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STO TECHNICAL REPORT

PUB REF NBR STO-TR-HFM-174

***Medical Fitness for Expeditionary Missions***

**A NATO Guide for Assessing Deployability for  
Military Personnel with Medical Conditions  
Task Group 174  
Human Factors and Medicine Panel**

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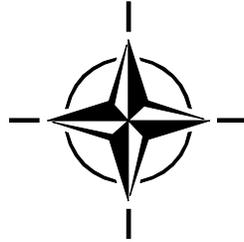
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## Executive Summary

Currently NATO member nations employ different criteria and approaches to assessing an individuals' medical fitness for deployment. Medical staff in a multinational NATO mission, frequently encounters soldiers experiencing exacerbations or onset of chronic medical conditions that may have been reasonably foreseeable before the mission. In extreme cases, there may not be appropriate medical resources to optimally manage some of these medical conditions. Current out-of-area operations are not only operationally demanding, they are generally conducted in environments where host nation medical support is rudimentary, and from where medical evacuation back to the country of origin is, at best, logistically burdensome.

This guide was created to be an evidence-based approach to deciding in the pre-deployment setting whether or not individual military members are medically fit to deploy on these missions. The overall goal of this standard approach is a decrease in individuals being deployed with pre-existing medical conditions that have a high likelihood of exacerbation or which, in their chronic, stable state, have the potential to impair unit capability. Additionally, achievement of this goal would reduce the risk to the health of the individual, enhance the safety of their unit members, contribute to the success of the mission and decrease the demand on deployed medical resources.

The primary constraint in creating this guide has been the paucity of evidence-based research on the outcomes of individuals deployed with pre-existing medical conditions. This guide is therefore largely based on using subject matter expertise and consensus during the process of reviewing, interpreting and adapting existing current medical deployment standards of NATO nations and distilling the result into practical, clear, algorithm-based protocols.

The guide has two separate sections; (1) general guidance on how to make medical-fitness-for deployment decisions in any setting and for any disease; and (2) specific guidance for approximately thirty chronic diseases that were selected for closer review on the basis of their prevalence in the military population. Whether in hard copy, or a web-based tool, this guide will allow front-line physicians across NATO to make decisions on a military member's medical fitness for a NATO deployment using a standardized approach.

The intention is to have this guide adopted as STANAG and then kept up-to-date through a process that allows nations to track individuals with known chronic disease who have been deployed into a theatre of operations in terms of whether or not the deployment of the individual was successful as measured by five specific criteria. This information will be fed into an expanding database that will allow the guide to become increasingly evidence-based in quantifying the risk of exacerbation based on individual and disease characteristics, as well as the nature and length of the deployment. This information will aid medical advisors and military commanders as they ultimately make the final deployment decisions.

To start this process, it would be of significant value if, either as an addendum to HFM RTG 174 or as a separate TG, there was a retrospective research analysis done of military members presenting for medical care for a pre-existing condition while in-theatre during a specific deployment and timeframe. The intention would be to identify the most common diagnoses and also, what the outcome of the deployment was for that member. Lastly, for each of these members, there would be a review of the documentation of the pre-deployment medical assessment /screening to identify whether the individuals would have screened as red, yellow, or green using the algorithms in this guide. Such information could then be used to validate the current algorithms and make them more evidence-based.

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## ABSTRACT

Each time a military member on deployment has an exacerbation of a chronic disease that may have been reasonably foreseeable before the mission there is a potential risk to mission success, individual health, and the safety of other allied military members. Currently NATO member nations employ different approaches to assessing an individual's medical fitness for deployment. This guide offers frontline military physicians a rational, standardized and algorithmic approach to assessing medical fitness of individuals before deployment. If adopted as a STANAG, this guide could then be kept up-to-date through a process that allows nations to track individuals with known chronic disease who were deployed into a theatre of operations. This information, stripped of any patient-specific identifiers, could then be entered into a national and/or NATO database, allowing the guide to become increasingly evidence-based, and also more accurate in quantifying the risk of exacerbation based on individual and disease characteristics, as well as the nature and length of the deployment. This additional precision and degree of confidence will aid senior medical advisors and military commanders as they make the final decision on any given deployment situation.

**Keywords:** Deployment, medical conditions, chronic diseases, mission, fitness, algorithm, evidence-based, medical profile, periodic health assessment, stability, screening

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## List of Acronyms

AA	Aortic Aneurysm
ACC	associated clinical conditions
AIDS	Acquired Immunodeficiency Syndrome
AOC	associated clinical conditions
ASA	aspirin
BP	blood pressure
BSA	Body Surface Area
CABG	coronary artery bypass grafting
CAD	Coronary artery disease
CAT	computed axial tomography
CBRN	Chemical, Biological, Radiological, and Nuclear Defense
CD4	cluster of differentiation 4
CHD	coronary heart disease
CHF	Congestive Heart Failure
CM	centimeter
CT	computed tomography
CV	Cardiovascular
dB	decibel
DOD	Department of Defense
DSP	Diastolic blood pressure
DVT	Deep Venous Thrombosis
EEG	Electroencephalogram
FEV1	Forced Expiratory Volume in 1 second
GER	gastroesophageal reflux
GERD	gastroesophageal reflux disease
HAART	highly active antiretroviral therapy
HALO	High Altitude Low Opening
HDL	High Density Lipoprotein
HFM	Human Factors and Medicine Panel
HG	Mercury
HIV	Human Immunodeficiency Virus
Hz	Hertz
IBS	irritable bowel syndrome
IOS	International Organization for Standardization

IV	intravenous
LASEK	laser epithelial keratomileusis
LASIK	laser-assisted in-situ keratomileusis
LES	lower esophageal sphincter
LOC	Loss of Consciousness
MEDSTD	Medical Standard
MEL	Medical Employment Limitations
MI	Myocardial infarction
MP	Medical profiling
MPS	Medical profiling systems
MRI	Magnetic Resonance Imaging
MSK	Musculoskeletal
NATO	North Atlantic Treaty Organization
NSAID	Nonsteroidal anti-inflammatory drugs
OCD	Obsessive-Compulsive Disorder
PASI	Psoriasis Area & Severity Index
PE	Pulmonary embolism
PEF	Peak Expiratory Flow
PHA	periodic health assessment
PO	Per oral (by mouth)
PPD	purified protein derivative
PPE	Personal Protective Equipment
PPI	proton pump inhibitors
PRK	Photorefractive keratectomy
PSVT	Premature Supraventricular Tachycardia
PTS	post thrombotic syndrome
PTSD	Post traumatic Stress Disorder
RNLA	Royal Netherlands Army
RTG	Research Task Group
SBP	systolic blood pressure
SSRI	selective serotonin reuptake inhibitors
STANAG	Standardization Agreement
TAP	Technical Activity Proposal
TAP	Technical Activity Proposal
TB	Tuberculosis
TBI	Traumatic Brain Injury
TG	Task Group

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TOD	target-organ damage
TTH	tension-type headache
WHO	World Health Organization

## Preface

In 2005 the NATO Human Factors and Medicine Panel chartered Task Group (TG) 174, Medical Fitness for Expeditions. At that time multinational forces including NATO member nations were deployed to Afghanistan. Medical staff working in this theater frequently encountered soldiers experiencing exacerbations of chronic medical conditions or new chronic medical problems that may have been reasonably foreseeable before the mission. Participating nations employed different criteria and approaches to assessing an individuals' medical fitness for deployment. In extreme cases, there was not the correct mix of medical specialists, equipment, or pharmaceuticals in theater to optimally manage some of these medical conditions. The theatre was operationally and environmentally demanding, with limited host nation medical support and medical evacuation back to the country of origin was logistically burdensome and unachievable in a clinically relevant time frame. In this context TG 174 was established to propose a NATO response to the challenge of multinational deployments without consistent medical deployment standards.

## Assumptions

The following four background themes, or assumptions, were adopted by the technical group in preparing this report:

- Periodic Health Assessments do occur in all or most NATO Countries.
- Most nations do have, or would want to develop, a medical profiling system (e.g. for enrollment; retention).
- Most nations do have, or would want to develop, a way of using their med profiling system specifically to screen for medical fitness for deployment.
- Deployment screening needs to take into account the reality that during a deployment, unpredictable/emergent situations develop that require individuals to do common, military-essential tasks that may be outside of their normal scope of duties in an in-garrison setting. Any deployed individual should therefore meet a high standard of physical strength and aerobic capacity, such as would be required for carrying heavy loads (e.g. one end of a stretcher), performing arduous tasks (e.g. helping to fight a fire), delivering a sudden significantly burst of power (e.g. extracting an injured person from a vehicle). Service members also obviously require the ability to function to a high level while under prolonged psychological or mental stress. It is not the military physician's job to assess *physical* fitness (i.e. strength and aerobic capacity); however, the military physician needs to be cognizant of how a chronic disease may affect the service member's ability to perform at a high physical level

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# Forward

## The Original Technical Activity Proposal (TAP) Overall Goal & Specific Objectives

### Overall Goal

The overall goal is a decrease in individuals being deployed with pre-existing medical conditions that have a high likelihood of exacerbation or which, in their chronic, stable state, have the potential to impair unit capability. Achievement of this goal would have the following results:

- Reduce the risk to the health of the individual;
- Enhance the safety of their unit members;
- Contribute to the success of the mission; and
- Decrease the demand on deployed medical resources

### Specific Objectives

- The acquisition of currently available data on the frequency of deployed individuals with pre-existing medical conditions who, as a result of their pre-existing medical condition, impair the mission or significantly adversely affect their health.
- Gathering information on the different national systems for medical standards & assessment of medical fitness for duty/deployment; including profiling/ alpha-numeric systems.
- The development of a decision-making tool that permits the evaluation of medical fitness for deployment for a wide range of medical conditions and varying military deployment scenarios.
- To encourage NATO members to have an internal registry on those individuals who do not meet deployment medical standards but who are deployed anyway for military operational reasons (ie. waived), so that their outcomes can be measured and the decision-making tool refined and improved accordingly.

### Meeting The Original TAP Objectives

**Objective 1:** The acquisition of currently available data on the frequency of deployed individuals with pre-existing medical conditions who, as a result of their pre-existing medical condition, impair the mission or significantly adversely affect their health.

**Final Status:** Extremely limited data available. This data will only become available after the Guideline for Deployment Medical Screening has been adopted, along with NATO nations tracking those individuals who are sent into theatre with Red or Yellow risk status (i.e. tracking through an internal registry or waiver process) and providing feedback on outcomes.

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**Objective 2:** Gathering information on the different national systems for medical standards & assessment of medical fitness for duty/deployment; including profiling/ alpha-numeric systems.

**Final Status:** We were only able to obtain information from countries who participated in the RTG.

**Objective 3:** The development of a decision-making guide that permits the evaluation of medical fitness for deployment for a wide range of medical conditions and varying military deployment scenarios.

**Final Status:** Completed.

**Objective 4:** To encourage NATO members to have an internal registry on those individuals who do not meet deployment medical standards but who are judged deployable (e.g. waived), so that their outcomes can be measured and this Guidebook can be updated accordingly.

**Final Status:** There remains work to be done to overcome the technological and confidentiality aspects of how this internal registry/waiver process would work, and to be able to get all NATO countries to agree on this process. Lastly, there would need to be an update mechanism whereby the Guideline Document is updated as new evidence becomes available.

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# Terms of Reference

## **Deployment**

For the purpose of this guide, a deployment refers to an individual being sent to a NATO operational theatre where they will be relying upon NATO resources for any needed medical care. This tool is not intended to be used for individuals who are just visiting a deployment operation.

## **Successful Completion of a Deployment**

Successful completion of a deployment (from a medical perspective) for a service member is defined as including all of the following five criteria:

1. Completion of deployment (i.e. no need for early repatriation); **AND**
2. Able to perform all of their duties without limitations during the deployment period so as not to jeopardize mission success; **AND**
3. At no time have an exacerbation of their condition which jeopardizes the safety of those around them; **AND**
4. No significant additional requirement for medical care/assessment; **AND**
5. Not have a significant deterioration of their disease state as a result of the deployment.

## **When is a Chronic Disease Considered “Stable”**

Although it varies somewhat from disease to disease, for the purpose of the WG the following three criteria were established as being the minimum/floor standard in terms of defining stability.

- No change in symptoms or functioning > 3 months; **AND**
- No change in medication type or strength > 3 months; **AND**
- No requirement for medical follow-up more often than every 3 months.

*Note:* Some diseases have more demanding time-period standards. Additionally, individual nations may also set a higher standard (i.e. requiring a longer period of time before considering the disease to be stable).

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## CHAPTER 1: INTRODUCTION

### 1.1 BACKGROUND, PURPOSE & CONSTRAINTS

This guideline publication is the result of a multi-year effort made by military physicians from several countries and took into account existing deployment medical standards across several NATO nations. This guideline sets a *minimum*, floor standard and is therefore *not* intended to replace the existing deployment screening standards and policies of individual NATO countries where those countries already have an existing deployment screening process that sets a similar or higher standard for medical fitness.

Many countries have a Medical Profiling System and have medical standards for accession (i.e. recruiting) and retention that are separate from the medical standard for deployment. However, the purpose of this guide is to focus on the *minimum* medical standards that should be met before someone is deployed into a multinational theatre of operations. An example of a Medical Profiling System is shown at Annex F-1.

A deployment is defined (for the purpose of this guide) as an individual being sent to a NATO operational theatre where they will be relying upon NATO resources for medical care. Although the circumstances of deployments vary widely, it is a given that deployment conditions are somewhat unpredictable. In this context, it is reasonable and necessary to expect that anyone being deployed may be required to function outside of their usual or normal, narrow scope of duties. In other words, all deployed personnel may at some time be required to perform essential military tasks, such as carrying heavy loads (e.g. one end of a stretcher), performing arduous tasks over an extended period (e.g. helping to fight a fire) and be exposed to high levels of psychological stress. This is described in more detail in Annex F-1.

The purpose of this guide is to help frontline Captain and Major physicians make optimal decisions about a military member's medical fitness for deployment into a multinational theatre of operations. By making better and more-standardized decisions about medical fitness for deployment of military personnel, the frequency of exacerbations of chronic diseases during a deployment will be reduced, and the following three operational and medical benefits will be realized; (1) a reduction of morbidity; (2) more optimal use of deployment resources (medical and non-medical) and most importantly, (3) increased likelihood of mission success.

The principal objective of this guide is to avoid deploying personnel into theatre with a pre-existing medical condition that significantly reduces the likelihood of a successful deployment. A successful deployment is defined as including all of the following five criteria:

1. Completion of deployment (i.e. no need for early repatriation).
2. Able to perform all of their duties without limitations during the deployment period so as not to jeopardize mission success.
3. At no time have an exacerbation of their condition which jeopardizes the safety of those around them or mission success.
4. No significant additional requirement for medical care or assessment.
5. Not have a significant deterioration of their disease state as a result of the deployment.

The target audience for this guide are frontline military physicians involved in medically screening individuals to confirm medical fitness for deployments. The overriding priority of this guide is to set a *minimum* medical standard of fitness for deployment by establishing a list of "Red" criteria which would disqualify individuals

from being deployed, and to therefore reduce the number of individuals deployed into operations whose medical condition places them, other allied members, or the mission, at risk. The secondary priority is to identify those individuals who meet the “Yellow” (i.e. Caution) criteria which should prompt the frontline physician to consider consulting an appropriate specialist or a more senior and experienced military occupational health physician before deciding on the member’s medical fitness for deployment.

The primary constraint in creating this guide is the paucity of evidence-based research on the outcomes of individuals deployed with pre-existing medical conditions. This guide is therefore largely based on using subject matter expertise and consensus during the process of reviewing, interpreting and adapting existing current medical deployment standards of NATO nations and distilling the result into practical, clear, algorithm-based protocols.

For most diseases, there was good agreement on what characteristics of the disease would clearly make someone unfit (Red), and there was similar consensus on what features would make someone clearly fit (Green). However, for each of the diseases there were always some disease characteristics or varying degrees of severity where there was disagreement about whether or not such an individual should be screened as fit (green) or unfit (red). For this reason it was necessary to create a “yellow” category (yellow = caution) to reflect that review by a more senior and experienced military occupational health physician should occur before a decision about deployability.

Some have suggested that this guide should be dichotomous; individuals being screened for deployment are either medically fit (i.e. “green”), or *not* medically fit (i.e. “red”). However, while this “fit” or “not-fit” approach has the benefit of being clear and simple, it is not an accurate reflection of the current state of knowledge in military medicine on the subject of pre-deployment screening. For most of the diseases covered in this guide, there simply is no clear evidence of deployment outcomes amongst individuals deploying with pre-existing medical conditions. Neither is there even unanimous subject matter expert consensus to clearly establish that individuals who fall under the “yellow / caution” criteria would have worse outcomes during deployed operations than those who would meet the green (“fit”) criteria. The most practical and achievable purpose of this guide therefore is to focus on setting a minimum medical standard of fitness (i.e. the Red criteria). This guide does *not* prevent an individual nation from setting a more rigorous or higher medical deployment screening standard and deciding, for example, that individuals who screen as “Yellow” using this guide are not deployable.

Ideally, in the longer term, more evidence will become available about the outcomes of individuals deployed with various pre-existing chronic diseases. It will therefore become increasingly possible to build an algorithm and offer statistical probabilities about the likelihood of an exacerbation and the consequences of such an exacerbation by inputting individual-personal factors, disease characteristics and deployment parameters (i.e. length of deployment, location, nature of operations). This algorithm would then allow the screening physician to more confidently categorize individuals as either “fit” or “not fit” (i.e. the percentage of individuals flagged as yellow will decrease).

Lastly, and underlying everything that has been said above, there will always remain an absolute requirement for effective communication and collaboration between the senior occupational health physician and the chain-of-command (operational leaders) for those situations where an individual has screened as yellow and there is now a need to estimate and balance the risk and consequences of an exacerbation of a pre-existing medical condition during the deployment against the operational imperative and associated timelines. Some of these individual situations are highly complex and frontline physicians can find it difficult to balance their competing responsibilities as healthcare provider, patient advocate and desire to support legitimate operational

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requirements. This guidebook is intended to give these physicians more confidence in their decisions when a service member is clearly unfit deployment (i.e. (Red), and to prompt them to involve a more senior military occupational health physician for those situations where the service member has screened Yellow.

## 1.2 HOW TO USE THIS GUIDE

### **Step 1: Look in “List of Specific Disease Section” to See if the Disease is Covered**

Then, pick one of the following two steps

- If the disease is **not** covered- go to Step 2A; **OR**
- If the disease **is** covered – go to Step 2B

### **Step 2A: If the Disease is Not Covered Under the Specific Disease Section**

Then go to **chapter 2**, and review the section entitled “Factors to Consider Before Deploying Military Personnel With a Medical Condition.”

### **Step 2B: If the Disease is Covered Under the Specific Disease Section**

- **Review the “Red” Criteria First**  
If your patient *does* meet *any* of the Red criteria then they should **not** be deployed.
- **Review the Green Criteria Only if Your Patient Does Not Have Any of the Red Criteria**  
If your patient does **not** have *any* of the Red Criteria, then review the Green criteria and see if your patient meets *all* of the Green Criteria. If so, then they are *fit* for deployment.
- **Review The Yellow Criteria Only If Your Patient Does Not Meet Either the Red or Green Criteria**

If your patient does not fall into the Red or Green category, then review the Yellow Criteria. If your patient falls into the Yellow category, then a review by an appropriate specialist or a more senior and experienced military occupational health physician should occur before making a decision about deployability. In doing this review, you and the senior occupational health physician should use the “Key Factors” information found in **chapter 2** to help you assess the likelihood of exacerbation during deployment based on the nature of disease, the service person’s own experience with their disease and the anticipated deployment environment.

### **Special Situation: If An Individual Has More Than One Disease**

If any one of their diseases meets the criteria for a *Red* classification, then the individual should be screened as *Red* – unfit deployment. If the member has two or more diseases, then the possible adverse comorbidity effect should be taken into account. For example, a member may have two diseases that are each classified as Yellow. Each disease assessed independently may not preclude deployment. However, when taken together, the presence of these two diseases may lead to a decision that the member is unfit for deployment because of a possible additive or synergistic adverse effect of the two diseases. Again, in this type of a situation, consultation should be sought from an appropriate specialist or a more senior and experienced military occupational health physician.

## CHAPTER 2: GENERAL GUIDANCE ON PRE-DEPLOYMENT MEDICAL EVALUATION

### 2.1 FACTORS TO CONSIDER BEFORE DEPLOYING MILITARY PERSONNEL WITH A MEDICAL CONDITION

#### Factors That Are Extraneous to the Service Member to Be Considered In the Pre-Deployment Screening

- **Length of deployment:** Longer deployments may make specialty follow-up difficult for certain medical conditions; as well as increasing the risk of an exacerbation of the medical condition.
- **Climate:** Some climates may exacerbate a chronic condition; such as an arid/dry climate increasing risk of dehydration and problems with kidney stones.
- **Available Medical Support During Deployment:** Levels of health care support depends upon a variety of factors, including the maturity of the theatre environment. Not all medical specialty services (clinicians; diagnostic capability; treatments and medications) are available in a deployed environment. If you don't know for sure if a medical capability is available, then you must assume that it is not available.
- **Nature of Deployment:** The type of mission (e.g. peacekeeping versus conflict) and its intensity is related to physical/psychological stress and this may exacerbate certain diseases.

#### Individual Disease-Stability Factors to Be Considered In the Pre-Deployment Screening

- **Symptom-Control & Medications:** The disease condition should be under good control on same medication regimen (i.e. same dose and same medication) for at least 3 months, and possibly longer depending upon the disease. Take into account the medication side-effects and the consequence of unexpected unavailability of medication. Any hospitalizations or requirements for urgent physician assessment/care within past 12 months would reflect sub-optimal disease control and stability.
- **Frequency of Exacerbation:** The frequency of exacerbation should be such that no exacerbation is anticipated during the length of the deployment.
- **Severity and Consequences of an Exacerbation:** Consider the degree and rapidity of incapacitation or inability to perform occupational requirements. Also consider the possible need for medical evacuation, repatriation, or in-theatre hospitalization.
- **Requirement for Regular Specialty Care:** The frequency of specialty care should be such that it will not be required during the deployment period.
- **Current Medical Profile / Periodic Health Assessment / Medical Restrictions on Duties:** The service member's current formal medical profile/status should be reviewed and, where required, updated.
- **Decision By Formal Medical Evaluation/Review Board:** A service member is likely medically fit to deploy if they have previously had formal medical evaluation board review of their medical condition with specialty input and been found fit for deployment, and there has been no significant change in their health status.

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### **Occupational Factors to Be Considered During Pre-Deployment Screening**

- **Similarity of Current Occupational Tasks to Expected Deployed Tasks**: If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical (e.g. strength and aerobic-workload capacity) and mental/psychological stressors, then this would be a favorable factor to consider.
- **Common Tasks for All Deployed Service Members**: Deployment conditions are somewhat unpredictable. It is therefore necessary to expect that anyone being deployed may be required to function outside of their usual or normal, narrow scope of duties and do essential military tasks, such as carrying heavy loads (e.g. one end of a stretcher), performing arduous tasks over an extended period (e.g. helping to fight a fire) and be exposed to high levels of psychological stress. This is described in more detail in [Annex F-1](#).

### **Cardiovascular Screening for Service Personnel over 40 years old**

- **Personnel over 40 years old**: Should have had appropriate and current cardiovascular screening before being assessed as medically fit for deployment. [See Annex D-1](#) for details.

## 2.2 THE RED – YELLOW – GREEN DEPLOYMENT MEDICAL RISK CLASSIFICATION APPROACH

The Red-Yellow-Green risk approach is a conceptual framework to reflect the degree of risk that an individual may not be able to complete their deployment successfully for medical reasons. A successful mission for a service member is defined by the following five criteria:

1. Completion of deployment (i.e. no need for early repatriation).
2. Able to perform all of their duties without limitations during the deployment period so as not to jeopardize mission success.
3. Not have an exacerbation of their condition which jeopardizes other’s safety.
4. No significant additional requirement for medical care/assessment compared to in-garrison.
5. No significant deterioration of their disease state as a result of the deployment.

A member being screened for deployment would be screened as one of the following:

**RED:** High risk of failure in one or more of the above five criteria. **Do not deploy**

**GREEN:** Low risk of failure in one or more of the above five criteria. **May deploy**

**YELLOW:** Moderate risk of failure in one or more of the above five criteria. **See below**

**Yellow:** Requires a review by an appropriate specialist or a more senior and experienced military occupational health physician before making a decision about deployability. In doing this review, use the “Key Factors” information to help assess the likelihood of exacerbation during deployment based on the nature of disease, the person’s own experience with their disease and the anticipated deployment environment. There will likely be a requirement for collaboration between the senior occupational health physician and the chain-of-command (operational leaders) for those situations where there is a need to estimate and balance the risk and consequences of an exacerbation of a pre-existing medical condition during the deployment against the operational imperative. The authors of this guide do not underestimate that such situations are frequently complicated by pressures from the chain-of-command, tight timelines, lack of hard medical evidence to predict the future, and the physician’s desire to be a patient advocate.

**Table 1: Red-Yellow-Green Pre-Deployment Medical Risk Classification Approach**

Probability of Occurrence of Disease Exacerbation	Consequences of Disease Exacerbation		
	Low	Moderate	High
Low	Green	Green	Yellow
Moderate	Green	Yellow	Red
High	Yellow	Red	Red

## CHAPTER 3: SPECIFIC DISEASE ALGORITHMS & GUIDANCE

### 3.1 RATIONAL & THE CRITERIA FOR COVERING SPECIFIC DISEASE

**Rationale:** General guidance and principles about screening individuals for medical fitness for deployment can sometimes seem abstract or unclear. It was felt that it would be helpful to provide guidance in very practical, concrete terms about some specific diseases.

#### **Criteria for Covering a Specific Disease**

- **Prevalence:** The degree to which the disease has the potential to be a commonly seen medical problem on deployment.
- **Risk:** Risk takes into account two separate factors:
  - The probability of an exacerbation during deployment; and
  - The consequences of such an exacerbation.

#### **How to use this Section:**

- **Review the “Red” Criteria First:**  
If your patient **does** meet **any** of the Red criteria then they should **not** be deployed.
- **Review the Green Criteria Only if Your Patient Does Not Have Any of the Red Criteria**  
If your patient does **not** have **any** of the Red Criteria, then review the Green criteria and see if your patient meets **all** of the Green Criteria. If so, then they are **fit** for deployment.
- **Review The Yellow Criteria Only If Your Patient Does Not Meet Either the Red or Green Criteria**

If your patient does not fall into the Red or Green category, then review the Yellow Criteria. If your patient falls into the Yellow category, then a review by an appropriate specialist or a more senior and experienced military occupational health physician must occur before making a decision about deployability. In doing this review, you and the specialist or senior occupational health physician should use the “Key Factors” information to help assess the likelihood of exacerbation during deployment based on the nature of disease, the person’s own experience with their disease and the anticipated deployment environment. There will likely be a requirement for collaboration between the senior occupational health physician and the chain-of-command (operational leaders) for those situations where there is a need to estimate and balance the risk and consequences of an exacerbation of a pre-existing medical condition during the deployment against the operational imperative.

## 3.2 LIST OF DISEASES AND SPECIFIC **RED** “DO NOT DEPLOY” CRITERIA

### 3.2.1 Anaphylaxis and Allergy

#### Anaphylaxis and Allergy

- An established diagnosis of anaphylaxis to an allergen that would likely be found in the operational theatre under consideration; **OR**
- A clear risk that the service member will need epinephrine to treat anaphylaxis (i.e. self-treatment with an “epi-pen”); **OR**
- The service member has a food allergy to a food that would be difficult to avoid in-theater and where the symptoms of the allergic reaction are systemic and/or severe enough to the degree where it may interfere with their ability to perform their military and occupational duties.

### 3.2.2 Cardiovascular

#### Hypertension

- The hypertension is not well-controlled; as follows
  - An average diastolic BP > 100 mm HG with treatment; **OR**
  - An average systolic BP > 160 mm HG with treatment; **OR**
- The hypertension is worsening other significant medical problems, such as cardiovascular, cerebrovascular, renal or ophthalmological problems; **OR**
- The hypertension has not been stable (i.e. on the same medication with good blood pressure control) for > 3 months during period before deployment; **OR**
- Medication being used is producing side effects that would impair the service member’s ability to function in a deployed environment; **OR**
- Requirement for blood pressure checks more frequently than once every 3 months

#### Cardiovascular Disease

- Coronary artery disease (CAD) is symptomatic, with any one or more of the following: angina, shortness of breath, palpitations or reduced exercise tolerance; **OR**
- Cardiac dysrhythmia (e.g. atrial fibrillation; premature supraventricular tachycardia (PSVT); etc) producing symptoms, or which requires chronic medication or an implantable defibrillator or pacemaker to manage; **OR**
- Heart Failure; **OR**, Cardiomyopathy; **OR**
- Within the **past year** has had any of the following:
  - coronary artery bypass grafting (CABG); or
  - coronary artery angioplasty and/or stenting, or anticoagulation therapy; or
  - myocardial infarction (MI)
- Clinical suspicion that cardiac disease may exist which requires further evaluation (e.g. stress test, holter monitor, echocardiogram, cardiology consult, etc); **OR**
- Medication being used likely to produce side effects that would impair performance of military and occupational duties in a deployed environment; **OR**
- A requirement to see a specialist (e.g. cardiologist or internal medicine) every 3 months or less (more frequently than every 3 months).

### **3.2.3 Dental**

Dental fitness Class 3:

- Dental condition that is likely to cause a dental emergency within 12 months
- Includes patients currently under care, but likely to experience a dental emergency if treatment is not completed **OR**

Dental fitness Class 4:

Applies to military personnel who:

- Require an annual examination
- Have an undetermined dental status
- Have no dental record
- Have an incomplete dental record

### **3.2.4 Dermatological**

Eczema & Psoriasis

- Requires frequent (more often than every 3 months) specialist medical care; **OR**
- Extensive lesions/disease such that, in the opinion of a dermatologist, it constitutes increased risk of illness, injury, or infection in the austere setting of a deployment; **OR**
- Interferes with the satisfactory performance of duty, wearing of the uniform, or using military equipment (e.g. deployment-specific equipment/clothing); **OR**
- Requires treatment with **ANY** of:
  - Immunosuppressants (e.g., chronic systemic steroids); **OR**
  - Biologic Response Modifiers (e.g. immunomodulators); **OR**
  - Antineoplastics (oncologic or non-oncologic use). This includes antimetabolites, such as methotrexate, hydroxyurea, mercaptopurine, etc.

### **3.2.5 Ear Nose and Throat**

Ear Nose and Throat

- A service member assessed with **SEVERE** or **PROFOUND** hearing loss using the medical profiling system of the nation of the service member should not be fit for deployment if any one of the following is true:
  - Inability to do one's occupational and military duties safely and effectively without use of a hearing aid; **OR**
  - Poor speech recognition capability in settings with significant background noise, as may be found in a deployment environment; **OR**
  - Recent progressive hearing loss that has not yet been investigated and stabilized.

### **3.2.6 Endocrine**

Diabetes Mellitus Type II

- Insulin treatment; **OR**
- Poor control with oral medication based on hemoglobin A1c; **OR**
- Diabetes mellitus complications or incidents (i.e., hypo- or hyperglycemia requiring urgent medical attention) in the prior 6 months

#### Thyroid Disorders

- New onset (within past 3 months) of either hypo- or hyper-thyroid function; **OR**
- Changes in thyroid-related symptoms during the previous 3 months; **OR**
- Changes to medication or dose in preceding 3 months; **OR**
- An episode of acute thyrotoxicosis in the preceding 6 months; **OR**
- Requirement for physician follow-up within a 3 month period

### **3.2.7 Environment**

#### Heat Illness, Including Heat Stroke and Heat Exhaustion

- Two or more episodes of heat stroke complicated by either acute renal failure and/or rhabdomyolysis; **OR**
- end-organ damage (e.g. renal; cardiovascular or neurological;) as a result of a single heat illness injury.

### **3.2.8 Gastrointestinal**

#### Gastroesophageal Disease

- Existence of associated diseases, such as esophageal stricture or GERD-exacerbated asthma, that require active management or frequent (more often than every 3 months) medical care; **OR**
- Poor response to medications, and the GERD symptoms adversely affect the service member's ability to perform military and occupational tasks

#### Inflammatory Bowel Disease (Crohns and Ulcerative Colitis)

- Any significant exacerbation in the preceding 6 months that;
- One or more hospitalizations in the preceding 12 months; **OR**
- Endoscopic exam shows extensive disease; **OR**
- Requires biologic response modifiers, systemic steroids or immuno-modifying agents) to control the disease; **OR**
- History of a total or partial colectomy

#### Irritable Bowel Syndrome

- Symptom frequency and/or severity affect member's ability to do their military duties; **OR**
- Symptoms are not fully responsive to dietary measures available in-theatre (including fibre supplementation) and medications (e.g. anti-diarrheals; anti-spasmodics and bulk-forming laxatives), **OR**
- The presence in-theater of triggers (e.g. irregular meals, poor sleep, loud noises, increased psychological stress) that will likely result in an exacerbation of the frequency and/or severity of the symptom pattern.

### **3.2.9 Genitourinary**

#### Kidney Stones / Renal Colic

- One or more exacerbations or urologic pain (ureteric pain or calculi) in the preceding 12 months requiring urgent care or hospitalization; **OR**
- CT Scan or intravenous pyelogram or flat plate x-rays confirms current existence of more than one calculi or a single calculi more than 5 mm in size; **OR**

- Renal/urologic intervention (e.g. lithotripsy, ureteroscopic extraction, etc) in preceding 3 months.

### **3.2.10 Infectious Disease**

#### Human Immunodeficiency Virus (HIV - AIDS)

- Confirmed HIV infection with the presence of progressive clinical illness or immunological deficiency (e.g.. review of viral load and CD4 deficiency); **OR**
- Not on a stable HAART (highly active antiretroviral therapy) regimen (i.e. during past 6 months there has been changes to medication or dosage, or presence of significant adverse side-effects); **OR**
- Confirmed HIV infection which has not yet been reviewed by a senior military occupational health or infectious disease physician or a formal military medical board

#### Tuberculosis (TB) (Active or Latent)

- Any active TB case with or without therapy; **OR**
- Any recent PPD (purified protein derivative; i.e. the tuberculin intradermal test) conversion without further diagnostic workout; **OR**
- Any history of TB case with evidence of brain, kidney or bone involvement.

### **3.2.11 Musculoskeletal**

#### Chronic Low Back Pain

- Low back pain secondary to a serious process (such as cancer, infection, cauda equina syndrome, spinal stenosis or radiculopathy, vertebral compression fracture or ankylosing spondylitis); **OR**
- Incapacitating low back pain that occurs on average more often than once every 6 months, or that exists for more than five days in any 3 month period; **OR**
- The low back pain would limit the service member's ability to do their duties during a deployment, which includes wearing of PPE, carrying full military equipment, and travel in military vehicles; **OR**
- The requirement to use medications such as benzodiazepines or narcotics or opioids whose side effects may limit them from carrying out their military duties during a deployment; **OR**
- Has had surgery and has not completed required rehabilitation to a degree that the service member can fully perform their occupational or military duties.

#### Musculoskeletal (MSK) Injuries

- The musculoskeletal injury or condition, including any chronic pain syndromes, results in loss of motion or function to a degree that impairs the service member's ability to do their occupational or military duties; **OR**
- Has had surgery and has not completed required rehabilitation to a degree that the service member can fully perform their occupational or military duties; **OR**
- Requires the use of a medication to manage MSK symptoms such that the medication may impair the service member from performing their duties/occupation (e.g. narcotics); **OR**
- The service member has a diagnosis of a significant systemic or infectious disease state as the cause for their musculoskeletal symptoms (e.g., osteomyelitis or autoimmune diseases such as rheumatoid arthritis, ankylosing spondylitis, and others) since the natural course of these types of diseases tends to be progressive; **OR**
- Any condition that will require the use of rehabilitative physical therapy while in theater

### **3.2.12 Neurological**

#### Epilepsy and Seizure Disorder

- Diagnosis of epilepsy with ongoing chronic risk for seizures; **OR**
- Idiopathic seizure (i.e. with normal MRI, EEG and lab work-up) within the last 12 months.

#### Migraines and Headaches

- Incapacitating headaches that typically last > 2 hours and occur more often than once every 3 months; **OR**
- Any acute, urgent or emergent visits for treatment of a headache within the last 3 months; **OR**
- The requirement to use a medication whose side effects would preclude them from carrying out their military responsibilities during a deployment (e.g narcotics); **OR**
- The requirement to use intravenous or oral rescue medication that may not be readily available to the patient (e.g. dihydroergotamine); **OR**
- The presence in-theater of triggers (e.g. irregular meals, poor sleep, loud noises, increased psychological stress) will likely result in an exacerbation of the frequency and/or severity of the headache pattern;

#### Syncope & Loss of Consciousness (LOC)

- An episode of syncope requiring ongoing evaluation or treatment; **OR**
- An episode of syncope occurred < 1 yrs ago and it was never evaluated fully by a physician to determine the cause; **OR**
- More than one idiopathic syncope event; **OR**
- The service member currently has restrictions or limitations on their military duties

#### Traumatic Brain Injury (TBI)

- Moderate or severe ongoing cognitive impairment so that the service member cannot carry out full military duties; **OR**
- Significant psychiatric (e.g. Axis 1) or neurological comorbidity which results in an inability to do full military duties.

### **3.2.13 Psychiatry / Mental Health**

#### Anxiety

- Has required regular, ongoing mental health treatment within the last six months; **OR**
- Ongoing symptoms of any type which affects ability to do one's duty; **OR**
- Disease stability for < 6 months; **OR**
- Any concern about the service member's behavioral stability (social and occupational) and the potential for deterioration or recurrence of symptoms during a deployment; **OR**
- Significant (i.e. significant = Axis I; to include drug dependency) psychiatric co-morbidity; **OR**
- Any requirement for antipsychotics or lithium; **OR**
- Any evidence of bipolar disorder or psychotic features.

#### Major Depressive Disorders

- Hospitalization for psychiatric reason within the last 12 months; **OR**
- Any ongoing depressive symptoms (cognitive/sleep/mood/suicidal) affecting duty; **OR**
- Disease stability for < 3 months; **OR**
- Any requirement for antipsychotics or lithium; **OR**

- Any evidence of bipolar disorder or psychotic features; **OR**
- A reasonable concern about the service member's behavioral stability and the potential for deterioration or recurrence of symptoms during a deployment; **OR**
- Ongoing requirement for psychological or mental health counselling; **OR**
- Any suicidal ideation in the preceding six months.

#### Post Traumatic Stress Disorder (PTSD)

- Currently being evaluated for possible diagnosis of PTSD; **OR**
- Diagnosed with PTSD and currently has symptoms which interfere with ability to carry out full military duties; **OR**
- Diagnosed with PTSD and with symptoms controlled but period of stability is less than 6 months; **OR**
- Diagnosed with PTSD and has symptoms under control but requires frequent follow-up with a specialist (more often than every 6 months); **OR**
- Diagnosed with PTSD and with symptoms controlled and stabilized, but judged to be at risk for deterioration if deployed; **OR**
- Requiring antipsychotics; or lithium or anti-convulsants; **OR**
- Ongoing requirement for mental health treatment.

#### **3.2.14 Respiratory**

##### Asthma and Wheezing Disorders

- Use of systemic (PO or IV) steroids in past 6 months; **OR**
- An asthma-related hospitalizations in last 2 years; **OR**
- Any asthma-related visits to an Emergency Department in past year; **OR**
- Forced Expiratory Volume in 1 second (FEV1) < 50% with treatment; **OR**
- Requirement for physician assessment for asthma more often than once every 3 months; **OR**
- Symptoms likely to be exacerbated by triggers found in theater (e.g. dust or cold weather); **OR**
- Inability to wear personal protective equipment.

#### **3.2.15 Surgery**

##### Inguinal Hernia

- The service member has physical signs and/or symptoms suggesting possibility of an inguinal or abdominal wall hernia, but has not undergone a definitive surgical specialist evaluation to confirm diagnosis and requirement for treatment; **OR**
- The service member has been diagnosed with an inguinal or abdominal wall hernia and is awaiting surgery.
- Surgical repair within the prior 6 weeks.

#### **3.2.16 Vascular**

##### Abdominal/Thoracic Aortic Aneurysms

- Aortic or arterial aneurysm which requires a surgical intervention or that is at risk of rupture; **OR**
- Any history of aortic aneurysm that needs follow-up with a vascular surgeon more frequently than every 6 months; **OR**
- Any evidence of aneurysm enlargement during follow-up (i.e. disease is progressive).

#### History of Pulmonary Embolism (PE) / Deep Venous Thrombosis (DVT)

- Anyone on anti-coagulant therapy; **OR**
- A history of more than one DVT (i.e. the disease has proven to be recurrent); **OR**
- A history of major/proximal DVT; **OR**
- DVT with evidence of a Post Thrombotic Syndrome (PTS); **OR**
- A history of large PE with evidence of a permanent functional limitation which prevents service member from doing full military duties.

#### Venous Insufficiency

- Any current symptomatic varicose pathology with significant functional impairment or edema or interference with wearing normal equipment including boots; **OR**
- Any history of varicose veins in the lower limbs with chronic significant skin pathology, such as hypodermatitis, and/or skin ulcers, that has not yet been treated definitively.

### **3.2.17 Vision / Ophthalmology**

#### Refractive surgery

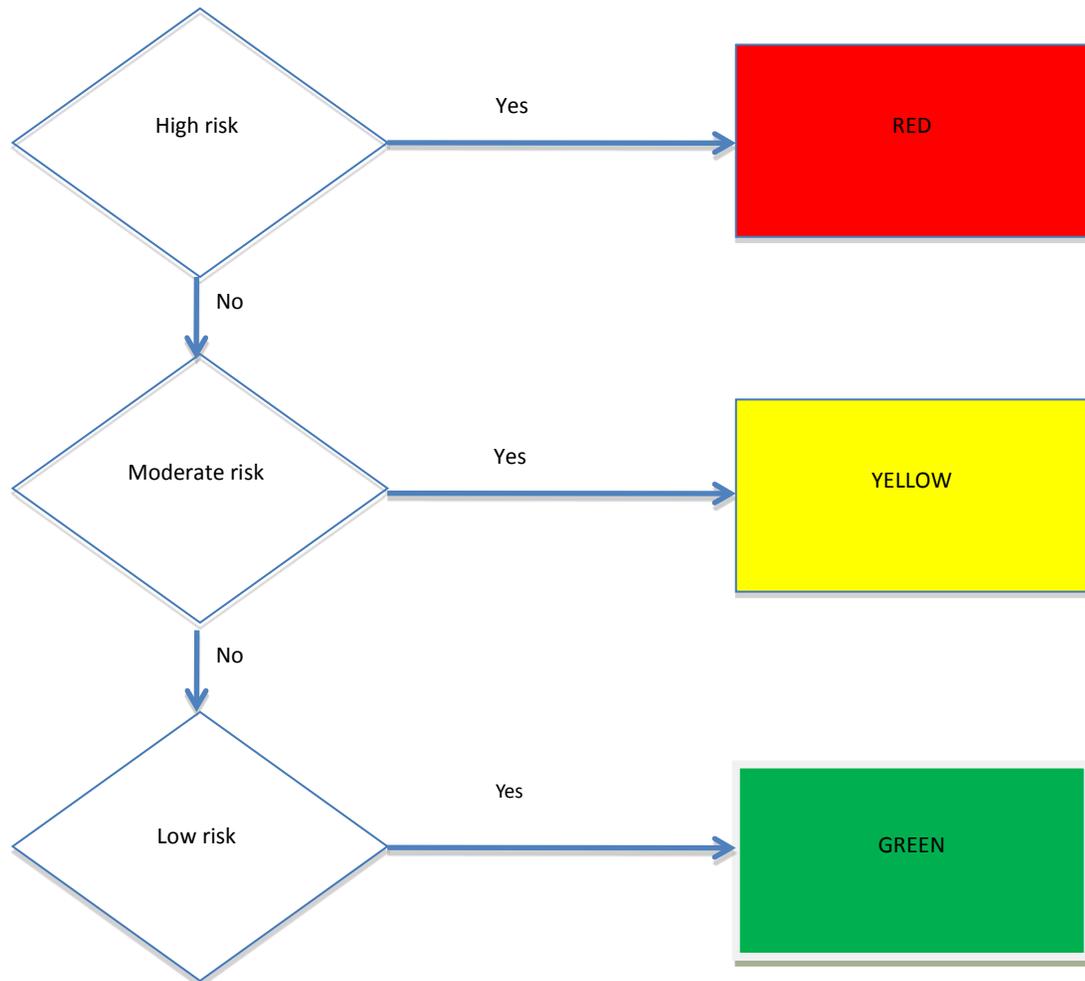
- The service member is still using ophthalmic steroid drops post-procedure; **OR**
- The attending ophthalmologist or optometrist determines that the refractive surgery recovery is NOT complete ; **OR**
- Less than three months following uncomplicated PRK and related “surface ablation” procedures such as laser epithelial keratomileusis (LASEK); **OR**
- Less than one month following uncomplicated LASIK

#### Visual Impairment

- The service member’s best corrected visual acuity does not meet the occupational or retention standards of their national military; **OR**
- The service member has another visual problem (cataracts; night blindness; scotomata, etc) that is currently affecting the service member’s ability to do full military duties;

### 3.2.1 Allergy & Immunology

#### Anaphylaxis and Allergy



#### **High Risk – Do Not Deploy if any of the following are true:**

- An established diagnosis of anaphylaxis to an allergen that would likely be found in the operational theatre under consideration; **OR**
- A clear risk that the service member will need epinephrine to treat anaphylaxis (i.e. self-treatment with an “epi-pen”); **OR**
- The service member has a food allergy to a food that would be difficult to avoid in-theater and where the symptoms of the allergic reaction are systemic and/or severe enough to the degree where it may interfere with their ability to perform their military and occupational duties.

#### **Moderate Risk – May Deploy With Caution**

- A service member may be considered FIT for deployment if they have had a previous episode of an allergic reaction with a conclusion that the incident was “unlikely” anaphylaxis; **OR**

- Desensitization treatment completed successfully; **OR**
- Food Allergy: If the reaction is non-systemic, (e.g. limited to gastrointestinal symptoms), and short-lived and the service member can tolerate a varied diet.

**Low Risk – May Deploy. Any of the following:**

- Diagnosis of anaphylaxis ruled out: The service member has had “allergic” reactions, but they were short lasting, self-limiting, with symptoms unlikely to interfere with duties and treatable with well-tolerated oral antihistamines; **OR**
- Drug Allergies: If the drug that can be avoided; **OR**
- Latex Allergy: If latex can reasonably be avoided and if the allergy is limited to a dermatologic reaction.

**Anaphylaxis and Allergy**

**Brief Definition / Diagnostic Criteria**

The clinical diagnosis of anaphylaxis is based primarily on a detailed history of the episode and recognition of characteristic symptoms and signs with a sudden onset after exposure to an allergen or other trigger, often followed by rapid progression of symptoms over minutes to hours. The clinical criteria for the diagnosis of anaphylaxis usually involve symptoms in more than 1 body organ system, although in certain circumstances involving exposure to a known trigger for the patient, the diagnosis can be made when symptoms suddenly develop in only one organ system.

Anaphylaxis is highly likely when any one of the following three criteria is fulfilled:

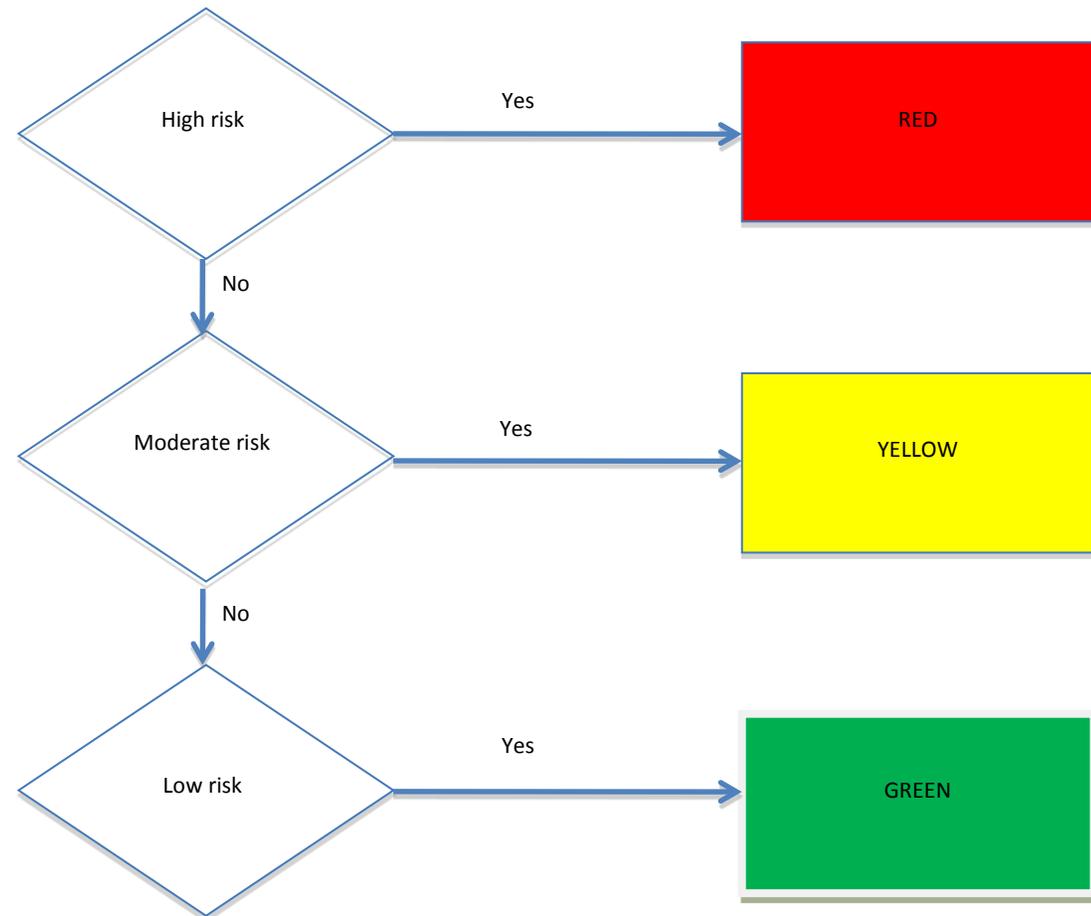
- The symptoms/illness include involvement of the skin, mucosal tissue, or both (e.g. generalized hives, itching or flushing, swollen lips-tongue-uvula)
- The illness has occurred suddenly (minutes to several hours) after exposure to a likely allergen or other trigger for that patient.
- Reduced blood pressure (BP) after exposure to a known allergen for that patient (minutes to several hours).

**Factors to Consider During Pre-Deployment Medical Screening**

- Was the diagnosis of anaphylaxis to an allergen firmly established and, if so, how difficult would it be to avoid that allergen in-theatre.
- Did the service member receive immunotherapy and, if so, was the treatment confirmed to be successful. For how long has therapy been completed?
- Does the service member require epinephrine to self-treat anaphylaxis (i.e. “epi-pen”)?
- Is the allergen known to exist in the deployment theater?
- Consider the potential for exposure to allergens in the deployed environment that the service member is able to avoid in their normal work setting (e.g. foods; stinging insects).
- Remember that deployments are inherently unpredictable (change of locale, duration and occupational assignment).

### 3.2.2 Cardiovascular

#### Hypertension



**High Risk – Do Not Deploy if any of the following are true:**

- The hypertension is not well-controlled; as follows
  - An average diastolic BP > 100 mm HG with treatment; **OR**
  - An average systolic BP > 160 mm HG with treatment; **OR**
- The hypertension is worsening other significant medical problems, such as cardiovascular, cerebrovascular, renal or ophthalmological problems; **OR**
- The hypertension has not been stable (i.e. on the same medication with good blood pressure control) for > 3 months during period before deployment; **OR**
- Medication being used is producing side effects that would impair the service member’s ability to function in a deployed environment; **OR**
- Requirement for blood pressure checks more frequently than once every 3 months

**Moderate Risk – May deploy With Caution – If all of the following are true:**

- Systolic BP has averaged between 140-160 and diastolic BP has averaged between 90-100 for a period of 3- 6 months; **AND**

- The service member is routinely exposed to physical activity (work and training) demands that are similar to what is expected in theater and the service member has no symptoms or medical problems in these conditions; **AND**
- The hypertension is not worsening other significant medical problems, such as cardiovascular, cerebrovascular, renal or ophthalmological problems; **AND**
- No requirement for a blood pressure check more frequently than once every 3 months; **AND**
- Does not require more than three medications to achieve control.

**Low Risk – May Deploy– If all of the following are true:**

- Systolic BP has averaged < 140 and diastolic BP has averaged <90 for a period of > 6 months; **AND**
- Two or less medications are being used for treatment; **AND**
- The service member is routinely exposed to physical activity (work and training) demands that are similar to what is expected in theater and the service member has no symptoms or medical problems in these conditions; **AND**
- The hypertension is not contributing to other significant medical problems, such as cardiovascular, cerebrovascular, renal or ophthalmological problem **AND:**
- No significant medication side effects.

**Hypertension**

**Hypertension Assessment Should Also Take Into Account Other Cardiovascular Risk Factors**

It would be appropriate for the physician to consider the service member’s hypertension within the context of the service member’s overall risk for cardiovascular or cerebrovascular disease. This can be done using tools such as the Framingham Risk Calculator, or other epidemiologically-based tools that may better reflect appropriate national data. The purpose would be to help clinicians estimate the risk of an event within a specific timeframe.

**Brief Definition / Diagnostic Criteria**

There is some variation between nations and medical organizations regarding the definition of hypertension and the implications for subsequent adverse health events. For the purpose of this guidebook, we have adapted the following information from a WHO document:

**Table 2: Stratification of risk for subsequent adverse health events**

Other risk factors and disease history	Blood pressure (mmHg)		
	Grade 1 (SBP 140 - 159 or DBP 90 - 99)	Grade 2 (SBP 160- 179 or DBP 100 - 109)	Grade 3 (SBP > 180 or DBP> 110)
I No other risk factors	Low risk	Medium risk	High risk
II 1 - 2 risk factors	Medium risk	Medium risk	High risk
III 3 or more risk factors, or TOD, or ACC	High risk	High risk	High risk

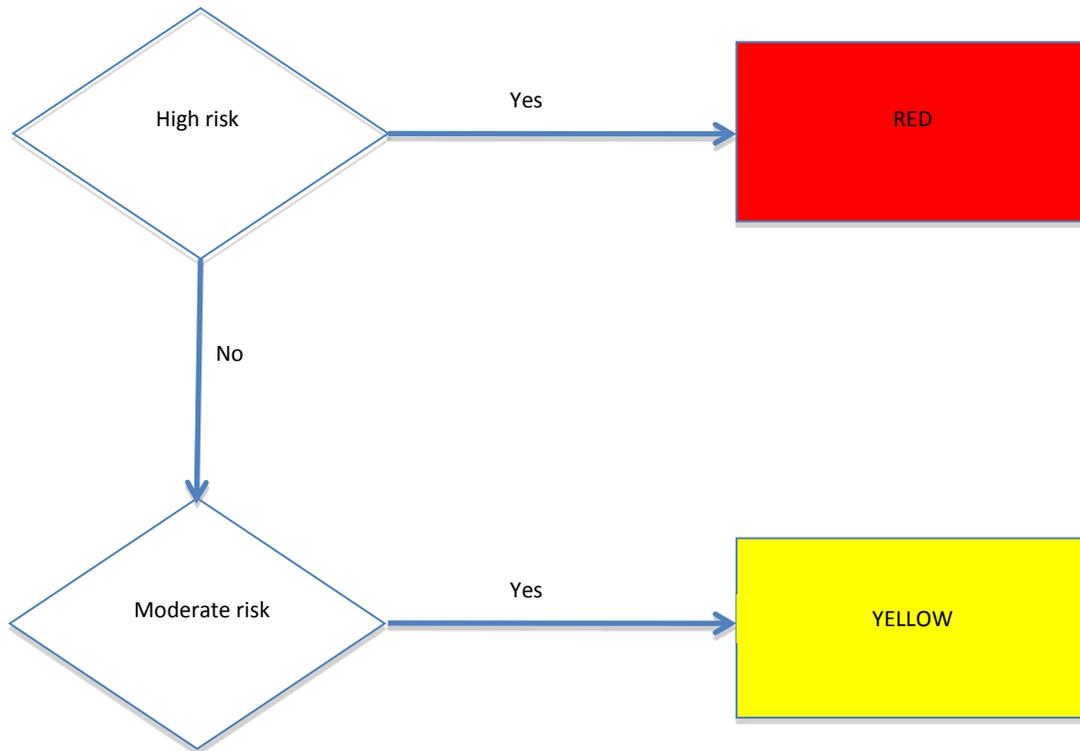
SBP, systolic blood pressure; DBP, diastolic blood pressure; TOD, target-organ damage; ACC, associated clinical conditions (Whitworth, JA)

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### **Key Factors to Consider Pre-Deployment**

- Requirement for strict dietary and medication compliance
- Degree to which hypertension is controlled.
- How often does BP need to be monitored.
- Stability - for how long has the service member been on the same medication and dosage regimen with good control.
- Presence of end organ disease (i.e. Heart, Kidney, Retina, Vascular).
- Difficult to maintain dietary guidelines.
- Difficult to comply with medication dosing schedule.
- Increased physical and psychological demands may adversely affect blood pressure control.

## Cardiovascular Disease



### **High Risk – Do Not Deploy if Any of the following are true:**

- Coronary artery disease (CAD) is symptomatic, with any one or more of the following: angina, shortness of breath, palpitations or reduced exercise tolerance; **OR**
- Cardiac dysrhythmia (e.g. atrial fibrillation; premature supraventricular tachycardia (PSVT); etc) producing symptoms, or which requires chronic medication or an implantable defibrillator or pacemaker to manage; **OR**
- Heart Failure; **OR**, Cardiomyopathy; **OR**
- Within the **past year** has had any of the following:
  - coronary artery bypass grafting (CABG); or
  - coronary artery angioplasty and/or stenting, or anticoagulation therapy; or
  - myocardial infarction (MI)
- Clinical suspicion that cardiac disease may exist which requires further evaluation (e.g. stress test, holter monitor, echocardiogram, cardiology consult, etc); **OR**
- Medication being used likely to produce side effects that would impair performance of military and occupational duties in a deployed environment; **OR**
- A requirement to see a specialist (e.g. cardiologist or internal medicine) every 3 months or less (more frequently than every 3 months).

### **Moderate risk – May Deploy With Caution. If both statements are true**

- The event (e.g. myocardial infarction) or procedure/intervention (coronary artery bypass grafting (CABG), coronary artery angioplasty and/or stenting, anticoagulation therapy,) occurred **more than one year ago**; **AND**

- A military cardiologist assessment within the past 6 months has concluded that the service member is fit to deploy.

Note: Clinically indicated low-dose ASA chemoprophylaxis does not preclude deployment

## **Cardiovascular Disease**

### **Brief Definition / Diagnostic Criteria**

For the purpose of this guide, cardiovascular disease includes any one of:

- Coronary Artery Disease (CAD)
- Congestive Heart Failure (CHF)
- Cardiomyopathy
- Arrhythmias; and
- Abdominal/Thoracic Aortic Aneurysms

### **CABG and Stenting**

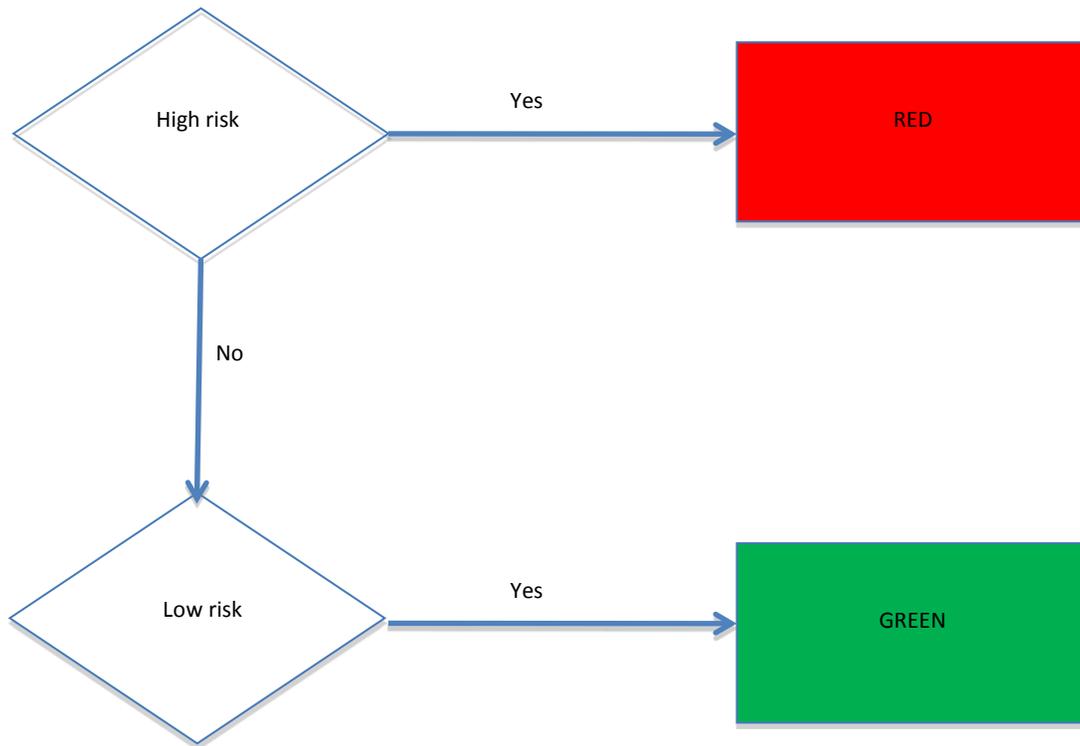
It is noted that CABG and stenting can both be effective for reducing coronary artery disease symptoms. Both treatments have a bimodal failure patterns; they typically fail either within a few months after the procedure, or several years later. Changes or improvements in these procedures are ongoing. It is because of the complexity of service member risk stratification for a service member with CV disease that deployment of such a service member should only be done after an assessment by a military cardiologist, and this assessment needs to be current (i.e. within 6 months of the deployment date).

### **Key Factors to Consider Pre-Deployment**

- Deployed personnel, in the setting of an emergency, may be required to do sudden explosive activity or sustained, highly aerobically demanding activity, both of which may exacerbate CV disease or produce a catastrophic CV event.
- Stability - for how long has the service member been on the same medication and dosage regimen with good control?
- Presence of end organ disease
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for diet and medication.
- Deployments can also be unpredictable in terms of need to change location or changes in anticipated availability of medical support
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

### 3.2.3 Dental

#### Dental Disease



#### **High Risk = Class 3 OR 4**

Dental fitness Class 3:

- Dental condition that is likely to cause a dental emergency within 12 months
- Includes patients currently under care, but likely to experience a dental emergency if treatment is not completed **OR**

Dental fitness Class 4:

Applies to military personnel who:

- Require an annual examination
- Have an undetermined dental status
- Have no dental record
- Have an incomplete dental record

#### **Low Risk = Class 1 OR 2**

Dental fitness Class 1:

- No dental treatment required,
- No further dental appointments required for existing conditions **OR**

Dental fitness Class 2:

- Military personnel whose existing dental condition is unlikely to result in a dental emergency within 12 months.

### **Dental: (Dental Fitness Standards, 2013)**

#### **Brief Definition - Dentally Fit**

Dentally Fit (Dental Fitness Class 1 and 2): Describes a state of oral health which, once attained and maintained, ensures that Service personnel are fit to carry out all military duties without loss of time or effectiveness being attributable to dental causes.

#### **Twelve criteria in order to be considered Dentally Fit (Dental Fitness Class 1 and 2):**

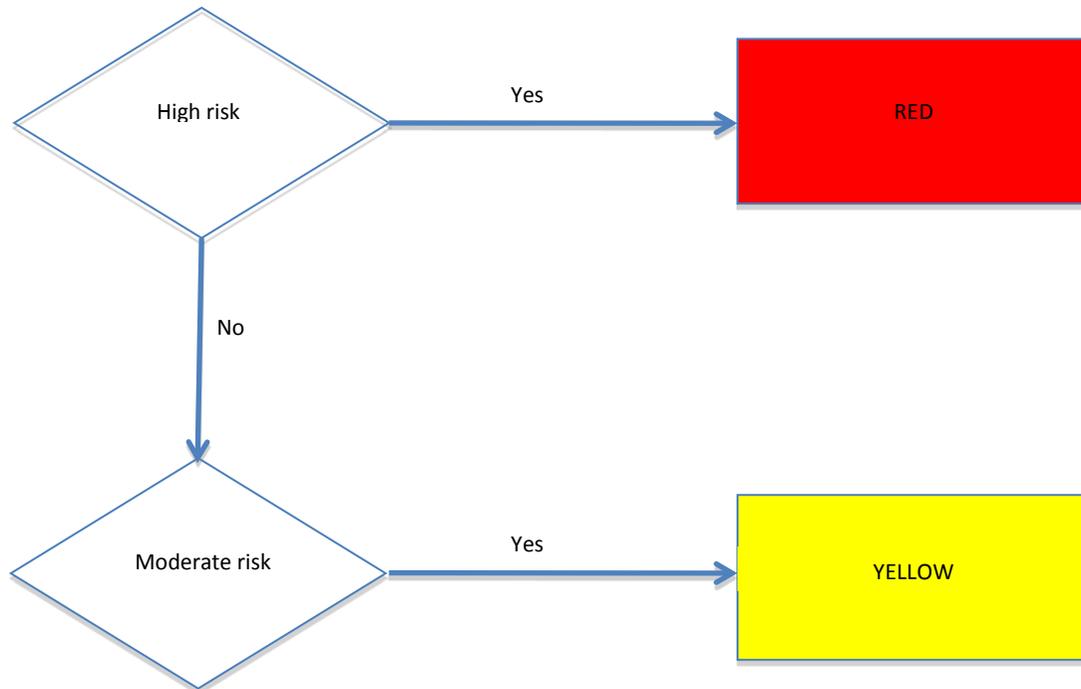
1. No evidence of progression of monitored carious lesions, or of active caries extending into dentine (X-Ray )
2. No signs of irreversible pulpal damage:
  - i. Pulp capping & inadequate endodontic treatment could be allowed if clinical and radiographic stability confirmed
  - ii. Direct pulp capping is unacceptable in personnel subjected to barometric pressure changes (i.e. pilots, divers, HALO jumpers)
3. No evidence of active periodontal disease that is beyond control by self-care
4. No periodontally involved teeth with untreated associated apical involvement. When treated, teeth show both clinical and radiographic signs of resolution.
5. No significant tooth mobility. No interference with occupational functions such as oxygen mask, diving mouthpieces
6. No permanent restorations which are cracked, loose or leaking. No temporary restorations present.
7. Stable occlusion, uncompromised speech and function (beware for long term damage in case of malocclusion and parafunctional activities)
8. No History of recent unresolved dental problems
9. Stable and retentive dental prostheses – in accordance to occupational function
10. Presence of third molars in communication with the oral cavity which are unlikely to erupt into functional occlusion and with a history of repeated pericoronar infection. In some cases advice of oral surgeon needed
11. No functionless roots in contact with oral cavity. Buried roots with no associated pathology may be left in situ but frequent review is needed
12. Soft tissues are free from abnormality

#### **Validity of Dentally Fitness:**

- Normally 12 months
- May be set at any period between 3 and 18 months
- Only >12 months for Class 1 patients

### 3.2.4 Dermatological

#### Eczema and Psoriasis



#### **High Risk – Do Not Deploy if any of the following are true:**

- Requires frequent (more often than every 3 months) specialist medical care; **OR**
- Extensive lesions/disease such that, in the opinion of a dermatologist, it constitutes increased risk of illness, injury, or infection in the austere setting of a deployment; **OR**
- Interferes with the satisfactory performance of duty, wearing of the uniform, or using military equipment (e.g. deployment-specific equipment/clothing); **OR**
- Requires treatment with **ANY** of:
  - Immunosuppressants (e.g., chronic systemic steroids); **OR**
  - Biologic Response Modifiers (e.g. immunomodulators); **OR**
  - Antineoplastics (oncologic or non-oncologic use). This includes antimetabolites, such as methotrexate, hydroxyurea, mercaptopurine, etc.

#### **Moderate Risk – May Deploy With Caution if ALL of the following are true:**

- No associated systemic disease (e.g. arthropathy); **AND**
- Extent of eczema or psoriasis is focal, mild (<10% BSA) , with good response to adequate conservative treatment; **AND**
- Does not require significant limitation of physical activity and military duties
- including wearing of the uniform, or using military equipment; **AND**
- A dermatologist assessment has been done and a military medical review board has cleared the service member for deployment based on the dermatologic condition and for the specific deployment theater of operation and military occupation

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## **Eczema & Psoriasis:**

### **Brief Definition / Diagnostic Criteria**

**Eczema:** includes a number of skin conditions that cause the skin to become swollen, irritated, and itchy, including:

- Atopic dermatitis
- Contact dermatitis
- Dyshidrotic dermatitis
- Hand dermatitis
- Neurodermatitis
- Nummular dermatitis
- Occupational dermatitis
- Seborrheic dermatitis
- Stasis dermatitis

**Psoriasis:** Is an immune-based skin disease that causes itchy or sore patches of thick, red skin with silvery scales. The patches are usually on the elbows, knees, scalp, back, face, palms and feet, but they can also be located on other parts of the body. Psoriasis is a chronic disease that may wax and wane, and exacerbations can be multi-factorial.

### **Some Concepts to Describe Disease Severity**

- BSA- Body Surface Area
- PASI: Psoriasis Area & Severity Index. For example, if psoriasis affects less 10% of BSA, it is considered mild.

### **Key Factors to Consider Pre-Deployment**

- Requirement for medication compliance and ongoing medical care, and can these both be maintained in-theatre.
- Stability - for how long has the service member been on the same medication and dosage regimen with good control?
- Any problems associated with wearing clothing or using equipment that might be required in theater.
- Climate (dehydration; reduced sun exposure; extremes of cold; heat; humidity).
- Increased psychological stress.
- Some protective clothing (e.g. nuclear/biological/chemical) can significantly exacerbate existing skin conditions.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for diet and medication.
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains:
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

### 3.2.5 Ear Nose and Throat

#### Hearing Loss



#### **High Risk – Do Not Deploy if any of the following are true:**

- A service member assessed with SEVERE or PROFOUND hearing loss using the medical profiling system of the nation of the service member should not be fit for deployment if any one of the following is true:
  - Inability to do one’s occupational and military duties safely and effectively without use of a hearing aid; **OR**
  - Poor speech recognition capability in settings with significant background noise, as may be found in a deployment environment; **OR**
  - Recent progressive hearing loss that has not yet been investigated and stabilized.

#### **Moderate Risk – May Deploy With Caution. If ALL of the following are true:**

- Service members with MODERATE unilateral hearing loss may be fit for deployment if ALL of the following are true:
  - The service member can do their job safely and effectively *with* the use of a hearing aid; **AND**
  - The degree of hearing loss has been relatively stable over several years; **AND**
  - The service member has acceptable speech recognition capability.

#### **Low Risk – May Deploy**

- Service members with MILD hearing loss will usually be fit for deployment if ALL of the following

are true:

- The service member can do their job safely and effectively *without* the use of a hearing aid; **AND**
- The degree of hearing loss has been relatively stable over several years; **AND**
- The service member has acceptable speech recognition capability.

## Hearing Loss

### Key Factors to Consider Pre-Deployment

- Is the service member able to do a job currently that is similar to what they would be expected to do in-theater.
- Can the person function safely in their job *without* the use of a hearing aid.
- Deployments can be unpredictable in terms of the following;
  - Significant background noise at critical times which make understanding spoken commands challenging for a person with normal hearing; will likely make it impossible for a hearing-impaired service member.
  - Unexpected requirement to operate in conditions with grit/dirt potentially affecting hearing aid(s)

**Table 3: WHO Grades of hearing impairment**

Grade of impairment	Corresponding audiometric <sup>a</sup> ISO value	Performance	Recommendations
0 - No impairment	25 dB or better (better ear)	No or very slight hearing problems. Able to hear whispers.	
1 - Slight impairment	26-40 dB (better ear)	Able to hear and repeat words spoken in normal voice at 1 metre.	Counseling. Hearing aids may be needed.
2 - Moderate impairment <sup>b</sup>	41-60 dB (better ear)	Able to hear and repeat words spoken in raised voice at 1 metre.	Hearing aids usually recommended.
3 - Severe impairment <sup>b</sup>	61-80 dB (better ear)	Able to hear some words when shouted into better ear.	Hearing aids needed. If no hearing aids available, lip-reading and signing should be taught.
4 - Profound impairment including deafness	81 dB or greater (better ear)	Unable to hear and understand even a shouted voice.	Hearing aids may help understanding words. Additional rehabilitation needed. Lip-reading and sometimes signing essential.

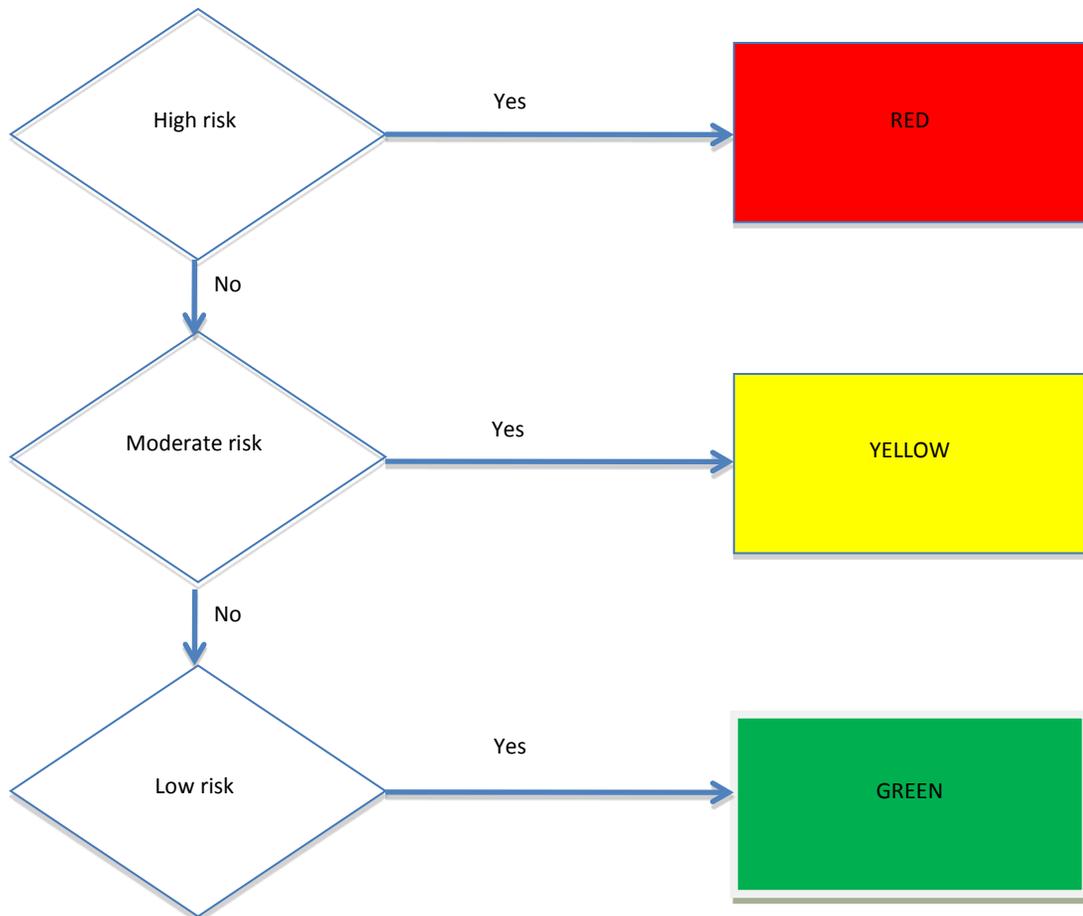
The audiometric ISO values are averages of values at 500, 1000, 2000, 4000 Hz. 1. WHO;

<sup>a</sup>International Organization for Standardization

<sup>b</sup>Grades 2, 3 and 4 are classified as disabling hearing impairment.

### 3.2.6 Endocrine

#### Diabetes Mellitus Type II



**High Risk – Do Not Deploy if any of the following are true:**

- Insulin treatment; **OR**
- Poor control with oral medication based on hemoglobin A1c; **OR**
- Diabetes mellitus complications or incidents (i.e., hypo- or hyperglycemia requiring urgent medical attention) in the prior 6 months

**Moderate Risk – May Deploy With Caution. If all of the following are true:**

- Well-controlled with oral medication, diet and lifestyle for at least 6 months; **AND**
- Stable dose of oral medication for the past 6 months; **AND**
- No diabetes mellitus complications or incidents (i.e., hypo- or hyperglycemia requiring urgent medical attention) in the prior 6 months

### **Low Risk – May Deploy**

- Well-controlled based on hemoglobin A1c for at least 6 months with diet and lifestyle only (i.e. not needing medication); **OR**
- The service member has had a formal medical evaluation board or formal review for diabetes mellitus with input from an endocrinologist who found the service member fit for deployment.

## **Diabetes Mellitus**

### **Brief Definition / Diagnostic Criteria**

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces.

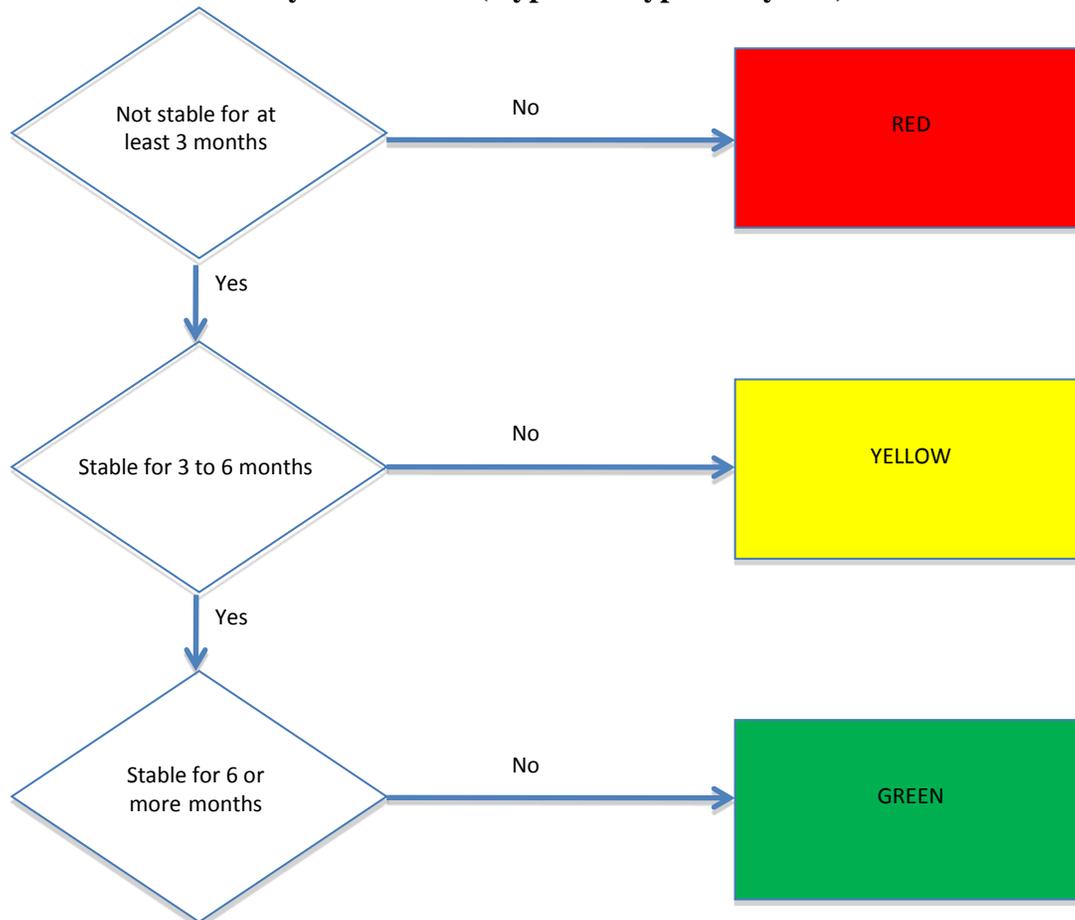
### **Diagnostic Criteria**

- Fasting plasma glucose  $\geq 7.0$ mmol/l (126mg/dl) **or**
- 2-hour plasma glucose  $\geq 11.1$ mmol/l (200mg/dl)

### **Key Factors to Consider Pre-Deployment**

- Difficult to maintain strict dietary and medication compliance in-theater.
- History of control of serum glucose as measured by hemoglobin A1c.
- Presence of end organ disease (i.e. heart, kidney, retina, vascular).
- History of diabetes mellitus complications or incidents (i.e. hypo- or hyperglycemia)
- Increased risk of disturbances in serum glucose levels and possible sudden incapacitation.
- Increased risk of poor wound healing in diabetics (e.g. implications for skin infections and/or ulcers).

### Thyroid Disease (Hypo- or Hyper- Thyroid)



**High Risk – Do Not Deploy if Any of the following:**

- New onset (within past 3 months) of either hypo- or hyper-thyroid function; **OR**
- Changes in thyroid-related symptoms during the previous 3 months; **OR**
- Changes to medication or dose in preceding 3 months; **OR**
- An episode of acute thyrotoxicosis in the preceding 6 months; **OR**
- Requirement for physician follow-up within a 3 month period

**Moderate Risk – May Deploy With Caution. If all of the following are true:**

- No changes in symptoms during the previous 6 months; **AND**
- No changes to type or dose of medication in preceding 6 months; **AND**
- No requirement for physician follow-up within next 6 month period

**Low Risk– May Deploy. If all of the following are true:**

- In the setting of thyroid diseases including, for example, in the setting of total thyroidectomy or thyroid ablation, the service member would be normally low risk for deployment if all of the following are true:
  - No changes in symptoms during the previous 12 months; **AND**
  - No changes to type or dose of medication in preceding 12 months; **AND**
  - No requirement for physician follow-up within a 6 month period.

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## **Thyroid Disorders**

### **Hyperthyroidism Can Be Especially Labile**

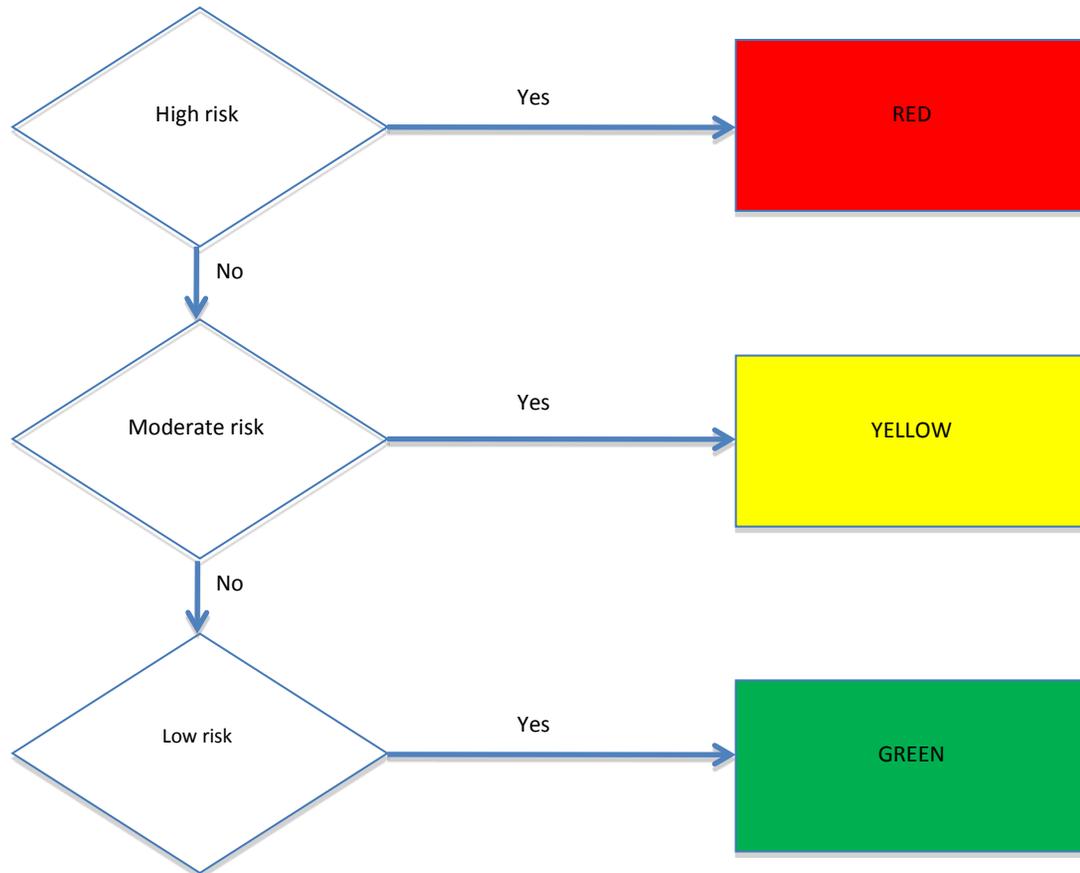
Hyperthyroidism can be very labile. Service members with hyperthyroidism therefore typically require more frequent lab testing and dosage/medication adjustments than service members with hypothyroidism.

### **Key Factors to Consider Pre-Deployment**

- Hyperthyroid service members have a greater tendency to require frequent monitoring and medication adjustments than service members who are hypothyroid.
- Requirement for laboratory test monitoring of disease.
- Stability - for how long has the service member been on the same medication and dosage regimen with good control?
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for diet and medication.
- Deployments can also be unpredictable in terms of need to change location and therefore changes in availability of medical support
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

### 3.2.7 Environment

#### Heat Illness, Including Heat Stroke and Heat Exhaustion



#### **High Risk – Do Not Deploy if any of the following are true:**

- Two or more episodes of heat stroke complicated by either acute renal failure and/or rhabdomyolysis; **OR**
- end-organ damage (e.g. renal; cardiovascular or neurological;) as a result of a single heat illness injury.

#### **Moderate Risk – May Deploy With Caution**

- An service member with a past history of significant heat illness, such as one of the following,
  - only one episode of heat stroke (high core temp + transient neurological changes) and the episode occurred at least 24 months prior to deployment and no end-organ damage; **OR**
  - no more than two episodes of heat exhaustion during the preceding two years; **AND**
  - **May** be fit for deployment if the service member has subsequently had a successful trial of duty characterized by physically demanding work in similar or more demanding and environmental

conditions when the original heat illness episode occurred.

### **Low Risk – May Deploy**

- A history of a mild heat illness episodes, including heat cramps; **OR**
- A single episode of heat exhaustion, and the episode occurred > 3 months ago.

## **Heat Illness (Including Heat Stroke and Heat Exhaustion)**

### **Brief Definition / Diagnostic Criteria**

Heat emergencies fall into three categories of increasing severity: heat cramps, heat exhaustion, and heatstroke. Heat cramps are a minor, self-limiting medical condition and so this handbook will focus on heat exhaustion and heat stroke.

### **Two Key Differences Between Heat Stroke and Heat Exhaustion**

- Heat Stroke - Core temperature **is** elevated (fever) and neurological signs/symptoms.
- Heat Exhaustion - Core temperature is **not** elevated. No neurological signs/symptoms.

### **Complete Symptoms/signs of heat exhaustion include:**

- Headache
- Dizziness and light headedness
- Weakness
- Nausea and vomiting
- Cool, moist skin
- Dark urine

### **Complete symptoms/signs of heatstroke include:**

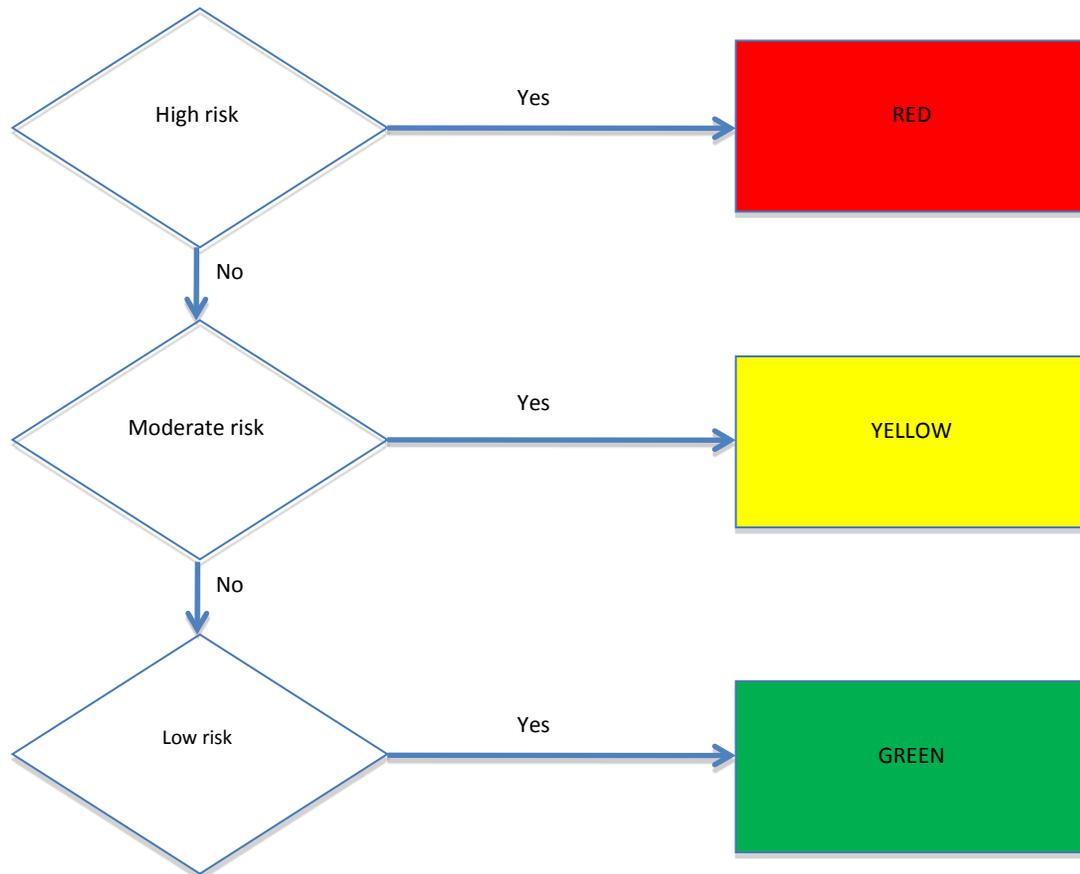
- Fever (temperature above 104 °F)
- Irrational behavior
- Extreme confusion
- Dry, hot, and red skin
- Rapid, shallow breathing
- Rapid, weak pulse
- Seizures
- Unconsciousness

### **Key Factors to Consider Pre-Deployment**

- Heat stroke can be fatal.
- A past history of heat stroke increases the risk for a future episode of significant heat illness.
- There is no absolute consensus on the “safe” period of time after heat stroke to have a service member re-exposed to conditions that precipitated the original event.

### 3.2.8 Gastrointestinal

#### Gastroesophageal Reflux Disease



**High Risk – Do Not Deploy if any of the following are true:**

- Existence of associated diseases, such as esophageal stricture or GERD-exacerbated asthma , that require active management or frequent (more often than every 3 months) medical care; **OR**
- Poor response to medications, and the GERD symptoms adversely affect the service member’s ability to perform military and occupational tasks

**Moderate Risk – May Deploy With Caution**

- Symptoms controlled with medications, such as H2 blockers or proton pump inhibitors (PPI) and on a stable dose for > 3 months; **AND**
- Able to perform military and occupational tasks.

**Low Risk – May Deploy**

- Controlled with diet and/or lifestyle; **AND**
- Able to perform military and occupational tasks.

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## **Gastroesophageal Reflux Disease**

### **Definition / Diagnostic Criteria**

Gastroesophageal reflux disease (GERD) is a more serious form of gastroesophageal reflux (GER), which is common. GER occurs when the lower esophageal sphincter (LES) opens spontaneously, for varying periods of time, or does not close properly and stomach contents rise up into the esophagus. GER is also called acid reflux or acid regurgitation. Persistent reflux that occurs more than twice a week is considered GERD, and it can lead to complications such as esophageal stricture, perforation, or be a contributing factor to asthma.

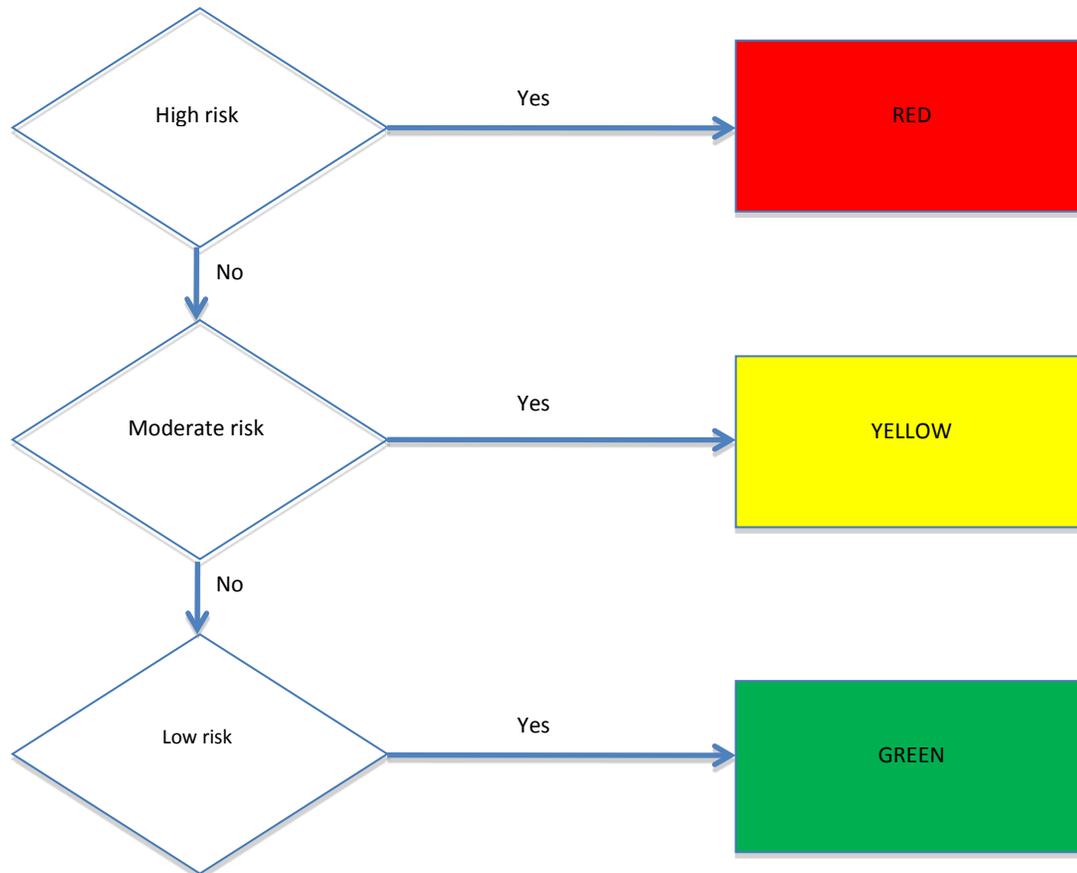
### **Proton-Pump Inhibitors Should be Avoided in Cholera-endemic Regions**

PPI's should be avoided in cholera-endemic regions because they reduce the normal protective effect of gastric acid against cholera.

### **Key Disease Factors to Consider Pre-Deployment**

- Current treatment regimen and degree of success in symptom control.
- Period of stability – how long has service person had symptoms well-controlled on same medication and dosage regimen.
- Absence of complications.
- Difficult to maintain dietary (types of food and meal regularity) or lifestyle (e.g. head of bed elevation) guidelines
- Difficult to comply with medication dosing schedule.
- Increased psychological stress may exacerbate symptoms.

## Inflammatory Bowel Disease (Crohns and Ulcerative Colitis)



### **High Risk – Do Not Deploy if any of the following are true:**

- Any significant exacerbation in the preceding 6 months that;
- One or more hospitalizations in the preceding 12 months; **OR**
- Endoscopic exam shows extensive disease; **OR**
- Requires biologic response modifiers, systemic steroids or immuno-modifying agents) to control the disease; **OR**
- History of a total or partial colectomy

### **Moderate Risk – May Deploy With Caution**

- A service member may be deployed with caution if they meet all of the following criteria
  - On regular medication (but none of the medications listed in red) with good symptom control; **AND**
  - No significant exacerbations in preceding 12 months; **AND**
  - Endoscopic exam has revealed limited disease (i.e. not extensive disease)

### **Low Risk – May Deploy**

- No history of significant exacerbation of disease within preceding two years; **AND**
- Not requiring regular medication; **AND**

- Review by a senior military occupational health physician or gastroenterologist or by a formal military medical board, confirming fitness for deployment.

## **Inflammatory Bowel Disease (Crohns and Ulcerative Colitis)**

### **Crohns and Ulcerative Colitis Are Different Diseases**

They have been combined here under one heading because there are some similarities in terms of how to assess an service member for deployment; however, the diseases are different in some key respects that affect risks and consequences of exacerbations.

### **A Period of No-Exacerbations and a Recent Colonoscopy showing limited disease Are Not Completely Reassuring in terms of Predicting Future Exacerbations**

It is noted that the risk of future exacerbations (their frequency and intensity) is difficult to predict. So, for example, a period of 6 or 12 months of no exacerbations and a recent (less than 6 months) colonoscopy showing limited disease (relative to previous colonoscopies) does not necessarily assure a good prognosis.

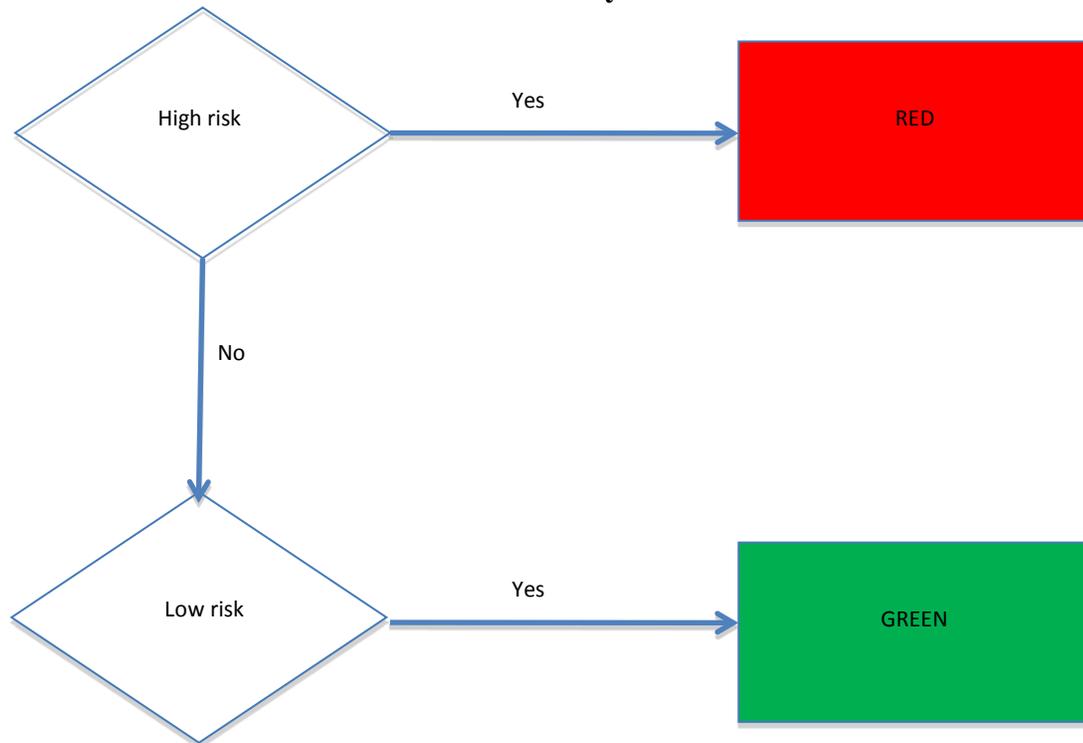
### **Colectomy to Treat Ulcerative Colitis**

In the setting of colitis, a colectomy may allow some individuals, if their outcome is ideal, to carry on with a relatively normal life. For a service member, a Medical Review Board would be the ideal forum to determine whether any medical restrictions on service are warranted who have a colectomy.

### **Key Factors to Consider Pre-Deployment**

- Requirement for strict dietary and medication compliance
- Stability - for how long has the service member been on the same medication and dosage regimen with good control?
- How long ago was last exacerbation requiring hospitalization OR urgent medical care.
- How long ago was endoscopy done and what was extent of disease at that time.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for diet and medication.
- Deployments can also be unpredictable in terms of need to change location or changes in anticipated availability of medical support
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

## Irritable Bowel Syndrome



### **High Risk – Do Not Deploy. If any of the following:**

- Symptom frequency and/or severity affect member’s ability to do their military duties; **OR**
- Symptoms are not fully responsive to dietary measures available in-theatre (including fibre supplementation) and medications (e.g. anti-diarrheals; anti-spasmodics and bulk-forming laxatives). **OR**
- The presence in-theater of triggers (e.g. irregular meals, poor sleep, loud noises, increased psychological stress) that will likely result in an exacerbation of the frequency and/or severity of the symptom pattern.

### **Low Risk – May Deploy**

- Symptom frequency and /or severity do not interfere with the member’s ability to do their military duties; **AND**
- Symptoms are fully responsive to dietary measures available in-theater (including fibre supplementation) and medication (e.g. anti-diarrheals; anti-spasmodics and bulk-forming laxatives); **AND**
- Symptom frequency and/or severity are not likely to be worsened by the increased stress and diet changes associated with the deployment (i.e. ideally, the service member has had a previous similar successful deployment or recent successful completion of military training that closely resembled the deployment conditions in terms of the usual triggers for IBS exacerbations).

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## **Irritable Bowel Syndrome**

### **Brief Definition / Diagnostic Criteria**

The Rome III criteria for the diagnosis of irritable bowel syndrome require that patients have had recurrent abdominal pain or discomfort at least 3 days per month during the previous 3 months that is associated with 2 or more of the following:

- Relieved by defecation
- Onset associated with a change in stool frequency
- Onset associated with a change in stool form or appearance

Supporting symptoms include the following:

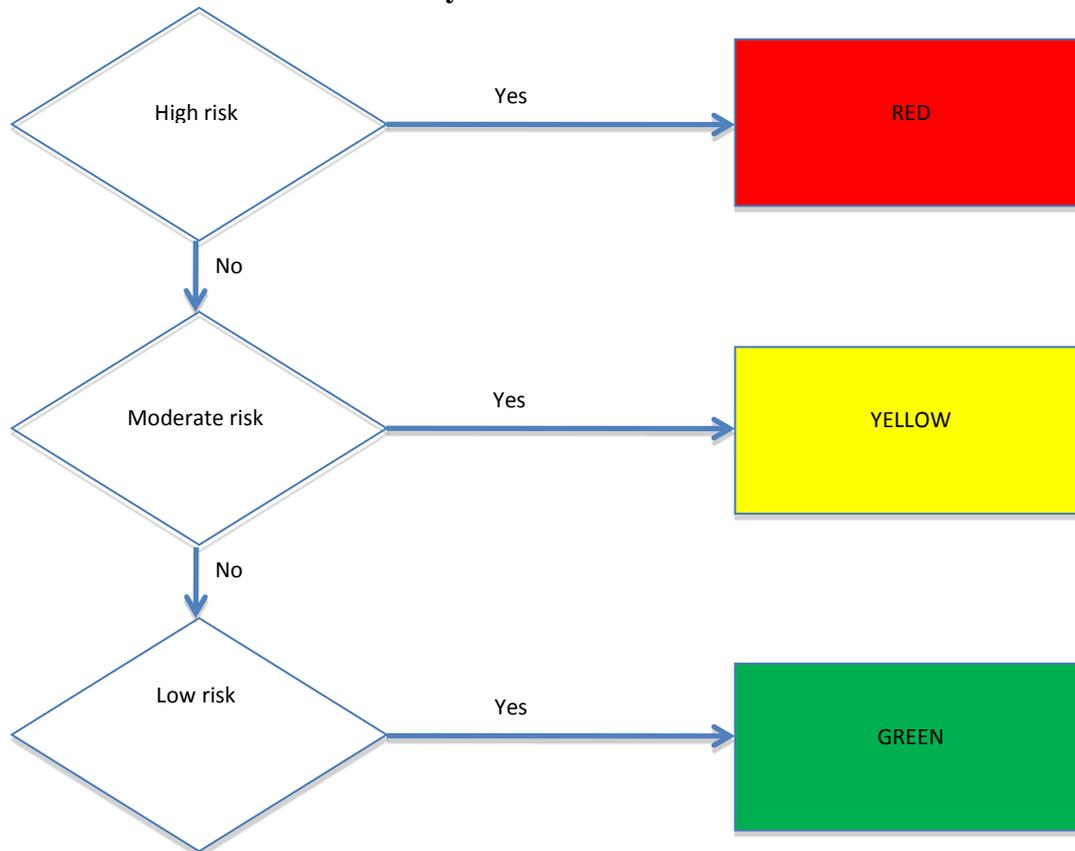
- Altered stool frequency
- Altered stool form
- Altered stool passage (straining and/or urgency)
- Mucorrhea
- Abdominal bloating or subjective distention

### **Factors to Consider During Pre-Deployment Medical Screening**

- Frequency and severity of exacerbations.
- Precipitating factors
- Current medication regimen.
- Dietary restrictions.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for diet and medication.
- The deployed environment may have precipitating factors for IBS, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

### 3.2.9 Genitourinary

#### Kidney Stones/ Renal Colic



#### **High Risk – Do Not Deploy if any of the following are true:**

- One or more exacerbations or urologic pain (ureteric pain or calculi) in the preceding 12 months requiring urgent care or hospitalization; **OR**
- CT Scan or intravenous pyelogram or flat plate x-rays confirms current existence of more than one calculi or a single calculi more than 5 mm in size; **OR**
- Renal/urologic intervention (e.g. lithotripsy, uretoscopic extraction, etc) in preceding 3 months.

#### **Moderate Risk – May Deploy With Caution. If all of the following are true**

- They have never had an episode of renal colic (i.e. the renal calculi was likely found incidentally), or they had one episode of renal colic, but it occurred > 12 months ago; **AND**
- Normal kidney function; **AND**
- If a calculus is present, it is less than 5mm in size; **AND**
- If an intervention was done, it was done >3 months ago and was successful; **AND**
- There are no limitations on duty restricting environmental exposure or physical activity that would adversely affect job performance, **AND**
- No requirement for physician follow-up in next 6 months

### **Low Risk – May Deploy**

- Currently asymptomatic with normal kidney function; **AND**
- A single episode of ureteric spasm which occurred more than 24 months ago and which has been investigated with no underlying pathology or metabolic abnormality identified; **AND**
- No urinary calculi or other anatomic abnormalities seen on CT or with intravenous pyelogram

### **Urolithiasis or Kidney Stones**

Kidney stones (urolithiasis) are calculi that are present in the urinary tract (i.e., the kidneys, bladder, and/or urethra). Predisposing factors include dehydration and high uric acid (increased by some medications). They are also called *nephrolithiasis* or *renal calculi*.

### **Its is Difficult to Predict When a Kidney Stone May Become Symptomatic**

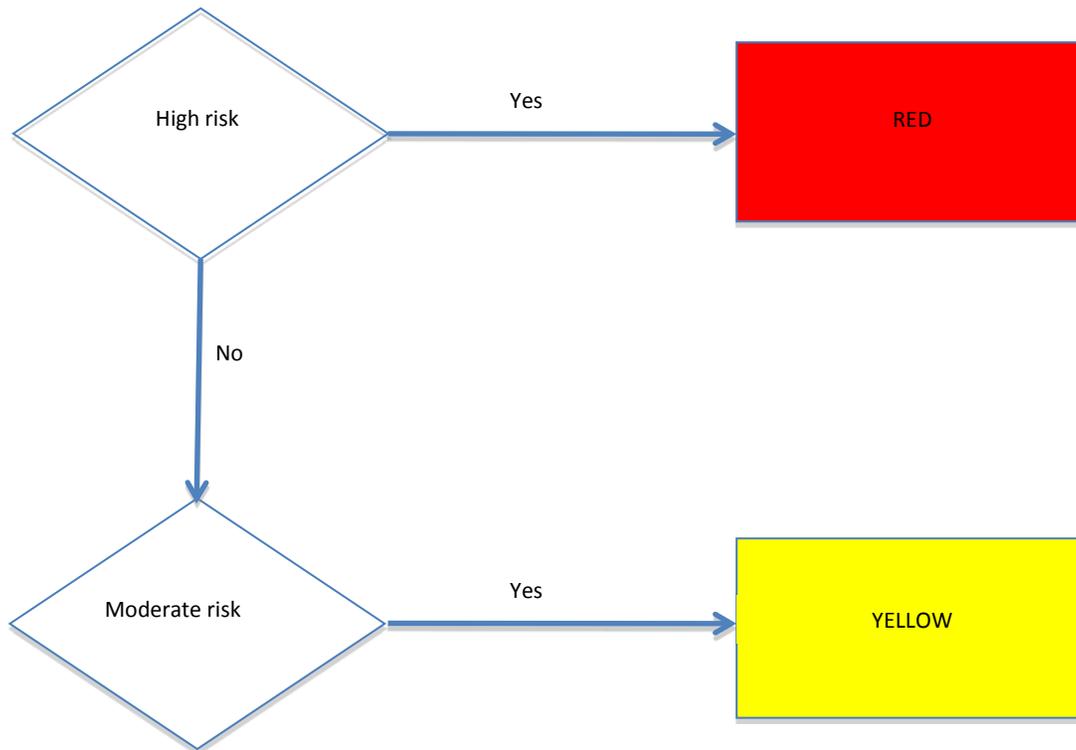
Although the Red-Yellow-Green guide on the preceding page suggests timelines to use to minimize risk of an exacerbation, it is acknowledged that, similar to many chronic diseases, the predicting of future exacerbations is very difficult.

### **Key Disease Factors to Consider Pre-Deployment**

- There is some evidence for increased risk of stone formation in a climate where the temperature is > 30 degree centigrade. This risk appears to be associated with heat only; it is independent of humidity, hydration routine and activity level.
- Requirement for strict dietary compliance.
- How long ago was last exacerbation requiring hospitalization OR urgent medical care.
- Deployments can be unpredictable in terms of need to change location or changes in anticipated availability of medical support.

### 3.2.10 Infectious Disease

#### Human Immunodeficiency Virus



#### **High Risk – Do Not Deploy if any of the following are true:**

- Confirmed HIV infection with the presence of progressive clinical illness or immunological deficiency (e.g.. review of viral load and CD4 deficiency); **OR**
- Not on a stable HAART (highly active antiretroviral therapy) regimen (i.e. during past 6 months there has been changes to medication or dosage, or presence of significant adverse side-effects); **OR**
- Confirmed HIV infection which has not yet been reviewed by a senior military occupational health or infectious disease physician or a formal military medical board

#### **Moderate Risk – May Deploy With Caution if all of the following are true**

- No progression of their clinical illness or immunologic deficiency (e.g.. review of viral load and CD4 deficiency); **AND**
- Able to do their duties fully without restrictions; **AND**
- If on HAART, then has been on this regimen for > 6 months, and without adverse side effects; **AND**
- Their condition has recently been reviewed by a senior military occupational health or infectious disease physician or a formal military medical board which, has determined that the service member is fit for a specific deployment; **AND**
- Deployment follows the applicable regulations and policies of the of host nation and participating NATO countries (theater-specific);

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## **HIV (Human immunodeficiency virus)**

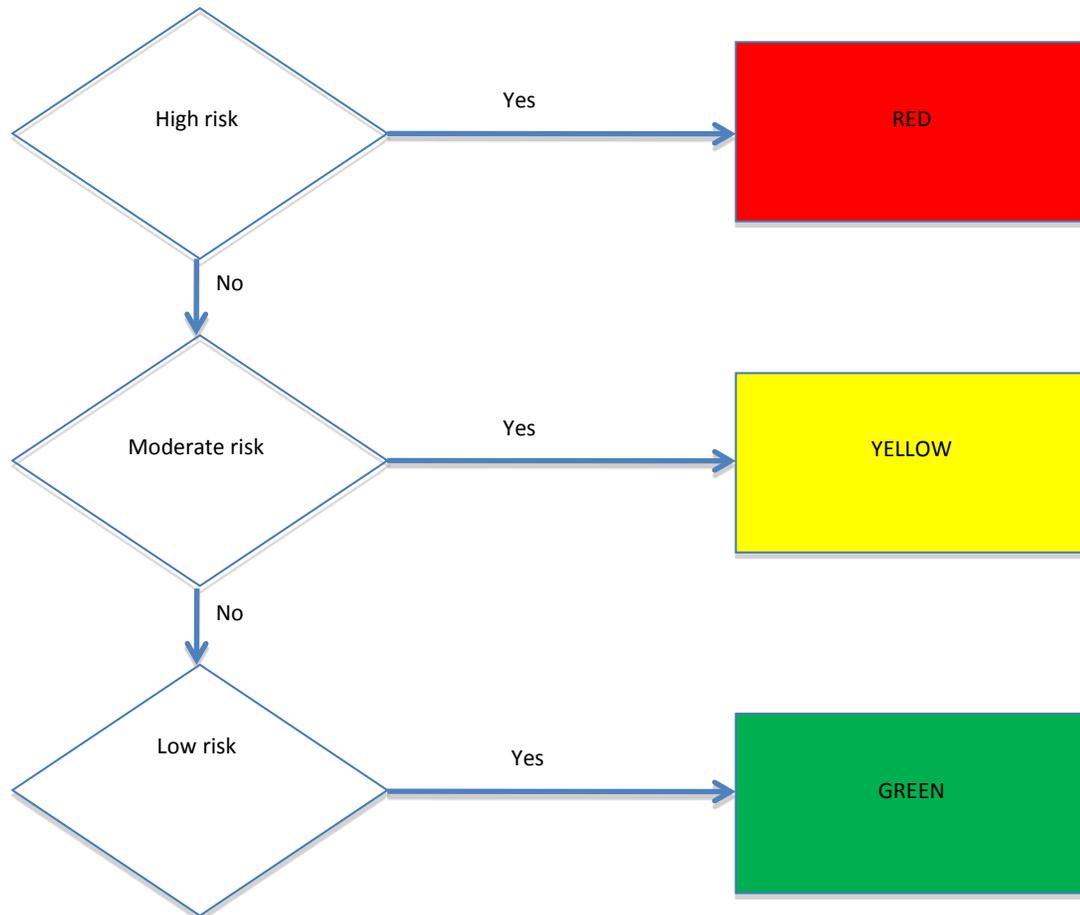
### **Definition / Diagnostic Criteria**

Human immunodeficiency virus is one of two retrovirus strains, HIV-1, or HIV-2, that attacks the T cells of the immune system with debilitating effects, producing a syndrome called acquired immune deficiency (AIDS).

### **Key Factors to Consider Pre-Deployment**

- Requirement for strict medication compliance.
- Stability - for how long has the service member been on the same medication and dosage regimen with good control.
- Current laboratory and other diagnostic markers that characterize diseases severity.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for medication.
- Deployments can also be unpredictable in terms of need to change location or changes in anticipated availability of medical support.
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

## Tuberculosis (Active or Latent)



### **High Risk – Do Not Deploy if any of the following are true:**

- Any active TB case with or without therapy; **OR**
- Any recent PPD (purified protein derivative; i.e. the tuberculin intradermal test) conversion without further diagnostic workout; **OR**
- Any history of TB case with evidence of brain, kidney or bone involvement.

### **Moderate Risk – May Deploy With Caution if ANY of the following are true**

- A service member may be deployed if they have a recent conversion of PPD where complete diagnostic workout (Lab, X-Ray, specialised examination) ruled out an active TB case.

### **Low Risk – May Deploy**

- A service member may be deployed if > 3 months after end of therapy (in terms of dose and duration) for active disease have passed; **AND**
- There are no remaining clinical, radiological and/or laboratory abnormalities; **AND**
- There has been full physical recovery, allowing the service member to do full military duties; **OR**
- The full course of treatment (in terms of dose and duration) for latent tuberculosis was completed.

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### **Tuberculosis Infectious Diseases (Active Tuberculosis)**

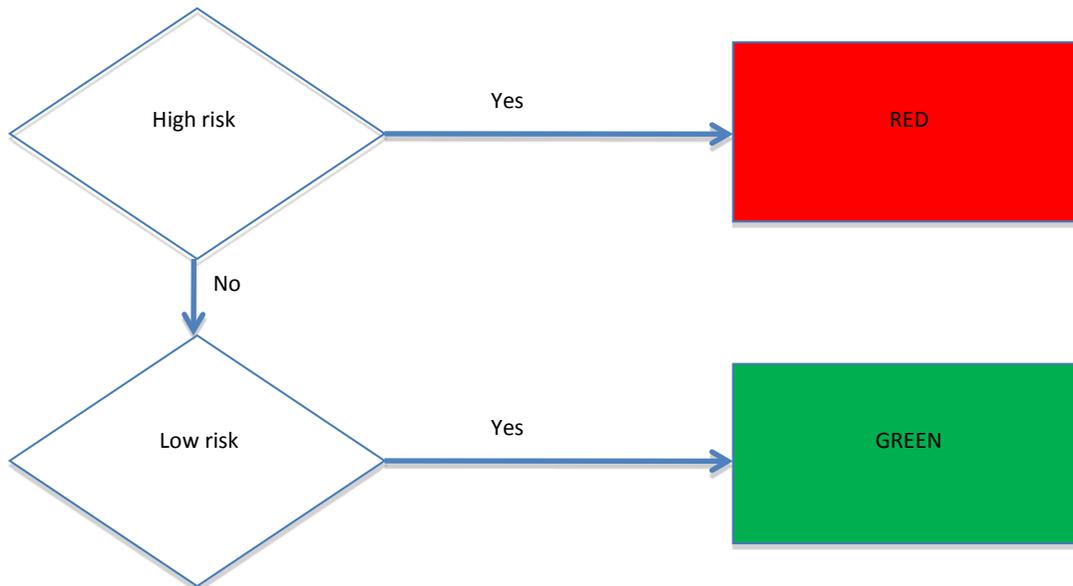
This is a chronic granulomatous infection caused by an acid-fast bacillus, *Mycobacterium tuberculosis*. It is generally transmitted by the inhalation or ingestion of infected droplets and usually affects the lungs, although infection of multiple organ systems occurs. Persons who are immunodeficient, such as those infected with human immunodeficiency virus, may have extrapulmonary tuberculosis. This includes disseminated tuberculosis, which involves multiple organs such as the liver, lung, spleen, bone marrow, and lymph nodes. Diagnosis is through biopsy, stain, sputum and gastric cultures, and x-ray studies. Central nervous system tuberculosis may occur as inflammation of the meninges or a mass lesion (tuberculoma).

### **Latent Tuberculosis Has a Small Risk of Becoming Active Tuberculosis**

“Latent tuberculosis” refers to a person with live TB bacteria in the body but the disease is not active and the person is not contagious. However, there is a small risk of latent TB becoming active TB, which is infectious. Even a small risk of the disease becoming activated is hugely problematic in a deployed setting. If someone with in-theatre develops active TB it would place a significant burden on front-end health care providers and facilities, and make aeromedical evacuation extremely difficult because of concern re transmission of a contagious disease across international borders.

### 3.2.11 Musculoskeletal

#### Chronic Low Back Pain



#### **High Risk – Do Not Deploy if any of the following are true:**

- Low back pain secondary to a serious process (such as cancer, infection, cauda equina syndrome, spinal stenosis or radiculopathy, vertebral compression fracture or ankylosing spondylitis); **OR**
- Incapacitating low back pain that occurs on average more often than once every 6 months, or that exists for more than five days in any 3 month period; **OR**
- The low back pain would limit the service member’s ability to do their duties during a deployment, which includes wearing of PPE, carrying full military equipment, and travel in military vehicles; **OR**
- The requirement to use medications such as benzodiazepines or narcotics or opioids whose side effects may limit them from carrying out their military duties during a deployment; **OR**
- Has had surgery and has not completed required rehabilitation to a degree that the service member can fully perform their occupational or military duties.

#### **Low Risk – May Deploy if ALL of the following are true:**

- Low back pain exacerbations occur less often than every 6 months and is not incapacitating; **AND**
- Low back pain exacerbations resolve in < 3 days with conservative management ; **AND**
- Not currently experiencing an acute low back pain episode; **AND**
- Able to perform all military duties and occupational requirements, including physical fitness testing and pre-deployment training; **AND**
- The pain can be managed effectively with acetaminophen and/or NSAIDS.

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## **Chronic Low Back Pain**

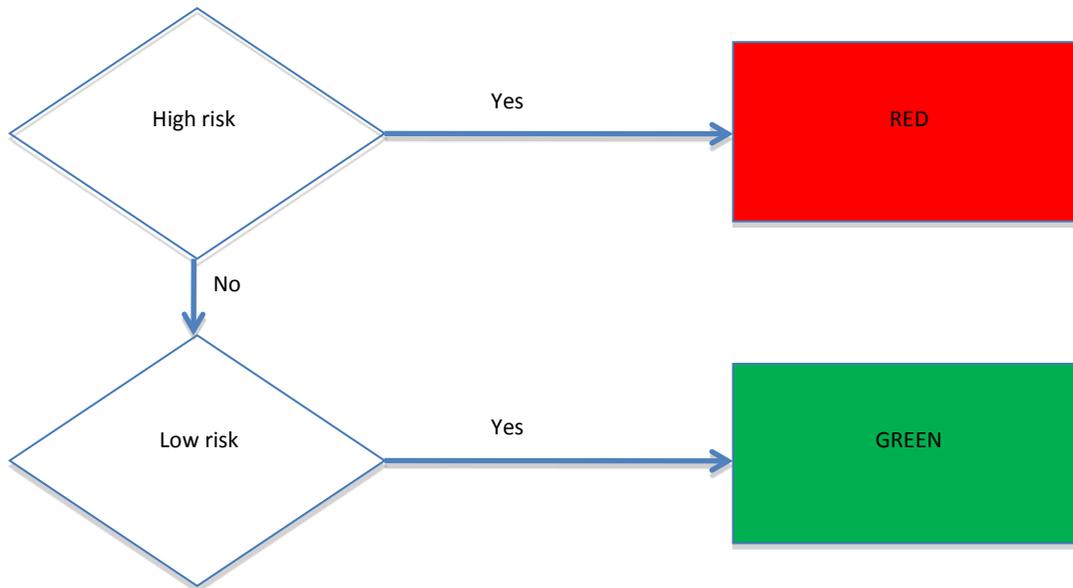
### **Brief Definition / Diagnostic Criteria**

Chronic low back pain is defined as pain being present for more than 3 months with pain occurring primarily in the back with no signs of a serious underlying condition (such as cancer, infection, or cauda equina syndrome), spinal stenosis or radiculopathy, or another specific spinal cause (such as vertebral compression fracture or ankylosing spondylitis). Degenerative changes on lumbar imaging are usually considered nonspecific, as they correlate poorly with symptoms.

### **Factors to Consider During Pre-Deployment Medical Screening**

- If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical stressors, then this would be a favorable factor to consider.
- Requirement for narcotics to manage pain is not consistent with deployment.
- Requirement for physiotherapist or chiropractor treatment to maintain function is not consistent with deployment.
- Deployment conditions are unpredictable and service personnel may be required to perform very physically-demanding tasks in emergency settings (e.g. carrying injured comrade), and this may exacerbate low back pain symptoms, rendering the service member incapable of fulfilling their duties.

## Musculoskeletal (MSK) Injuries



### **High Risk – Do Not Deploy if any of the following are true:**

- The musculoskeletal injury or condition, including any chronic pain syndromes, results in loss of motion or function to a degree that impairs the service member’s ability to do their occupational or military duties; **OR**
- Has had surgery and has not completed required rehabilitation to a degree that the service member can fully perform their occupational or military duties; **OR**
- Requires the use of a medication to manage MSK symptoms such that the medication may impair the service member from performing their duties/occupation (e.g. narcotics); **OR**
- The service member has a diagnosis of a significant systemic or infectious disease state as the cause for their musculoskeletal symptoms (e.g., osteomyelitis or autoimmune diseases such as rheumatoid arthritis, ankylosing spondylitis, and others) since the natural course of these types of diseases tends to be progressive; **OR**
- Any condition that will require the use of rehabilitative physical therapy while in theater

### **Low Risk – May Deploy**

- Acute musculoskeletal injuries are resolved; **AND**
- Able to perform all military duties and occupational requirements in an unprotected environment, including pre-deployment training; **AND**
- If they have pain, then pain can be managed with acetaminophen and/or NSAIDS.

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## **Musculoskeletal (MSK) Injuries**

### **Brief Definition / Diagnostic Criteria**

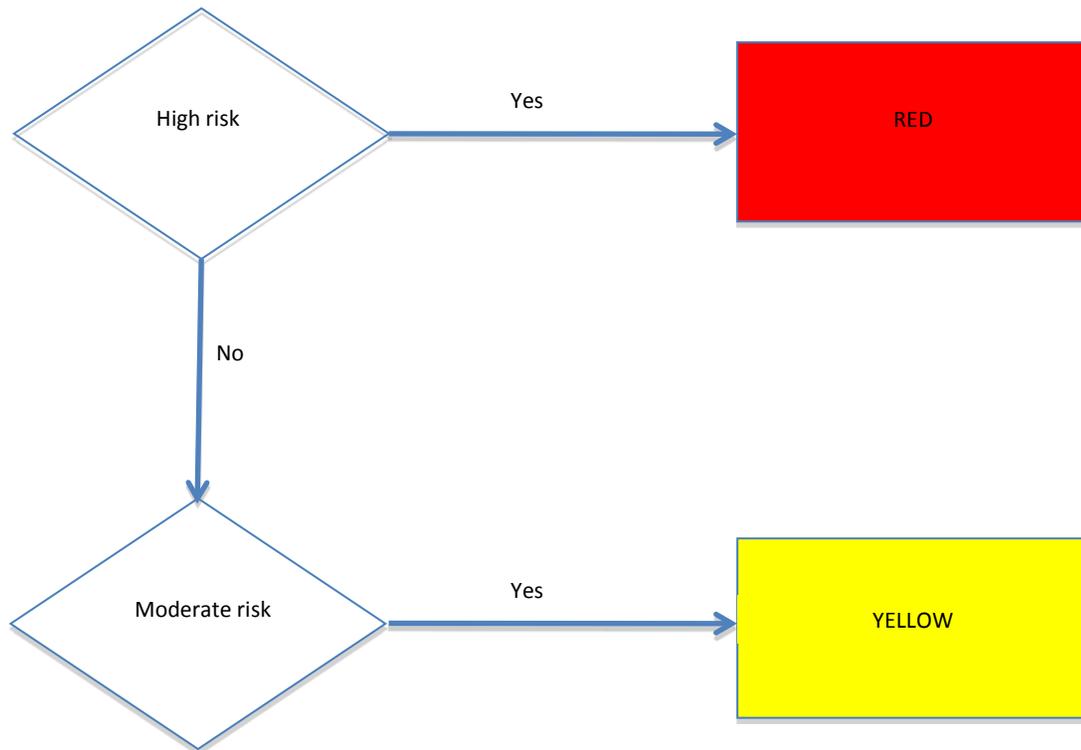
Any acute or chronic injury to the musculoskeletal system that has caused pain or functional impairment.

### **Factors to Consider During Pre-Deployment Medical Screening**

- If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical stressors, then this would be a favorable factor to consider.
- Requirement for narcotics to manage pain would be a red flag for deployment.
- Requirement for ongoing physiotherapist or chiropractor treatment to maintain function would be a red flag for deployment.
- Deployment conditions are unpredictable and service personnel may be required to perform very physically-demanding tasks in emergency settings (e.g. carrying injured comrade), and this may exacerbate MSK symptoms.

### 3.2.12 Neurological

#### Epilepsy and Seizure



**High Risk – Do Not Deploy if any of the following are true:**

- Diagnosis of epilepsy with ongoing chronic risk for seizures; **OR**
- Idiopathic seizure (i.e. with normal MRI, EEG and lab work-up) within the last 12 months.

**Moderate Risk – May Deploy With Caution. If ALL of the following are true**

- A single idiopathic seizure occurred more than 12 months ago; **AND**
- There was a full negative work-up for the cause of the seizure (to include an MRI, EEG and neurologist assessment); **AND**
- No current medications required; **AND**
- No motor vehicle driving restrictions.

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## **Epilepsy and Seizure**

### **Brief Definition / Diagnostic Criteria**

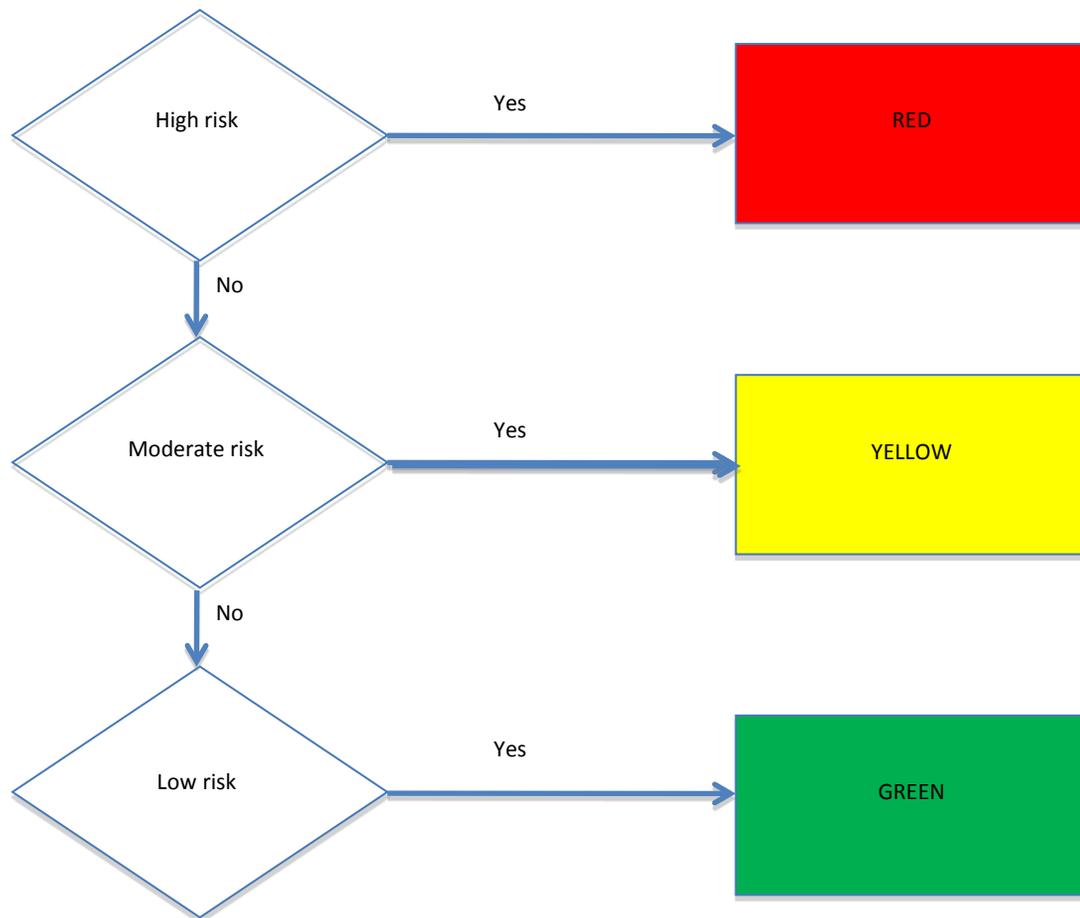
***Seizure*** is the physical findings or changes in behavior that occur after an episode of abnormal electrical activity in the brain. There are a wide variety of possible symptoms of seizures, depending on what parts of the brain are involved. Many, if not all, types of seizures cause loss of awareness and some seizures cause twitching or shaking of the body. However, some seizures may be hard to notice because they consist of staring spells that can easily go unnoticed.

***Epilepsy*** is a chronic disorder of the brain that is characterized by recurrent seizures - which are physical reactions to sudden, usually brief, excessive electrical discharges in a group of brain cells. Different parts of the brain can be the site of such discharges.

### **Factors to Consider During Pre-Deployment Medical Screening**

- If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical and psychological stressors including sleep deprivation, then this would be a favorable factor to consider.
- The completeness of the negative work-up for the cause of the seizure (e.g. did work-up include an MRI, EEG, neurologist assessment and military medical board review);
- Requirement for ongoing neurological follow-up.
- Length of time that service member has been seizure free.
- If the service member is not medically fit to drive a car, then they are not medically fit to deploy.
- Deployments are unpredictable and what began as an uncomplicated assignment may turn out to be one marked by chronic sleep deprivation; repeated loud noises and high physical and psychological stress.

## Migraine and Headaches



### **High Risk – Do Not Deploy if any of the following are true:**

- Incapacitating headaches that typically last > 2 hours and occur more often than once every 3 months; **OR**
- Any acute, urgent or emergent visits for treatment of a headache within the last 3 months; **OR**
- The requirement to use a medication whose side effects would preclude them from carrying out their military responsibilities during a deployment (e.g narcotics); **OR**
- The requirement to use intravenous or oral rescue medication that may not be readily available to the patient (e.g. dihydroergotamine); **OR**
- The presence in-theater of triggers (e.g. irregular meals, poor sleep, loud noises, increased psychological stress) will likely result in an exacerbation of the frequency and/or severity of the headache pattern;

### **Moderate Risk – May Deploy With Caution if ALL of the following are true**

- No acute, urgent or emergent visits for treatment of a headache during the preceding 3 months but may have had a visit during the preceding interval from 3-6 months ago; **AND**
- Partially responsive to prophylactic and rescue medications which are readily available in-theater so

that the frequency and severity of the headaches do not prevent the service member from fully carrying out their military duties without periods of incapacitation; **AND**

- The presence of in-theater triggers will not likely result in an exacerbation of the frequency and/or severity of the headache pattern (this is best demonstrated by successful pre-deployment training, where such training closely approximates the in-theater environment in terms of potential triggers for disease exacerbation).

#### **Low Risk – May Deploy if ALL of the following are true**

- No acute, urgent or emergent visits for treatment of a headache in the preceding 6 months; **AND**
- Fully responsive to prophylactic and rescue medications which are readily available in-theater so that the frequency and severity of the headaches do not prevent the service member from fully carrying out their military duties without periods of incapacitation; **AND**
- The presence of in-theater triggers will not likely result in an exacerbation of the frequency and/or severity of the headache pattern (this is best demonstrated by successful pre-deployment training, where such training closely approximates the in-theater environment in terms of potential triggers for disease exacerbation).

### **Migraine and Headaches**

#### **Brief Definition / Diagnostic Criteria**

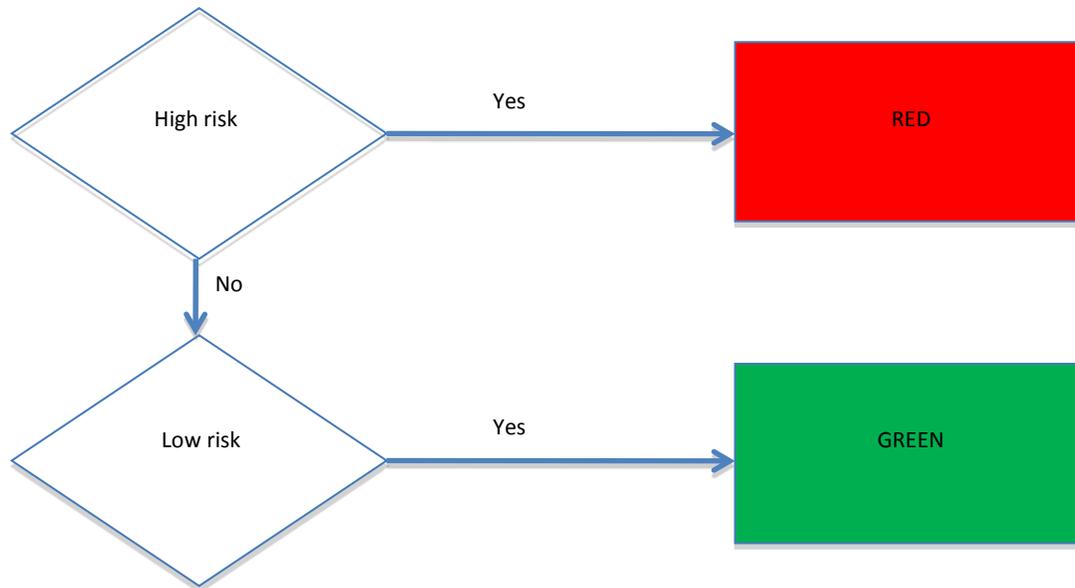
Headache itself is a painful and often disabling feature of a relatively small number of primary headache disorders. It also occurs secondarily to a considerable number of other conditions. A wide range of headache types have been classified in detail by the International Headache Society. All of these can cause substantial levels of disability. The most common among them are:

- tension-type headache (TTH),
- migraine,
- cluster headache and
- chronic daily headache syndromes

#### **Factors to Consider During Pre-Deployment Medical Screening**

- If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical and psychological stressors, including sleep deprivation, irregular meals, exposure to loud noises, then this would be a favorable factor to consider.
- Past medication history (single versus multiple, rescue versus prophylactic)
- Type of medication required (requiring narcotics or dihydroergotamine to treat or prevent a headache, for example, is problematic).
- Frequency and severity of headaches.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for sleep, diet and medication.
- The deployed environment may have more precipitating factors, such as mental/psychological and physical stressors, as well as loud noises.

## Syncope / Loss of Consciousness (LOC)



### **High Risk – Do Not Deploy if any of the following are true:**

- An episode of syncope requiring ongoing evaluation or treatment; **OR**
- An episode of syncope occurred < 1 yrs ago and it was never evaluated fully by a physician to determine the cause; **OR**
- More than one idiopathic syncope event; **OR**
- The service member currently has restrictions or limitations on their military duties

### **Low Risk – May Deploy if ALL of the following are true**

- Only one episode of syncope; **AND**
- The episode occurred > 1 year ago; **AND**
- The clinical evaluation at that time by a physician was negative for any cardiac/neurologic/metabolic etiology; **AND**
- Currently performing their military occupation and duties without limitations.

## **Syncope and Loss of Consciousness (LOC)**

### **Brief Definition / Diagnostic Criteria**

Partial or complete loss of consciousness with an interruption of awareness of oneself and one's surroundings. When the loss of consciousness is temporary and there is spontaneous recovery, it is referred to as syncope. Syncope is due to a temporary reduction in cerebral blood flow and its etiology is typically described as being either cardiac, or non-cardiac. Non-cardiac causes are the most common and include:

#### ***Non-Cardiac causes of syncope:***

- Postural (orthostatic) hypotension
- Dehydration causing a decrease in blood volume.

- Blood pressure medications leading to low blood pressure.
- Transient ischemic attack
- A migraine attack.
- Fainting after certain situations (situational syncope) such as: blood drawing, urinating (micturition syncope), defecating (defecation syncope), swallowing (swallowing syncope), or coughing (cough syncope). Situational syncope triggers a reflex of the involuntary nervous system (the vasovagal reaction) that slows the heart and dilates blood vessels in the legs and cause one to feel nausea, sweating, or weakness just before losing fainting.

***Cardiac causes of syncope:***

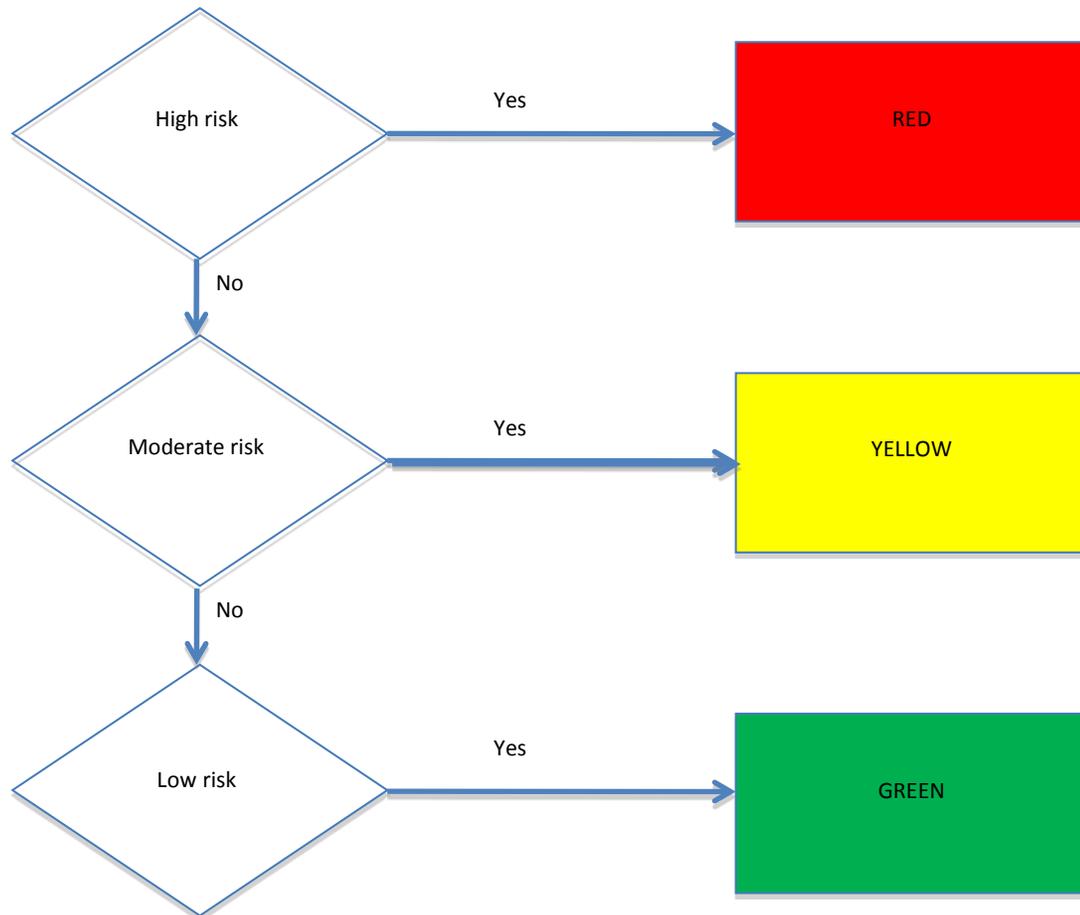
Heart conditions that can cause syncope or fainting due to temporary loss of consciousness include:

- Arrhythmia
- Abnormalities of the heart valves (aortic stenosis or pulmonic valve stenosis).
- Pulmonary artery hypertension
- Aortic dissection
- Cardiomyopathy

**Factors to Consider During Pre-Deployment Medical Screening**

- If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of physical stressors including sleep deprivation, then this would be a favorable factor to consider.
- The extent of the work-up for the cause of the LOC (to rule out serious pathology from benign causes).
- Length of time free of LOC episodes.
- It is noted that fainting during a parade is not uncommon for service members. By itself, and in the context of the service member being fully assessed by a physician subsequently and found to be “good to go”, an isolated or rare episode of fainting on parade is not a red flag for deployment.

## Traumatic Brain Injury



### **High Risk – Do Not Deploy if any of the following are true:**

- Moderate or severe ongoing cognitive impairment so that the service member cannot carry out full military duties; **OR**
- Significant psychiatric (e.g. Axis 1) or neurological comorbidity which results in an inability to do full military duties.

### **Moderate Risk – May Deploy With Caution. If ALL of the following are true**

- Mild/slight cognitive impairment exists; **AND**
- There is no psychiatric or neurological comorbidity; **AND**
- Service member has demonstrated that they can do all occupational and military duties.

### **Low Risk – May Deploy**

- Medical Evaluation Board has found service member fit for unrestricted duty and deployment; **OR**
- All of the following are true:
  - No current cognitive impairment; **AND**
  - Can do all occupational and military duties; **AND**
  - No psychiatric or neurological co-morbidity.

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## **Traumatic Brain Injury (TBI)**

### **Definition / Diagnostic Criteria**

Traumatic brain injury happens when a head injury causes damage to the brain. Half of all traumatic brain injuries (TBIs) are due to motor vehicle accidents. Military personnel are also at risk due to blast exposure. Symptoms of a TBI may not appear until days or weeks following the injury. Treatment and outcome depend on the severity of the injury. TBI can cause a wide range of changes affecting thinking, sensation, language, or emotions. TBI can be associated with post-traumatic stress disorder. People with severe injuries usually need rehabilitation.

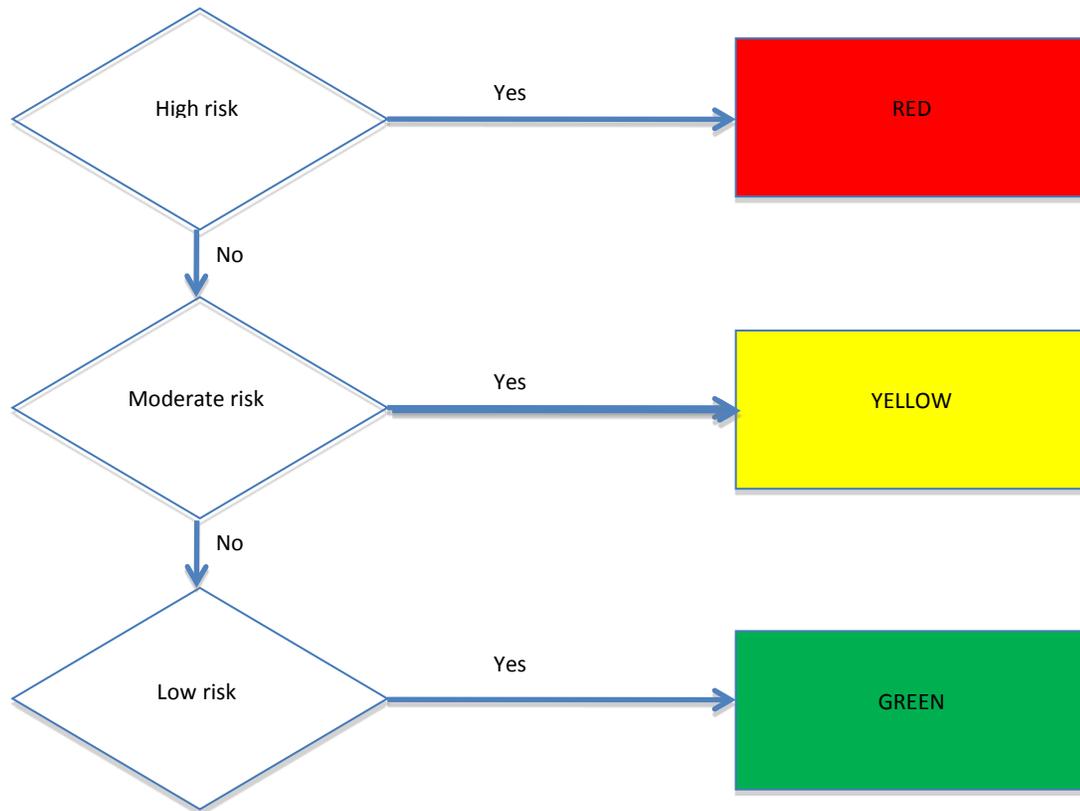
It is noted that there is a significant amount of ongoing research by militaries around the world into TBI and so hopefully there will be more precise diagnostic tools and scales and clearer pre-deployment screening guidelines in the future.

### **Factors to Consider During Pre-Deployment Medical Screening**

- Is the service member doing a job now similar to that which they would do on deployment
- Stability of disease – how long has the service member been on same treatment regimen with stable symptoms and no exacerbations?
- Current level of cognitive functioning.
- Comorbidity of psychiatric illness.
- Any behavioral - personality issues associated with the TBI.
- The –deployment environment will likely worsen the level of cognitive functioning in many cases (e.g. sleep deprivation; increased anxiety and mental distress)
- Need to be able to operate at a high level of cognitive functioning while sleep deprived and under psychological distress (e.g. in-theater critical situation in middle of night)

### 3.2.13 Psychiatry/Mental Health

#### Anxiety



#### **High Risk – Do Not Deploy if any of the following are true:**

- Has required regular, ongoing mental health treatment within the last six months; **OR**
- Ongoing symptoms of any type which affects ability to do one's duty; **OR**
- Disease stability for < 6 months; **OR**
- Any concern about the service member's behavioral stability (social and occupational) and the potential for deterioration or recurrence of symptoms during a deployment; **OR**
- Significant (i.e. significant = Axis I; to include drug dependency) psychiatric co-morbidity; **OR**
- Any requirement for antipsychotics or lithium; **OR**
- Any evidence of bipolar disorder or psychotic features.

#### **Medium Risk – May Deploy With Caution. If ALL of the following are true**

- The service member has been disease stable for > 6 months; **AND**
- The service member has not required regular mental health treatment for the preceding 12 months; **AND**
- The service member has had an assessment by a military mental health professional for their anxiety disorder which found the service member fit for deployment; **AND**
- The service member has demonstrated ability to do full military duties.

### **Low Risk – May Deploy**

- The service member has had a formal medical evaluation board or formal review for their anxiety, with professional mental health input, that found the service member fit for deployment; **AND**
- There has been no subsequent change in their condition

## **Anxiety**

### **There is Variability in How Physicians Diagnose Anxiety**

It is noted that there is both a cultural variation and even variation within a culture in terms of how physicians diagnose anxiety. It is for this reason that the assessment guide on the preceding page focuses less on the diagnosis of anxiety, and more on the service member's ability to do their military duties and disease stability.

### **Brief Definition / Diagnostic Criteria**

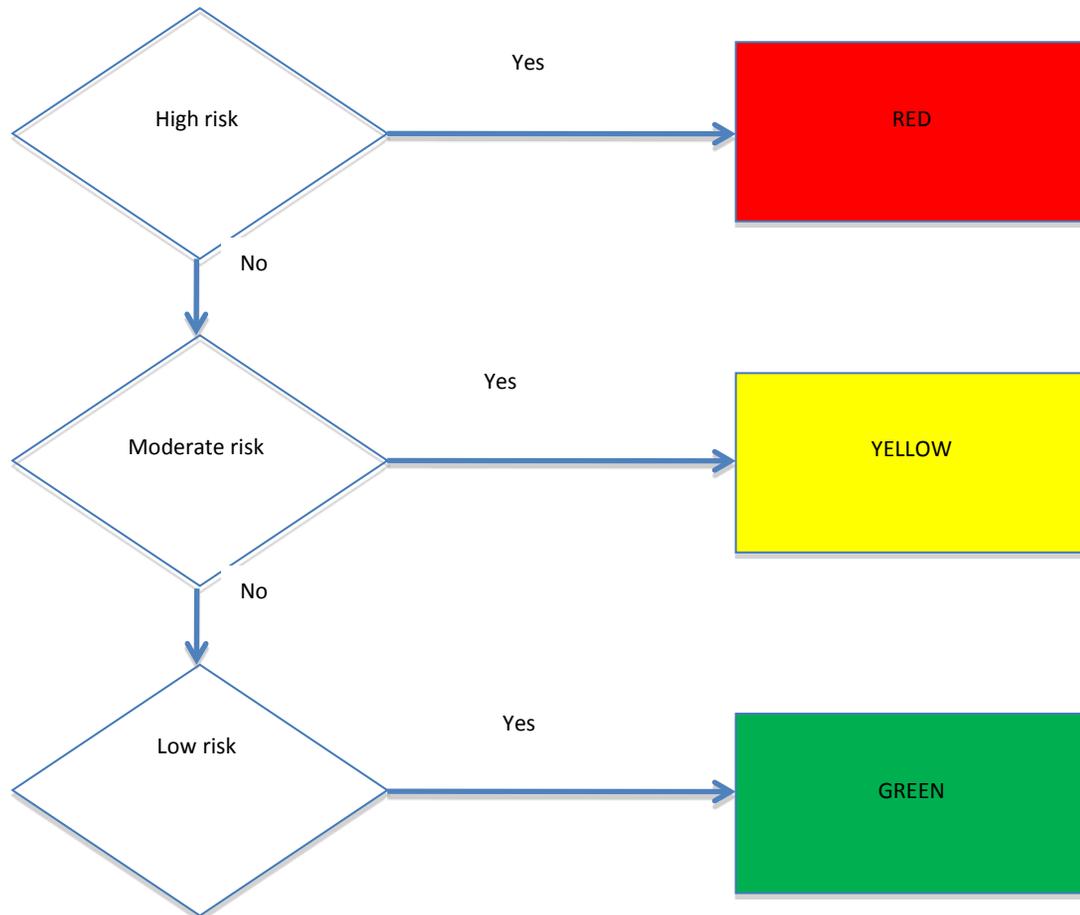
Anxiety is a normal reaction to stress and is often helpful to cope with demands of daily life. But when anxiety is an excessive, irrational dread of everyday situations, it has become a disabling disorder. The types of anxiety disorder for the purpose of using this medical screening guide are:

- Generalized Anxiety Disorder
- Obsessive-Compulsive Disorder (OCD)
- Panic Disorder
- Social Phobia (or Social Anxiety Disorder)

### **Factors to Consider Pre-Deployment**

- Presence of Mental Health disorder comorbidity, including drug or alcohol abuse or dependence is concerning.
- Current medication and psychotherapy regimen.
- Current functional level. If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of mental and psychological stressors, then this would be a favorable factor to consider.
- Stability – length of time that member has been performing normal occupational tasks on same treatment regimen.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for medication.
- The deployed environment may have more exacerbating factors, such as mental health and psychological stressors

## Major Depressive Disorder



### **High Risk – Do Not Deploy if any of the following are true:**

- Hospitalization for psychiatric reason within the last 12 months; **OR**
- Any ongoing depressive symptoms (cognitive/sleep/mood/suicidal) affecting duty; **OR**
- Disease stability for < 3 months; **OR**
- Any requirement for antipsychotics or lithium; **OR**
- Any evidence of bipolar disorder or psychotic features; **OR**
- A reasonable concern about the service member’s behavioral stability and the potential for deterioration or recurrence of symptoms during a deployment; **OR**
- Ongoing requirement for psychological or mental health counselling; **OR**
- Any suicidal ideation in the preceding six months.

### **Moderate Risk – May Deploy With Caution. If ALL of the following are true**

- No other psychiatric co-morbidity (i.e. a total of no more than one Axis 1 or Axis 2 diagnoses); **AND**
- There is no more than one hospitalization within the preceding two years; **AND**
- There is no comorbidity with drug or alcohol abuse or dependence; **AND**
- Symptoms responded to selective serotonin reuptake inhibitors and/or cognitive behavioral therapy (service members can be considered for deployments even if taking SSRIs); **AND**

- Disease stability (no change in medication / dosage/ symptoms) for > 3 months; **AND**
- Condition not anticipated to deteriorate in-theater; **AND**
- Currently performing well in duties/tasks similar to what is expected in-theatre.

### **Low Risk – May Deploy**

- The service member has had a formal medical evaluation board or formal review for their depression, with professional mental health, input that found the service member fit for deployment; **OR**
- A single uncomplicated episode of depression that resolved > 3 months prior to deployment.

### **Major Depressive Disorders**

#### **There is Variability in How Physicians Diagnose Depression**

It is noted that there is both a cultural variation and even variation within a culture in terms of how physicians diagnose depression. It is for this reason that the assessment guide on the preceding page focuses less on the diagnosis of depression, and more on the service member's ability to do their military duties.

#### **Brief Definition / Diagnostic Criteria**

Five (or more) of the following list of symptoms have been present during the same 2-week period and represent a change from previous functioning. At least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

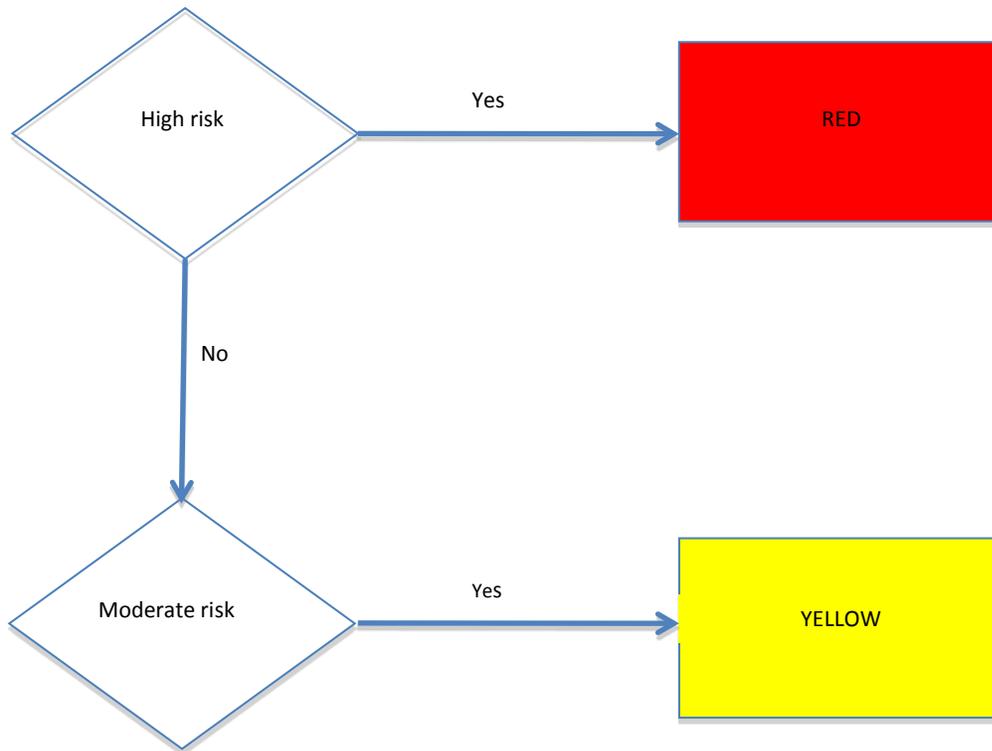
- depressed mood most of the day
- markedly diminished interest or pleasure in all, or almost all, activities most of the day,
- significant weight loss when not dieting or weight gain or decrease or increase in appetite
- insomnia or hypersomnia nearly every day
- psychomotor agitation or retardation
- fatigue or loss of energy
- feelings of worthlessness or excessive or inappropriate guilt
- diminished ability to think or concentrate, or indecisiveness
- recurrent thoughts of death or recurrent suicidal ideation

#### **Factors to Consider Pre-Deployment**

- Presence of Mental Health disorder comorbidity, including drug or alcohol abuse or dependence, is especially concerning.
- Current medication and psychotherapy regimen.
- History of suicidal ideation or attempt(s).
- History of hospitalizations.
- Current functional level. If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of mental and psychological stressors, then this would be a favorable factor to consider.

- 
- Stability – length of time that member has been performing normal occupational tasks on same treatment regimen (i.e. same medication; same dose).
  - Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for medication.
  - The deployed environment may have more exacerbating factors, such as mental health and psychological stressors

## Post Traumatic Stress Disorder (PTSD)



### **High Risk – Do Not Deploy if any of the following are true:**

- Currently being evaluated for possible diagnosis of PTSD; **OR**
- Diagnosed with PTSD and currently has symptoms which interfere with ability to carry out full military duties; **OR**
- Diagnosed with PTSD and with symptoms controlled but period of stability is less than 6 months; **OR**
- Diagnosed with PTSD and has symptoms under control but requires frequent follow-up with a specialist (more often than every 6 months); **OR**
- Diagnosed with PTSD and with symptoms controlled and stabilized, but judged to be at risk for deterioration if deployed; **OR**
- Requiring antipsychotics; or lithium or anti-convulsants; **OR**
- Ongoing requirement for mental health treatment.

### **Moderate Risk – May Deploy With Caution. If all of the following are true**

- Asymptomatic, or with minimal current symptoms that do not interfere with service member's ability to carry out full military duties; **AND**
- Patient has been stable for > 6 months; **AND**
- No ongoing requirement for mental health treatment more frequently than every 6 months; **AND**
- They are assessed by a psychiatrist or reviewed by a formal military medical evaluation board and found fit for duty and cleared for deployment.

## **Post-Traumatic Stress Disorder (PTSD)**

It is noted that there is significant variability between clinicians in terms of their diagnostic approach to PTSD. There is also little evidence regarding the degree of risk that someone who has been “successfully treated for PTSD” (a concept that is itself hard to define) will relapse if deployed again into a theatre of operations. Even if the degree of risk could be quantified, there would still be variability in terms of what constitutes an “acceptable risk” to the service member (and the associated ethical implications) balanced against the benefit to the mission of having that particular member deployed.

### **Brief Definition / Diagnostic Criteria** (Post-traumatic stress disorder, 2013)

PTSD arises as a delayed and/or protracted response to a stressful event or situation (either short- or long-lasting) of an exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone. This disorder should not generally be diagnosed unless there is evidence that it arose within 6 months of a traumatic event of exceptional severity. In addition to evidence of trauma, there must be a repetitive, intrusive recollection or re-enactment of the event in memories, daytime imagery, or dreams. Conspicuous emotional detachment, numbing of feeling, and avoidance of stimuli that might arouse recollection of the trauma are often present but are not essential for the diagnosis.

### **Typical symptoms may include:**

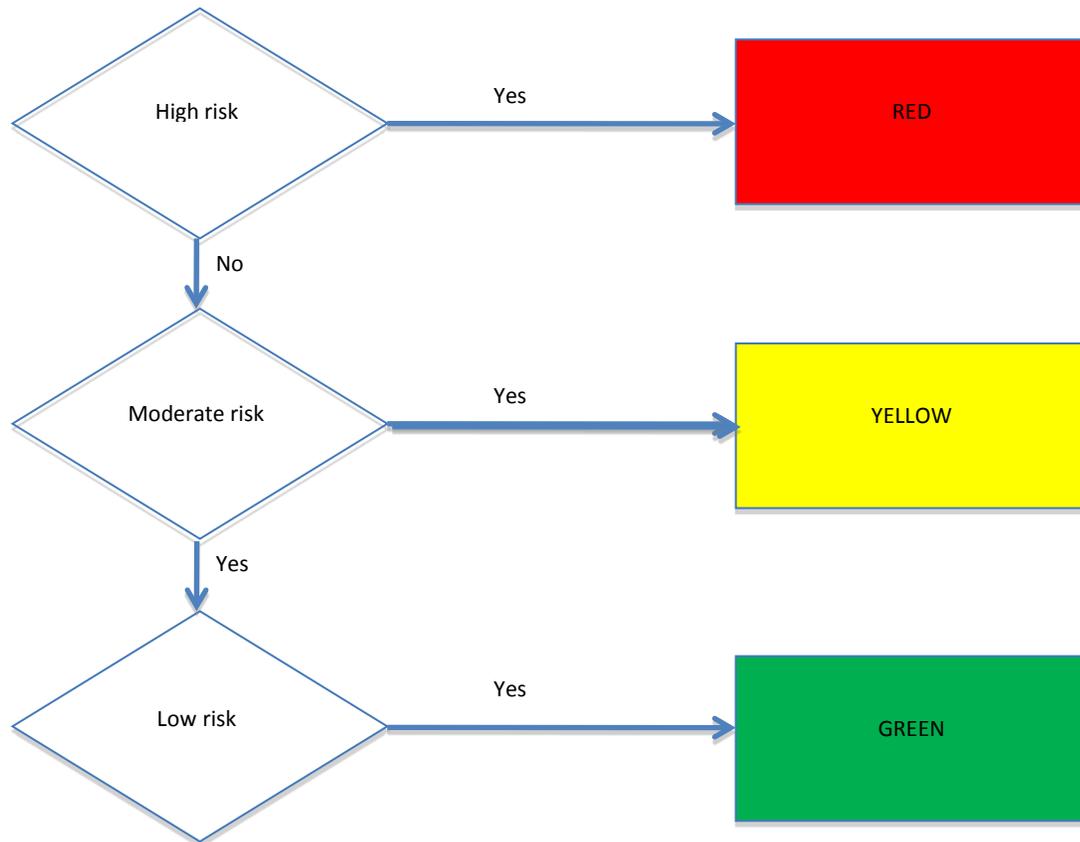
- episodes of repeated reliving of the trauma in intrusive memories ("flashbacks") or dreams;
- a sense of "numbness" and emotional blunting, detachment from other people,
- anhedonia,
- avoidance of activities and situations reminiscent of the trauma.
- dramatic, acute bursts of fear, panic or aggression,
- a state of autonomic hyperarousal with hypervigilance, an enhanced startle reaction,
- Anxiety, depression, insomnia, suicidal ideation and excessive use of alcohol or drugs may be associated with the above symptoms

### **Factors to Consider Pre-Deployment**

- Presence of mental health disorder comorbidity, including drug or alcohol abuse or dependence suggests a poorer prognosis.
- Current medication and psychotherapy regimen.
- History of suicidal ideation or attempt(s).
- History of hospitalizations.
- Current functional level. If the service member is performing satisfactorily in a pre-deployment (i.e. current) occupational setting that is similar to what is expected during the deployment in terms of mental and psychological stressors, then this would be a favorable factor to consider.
- Stability – length of time that member has been performing normal occupational tasks on same treatment regimen.
- Does member require ongoing counseling.
- Deployments can be unpredictable in terms of the demands placed on service personnel, and so this may limit their ability to maintain their current routines for medication.
- The deployed environment may have more exacerbating factors, such as sleep deprivation and mental health and psychological stressors.

### 3.2.14 Respiratory

#### Asthma



#### **High Risk – Do Not Deploy if any of the following are true:**

- Use of systemic (PO or IV) steroids in past 6 months; **OR**
- An asthma-related hospitalizations in last 2 years; **OR**
- Any asthma-related visits to an Emergency Department in past year; **OR**
- Forced Expiratory Volume in 1 second (FEV1) < 50% with treatment; **OR**
- Requirement for physician assessment for asthma more often than once every 3 months; **OR**
- Symptoms likely to be exacerbated by triggers found in theater (e.g. dust or cold weather); **OR**
- Inability to wear personal protective equipment.

#### **Moderate Risk – May Deploy With Caution. If ALL of the following are true**

- A service member who does not meet any of the Red criteria, but who requires regular/daily use of inhaled medication or non-steroidal oral prophylactic medication may be fit for deployment if all of the following are true:
  - Asthma symptoms unlikely to be exacerbated by triggers found in theater (dust, cold weather, strenuous exercise); **AND**
  - Service member able to do full military duties without restriction; **AND**

- The service member requires two or fewer regular prophylactic medications (oral or inhaled) to manage symptoms.

### **Mild risk**

- Disease stable for > 12 months; not exacerbated by exertion, and with only occasional use of rescue medication (and with good response to rescue medication); **AND**
- Service member able to do full military duties without restriction.; **AND**
- Asthma symptoms unlikely to be exacerbated by triggers found in theater (e.g. dust, cold weather, etc) and can wear personal protective equipment (gas mask)

## **Asthma**

### **Brief Definition / Diagnostic Criteria**

Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. Symptoms may occur several times in a day or week in affected service members, and for some people become worse during physical activity or at night. During an asthma attack, the lining of the bronchial tubes swell, causing the airways to narrow and reducing the flow of air into and out of the lungs. Recurrent asthma symptoms frequently cause sleeplessness, daytime fatigue, reduced activity levels and work absenteeism.

The fundamental causes of asthma are not completely understood. The strongest risk factors for developing asthma are a combination of genetic predisposition with environmental exposure to inhaled substances and particles that may provoke allergic reactions or irritate the airways, such as:

- indoor allergens (for example, house dust mites in bedding, carpets and stuffed furniture, pollution and pet dander)
- outdoor allergens (such as pollens and moulds)
- tobacco smoke
- chemical irritants in the workplace; air pollution.

Other triggers can include cold air, extreme emotional arousal such as anger or fear, and physical exercise. Certain medications can trigger asthma, such as aspirin and other non-steroid anti-inflammatory drugs, and beta-blockers.

### **Concept of Using Asthma Severity Scoring System And Applying It To Red-Green-Yellow**

The US National Heart, Lung and Blood Institute asthma severity classification includes: intermittent, mild persistent, moderate persistent and severe persistent. The medical deployment red-green-yellow risk stratification corresponds to asthma severity according to the table below.

**Table 4: Concept of Using Asthma Severity Scoring System And Applying It To Red-Green-Yellow Risk**

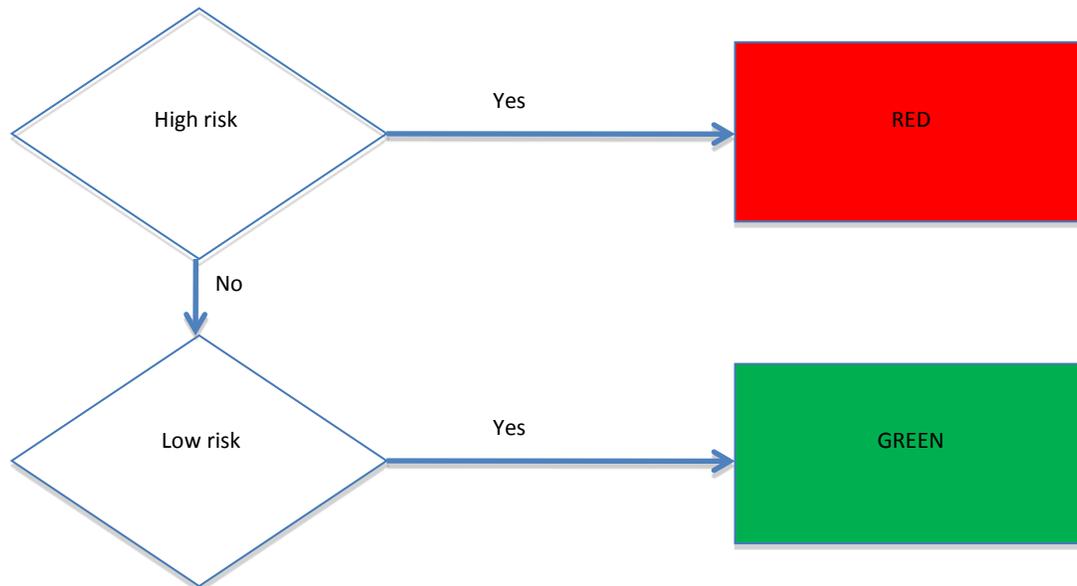
Asthma Severity	Deployment Risk
Intermittent	<b>Green</b>
Mild Persistent	<b>Yellow</b>
Moderate Persistent	<b>Red</b>
Severe Persistent	<b>Red</b>

**Disease Factors to Consider Pre-Deployment**

- Is the service member doing a job now similar to what they will be doing on deployment
- Any hospitalizations or emergency department visits in past 12 months
- How long has disease been stable – same medications and dosages, and good symptom control with no exacerbations
- Current respiratory status (including PEF, FEV1 monitoring )
- How likely will disease precipitating factors be found on deployment. The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains; Allergens; dust, pollen, cold weather, and other precipitants; Sleep (less sleep overall; and disrupted pattern of sleep); Psychological stress; Physical demands (increased demands for aerobic fitness, strength and workload capacity).

### 3.2.15 Surgery

#### Inguinal Hernia



#### **High Risk – Do Not Deploy if any of the following are true:**

- The service member has physical signs and/or symptoms suggesting possibility of an inguinal or abdominal wall hernia, but has not undergone a definitive surgical specialist evaluation to confirm diagnosis and requirement for treatment; **OR**
- The service member has been diagnosed with an inguinal or abdominal wall hernia and is awaiting surgery.
- Surgical repair within the prior 6 weeks.

#### **Low Risk – May Deploy**

- Symptoms suggestive of a hernia, but proven by surgical specialist to be normal and not requiring surgery; and symptoms do not interfere with service member's ability to do full military duties; **OR**
- Has undergone successful surgical repair of a hernia at least six weeks ago and is now judged by the treating surgeon to be fit full duties, including permission to lift heavy loads, and has demonstrated the ability to do so while doing activities (e.g. pre-deployment training) that resemble working conditions in-theater.

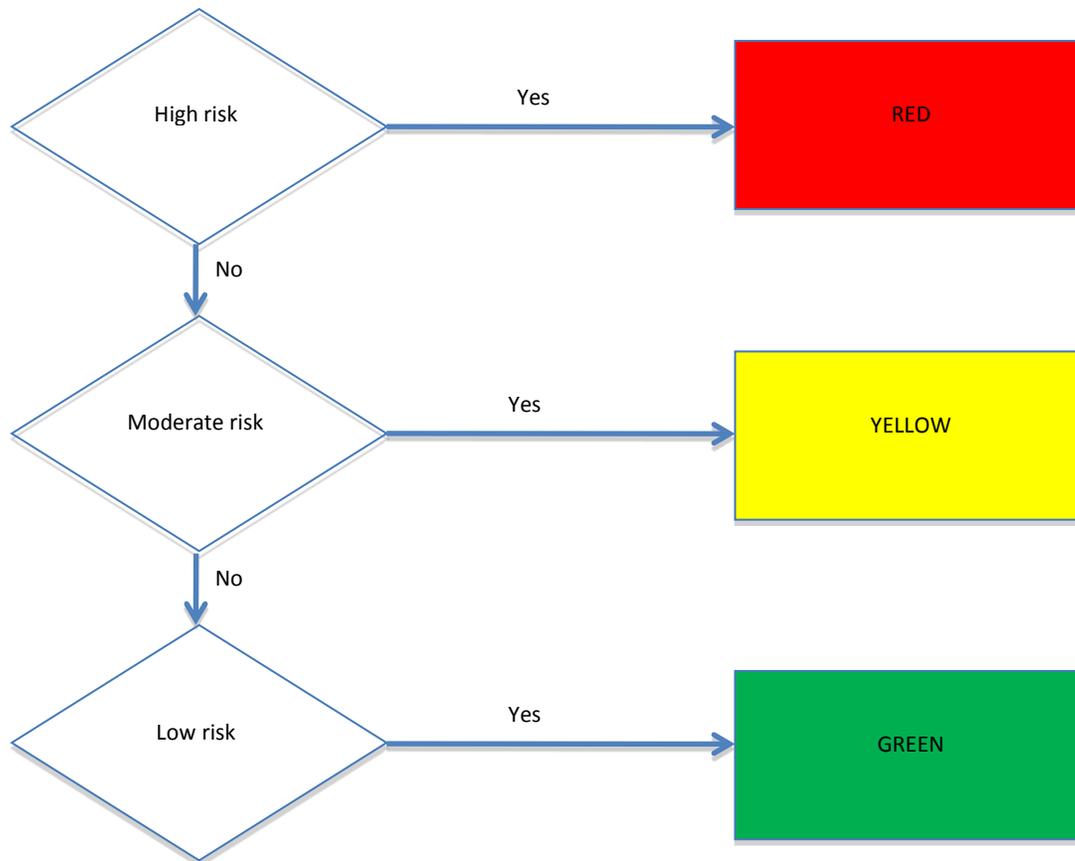
#### **Inguinal Hernia**

#### **Key Factors to Consider Pre-Deployment**

- Has inguinal hernia been definitively ruled out by a surgeon with expertise in inguinal hernias;
- If the service member has had an inguinal hernia operation, are they more than 6-weeks post-surgery and has the surgeon given the person the permission to lift heavy loads; and has the service member demonstrated that they can do so;
- Deployments can be unpredictable and, in an critical, unexpected situation, a service member may be called upon to do highly strenuous tasks (such as repetitive lifting of heavy loads).

### 3.2.16 Vascular

#### Abdominal and Thoracic Aortic Aneurysms



**High Risk – Do Not Deploy if any of the following are true:**

- Aortic or arterial aneurysm which requires a surgical intervention or that is at risk of rupture; **OR**
- Any history of aortic aneurysm that needs follow-up with a vascular surgeon more frequently than every 6 months; **OR**
- Any evidence of aneurysm enlargement during follow-up (i.e. disease is progressive).

**Moderate Risk – May Deploy With Caution. If ALL of the following are true**

- History of a moderate Arterial or Aortic Aneurysm (AA) that is stable during follow-up, **AND**
- No uncontrolled risk factors (e.g. poorly managed hypertension, inactivity; smoking); **AND**
- **If** a surgical repair of the aneurysm was done, then it was done > 6 months ago and is stable, and does not need follow-up more frequently than once per year

**Low Risk – May Deploy**

- Personnel with family history of Abdominal Aortic Aneurysm, who have a negative Duplex screening. **OR**

- Personnel with a proven small abdominal aortic aneurysm (<4 cm) with no requirement for special treatment or frequent follow-up (i.e. no more often than yearly).

### **Vascular Disease: Abdominal and Thoracic Aortic Aneurysms**

Aortic aneurysm is a localized dilation of the wall of the aorta caused by atherosclerosis, hypertension, connective tissue disease such as Marfan's, or less frequently, syphilis. The lesion may be a saccular distension or a fusiform or cylindrical swelling of a length of the vessel. Syphilitic aneurysms almost always occur in the thoracic aorta and usually involve the arch of the aorta. The more common atherosclerotic aneurysms are usually in the abdominal aorta below the renal arteries and above the bifurcation of the aorta. These lesions often contain atheromatous ulcers covered by thrombi that may discharge emboli, causing obstruction of smaller vessels.

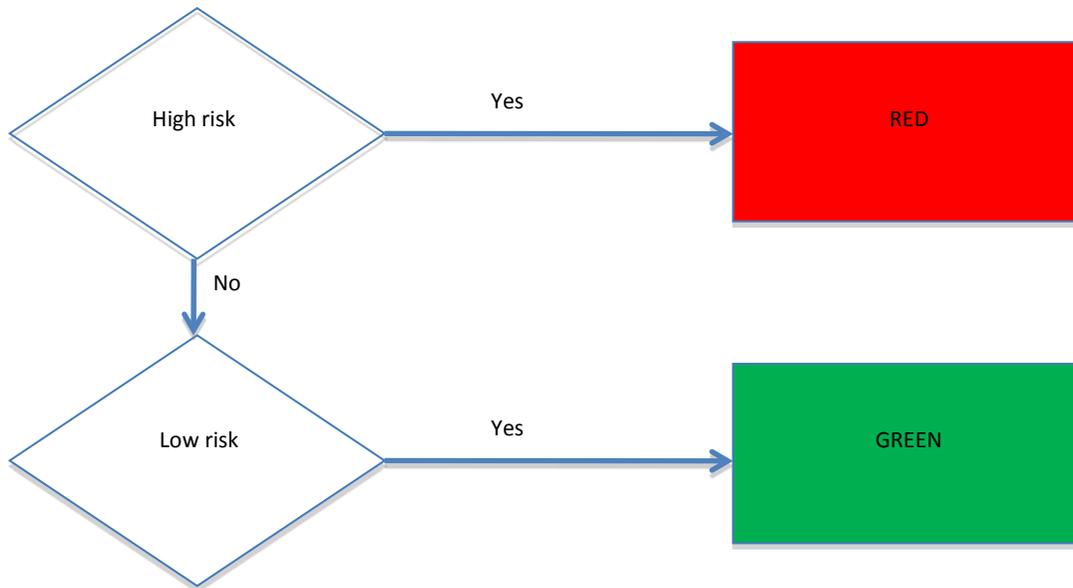
### **Covered separately in this handbook:**

- Venous Insufficiency,
- Pulmonary Embolism; and
- Deep Venous Thrombosis

### **Key Factors to Consider Pre-Deployment**

- Is the service member doing a job now similar to what they will be doing on deployment
- How long has disease been stable – same medications and dosages, and good symptom control with no exacerbations?
- Any hospitalization or emergency department visits in past 12 months?
- Deployments can also require service members to change locations unexpectedly in-theater, bringing them new environmental challenges, and less access to medical care
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

## History of Pulmonary Embolism (PE) or Deep Venous Thrombosis (DVT)



### **High Risk – Do Not Deploy if any of the following are true:**

- Anyone on anti-coagulant therapy; **OR**
- A history of more than one DVT (i.e. the disease has proven to be recurrent); **OR**
- A history of major/proximal DVT; **OR**
- DVT with evidence of a Post Thrombotic Syndrome (PTS); **OR**
- A history of large PE with evidence of a permanent functional limitation which prevents service member from doing full military duties.

### **Low Risk – May Deploy**

- A single, uncomplicated idiopathic or secondary DVT which has been stable for at least 3 months after completing treatment; **AND**
- No permanent significant limitation in physical capacity or impaired cardiopulmonary function; **AND**
- Medical specialist assessment and military review board have confirmed that the disease is unlikely to be recurrent.

### **Vascular Disease: History of Pulmonary Embolism or Deep Venous Thrombosis**

#### **Covered separately in this handbook:**

- Venous Insufficiency,
- Pulmonary Embolism and
- Deep Venous Thrombosis

#### **Definition**

Deep vein thrombosis (DVT) is a disorder involving a thrombus in one of the deep veins of the body, most

commonly the iliac or femoral vein. Symptoms include tenderness, pain, swelling, warmth, and discoloration of the skin. A deep vein thrombus is potentially life threatening. Treatment, including bed rest and use of thrombolytic and anticoagulant drugs, is directed to preventing movement of the thrombus toward the lungs.

Pulmonary embolism is the obstruction of a pulmonary artery due to the presence of air, fat, blood clot, or a tumor. In general, the obstruction originates from a peripheral vein, which is most frequently located in the legs. Symptoms such as labored breathing, shock, chest pain, and cyanosis appear and are similar to those of pneumonia or a myocardial infarction.

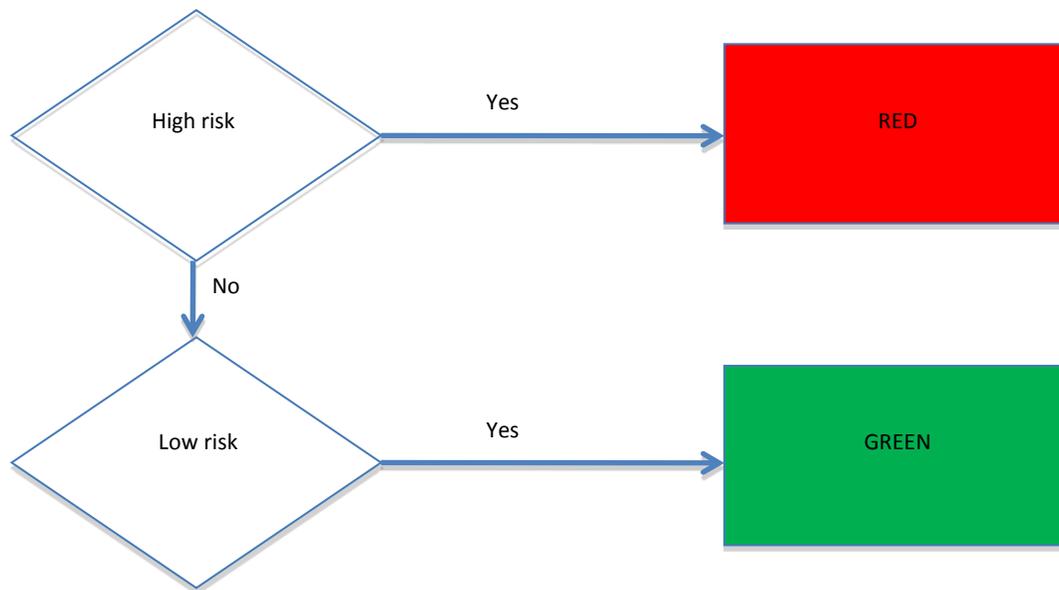
### **Prognosis**

Most DVT are asymptomatic and usually resolves spontaneously without complication. The principal long-term morbidity from DVT is PTS, which complicates about a quarter of cases of symptomatic proximal DVT; most cases develop within 2 years after the DVT.

### **Key Factors to Consider Pre-Deployment**

- Is the service member doing a job now similar to what they will be doing on deployment
- How long has disease been stable – same medications and dosages, and good symptom control with no exacerbations.
- Deployments can require service members to change locations unexpectedly in-theater, bringing them new environmental challenges, and less access to medical care
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

## Venous Insufficiency



### **High Risk – Do Not Deploy if any of the following are true:**

- Any current symptomatic varicose pathology with significant functional impairment or edema or interference with wearing normal equipment including boots; **OR**
- Any history of varicose veins in the lower limbs with chronic significant skin pathology, such as hypodermatitis, and/or skin ulcers, that has not yet been treated definitively.

### **Low Risk – May Deploy**

- Personnel with a history of mild to moderate varicose veins which do not cause any loss of function (e.g. exercise intolerance) and which can be managed conservatively (e.g. compression stockings); **OR**
- Personnel with a history of vascular surgery for varicose veins, which has proven to be successful; **OR**
- Any history of superficial venous pathology, successfully treated by sclerotherapy or laser therapy.

### **Vascular Disease: Venous Insufficiency**

Venous insufficiency is an abnormal circulatory condition characterized by decreased return of venous blood from the legs to the trunk of the body. Edema is usually the first sign of the condition. Pain, varicosities, and ulceration may follow. Treatment usually consists of elevation of the legs, use of elastic hose, and correction of the underlying condition.

### **Covered separately later in this workbook are:**

- Abdominal Aortic Aneurysms,
- Pulmonary Embolism and
- Deep Venous Thrombosis

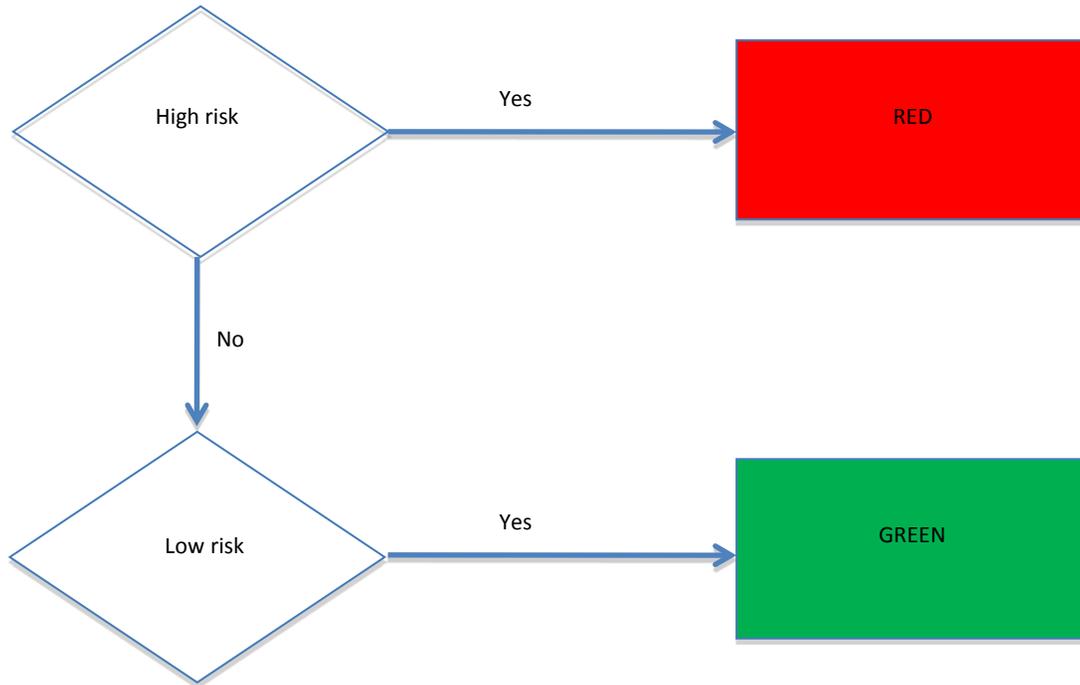
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### **Key Factors to Consider Pre-Deployment**

- Is the service member doing a job now similar to what they will be doing on deployment.
- How long has disease been stable – same medications and dosages, and good symptom control with no exacerbations.
- Any hospitalizations or emergency department visits in past 12 months.
- Deployments can require service members to change locations unexpectedly in-theater, bringing them new environmental challenges, and less access to medical care.
- The deployed environment may have more precipitating factors for most diseases, including increased demands and stress across the following domains;
  - Sleep (less sleep overall; and disrupted pattern of sleep)
  - Diet (types of foods and irregularity of meals)
  - Psychological stress
  - Physical demands (increased demands for aerobic fitness, strength and workload capacity)

### 3.2.17 Vision / Ophthalmology

#### Refractive Surgery



#### **High Risk – Do Not Deploy if any of the following are true:**

- The service member is still using ophthalmic steroid drops post-procedure; **OR**
- The attending ophthalmologist or optometrist determines that the refractive surgery recovery is NOT complete ; **OR**
- Less than three months following uncomplicated PRK and related “surface ablation” procedures such as laser epithelial keratomileusis (LASEK); **OR**
- Less than one month following uncomplicated LASIK

#### **Low Risk – May Deploy**

- The attending ophthalmologist/optometrist determines that post-surgical recovery is complete **AND**
- The timelines described above in the RED section have been satisfied; **AND**
- The service member now meet’s their nation’s medical standards for vision; **AND**
- There are no complications (e.g. night flares; halos; haze) that interfere with the service member’s ability to do full military duties.

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## **Refractive Eye Surgery**

### **Brief Definition / Diagnostic Criteria**

For the purpose of this guidebook, refractive surgery reflects to any of the continually evolving surgical approaches to improving the visual acuity of a service member.

**Photorefractive keratectomy (PRK)** is a procedure that uses an excimer laser to make modifications to the cornea and permanently correct myopia.

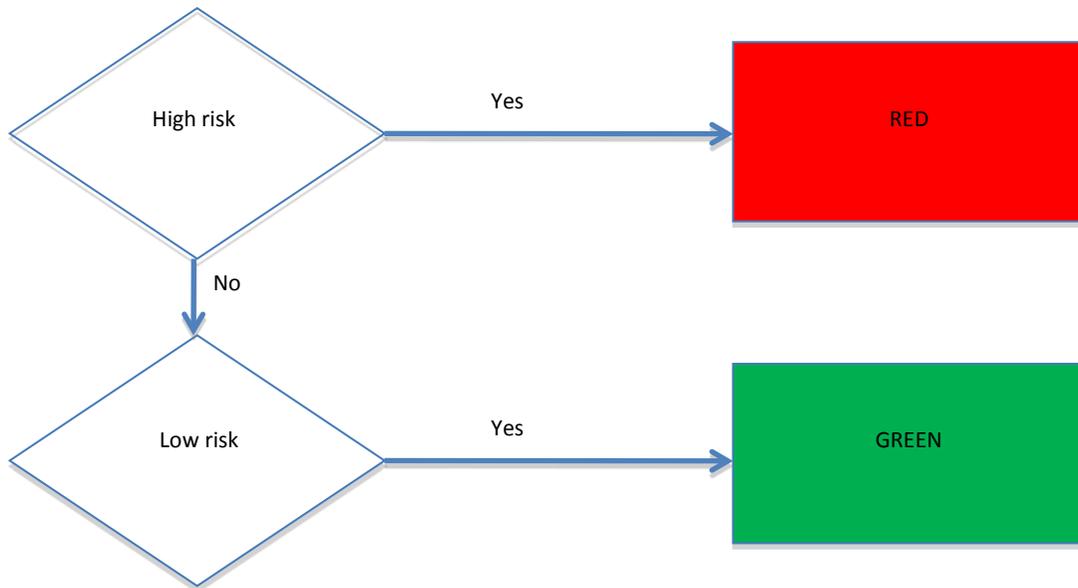
**Laser-assisted in-situ keratomileusis (LASIK)** is a procedure that uses a cutting tool and a laser to modify the cornea and correct moderate to high levels of myopia.

**Laser assisted epithelial keratomileusis (LASEK)** is a modification of LASIK but is less invasive than LASIK and appears to give rise to fewer complications.

### **Factors to Consider During Pre-Deployment Medical Screening**

- Type of surgical procedure performed.
- Post-operative course, including any complications.
- Complete and current eye specialist evaluation after sufficient post-operative period which confirms medical fitness to deploy
- Some refractive surgery procedures lead to chronic problems with “haze” (or night flares or halos) which may affect the ability to perform in low-light conditions
- Some deployed occupations have specific visual requirements that could be affected by refractive surgery

## Visual Impairment



### **High Risk – Do Not Deploy if any of the following are true:**

- The service member's best corrected visual acuity does not meet the occupational or retention standards of their national military; **OR**
- The service member has another visual problem (cataracts; night blindness; scotomata, etc) that is currently affecting the service member's ability to do full military duties;

### **Low Risk – May Deploy**

- Best corrected visual acuity does meet the minimum occupational or retention standards of their national military;

## **Visual Impairment**

### **Brief, Military-Focused Definition / Diagnostic Criteria**

Visual impairment is common throughout the world and has many etiologies. Within the sub-population of military personnel, myopia would be the most common cause of visual impairment in this age group. Myopia is nearsightedness or ametropia in which parallel rays come to a focus in front of the retina, vision being better for near objects than for far.

### **This Guide Focuses on Meeting the National Military Visual Standards of their Country**

Although standards vary, the following minimum standard is commonly used: the service member has visual acuity that can be corrected with ordinary spectacle lenses, to at least the following:

- 20/40 in one eye and 20/100 in the other; **OR**
- 20/20 in one eye and 20/400 in the other

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### **Factors to Consider During Pre-Deployment Medical Screening**

- Military personnel should have a complete and current eye specialist evaluation
- Service members may need to operate in conditions of low-lighting.
- Corrective vision eyewear must be compatible with gas mask and other goggle/eyewear equipment, for certain deployments.
- Spectacles may be lost or damaged and not easily or quickly replaced (hence the advantage of having multiple pairs).
- There are some types of color blindness that would be particularly dangerous in certain deployed occupations (recognizing red/yellow warnings; recognizing different colored wires on an inflammatory/explosive device).
- Depth perception is an important ability for firing a weapon accurately.

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## Annex A-1: Historical Record of Work Done by HFM RTG 174: Medical Fitness for Expeditionary Missions

### Record of Meetings

Date	Location	Synopsis
Sep 2008	Paris, FRA	<ul style="list-style-type: none"> <li>• This was the first meeting of HFM – RTG 174: Medical Fitness for Expeditions.</li> <li>• Each country presented their approach to setting medical standards for deployments.</li> <li>• The USA gave additional presentations entitled: “Developing a DoD policy on medical fitness for deployment”, and “The development of a prediction tool for ensuring individuals are medically able to accomplish their duties in deployed environments.”</li> <li>• Initial discussion of the concept of developing a web-based tool that had a section that dealt with the generalities of assessing medical fitness for deployment, and another section that would address specific diseases/illnesses of sufficient prevalence and significance to potentially affect deployment success.</li> </ul>
Apr 2009	San Diego, USA	<ul style="list-style-type: none"> <li>• Defining what success might look like.</li> <li>• Identifying likely challenges /obstacles and strategies to overcome them.</li> <li>• Discussing the potential of using a “Red-Yellow-Green” classification system for screening.</li> <li>• Beginning to identify the criteria by which the specific diseases would be selected.</li> </ul>
Sep 2009	Brussels, BEL	<ul style="list-style-type: none"> <li>• Briefing from LCol Wassink: “Intro to RNLA Medical Assessment System.”</li> <li>• Ongoing progress on developing the list of specific diseases.</li> <li>• The following specific diseases were reviewed in detail: anxiety; kidney stones; loss of consciousness; seizures; allergies/anaphylaxis; musculoskeletal limb ailments and cardiac disease.</li> </ul>
May 2010	Amsterdam	<ul style="list-style-type: none"> <li>• Further progress made in developing guidelines and Red-Green-Yellow criteria for the list of specific diseases. Over one-half of the list of thirty diseases now reviewed, although the best format for presenting this information was still evolving.</li> <li>• This meeting also began to finalize the definitions and assumptions that were the foundation of all of the work we were doing.</li> <li>• Strategies to Increase Participation of Other Countries</li> <li>• Approach to engaging Medical Specialists in Deliberations</li> <li>• Approach to engaging Medical Chain of Command in our own and other NATO countries</li> <li>• Update the list of Specific Diseases being covered</li> </ul>

Dec 2010	Cyprus (Hosted by GBR)	<ul style="list-style-type: none"> <li>• Developing and refining - Chapter 1, - General Guidance.</li> <li>• Ongoing review of the specific diseases.</li> <li>• Further progress on agreeing on the overall format and structure of the guidebook and its individual sections</li> <li>• Clarifying the Red-Green-Yellow Stoplight System and ongoing debate re the advantages of having a “Yellow” category or not having one.</li> <li>• Ongoing discussions regarding the Pros and Cons of Introducing “Waivers” Into the Guidebook</li> </ul>
May 2011	Finland	<ul style="list-style-type: none"> <li>• This meeting held in conjunction with <i>Second International Congress on Soldier’s Performance</i>.</li> <li>• LCol Russell delivered podium presentation at the Conference on the work done so far.</li> <li>• Other work that was done in Finland, included;</li> <li>• Finish Review of Specific Diseases</li> <li>• Agree on Website Homepage &amp; Functions</li> </ul>
Sep 2011	Cologne, GER	<ul style="list-style-type: none"> <li>• Review Timeline &amp; Tasks for Completing Our Work</li> <li>• Agree on Draft of General Guidance (1<sup>st</sup> half of tool)</li> <li>• Agree on Website Homepage &amp; Functions</li> <li>• Draft Implementation &amp; Marketing Plan</li> </ul>
Apr 2012	Washington, USA	<ul style="list-style-type: none"> <li>• Editing and production of the guidelines into a sufficiently finished state so that it could be more broadly circulated within NATO community and feedback sought.</li> <li>• Develop Plan to “Test” Tool With Real Users</li> </ul>
Sep 2012	Ottawa, CAN	<ul style="list-style-type: none"> <li>• Review and reconciliation of feedback received.</li> <li>• Review of entire final guideline document</li> </ul>

*Note:* Meetings typically ran for 2 ½ - 3 days.

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## **Annex B-1: Challenges and Obstacles**

### **Lack of Evidence**

Lack of evidence-based information related to the effect of pre-existing chronic medical conditions on deployment.

### **Lack of Widespread Participation On RTG 174**

- Fewer countries on RTG than hoped;
- No countries agreed to participate via internet/telecom updates; and
- Lack of initial response seeking feedback from other NATO countries to our specific questions about diseases.

### **Initial Difficulties Gaining Consensus Within RTG 174**

This was to be expected as the RTG members attempted to reconcile varying national approaches and philosophies that underlie the question about what standards should be used in assessing a soldier's fitness for deployment.

### **Potential Pitfalls During Implementation**

- Lack of support from leadership
- Information not getting to into hands of user
- Information rejected/not used

### **Gaining Expert Clinical /Specialist Support**

Difficulty finding complete agreement within a group of specialists on a clinical topic where there is little hard evidence, such as deployment medical standards.

### **Sustainability of the Tool & Keeping It Current**

The intention is to have this tool adopted as a STANAG, which will then require it to be reviewed and updated on a regular basis. Possibility of going thru website and entering a patient identifiers code (kept separate and distinct from any patient identifiers) and a description of disease characteristics and then later use the tool to enter data to indicate if the individual completed deployment successfully

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## **Annex C-1: Wavier Process**

### **The Option of Using a Medical Waiver Process To Deploy Service Members With Disqualifying Medical Conditions**

A medical waiver, sometimes referred to as “an exception to policy”, is when a nation decides to deploy a service member even though that member does not meet the minimum medical fitness standard for the deployment. Depending upon the nation’s policy on this issue, a waiver reflects a deliberate, conscious decision by the Commander, or by a Medical Review Board or senior medical authority, or some combination of these elements.

For example, a Commander may decide that a service member’s occupation or the individual skills or knowledge (e.g. fluency in a particular foreign language) is critical and in short supply for the Unit Mission. In this case, the Commander may decide that the need for that particular individual on the deployment outweighs the medical risks and approve the deployment of this service member. In these cases, the process for how this occurs does not involve changing the medical assessment. Rather the medical assessment and recommendations remain unchanged, and the Commander simply elects to approve the deployment of the service member (e.g. grants a waiver)

Alternatively, a Commander may request a senior medical authority or medical review board to reassess the member’s medical fitness in the context of the specific deployment and likely work to be done by the individual, and the medical board may decide the individual soldier is medically fit for the specific deployment and task in question.

If a nation decides to deploy an individual who has a positive *Red* criterion, or is being deployed even though they do not meet the normal deployment medical standards for their country, then that member’s deployment should be tracked in terms of the five elements of a successful deployment (see “Terms of Reference”) and the information used to update this Guidebook. Some countries may also decide to track members who have screened as *Yellow*.

## Annex D-1: Cardiovascular screening algorithm for Over 40 year old Service members

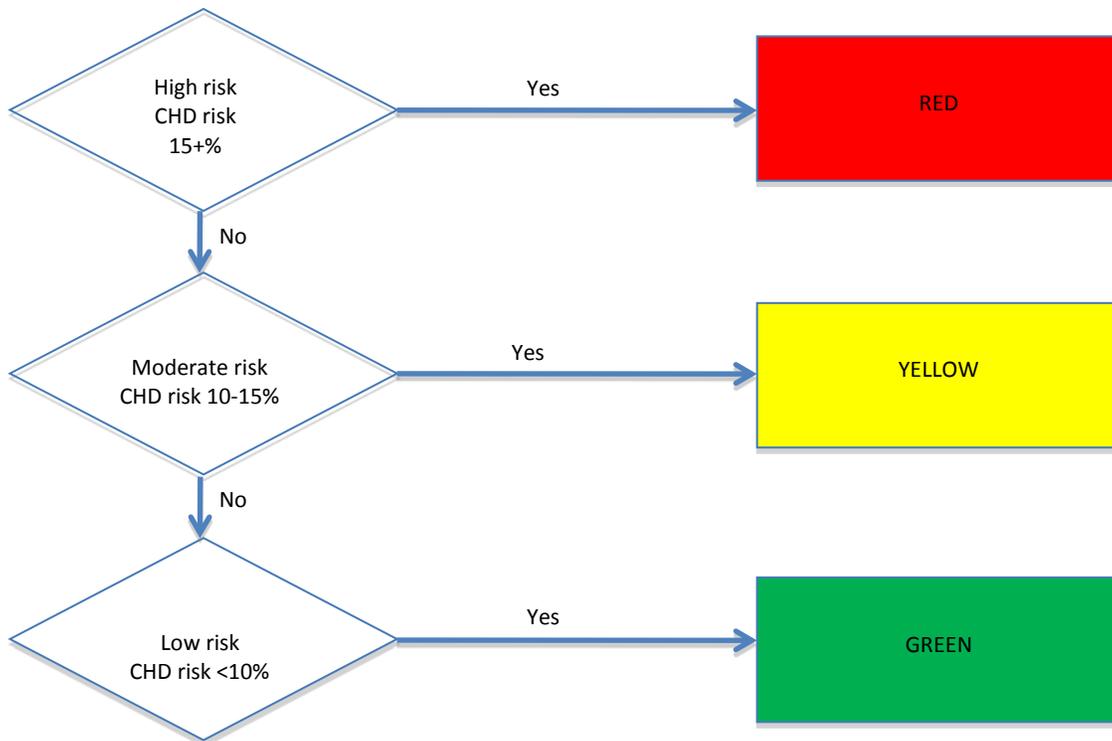
This annex applies to service members with no history of coronary heart disease (CHD) and history of cardiac procedures/interventions. Service members who are 40 years of age or older must have a Framingham 10-year CHD risk percentage calculated (National Cholesterol Education Program (NCEP), (2002), (National Cholesterol Education Program, (2013)).

### Key Cardiovascular Disease Risk Factors to Consider Pre-Deployment

- Family history of early coronary artery disease
- Smoking
- Hyperlipidemia
- Diabetes Mellitus
- Abdominal girth
- Physical activity level
- Hypertension

Individuals at increased risk for CHD are to be identified for primary preventive risk factor reduction interventions and possibly for consultation with a cardiac specialist pre-deployment.

**Figure1: Cardiovascular Screening Algorithm for Over 40 years old Service Members**



### **High risk of cardiac event**

- The individual has a calculated CHD-risk of 15% or greater without a cardiology diagnostic evaluation; **OR**
- The individual has an abnormal cardiology diagnostic evaluation, **OR**
- The individual has a CHD-risk equivalent disease\* and an abnormal cardiac diagnostic evaluation

### **Moderate risk**

- Individuals may be deployed with caution if they have either one of the following:
  - Metabolic syndrome; **AND/OR**
  - Calculated 10-year CHD risk (e.g. Framingham) is 10 to 15% or greater and sub-optimal risk factor reduction

### **Low risk**

- May be deployed if either one of the following is true;
  - Calculated 10-year CHD risk (e.g. Framingham) is less than 10%; **OR**
  - Normal cardiac diagnostic by a military cardiac or internal medicine specialist who judges that the individual is fit for full duties with no restrictions on activities and does not require medical follow-up more frequently than every three to six months.

### **\*CHD equivalent diseases**

- peripheral arterial disease
- abdominal aortic aneurysm
- symptomatic carotid artery disease
- diabetes mellitus

### **Cardiac diagnostic evaluation** any of the following:

- graded exercise test
- myocardial perfusion scintigraphy
- stress echocardiography

### **Metabolic Syndrome Definition**

- Three or more of the following: waist > 40 inches for males and > 35 inches for females; triglycerides > 150 mcg/dl; blood pressure >130/85 mm Hg; HDL < 40 mg/dl; fasting blood glucose > or equal to 110 mg/dl) are at increased risk for coronary artery disease and should be reevaluated at least annually.
- Service members with metabolic syndrome must be treated aggressively using a multimodal approach including pharmacologic therapy, weight reduction, diet counselling, exercise and control of other risk factors.
- Consider cardiac diagnostic evaluation for metabolic syndrome

## Annex E-1: List of Medications That Are Normally Disqualifying for Deployment\*

### 1. **Blood modifiers:**

- a. **Therapeutic Anticoagulants:** warfarin (Coumadin®).
- b. **Platelet Aggregation Inhibitors or Reducing Agents:** clopidogrel (Plavix®), anagrelide (Agrylin®), Dabigatran (Pradaxa®), Note: Aspirin use in theater is to be limited to individuals who have been advised to continue use by their healthcare provider for medical reasons; such use must be documented in the medical record.
- c. **Hematopoietics:** filgrastim (Neupogen®), sargramostim (Leukine®), erythropoietin (Epogen®, Procrit®).
- d. **Antihemophilics:** Factor VIII, Factor IX.

2. **Antineoplastics:** (oncologic or non-oncologic use): e.g., antimetabolites (methotrexate, hydroxyurea, mercaptopurine, etc.), alkylators (cyclophosphamide, melphalan, chlorambucil, etc.), antiestrogens (tamoxifen, etc.), aromatase inhibitors (anastrozole, exemestane, etc.), medroxyprogesterone (except use for contraception), interferons, etoposide, bicalutamide, bexarotene, oral tretinoin (Vesanoid®).

3. **Immunosuppressants:** e.g., chronic systemic steroids.

4. **Biologic Response Modifiers (immunomodulators):** e.g., abatacept (Orencia®), adalimumab (Humira®), anakinra (Kineret®), etanercept (Enbrel®), infliximab (Remicade®), leflunomide (Arava®)

5. **Antipsychotics:** Including atypical antipsychotic medication.

6. **Antimanic (bipolar) agents:** e.g., lithium.

7. **Anticonvulsants:** used for seizure control or psychiatric diagnoses.

- a. **Anticonvulsants** (except those listed below) which are used for *non-psychiatric* diagnoses, such as migraine, chronic pain, neuropathic pain, and post-herpetic neuralgia, are not deployment limiting as long as those conditions meet the criteria set forth in this document.
- b. **Valproic acid** (Depakote®, Depakote ER®, Depacon®, etc.).
- c. **Carbamazepine** (Tegretol®, Tegretol XR®, etc.).

8. **Varenicline (Chantix®).**

9. **Opioids, opioid combination drugs, or tramadol:** (Ultram®), chronic use.

10. **Insulin and exenatide:** (Byetta®).

\*Note: Adapted from USCENTCOM 021922Z DEC 11 MOD ELEVEN TO USCENTCOM INDIVIDUAL PROTECTION AND INDIVIDUAL-UNIT DEPLOYMENT POLICY-USCENTCOM

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## **Annex F-1: Example of a Medical Profiling and Periodic Health Assessment Systems**

### **I. Introduction**

- A. Purpose of This Annex
- B. Goals of a MPS and a PHA System
- C. Desired Characteristics of a MPS/PHA System
- D. Assumptions

### **II. Periodic Health Assessments (PHA)**

- A. Purpose of the PHA System
- B. PHA Schedule
- C. PHA Content

### **III. Medical Profile System (MPS): The Basics**

- A. Use of Red-Yellow-Green Matrix Chart – Risk & Consequence of Exacerbation
- B. Risk-based Medical Employment Limitations (MEL)
- C. Likelihood of exacerbation
- D. Consequence & Severity of exacerbation
- E. Temporary Profiles/Categories versus Permanent Profiles
- F. Role of Medical Review Board
- G. Role of Waiver or “Exception to Policy” Process

### **IV. Specific Examples of How Medical Employment Limitations and Recorded in the Medical Profile**

- A. Medical Profile System (MPS): Option 1 – Functional Approach
- B. Medical Profile System (MPS): Option 2- Body System Approach

### **V. Using the MPS to Assess Medical Fitness for Deployment**

- A. Common Tasks That All Military Personnel Should be Able to Perform During a Deployment
  - B1. Common Task Statement Physical
  - B2. Common Task Statements Stress/Mental Health

## Annex F-1.1: Introduction

### A. Purpose of This Annex:

The focus of this Annex will be on the Medical Profiling System (MPS); however, there will also be some discussion about the Periodic Health Assessment (PHA), because the two systems work closely together.

The two examples of a Medical Profiling System (MPS) described in this Annex are **not** intended to replace any nation's current MPS/PHA system. These examples may be helpful to those nations who do not currently have an MPS/PHA system, or who are looking to revise the system they use now.

### B. Goals of An MPS/PHA System

The system proposed in this Annex achieves the following goals;

- The integration of the Regular Periodic Health Assessment (PHA) with the Medical Profile System (MPS);
- Assigning a Medical Profile (MP) to every service person which succinctly conveys the essential information to the chain-of-command about the member's medical fitness to do occupational tasks in each of the following two settings;
  - Daily occupational role; and
  - In-Theatre/Deployed Environment
- Optional: The MPS can also be adapted for use for medical accession (i.e. for medical screening of applicants enrolling in the military).

### C. Desired Characteristics of An MPS/PHA System

- Reliability: Different physicians who independently assessed the same individual would assign the same profile.
- Validity: The profile accurately reflects the medical status of the member in a manner that is useful for decision-making in all aspects of a military member's career; accession; promotion; deployment; retention.
- Ease of Use: The system is simple to understand (by physicians, ordinary military personnel and their leaders) and could be put into use in any country with minimal training requirements.
- International: The system could work in any country's military.

### D. Assumptions

- The MP (Medical Profile) Must be Kept Current: The MP would be assigned at enrollment and then updated as required when a Periodic Health Assessment (PHA) was done or upon a change in health status.
- Common Task Statements for Deployed Operations: There is a common, minimum set of tasks that all deployed service members, independent of their occupation, should be able to do. This is discussed further below.
- Confidentiality of Medical Information: In some countries, Commanders (i.e. non-medical Commanders) are only entitled to know the medical restrictions or limitations, and the prognosis and

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timelines for recovery; they are not entitled to know the member's diagnosis.

- Disease Variability: The same disease may vary significantly in intensity (e.g. mild versus severe asthma) and also the same disease severity may affect different individuals in different ways. For example, there may be one service member with mild osteoarthritis (as seen on x-ray) who cannot do a lot of physical tasks, and another individual with the same mild osteoarthritis who can do very demanding physical tasks without restrictions.

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## **Annex F-1.2: Periodic Health Assessments**

### **A. The Purpose of the Periodic Health Assessment (PHA) System**

- Provide an opportunity for the member to bring non-urgent health concerns to the attention of their physician;
- Identify diseases and conditions that are affecting the health of the member;
- Provide screening for medical conditions known to be associated with occupational exposure in a military environment;
- Provide risk-related screening and primary prevention in the interest of protecting the member's future health;
- Assess life-style habits and provide health recommendations with respect to diet, physical activity and stress management, and assess for high risk behaviour such as alcohol/ drug use, gambling, smoking, and unsafe sex;
- Institute appropriate counseling and/or interventions and follow-up to address identified or potential health concerns;
- Verify and update immunization status;
- Assess impact of diseases and conditions on the performance of military duties;
- Reaffirm or amend the MPS profile / category and any medical duty restrictions for administrative and personnel management reasons; and,
- Gather population data

### **B. PHA Schedule**

One example of a PHA schedule is to conduct the PHA at a minimum of every five years for members under 40 years of age, and every two years for members over 40, normally within one month of the member's birthday. Some nations may choose to conduct the PHA more frequently than this, or to adjust the schedule in alignment with the most current evidence-based epidemiologic studies on PHA schedules.

It is the responsibility of the member to ensure that their individual PHA is current. The member's command unit shall monitor the PHA currency status of all Unit members, and establish procedures to ensure all Unit members maintain currency. Some may choose to have their Medical Services Units develop reminder systems in collaboration with local operational Units to notify members and their units when MPS/PHAs are about to expire.

### C. The Content of the PHA

To reflect the most current epidemiological evidence, and normally carried out under the following domains:

- History: To include a review of systems.
- Physical Examination: focused based on the history
- Disease Screening: Examples include - Cardiovascular; cancer (e.g. prostate; breast; cervical; etc), mental health issues (e.g. addiction; depression, post-traumatic stress, etc), visual and hearing testing.
- Diagnostic Investigations: Examples include - Blood tests; urine screen; electrocardiogram (as clinically indicated); chest x-ray (as clinically indicated)

## Annex F-1.3: Medical Profile Categories: The Basics

### A. Use of Red-Yellow-Green Matrix Chart – Risk & Consequence of Exacerbation

- 1 = Green: Can complete occupational and common military tasks without restriction and does not require medical follow-up more frequently than every 6 months (individual nations may choose to set a different time parameter).
- 2 = Yellow: Can do most occupational and common military tasks without restriction, but may be limited in duration, or frequency, or performance for some tasks.
- 3 = Red: Significant limitations affecting ability to do occupational and common deployment-military tasks.

### B. Risk-based Medical Employment Limitations (MEL)

Risk-based MELs are an approach to help physicians better analyze the medical fitness of an individual for a deployment by combining two key informational components of risk: the risk of an exacerbation, and the consequences (clinical and operational) if such an exacerbation were to occur. This colour-coded chart graphically reflects how these two components of risk interact.

**Table 5: The Red-Yellow-Green Pre-Deployment Risk Medical Screening Decision Matrix**

Probability of Disease Exacerbation	Consequences of Disease Exacerbation		
	Low	Moderate	High
Low	Green	Green	Yellow
Moderate	Green	Yellow	Red
High	Yellow	Red	Red

### C. Likelihood of exacerbation

The objective is to use whatever evidence and clinical expertise is available to assign a degree of risk that the service member with a chronic medical condition will have an exacerbation of their disease state over a predetermined period of time. As an example, one approach to quantifying this risk might be over a period of 1 year, the risk of recurrence is estimated to be one of the following:

- Minimum risk: less than 10%
- Low risk: between 10 – 20%
- Medium Risk: between 20 – 50%
- High Risk: greater than 50%

#### **D. Consequence & Severity of exacerbation**

The objective here is to assign a degree of severity of incapacitation and the need for medical attention, if the individual experienced an exacerbation (for example, during a deployment). The following is an example of one simple approach to quantifying these factors.

- **LOW:** In the event of a recurrence, the member will require basic levels of medical attention, in an ambulatory setting provided by medical technicians or physician assistants, within XX *days*. They will be able to continue to do the majority of their military tasks, but may require some restrictions or need more time to complete them.
- **MODERATE:** In the event of a recurrence, the member will require moderate levels of medical attention in an ambulatory setting provided by a primary care physician, within XX *hours*. They will be able to do about one-half of their military tasks.
- **HIGH:** In the event of a recurrence, the member will require significant levels of medical attention, in an ambulatory or inpatient setting by physician specialists, within XX *minutes* and will be unable to perform the majority of basic military duties.

#### **E. Temporary Profiles/Categories versus Permanent Profiles**

Temporary Profiles are used to restrict individuals from doing certain military or occupational tasks for a specific period of time, usually because of the assumption that the individual will improve during that period of time and will likely require fewer or no restrictions once the temporary profile period has elapsed. Temporary profiles are limited in duration, for example, to a period of 1 – 6 months, depending on the individual situation. Nations may consider having a maximum upper limit for the period of time an individual may be on a temporary profile before it becomes necessary to be assigned a new permanent profile. The permanent profiles should be re-evaluated whenever a PHA is done, or whenever the medical condition of the individual changes in a way that affects their ability to do full military tasks and duties.

#### **F. Role of Medical Review Board**

Typically three physicians including appropriate specialists must review the service members medical condition(s), and concur with the diagnosis and the occupational and military duties limitations specified.

#### **G. Role of Waiver or “Exception to Policy” Process**

A medical waiver, sometimes referred to as “an exception to policy”, is when a nation decides to deploy a service member even though that member does not meet the minimum medical fitness standard for the deployment. Depending upon the nation’s policy on this issue, a waiver reflects a deliberate, conscious decision by the Commander, or by a Medical Review Board or senior medical authority, or some combination of these elements.

For example, a Commander may decide that a service member’s occupation or the individual skills or knowledge (e.g. fluency in a particular foreign language) is critical and in short supply for the Unit Mission. In this case, the Commander may decide that the need for that particular individual on the deployment outweighs the medical risks and approve the deployment of this service member. In these cases, the process for how this occurs does *not* involve changing the medical assessment. Rather the medical assessment and

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recommendations remain unchanged, and the Commander simply elects to approve the deployment of the service member (e.g. grants a waiver).

Alternatively, a Commander may request a senior medical authority or medical review board to reassess the member's medical fitness in the context of the specific deployment and likely work to be done by the individual, and the medical board may decide the individual soldier is medically fit for the specific deployment and task in question.

## **Annex F-1.4: Specific Examples of How Medical Employment Limitations and Recorded in the Medical Profile**

Each one of the following items would be scored as a minimum of three numbers (or letters). For example, 1, 2 and 3 would correspond to green; yellow; red. Or there could be more than three numbers such that, within a given colour category, there could be more than one number to reflect degrees of limitations/constraints. The key point is to use the high, moderate, low risk (colour code) concept; but how the numbers or letters are assigned may vary by nation.

### **A. Medical Profile System (MPS): Option 1 - Based on Functional Approach**

The Categories (Domains) Based on Functional Approach

- **Occupational:** For example, the member may be excluded from aviation, chemical, nuclear, special forces. The member may be restricted from roles where there is increased psychological stressors.
- **Geographic:** For example, the member may be excluded from hot or cold environments.
- **Physical:** For example, the individual may have limitations in lifting, carrying, running, marching.
- **Deployability:** For example, the member may be restricted from being deployed to immature theaters with limited medical capabilities, or more broadly restricted from any deployed operational setting. This category/domain would assess the need for regular access to care providers (either by primary care versus specialist) providers, as well as the frequency of exacerbation of existing disease, and the consequence of such an exacerbation and the urgency with which such as exacerbation would need to be addressed.

### **B. Medical Profile System (MPS): Option 2- Based on Body System Approach**

Detail impairments and limitations for each of the following domains:

1. Systemic
2. Musculoskeletal including upper and lower extremities
3. Hearing
4. Vision
5. Mental Health
6. Physical Fitness Test
7. Deployability

## **Annex F-1.5: Using the MPS to Assess Medical Fitness for Deployment**

### **A. Common Tasks That All Military Personnel Should be Able to Perform During a Deployment**

One of the most important, fundamental assumptions for this guide was that every service person may be required to do common military tasks during a deployment in unusual or extraordinary circumstances, independent of their usual/regular occupation. These extraordinary circumstances could include a fire; coming under attack; having their vehicle go off road in unfriendly territory while transiting between secure points. To reflect this concept, this Guidebook often uses the phrase “individual ability to do their military and occupational duties.” The list below is an example of a “generic/common task list” that every service member should be able to perform. The example below is adapted from a list used by the Canadian military. This list is not intended to replace the similar task lists that NATO nations may already have in place. It is intended as a starting point for discussion for those nations who may not have such a list, or for those nations who are looking to revise their list, perhaps in concert with revising their MPS/PHA systems.

#### **B.1. Common Task Statements- Physical – May Be Required in An Emergency**

- able to perform a high-crawl over a distance of 45m and low-crawl over a distance of 30m
- able to tolerate digging a personal trench
- able to carry sandbags weighing 20kg over a distance of 50 m for a period of 10 minutes
- able to evacuate a casualty 750m across country by carrying one end of a stretcher bearing an 80kg load
- able to safely handle and effectively operate a personal weapon

#### **B.2. Common Task Statements- Stress / Mental Health**

Able to tolerate the integral requirements of an operational military environment which requires the member to be able to perform duties while being exposed to:

- psychological stress (e.g. risk to personal safety);
- frequent movement;
- adverse climactic conditions;
- poor sleeping conditions & disrupted sleep;
- irregular meals;
- Isolation from Unit/comrades;
- long periods away from home;
- able to wear protective equipment (e.g. CBRN; ballistic protection; body armor, etc.).

