



Operation  
Wallacea

Conservation research through academic partnerships

## Medical and Evacuation Procedures for Madagascar 2011

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## **1. Introduction**

### **Medical screening**

As with all expeditions careful planning is essential to ensure that all individuals enjoy a safe successful trip. Some members of the expedition team (including all volunteers and staff) may have significant pre-existing health problems or disabilities, which in the field, could potentially lead to problems.

#### *Medical questionnaire*

All participants will be required to complete a medical questionnaire prior to their departure. This will be included in the expedition confirmation pack that is set out to all volunteers. These forms will then be taken to the medical meeting so the medics are able to discuss any implications to the site medical kit or the individual's itinerary.

### **PADI**

All those who are diving during the expedition will be required to complete a PADI (Professional Association of Dive Instructors) medical questionnaire according to the rules and regulations set out by PADI. All volunteers are required to get their GP to sign the declaration on the reverse of the PADI form if they have answered yes to any of the questions. The forms are returned to the administrator at the UK, US or Canadian office.

#### *Screening*

All medical forms are assessed and discussed at a pre-expedition medical meeting. The team of medics will discuss any potential medical issues, advise anyone if a further consultation with a medic is required and will also suggest additions to the medical kits in light of any pre-existing health problems highlighted. Forms need to be photocopied twice. The original will be taken by the volunteer or staff member to site, one copy kept in their staff or volunteer file and the other passed to the medical coordinator to be placed with the medical questionnaire for the medical meeting and sent to the field.

All staff and volunteers are covered by insurance purchased by Operation Wallacea which includes medical costs and repatriation of £1million. Operation Wallacea staff have met with CEGA insurance providers to agree evacuation routes from each site including overland and by air, the western standard hospitals that will be used and the costs so that if evacuation is required there is no delay in the insurance company approving the evacuation and medical costs.

### ***Roles in the event of an emergency***

Carefully planned evacuation protocols are in place in all of the sites in Madagascar. All staff will have training on the evacuation procedures and protocols.

Because of the high variability of influential factors such as weather conditions and nature of potential injuries, a number of different evacuation scenarios must be prepared for prior to the season. All staff are fully briefed in these scenarios, and this report describes the most commonly used and available evacuation options.

It is the responsibility of the Medical Officer at the relevant site to determine if an emergency scenario exists and to ensure the patient is stabilised ready for evacuation. The Medical Officer on site with the casualty will decide the level of emergency evacuation required for the patient in consultation by phone with doctors from the target hospital. These should be classified as *Medium Priority, High Priority or Emergency*.

### **Medium Priority**

Cases in which the patient is in no immediate danger but the onsite facilities and local facilities are unable to cope were their condition to deteriorate or where the condition cannot be assessed on site. This requires the patient to be moved as quickly as possible without the need to hire special vehicles or boats to the nearest appropriate suitable local facilities.

### **High Priority**

Cases where the patient's health is at risk if immediate action is not taken. An example of this is a broken bone. This would require a scheduled flight from Mahajanga, Fort Dauphin or Nosy Be to Antananarivo.

### **Emergency**

Cases where the patient's life is at risk or there is a damage or loss of limb if immediate action is not taken. This requires the fastest possible transfer by air to a western standard hospital, which for most types of emergency would be in Antananarivo. However, if a recompression chamber is required then the evacuation would be to Richards Bay in South Africa

If an emergency occurs then the Incident Coordinator for the site is responsible for ensuring that all relevant staff are aware of the ongoing emergency and follow up actions. All staff involved in the major accident or emergency procedure should keep detailed notes of times, actions taken, contacts made, costs incurred etc. After the incident has been closed it is the responsibility of the Incident Coordinator to compile a detailed report and submit this to the relevant insurance company.

## **2. Medical facilities in country**

This information has been checked prior to the 2011 season by senior Operation Wallacea staff.

**Facilities in Antananarivo**

Polyclinique d'Ilafy, Antananarivo

Tel: +261 (0) 2022 425 66 / 425 69 / 425 73

Fax: +261 (0) 2022 42564

Email: [mbolatiana.andriamanalina@sodiat.mg](mailto:mbolatiana.andriamanalina@sodiat.mg), [clinilaf@sodiat.mg](mailto:clinilaf@sodiat.mg)

Website: <http://www.polyclinique-ilafy.com/>

Emergency Contact: Doctor Prosper +261 (0) 3207 243 13

Secondary Contact: Andriamanalina Mbolatiana +261 (0) 3207 409 08

The private clinic 'Polyclinique d'Ilafy' has a fully equipped operating suite with several theatres, diagnostic equipment such as x-ray machines and scanners, a laboratory, dental care facilities and blood bank. This is one of the best clinics in Tanà and the one that the 'Tropical Biology Association' works with. There is an area for helicopter landing behind the clinic. The clinic has also collaboration with another helicopter company.

**Behoririka**

Centre de consultation en centre ville

BP : 8632 – Antananarivo 101

Tél : (261) 22 641 25

(261) 22 603 63

Fax : (261) 22 313 50

E-mail : [clinilaf@sodiat.mg](mailto:clinilaf@sodiat.mg)

Mobile : 033 11 458 48

032 07 409 38

**Pasteur Institute**

IPM - Institut Pasteur de Madagascar

B.P. 1274

Ambatofotsikely

101 Antananarivo

Madagascar

Téléphone : 261 20 22 412 72 / 74

Téléphone : 261 20 22 401 64 / 65

Télécopie : 261 20 22 415 34

e-mail : [ipm@pasteur.mg](mailto:ipm@pasteur.mg)

Rabies treatment : Tél. : 22.412.72 - Poste 431

**Facilities in Mahajanga**

The private clinic at Mahajanga has an operating theatre, diagnostic equipment, and a dental care centre. It also has rooms that patients can stay in should they need to be hospitalized for time periods longer than a day.

Espace Médical – Mahajanga

Tél. : + 261 20 62 241 75 Mobile : + 261 34 02 172 26

Centre Hospitalier Universitaire d'Androva  
Tel : + 261 20 62 229 16

**Facilities in Nosy Be**

Espace Médical – Nosy Be Hellville Nosy Be  
Tél . : + 261 20 86 620 57 Mobile : +261 34 05 431 15

The hospital in Hell-Ville has the capability to cover essentials, such as suturing, parasitological tests and minor surgery. As of January 2011 the x-ray machine is broken. There are beds for patients to stay overnight if necessary. There are several private doctors on the island of Nosy Be that can offer diagnosis and treatment of minor to moderate illnesses and injury.

**Facilities in Fort Dauphin**

The Amboanato hospital in Fort Dauphin can deal with x-rays and minor surgery including dentistry, and through the nearby Manambaro-Annexe (which is also located in the town of Fort dauphin) clinical tests for tropical illnesses such as malaria, typhoid etc can be carried out. There are admission wards in the hospital, and the team also regularly works with a private doctor (Dr Goulzar) in town.

Hôpital Médico-Chirurgical de Taolagnaro (Fort-Dauphin)  
Tel : 92.212.58

**Recompression chamber in Richards Bay**

In the event of an incident at the Nosy Be marine site requiring decompression facilities, the Divers Alert Network (DAN) will be contacted to arrange evacuation to one of the closest recompression chambers in Richards Bay.

Transnet National Ports Authority (Portnet)

Diving Section Richards Bay;

Office tel: +27 035 905 3420

General Contact: Mr Quinton Gower (Dive Supervisor) 082 321 4420 or

Mr Doug Searl (Assistant Dive Supervisor) 083 561 8298 or

Dr Daan Struwig (Medical Emergency) 082 551 5372 or Office tel: (035) 797 3102.

Dr Struwig requires a Letter of Guarantee from the Insurance Company to cover all costs in respect of any services rendered.

Email: [struwig@iafrica.com](mailto:struwig@iafrica.com)

### **3. Medical cover at each site**

There are three sites that are being run in the 2011 season in Madagascar:

- Malagasy Ecology course, research assistant and dissertation projects and school groups at the Mariarano and Matsedroy camps in Mahamavo;
- Malagasy Ecology course, research assistant projects and school groups at the Ifotaka village and Mahavelo camps in the Ifotaka North protected area;
- Reef Ecology course and dive training for school groups and research assistants at the Marodoka beach camp on the island of Nosy Be.

#### **Mariarano and Matsedroy**

There will be a Doctor based at each camp at all times, and s/he will always be contactable via radio whilst the teams are in the field. The doctor will have access to an extensive field medical kit, but can also recommend an evacuation to the nearest hospital or further afield if needed. Each camp will be equipped with a satellite telephone and a mobile phone antenna will be erected at both camps so that communication is possible between the camps via the Madagascar mobile phone network.

#### **Ifotaka and Mahavelo**

Only one of these camps will operate at any given time, and there will be a Doctor with the team at all times. S/He will always be contactable via radio whilst the teams are in the field. The doctor will have access to an extensive field medical kit, but can also recommend an evacuation to the nearest hospital or further afield if needed. In the village there is a health centre with a state trained doctor. A satellite telephone will be available on site.

#### **Marodoka**

A medic (doctor, nurse or paramedic) will be permanently based at the camp, with divers and snorkelers only a short distance away whilst training or undertaking the reef ecology course, and mobile phone contact possible on post-qualification dives further away from the site. The doctor will have access to an extensive field medical kit, but can also recommend an evacuation to the nearest hospital or further afield if needed. There is also a pharmacy in Hell-Ville 10 minutes drive from the site.

### **4. Evacuation procedures**

It is the responsibility of the Medical Officer at the relevant site to determine if an emergency scenario exists and to ensure the patient is stabilised ready for evacuation. Once a major incident or emergency is identified the Incident Co-ordinator for that site must be notified. At the Mahamavo sites this will be Dr Peter Long, at Ifotaka this will be Barry Ferguson and at Nosy Be this will be Willem Strauss. The Incident Co-ordinator will liaise with the Transfer Co-ordinator who is

based in Antananarivo and has mobile, landline and email connections so can communicate with the UK Opwall office and keep them informed of progress.

The Medical Officer on site with the casualty will decide the level of emergency evacuation required for the patient in consultation by phone with doctors from the target hospital. These should be classified as **Emergency** (requiring the fastest possible transfer by air to hospital facilities in Antananarivo,, **High Priority** (requiring the patient to be moved at the fastest speed possible to hospital facilities in Antananarivo) or **Medium Priority** (requiring the patient to be moved as quickly as possible without the need to hire special vehicles or boats to the nearest appropriate medical facilities).

In all Emergency or High Priority cases where a patient is being transferred to medical facilities they should be accompanied by the relevant Medical Officer or someone appointed by the Medical Officer as fit to accompany the patients. The absence of the Medical Officer from the site whilst the patient is accompanied to the hospital will require the temporary appointment of another Medical Officer at the site, or if this is not possible the suspension of all high risk activities at the site until the Medical Officer is back on site. In the case of a Medium Priority evacuation (e.g. transfer to a hospital for a confirmatory X-ray) another staff member other than the Medical Officer may be nominated to accompany the patient.

The Incident Coordinator on being informed of the major accident or incident should immediately contact the relevant insurance company 24 hour contact number to explain the situation and obtain the necessary authorisations for the evacuation actions necessary. He will then contact the relevant organisations required to implement the evacuation and receive the patient. In addition he is responsible for informing the Project Director for Operation Wallacea that there is an ongoing emergency and the contact person given by the patient on their personal details form of the actions being taken and the state of the patient. He is also responsible for ensuring that all relevant Malagasy staff are aware of the ongoing emergency and follow up actions.

All staff involved in the major accident or emergency procedure should keep detailed notes of times, actions taken, contacts made, costs incurred etc. After the incident has been closed it is the responsibility of the Incident Coordinator to compile a detailed report and submit this to the relevant insurance company.

### **Emergency evacuation**

The in-country medical assistance agency International SOS should be contacted to arrange treatment and evacuation in emergency and high priority cases. In cases of diving incidents involving the need for recompression, the Divers Alert Network (DAN) should be contacted to arrange fast and efficient transfer to a decompression chamber in South Africa.

### **International SOS Madagascar**

Bernard LEMAIRE  
General Manager  
*office direct line: 00 261 (0)20 22 434 17*  
*mobile: 00 261 (0)32 499 57 91*  
bernard.lemaire@internationalsos.com  
General Managers Assistant  
bako.harivelo@internationalsos.com

I-SOS London Alarm Centre  
International SOS Assistance (UK) Ltd. Open 24hrs  
Tel: +44 (0)20 8762 8008  
Fax: +44 (0)20 8748 7744

### **Divers Alert Network**

Dawn Avice du Buisson  
DAN-SA  
DAN Medic  
[danmedic@dansa.org](mailto:danmedic@dansa.org)  
Direct Tel: 011 266 4903  
Fax: 086 545 7006  
NEW INTERNATIONAL EMERGENCY NUMBER: +27 10 209 8112

DAN Building, Rosen Office Park  
Cnr Invicta & 3<sup>rd</sup> Roads - Halfway Gardens - Midrand  
[www.dansa.org](http://www.dansa.org)

In the event of an emergency priority evacuation where a helicopter was needed, the company used for the Mahajanga site would be Madagascar Helicopter.

Tel: +261 (0) 3207 212 32/ 212 54 / 547 62 / 289 15  
Email: [contact@madagascarhelicopter.com](mailto:contact@madagascarhelicopter.com)  
Website: [www.madagascarhelicopter.com](http://www.madagascarhelicopter.com)

For air evacuations from Ifotaka which is 720km from Antananarivo helicopter evacuation is less likely to be a viable option. Evacuations would therefore be undertaken by Missionary Aviation Fellowship using their C208 Caravan Aircraft from the airstrip 2km south of the village. However since the airstrip in Ifotaka is unlit, afternoon incidents may be more likely to be evacuated by road to Fort Dauphin. There is a base of International SOS in Fort Dauphin, which can be contacted to arrange transport if the airstrip can not be used.

MAF Madagascar  
Enceinte Avion Leger  
Ivato Aeroport BP 132

CP105 Antananarivo  
Madagascar  
Tel/fax: +261 20 22 453 22  
24 hr emergency number: +261 33 11 656 05  
BLU: 7036 LSB  
E-mail: [maf-mad@iris.mg](mailto:maf-mad@iris.mg)  
[www.maf-madagascar.org](http://www.maf-madagascar.org)

#### **Mariarano Village Camp and Matsedroy Forest Camp**

In emergency cases a helicopter would be called from the base in Antananarivo, to take the patient to the Polyclinique d'Ilfy. In the event of an evacuation being required from here, the patient would be transferred using the emergency 4x4 vehicle to the hospital in Mahajanga for medium or low priority cases (approx 3.5 hours transfer time). For medium or high priority cases patients will be transferred by road to Mahajanga (3.5 hours) and then by plane to Antananarivo.

#### **Ifotaka Village Camp or Mahavelo Forest Camp**

In the event of an emergency priority evacuation being required, a plane would be mobilised and the patient stretchered to the airstrip at Ifotaka DP, and flown to Antananarivo (approx 3.5 hours). In the event of a high priority or medium priority evacuation being required, the patient would be stretcher-carried out to the village of Ifotaka (no more than 90 minutes from any field site) from where he/she could be driven to the airport in Fort Dauphin (4 hours by 4x4 vehicle) for a transfer to Antananarivo (high priority) or to the hospital in Fort Dauphin (medium priority).

#### **Marodoka Beach Camp**

In emergency or high priority cases the patient will be transported by air to the appropriate medical facility in Antananarivo or the recompression chamber in Richards Bay. The international airport on Nosy Be is a 30 minute drive from the site. In medium priority cases the patient would be taken by road to the local clinic.

<b>LIST OF COMMERCIAL AIRCRAFT BASED AT IVATO AIRPORT ANATANANARIVO</b>		
	<b>Name</b>	<b>Services</b>
02	<p><b>AEROMARINE</b>            3<sup>ème</sup> Etage Immeuble Assurance ARO            Antsahavola - Antananarivo 101            BP 38 44            24 H Urgence : 032 11 444 44 / 032            11 444 45            Email : <a href="mailto:aeromarine@blueline.mg">aeromarine@blueline.mg</a>  <a href="http://www.aeromarine.mg">www.aeromarine.mg</a></p>	CHARTER FLIGHT
03	<p><b>HFF-TRAVEL AIRWAYS</b>            Rue Ravoninahitrinarivo            B.P. 28 – Akoronrano            ANTANANARIVO 101            24 H - Urgence : 034 02 023 23            Email : <a href="mailto:hff.airways@hff.mg">hff.airways@hff.mg</a></p>	CHARTER FLIGHT
04	<p><b>SERVICES ET TRANSPORTS AERIENS</b>            15, rue Ratsimilaho – Antaninarenina            BP 826 Antananarivo 101 –            MADAGASCAR            Tél. :            Portable :            Email : <a href="mailto:sta-i@netclub.mg">sta-i@netclub.mg</a></p>	CHARTER FLIGHT
05	<p><b>MADAGASCAR HELICOPTER</b>            30 rue Emile RANARIVELO Behoririka            Antananarivo 101 MADAGASCAR            Tél. : 22 547 62            Portable : 032 07 212 54            Email            : <a href="mailto:contact@madagascarhelicopter.com">contact@madagascarhelicopter.com</a></p>	CHARTER FLIGHT
06	<p><b>MADAGASCAR TRANS AIR</b>            Zone Avions Legers IVATO-            AEROPORT – MADAGASCAR            Email : <a href="mailto:mtransair@moov.mg">mtransair@moov.mg</a></p>	CHARTER FLIGHT
07	<p><b>TRANS OCEAN AIRWAYS</b>            Lot II J 17 Ter – Ivandry BP            4249 Antananarivo101 MADAGASCAR</p>	CHARTER FLIGHT

	<p>Tél.: 22 538 38 ou 22 536 36  Portable: 032 05 538 38  Email : <a href="mailto:toa@toa.mg">toa@toa.mg</a>  <a href="http://www.tao.mg">www.tao.mg</a></p>	
08	<p><b>MISSION AVIATION FELLOWSHIP</b>  BP 132 Ivato Aéroport  Antananarivo 105 MADAGASCAR  Tél. : 24 524 57 ou 22 453 22  Portable : 033 11 656 05  <a href="mailto:mafml-logsec@iris.mg">mafml-logsec@iris.mg</a></p>	<p>CHARTER FLIGHT  HELICOPTER</p>
09	<p><b>INSOLITE TRAVEL FLY</b>  Lot II J178 TER Alarobia Ivandry –  Antananarivo101 – MADAGASCAR  Bertrand Beaujoin, Directeur Tel : +  261 33 11 427 50  e-mail : <a href="mailto:bertrand.beaujoin@itf.mg">bertrand.beaujoin@itf.mg</a></p>	<p>CHARTER FLIGHT  HELICOPTER</p>
10	<p><b>SKY SERVICES</b>  18, Rue de l'Abattoir  BP 569 MAHAJANGA 401  MADAGASCAR  E-mail : <a href="mailto:sky-services@moov.mg">sky-services@moov.mg</a></p>	<p>CHARTER FLIGHT</p>
11	<p><b>ASSIST AVIATION</b>  Immeuble Assist Velo -  Rainimangalahy  Alarobia Ivandry BP 12.164  Antananarivo 101 – MADAGASCAR  Tél. :  Portable :  <a href="mailto:aviation.dg@assistgroup.mg">aviation.dg@assistgroup.mg</a></p>	<p>CHARTER FLIGHT</p>
12	<p><b>GS AVIATION</b>  BP 3019, rue Ravoninahitrarivo-  Ankorondrano - Antananarivo 101  MADAGASCAR  Tél. :  Portable :  <a href="mailto:huguesraha@moov.mg">huguesraha@moov.mg</a></p>	<p>CHARTER FLIGHT</p>

## **6. Reporting and Logging**

During evacuations it is crucial that a log is kept on site by the Medical Officer and by the Incident Coordinator detailing times, personnel involved and all relevant details of each step of the evacuation process.

All medium priority evacuations must be logged by the Medical Officer and included in the post-season report. For high priority and emergency evacuations the Medical Officer and Incident Coordinator and any other staff involved in the incident must make a report immediately following the incident. A full safety assessment must be carried out after all evacuations and if a similar incident is likely all activities must be stopped until the situation has been rectified.

The Incident Coordinator for each site will collate the reports of all high priority and emergency evacuations and will submit the final report to the UK office. They will also submit the costs and report to the insurance company for re-imbusement of costs.

## **7. Mass Evacuations and Disaster Management**

There is the possibility, albeit incredibly small, that a large scale incident could occur which would require a large number of Operation Wallacea volunteers and staff being repatriated. Such incidents could include political unrest, natural disaster and terrorist attacks. These incidents can be broken into two types, those with prior warning and those without.

### **Major Incident With Prior Warning**

Some major incidents come with a degree of prior warning. A good example of this is political unrest resulting in violence, which would have a build up period. We constantly monitor the political situation of the area we work in and if our experienced field operatives decide that the political situation has become unsafe they would order a full evacuation. In such an incident the Incident Coordinators would liaise with the insurance company and relevant embassies to agree the best route for repatriation.

### **Major Incident With No Prior Warning**

Some incidents, such as a terrorist attack or natural disaster, would have no prior warning. In cases such as these the field staff would get all volunteers and staff to a place they deemed safe by which ever means they decide best. From here the Incident Coordinators would contact the volunteers' embassies to coordinate an evacuation strategy. The details of such an evacuation would vary dramatically depending on the situation and as such it is impossible to produce more detailed procedures than this.