



**Ndjole Manganese Project  
(Gabon)**

**Emergency Response Plan**

**Version: 1**

**Date: 28/02/2015**

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# **1 Introduction**

Dome Ventures (DV) has a moral and possible legal responsibility for safety, environment, community and loss control management, which includes effective emergency planning, preparedness, emergency response and improvement through lessons learned.

This document is designed to support all personnel in the event of an Incident and or emergency.

## **2 Purpose of Emergency Response Plan**

The purpose of this Emergency Response Plan (ERP) is to describe the structure and processes that DV has in place for management of emergency events.

The goal is to ensure that DV plans, processes and accountabilities are in place to preserve the safety of people, the integrity of assets and business continuity in emergency and crisis situations.

## **3 Responsibilities**

### **3.1 Exploration Manager**

It is the responsibility of the Exploration Manager to ensure that:

- Effective procedures are in place to account for the location of all employees while in the field.
- Effective procedures are in place for field emergency evacuations.
- A field emergency evacuation plan is maintained and regularly tested.
- Appropriate emergency response equipment is available for each work area.

### **3.2 Emergency Response Manager**

The Emergency Response Manager has the overall responsibility for the management of all activities undertaken to control the incident. This person will be appointed by the Exploration Manager and will normally be the most senior person on site. The person fulfilling this role must be trained and competent to fulfil the roles and responsibilities of the position.

The Emergency Response Manager is responsible for:

- Notify the relevant management team of the incident.
- Establishing and taking control.
- Establishing and maintaining a management structure.
- Assessing the situation, identifying risks and determining priorities.
- Monitoring and reviewing safety and welfare during the incident.
- Communicating within the control structure.
- Communicating progress and key risks to delegating authority stakeholders.
- Concluding and reviewing emergency activities.
- Maintaining a log of activities.

### **3.3 Emergency Management Team**

The Emergency Management Team shall be comprised of key management and supervisory personnel to ensure that the right level of capability, responsibility and accountability is provided. The Emergency Response Manager shall assign roles and responsibilities to the Emergency Response team and identify the requirement for additional members according to the needs of exploration operations for emergency response capability.

## 4 Risk Management

Risks are controlled/mitigated to reduce the likelihood of emergency events occurring, and the consequences when they do occur in accordance with the principle of risk reduction to 'As Low As Reasonably Practicable' (ALARP). Risks must be reviewed on a regular basis.

### 4.1 Maintenance of the Emergency Response Plan

This ERP shall be reviewed and revised:

- After the occurrence of actual or simulated emergencies,
- When legal or other requirements change,
- Prior to entering new regions,
- When there are changes to work equipment or processes,
- As a minimum on a 6 monthly basis to ensure contact details are current.

### 4.2 Induction and training

Emergency Response requirements shall be communicated during general inductions, site specific inductions and Emergency Response team training.

## 5 Incident Levels

At the earliest opportunity, the Emergency Response Manager will notify the Exploration Manager and the Office Manager of the incident. They will determine the need to escalate response. The following indicative levels are provided to determine the need for escalation of the emergency.

### 5.1 Incident Level Descriptors and Actions

Incident Level	Descriptors and action
<b>Level 1</b> (Routine)	<ul style="list-style-type: none"> <li>• local response/resources required;</li> <li>• no significant issues;</li> <li>• single or limited multi agency response (day to day business);</li> <li>• minimal impact on community or environment;</li> <li>• low risk of incident escalation</li> </ul>
<b>Level 2</b> (Extended)	<ul style="list-style-type: none"> <li>• requires multi agency response;</li> <li>• protracted duration;</li> <li>• resources required from outside the local area;</li> <li>• low level of media interest;</li> <li>• medium level of complexity;</li> <li>• medium impact on the community or environment</li> </ul>
<b>Level 3</b> (Major/Complex)	<ul style="list-style-type: none"> <li>• requires significant multi agency response;</li> <li>• protracted response duration;</li> <li>• State or National resources required;</li> <li>• significant level of media interest;</li> <li>• high level of complexity;</li> <li>• significant impact on the community;</li> <li>• multiple incident areas;</li> <li>• significant political interest;</li> <li>• Potential declaration of an 'Emergency Situation'</li> </ul>

## **6 Plan Preparedness**

The following activities should be undertaken as part of regular preparedness for emergency:

- Maintain a current copy of the Emergency Response Plan, ensuring that emergency contacts are updated and current at all times for all locations;
- Maintain contact names and details;
- Maintain a file with up-to-date site drawings and maps showing all facilities, for fixed locations only;
- Conduct site familiarisation sessions with internal and external emergency services, for fixed locations only (where practicable);
- Train personnel and coordinate emergency exercises in all identified emergencies;
- Establish arrangements for internal and external emergency assistance where appropriate;
- Identify and evaluate emergency evacuation options for sites and general working areas;
- Distribute controlled copies of this plan to all relevant personnel.

## **7 Emergency Event**

An emergency situation can result from different unplanned events that have or could lead to loss of life, significant damage to company property and the environment, or impacts to company reputation. These situations may require the assistance of external agencies to minimise the impacts on people, property or the environment.

The actual or potential consequences of an emergency are such that the management needs to be immediately informed. Regardless of the event, all emergency scenarios are managed in a similar manner.

Events that could result in an emergency within exploration operations include, but are not limited to:

- Vehicle incidents
- Barge or boat incidents
- Drilling incidents
- Medical condition or injury
- Missing person
- Community incident
- Environmental incident
- Fire
- Protection of Cultural Sites
- Security incident
- Natural disaster ( Flooding)
- Geophysical incident

This plan covers the following specific activities;

Activities include:

- Road travel between Libreville office and Ndjole.
- River transport
- Drilling, Field mapping and sampling in a 30km radius from Ndjole.
- Accommodation of personnel in Libreville and Ndjole.
- Accommodation of up to 12 people at a tented camp within 30km of Ndjole.

## 8 Emergency Response

The first point of contact is the senior personnel on site.

**Paul Shauri: +241 (0) 664 7667**

**Maurice Semahimbo +241 (0) 771 2733**

If he is not available the following persons should be contact: (See also appendix 1 for all contacts)

**Rajaa Medame +241 (0) 771 2046**

**Dave Underwood +27 82 561 4685**

## 9 Responding to an Emergency

In the event of an emergency, the immediate response of the first person on the scene, in order of priority is to:

- **Preserve life**
- **Protect the environment, property, and company reputation from further damage.**
- **When required seek assistance.**
- **Promptly communicate with the most senior supervisor on site then the Management Team. This should occur as soon as the immediate threats to life, property, environment and company reputation have been controlled.**

This next section describes possible events and their responses for DV sites.

### 9.1 Vehicle incident

Vehicle accidents are likely to occur while travelling between Libreville and Ndjole and on the exploration licence.

The following actions should be followed:

- Provide first aid to any injured personnel.
- Inform senior personnel about the incident.
- If responding to a vehicle incident ensure respondents are first aid trained and are equipped with a medical kit or a trauma kit as well as communication devices.
- If require, transport injured person(s) to medical facilities or organise ambulance transport if available.
- Prevent additional incidents by erecting appropriate signage at sufficient distance from the accident site to warn on-coming traffic.
- Prevent personnel from accessing the scene of incidents to preserve the integrity of the site. This includes not moving vehicles involved in the incident unless absolutely necessary to do so to save a life or prevent further injury.

### 9.2 Drilling incident

Drilling is a high risk operation with a high likelihood of injuries occurred during the moving of the machine and the drilling operations. The following actions should be followed:

- Provide first aid to the injured person.
- Inform the senior personnel, Drilling manager and Exploration Manager about the incident.

- If responding to a drilling incident ensure respondents are first aid trained and are equipped with a medical kit or a trauma kit as well as communication devices.
- Follow the steps applicable to injuries as appropriate to the nature of the injuries, the location of the incident and availability of assistance.

### 9.3 Medical condition or injury

The most likely medical conditions will be an injury that requires medical attention or a medical condition that would arise from an illness that require medical treatment. Some personnel may also have pre-existing medical conditions like allergies, heart conditions, diabetes and epilepsy. In such situations, the medication required should be available at the work location and administration of medication should be known.

The following actions should be followed:

- Inform senior personnel about the incident.
- If the condition is known and medication is available, administer medical treatment to the person.
- If necessary, arrange for Emergency Evacuation.

### 9.4 Missing person

Personnel may get lost in remote areas while conducting remote field work programs. Lost personnel may suffer from heat exposure, become dehydrated and disoriented and in extreme circumstances may lose their life.

Alternatively, personnel may have forgotten to call in or may not have working communications. Initiating external search parties in such situations may result in misdirected resources and inconvenience to agencies involved.

A person or persons may be considered missing if:

- They have failed to return from the field at the designated time,
- They have missed daily or otherwise scheduled calls.

Prior to contacting external agencies for assistance, always attempt to establish contact and assess the level of risk of the situation. Factors such as the experience of the missing person/s, whether they are accompanied or alone, how well equipped the missing person/s are, external circumstances such as road conditions and/or atmospheric conditions (preventing radio/phone contact) and the elapsed time since last communication should be taken into account when considering a response.

There are three (3) potential levels of response that will be initiated during the course of a Search and Rescue. The levels of response are outlined below:

#### **LOW LEVEL RESPONSE**

Initiated immediately after the person or persons is/are considered missing:

- Try contacted the missing persons.
- Inform senior personnel and the Exploration Manager.
- The following should be consider:
  - Who is/are missing?
  - Last sighted by whom and where?
  - What is their experience? Maturity? Survival skills?
  - What equipment/resources do they have? vehicle type , water, telephone, recovery gear, tyre change gear, medical kit
  - What are the Environmental factors – excessive heat or flooding
  - Their likely medical, physical and mental condition



- Commence preparations for Search Team.
- If the missing person or persons are unable to be contacted or located after three (3) hours of the response being initiated the response is upgraded the search to a Medium Level Response.

### **MEDIUM LEVEL RESPONSE**

Initiated three (3) hours after the person or persons is/are considered missing:

- Continue attempting to contact the missing person
- Decide on nature of search
- Send off the search party with any information about the last reported locality, intended travel plans, maps, etc. Ensure the Search Party has adequate communications with the Emergency Response Manager
- If the missing person or persons are unable to be contacted or located after a further three (3) hours of the response being initiated the response is upgraded the search to a High Level Response.

### **HIGH LEVEL RESPONSE**

Initiated six (6) hours after the person or persons is/are considered missing:

- Inform local authorities as appropriate.
- After two (2) hours of searching for the missing persons without success, the assistance of the Police and Military must be considered in coordinating the search and rescue.
- If the missing person(s) cannot be located then the Search Party Leader will advise the Emergency Response Manager who will consult with police and/or other senior Dome staff on the best means of progressing in the search
- Advise all parties when the search has been concluded.

## **9.5 Community incident**

Community incidents may arise from conflicts between the local population and grievances with the company on employment issues, work programs, engagement strategies, land access and road access.

The following actions should be followed:

- Inform the senior personnel about the incident.
- The vast majority of community incidents are minor can be managed locally through established engagement strategies and these should be mobilized in the first instance if a potential threat emerges.
- Engagement must be undertaken through appropriate community structures and representative bodies where available and should be undertaken with regard to local cultural practices and decision-making processes.
- The exploration group must provide and communicate appropriate mechanisms to enable stakeholders to raise and receive responses to grievances and complaints.
- The Exploration Manager will be responsible to take appropriate remedial action as and when the management agrees for further auctioning.

## **9.6 Fire**

There are different types of fires that maybe encountered. These include:

- Vehicle/Drill rig/Equipment fire
- Building or tent fire
- Fires with the risk of explosions. (in close proximity to bulk fuel storage facility)
- Electrical fire

Camps should be established with the risk of fires in mind. A cleared or clear area should be selected for storage of fuel, which is at least 20m from the accommodation facilities. All camps should have predetermined muster points identified.

The following response actions should be followed:

- When determining the appropriate response to a fire the first priority should always be the preservation of life.
- Raise the alarm, evacuate all buildings, work areas to the muster point and conduct a head-count
- Determine whether the fire can be extinguished with the equipment available.
- Isolate power to non-essential buildings.
- Inform some senior personnel about the fire incident.

### **9.7 Hydrocarbon or chemical spills**

Significant pollution may arise from spillage of hydrocarbons and chemicals either in large quantities or into sensitive environments. This may occur when bulk storage facilities breach their containment, as the result of an incident during refuelling operations, transport or during drilling operations.

Response information (including First Aid, Fire Fighting, and PPE requirements) is included in the Material Safety Data Sheet (MSDS) which must be available for all hydrocarbons and chemicals held on site. This information should be made available to medical personnel and the Emergency Response Manager during an emergency.

The following response actions should be followed:

- Safety First. Ensure safety issues such as fumes, potential flammability of the material, trips and slips are addressed as a priority.
- Control the Spill. If safe to do so, stop the source of the spill. This may involve shutting valves, plugging holes or turning off pumps. In such situations personnel safety is priority.
- Contain the Spill. The priority in spill containment is to minimise the area of impact and prevent the spill from entering sensitive environments and protected sites by building bunds or barriers. If machinery is not available for this purpose then absorbent material may help (spill kits, sand etc.).
- Inform the Exploration Manager about the incident.

### **9.8 Protection of Cultural Sites, Environment**

Damage to the environment and/or heritage/cultural sites has the potential to cause significant damage to the Company's reputation. The reputation of the company may also be damaged through inappropriate behaviours of personnel while undertaking exploration activities. This could be in the form of accessing land without appropriate authorisation, disorderly conduct or cultural insensitivities. Such events can potentially escalate to crisis situations and shall be reported to the Management Team immediately.

Activities that could result in a legal non-compliance or significantly impact on DV operations.

Reputation and community relations include:

- Unapproved trespassing or destruction of significant heritage or cultural sites.
- Damaging of environmental sensitive areas.

If significant impacts result from such activities, DV may be prosecuted and/or lose the licenses to conduct exploration activities.

The following response actions should be followed:

- Inform the Exploration Manager about the incident.
- All unapproved work and/or behaviours should cease immediately and be assessed to determine if significant impacts have been sustained. Significant impacts may require reporting to the relevant authorities.
- Immediately barricade the area by clearly marking out the area with relevant signage.
- Recovery of heritage/cultural site and proactively ensure consultation meeting with the appropriate cultural group.

### **9.9 Security incident**

Security incidents that may result include those caused by ethnic and/or political tensions.

The following response actions should be followed:

- Inform senior personnel and the Exploration Manager about the security incident.
- Evacuation procedures will be triggered for all personnel if necessary.

### **9.10 Natural disaster**

A natural disaster is an event caused by forces of nature that often has a significant effect on the human population (displacement, death toll).

Natural disasters that can occur in Gabon are flash flooding and falling of trees during storms.

The following response actions should be followed:

- Inform the senior personnel and Exploration Manager about the natural disaster.
- In the event that an evacuation of personnel is required, the senior personnel on site will initiate this.

### **9.11 Aviation incident**

Occasionally helicopters or fixed wing aircrafts might be used to carry out exploration activities.

The following response actions should be followed in the event that a flight does not arrive at the scheduled time.

- Inform the Exploration Manager about the incident.
- Try to contact the pilot or field crew with the aircraft.
- Inform the service provider.
- Mobilise a search and rescue team

In the event of an aircraft accident, immediately inform the service provider. Either the service provider or DV will also need to inform the:

- Relevant air traffic control
- Police and Gabon Air force and military
- Prevent personnel from accessing the scene of the accident to preserve the integrity of the site.

### **9.12 Electrical incident**

The following response actions should be followed:

- Isolate the electrical source.
- Administrate first aid (CPR).
- Use a defibrillator if available.
- Inform the Exploration Manager or some senior personnel about the incident.
- If necessary, arrange for Emergency Evacuation.

### **9.13 Lightning incident**

The following response actions should be followed:

- Administrative first aid (CPR).
- Use a defibrillator if available.
- Inform the Exploration Manager or some senior personnel about the incident.
- If necessary, arrange for Emergency Evacuation.

## **10 Emergency Field Evacuation Plan**

An Emergency Field Evacuation may be necessary in the following circumstances:

- Medical Emergency – broken limbs, severe illness etc.
- Security Emergency – violence etc.
- Natural Disaster – Flooding, tornadoes

An Emergency Field Evacuation is considered appropriate if any of the following circumstances are met:

- To preserve life.
- To prevent injury or illness resulting from natural disasters.
- To prevent an injury or illness from deteriorating.
- To help promote recovery from severe injury or illness.
- Pre-emptive evacuation if security situation is expected to deteriorate.
- Evacuation in the event of a natural disaster.

The following response actions should be followed:

- Inform the Exploration Manager about the Emergency Field Evacuation
- The initiating caller should consider the following to allow for an appropriate response:
  - What is the nature of the emergency – medical –security – natural disaster?
  - What is the current status of the situation – stability of medical patient – security etc.?
  - How many personnel require evacuation?
  - What are the Environmental factors – excessive heat – flooded waterways.
  - How urgent is the evacuation – immediate threat to life– pre-emptive?
  - Any other information that could be relevant to the emergency response.
- Establish the type, status and the urgency of the required field evacuation.
- Record the location of the evacuation point. Always state clearly the co-ordinate system that you are using.
- Decide which other agencies are required to assist and contact accordingly.
- Remember to advise all parties when the Emergency Field Evacuation has been successfully concluded.

## **11 Emergency response equipment**

The following emergency equipment should be available at each working site:

- Satellite phone and/or
- Two-way Radio
- Emergency contact list
- Maps illustrating work location
- First aid kit preferably Trauma kit
- GPS

- Fire Extinguishers / Fire-fighting Equipment

Emergency response equipment shall be regularly checked and serviced. As a minimum:

- First aid kits shall be replenished monthly.
- Fire Extinguishers shall be tagged and current.
- Emergency maps are printed and updated when there is a major change to work areas.
- Contacts details are checked for currency prior to mobilization to new regions, and as part of the 3-monthly review of this plan.
- Radios and phones are regular checked.

## **12 Emergency drills**

A schedule shall be developed of planned drills and desktop simulations to ensure that emergency scenarios are rehearsed and lessons learned captured to achieve continuous improvement. The frequency of testing shall be dependent on the risk of the event and the frequency of actual emergency events.

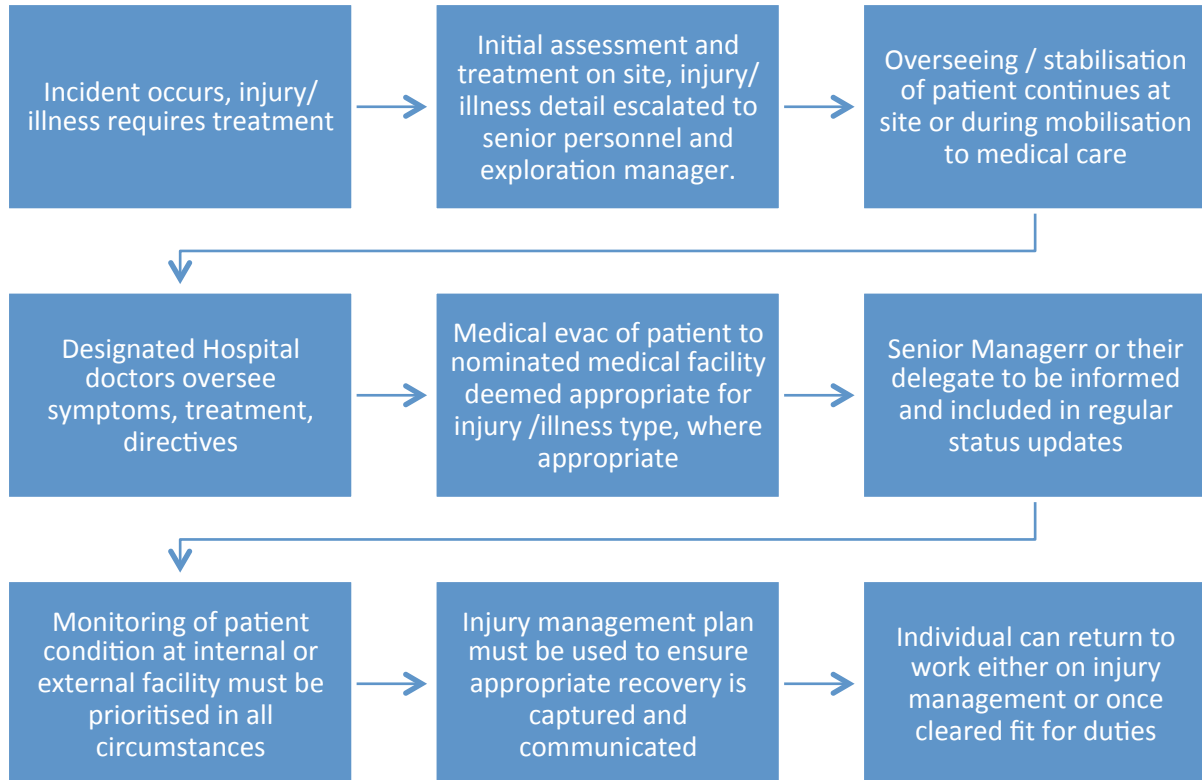
## Appendix 1-Personnel contact list

<b>Name</b>	<b>Telephone</b>	
<b>Paul Shauri</b>	<b>+241 (0) 700 2005 / +241 (0) 664 7667</b>	
<b>Maurice Semahimbo</b>	<b>+241 (0) 771 2733</b>	
<b>Rajaa Medame</b>	<b>+241 (0) 771 2046</b>	
<b>Dave Underwood</b>	<b>+27 82 561 4685 / +241 (0) 422 8905</b>	
<b>Jimmy</b>	<b>+241 (0) 616 2151 / +241 (0) 417 0768</b>	
<b>Eric N</b>	<b>+241 (0) 792 7875 / +241 (0) 642 0115</b>	
<b>Musa</b>	<b>+241 (0) 715 2916 / +241 (0) 6772120</b>	
<b>Justine</b>	<b>+241 (0) 606 2873</b>	

## Appendix 2-Hospital contact lists

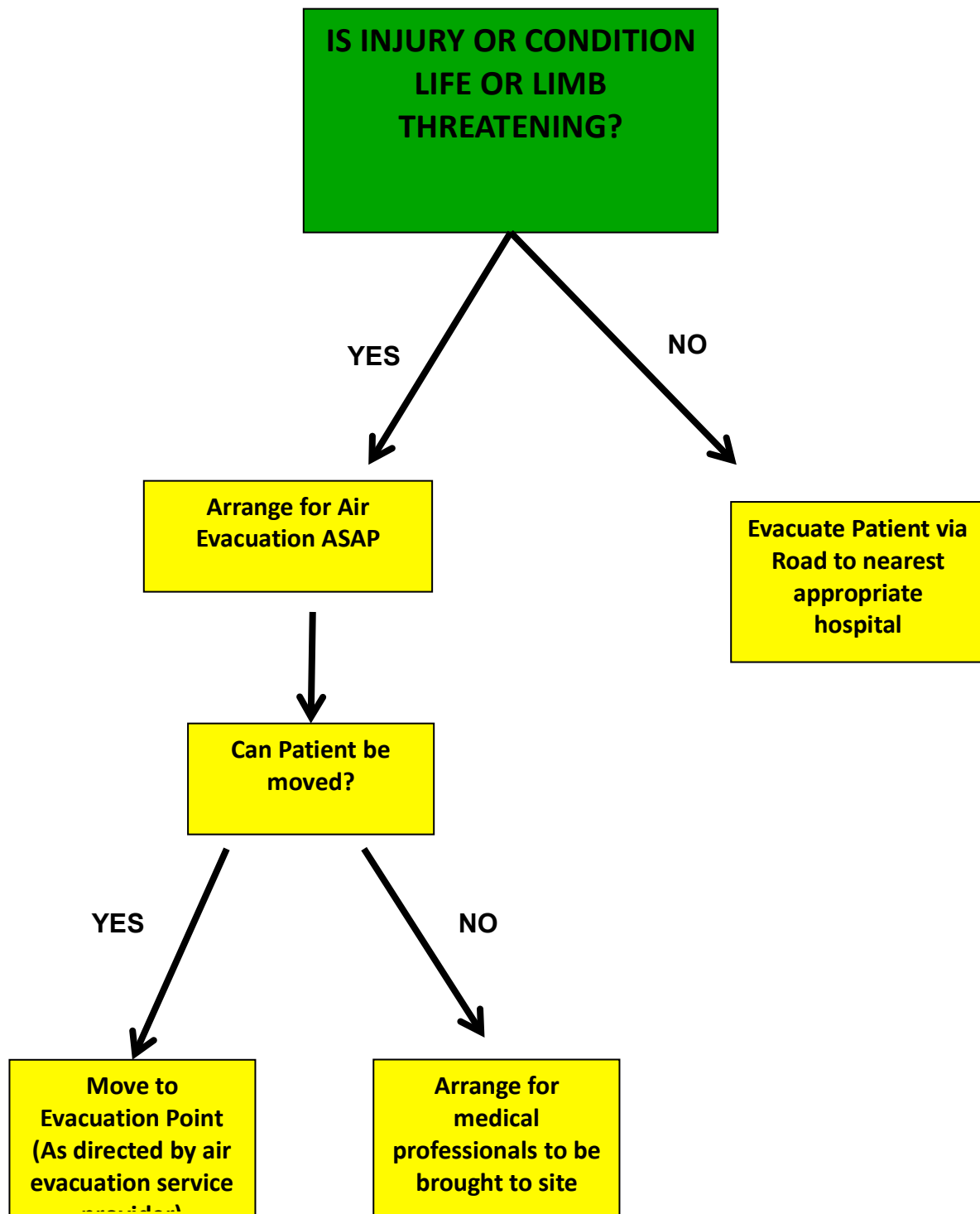
TOWN/CITY	HOSPITAL/ PRACTICIONER NAME	TELEPHONE	CAPABILITY	PHYSICAL ADDRESS
Libreville	Med Clinic El Rapha (Private) First Choice for: outpatient care/ trauma	+(241) 44 70 00 / 47	Ambulance + Paramedic / AER / Morgue / X-ray / screen blood / Dentist / CAT / Oxy / Defib / Ops room / Pharmacy / Lab / 10 docs / 95 nurses Grass patch at rear as helipad, geny	BP 256 Libreville Batterie 4
Libreville	Military Hospital (Public & Private)	+(241) 72 02 37 72 02 38 07 43 06 12 <u>06 97 48 41 24hr</u>	Burns unit / AER / Morgue / X-ray / screened blood bank / CAT + IRM / Oxy / Defib / Ops rooms / Pharmacy / Lab Morgue geny / neurologist Helipad east of AER entrance / 75 doctors / 255 paramedical nurses	9 kilometres from Libreville on the edge of the only route out to the interior
Ndjole	Ndjole general		Very limited	In Ndjole town
Lambarene	Albert Schweitzer Hospital	+(241) 58 10 33 58 11 45 / 55 / 76 / 96	Burns unit / AER / Morgue / X-ray / / Oxy / Defib / Ops rooms / Pharmacy / Helipad	In Lambarene

### Appendix 3- Flow chart diagram of the actions for an emergency.





**Appendix 4 Detailed FLOW DIAGRAM OF ACTIONS FOR A MEDICAL EVACUATION**



**Appendix 5-- Emergency First Aid – DRSABCD Action Plan (First response)**

# DRSABCD Action Plan

**D** **DANGER**  
Ensure the area *is* safe for yourself, others and the patient.

**R** **RESPONSE**  
Check for response—ask name—squeeze shoulders  
No response  
Response  
    Make comfortable  
    Monitor



**S** **SEND for help**  
Call for assistance

**A** **AIRWAY**  
Open mouth—if foreign material present  
Place in recovery position  
Clear airway with fingers



**B** **BREATHING**  
Check for breathing—look, listen, feel  
Not normal breathing  
Start CPR  
Normal breathing  
Place in recovery position  
Monitor breathing



**C** **CPR**  
Start CPR—30 chest compressions: 2 breaths  
Continue CPR until help arrives or patient recovers



**D** **DEFIBRILLATION**  
Apply defibrillator if available

