preventive Measure
 - (i) Pre Employment Screen (Need to Tighten? Dental Screen?)
 - (ii) Return to Work Screen (Need to Tighten?)
 - (iii) Allow High Risk Activity during certain Timing e.g. Dead Zone during Tow
 - (iv) Vaccinations (Chicken Pox, Measles and etc)
- f. Medevac Capability Recommendation
- g. MERP Changes
- h. Drills (Level 1 to Level 3)

6.3 Methodology

6.3.1 Theory

Based on the study of offshore installations in Asia, the risk level of one specific site is related to the hazards happened and its likelihood. Therefore the formula below is derived to calculate the risk level:

Risk Level = Impact of Hazard x Likelihood

Here the Impact of Hazard and Likelihood are based on the historical data and current activities of one specific site. The impact of the hazard and the likelihood are classed into 5 progressively risk levels.

6.3.2 Risk Assessment

The table1 below indicates the risk level assessment scoring system.

For illustration, the risk level of site D2 would be:

Risk Level _{D2} = Impact of Hazard (2) x Likelihood (4) = 8

Risk is classified into three different levels respectively: Low, moderate and high risk.

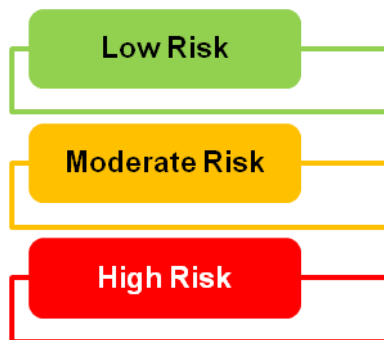


Table1. Risk Level Assessment

Risk Level		Likelihood				
		Incident not heard in industry	Incident has occurred in industry	Incident has occurred in the Company	Incidents Several times per year in company	Incident Several Times per year at location
Impact of hazard		1	2	3	4	5
Minor Illness/ Injury (First Aid)	1	A1	B1	C1	D1	E1
Significant Illness/ Injury (Temporary/ Impairment)	2	A2	B2	C2	D2	E2



Significant Illness/ Injury (Permanent Impairment)	3	A3	B3	C3	D3	E3
Serious Disability/ Death	4	A4	B4	C4	D4	E4
Multiple Casualties/ Serious Injuries- Deaths	5	A5	B5	C5	D5	E5

6.3.3 Implement of measures

- Risk Classification

According to the risk assessment classification, offshore sites will implement corresponding required medical modules; the module details are shown in Appendix B in green, yellow and red, respectively for low, moderate and high risk.

Low Risk	• Minimum medical supply required for all sites
Moderate Risk	• Additional medical supply may be added for moderate risk site
High Risk	• Additional medical supply should be added for high risk site • Specific requirement needed based on assessment report

- Focus on Conditions with Serious Impact and High Likelihood Probability
Serious Impact conditions usually would be life threatening conditions, i.e. Cardiac, work-related injury, acute appendicitis etc.
Likelihood of occurrence depends on the demographic of the workforce, i.e. age, gender etc.
- Mitigation and Intervention of the Conditions
Steps should be taken to improve the management of medical conditions and this would include Onsite Diagnostic, Onsite Treatment and Support (i.e. Telemedicine connection to shore-based specialist). In addition, Pre-Employment Screening should be done prior to deployment of staff.

- **Reconsider the Criteria for Evacuation (Threshold Triggers & Capability)**
The organisation should be prepared to accept a certain degree of False Positive in the evacuation and consider early disembarkation.
- **Review and Continuous monitoring the Risks identified**
Organisations can continue Targeted Medical Risk Assessment and address the gaps in the system.
The organisation may also consider other measures of mitigating the risks by changing the demographics of its staff deployment. For example, it can be deploying high risk staff to a platform that is nearer to shore or with easy access to transportation.

6.3.4 Case Study - Cardiac

In the review of casualty statistics from TOPSIDE Support for Offshore, Cardiac Illness is one of the highest causes of fatalities. Most of the cardiac deaths occurred offshore. It was rare for a death to eventuate from Cardiac illness when a patient had been evacuated to shore.

The worst consequence of cardiac illness is Acute Myocardial Infarct which often results in death if not managed rapidly and correctly.

From Table 1:

The impact of Cardiac Illness would be a score = 4

The likelihood of Cardiac Illness would be a score = 4

Risk Calculation would be a score of $4 \times 4 = 16$ (Red Box D4) or High Risk.

As such the management of Cardiac Illness would not depend on the distance or timing of the Offshore Facility from shore hospital but rather on the Risk Calculation. Evacuation of the Acute Myocardial Infarct patient within a 4 hour window to shore is not good enough without proper diagnosis and acute management of the patient offshore.

Steps should be taken to improve the management of cardiac disease offshore and this would include Onsite Diagnostic (Equipments: ECG, ultrasound etc.) and Onsite Treatment (medications: Thrombolytic and etc) and Support (Telemedicine connection to shore based specialist e.g. Cardiologist, for second opinion). In addition, Pre-Employment Screening should be done and the organisation should be prepared to accept a certain degree of False Positive in the evacuation.



6.3.5 On a similar note, organisations should utilise their previous case statistics and calculate the Risk for the various illness and injuries that have occurred on their offshore facilities. Once that is done, steps could be taken to mitigate the risk as above.

7. People and Competency

Medical staffing is essential to the risk mitigation process. The following competence requirements serve as a reference in choosing the qualified healthcare providers, based on the premise that staffing is decided after risk assessment.

7.1 Remote Site Doctor/ Medic Competency

Introduction

The basic requirements are listed below for medical personnel, who are healthcare providers working on a fixed or mobile oil rig and/or supporting vessel offshore. They are responsible for providing medical services to all crew members and they are on call 24/7 when on the offshore platform / vessel / rig. For circumstances that there is no medic in one country, a doctor or nurse, who holds the same level of skill-based training, qualified degree and sufficient experience, can be recommended.

Tasks	Skills and Qualifications	Competency
Medical Professional		
<p>Emergency Medicine (Pre hospital care)</p> <p>Initial emergency response, resuscitation and stabilisation of critically ill or injured (trauma) patients, emergency medical protocols</p> <p>Manage First Aid Services by providing, replenishing, inspecting First Aid Boxes and AED</p> <p>Training of first aiders</p> <p>Involve in Drills/Medical Emergency Response (MER) including participating in drills</p> <p>Primary Outpatient Care</p> <p>Inpatient and day-care includes advice, treatment and performing minor procedures</p> <p>Referral of patient to other medical facility for further medical attention upon consultation with the remote</p>	For Doctors	
	<p>Bachelor’s degree</p> <p>Minimum 3 years post graduation working experience</p> <p>Emergency medicine experience required</p> <p>Induction training</p> <p>Special certifications</p> <ul style="list-style-type: none"> • BCLS & ACLS • ITLS 	<p>Certification</p> <p>Certification</p> <p>Working Experience</p> <p>Working Experience</p> <p>Certification</p>



<p>physician</p> <p>Maintain sick bay operation readiness (Equipment, Drugs, and Consumables items).</p> <p>Guidance from Topside physician</p> <p>Occupational Health</p> <p>Pre embarkation health declaration</p> <p>Report work related injury (IADC, local regulatory requirements)</p> <p>Report all suspected Occupational Illness (OI) cases</p> <p>Drug and alcohol testing</p> <p>Work Site Health (Community Occ. Health)</p> <p>Worksite Hygiene Inspection</p> <p>Inspect Cafeteria/ galley</p> <p>Conduct worksite inspection</p> <p>Conduct Living Quarters inspection</p> <p>Control of communicable diseases including vector control supervision</p> <p>Potable water quality</p>		
	For Medics and Nurses	
	<p>Diploma in Paramedic/ Nursing</p> <p>Minimum 3 years post graduation working experience</p> <p>Emergency medicine experience required</p> <p>Induction training</p> <p>Special certifications</p> <p>BCLS & ACLS</p> <ul style="list-style-type: none"> ITLS 	<p>Certification</p> <p>Working Experience</p> <p>Working Experience</p> <p>Working Experience</p> <p>Certification</p>
Safety		
Safety duties	BOSIET & HUET	
Medical and Physical Fitness		
Assisting evacuation procedures, i.e., supporting patient and equipments transportation	Fitness Test	
Soft Skills		
Manage to lead the medical team to support and provide effective and efficient medical treatment	<p>IT</p> <p>Communication Skills</p> <p>Leadership</p>	Working Experience



Educator/ Trainer	TtT Training	Working Experience
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7.2 Topside Doctor Competency

Introduction

The term Topside refers to Remote Medical Support provided by doctors or physicians based onshore to healthcare providers located in remote locations. The support is given on a real time basis where the needed medical support is given promptly. The communications between the Topside Doctor and the remote site medical personnel can vary from using the simplest form of technology that is the basic telephone to sophisticated means of communication using information technology and telemedicine infrastructure.

Tasks	Skills and Qualifications	Competency
Medical Professional		
To provide relevant medical assessment and advice to remote sites providers on medical cases involving General Practice and Emergency Medicine advices, and risk assessment using criteria assessment and management bases on AHA guidelines best clinical practice guidelines.	Registered Medical Practitioner Minimum 5 years post registration working experience Emergency Experience required Special Certification <ul style="list-style-type: none"> • ACLS • ITLS 	Certification Working Experience Working Experience Certification
To provide occupational health advice in accordance with OSHA, IADC, and local occupational regulatory bodies or guidelines	Background of Occupational Health (OSHA & IADC)	Certification
To advice in the fields of: <ul style="list-style-type: none"> • Health and Wellbeing of the Remote Worker • Occupational Health in the Remote Setting • Telemedicine • Diving / Aviation Medicine • Tropical Medicine 	Remote and Offshore Knowledge and Certification OGUK H2S, Radiation Safety Awareness	Working Experience Awareness & Working Experience



	HUET, BOSIET	Working Experience Direct Access Desired Certification
To advise on decision for treatment on site or need for evacuation on emergency or non emergency basis (Primary evacuation)	Site Specific knowledge <ul style="list-style-type: none"> Hazards and risks of the workplace covered Site MERP / MERP knowledge Capability of local health facilities GP practice Competence Occupational Health awareness Wellbeing of remote workers Offshore working experience 	Working Experience
Coordination of primary evacuation in terms of advice on appropriate transport, medical personnel and equipment for transfer		Working Experience
To coordinate onshore ground medical transport and appropriate receiving care (Secondary Evacuation)		Working Experience
To assist remote onsite medical personnel with medical queries and advice on health, safety and welfare of the remote site crew and duties related to administration of health and safety at work.		Working Experience Working Experience

7.3 Medical Escort Competency

Introduction

The basic requirements are listed below for cases wherein medical personnel are in charge of escorting patients that will require medical monitoring and treatment during their transfer from site to an appropriate medical facility onshore, where further adapted treatment can be conducted.

The Medical Escort Personnel is responsible for providing medical care to injured or ill crew members who will require constant surveillance and stabilization and disembarkation so as to benefit from an adapted treatment that is either not available or goes over the medical capability of the site clinic.

The Escort Personnel is on call 24/7, located next to the base of the helicopter provider for the site and able to get mobilised in less than 30 minutes.



If there is no medic in a country, a doctor or a nurse who hold the same level of skill-based training, qualified degree and sufficient experience, will be generally recommended.

Tasks	Skills and Qualifications	Competency
Medical Professional		
<p>Ensuring continuity of care for any patient necessitating medical monitoring and / ongoing treatment during a primary evacuation (extraction) from site to a medical facility where either first appropriate treatment or definitive care can be provided.</p> <p>To ensure proper maintenance and operational readiness of the emergency the emergency medical equipment</p>	(For Doctor)	
	<p>Bachelor's degree, diploma</p> <p>Minimum 3 years experience in medical work.</p> <p>Emergency medicine experience required</p> <p>Induction training I (See Appendix A)</p> <p>Special certifications</p> <ul style="list-style-type: none"> • ACLS • ITLS 	<p>Certification</p> <p>Working experience</p> <p>Working Experience</p> <p>Awareness</p> <p>Certification</p>
	For Medic / Nurse	
	<p>Diploma in Nursing or Paramedic</p> <p>Minimum 3 years experience in medical work</p> <p>Emergency experience required</p> <p>Induction training I (See Appendix A)</p> <p>Special certifications</p>	<p>Certification</p> <p>Working experience</p> <p>Working Experience</p> <p>Awareness</p> <p>Certification</p>



	<ul style="list-style-type: none"> • ACLS • ITLS 	
Safety		
Safety	<ul style="list-style-type: none"> • BOSIET & HUET 	Certification
Medical and Physical Fitness		
<p>Physical activities in the offshore working environment include climbing walkways and stairs</p> <p>The physical structure of an offshore installation requires a reasonable degree of physical stamina and agility</p>	Fitness Test	
Soft Skills		
Manage to lead the medical team to support and provide effective and efficient medical supply	IT Communication Skills Leadership	Working Experience
Educator/ Trainer	TtT Training	Working Experience

8. Appendix A – Induction Training

(To be included in next version)



9. Appendix B – Medication Training

Antibiotics

	Medication	Package	Form	Remarks
1	Amoxicillin	250 mg	oral	
2	Augmentin	625 mg	oral	
3	Erythromycin	500 mg	oral	Short or long acting
4	Cefuroxime	250 mg	oral	
5	Doxycycline	100 mg	oral	
6	Ciprofloxacin	500 mg	oral	
7	Metronidazole	400 mg	oral	
8	Flucloxacillin	500 mg	oral	
9	Ceftriaxone	2 gram	IV	
10	Metronidazole	0.5% / 100 ml	IV	
11	Acyclovir	800 mg	oral	
12	Clarithromycin	250 mg	oral	
ANTI-PARASITES				
1	Mebendazole tab	100 mg	oral	
ANTIMALARIAS				
1	Artemether – Lumefantrine		oral	Coartem or Riamet
2	Quinine Injection	600 mg / 2 ml	IV	
	NIL			

Analgesics

	Medication	Package	Form	Remark
1	Paracetamol	500 mg	oral	
2	Ibuprofen	200 mg	oral	
3	Diclofenac Tablets	50 mg	oral	
4	Diclofenac Injection	75 mg / 3 ml	oral	
5	Counter Pain	15 g tube	T	Topical
6	Tramadol Tablet	50 mg	oral	



7	Tramadol Injection	100 mg / 2 ml	IV	
8	Lidocaine 1 %	5 ml	IV	
9	Panadeine	8 mg / 500 mg	oral	(Codeine – Paracetamol)
10	Morphine	10 mg / 1 ml	IV	May not be available in some countries due to legal issues
11	Morphine	10 mg / 1 ml	IV	Risk Assessment : High Especially on Tow

Cardiovascular

	Medication	Package	Form	Remark
1	Aspirin	300 mg	oral	
2	Frusemide tab	10 mg tab	oral	
3	Isosorbide dinitrate tab	10 mg	oral	
4	Atenolol	50 mg	oral	
5	Nifedepine capsule	5 mg	oral	
6	Amiodarone	300 mg	IV	
7	Atropine	0.6 mg	IV	
8	Calcium Chloride	10% 10 ml	IV	
9	Magnesium Sulphate	50 %	IV	
10	Dopamine	200 mg	IV	
11	Adrenaline	1 mg	IV	
12	Frusemide	10 mg/ml	IV	2 ml ampule
13	GTN Spray		Sp	Spray
14	Anticoagulant		Inj	Clexane
15	ACE Inhibitor		oral	Ramipril / Zestril
16	Thrombolytics		IV	Risk Assessment: High



Respiratory

	Medication	Package	Form	Remark
1	Chlorpheniramine	4 mg	oral	
2	Loratadine tab	10 mg	oral	
3	Cetirizine tab	10 mg	oral	
4	Salbutamol tab	2 mg	oral	
5	Prednisolone tab	2 mg	oral	
6	Hydrocortisone	100 mg	IV	
7	Salbutamol		Inh	Inhaler
8	Beclomethasone		Inh	Inhaler
9	Salbutamol nebules	5 mg	Neb	Nebules
10	Ipratropium Bromide		Neb	Nebules
11	Oxymetazoline Spray		Sp	Nasal Spray
	NIL			

Gastrointestinal

	Medication	Package	Form	Remark
1	Antacids or Maalox		oral	
2	Omeprazole	20 mg	oral	PPI (alternative H2 blocker)
3	Ranitidine	150 mg	oral	H2 Blocker (alternative PPI)
4	Loperamide	2 mg	oral	
5	Buscopan	10 mg	oral	
6	Charcoal		oral	
7	ORS		oral	Oral Rehydration Salt
8	Annusol		Sup	Suppository
9	Buscopan	20 mg	IV	20 mg per ml ampule
	NIL			
	NIL			



Endocrine

	Medication	Package	Form	Remark
1	Insulin (Soluble)	100 IU / ml	IV	10 ml vial
2	Glucose Injection	10 %	IV	
3	Glucose Injection	40 %	IV	
4	Glucagon Kit		IV	
5	Glucagon Kit		IV	Risk Assessment: High

Central Nervous System

	Medication	Package	Form	Remark
1	Stemedil Tab	12.5 mg	oral	
2	Stemedil Injection	12.5 mg	IV	
3	Metoclopramide tab	10 mg	oral	
4	Metoclopramide Injection	10 mg	IV	10 mg in 2 ml ampule
5	Diazepam tab	5 mg	oral	
6	Diazepam Injection	10 mg	IV	10 mg in 2 ml ampule
7	Haloperidol Injection	5 mg / ml	IV	
8	Naloxone HCl	400 mcg/ml	IV	
9	Zopiclone tab	7.5 mg	oral	
	NIL			

Eye

	Medication	Package	Form	Remark
1	Antibiotic Eye drops		T	Framycetin / Sofradex
2	Antibiotic Ointment		T	Tetracycline / Chloramphenicol
3	Flourescein Sodium		T	Eye drops
4	Normal Saline	0.9%	T	Eye drops / Wash
5	Artificial Tears		T	Eye drops



6	Amethocaine	0.5%	T	Eye drops
	NIL			
	NIL			

Ear

	Medication	Package	Form	Remark
1	Antibiotic Ear drops		T	Sofradex
2	Cerumol Ear drops		T	Ear wax softener
	NIL			
	NIL			

Dental

	Medication	Package	Form	Remark
1	Bonjela		T	
2	Oil of Cloves		T	
3	Lozenges		oral	
4	Mouth Wash		T	Chlorhexidine
	NIL			
	NIL			

Immunisation

	Medication	Package	Form	Remark
1	Tetanus Immunoglobulin		Inj	Intramuscular
	NIL			



1	Rabies Vaccine		Inj	Risk Assessment: High
2	Hepatitis B Vaccine		Inj	Risk Assessment: High
3	Diphtheria-Tetanus- Polio Vaccine		Inj	Risk Assessment: High

Skin

	Medication	Package	Form	Remark
1	Hydrocortisone	1 %	T	
2	Betnovate	¼ strength	T	
3	Antifungal		T	Powder
4	Antifungal		T	Cream
5	Acyclovir		T	Cream
6	Antiseptic		T	Cream
7	Skin Moisturiser		T	E45,
8	Anti Scabies		T	Permethrin Dermal Cream, Eurax
9	Flamazine		T	Burns
	NIL			
	NIL			

Gynaecology

	Medication	Package	Form	Remark
1	Clotrimazole (Canesten)		Pes	Pessary
2	Mefenamic Acid	250 mg	O	
3	Syntometrine		Inj	
	NIL			



Antidotes

	Medication	Package	Form	Remark
1	Naloxone HCl		IV	400 mcg/1 ml ampule
	NIL			
2	EDTA		IV	Risk Assessment: High
3	Calcium Gluconate		IV	Risk Assessment: High
4	Dimercaprol / BAL		IV	Risk Assessment: High
5	Hydroxy Cobalamin		IV	Risk Assessment: High
6	Methylene Blue		IV	Risk Assessment: High

Intravenous Fluids

	Medication	Package	Form	Remark
1	Normal Saline		IV	
2	5 % Dextrose		IV	
3	Hartman		IV	
4	Colloid		IV	
5	Mannitol		IV	
6	Water for Injections		IV	
	NIL			
	NIL			

Dressing

	Medication	Package	Form	Remark
1	Gauze		D	
2	Paraffin Gauze		D	
3	Burns Dressing		D	
4	Eye Pad		D	
5	Triangular Dressing		D	
6	Crepe Bandage			



1	Haemostatic Dressing		D	

10. Appendix C – Equipment

Low Risk

- Minimum medical supply required for all sites

Moderate Risk

- Additional medical equipment required for moderate risk site

High Risk

- Additional medical supply required for high risk site
- Specific requirement needed based on assessment report

Airways & Respiratory

	Equipment	Remark
1	Oxygen Support	
a	Oxygen Cylinders	
b	Flow Regulators	Pin Index and Bull Nose
2	Transport Ventilator	Manual or Auto Trigger
3	Mask & Tubings	
a	Oxygen Mask: Normal	
b	Oxygen Mask: Venturi	
c	Oxygen Mask: Non-Rebreathing	
d	Tubings	
4	Airways	
a	Oropharyngeal Airway	
b	Nasopharyngeal Airway	
c	Laryngeal Mask Airway	
5	Suction Apparatus	Both Powered and Manual



6	Laryngoscope	
a	Laryngoscope Handle	plus spare batteries & bulbs
b	Curve & Straight Blades	
7	Magill Forceps	
8	Endotracheal Tubes	Include stylus
9	Crico-thyroidectomy Kit	
10	Heimlich valve	
11	Chest Tubes	
12	Nebuliser Set	
13	Peak Flow Meter	
14	Oxygen Concentrator	
15	Tracheostomy Kit	Risk Assessment: High
16	End Tidal CO2 Detector	Risk Assessment: High
17	Video Laryngoscope	Risk Assessment: High

Cardiac

	Equipment	Remark
1	Defibrillator	AED
2	Patient Monitor	BP, HR, Respiration, SaO2, ECG Leads I - III
3	12 Lead ECG machine	
4	Defibrillator	Manual with External Pacing
5	Defibrillator	Manual with External Pacing



Examination

	Equipment	Remark
1	Ophthalmoscope	
2	Otoscope	
3	Stethoscope	
4	Sphygmomanometer BP	needs normal and large Cuffs
5	Tendon Tapper	
6	Magnifying Glass	
7	Examination Light	
8	Thermometer	Oral & Rectal
9	Snellen Chart	
	NIL	
	NIL	

Diagnostics

	Equipment	Remark
1	Urine Analysis	Dipstick
2	Pregnancy Test Kit (Urine)	
3	Glucometer	With Test Strips & Lancets
4	Cardiac Markers	Troponin Kit
5	Stools (Occult Blood)	Test Kit
6	Blood	
a	Haematology	Risk Assessment: High
b	Urea, Creatinine, Electrolytes	Risk Assessment: High
c	Arterial Blood Gas	Risk Assessment: High
d	Coagulation Profile (INR, PT)	Risk Assessment: High
e	Cardiac Markers (Troponin Kit)	Risk Assessment: High



Radiology

1	Digital Ultrasound	Risk Assessment: High
2	Digital X-Ray	Risk Assessment: High

Intravenous Therapy

	Equipment	Remark
1	Intravenous Catheter	Sizes 18, 21, 22
2	Intra-osseous Needle	Spring - loaded (Tibial or Humerus)
3	Infusion Sets (Tubings)	
4	IV Pole	
5	IV Crystalloids	Normal Saline, Hartman, 5 % Dextrose
6	IV Colloids	Haemaccel, Gelafundin
7	Tourniquet	Both Velcro and Long Rubber
8	Intravenous 3 way lock	
9	Intravenous Plug	
10	Alcohol wipes	
11	Syringes	
	NIL	
	NIL	

ENT

	Equipment	Remark
1	Adrenaline Soak Gauze	Nasal Tamponade
2	Merocel	Nasal Tamponade
3	Nasal Tamponade	Risk Assessment: High



Eye

	Equipment	Remark
1	Eye Magnet with Loop	
2	Eye Patches	
3	Fluorescein Strips	
	NIL	
	NIL	

PPE (Personal Protection Equipment)

	Equipment	Remark
1	Gloves (non sterile)	Various sizes
2	Gloves (sterile)	Various sizes
3	Surgical Mask	
4	N95 Mask	
5	Goggles	
6	Face Shield	
7	Gown Disposable	
8	Shoe Cover (disposable)	
9	Bio Hazard Trash Bags	
10	Bio Hazard Tape	
11	Bio Hazard Box for Sharps	
12	Disinfectant	Hand Wash
13	Disinfectant	Equipment
14	Disinfectant	Floor Wash
	NIL	
	NIL	



Bandages & Wound Care

	Equipment	Remark
1	Non-adherent dressings	Various sizes
2	Occlusive dressings	
3	Gauze Rolls	
4	Adhesive Tapes	
5	Micropore Tape	
6	TG Dressing	Tulle Gras
7	Melonin Dressing	
8	Roller Bandages	
9	Gauze (non sterile)	
10	Gauze (sterile)	
11	Elastic Bandages	Crepe
12	Triangle Bandages	With safety pins
13	Burn Dressing	Pack
14	Paramedic Scissors	"Paraguard" scissors
15	Disposable Razors	
16	Sterile Burn Blankets	
17	Tourniquet	Velcro & Long Rubber
18	Wound Disinfectants	Betadine, Hydrogen peroxide
19	Wound Closure	Steri Strips
20	Wound Closure	Suture Kit (Needle Holder, Tissue Forcep) Silk or Nylon (2 "O" to "3 "O")
21	Scalpel Handle	Plus blades different sizes
	NIL	
23	Haemostatic Dressing	Risk Assessment: High

Others

	Equipment	Remark
1	Blankets	Both Normal & Disposable types
2	Flash Lights	
3	Bed pan	



4	Urinal	
5	Hospital bed	
6	Urinary catheter	
7	Autoclave Machine	
8	Refrigerator	
9	Ring Cutter	
10	Body Bags	
11	Bed sheets	
12	Pillow (with pillow cases)	
13	Blankets	
14	Casualty Records	Charts, forms, record books
15	Communication	Radio (within vessel)
16	Dental Filling Material	Temporary
17	Vaginal Speculum	Females Crew Doctors on Board (not paramedic)
	NIL	

Patient Immobilisation & Transfer

	Equipment	Remark
1	Folding Stretcher	2 Fold or 4 Fold
2	Basket Stretcher	
3	Spinal Board	With head immobiliser & body straps
4	KED	Kendrick Extraction Device
5	Cot Stretcher	
6	Cervical Collars	Different sizes or Expandable models
7	Upper & Lower Limb Immobilisation Devices	e.g. Sam Splints, Wooden Splints
8	Finger Splint	
9	Traction Splint (Femur)	
10	Stretcher for Winching	Sked Stretcher or Paraguard Stretcher



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