Guidelines for the medical screening of TAAF and IPEV expedition personnel

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This document was developed collaboratively by the TAAF-IPEV medical unit (*Service Médical TAAF-IPEV*) and *Latitude Solutions* through a working group composed of Claude Bachelard (former TAAF-IPEV Chief Medical Officer, 1981-2014), Antoine Guichard (Consultant, Latitude Solutions) and Paul Laforêt (TAAF-IPEV Chief Medical Officer).

The “Fitness criteria for common medical conditions” table was adapted from Annex E of the *Guidelines on the medical examinations of seafarers* adopted in 2011 by the *International Labour Organisation* (ILO) and the *International Maritime Organisation* (IMO), Reference ILO/IMO/JMS/2011/12, also available in French (*Directives relatives aux examens médicaux des gens de mer*) and Spanish (*Directrices para la realización de los reconocimientos médicos de la gente de mar*). See bibliography for details.

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Any feedback on this document will be welcome. If you produce a derived version of this document, please provide us with a copy. Contact : aptitude.medicale@taaf.re.

Electronic copies of French and English versions of this document should be available online on the web sites of TAAF (www.taaf.fr), IPEV (www.ipev.fr) and/or Latitude Solutions (www.latitude.aq).

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1 Preamble

This document details as explicitly as possible the process followed and the criteria used for the medical screening (physical and psychological) of personnel participating in expeditions to remote regions under the responsibility of either the French Southern and Antarctic Lands administration (TAAF, Terres Australes et Antarctiques Françaises) or the French Polar Institute (IPEV, Institut polaire français Paul Émile Victor).

These expeditions are aimed primarily at the conduct of scientific research in polar and subpolar regions and the management and protection of remote territories.

An appropriate and coherent medical screening process contributes to the protection of both the health and the safety of expeditioners. It gives an expedition the best possible chance of success. It reduces the needs for emergency medical evacuations, often risky and always costly.

Medical screening is the responsibility of the TAAF-IPEV Medical Unit. It is based on objective criteria detailed in this document. But assessments can only be carried out on a case-by-case basis and by someone with full knowledge of the specific context of the expedition, including knowledge of possible variations in local medical support capabilities from year to year. Therefore, the final decision on medical clearance (on whether or not a person is deemed medically fit for service) can only be taken by the TAAF-IPEV Medical Unit under the authority of its Chief Medical Officer.

1.1 A dual objective

The development of this document is part of both an internal process of constant improvement of medical screening and a desire to further facilitate international scientific collaboration in polar and subpolar regions. It has a dual objective:

1.1.1 Promoting the medical safety of TAAF and IPEV expeditions:

To document and update the medical screening process so as to:

- continue to improve the medical safety of expeditions, to reduce the need for emergency medical evacuations and to give expeditions the best possible chance of success.
- facilitate the work of the TAAF-IPEV Medical Unit, of medical doctors examining candidates, of human resources personnel of TAAF and IPEV and other stakeholders.

1.1.2 Facilitating transnational access to expeditions and research infrastructure :

To serve as a basis for the development of bilateral or multilateral agreements governing medical screening in the event of “transnational access”, that is :

- access to TAAF and IPEV expeditions and research infrastructure by personnel reporting to foreign organisations; and/or

- access to foreign expeditions and research infrastructure by personnel reporting to TAAF or IPEV.

1.2 A document for medical doctors and for managers

In line with the objectives detailed above, this document is primarily targeted to :

- the medical doctors of the TAAF-IPEV medical unit, and any other medical personnel supporting expeditions
- the medical doctors examining candidates, including those from the armed forces and universities
- the medical doctors of other national Antarctic programs
- the managers and human resources personnel of TAAF and IPEV

This document can also, more generally, be useful to medical doctors and managers of expeditions into remote regions.

1.3 A document to develop collaboratively

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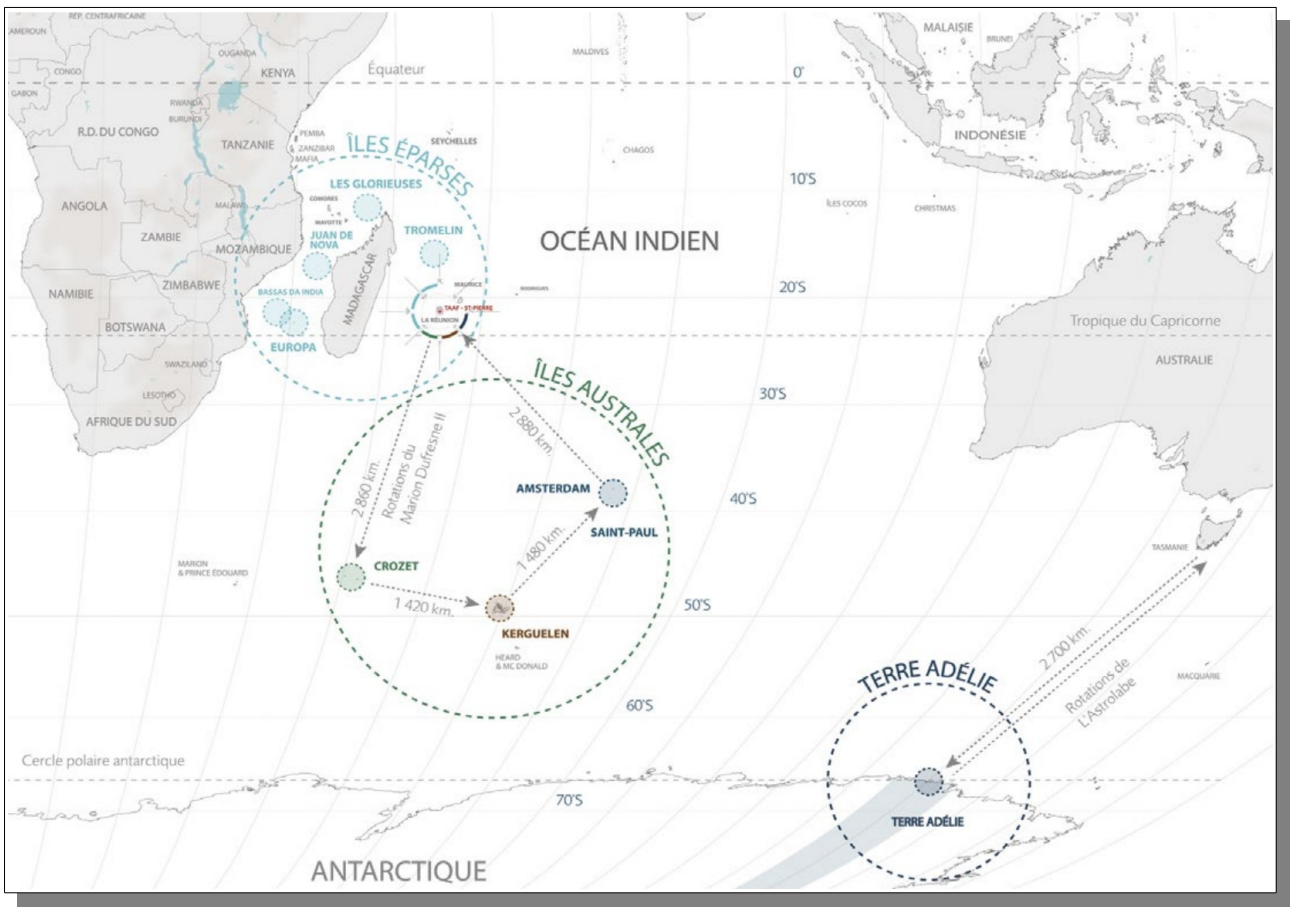
2 Introduction

2.1 The French Southern and Antarctic Lands (TAAF)

The French Southern and Antarctic Lands (TAAF, Terres Australes et Antarctiques Françaises – see www.taaf.fr) is a French local government authority with five administrative districts:

- the district of *Adelie Land* (*Terre-Adélie*) in the *Antarctic*
- three districts in the *French Austral Islands* (*îles Australes*), in the *South Indian Ocean*:
  - the *Crozet* archipelago
  - the *Kerguelen* archipelago
  - the *St Paul and Amsterdam* islands
- the district of the *Scattered islands in the Indian Ocean* (*îles Éparses [de l'océan Indien]):*
  - *Juan de Nova* island, *Europa* island, *Bassas da India* atoll and the *Glorioso* islands in, or in the close vicinity of, the *Mozambique Channel* between *Madagascar* and continental *Africa*
  - *Tromelin* island, in the *Indian Ocean* North of *La Réunion*



Map showing the location of TAAF (Source : TAAF 2018 annual report, page 9)

These territories scattered from the tropics to the South Geographic Pole have in common their remoteness, the absence of permanent residents, an exceptional natural environment and great scientific interest.

Adelie Land and the *French Austral Islands* host four permanent stations dedicated to scientific research at *Dumont d'Urville* in *Adelie Land*, at *Crozet*, at *Kerguelen* and at *Amsterdam*.

The *French Austral Islands* are home to the largest natural reserve in France, the *Réserve naturelle nationale des Terres australes françaises*.

The responsibilities of TAAF include:

- the administration and environmental protection of its five districts
- the operation of maritime or air services, out of *La Réunion*, to and from the *French Austral Islands* and the *Scattered Islands in the Indian Ocean*
- the logistical and technical management of the three permanent research stations at (from South to North) *Kerguelen*, *Crozet* and *Amsterdam*

2.2 The French Polar Institute (IPEV)

The French Polar Institute (IPEV, Institut polaire français Paul Émile Victor – see www.ipev.fr) is a Public Interest Grouping (GIP, Groupement d'Intérêt Public) constituted by nine French public or semi-public bodies, including the Ministry for Research, the Ministry for Foreign Affairs, the National Centre for Scientific Research (CNRS, Centre National de la Recherche Scientifique) and TAAF.

The primary mandate of IPEV is to support scientific and technological research in the Antarctic, sub-Antarctic, Arctic and sub-Arctic regions whose geographic isolation and climatic environment require specific technical expertise, and in particular to

- Select, coordinate, support and implement national and international research projects, with input from an independent panel of international experts.
- Manage resources in support of these projects. IPEV manages, maintains and provides logistical support for two research stations in the Antarctic (*Concordia*, in partnership with the Italian PNRA[1], and *Dumont d'Urville* under delegation from TAAF) and one station in the Arctic in *Spitzberg* (at *Ny-Ålesund*, in partnership with the German AWI[2]). IPEV also manages the French maritime service into the Antarctic with the vessel *L'Astrolabe*, out of *Hobart* in *Tasmania* (*Australia*), under delegation from TAAF.
- Organise and conduct scientific expeditions, in particular in the Antarctic where IPEV deploys over-ice surface convoys on expeditions known as "traverses".
- Establish and operate research observatories, both for earth sciences and life sciences. These observatories contribute to the knowledge of these specific environments and some of the data collected can be used by TAAF for the management of its natural reserve *Réserve naturelle nationale des Terres australes françaises*.

As part of its activities, IPEV ensures the operation of a number of research observatories that are

1 Italian national Antarctic research program (PNRA, Programma Nazionale di Ricerche in Antartide – see www.pnra.it)

2 Alfred Wegener institute for polar and marine research (AWI, Alfred-Wegener-Institut – see www.awi.de)

key components of various global networks of scientific observatories.

2.3 TAAF and IPEV expeditions

TAAF and IPEV, together or separately, organise a variety of expeditions into remote regions in support of their respective activities.

These « TAAF and IPEV expeditions » can involve permanent TAAF or IPEV staff as well as external staff such as contract workers, service provider staff or staff from partner organisations.

Some of these expeditions contribute to international research programmes and involve foreign staff.

The nature and destinations of these expeditions vary, but they all have in common an isolated environment, difficult meteorological conditions and limited rescue and evacuation capabilities.

2.4 Why a need for medical screening?

TAAF and IPEV expeditions demand special consideration of health and medical support aspects as:

- The climate and some activities present specific risks (e.g. high altitude and intense cold at Concordia).
- Geographic isolation greatly reduces opportunities for medical evacuation and sometimes makes them impossible (access is mostly maritime with no or few options for air access, Antarctic stations are totally isolated for eight to nine months of the year). When they are possible, medical evacuations are reserved for extreme, life-threatening situations.
- On-site medical care is limited and nowhere as comprehensive as that available in a normal inhabited region. Research stations have only a local hospital facility and usually one or two medical doctors without paramedical personnel.
- If a medical condition makes an expeditioner unable to work long-term, or necessitates their medical evacuation, the impact on the expedition and its success can be massive.
- TAAF and IPEV expeditions expose personnel to unusual living conditions that can be difficult to adjust to. Adaptation problems may cause undesirable behaviour and effects for the individual or the entire group.

These factors result in:

- an increased global risk that one must be aware of and that expeditioners must take into account in their behaviour in the field (respect of safety regulations)
- the necessity for any candidate for a TAAF or IPEV expedition to undergo a complete physical medical examination that will allow an appropriate evaluation of her or his physical aptitude for the relevant expedition. It is particularly important that candidates inform examining doctors of all their past and present medical conditions
- the necessity for any candidate for a TAAF or IPEV expedition of more than six months, or

for shorter but recurring expeditions (repeated over a single year or over several consecutive years), to undergo a psychological medical examination that will allow an appropriate evaluation of her or his psychological aptitude for the relevant expedition.

2.5 A joint TAAF-IPEV medical unit

TAAF and IPEV have given the responsibility of medical screening for their expeditions to a joint TAAF-IPEV medical unit (le « Service médical TAAF-IPEV »).

This unit also organises the medical support of expeditions (medical care infrastructure, personnel and supplies) and undertakes medical research activities.

Some of these medical research activities are part of epidemiological studies for medical prevention and directly contribute to improving both the medical screening process and the provision of medical care to expeditions.

For expeditions to *Concordia*, a station operated jointly by IPEV and the Italian PNRA, the joint TAAF-IPEV medical unit works closely with their colleagues at the PNRA medical unit who have responsibility for the provision of medical care on the station. The two medical units carry out the medical screening of their respective candidates based on the same process and criteria agreed jointly.

2.6 On-site medical care capabilities

Medical personnel on site at TAAF and IPEV permanent stations of Concordia, Dumont d'Urville, Kerguelen, Crozet and Amsterdam is limited to one or two medical doctors – generally two at *Kerguelen* and *Concordia* and one at the other stations. There is no other trained medical personnel on site.

These medical doctors have to be as multi-skilled as possible. The preferred profile is a specialist in emergency medicine or a general practitioner with experience in emergency management.

These medical doctors undergo three months of special training before going on site. The training is focused on surgery, anaesthesia, dentistry and remote medicine.

On site, these medical doctors enroll amongst other expeditioners a team of volunteers ready to assist them in a surgical operation or in the long-term monitoring of a patient with an acute condition.

All expeditioners receive first aid training adapted to their expedition and their specific role on the expedition.

TAAF and IPEV permanent stations include a local hospital equipped with a treatment and resuscitation room, operating room, hospital beds, medical imaging equipment (x-ray and ultrasound), biology analysis equipment (hematology and basic biochemistry) and dental care equipment.

The stock of pharmaceuticals is inevitably limited. It is intended to treat pathologies that can emerge during the expedition, but not pre-existing pathologies.

The medical capabilities of these permanent stations, in terms of diagnosis and therapeutic care, are substantially lower than what is commonly available in inhabited regions.

Maritime resupply voyages, marine science voyages and Antarctic traverses systematically include a multi-skilled medical doctor with a suitable, but limited, allocation of equipment and supplies.

In the *Scattered Islands in the Indian Ocean*, each expedition includes a qualified nurse with a suitable, but limited, allocation of equipment and supplies.

The Arctic station at *Ny-Ålesund* is located close to a medical facility with a nurse and capabilities that allow the management of simple medical problems. Prompt medical evacuation to a full-service hospital is possible for anything more serious.

2.7 Medical evacuation capabilities

Medical evacuations out of TAAF or IPEV facilities other than out of *Ny-Ålesund* are very difficult to organise, require the deployment of substantial resources and are very costly.

These medical evacuations can only be organised in response to life-threatening medical conditions, and only if their deployment does not put others at too high a risk.

Medical conditions must be managed on site until stabilisation and preparation of the patient for the duration and conditions of the evacuation.

The Antarctic stations are totally isolated during the long austral winter. For eight to nine months it is close to impossible to organise medical evacuations without taking major risks.

Over summer, medical evacuations from Antarctic stations and traverses can be organised by sea (count about ten days from the time decision to evacuate is taken and patient is delivered to full-service hospital) and sometimes by air (count two to eight days depending on meteorological conditions).

Medical evacuations from the sub-Antarctic stations are possible all year round but only by sea (count eight to fifteen days). Few vessels operate in these waters and their medical care capabilities are usually low.

A medical evacuation by sea usually involves diversion of the vessel first to the station then to a port with suitable medical facilities. Total time needed until delivery to a suitable hospital will depend on the initial position of the vessel when diverted.

The *Scattered Islands in the Indian Ocean*) have basic airstrips. Depending on meteorological conditions and aircraft availability, a medical evacuation by air is possible in two to five days.

At the Arctic station at *Ny-Ålesund*, medical evacuation by helicopter to a full-service hospital is usually possible in one to two hours.

2.8 History of these guidelines

The first guidelines for the medical screening of personnel participating in expeditions organised by TAAF, IPEV or their predecessors were based on medical clearance standards developed in the

1960s by the French Defence Health Service in collaboration with Dr Jean Rivolier, first chief medical officer for TAAF and the French Polar Expeditions (EPF)[3].

These guidelines have evolved regularly to take into account the evolution of the missions assigned to personnel, the evolution of prevention objectives and the evolution of the means of investigation and treatments available.

This new version has been prepared by a working group tasked to

- Revise existing guidelines to improve the medical safety of expeditions and reduce the need for emergency medical evacuation, and in doing so give expeditions the best possible chances of success.
- Document the guidelines in detail so as to
    - facilitate the work of the joint TAAF-IPEV medical unit and others involved
    - identify relevant national and international standards that can provide a scientific basis for decision-making, while keeping in mind that the specific characteristics of these remote regions can lead to significant deviations from approaches validated for a more conventional medical care environment
    - serve as a basis for the development of bilateral or multilateral agreements on medical screening for “transnational” access (participation in an expedition or access to a research infrastructure operated by another nation)

In this context, it should be noted that in Article III of the Antarctic Treaty, *in order to promote international cooperation in scientific investigation in Antarctica, the Contracting Parties agree that, to the greatest extent feasible and practicable […] scientific personnel shall be exchanged in Antarctica between expeditions and stations*.

National Antarctic programs having to screen their own personnel for access to another nation’s expeditions or stations need to adapt their screening process to the specific conditions and requirements of those expeditions and stations.

This is a regular topic of discussion within the medical working group of the Council of Managers of National Antarctic Programs (COMNAP).

These guidelines can constitute a useful input into these important discussions.

3 Medical screening process

3.1 Overview

3.1.1 Objectives

The purpose of medical screening is not to prevent applicants from participating in an expedition or

3 The French Polar Expeditions (EPF, Expéditions Polaires Françaises), created in 1947 by French explorer and ethnologist Paul-Émile Victor, organised French scientific expeditions in the Arctic and Antarctic 1947-1992.

to provoke alarm. It is to ensure that their participation does not pose too great a risk to themselves and/or to the entire group.

The ultimate objectives are to:

- Protect the health and safety of the applicant.
- Manage the risks to other members of the expedition.
- Reduce the need for emergency medical evacuations from the Antarctic or remote islands – their financial cost as well as their negative impact on operations and scientific research can easily be massive.
- Give an expedition the best possible chances of success.

3.1.2 Medical screening examination

The purpose of the medical screening examination is twofold :

- Ensure that the applicant is medically fit for the job.
- Detect any pathology incompatible with living in an isolated environment.

The first step is to check that the applicant is medically fit to perform, in the course of the expedition, common work duties, common every day life duties and any tasks that may be required in case of an emergency.

The second step is to identify pathologies, known or unknown to the applicant, which would require diagnostic tests or medical care impossible to provide during the expedition and/or which would put the applicant or the entire group at risk.

The medical capabilities of an expedition are not designed to manage preexisting, non stabilised pathologies.

As a consequence, any chronic pathology not fully investigated and stabilised is an in-principle cause of exclusion.

The conclusions of the medical screening examination (physical and psychological), the opinions of examining doctors and any advice received from specialists are all provided to the joint TAAF-IPEV medical unit so that it can make a decision to grant or deny medical clearance.

3.1.3 Medical clearance

The final ruling on an applicant’s medical clearance for the relevant expedition and mission is the sole responsibility of the joint TAAF-IPEV medical unit. It makes its ruling on a case by case basis, on the strength of screening standards it has validated and on the strength of its knowledge of the precise context of the expedition and role applied for.

Medical clearance can be denied on either a temporary or a permanent basis.

3.1.4 Screening standards

Screening standards based on objective criteria specify the types of disabilities, the medical conditions and the risk factors that are normally compatible or incompatible with different expeditions and roles.

These screening standards take into account a range of indirect risk factors not always evident to examining doctors unfamiliar with the context of the relevant expeditions and mission. For example, stabilised diabetes may not be a problem in itself in normal circumstances but may become a problem if a surgical procedure was necessary during an expedition.

These screening standards are originally based on internationally recognised standards adjusted for the specific characteristics of TAAF and IPEV expeditions, in particular those in polar and sub-polar regions. These also incorporate practices of other national Antarctic programs.

These screening standards will evolve with the evolution of medical and operational practices and scientific knowledge.

3.1.5 Medical screening applies to everyone

TAAF and IPEV stipulate that all applicants for an expedition placed under their responsibility must undergo medical screening under the terms and conditions determined by the joint TAAF-IPEV medical unit.

This medical screening applies to all applicants without exception.

3.1.6 Period of validity

A medical clearance is valid for departure on the relevant expedition within twelve months of the date of the main medical examination on which it is based.

Some of the other tests and examinations used can precede the main medical examination but must normally be less than a year old at the time the ruling is made. Some tests and examinations remain valid longer: abdominal ultrasound (2 years), breast imaging (2 years), cervical screening test (3 years), chest x-ray (5 years), exercise stress test (5 years) or psychological tests (5 years).

It is the responsibility of the examining doctor and/or the doctor following the screening procedure within the joint TAAF-IPEV medical unit to determine if some examinations (physical or psychological) must be updated or renewed before their theoretical date of expiry.

It must be noted that those periods of validity for medical clearance, and for examinations on which the clearance was based, no longer apply if a serious medical problem occurs in the meantime.

3.1.7 Medical clearance certificate

Once an applicant has been granted medical clearance, the doctors of the joint TAAF-IPEV medical unit forward to the relevant managing agencies, in accordance with relevant medical confidentiality rules, a medical certificate clearance for the applicant.

This certificate can only be delivered by the TAAF-IPEV joint medical unit. The opinions of

examining doctors and any advice received from specialists have a strictly advisory value.

If medical clearance was denied for physical reasons, the joint TAAF-IPEV medical unit makes direct contact with the applicant to explain the reasons.

3.1.8 Appeal procedure

When medical clearance has been denied, the applicant can request that the TAAF-IPEV Chief Medical Officer reexamine her/his file for a new ruling.

Because of the specific context of these expeditions and of medical capabilities available on site, the final say and decision always remains the prerogative and responsibility of the TAAF-IPEV Chief Medical Officer.

3.1.9 Access to medical dossier

In accordance with French law, applicants have the right to access their medical screening dossier and to obtain a copy. The request must be made in writing and sent by post to the TAAF-IPEV Chief Medical Officer.

3.1.10 Availability of medical dossiers on an expedition

The medical screening dossiers of successful applicants, marked “Confidential”, are systematically forwarded to the medical personnel of the relevant expedition. The dossiers are forwarded and stored in accordance with relevant medical confidentiality rules.

3.1.11 Medical events during an expedition

Medical conditions or injuries that occur or worsen on an expedition can affect the ability of an expeditioner to accomplish safely and effectively common work duties, common every day life duties and any tasks that may be required in case of an emergency.

Her/his medical clearance may need to be reassessed, with the possibility that repatriation or medical evacuation may be deemed necessary.

3.1.12 Extending participation in an expedition

Extending the duration of participation in an expedition is subject to satisfactory medical examination by the expedition doctor.

3.1.13 Links with relevant occupational medicine services

Under French law, special occupational medicine services monitor the health of employees of both the private and public sectors.

The medical assessment made as part of the TAAF-IPEV medical screening is intended to assess fitness for a specific service in remote regions. This medical assessment can in no way be a substitute for medical monitoring and assessments made by the occupational medicine service normally responsible for the applicant.

However, the TAAF-IPEV joint medical unit and the relevant occupational medicine service work together as and when possible to simplify medical assessments and monitoring of applicants, in particular to avoid duplication of medical and paramedical examinations.

3.2 Mission types and screening profiles

3.2.1 Mission types

The different missions available as part of TAAF and IPEV expeditions are grouped in a series of “Mission types” listed in « Table 1: TAAF and IPEV Mission types » (p 10).

A mission type is characterised mostly by:

- the regions visited (which determine the level of isolation and medical care available on site)
- the duration of the expedition, and when applicable the frequency of expeditions
- the type of role undertaken on the expedition, if it carries specific risks

Each mission type is identified by a name that can be used to describe a person assigned to this mission, for example « [a] summer expeditioner at Concordia ». It is also allocated a short identifier that will be used in the naming of relevant digital files.

Table 1: TAAF and IPEV Mission types

TAAF and IPEV mission types	
Name (Original name in French) [short identifier]	**Description**
Winter expeditioner *Concordia* (Hivernant *Concordia)* [hiv-concordia]	Person staying more than 6 months at *Concordia*
Winter expeditioner coastal (Hivernant côtier) [hiv-cotier]	Person staying more than 6 months at one of the permanent coastal stations in the Antarctic or sub-Antarctic : *Dumont d'Urville*, *Kerguelen*, *Crozet*, *Amsterdam*.
Winter expeditioner Arctic (Hivernant Arctique) [hiv-arctique]	Person staying more than 6 months in the Arctic at *Ny-Ålesund*
Long summer expeditioner coastal (Campagnard d'été long côtier) [ce-cotier-long]	Person staying between 3 and 6 months at one of the permanent coastal stations in the Antarctic or sub-Antarctic : *Dumont d'Urville*, *Kerguelen*, *Crozet*, *Amsterdam*.

Short summer expeditioner coastal (Campagnard d'été court côtier) [ce-cotier-court]	Person staying less than 3 months at one of the permanent coastal stations in the Antarctic or sub-Antarctic : *Dumont d'Urville*, *Kerguelen*, *Crozet*, *Amsterdam*.
Summer expeditioner *Concordia* (Campagnard d'été *Concordia)* [ce-concordia]	Person staying less than 3 months at *Concordia*.
Short-stay arctic expeditioner (Campagnard arctique courte durée) [arctique-court]	Person staying less than 3 months in the Arctic at *Ny-Ålesund*.
Recurring summer expeditioner (Campagnard d'été récurrent) [ce-recurrent]	Person who may have to make recurring expeditions: several short expeditions in the same year or regular expeditions of less than 6 months from year to year. This applies mostly to some TAAF or IPEV permanent Staff.
Recurring expeditioner *Tromelin* (Campagnard récurrent *Tromelin)* [recurrent-tromelin]	Person making recurring expeditions at *Tromelin* (at least two expeditions a year), usually staying about 90 days each time.
Onetime expeditioner *Scattered Islands* *(*Campagnard mission unique *Éparses)* [unique-eparses]	Person making a single expedition to the *Scattered Islands in the Indian Ocean* , staying on site between two successive personnel change-over voyages (normally about 45 days on site). This type of mission does not normally apply to *Tromelin*.
Marine science expeditioner (Campagnard océanographique) [oceano]	Any person participating in a marine science voyage.
Traverse expeditioner (Équipier raid) [raid]	Any person participating in a traverse across the continental plateau (« inlandsis ») in the *Antarctic* or the *Arctic*.
Marine round tripper (Personnel embarqué rotation simple) [rotation]	Person making a single round-trip voyage on board a vessel resupplying stations, normally on board the *Marion Dufresne* or the *Astrolabe* for a maximum of one month, without staying ashore any longer than the duration of the ship’s stopover.

Regular doctor *Marion* (Médecin VSC *Marion*) [med-marion]	Young medical doctor on voluntary civic service based on *Reunion* island and boarding every resupply voyage of the *Marion Dufresne*, and sometimes one voyage of the *Astrolabe*, as ship's doctor. She/he also must be ready to step in promptly to replace a station doctor if needed.
Medical personnel Scattered Islands (Personnel médical îles éparses) (med-eparses)	Medical personnel providing medical support for an expedition to the *Scattered Islands in the Indian Ocean*, usually a qualified nurse.
Fishing inspector (Contrôleur de pêche) [controleur-peche]	Fishing inspector on a fishing vessel operating in or near the French Exclusive Econonomic Zone (EEZ) surrounding the *French Austral Islands* in the Southern Ocean (remote regions and tough sea conditions)
Fishing or seismic observer (Observateur de pêche ou sismique) [obs-peche-sismo]	Observer on board a fishing or seismic survey vessel in or near the French Exclusive Econonomic Zone (EEZ) surrounding the *Scattered Islands in the Indian Ocean*, close to Madagascar.
Tourist *Marion* (Touriste *Marion*) [touriste-marion]	Tourist on board the *Marion Dufresne* for a single round-trip voyage of maximum one month towards the *French Austral Islands* (*Southern Indian Ocean*) or the *Scattered Islands in the Indian Ocean*.

3.2.2 Medical screening profiles

The medical screening of personnel participating in expeditions organised by TAAF and IPEV is organised around seven different "medical screening profiles" P1 to P7 listed in « Table 2: Medical screening profiles » (p 13).

Each medical screening profile corresponds to a particular context, environmental and logistic, which determines the choice of a unique combination of (1) a list of medical examinations to be conducted, and (2) criteria for determining if the applicant can be declared fit for service in view of the examination results.

While each mission type is identified by a name describing a person (e.g. "[a] winter expeditioner"), each screening profile is always given a name that cannot be used to describe a person (e.g. "short summer"). This allows for clearer distinction between a mission type (a person doing a specific job) and a screening profile (a particular environmental and logistic context).

Each mission type fits within one and only one medical screening profile.

Table 2: Medical screening profiles

Medical screening profiles	
Name and context	**Relevant mission types**
P1 : Winter Antarctic Plateau Context : long expeditions (> 6 months) ; high altitude; extreme cold; large fluctuations of day/night cycle ; isolation : evacuations impossible for some 9 months over winter ; local hospital with a medical doctor.	Winter expeditioner *Concordia*
P2 : Winter Coastal Context : long expeditions (> 6 months) ; cold weather or strong winds ; isolation : evacuations are difficult – by sea only from Crozet, Kerguelen and Amsterdam and impossible over winter from Dumont d'Urville ; local hospital with a medical doctor.	Winter expeditioner coastal Winter expeditioner Arctic Regular doctor *Marion*
P3 : Short Summer Context : short expeditions (< 3 months) ; isolation : evacuations are difficult – by sea only from Crozet, Kerguelen, Amsterdam and from ships at sea, by sea or air from Dumont d'Urville ; local hospital with a medical doctor (except on fishing vessels which have a simple infirmary and no medical doctor).	Short summer expeditioner coastal Marine round tripper Marine science expeditioner Fishing or seismic observer Onetime expeditioner *Scattered Islands*
P4 : Long Summer Context : expeditions of 3 to 6 months. Isolation : evacuations are difficult – by sea only from Crozet, Kerguelen, Amsterdam and from ships at sea, by sea or air from Dumont d'Urville, by air from *Scattered Islands* (with limited choice of aircraft capable to access the islands) ; local hospital with a medical doctor (except for *Scattered Islands* and for fishing vessels which have a simple infirmary and no medical doctor).	Long summer expeditioner coastal Summer expeditioner *Concordia* Traverse expeditioner Recurring summer expeditioner
P5 : Recurring Remote Expeditions Context : relatively short but recurring expeditions ; isolation : evacuations are difficult (possible by air from *Tromelin*, ship diversion) ; simple infirmary and no medical doctor.	Fishing inspector Recurring expeditioner *Tromelin* Medical personnel *Scattered Islands*
P6 : Ship-based Tourism Context : seas often very rough ; isolation : evacuations are difficult (ship diversion) ; local hospital with a medical doctor.	Tourist *Marion*
P7 : Short Arctic expedition Context : Short expeditions (always < 3 months and most often < 1 month) at *Ny-Ålesund*; Local dispensary; Evacuations to a full-service hospital generally possible within one to two hours.	Short-stay arctic expeditioner

3.3 Medical screening dossier

A blank medical screening dossier is sent to each applicant as specified by the TAAF-IPEV joint medical unit. The dossier is adapted to the relevant mission type and prescribes the minimum set of information required for medical screening.

The dossier is in 3 parts :

- a medical certificate including :
  - a personal information form to collect the candidate’s personal details
  - a medical information sheet setting out the living conditions and medical care capabilities for the type of mission applied for, together with a relevant informed consent form to be signed by the applicant
  - a questionnaire to be completed by the applicant with her/his personal and family medical history
  - an information sheet about blood transfusion, together with a relevant informed consent form to be signed by the applicant
  - an information sheet about telemedicine, together with a relevant informed consent form to be signed by the applicant
  - a medical examination form to be completed and signed by the examining doctor (The advice of the examining doctor on medical clearance will always need to be confirmed or rejected by the TAAF-IPEV joint medical unit. Because of the specific context of these expeditions and of medical capabilities available on site, the final say and decision always remains the prerogative and responsibility of the TAAF-IPEV Chief Medical Officer.)
- additional examinations (blood and urine biological tests, radiology, ultrasound, electrocardiogram, exercise stress test)
- additional certificates
  - dental: a certificate of good dental health, with an interpretation of the dental panoramic x-ray, to be completed by the applicant’s dentist.
  - ophthalmology: an ophthalmology certificate, including visual acuity, intraocular pressure and dilated eye test, to be completed by the applicant’s ophthalmologist.
  - gynaecology: for each female applicant, a gynaecology certificate to be completed by her gynaecologist.

The dossier, once completed by the applicant and examining doctors, is forwarded to the TAAF-IPEV joint medical unit which can then make a ruling on the applicant’s fitness-for-service, confirming or rejecting the advice of the examining doctors as required.

A copy of the medical screening dossier follows each successful candidate on her/his expedition. The dossier is kept by the medical personnel on the expedition, in accordance with relevant medical confidentiality rules.

3.4 Medical screening examination

The medical screening examination always includes a physical examination adapted to the mission type. For long or recurrent expeditions (profiles P1, P2 and P5), it also includes a psychological

examination.

3.4.1 Physical screening examination

Each and every applicant for a TAAF or IPEV expedition, without exception, must undergo a physical screening examination.

The objective of this physical examination is to assess the level of risk associated with the applicant's participation in the expedition – risk to the applicant as well as risk to other expeditioners and to the success of the overall expedition.

The content of the examination varies depending on the type of mission, the exact role applied for, the age and the sex of the applicant. The TAAF-IPEV joint medical unit provides each applicant with the appropriate medical screening dossier.

The physical examination can be carried out by a range of medical providers (relevant occupational medicine services, French defence health service, family doctor, etc.) depending on the employer or administrative status of the applicant and/or the type of mission considered. The examining doctor completes the dossier, and forwards it along with their opinion to the TAAF-IPEV joint medical unit as input into its final assessment and decision to grant or deny medical clearance.

The examining doctor and the TAAF-IPEV joint medical unit can each request additional specialist advice and/or paraclinical investigations deemed necessary to assess if medical clearance can be granted.

The examination always includes, for each and every applicant, a check of her/his blood group card or, failing that, the determination of her/his blood group and Rhesus type as well as a search for irregular antibodies. This information is required in case a blood donation or transfusion is required during the expedition. However, this information is not taken into account when ruling on an applicant's medical clearance.

Some examinations are only requested for long and/or recurring expeditions. These additional examinations do not correspond to additional screening criteria. They are carried out to help with an early diagnosis of potential conditions not yet detected, hence not listed in the medical history questionnaire, but that could emerge and become a problem in the course of a long expedition.

The content of the physical screening examination, as a function of screening profile, mission type, age, sex and exact position is summarised in Table 3: Content of physical screening examination (p 16).

Table 3: Content of physical screening examination

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Screening profile	P1 Winter Antarctic plateau	P2 Winter coastal	P3 Short summer (< 3 months)	P4 Long summer (3 to 6 months)	P5 Recurring remote expeditions	P6 Ship-based tourism	P7 Short Arctic expedition
Mission types	O Winter expeditioner Concordia	O Winter expeditioner coastal O Winter expeditioner Arctic O Regular doctor Marion	O Short summer expeditioner coastal O Maritime round-tripper O Marine science expeditioner O Fishing or seismic observer O Onetime expeditioner Scattered Islands	O Long summer expeditioner coastal O Summer expeditioner Concordia O Traverse expeditioner O Recurring summer expeditioner	O Fishing inspector O Recurring expeditioner Tromelin O Medical personnel Scattered Islands	O Tourist Marion	O Short-stay arctic expeditioner
Medical certificate							
Information and informed consent	✓	✓	✓	✓	✓	✓	✓
Complete clinical examination	✓	✓	✓	✓	✓	✓	✓
Vaccinations							
Diphtheria/Tetanus/Polio (DTP)	✓	✓	✓	✓	✓	✓	✓
Yellow fever	-	-	✓ if FichObs	-	-	-	-
Rabies	-	✓ if WinterArctic	-	-	-	-	-
Additional examinations (excl. biological tests)							
Electrocardiogram (ECG)	✓	✓	✓	✓	✓	✓	Recommended
Exercise stress test < 5 years	✓	✓ if > 50 yo	✓ if > 50 yo	✓ if > 50 yo or if raverse or	✓ si > 50 yo	✓si >50 yo	-
Chest x-ray < 5 years	✓ + Picture	✓ + Picture	-	✓ + Picture	✓ + Picture	-	-
Abdominal ultrasound < 2 years	✓	-	-	-	-	-	-
Dental panoramic x-ray < 1 year	✓	✓	-	✓	✓	-	-
Additional certificates							
Ophtalmology: Certificate < 1 year	✓	✓	-	Recommended	Recommended	-	-
Dental: Certificate < 1 year	✓ + Picture	✓ + Picture	Recommended	✓ + Picture	✓ + Picture	Recommended	-
Gynaecology: Certificate < 1 year	✓	✓	Recommended	Recommended	Recommended	-	-
Biological tests							
Urine test strip	✓	✓	✓	✓	✓	✓	-
Blood sugar level	✓	✓	✓	✓	✓	✓	-
Plasma uric acid	✓	✓	-	✓	✓	-	-
Creatinine	✓	✓	✓	✓	✓	✓	-
Lipid test	✓	✓	-	✓	✓	-	-
PR/PTT	✓	✓	-	✓	✓	-	-
Transaminases / Gamma-GT	✓	✓	✓	✓	✓	✓	-
CDT	✓	✓	✓	✓	✓	✓	-
Blood group, Rh & irregular antibodies	✓	✓	✓	✓	✓	✓	-
TPHA/VDRL	✓	✓	-	✓	✓	-	-
HBV	✓	✓	-	✓	✓	-	-
HCV	✓	✓	-	✓	✓	-	-
HIV	✓	✓	-	✓	✓	-	-
CRP	✓	✓	-	✓	✓	-	-
CBC	✓	✓	✓	✓	✓	✓	-
Beta HCG	✓ if pre-menopausa	✓ if pre-menopausa	✓ if pre-menopausa	✓ if pre-menopausa	✓ if pre-menopausa	✓ if pre-menopausal	
PSA < 1 year	✓ if > 45 yo	✓ if > 45 yo	-	✓ if > 45 yo	✓ if > 45 yo	-	-
Parasitology stool test	✓ if cook	✓ if cook	✓ if cook	✓ if cook	✓ if cook	-	-
Hemoccult < 2 years	✓ if > 50 yo	✓ if > 50 yo	-	✓ if > 50 yo	✓ if > 50 yo	-	-

3.4.2 Psychological screening examination

Every applicant for a TAAF or IPEV expedition of more than 6 months (profiles P1 and P2), or for shorter but recurring expeditions over one or more years (profile P5), must undergo a psychological screening examination.

This psychological screening serves three complementary purposes :

- Searching for any possible psychiatric history that required long term or continuous treatment, and/or hospitalisation.
- Detecting possible pathological personality traits.
- Identifying potential risk factors for maladjustment to the expedition.

The psychological screening examination is conducted in a single session of about three hours in the offices of the TAAF-IPEV joint medical unit, either in Paris or in St Pierre (Reunion).

The applicant starts the session by filling out a biographical questionnaire and two personality inventory questionnaires.

This is followed by an interview with a psychologist which focuses primarily on the applicant’s personal history, her/his family situation and professional situation, and her/his motivations and expectations in relation to the expedition. If applicable, the interview also explores how well the applicant adapted to similar expeditions in the past.

The interview also includes a projective test.

On the basis of the results of the three questionnaires, the projective test and the interview, the examining psychologist gives the applicant one of four levels of psychological clearance for the given expedition :

- cleared A (« without reservations »)
- cleared B (« with slight reservations »)
- cleared C (« with serious reservations – recruitment advised against »)
- not cleared

This psychological clearance level is forwarded to the TAAF-IPEV joint medical unit for consideration in its final medical clearance.

The psychological clearance level attributed by the examining psychologist will be shown on the medical clearance certificate.

The psychological screening examination is normally valid for 5 years, but the TAAF-IPEV medical unit can request a new examination before the end of these 5 years.

4 Screening standards

4.1 Introduction

4.1.1 Purpose

The purpose of these screening standards are to:

- Provide the examining doctor with a context for determining any additional level of investigation that may be required.
- Provide the decision making doctors of the joint TAAF-IPEV medical unit with a set of objective, equitable and accepted criteria to refer to when ascertaining whether an applicant is fit to spend time in a remote region and to safely and efficiently perform common work duties, common every day life duties and any tasks that may be required in case of an emergency.

4.1.2 Format

The format of these standards is in part modelled on the *Guidelines on the medical examinations of seafarers* adopted in 2011 by the I*nternational Labour Organisation (ILO)* and the *International Maritime Organisation (IMO)*.

This is in particular the case for the *Fitness criteria for common medical conditions* table, adapted from Annex E of the *Guidelines on the medical examinations of seafarers*.

The medical environment and constraints of TAAF and IPEV expeditions are relatively close to those encountered at sea. Furthermore, the ILO/IMO model is an international, consensual model used widely and available in French, English and Spanish. Using a model close to this accepted international model facilitates its use in bilateral or multilateral international agreements designed to ease transnational access to expeditions and research infrastructures.

These standards are intended to be kept under regular review, and to be updated and supplemented on the basis of :

- recommendations issued by relevant professional bodies, validated at national or international level
- recommendations issued by ad hoc expert groups appointed by the TAAF-IPEV joint medical unit
- recommendations issued by the medical expert groups of the *Council of Managers of National Antarctic Programs (COMNAP)* and the *Scientific Committee on Antarctic Research (SCAR)*

4.2 Physical fitness criteria

The physical examination seeks to determine the candidate’s general physical condition and

physical ability to live and work in remote regions.

The applicant’s sex and blood group have no bearing on physical ability and are not taken into account in the screening process.

An upper age limit of 70 years applies to TAAF and IPEV expeditions.

Limitations on an applicant’s physical capability can be caused by a wide variety of disorders :

- excess weight or obesity (BMI > ~35) or thinness (BMI < ~18)
- significant reduction of muscle mass
- musculoskeletal disorders, pain or reduction in some movements due to musculoskeletal disorders
- consequences of an injury or of surgery
- pulmonary disorders
- cardiovascular disorders
- some neurological disorders.

Physical capability must be checked whenever deemed necessary by the examining doctor, for example in the presence of one of the disorders listed above or of any other concerns about the applicant’s physical capabilities. Elements to investigate will be chosen as needed depending on these concerns.

The following can be used to determine if the requirements of « Table 4: Minimum physical capabilities evaluation criteria » (p 20) are met:

- Verification of capability to perform every day life tasks safely and efficiently.
- Verification of capability to perform tasks that simulate common professional duties safely and efficiently.
- Clinical evaluation of strength, mobility, coordination, etc.
- Evaluation of cardiopulmonary reserve, in particular through spirometry and ergometry tests or an exercise stress test.

Table 4: Minimum physical capabilities evaluation criteria

Minimum physical capabilities evaluation criteria for applicants for TAAF and IPEV expeditions		
Task, role, event or condition on the expedition	**Corresponding physical capability**	**An examining doctor undertaking the examination should check that the applicant**
Routine movements: - on uneven terrain - between floors of buildings and ships - when lifting or handling equipment.	• Maintain balance and be agile. • Go up and down stairs and vertical ladders. • Pass over obstacles. • Lift heavy loads.	• Does not suffer from balance problems. • Does not suffer from impairment or illness that restricts necessary movements or activities. • Can, without assistance : – go up and down stairs and vertical ladders; – pass over high sills; – lift and handle loads.

4.3 Fitness criteria for medication use

The applicant must disclose any use of medication prescribed to treat a medical condition.

The necessity to follow a regular medicated treatment is normally incompatible with participation in TAAF and IPEV expeditions.

There are few exceptions to this rule, listed in *Fitness criteria for common medical conditions* under the relevant medical condition.

4.4 Fitness criteria for common medical conditions

One of the objectives of the physical medical examination is to identify some conditions that contraindicate participation in an expedition. This includes in particular :

- recent or evolving acute pathologies that could worsen at any time
- pathologies that require specific monitoring that is not possible on the expedition
- infectious pathologies with a risk of transmission to others.

It should be borne in mind that it is not possible to develop a comprehensive list of fitness criteria covering all possible conditions and all possible variations in their presentation and prognosis.

The criteria selected are detailed in appendix in Table 5: Fitness criteria for common medical conditions (p 25), adapted from Annex E of the the *Guidelines on the medical examinations of seafarers* adopted in 2011 by the I*nternational Labour Organisation (ILO)* and the *International Maritime Organisation (IMO), r*eference ILO/IMO/JMS/2011/12.

The principles underlying the approach adopted in the table can often be extrapolated to conditions not covered in the table. Decisions on fitness in the presence of a medical condition depend upon careful clinical assessment and analysis and the following points need to be considered whenever a decision on fitness is taken :

- The recommendations in this table are intended to allow some flexibility of interpretation while being compatible with consistent decision-making that aims to maintain safety on the expedition.
- The implications for working and living on an expedition vary widely, depending on the

condition and scope for treatment. Knowledge about the condition and an assessment of its features in the individual being examined should be used to reach a decision on fitness.

The table is laid out as follows

- column 1: WHO International Classification of Diseases, 10th revision (ICD-10) - codes are listed as an aid to analysis and, in particular, international compilation of data
- column 2: the common name of the condition or group of conditions, with a brief statement on its relevance to work and/or life on the expedition
- column 3: Permanent unsuitability criteria (circumstances in which participation in the expedition will be contraindicated permanently)
- column 4: Temporary unsuitability criteria (circumstances in which participation in the expedition will be contraindicated temporarily, until specific conditions can be met)
- column 5: notes and references, in particular relevant references to consensus conferences or evidence-based medicine

The table lists the main medical conditions that could make an applicant unfit for the expedition, temporarily or permanently. For each condition, the table provides objective fitness criteria adapted to the relevant expedition. The doctor ruling on the applicant’s medical clearance uses these objective criteria, and her/his knowledge of the precise context of the expedition applied for, to make, on a case by case basis, an informed judgement on the applicant’s fitness for the expedition.

4.5 Psychological fitness criteria

Psychological fitness criteria are included to some extent in Table 5: Fitness criteria for common medical conditions (p 25), under Mental, cognitive and behavioural disorders (ICD-10 diagnostic codes F00 to 99).

Past psychiatric conditions and behavioural disorders that required hospitalisation or continuous treatment are incompatible with participation in TAAF and IPEV expeditions.

Past psychiatric conditions and behavioural disorders that did not require hospitalisation or continuous treatment are compatible with participation in TAAF and IPEV expeditions as long as, untreated, they have not occurred for more than one year (for candidates under profiles P3 to P7) or for more than three years (for candidates under profiles P1 to P2 i.e. winter).

Applicants with multiple pathological personality traits with a significant deviation from the norm (as per the criteria of ICD-10 and of the *Diagnostic and Statistical Manual of Mental Disorder,* 4th edition (DSM-IV)) present a risk of predisposition to psychiatric conditions. This is incompatible with participation in TAAF and IPEV expeditions.

Psychological screening also takes into account the applicant's family situation, professional situation, her/his motivations and expectations in relation to the expedition, and if applicable how well the applicant adapted to similar expeditions in the past.

The applicant's profile should be as close as possible to an "ideal" profile characterised by: strong motivation, emotional stability, good resistance to stress, absence of depressive tendencies, low neurotiscism, introversion with social openness, good sociability, low dependence on others, sensitivity to demands of others.

For team leader positions, management and leadership qualities will also be taken into account.

5 Appendices

5.1 Bibliography

5.1.1 Journal articles

- Geneviève CAZES and Claude BACHELARD (1989) *Stress et environnement polaire (Stress and polar ennvironment)* ; in Neuro-Psy, Volume 4, Number 2, Feb 1989, pp 84-92.
- Elizabeth ROSNET, Geneviève CAZES end Claude BACHELARD (1998) *Méthodes de sélection et de contrôle de l'adaptation dans une situation extrême: le cas des hivernages polaires (Selection and adaptation control methods in extreme situations: the case of polar overwintering)* ; in Bulletin de Psychologie, volume 51(6), Nov-Dec 1998, pp 737-764.
- Lawrence A PALINKAS and Peter SUEDFELD (2007) *Psychological effects of polar expeditions* ; in The Lancet 2007, Volume 369, pp 1-11.

5.1.2 International standards

- *Guidelines on the medical examinations of seafarers* adopted in 2011 by the International Labour Organisation (ILO) and the International Maritime Organisation (IMO), reference ILO/IMO/JMS/2011/12, ISBN 978-92-2-227462-9 (print), 978-92-2-127463-6 (web pdf) Version in French: *Directives relatives aux examens médicaux des gens de mer*; ISBN 978-92-2-227462-8 (print), 978-92-2-127463-5 (web pdf). Version in Spanish: *Directrices para la realización de los reconocimientos médicos de la gente de mar*; ISBN 978-92-2-227462-7 (print), 978-92-2-127463-4 (web pdf).
- World Health Organisation (WHO) *International Classification of Diseases [and Related Health Problems], 10th revision (ICD-10).* Version in French : *Classification statistique internationale des maladies [et des problèmes de santé connexes]* de l'Organisation Mondiale de la Santé (OMS), 10ème révision, (CIM-10). Version in Spanish : *Clasificación Internacional de Enfermedades [y Problemas Relacionados con la Salud]* de la Organización Mundial de la Salud (OMS), 10ª edición (CIE-10).
- Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association , 4th edition (DSM-IV), with ICD-10 codes. Version in French : *Manuel diagnostique et statistique des troubles mentaux* de l'Association américaine de psychiatrie (American Psychiatric Association ou APA), 4ème édition internationale avec les codes CIM-10, 1995. Version in Spanish : *Manual diagnóstico y estadístico de los trastornos mentales* de la Asociación Estadounidense de Psiquiatría, 4ª edición, con códigos CIE-10.

5.1.3 Foreign guidelines and practices

- United States Antarctic Program (USAP) Medical Screening Guidelines 2013-2014.

5.2 Checklist – Medical screening examination

Checklist – Medical screening examination for TAAF and IPEV expeditions

Name :

Expedition departure date :

Version: 2019-03-18-en

Screening profile	P1 Winter Antarctic plateau	P2 Winter coastal	P3 Short summer (< 3 months)	P4 Long summer (3 to 6 months)	P5 Recurring remote expeditions	P6 Ship-based tourism	P7 Short Arctic expedition
Mission types	O Winter expeditioner Concordia	O Winter expeditioner coastal O Winter expeditioner Arctic O Regular doctor Marion	O Short summer expeditioner coastal O Maritime round-tripper O Marine science expeditioner O Fishing or seismic observer O Onetime expeditioner Scattered Islands	O Long summer expeditioner coastal O Summer expeditioner Concordia O Traverse expeditioner O Recurring summer expeditioner	O Fishing inspector O Recurring expeditioner Tromelin O Medical personnel Scattered Islands	O Tourist Marion	O Short-stay arctic expeditioner
Medical certificate							
Information and informed consent	✓	✓	✓	✓	✓	✓	✓
Complete clinical examination	✓	✓	✓	✓	✓	✓	✓
Vaccinations							
Diphtheria/Tetanus/Polio (DTP)	✓	✓	✓	✓	✓	✓	✓
Yellow fever	-	-	✓ if FichObs	-	-	-	-
Rabies	-	✓ if WinterArctic	-	-	-	-	-
Additional examinations (excl. biological tests)							
Electrocardiogram (ECG)	✓	✓	✓	✓	✓	✓	Recommended
Exercise stress test < 5 years	✓	✓ if > 50 yo	✓ if > 50 yo	✓ if > 50 yo or if raverse or Concordia	✓ si > 50 yo	✓ si >50 yo	-
Chest x-ray < 5 years	✓ + Picture	✓ + Picture	-	✓ + Picture	✓ + Picture	-	-
Abdominal ultrasound < 2 years	✓	-	-	-	-	-	-
Dental panoramic x-ray < 1 year	✓	✓	-	✓	✓	-	-
Additional certificates							
Ophtalmology: Certificate < 1 year	✓	✓	-	Recommended	Recommended	-	-
Dental: Certificate < 1 year	✓ + Picture	✓ + Picture	Recommended	✓ + Picture	✓ + Picture	Recommended	-
Gynaecology: Certificate < 1 year	✓	✓	Recommended	Recommended	Recommended	-	-
Biological tests							
Urine test strip	✓	✓	✓	✓	✓	✓	-
Blood sugar level	✓	✓	✓	✓	✓	✓	-
Plasma uric acid	✓	✓	-	✓	✓	-	-
Creatinine	✓	✓	✓	✓	✓	✓	-
Lipid test	✓	✓	-	✓	✓	-	-
PR/PTT	✓	✓	-	✓	✓	-	-
Transaminases / Gamma-GT	✓	✓	✓	✓	✓	✓	-
CDT	✓	✓	✓	✓	✓	✓	-
Blood group, Rh & irregular antibodies	✓	✓	✓	✓	✓	✓	-
TPHA/VDRL	✓	✓	-	✓	✓	-	-
HBV	✓	✓	-	✓	✓	-	-
HCV	✓	✓	-	✓	✓	-	-
HIV	✓	✓	-	✓	✓	-	-
CRP	✓	✓	-	✓	✓	-	-
CBC	✓	✓	✓	✓	✓	✓	-
Beta HCG	✓ if pre-menopausal	✓ if pre-menopausal	✓ if pre-menopausal	✓ if pre-menopausal	✓ if pre-menopausal	✓ if pre-menopausal	
PSA < 1 year	✓ if > 45 yo	✓ if > 45 yo	-	✓ if > 45 yo	✓ if > 45 yo	-	-
Parasitology stool test	✓ if cook	✓ if cook	✓ if cook	✓ if cook	✓ if cook	-	-
Hemoccult < 2 years	✓ if > 50 yo	✓ if > 50 yo	-	✓ if > 50 yo	✓ if > 50 yo	-	-
Psychology							
Psychological assessment	✓	✓	-	-	✓	-	-

5.3 Fitness criteria for common medical conditions

Table 5: Fitness criteria for common medical conditions

Fitness criteria for common medical conditions				***Version : 2019-03-18***
Diagnostic code ICD-10	**Condition** ***Justification for criteria***	**Permanent unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated permanently)	**Temporary unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated temporarily, until specific conditions can be met)	**Notes and references**
A00-B99	***5.3.1.1 Infections***			
A00-09	**Gastrointestinal infection.** *Transmission to others, recurrence.*	Not applicable.	In the presence of obvious symptoms (all applicants) or in the case of confirmed carrier status (food handlers only) until confirmed cured (negative parasitological examination of stools and absence of pathogen).	
A15-16	**Pulmonary TB.** *Transmission to others, recurrence.*	Relapse or severe residual damage.	Positive screening test or clinical history, until investigated. If infected, until treated and cured, and lack of infectivity confirmed by specialist.	
A50-64	**Sexually transmissible infections.** *Acute impairment, recurrence.*	Untreatable impairing and/or late complications.	In the case of infection : until diagnosis confirmed, treatment successful and impairing symptoms resolved.	
B15	**Hepatitis A.** *Transmissible by food or water contamination.*	Not applicable.	Until jaundice resolved and liver function tests return to normal (clinical and biological normalisation).	
B16-19	**Hepatitis B, C, etc.** *Transmissible by contact with blood or other bodily fluids. Possibility of permanent liver impairment and liver cancer.*	Persistent liver impairment with symptoms affecting safe and effective work during the expedition or with likelihood of complications.	Until jaundice resolved, liver function tests returned to normal and low level of infectivity confirmed by specialist.	

Fitness criteria for common medical conditions				*Version : 2019-03-18*
Diagnostic code ICD-10	**Condition** *Justification for criteria*	**Permanent unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated permanently)	**Temporary unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated temporarily, until specific conditions can be met)	**Notes and references**
B20-24	**HIV+.** *Transmissible by contact with blood or other bodily fluids. Progression to HIV-associated diseases or AIDS. Impossibility of ensuring appropriate monitoring and treatment during the expedition.*	Positive HIV test.	Not applicable.	
A00–B99 Not listed separately	**Other infections.** *Personal impairment, infection of others.*	If continuing likelihood of repeated impairing or infectious recurrences.	Until free from risk of transmission and capable of performing duties.	
C00-48	***5.3.1.2 Cancers***			
C00-48	**Malignant neoplasms** – including lymphoma, leukaemia and related conditions. *Recurrence – especially acute complications, e.g. harm to self from bleeding and to others from seizures.*	Neoplasm or history of neoplasm without confirmed cure.	Neoplasm diagnosed and treated more than five years ago, confirmed cured by a specialist through a report detailing the basis of his conclusions.	
D50-89	***5.3.1.3 Blood disorders***			
D50-59	**Anaemia/Haemoglobinopathies.** *Reduced exercise tolerance. Episodic red cell breakdown.*	Severe recurrent or continuing anaemia or impairing symptoms from red cell breakdown that are untreatable.	Until haemoglobin normal and stable.	
D73	**Splenectomy** (history of surgery). *Increased susceptibility to certain infections.*	Not applicable.	Post surgery until full recovery confirmed by a specialist through a report detailing the basis of this conclusion.	

Fitness criteria for common medical conditions				*Version : 2019-03-18*
Diagnostic code ICD-10	**Condition** ***Justification for criteria***	**Permanent unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated permanently)	**Temporary unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated temporarily, until specific conditions can be met)	**Notes and references**
D50–89 Not listed separately	**Other diseases of the blood and blood-forming organs.** *Varied recurrence of abnormal bleeding and also possibly reduced exercise tolerance or low resistance to infections.*	Significant chronic disorders.	Disorders under investigation, until confirmed benign and non-chronic by a specialist through a report detailing the basis of this conclusion.	
E00-90	***5.3.1.4 Endocrine and metabolic***			
E10	**Diabetes – Insulin using.** *Acute impairment from hypoglycaemia. Complications from loss of blood glucose control. Increased likelihood of visual, neurological and cardiac problems. Lack of capacity to manage a glucose imbalance during the expedition.*	In all cases, except in exceptional circumstances (see column « Temporary inability»).	In exceptional circumstances, and only in the case of a mission of type « marine round tripper » : until the diabetes is perfectly stabilised by treatment.	
E11-14	**Diabetes – Non-insulin treated**, on other medication. *Progression to insulin use, increased likelihood of visual, neurological and cardiac problems. Lack of capacity to manage a glucose imbalance during the expedition.*	Diabetes that cannot be stabilized and/or with complications causing incapacity.	Until treated and stabilized without any adverse effects, as confirmed by a specialist.	

Fitness criteria for common medical conditions				*Version : 2019-03-18*
Diagnostic code ICD-10	**Condition** *Justification for criteria*	**Permanent unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated permanently)	**Temporary unsuitability criteria** (circumstances in which participation in the expedition will be contraindicated temporarily, until specific conditions can be met)	**Notes and references**
E11-14	**Diabetes – Non-insulin treated**, treated by diet alone. *Progression to insulin use, increased likelihood of visual, neurological and cardiac problems. Lack of capacity to manage a glucose imbalance during the expedition.*	**Profiles P1 and P2 (Winter) only :** Diabetes that cannot be stabilized and/or with complications causing incapacity. **Profiles P3 to P7 :** Not applicable.	**Profiles P1 and P2 (Winter) only :** Until stabilised and without significant complications. **Profiles P3 to P7 :** Not applicable.	
E65-68	**Obesity/abnormal body mass** – high or low. *Accident to self, reduced mobility and exercise tolerance for routine and emergency duties. Increased likelihood of diabetes, arterial diseases and arthritis.*	Routine work duties or safety-critical duties cannot be performed; capability or exercise test performance is poor with no prospect of attaining satisfactory standards.	While routine work duties or safety-critical duties cannot be performed, poor results when evaluating physical capabilities, until normalisation : satisfactory results when evaluating physical capabilities, normalisation of weight without co-morbidity.	Note: Body mass index, in association with abdominal circumference, is a useful indicator of when additional assessment is needed. The norm (BMI < 35) should not form the sole basis for a decision on medical fitness.
E00–90 Not listed separately	**Other endocrine and metabolic disease** (thyroid, adrenal including Addison's disease, pituitary, ovaries, testes). *Likelihood of recurrence or complications.*	In case of persistent incapacity, of need for frequent adjustments of treatment, or of increased risk of major complications.	Until treatment established and stabilized without adverse effects, as confirmed by a specialist.	
F00-99	***5.3.1.5 Mental, cognitive and behavioural disorders***			
F10	**Alcohol abuse** (dependency). *Recurrence, accidents, erratic behaviour / safety performance.*	***Profiles P1 and P2 (winter) :*** Alcohol abuse and/or dependency, past or present. ***Profiles P3 to P7 :*** Alcohol dependency, past or present.	***Profiles P1 and P2 (winter) :*** Not applicable. ***Profiles P3 to P7 :*** Occasional alcohol abuse only, without pathological alcohol intoxication in the last three years, without dependency, past or present.	

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F11-19	**Drug dependence / persistent substance abuse**, includes both illicit drug use and dependence on prescribed medications. *Recurrence, accidents, erratic behaviour/safety performance.*	Situation of dependency, past or present.	Occasional use (less than once a month) in the last 5 years, without dependency. Case by case assessment.	
F20-31	**Psychosis** (acute) – whether organic, schizophrenic or other category listed in the ICD. Bipolar (manic depressive disorders). *Recurrence leading to changes to perception / cognition, accidents, erratic and unsafe behaviour.*	Confirmed presence or history of psychosis events as listed in ICD-10 or in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), even when occasional and associated with provoking factors.	Not applicable.	
F32-38	**Mood / affective disorders.** Severe anxiety state, depression, or any other mental disorder likely to impair performance. *Recurrence, reduced performance, especially in emergencies.*	Confirmed presence or history of mood / affective disorders as listed in ICD-10 or in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), even when occasional and associated with provoking factors.	Not applicable.	
F32-38	**Mood/affective disorders.** Minor or reactive symptoms of anxiety / depression. *Recurrence, reduced performance, especially in emergencies.*	Confirmed chronic presence of mood / affective disorders as listed in ICD-10 or in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), even when intermittent and even when stabilised by medicated treatment.	Confirmed presence or history of medicated treatment in last 12 months for these mood / affective disorders as listed in ICD-10 and DSM-IV.	

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F00–99 Not listed separately	**Other disorders**, e.g. disorders of personality, attention (e.g. ADHD), development (e.g. autism). *Impairment of performance and reliability and impact on relationships.*	***Profiles P1 and P2 (winter) :*** If screening shows personality traits or risk factors that could compromise adaptation to extended period in an isolated environment. ***Profiles P3 to P7 :*** If screening shows behavioural disorders or risk factors that could compromise adaptation to life in an isolated environment, even if these disorders are controlled by treatment.	not applicable.	
G00-99	***5.3.1.6 Diseases of the nervous system***			
G40-41	**Epilepsy – with or without provoking factors .** *Harm to expedition and self from seizures.*	Need for continuous medicated treatment.	Seizure or medicated treatment in last 5 years.	
G43	**Migraine** (frequent attacks causing incapacity). *Likelihood of disabling recurrences.*	Not applicable.	Frequent attacks causing incapacity and not controlled by treatment, until cured as confirmed by a specialist.	
G47	**Sleep disorders, including sleep apnoea.** *Fatigue and episodes of sleep while working.*	Treatment unsuccessful or not being complied with.	Until treatment started and successful for three months.	
G47 suite	**Narcolepsy.** *Fatigue and episodes of sleep while working.*	Treatment unsuccessful or not being complied with.	Until controlled by treatment for at least two years.	

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G00–99 Not listed separately	**Other organic nervous disease**, e.g. multiple sclerosis, Parkinson's disease. *Recurrence / progression. Limitations on muscular power, balance, coordination and mobility.*	Case by case assessment, informed by specialist advice.	Until diagnosed and stable. Case by case assessment, informed by specialist advice.	
R55	**Syncope and other disturbances of consciousness.** *Recurrence causing injury or loss of control.*	In the presence of confirmed underlying cardiac, metabolic or neurological causes that either cannot be cured or require continuous treatment.	Until investigated to determine cause and confirmation of absence or disappearance after treatment of any detected underlying cardiac, metabolic or neurological cause.	
T90	**Intracranial surgery/injury**, including treatment of vascular anomalies or serious head injury with brain damage. *Harm to expedition, others and self from seizures. Defects in cognitive, sensory or motor function. Recurrence or complication of underlying condition.*	Continuing impairment from underlying condition or injury or from recurrent seizures, or need for continuous treatment.	For minimum three years after the injury, then once seizure likelihood low, based on advice from specialist, without the need for treatment.	
H00-99	***5.3.1.7 Diseases of the eyes and ears***			

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H00-59	**Eye disorders**: Progressive or recurrent (e.g. glaucoma, maculopathy, diabetic retinopathy, retinitis pigmentosa, keratoconus, diplopia, blepharospasm, uveitis, corneal ulceration and retinal detachment). *Future inability to meet vision standards, risk of recurrence.*	Visual acuity or colour vision incompatible with the functions to be exercised without possibility of correction ; or pathology with high risk of deterioration or of impairing recurrence.	Acute or chronic ophthalmologic pathology with low probability of further deterioration or of impairing recurrences after treatment or recovery. Until complete recovery after refractive eye surgery, and at least until 6 months post surgery, as assessed by a specialist. In the case of monocular vision, a more comprehensive examination of eye function will be required.	Note : Without access to a specialist or to an optician, expeditioners requiring prescription glasses must take one spare pair with them.
H65-67	**Otitis – External or media.** *Recurrence, risk as infection source in food handlers, problems using hearing protection.*	In the case of chronic discharge from ear.	Until cured.	
H68-95	**Ear disorders**: Progressive (e.g. otosclerosis).	Loss of hearing acuity incompatible with everyday living and professional activities, which cannot be corrected.	Temporary loss of hearing acuity incompatible with everyday living and professional activities, but low likelihood of subsequent deterioration or of recurrent impairment, until recovered.	
H81	**Ménière's disease** and other forms of chronic or recurrent disabling vertigo. *Inability to balance, causing loss of mobility and nausea.*	Frequent attacks leading to incapacity or which cannot be easily controlled by treatment.	In the case of symptoms that can be easily controlled by treatment, for one year following the last episode.	
I00-99	***5.3.1.8 Cardiovascular system***			

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I05-08 I34-39	**Congenital and valve disease of heart** (including surgery for these conditions). Heart murmurs not previously investigated. *Likelihood of progression, limitations on exercise. Investigation and treatment capabilities limited.*	If exercise tolerance limited or episodes of incapacity occur or if on anticoagulants or if permanent high likelihood of impairing event. Case by case assessment based on specialist advice.	Until fully investigated and, if required, treated. The effectiveness of the treatment must be assessed by a specialist.	
I10-15	**Hypertension.** *Increased likelihood of ischemic heart disease, eye and kidney damage and stroke. Possibility of acute hypertensive episode. Limited treament capabilities.*	If persistently >160 systolic or >100 diastolic mm Hg with or without treatment.	Normally if >160 systolic or >100 diastolic mmHg until investigated and treated in accordance with national or international guidelines for hypertension management and in the absence of impairment related to the condition or to the medication. Case by case assessment based on specialist advice.	
I20-25	**Cardiac event**, i.e. myocardial infarction, ECG evidence of past myocardial infarction or newly recognized left bundle-branch block, angina, cardiac arrest, coronary artery bypass grafting, coronary angioplasty. *Sudden loss of capability, exercise limitation. Problems of managing repeat cardiac event during the expedition. Risks of recurrence and sudden death. Limited on-site diagnostic and treatment capabilities.*	In case of a history of atherosclerosis associated with diabetes, or in a smoker with hypertension not controlled by treatment. - In case of a history of angina pectoris or myocardial infarction, even when treated by bypass or stent. - If undergoing anti-coagulation treatment.	If high cardiovascular risks (normally if risk at or above 10 % on the SCORE risk charts), until full investigation and satisfactory reduction of the risk. - Until full investigation of any chest pain. - Case by case decision based on specialist advice.	

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I44-49	**Cardiac arrhythmias** and conduction defects (including those with pacemakers and implanted cardioverter defibrillators (ICD)). *Likelihood of impairment from recurrence, sudden loss of capability, exercise limitation. Pacemaker/ICD activity may be affected by strong electric fields.*	If disabling symptoms present or excess likelihood of impairment from recurrence. - If equipped with pacemaker and/or ICD implant. - In case of anticoagulant treatment.	Until investigated, treated and adequacy of treatment confirmed with absence of impairing symptoms and with very low risk of impairment in the event of recurrence. Case by case assessment based on specialist advice.	
I61-69 G46	**Ischaemic cerebrovascular disease** (stroke or transient ischaemic attack). *Increased likelihood of recurrence, sudden loss of capability, mobility limitation. Liable to develop other circulatory disease causing sudden loss of capability.*	If significant residual symptoms persist or if there is significant excess likelihood of recurrence.	Until treated and any residual impairment has disappeared and at least until one year post event. Case by case assessment based on specialist advice.	
I73	**Arterial-claudication.** *Likelihood of other circulatory disease causing sudden loss of capability. Limits to exercise capacity.*	If condition is causing impairment or if requires anticoagulant treatment.	Until fully assessed and treated. Case by case assessment based on specialist advice.	
I83	**Varicose veins.** *Possibility of bleeding if injured, skin changes and ulceration.*	Not applicable.	Until treated if impairing symptoms. Post-surgery for up to six months, in the absence of complications.	

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I80.2-3	**Deep vein thrombosis / pulmonary embolus.** *Likelihood of recurrence and of serious pulmonary embolus. Likelihood of bleeding from anticoagulant treatment.*	If events recurrent or permanently on anticoagulants. Case by case assessment based on specialist advice.	Until investigated and treated and while still on anticoagulants.	
I00–99 Not listed separately	**Other heart disease**, e.g. cardio-myopathy, pericarditis, heart failure, peripheral circulation disorders. *Likelihood of recurrence, sudden loss of capability, exercise limitation.*	If impairing symptoms or likelihood of impairment from recurrence.	Until investigated, treated and adequacy of treatment confirmed with low risk of recurrence. Case by case assessment based on specialist advice.	
J00-99	***5.3.1.9 Respiratory system***			
J02-04 J30-39	**Nose, throat and sinus conditions.** *Impairing for individual. May recur. Transmission of infection to food / other expedition personnel in some conditions.*	If impairing and recurrent.	Until resolved or treated in the absence of any factors predisposing to recurrence.	
J40-44	**Chronic bronchitis and/or emphysema.** *Reduced exercise tolerance and impairing symptoms.*	If repeated recurrences or significant impact on physical abilities.	If acute episode, until full recovery.	
J45-46	**Asthma** *Unpredictable episodes of severe breathlessness.*	In case of significant history and if a regular steroid treatment is required.	For all candidates, until episode resolved, cause investigated (including any occupational link) and effective treatment regime in place. In person under age 25, in case of hospital admission or oral steroid use in last three years.	

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J93	**Pneumothorax** (spontaneous or traumatic). *Acute impairment from recurrence.*	After recurrent episodes unless pleurectomy or pleurodesis performed.	For 12 months after initial episode and after assessment of the risk of recurrence, as advised by specialist.	
K00-99	***5.3.1.10 Digestive system***			
K01-06	**Oral health.** *Acute pain from toothache. Recurrent mouth and gum infections.*	If excess likelihood of dental emergency remains after treatment completed or non-compliance with dental recommendations.	In the absence of assessment or treatment, of dental defects or oral disease : until assessed and, if necessary, treated. In case of impacted or malpositioned wisdom tooth, for one month after removal.	
K25-28	**Peptic ulcer.** *Recurrence with pain, bleeding or perforation.*	If ulcer persists despite surgery and medication.	Until cured by surgery or by control of helicobacter and on normal diet for one year.	
K40-41	**Hernias – Inguinal and femoral.** *Likelihood of strangulation.*	Not applicable.	Until satisfactorily treated.	
K42-43	**Hernias – Umbilical, ventral.** *Instability of abdominal wall on bending and lifting.*	Case-by-case assessment depending on severity of symptoms or impairment.	Case-by-case assessment depending on severity of symptoms or impairment.	
K44	**Hernias – Diaphragmatic (hiatus).** *Reflux of stomach contents and acid causing heartburn, etc.*	Not applicable.	Until severity of symptoms assessed, in particular sleep disturbances, and effective treatment implemented. Case-by-case assessment.	
K50, 51, 57, 58, 90	**Non-infectious enteritis, colitis, Crohn's disease, diverticulitis, etc.** *Impairment and pain.*	If severe, recurrent or with complications. Case by case assessment based on specialist advice.	Until investigated, treated and stabilized for more than five years.	

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K60 I84	**Anal conditions: Piles (haemorrhoids), fissures, fistulae.** *Likelihood of episode causing pain and limiting activity.*	If not treatable or recurrent. Case by case assessment based on specialist advice.	If piles prolapsed, bleeding repeatedly or causing symptoms; if fissure or fistula painful, infected, bleeding repeatedly or causing faecal incontinence, until effective treatment implemented.	
K70, 72	**Cirrhosis of liver.** *Liver failure. Bleeding oesophageal varices.*	If severe, active or complicated by ascites or oesophageal varices.	Until fully investigated and proven to be minor and stable.	
K80-83	**Biliary tract disease.** *Biliary colic from gallstones, jaundice, liver failure.*	Advanced liver disease, recurrent or persistent impairing symptoms. History of acute cholecystitis not treated by cholecystectomy. Case by case assessment based on specialist advice.	In case of biliary colic, until definitively treated.	
K85-86	**Pancreatitis.** *Likelihood of recurrence.*	In case of severe attack, of recurrence, of complications or if alcohol related.	Until cured and after assessment by a specialist that there is a very low risk of recurrence and that the condition is not alcohol related. Case by case assessment.	
Y83	**Stoma (ileostomy, colostomy).** *Impairment if control is lost – need for bags, etc. Potential problems during prolonged emergency.*	Not applicable.	For one year after restoring bowel function and in the absence of risk of recurrence or complications.	
N00-99	***5.3.1.11 Genito-urinary conditions***			
N00, N17	**Acute nephritis.** *Renal failure, hypertension.*	Not applicable.	For one year after full recovery of kidney function without residual lesions.	

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N03-05, N18-19	**Sub-acute or chronic nephritis or nephrosis.** *Renal failure, hypertension.*	Chronic renal insufficiency.	Until investigated by a specialist and confirmation of normal kidney function and no predisposition to complications.	
N20-23	**Renal or ureteric calculus.** *Pain from renal colic.*	Recurrent stone formation, or stones with impact on kidney function and risk of recurrence. Case by case assessment based on specialist advice.	For 6 months after an isolated episode has been investigated and treated.	
N33, N40	**Prostatic enlargement / urinary obstruction.** *Acute retention of urine.*	If malignant condition, or if condition is not remediable, or in the presence of permanent functional impairment.	Until investigation and effective medical treatment, or for 6 months after surgical treatment without complications. Assessment based on specialist advice.	
N70-98	**Gynaecological conditions** – Heavy vaginal bleeding, severe menstrual pain, endometriosis, prolapse of genital organs or other. *Impairment from pain or bleeding.*	Not applicable.	Until full resolution of the condition if impairment or if investigation is needed to determine cause and remedy it.	
R31, 80, 81, 82	**Proteinuria, haematuria, glycosuria** or other urinary abnormality. *Indicator of kidney or other diseases.*	Serious and non-remediable underlying cause – e.g. impairment of kidney function or risk of complications. Malignant tumourous pathology.	Until abnormality has been confirmed as benign.	
Z90-5	**Removal of kidney or one non-functioning kidney.** *Limits to fluid regulation under extreme conditions if remaining kidney not fully functional.*	If reduction of kidney function or if active pathology affecting remaining kidney. Based on specialist advice.	Not applicable.	
O00-99	***5.3.1.12 Pregnancy***			

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O00-99	**Pregnancy.** *Complications, potential for harm to mother and child in the event of delivery during expedition. No possibility of normal monitoring and absence of obstetric capabilities on-site.*	Not applicable.	For one month after termination or miscarriage. For three months after child birth.	
L00-99	***5.3.1.13 Skin***			
L00-08	**Skin infections.** *Recurrence, transmission to others.*	Consider for catering staff with recurrent problems.	Until satisfactorily treated and low risk of recurrence.	
L10-99	**Other skin diseases**, e.g. eczema, dermatitis, psoriasis. *Recurrence, sometimes occupational cause.*	Not applicable.	Until condition has been satisfactorily treated, is stable and no longer incapacitating.	
M00-99	***5.3.1.14 Musculoskeletal***			
M10.9	**Gout**, hyperuricemia and complications. *Incapacitating conditions with risk of recurrence and risk of complications requiring specific treatment.*	***Profiles P1 and P2 (winter) :*** Recurring incapacitating condition requiring permanent treatment. ***Profiles P3 to P7 :*** History of gout attacks and uric acid level above 80 mg/l despite specific treatment.	***Profiles P1 and P2 (winter) :*** Until treatment and preventative measures rule out any incapacity and recurrence without the need for ongoing treatment. ***Profiles P3 to P7 :*** Until fully investigated and treated and uric acid level is under 80 mg/l.	

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M10-23	**Osteoarthritis**, other joint diseases and subsequent joint replacement. *Pain and mobility limitation affecting normal or emergency duties. Possibility of infection or dislocation and limited life of replacement joints.*	For advanced and severe cases.	Until full recovery of function. Specialist advice required after hip or knee replacement.	
M24.4	**Recurrent instability of shoulder or knee joints.** *Sudden limitation of mobility, with pain.*	Not applicable.	Until satisfactorily treated with low risk of recurrence.	
M54.5	**Back pain.** *Pain and mobility limitation affecting normal or emergency duties. Exacerbation of impairment.*	If recurrent or incapacitating. Case by case assessment by specialist.	In acute stage until fully investigated and treated by a specialist.	
Y83.4 Z97.1	**Limb prosthesis.** *Mobility limitation affecting normal or emergency duties.*	If incompatible with reliable performance of routine and emergency duties safely or effectively.	Not applicable.	
	5.3.1.15 General			
R47, F80	**Speech disorders.** *Limitations to communication ability.*	If incompatible with reliable performance of routine and emergency duties safely or effectively.	Not applicable.	
T78 Z88	**Allergies** (other than allergic dermatitis and asthma). *Likelihood of recurrence and increasing severity of response. Reduced ability to perform duties.*	If incapacitating or severe response reasonably foreseeable.	Until fully investigated by specialist and confirmation that incapacitating or severe life-threatening response is not reasonably foreseeable.	

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Z94	**Transplants** – Kidney, heart, lung, liver (for prosthetics, i.e. joints, limbs, lenses, hearing aids, heart valves, etc. see condition-specific sections). *Possibility of rejection. Side effects of medication. Absence of monitoring and treatment capabilities on-site.*	In all cases.	Not applicable.	
Classify by condition	**Progressive conditions**, which are currently within criteria, e.g. Huntington's chorea (including family history) and keratoconus.	Case by case assessment based on specialist advice.	Until investigated and treated if indicated.	
Classify by condition	**Conditions not specifically listed.**	Case by case assessment based on specialist advice.	Until investigation and treated if indicated.	