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**British  
Antarctic Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

**NHS**  
**University Hospitals  
Plymouth**  
NHS Trust

## MEDICAL ASPECTS OF DEPLOYMENTS TO POLAR REGIONS



## BRITISH ANTARCTIC SURVEY MEDICAL UNIT

### Purpose

This is intended as a brief guide for anyone who wishes to work for or in association with the British Antarctic Survey (BAS) on deployment, including those who are from other organisations. It introduces some of the medical aspects of Antarctic / Arctic life. It is not intended as a fully comprehensive guide. BASMU staff are always happy to answer specific questions from individuals relating to any health matters.

Please read the guide carefully before completing the Medical Examination forms. Your understanding of the philosophy of the BASMU approach to medical matters will help you to supply the necessary information so that your medical fitness can be realistically and fairly assessed.

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## **Please Note:**

**If you need to take regular medication for an ongoing medical condition, you must ensure you take sufficient supplies to cover your period of deployment. BASMU should be contacted if this becomes problematic.**

**To cover your journey and the initial period after arrival, ensure you take a small personal supply of sun skin and lip cream (minimum SPF 30). It is also worthwhile taking a small supply of cold / flu relief medications and some sea / air travel sickness tablets.**

**It is your responsibility to ENSURE THAT YOUR TEETH ARE IN GOOD CONDITION and that your dental health has been checked out by your own dentist before being deployed. Dental issues are one of the commonest causes for medivac from deployment.**

**Some medical problems may not be obvious to a medical practitioner unless it has been mentioned by the patient. This is particular true of conditions which are recurrent (eg dislocated shoulder) or episodic (eg depression or asthma) where you may be completely well at the time of examination. It is very important that you volunteer such information both on BASMU forms and to the examining doctor, without reservation. In this way the professionals involved can make reasoned judgements, so that you and your colleagues are not put in a situation where the issue becomes a problem. Things which are only a minor irritation in UK can have significant impacts on deployment, particularly in the field, or overwinter.**

## **The British Antarctic Survey Medical Unit (BASMU)**

The British Antarctic Survey recognises that the health and welfare of its employees and visitors are vital to the success of operations in the UK, in transit and in the Polar Regions.

The British Antarctic Survey Medical Unit (BASMU) is based in University Hospitals Plymouth NHS Trust. Permanent staff includes Emergency Medicine Consultants with a special interest in remote medicine, experienced nursing sisters, and a manager with extensive Antarctic experience. There are experts, throughout the specialities in the trust, ready to give advice and support. We work in partnership with the Diving Diseases Research Centre (adjacent to the hospital), South Western Ambulance Trust, and the Peninsula Medical and Dental School ensures that all aspects of healthcare expertise are immediately available.

At the BAS conference in Cambridge prior to deployment you will have the chance to meet some of the BASMU personnel who will be happy to tell you more about the Medical Unit. Many of you will also participate in a specialised first aid course, designed by BASMU to meet your needs in the field, on ship or on our Bases. First Aid training continues during deployment for everyone, and a few BAS personnel will extend their skills at a course run in Plymouth to provide advanced first aid, either to assist our doctors, or for deep field ops.

We provide a doctor at Rothera, Halley and South Georgia, and on the ships whilst south. They have undergone special training to enable them to provide healthcare in difficult situations. Within the Emergency Department of Derriford Hospital, the Trust's main centre, are highly trained and motivated doctors who provide 24 hour emergency support for our doctors in Antarctica.

**BASMU provides a medical screening service to BAS, and deals with issues that arise during deployment. Your routine medical care is provided by your normal doctor, not BAS.**

It is essential that you **remain registered with a General Practitioner (GP) in the UK (or your country of origin if not UK)**. Any medical treatment or follow up on return from deployment needs to be through your GP, in your normal residential area.

**BASMU does not provide private health care for BAS personnel in the UK.** In the course of screening we may come across incidental conditions, or conditions that require treatment to facilitate deployment. These will be arranged through your GP.

## **Medical Facilities in Antarctica.**

The medical provision whilst on deployment is extremely limited, and cannot deliver the standard and extent of services that people expect in the western world.

At Rothera, Halley and South Georgia, and on the Ships when they are South, we provide a BASMU medical officer. These doctors are trained over a 6 months period to provide remote healthcare. They have the back up of the senior medical staff in Plymouth, which is supported by the specialists with University Hospitals Plymouth NHS Trust.

At each base and on ship there is a limited supply of medicines and medical kit for single handed medical practice, tailored to conditions that we expect to see in a screened remote working population.

## **Medical facilities in the Arctic**

Such facilities are few and far between among Arctic location field work sites. Limited first aid provision is supplied at Ny-Alesund on Svalbard with a small hospital facility at Longyearbyen. Arctic research vessels have similar limited capabilities.

### **Medical Requirements for Polar Service.**

BAS is naturally a risk adverse institution. It has a duty to provide a safe environment for the science programme to be delivered, whilst looking after the welfare of employees, in a cost effective way.

Therefore at BASMU it is our job to identify possible medical risk, to attempt to mitigate the risk, and to prevent the potential risk to BAS, who make the judgment as to whether that level of risk is acceptable or not.

The majority of medicals are passed without further comment. In a relatively small number of cases we may contact the individual for more information, or advise that they contact their GP for treatment or intervention.

In the very rare case where we believe that a medical matter precludes polar service, the decision will not be taken lightly.

### **Why is the medical so rigorous?**

The impacts of medical events in the Polar Regions are significant.

- The individual may suffer, as there is a lone doctor, and limited medical resource.
- Medivac may be impossible due to weather, remoteness or winter.
- Some roles are directly responsible for others safety.
- An individual becoming unwell may indirectly put the safety of others at risk.
- Medivacs often interrupt or cancel planned normal activity.
- This may lead to whole programmes being cancelled.
- Changing travel logistics normally incurs huge costs.

Whilst we will attempt all best efforts to affect rescue, at times, medivac is impossible and we have to consider the safety of the rescuer. For this reason we do not do medivac in the winter

There is a perception that as the weather in the summer at places such as Rothera can at times resemble a mild winter in Scotland, that we should not be so rigorous. However it is the remoteness to secondary medical help, and the journey involved to get there that influences our medical decision making.

You should already have seen a guide as to which conditions may cause a problem (sent with your initial medical form). In case you have forgotten, the information is repeated below. None of these is inevitably going to preclude service, and individuals are welcome to discuss problems with BASMU doctors at any time. A brief discussion prior to your application for a post may be of mutual benefit if such an issue arises.

## **A guide to conditions that may cause concern**

<p>Conditions that <b>will</b> usually preclude service Decisions will depend on many different factors and will be made on an individual basis.</p>	<p>Conditions which <b>may</b> preclude</p> <p>These will be assessed on an individual basis and in relation to the capacity to undertake activity/work in the anticipated environment.</p>
<p><b>Cardiac &amp; Circulation problems</b></p> <p>Angina &amp; Heart Attacks Leaky Heart valves &amp; Rheumatic Fever Previous Heart Surgery Uncontrolled High Blood Pressure Heart Rhythm Abnormalities Heart Failure Arterial Disease</p>	<p>Treated abnormal rhythms Severe varicose veins Previous Frostbite Severe Reynaud's disease Previous leg thrombosis Previous clot on the lung</p>
<p><b>Respiratory (chest) problems</b></p> <p>Recurrent pneumothorax Cold induced asthma Chronic Bronchitis or emphysema Active Tuberculosis</p>	<p>Single episode of pneumothorax History of moderate or severe Asthma</p>
<p><b>Gastrointestinal problems</b></p> <p>Active stomach / duodenal ulcer History of these ulcers Liver Disease Pancreatitis Untreated Hernia</p>	<p>Previous exploratory abdominal surgery Severe piles Recurrent (inflammatory) bowel disease</p>
<p><b>Genito- urinary problems</b></p> <p>Recurrent Kidney Stones Kidney failure</p>	<p>Renal colic Recurrent kidney infections</p>
<p><b>Neurological Conditions</b></p>	

<p>Epilepsy or fits (on treatment)          Non – traumatic Brain Haemorrhage in past          Unexplained episodes of loss of consciousness          Degenerative N.M. conditions          Significant Neuro Deficit secondary to Trauma</p>	<p>Previous fits clear for &gt; 3 years          Previous brain surgery          Severe ME</p>
<p><b>Metabolic Conditions</b>          Most diabetes          Cushing’s Disease          Addison’s Disease          Obesity BMI &gt;30</p>	<p>Well controlled mild type II diabetes (exceptional)          Other endocrine disorder          Thyroid disease          Obesity (severe) BMI &gt;30</p>
<p><b>Musculoskeletal conditions</b>          Untreated Slipped disc          Lower Limb Amputation          Recurrent dislocations (untreated)           Rheumatoid Arthritis          Ankylosing Spondylitis</p>	<p>Recurrent back pain          Severe knee problems          Unstable joint          Frequent Gout</p>
<p><b>Cancer and Haematological Disorders</b>          Most cancers          Clotting or bleeding disorders          Warfarin Medication           Bone marrow disease</p>	<p>Treated cancer with low risk of recurrence          Treated leukaemia          Treated Hodgkin’s disease</p>
<p><b>Gynaecological conditions</b>          Current Pregnancy</p>	<p>Pelvic inflammatory Disease          Ovarian disease</p>

<b>Dermatological conditions</b> Blistering Skin diseases Severe psoriasis	
<b>Mental Health Problems</b> Current psychiatric illness Previous severe mental illness Schizophrenia Manic depression Personality Disorder Current Drug or alcohol abuse	Depression Self-harm Previous drug / alcohol problems

The decision will depend on many different factors and will be made on an individual basis. With all of these conditions it is much more likely that you would be able to go to the Antarctic for a short summer trip than to overwinter.

Some conditions will be assessed in relation to the capacity to undertake activity/work in the anticipated environment.

### **The BASMU Medical**

The BASMU medical has two parts. The BASMU 3 is a detailed questionnaire for you to fill in. The BASMU 4 is for an examining doctor to complete. This may be one of our doctors in Cambridge, or a doctor local to you depending on circumstances. The medical is rigorous, as we want to try and mitigate as many preventable medical risks as possible. This only rarely precludes deployment, but more usually we find a way to facilitate your deployment.

ALL medical papers are reviewed by senior medical staff at BASMU, and the level of fitness is decided on an individual basis, considering amongst other factors, the geography, role and length of deployment. Clearly the level of fitness for a short base bound deployment will be different to that expected for a deep field party or over wintering contract.

### **Tuberculosis**

Tuberculosis (TB) is a very serious disease which has the potential to spread in a closed community. We are attempting to keep the ships & bases free of TB, please ensure that disclosure is full with regard to any contact with active TB.

### **Confidentiality and Your Medical Records.**

All information about you and your health held by BASMU is confidential (as you would expect with any health records). **Because of the nature of Polar service, it is sometimes necessary to involve non-medical senior staff in BAS in the care and evacuation of personnel. This is only done when logistics demand it for the safety of you or your colleagues. Information is then passed to a very limited number of people in the BAS Directorate, HR or Operations departments on a strictly “need to know” basis, to assist with planning. All the individuals who may be involved sign an undertaking to respect the confidentiality of such medical information.**

A comprehensive policy on medical confidentiality has been agreed and is available on request.

Medical communications between BASMU and BAS (Cambridge), Polar Station and ships (all secure locations) is by means of telephone, email and Fax. Sensitive messages are encrypted.

All medical information is subject to various laws in respect of your rights of access to your personal details.

You have the right under the Access to Medical Reports Act 1988 to see any report supplied by your General Practitioner to BASMU, before it is despatched. The doctor will let you know it is ready and you then have 21 days in which to arrange with the doctor to see the report. The consent form for release of this information is part of Form BASMU 3. You can refuse to give permission for BASMU to approach your doctor, but we hope you will not feel the need to do so. You are asked to indicate on this form whether you wish to see the report. You also have the right to see all medical records held by BASMU relating to your healthcare since 1991. BASMU office can supply the necessary application forms. A statutory charge of £10 is made for copies of this information, which must be supplied to you within a set period. Your doctor can request copies of all (or relevant parts) of your BASMU medical record. This will be forwarded to your doctor directly by either fax or mail as appropriate.

## **Deployment , Lifestyle and Your Health.**

Living in the Polar arena whether over winter or for a shorter time can be physically and psychologically demanding. As well as the obvious problems of cold, dangerous terrain and physical isolation, there are some other problems of which you need to be aware.

### **Physical Fitness**

Working in the cold or at altitude increases this need. Be sure you are fit enough to cope. Even if your job does not involve particular physical exertion, life on the base is active, and both on base and ship you may be expected to help out with general base duties, or to disembark by rope ladder etc etc

### **Food**

BAS' food is of generous quantity and generally very good quality. The diet is as well balanced as is possible although the choice of what you eat is of course your own. It is important to eat a balanced diet, to perhaps exercise some restraint if your weight is increasing, and to take the vitamin supplements that are freely supplied. Serious obesity will preclude deployment under BAS. To monitor weight we use a measurement called the Body Mass Index (BMI). A BMI of greater than 35 is considered to be too high. BMI is however only part of the equation, and we will also measure your waist to hip ratio, to detect the more dangerous "abdominal obesity".

### **Alcohol**

Alcohol is available to buy on ships and bases, and its value in social interaction is recognised. You need however also to be aware of the very real dangers of excessive drinking on deployment.

**You must be able to muster at all times, when on base, or ship. If you are too drunk to muster, then you may pose threat to yourself, or to potential rescuers.**

- Getting drunk poses risks to yourself and others.
- Alcohol causes vomiting and increases the risk of asphyxiation from inhaled vomit.
- Alcohol increases the risk of injury and hypothermia.
- Alcohol may lead to disruptive behaviour that is unacceptable in a small closed community.
- Alcohol causes careless behaviour, which may risk the safety of the whole community.
- Excess alcohol is linked with several major medical illnesses.



BAS requires that you adopt a sensible approach to drinking, keeping within safe limits, avoiding binge drinking, as guided by the BAS Policy on Drugs and Alcohol. The responsibility is yours and sometimes may require considerable self-discipline.

*The Maritime and Coastguard Agency alcohol limit on ships is half the UK drink drive limit for safety situations at sea.ie one pint or one med' glass of wine only at best.*

### **Smoking**

Areas to safely smoke are very limited. This is largely due to the nature of the base construction, or being on a working ship, which coupled with the very dry Polar atmosphere leads to fire risk. However, as everyone is aware, smoking is bad for your health and the most important lifestyle decision you can ever make is to stop (or never to start) smoking.

**Isolation** especially in winter means very close contact in a small space with your companions. The environment is unique, and can be stressful. Please try to adopt a mature approach to relationships. When others get to you try to talk it through without rancour. The BASMU doctor or Base Commander can sometimes help when there is a problem in relationships within the group.

### **Pregnancy**

We have a policy that means that we prevent people deploying through BAS who are pregnant, and remove anyone who falls pregnant from our bases or ships. This is due to the medical risk of early pregnancy (ectopic pregnancy, bleeding, increased susceptibility to seasickness etc) and the potential complications of late pregnancy. We also consider the emotional impact on the individual of adverse outcomes of pregnancy whilst deployed, and on their ability to do their job. Therefore we strongly advise to avoid actively trying to get pregnant before deployments, and take all precautions to avoid pregnancy both during and prior to deployment.

In every respect, in a small community such as the one you will be in, each individual can contribute much both constructively and destructively within the group. Be prepared to take responsibility for your health and your actions at all times. Try to make a positive effort to enhance the well being of the whole community.

Lifestyle issues will be addressed more fully in briefing conferences prior to departure and the BASMU team will try to give individual guidance on any lifestyle problems you may identify.

And Finally.....

Good Health, Good Luck and enjoy your time with BAS. Moderation in all things is a good motto!

**We hope this guide has been helpful. If you have any queries, suggestions or comments feel free to contact + 44 (0) 1752 315220 and talk to someone in BASMU.**