



Competition Medical Guidelines

A Practical Guide

January 2013 First Edition

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Table of Contents

	<i>Page(s)</i>
IAAF President's Message	5
Medical and Anti-doping Commission Chairperson's message	7
Preface	9
Chapter One	
Principles and Ethical Guidelines of Health Care for Sports Medicine	(11 to 19)
Relationships Between Athletes and Health Care Providers	13 to 18
Protection and Promotion of the Athlete's Health during Training and Competition	18 to 19
Chapter Two	
Athletics Competition & Prevention	(21 to 42)
Health risks & Athletic competition	23 to 33
Roles and Responsibilities	33 to 36
Pre Participation Examination and Periodic Health Evaluation (PPE and PHE)	36 to 42
Chapter Three	
IAAF Event organiser medical support requirements	(43 to 89)
General principles of medical organisation	45 to 72
Medical management for road race events and cross country	72 to 83
Medical management for single day events	83 to 89
Appendices	91 to 115

IAAF President's Message

I am pleased to introduce the updated IAAF Competition Medical Guidelines. This replaces the former IAAF Competition Medical Handbook for Track and Field and Road-Racing Competitions, and complements the new medical regulations, including Rule 48.4.(e) and Rule 51.2.

The IAAF emphasises that all competitions should be held under the appropriate conditions which assure a healthy and safe environment for all participants to compete.

These Guidelines are the result of ongoing experiences of practitioners who provide medical care at athletics, road-racing and race-walking competitions. I wish to thank all of those who were involved in the preparation of this handbook.

I am sure that those working for medical care organisations, and all of those involved in their respective competitions will find these guidelines to be a valuable contribution to their work in athletics.

Lamine DIACK
President, IAAF

January 2013

Medical and Anti-doping Commission Chairperson's message

This is the first edition of the IAAF Competition Medical Guidelines

The major goal of this publication is to guide Member Federations and Athletics Competition organisers in establishing suitable health care for athletes not only during Athletics Competitions but through the whole training and competitive season. The objective is to provide appropriate permanent medical care that will help athletes to reduce their risk of suffering from injuries and illnesses, and to respond promptly to medical emergency situations. Furthermore, we want to provide guidance in designing the necessary preparations in order to offer excellent medical coverage to team officials and spectators and other members of the Athletics' family.

I would like to express special thanks to the members of the IAAF Medical & Anti-Doping Commission for their valuable comments.

Dr. Juan-Manuel ALONSO, MD PhD
IAAF Medical & Anti-Doping Commission Chairperson

Preface

The IAAF World Athletics Championships is the third largest sports event in the world. In Daegu 2011, 1,851 athletes from 200 countries competed. Aside from winning medals, fame and other rewards on the elite level, sports participation is also important from a health perspective. There is no doubt that regular physical activity reduces the risk of premature death in general terms. Nevertheless, the evidence suggests that although sports participation is beneficial, injuries and some medical conditions are a significant side effect. This aspect becomes crucial when we consider the thousands of people of different ages, who are training and competing in so many athletic events around the world, including the thousands of road races held annually.

Although athletes are the major actors in Athletics competitions, other important participants such as team officials, spectators and local operators or volunteers, shouldn't be ignored in the competition's medical coverage. Large sports arenas typically gather several thousands of spectators, including adult and senior individuals with potential cardiac risk and other health concerns. Although much attention is placed on the athletes on the field, a number of severe medical conditions could occur amongst spectators.

In recent years the IAAF has recognised that health care and the prevention injuries of all the athletes in its member Federations is an area which must be addressed. The IAAF, through its Medical and Anti-doping Commission and Department, is committed to working to make our sport safer for all our athletes, from novices to world-class competitors. Local Organising Committees are encouraged more and more to provide adequate medical coverage for all participants at Athletics Competitions. The IAAF is increasingly emphasising projects on the prevention of injuries and illnesses. Good examples of this work were the Injury Prevention Studies that were put in place during the IAAF World Championships in Osaka 2007, Berlin 2009 and Daegu 2011. The results of these three epidemiologic surveys have been published in peer-reviewed scientific journals and concluded that the incidence of injuries and illnesses among athletes should not be neglected and require preventive measures.

Member Federations, Athletics Clubs and Local Organisers are expected to be the main users of this publication in order to obtain the necessary guidance for arranging correct medical care. These guidelines will help these organisations to improve health status among athletes, team officials and spectators and aims to decrease the risk for suffering from injuries and illnesses.

We wish to thank Dr. Gabriel Dollé, Chair of the Medical and Anti-Doping Department, for his continuing support of this project, to the authors for their input in making these Guidelines a valuable sports medicine educational tool, and to the staff of the IAAF Anti-Doping and Medical Department for their work in assuring its finalisation. We would especially like to acknowledge Dr. Pierre-Yves Garnier, IAAF Medical Manager, for his thorough review of the manuscript and suggestions for its improvement.

The authors

CHAPTER 1

Principles and Ethical Guidelines of Health Care for Sports Medicine



(A and B: Extracted from the Olympic Movement Medical Code)**A. Relationships Between Athletes and Health Care Providers**

1. General Principles

- 1.1 Athletes should enjoy the same fundamental rights as all patients in their relationships with physicians and health care providers, in particular, respect for:
 - a. their human dignity;
 - b. their physical and mental integrity
 - c. the protection of their health and safety;
 - d. their self-determination; and
 - e. their privacy and confidentiality.
- 1.2 The relationship between athletes, their personal physician, the team physician and other health care providers should be protected and be subject to mutual respect. The health and welfare of athletes prevails over the sole interest of competition and other economic, legal or political considerations.

2. Information

- 2.1 Athletes should be fully informed, in a clear and appropriate way, about their health status and their diagnosis; preventive measures; proposed medical interventions, together with the risks and benefits of each intervention; alternatives to proposed interventions, including the consequences of non-treatment for their health and for their return to sports practice; and the prognosis and progress of treatment and rehabilitation measures.

3. Consent

- 3.1 Voluntary and informed consent of the athletes should be required for any medical intervention.

- 3.2 Particular care should be taken to avoid pressure from the entourage (e.g., coach, management, family, etc.) and other athletes, so that athletes can make fully informed decisions, taking into account the risks associated with practicing a sport with a diagnosed injury or disease.
- 3.3 Athletes may refuse or interrupt a medical intervention. The consequences of such a decision should be carefully explained to them.
- 3.4 Athletes are encouraged to designate a person who can act on their behalf in the event of incapacity. They may also define in writing the way they wish to be treated and give any other instruction they deem necessary.
- 3.5 With the exception of emergency situations, when athletes are unable to consent personally to a medical intervention, authorisation by their legal representative or the person designated by the athletes for this purpose should be required, after they have received the necessary information.

When the legal representative has to give authorisation, athletes, whether minors or adults, should nevertheless assent to the medical intervention to the fullest extent of their capacity.
- 3.6 Consent of the athletes is required for collection, preservation, analysis and use of any biological sample.

4. Confidentiality and Privacy

- 4.1 All information about an athlete's health status, diagnosis, prognosis, treatment, rehabilitation measures and all other personal information should be kept confidential, even after the death of the athlete and all applicable legislation should be respected.
- 4.2 Confidential information should be disclosed only if the athlete gives explicit consent thereto, or if the law expressly provides for this. Consent may be presumed when, to the extent necessary for the athlete's treatment, information is disclosed to other health care providers directly involved in his or her health care.
- 4.3 All identifiable medical data on athletes should be protected. The protection of the data will normally be appropriate to the manner of their storage. Likewise, biological samples from which identifiable data can be derived should be protected from improper disclosure.

- 4.4 Athletes should have the right of access to, and a copy of, their complete medical record. Such access should normally exclude data concerning or provided by third parties.
- 4.5 Athletes should have the right to demand the rectification of any erroneous medical data in their files.
- 4.6 Intrusion into the private life of an athlete should be permissible only if necessary for diagnosis, treatment and care, with the consent of the athlete, or if it is legally required. Such intrusion is also permissible pursuant to the provisions of the World Anti-Doping Code.
- 4.7 Any medical intervention should respect privacy and be carried out in the presence of only those persons necessary for the intervention, unless the athlete expressly consents or requests otherwise.

5. *Care and Treatment*

- 5.1 Athletes should receive such health care as is appropriate to their needs, including preventative care, activities aimed at health promotion and rehabilitation measures. Services should be continuously available and accessible to all equitably, without discrimination and according to the financial, human and material resources available for such purpose.
- 5.2 Athletes should have a quality of care marked both by high technical standards and by the professional and respectful attitude of health care providers. This includes continuity of care, including cooperation between all health care providers and establishments involved in their diagnosis, treatment and care.
- 5.3 During training and competition abroad, athletes should receive the necessary health care, which if possible should be provided by their personal physician or the team physician. They should also receive appropriate emergency care prior to returning home.
- 5.4 Athletes should be able to choose and change their own physician, health care provider or health care establishment, provided that this is compatible with the functioning of the health care system. They should have the right to request a second medical opinion.

- 5.5 Athletes should be treated with dignity in relation to their diagnosis, treatment, care and rehabilitation, in accordance with their culture, tradition and values. They should enjoy support from family, relatives and friends during the course of care and treatment, and to receive spiritual support and guidance.
- 5.6 Athletes should enjoy relief of their suffering according to the latest recognised medical knowledge. Treatments with an analgesic effect, which allow an athlete to practice a sport with injury or illness, should be carried out only after careful consideration and consultation with the athlete and other health care providers. If there is a long-term risk to the athlete's health, such treatment should not be given.

Procedures that are solely for the purpose of masking pain or other protective symptoms in order to enable the athlete to practice a sport with injury or illness should not be administered if, in the absence of such procedures, his or her participation would be medically inadvisable or impossible.

6. Health Care Providers

- 6.1 The same ethical principles that apply to the current practice of medicine should apply equally to sports medicine. The principal duties of physicians and other health care providers include:
- a. making the health of the athletes a priority; and
 - b. doing no harm.
- 6.2 Health care providers who care for athletes should have the necessary education, training and experience in sports medicine, and keep their knowledge up to date. They should understand the physical and emotional demands placed upon athletes during training and competition, as well as the commitment and necessary capacity to support the extraordinary physical and emotional endurance that sport requires.
- 6.3 Athletes' health care providers should act in accordance with the latest recognised medical knowledge and, when available, evidence-based medicine. They should refrain from performing any intervention that is not medically indicated, even at the request of the athletes, their entourage or another health care provider. Health care providers must also refuse to

provide a false medical certificate concerning the fitness of an athlete to participate in training or competition.

- 6.4 When the health of athletes is at risk, health care providers should strongly discourage them from continuing training or competition and inform them of the risks.

In the case of serious danger to the athlete, or when there is a risk to third parties (players of the same team, opponents, family, the public, etc.), health care providers may also inform the competent persons or authorities, even against the will of the athletes, about their level of fitness to participate in training or competition, subject to applicable legislation.

- 6.5 Health care providers should oppose any sports or physical activity that is not appropriate to the stage of growth, development, general condition of health, and level of training of children. They should act in the best interest of the health of children or adolescents, without regard to any other interests or pressures from the entourage (e.g., coach, management, family, etc.) or other athletes.
- 6.6 Health care providers should disclose when they are acting on behalf of third parties (e.g., club, federation, organiser, National Olympic Committee (NOC), etc.). They should personally explain to the athletes the reasons for the examination and its outcome, as well as the nature of the information provided to third parties. In principle, the athlete's physician should also be informed.
- 6.7 When acting on behalf of third parties, health care providers should limit the transfer of information to what is essential. In principle, they may indicate only the athlete's level of fitness to participate in training or competition. With the athlete's consent, the health care providers may provide other information concerning the athlete's participation in sport in a manner compatible with his or her health status.
- 6.8 At sports venues, it is the responsibility of the team or competition physician to determine whether an injured athlete may continue in or return to the competition. This decision should not be delegated to other professionals or personnel. In the absence of the competent physician, such professionals or personnel should adhere strictly to the instructions that he or she has provided. At all times, the overriding priority should be to safeguard the

health and safety of athletes. The outcome of the competition should never influence such decisions.

- 6.9 When necessary, the team or competition physician should ensure that injured athletes have access to specialised care, by organising medical follow-up by recognised specialists.

B: Protection and Promotion of the Athlete's Health during Training and Competition

7. General Principles

- 7.1 No practice constituting any form of physical injury or psychological harm to athletes should be acceptable. Members of the Olympic Movement should ensure that athletes' conditions of safety, well-being and medical care are favorable to their physical and mental equilibrium. They should adopt the necessary measures to achieve this end and to minimise the risk of injury and illness. The participation of sports physicians is desirable in the drafting of such measures.
- 7.2 In each sports discipline, the minimum acceptable safety requirements should be defined and applied with a view to protecting the health of the participants and the public during training and competition. Depending on the sport and the level of competition, specific rules should be adopted regarding sports venues, safe environmental conditions, sports equipment authorised or prohibited, and the training and competition programmes. The specific needs of each athlete category should be identified and respected.
- 7.3 Measures to safeguard the health of the athletes and to minimise the risks of physical injury and psychological harm should be publicised for the benefit all concerned.
- 7.4 Measures for the protection and the promotion of athletes' health should be based on the latest recognised medical knowledge.
- 7.5 Research in sports medicine and sports sciences is encouraged and should be conducted in accordance with the recognised principles of research ethics, in particular the Declaration of Helsinki adopted by the World

Medical Association (last revised in Seoul, 2008), and the applicable law. It must never be conducted in a manner which could harm an athlete's health or jeopardise his or her performance. The voluntary and informed consent of athletes to participate in such research is essential.

- 7.6 Advances in sports medicine and sports science should not be withheld, and should be published and widely disseminated.

CHAPTER 2

Athletics Competition & Prevention



A. Health Risks & Athletic competition

1. ***Athlete***
 - i. **Sports Injury**
 - ii. **Environmental Risk**
 - iii. **Event Specific**
 - iv. **Inadvertent**
2. ***Spectator***
3. ***Stadium***

Health Risks & Athletic Competition

1. ***Athlete***
 - i. **Sports Injury**

The severity of acute injuries could range from minor to catastrophic or debilitating. Over-use injuries, by definition, are chronic in nature: although some over-use injuries may be indicative of an underlying condition.

The type of event will influence the prevalence and anatomical locations (e.g. upper-extremity vs. lower-extremity of an injury). The majority of injuries occur during training, since much more time/muscle exposure occurs with training than during competitions. But, when corrected for time, the risk of injury is around four times higher during competitions. In past injury studies, the IAAF has found that combined events and long-distance athletes have higher risk of injury. Most frequent diagnoses found in recent major IAAF competitions were: thigh strains (especially hamstring strains), followed by ankle sprains, trunk muscle cramps, and lower leg strains.

Despite the highly specific nature of sports injuries in track and field, certain factors (including predisposing factors) can be considered as generic, or at least classifiable.

Understanding risk factors associated with injuries includes categorising e.g.

- a) Intrinsic factors
 - i. Excessive height or weight
 - ii. Joint misalignment
 - iii. Biomechanical insufficiencies
 - iv. Muscle imbalance
 - v. Joint laxity or stiffness
 - vi. Acquired abnormalities in the anatomy or biomechanics in any joint
 - vii. Poor response time to visual disturbance
- b) Extrinsic factors
 - i. Training errors
 - E.g. abrupt change in the intensity of training
 - E.g. too much time spent running on the camber or around track bends
 - ii. Lack of training experience
 - E.g. sudden transition between track and cross-country surfaces
 - E.g. too much time spent training in spiked shoes
 - E.g. lack of co-ordination as a result of fatigue
- c) Improper Management of the athlete
 - i. Inappropriate recovery from previous injuries
 - ii. Return to competition too early
 - iii. Inappropriate nutrition

To uncover underlying conditions, coaches and medical personnel should ask the following questions:

- a) When did the injury occur?
- b) What were the inciting conditions?
- c) Was there a gradual increase in symptoms?
- d) Is it a recurrent injury?
- e) Did this injury occur soon after a different injury?
- f) Can further injury be anticipated?

However, a pro-active approach is also essential. Knowing injury study data allows for an estimation of risk, and an evaluation of the severity of risk. If the severity of risk is considered unacceptable, intervention is considered required.

Considering that most athletes will experience injury at some time, it is important for medical personnel to pay attention to which specific risk factor/s place an individual athlete in a high risk vs. low risk situation. In elite athletes, particularly there is a level of risk 'acceptance'. This requires thorough consideration and communication, especially since medical personnel may (with good reason) disagree with a coach or an athlete.

Intervention may take the form of screening, early therapeutic intervention or mitigation of the controllable risk factors.

ii. Environmental Risk

Environmental risk factors include water and climate and airborne particles.

Inspections are recommended in athletes, referees/judges, VIPs and media-accommodation sites. These inspections should be performed by environmental health inspectors who should receive training in inspection for swimming pools and water supply systems to control outbreaks of waterborne diseases.

- a) inspections and microbiological testing must:
 - i. Take place prior to, and during, the event;
 - ii. Include testing of decorative fountains & swimming pools within the event environs, and
 - iii. Include water sources at both sporting venues and seasonal hotels.

The incidence of heat-related illnesses/conditions ranges from 0.4 to 11.5 cases per 1000 people at temperatures of 30° C (86° F) to 49.4° C (121° F). Two types of heat-related illness can occur: skin/sunburn and exhaustion/stroke. Not only must climatic heat and UV measurements be made, but:

- a) Public information/announcements must be planned and executed
- b) Sufficient modes of protection modes must be available such as: sunscreen hats and portable shade canopies, and use of fans; and

- c) Staff-and-volunteer rotation will help prevent prolonged heat exposure.

Heat exhaustion and dehydration are common conditions in athletes competing in major competitions; especially in athletes competing in race walking. IAAF illness studies in recent World Championships proved that dehydration is common among athletes. Prevention strategies should emphasise appropriate event scheduling and athletes' heat acclimatisation. (See Chapter 3, A, Section 4.2, 'Weather conditions', for further information.)

Upper respiratory tract infections have even higher incidence among athletes competing than heat exhaustion and dehydration. Prevention interventions should focus on decreasing the risk of transmission.

Airborne hazards include pollutants (such as sulphur dioxide), and/or aero-allergens (such as pollen). Testing of seasonal allergens must be followed by:

- a) Provision of public information; and
- b) The availability of respiratory specialists

iii. Event Specific

The age and skill level of an athlete may exacerbate risks. But it is also evident that the risk can also be high for elite athletes participating either in a particular event, or in a different event at the same time (or preparing for a different event at the same time). Athletes should wear adequate footwear to minimise risk, and announcements must be made during concurrent events (field events during track).

Specific events have organisational challenges that are important to meet in order to ensure minimal risk to the safety of athletes and officials.

- a) Events from 100 m to 400 m:
 - i. Starting blocks must be correctly positioned in each lane and firmly secured onto the track.
- b) Hurdles must be correctly set.
 - i. The mechanism for fixing the hurdles should be lubricated and well maintained;
 - ii. Hurdles must be set at the required height and distance for the race;

- iii. Positioning of the counter balance weight must be checked, even during the competition, and
 - iv. Damaged hurdles must be replaced before, but also during the competition.
- c) The water jump:
- i. In the vicinity of the water jump, cones must be used to provide track edge markings until the water jump comes into use in competition;
 - ii. Ensure the water jump is full, i.e. the water is level with the track surface, and free from debris; and
 - iii. Regularly inspect lining materials to the bottom of the water jump for splits, bubbles etc., and repair any defects.
- d) Long Jump and Triple Jump:
- i. Sweep runways regularly to remove any excess water or sand;
 - ii. No obstructions or check marks should be placed on the runway;
 - iii. Ensure that measuring tapes do not encroach onto the runway;
 - iv. Any raised surfaces or tripping hazards must be clearly identified;
 - v. When revolving scoreboards are used, ensure they do not revolve over, or are sited close to the runway. They must also be firmly anchored down;
 - vi. Rakes and brushes used for levelling and cleaning should be kept away from the landing area; and
 - vii. Prongs of rakes should face the ground;
 - viii. Ensure that only pure quartz sand, without any organic content, is used, that will not cause injury to an athlete;
 - ix. Ensure that sand is well dug over before use;
 - x. Check that the landing area is free of extraneous material and other contaminants; and
 - xi. The edges of the landing areas should be covered with an impact absorbing material, and rounded off.

e) All jumping events:

- i. Ensure adequate maintenance and regular inspection of the landing area, with particular attention to impacted foam;
- ii. Where landing areas remain outside when not in use, the cover should be designed, so as to prevent damage to foam sections due to water saturation;
- iii. Ensure that the landing area is properly secured and checked regularly for movement during the course of a competition;
- iv. Ensure the surrounds of landing bed are safe;
- v. Ensure each athlete jumps in turn, and does not encroach on other athletes run whilst waiting their turn; and
- vi. Athletes whose approach runs conflict with other should be aware of potential collisions.

f) Pole vault:

- i. Injuries may be sustained from poles breaking or falling on to officials.
- ii. Regularly check poles for damage;
- iii. Prevent poles dropping on to hard surfaces; and
- iv. If possible poles should be caught after each vault

g) Throwing events

- i. Event organisers, meeting managers, and referees should ensure that the long throwing events are programmed so as not to present a hazard to other events;
- ii. Where long jump, triple jump or pole vault runways are located on the infield, long throwing events must not take place unless a separate risk assessment indicates that the standard of throwers will pose no risk to jumpers. Even then, special precautions must be still taken;
- iii. Be aware of the effect of strong winds on the flight characteristics of a javelin;
- iv. Check all netting regularly to ensure no damage to its structure;
- v. Ensure that netting is secured or ballasted at ground level;

- vi. Check that netting tension has sufficient retardation and minimal bounce;
- vii. Ensure that stop boards inset rings are firm and stable;
- viii. Ensure that stop boards are not damaged, so as to avoid causing foot injury;
- ix. Sweep circles and runways regularly to remove any excess water;
- x. The event leader must stand with the athlete at the entrance to the cage for hammer and disc; For the javelin, the official must stand on the runway while the athlete takes up his/her starting position;
- xi. Ensure all throws and practice throws only take place from within the circle, and in the direction of the sector;
- xii. Ensure that only officials are allowed forward of the throwing line; and
- xiii. Any system of implement retrieval must take place under the control of the event leader.

h) Indoor events

All the same hazards and risks apply, with the addition of risks associated with the size of the venue, and the number of events to be hosted. For example:

- i. Any moveable equipment and kit must be placed such as not to constitute a hazard to any events or individuals;
- ii. The risk of collisions is very high;
- iii. The proximity of walls and ceilings pose an additional risk;
- iv. The programming of activities must be more carefully planned and managed; and
- v. Ensure flag marshals are posted when conflicting activities are taking place.

iv. Inadvertent athlete injuries

Inadvertent injuries may occur at a competition venue. Awareness of factors that could contribute to such injuries is important for event management. Therefore,

in planning an event, setting up the event venue and during the competition itself potential hazards must be identified and addressed.

Risks may be related to the event location, the size of the event, and number of expected spectators. Maintenance and setting-up of the event area may lead to further risks.

The track and equipment must be serviceable, in good working order, and include:

- a) Drainage of the track;
- b) Porous surface should be cleaned regularly to allow drainage;
- c) Adequate lighting;
- d) Ensuring the track is level, free of holes, and swept regularly to remove debris, e.g. stones;
- e) Ensuring adequate maintenance and regular inspection;
- f) Where removable kerbs are in place,
 - i. protruding or exposed ends must be covered;
 - iii. where sections join together, they should be secured;
 - iv. sections should be securely fixed down; and
 - v. When not in use, cones and removable kerbs should be kept safely away from athletes and officials

2. *Spectator*

Whenever large numbers of individuals gather together, whether athletes or spectators, the risk of contracting contagious diseases increases. This is particularly true when athletes, team members, and supporters are from different geographical regions. Where possible, immunisation may be appropriate for staff and volunteers to control airborne diseases.

It is important to establish appropriate mechanisms to allow immediate reporting of such diseases. Existing surveillance systems must be enhanced by:

- a) Setting up on-site clinics;
- b) Increasing the number of staff trained in collecting and analysing surveillance data;
- c) Increasing the frequency of surveillance data reporting; and
- d) The use of systems that will enable the detection of abnormalities or patterns in surveillance data.

Compilation of daily reports on public health risks must be followed by feedback to team managers, medical personnel, and the public. Information must be provided on how people can best protect themselves. Feedback can be provided in the form of:

- a) Daily telephone conferences offering information of international public health relevance; and
- b) Provision of information packs to general practitioners and accident and emergency departments about less prevalent contagious diseases.

Acute illness and emergencies:

Studies show that between 0.3% and 1.3% of event attendees will require some form of medical care. Some emergencies will be taken care of outside of the main sporting arenas. Call volumes received by emergency departments during major sporting events are increased.

Information shows incidents to include chest pains; dyspnea; unconsciousness; intoxication; abdominal pains; dehydration; seizures; and falls.

Public emergencies may also occur at the venues, and plans and procedures must be established, e.g. including:

- a) Public health response teams at location,
- b) Quick, mobile, small vehicles (e.g. use of bikes and golf carts); and
- c) Good coordination between local health authorities, town hospitals, and police.

3. Stadium / venue

Existing infrastructure that is developed for an event (or temporary infrastructure) must be in strict compliance with health and safety regulations and legislation; Elements to take into account include, e.g:

- a) Temporary structures which, where possible, should be made from flame-resistant materials;
- b) Any erected structure that is load-bearing; and
- c) Walkways which must be safe, with adequate, clear on-site signage.

During an event, temporary structures also increase risk, and the following precautions must be taken:

- a) Safety monitoring and reporting procedures must be in place;
- b) Sufficient smaller fire stations should be in place; and
- c) Communication with the medical officials must be ensured.

During an event, temporary structures also increase risk and the following precautions must be taken:

- a) Safety monitoring and reporting procedures must be in place;
- b) Sufficient smaller fire stations should be in place; and
- c) Communication with the medical officials must be ensured.

At any athletics event - whether a day or night event - cabling is present to supply electricity for various reasons. These include places where medical and emergency supplies and personnel are stationed. Event organisers and officials must ensure that:

- a) All electrical cables are routed away from the main operations areas; and
- b) All electrical cables are protected from personnel/athletes/general pedestrian traffic.

A proper medical evacuation plan must be established. Adequate planning must also ensure good site layout with clear access, e.g:

- a) Medical access should not be near public drop-off points;
- b) Designated pick-up and drop-off points for athletes and team members must not obstruct emergency medical vehicles;
- c) There must be sufficient space to manoeuvre, depending on an incident;
- d) Preparation needs to include a prearranged emergency response plan for each event; and
- e) There must be provision of roads that can be used only by emergency medical vehicles.

B. Roles and Responsibilities

1. Athletes

Athletes are responsible for their own physical health and medical supervision.

By entering into an International Competition, an athlete specifically releases the IAAF from any liability to the extent permitted by law for any loss, injury or damage that they may suffer in relation to, or as a result of, participation in the International Competition (IAAF Medical Rules, Rule 49).

2. Team Doctor

A team doctor is appointed whenever appropriate; taking into consideration the nature of the competition, number of team participants and duration. The team doctor should be a licensed physician experienced in sports medicine, the nature and rules of the sport in question, and relevant anti-doping rules. The team doctor should be aware of the health conditions of the team members, including possible medications.

The team doctor will be equipped with the means to be able to help in simple acute situations, when the help of the local organisation is not possible (e.g. during travel).

3. Member Federations

Member (National) Federations shall use best efforts to ensure that all athletes under their jurisdiction competing in International Competitions are in a state of physical health that is compatible with elite level competition in athletics.

Every Member Federation shall use best efforts to ensure that appropriate and continuous medical monitoring of its athletes is undertaken either internally or through an approved external body.

It is further recommended that Member Federations organise for Pre-Participation Medical Examination (PPME) to be carried out in the form recommended by the IAAF Medical Guidelines (IAAF Medical Rules, Rule 50). (IAAF Medical Rules, Rule 50).

It is also recommended that athletes and other team members of a Member Federation are appropriately insured.

4. International Federation

In the Medical processes, the IAAF will act through its Medical and Anti-Doping Commission, and the Medical Manager (IAAF Medical Organisation).

The IAAF Medical Organisation shall have responsibility for the following further specific tasks (for a complete list, see IAAF Medical Rules, Rules 48 and 51) :

- a. To establish policies or issue statements on medical matters in Athletics;
- b. To publish general information for practitioners on sports medicine issues as applied to Athletics;
- c. To issue recommendations and guidelines on the organisation of medical services at International Competitions;
- d. To publish educational materials;
- e. To address any specific sports medicine issues which may arise in Athletics, and make recommendations;
- f. To issue and keep updated practical guidelines to assist Organising Committees in providing adequate medical services, and in taking appropriate safety measures at International Competitions; and
- g. To appoint a Medical and Anti-doping Delegate for the International Competition, when appropriate.

5. Medical and Anti-Doping Delegates

The Medical and Anti-doping Delegates are appointed by the IAAF. Medical and Anti-doping Delegates shall have ultimate authority on all medical and anti-doping matters. He/she shall ensure that adequate facilities for medical examination, treatment and emergency care will be available at the site of the competition, and that medical attention can be provided at places of athletes' accommodation (See also IAAF Rules, Rule 113). Further instructions are available for Medical and Anti-Doping Delegates upon request to the IAAF Medical and Anti-Doping Department.

6. Organising Committee

The Organising Committee shall be responsible for providing adequate medical services, and for taking appropriate safety/security measures during International Competitions. Specific medical and safety/ security requirements may vary according to the following factors: the size and nature of the competition; the category and number of Athletes participating; the number of support staff and spectators; the health standards of the country where the competition takes place; and the prevailing environmental conditions (climate, altitude etc.).

Specific medical and safety security requirements may be required for certain categories of event (Road races, Race walking), and Organising Committees are then responsible in seeking further instructions from the IAAF Medical Organisation.

The medical services and safety measures to be provided at an International Competition shall include, at a minimum:

- a. general health care for Athletes and accredited persons at the main site of the competition, and at the Athletes' place of accommodation;
- b. first-aid and emergency care for Athletes, staff, volunteers, media and spectators at the main site of the competition;
- c. safety surveillance, co-ordination of emergency and evacuation plans (preferably with local community authorities); and
- d. co-ordination of any special medical services, as appropriate.

The Organising committee shall appoint a Medical Director.

(See also IAAF Medical Rules, Rule 51).

7. Medical Director of the Event

A Medical Director is appointed by the local Organising Committee.

The Medical Director shall prepare and co-ordinate the medical services and safety requirements during the competition, and for an appropriate time before and after. It is recommended to have close co-operation with the local medical and health care authorities to ensure medical care in cases that are beyond the capacity of the Organising Committee.

C. Pre-Participation Examination and Periodic Health Evaluation (PPE and PHE)

Sports participation at the elite level, aside from winning medals, renown and other rewards, is also important from a health perspective. There is no doubt that regular physical activity reduces the risk of premature death. Nevertheless, evidence suggests that, although sports participation is beneficial, injuries are a significant side-effect. Moreover, training and competition can increase the risk of sudden cardiac death (SCD).

The IAAF has recently launched a new Chapter within its Competition Rules entitled, 'Medical Rules'. This chapter encompasses a set of medical provisions to be adopted by Athletes, Member Federations and Organisers. Indeed, Articles 49.1, 50.1 and 50.2 strongly encourage Athletes and Member Federations to use their best efforts to ensure that Athletes are competing in a state of physical health compatible with elite level competitions in Athletics.

Periodic Health Evaluation:

In March 2009, the International Olympic Committee (IOC), in a Consensus Statement, provided further recommendations for periodic health evaluation (PHE). The PHE should be a useful tool for continuous athlete health monitoring, and should serve several purposes: including the comprehensive assessment of the athlete's current health status, and risk of future injury or disease. Furthermore, PHE, typically, is the entry point for medical care of the athlete. The PHE also serves as a tool for periodic health evaluation and monitoring in athletes. Important aspects not to be missed are:

- SCD, and the detection of risk factors and groups;

- Non-cardiac medical problems;
- Risk factors for musculoskeletal injuries; and
- Specific medical concerns of female athletes (eating disorders, amenorrhea, disorders of sex development (DSD), etc.).

The main purpose of the PHE is to screen for injuries or medical conditions that may place an athlete at risk. Subsequently, if PHE evidence indicates that an athlete is at serious medical risk, the physician should strongly discourage the athlete from continuing in training or competing until the necessary medical measures have been taken.

The IAAF Medical and Anti-doping Commission endorses IOC recommendations on PHE. A fundamental part of this is the Pre Participation Examination (PPE) or Pre-Participation Medical Examination (PPME). We strongly recommend that every participant in athletics competitions should receive PHE by a sports physician, starting with a PPE.

In 2004, the IOC focused on the problem of possible health risks connected with exercise, sometimes resulting in sudden death in apparently normal healthy athletes. More than 90% of sudden deaths in competitive athletes are due to cardiovascular problems, and less than 10% to other causes (traumatic, respiratory, cerebrovascular or neurological diseases, drug abuse, etc. - Maron et al. 2007).

1. Cardiovascular system

Although in a young healthy population there is a low incidence of SCD events occurring in a person without a previously "recognised" cardiovascular condition, (1 in 50-100,000 athletes, per year). Any tragic event during sport has an enormous impact on public opinion, especially when it involves high level athletes. In spite of geographical differences, the incidence of SCD is higher in males than in females.

There is an increased relative risk of SCD of 2.8 times in athletes engaged in regular training and competition, compared to their nonathletic counterparts (Corrado et al 2003). Sport is not, per se, the cause for greater incidence of SCD. However, the combination of intensive physical exercise in athletes with underlying cardiovascular disease can trigger arrhythmias, leading to cardiac arrest.

The vast majority of these deaths in athletes <35 years of age are due to several congenital or acquired cardiac malformations. The vast majority of deaths in athletes >35 years of age are due to unsuspected atherosclerotic coronary artery disease.

Official recommendations of the IOC Medical Commission, introduced in Lausanne, on December 10th 2004:

Pre participation evaluation at the beginning of the competitive season for all participants up to the age of 35 years to identify those at risk, and reduce the possibility of SCD, through inclusion of:

1. Personal history;
2. Family history;
3. Physical examination; and
4. 12 lead rest Electrocardiogram (ECG) to be repeated every second year.

Selected cases with positive personal history, family history of potentially inherited cardiac disease, or positive physical/clinical or ECG findings, will require further evaluation by an age-appropriate cardiac specialist to qualify the athlete for sport participation. Further evaluation may include trans-thoracic echocardiography, maximal exercise testing with 12 lead ECG, and 24-hour ECG monitoring. Additionally non-invasive screening of family members may provide valuable information about inherited cardiovascular disease.

In recent decades, the American Heart Association (AHA) and European Society of Cardiology (ESC) faced the problem with slightly different approaches. According to the ESC, epidemiology studies on populations of thousands of competitive athletes showed a decrease of up to 89% in SCDs (Corrado et al 2006); with a pre participation evaluation including a 12 lead resting ECG. This result was mainly due to an increased identification of asymptomatic cardiomyopathies such as Hypertrophic cardiomyopathy (HCM), Arrhythmogenic right ventricular disease (ARVD), Long QT syndrome, congenital coronary artery anomalies, Wolff-Parkinson-White Syndrome, Brugada syndrome, etc.

1.1 Personal history:

- Syncope or near-syncope;
- Exertional chest pain or discomfort;

- Shortness of breath or fatigue, out of proportion to the degree of physical effort; or
- Palpitations or irregular heartbeat.

1.2 Family history:

- of one or more relatives with disability or death of heart disease (sudden/unexpected) before the age of 50; or
- of cardiomyopathy; coronary artery disease; Marfan syndrome; long QT syndrome; severe arrhythmias; or other disabling cardiovascular disease.

1.3 Physical examination should be performed according to the best clinical care, and should investigate the presence of:

- Musculoskeletal and ocular features suggestive of Marfan syndrome;
- Diminished and delayed femoral artery pulses;
- Mid- or end-systolic clicks;
- Abnormal second heart sound (single or widely split and fixed with respiration);
- Heart murmurs (systolic grade $>2/6$ and any diastolic);
- Irregular heart rhythm; or
- Brachial, bilateral blood pressure $>140/90$ mmHg on more than one reading

1.4 12-lead ECG

The 12-lead ECG should be recorded on a non-training day, during rest, and according to best clinical practice. Interpretation of the ECG abnormalities can be categorised according to the criteria defined by Corrado et al (2008) into two groups:

- Group A: the most common in trained athletes (sinus bradycardia, first degree AV block, notched QRS in V1 or incomplete right bundle branch block, isolated QRS voltage criteria for LV hypertrophy) consistent with the athlete's age, ethnical origin and level of athletic conditioning, and that do not require additional testing; or

- Group B: All other less common ECG abnormalities should be further evaluated to exclude cardiovascular disease.

2. Pulmonary system

Further to the standard prevalence of asthma in the normal population, the incidence of exercise induced asthma or bronchospasm (EIA or EIB), defined as a transient, reversible, and intermittent narrowing of the airways, occurring about 10-15 minutes after intense exercise, has a prevalence up to 15-20% among endurance athletes

In the presence of asthma, EIA or EIB, different steps are suggested, according to IAAF beta-2-agonists protocol:

- History (both familiar and personal) and clinical evaluation;
- Diagnostic tests, including basal pulmonary function tests and one or more of the following broncho-provocation tests: exercise challenge, pharmacological challenge; (methacholine); osmotic challenge (mannitol or hypertonic saline); eucapnic voluntary hyperventilation challenge (EVH); and bronchodilator test; and
- Skin or blood allergy tests, if any.

Functional pulmonary evaluation remains crucial for a correct diagnosis and for justified treatment, even considering the limits on pharmacological use imposed by WADA rules and the necessity of a previous Therapeutic Use Exemption (TUE), which is mandatory for some bronchodilator drugs.

3. Other Systems

Medical conditions in systems other than the cardiovascular and pulmonary systems are also very common in elite athletes. These conditions can occur immediately before competitions, during periods of training in preparation for competitions, and after competitions. A spectrum of medical conditions can occur in athletes across a number of medical systems. The IAAF Medical and Anti-doping Commission follows the 2009 IOC Consensus on PHE, and recommends examining the following systems during the PPE: According to best medical practice guidelines, assessment of non-cardiac medical conditions during a PPE should include an appropriate systematic medical history; a directed physical examination and selected special investigations. Routine investigations that are recommended are urinalysis (males and females), tests

for iron stores, etc. Sports Physicians performing PPE should take these important aspects into consideration when examining athletes' health status.

- a. Haematology;
- b. Allergies;
- c. Infections and immunology;
- d. Ear, nose and throat;
- e. Dermatology;
- f. Urology / Gynecology;
- g. Gastrointestinal;
- h. Ophthalmology; and
- i. Nervous system (neurological).

4. *Musculoskeletal Evaluation*

This should consist of a thorough history of current and previous musculoskeletal injuries. To improve the history, self-report forms should be used, going into detail for the regions and injury types associated with the sport in question, to ensure that no injuries or symptoms are missed. The clinical examination should follow up on any symptoms or injuries reported, consisting of inspection; palpation; range of motion; strength and laxity exams; effusions; muscle testing; and relevant functional exams. Additional imaging (e.g. ultrasound, MRI), or more advanced functional tests (e.g. strength tests, balance tests) may be indicated, based on history and physical examination.

5. *Endocrine-metabolic*

Based on the provision of appropriate medical monitoring, the IAAF also newly approved rule 141; which aims to establish early detection of hyperandrogenism (HA). This rule is included within the general framework of the eligibility of females with HA to participate in International Competitions. In fact, the rule also provides guidance for the management of any HA cases that might arise at the National level, based on the results of a routine pre-participation or other medical examination conducted by an athlete's National Federation Medical Officer, or other appropriate medical professional. The IAAF recommends strongly that this important aspect of potential HA in female athletes be included in the PPE at National level.

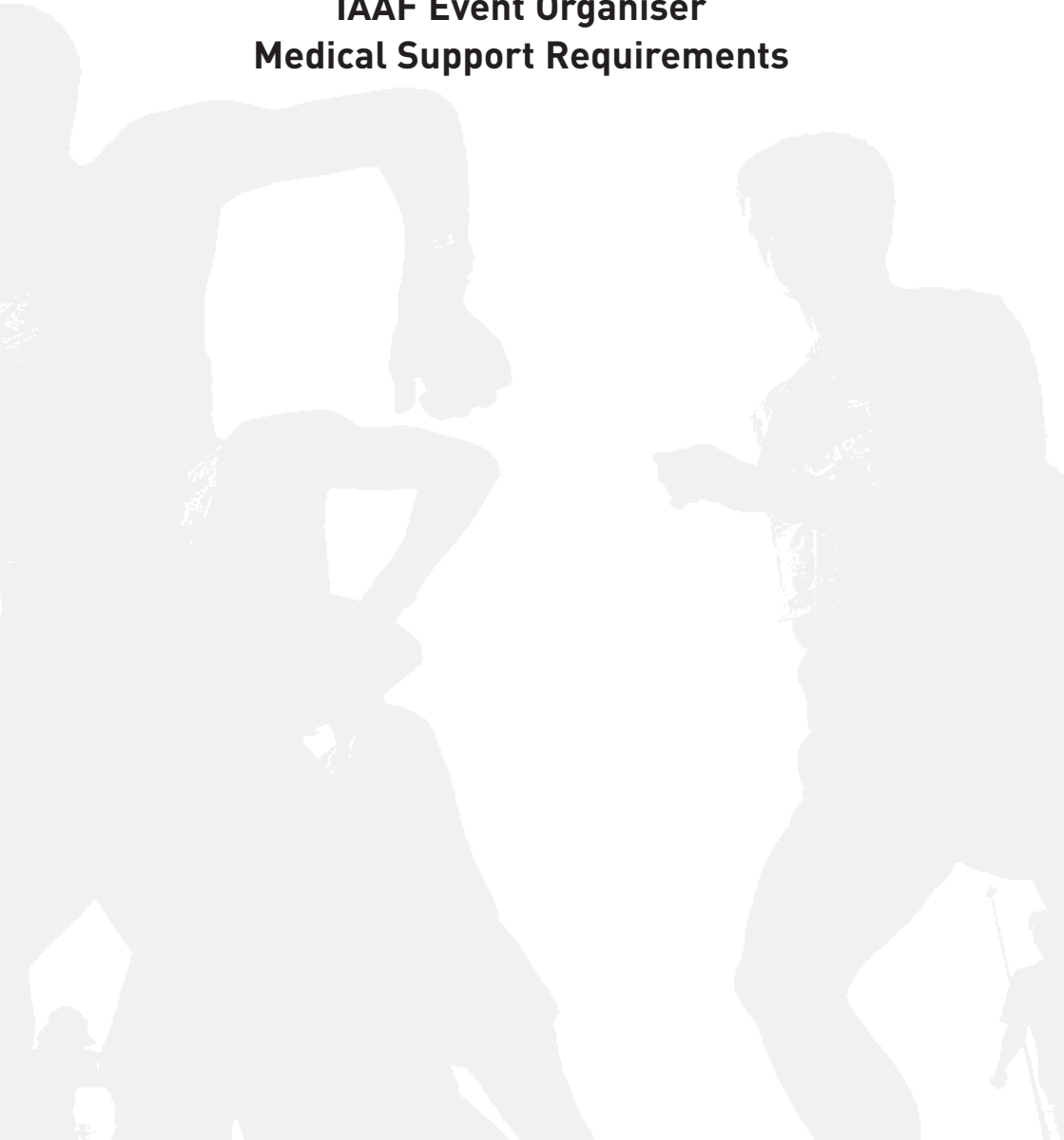
In summary, the IAAF Medical & Anti-doping Commission feels that a pre-participation or periodic health evaluation could contribute to:

- Screening of athletic population and detection of asymptomatic silent diseases;
- Prevention of acute unexpected health problems or life-threatening events;
- Appropriate and precocious management of health conditions;
- Decision on the opportunity to participate in intensive sport activity;
- Opportunity for athletes to have continuous medical and health education contact; and
- Evaluation of medication or nutritional products, helpful to avoid unwanted violation of WADA Anti-Doping rules, and, if any, help or suggestions for applications of Therapeutic Use Exemptions.

Note: The IAAF Medical and Anti-doping Commission strongly encourages sports physicians performing PPE to read the 2009 IOC Consensus statement for Periodic Health Evaluation.

CHAPTER 3

IAAF Event Organiser Medical Support Requirements



This document should be read by the Medical Committee/Team of IAAF Track and Field Competitions and Road race events in conjunction with the IAAF Medical and Doping Control Rules and Regulations. The Local Organising Committee (LOC) is financially responsible for all provisions detailed hereunder and in the IAAF Doping Control Rule and Regulations.

A. GENERAL PRINCIPLES OF MEDICAL ORGANISATION

1. Medical Committee/Team

The Medical Committee/Team is only one of the many components of athletics meet organisation which is necessary to conduct a successful competition. The mission of the Medical Committee/Team is: to provide primary and emergency care to athletes, staff, officials, judges, volunteers, IAAF Family members and spectators at all competition, training, and other event sites; to provide other medical support services needed to ensure the safety and health of the above described persons; and to arrange for referrals, where necessary, to a higher level of health care.

The composition and scope of the Medical Committee/Team may vary with the size of the competition; number of people involved (athletes, officials, judges, volunteers, media, etc.); and responsibilities assigned to other departments of the LOC.

The members of the Medical Committee/Team must integrate all aspects of their operation into the functions of the other departments if their mission is to be carried out successfully.

1.1 The Medical Director

The LOC should appoint a certified physician as Medical Director (MedDir) to head a Medical Committee or Team. The MedDir is ultimately responsible for all health care provided at all official sites, venues and accommodation areas. The MedDir is in charge of the overall coordination of medical organisation, and represents the Medical Committee/Team of the Organising Committee. He/she should preferably be a member of the local community, to ease cooperation with community resources. The MedDir reports to, and co-operates with, the IAAF - mainly the IAAF Medical Delegate - and the LOC President/CEO.

The Director's responsibilities include a number of significant tasks and duties. Due to the burden of work these tasks represent at the IAAF World Championships, it is strongly recommended that several assistants be appointed. Among them a Deputy Medical Director and office managers who can help the MedDir in the following duties (see Table 1):

- 1.1.1 Ensure recruitment and supervision of the various medical personnel that should have some knowledge of the nature of Athletics as a sport, and should have sports medicine skills;
- 1.1.2 Design a comprehensive health care system, making sure that adequate facilities, supplies and equipment are available for medical care at all official sites, venues and accommodation areas;
- 1.1.3 Recruitment and co-ordination of community medical resources, including emergency transport services, emergency room(s) and hospital admissions;
- 1.1.4 Ensure the correct accreditation and formal licensing of medical staff, and of teams' official medical personnel;
- 1.1.5 Assist the LOC in obtaining liability insurance for medical staff (doctors, nurses, physiotherapists, volunteers etc.) and negotiate, if any, an insurance contract to cover care and consultative services for all accredited personnel;
- 1.1.6 Support the LOC in developing a medical budget, according to the planned medical services;
- 1.1.7 Develop medical information for the Team Manual including detailed facts of medical care provided by the Organising Committee to visiting teams, VIP's, IAAF Family and media. The medical information should also be available on the Organising Committee web site;
- 1.1.8 Maintain administrative liaison with the IAAF Medical and Anti-Doping Delegates. At major championships, he/she should work with the IAAF Medical/Anti-Doping Delegate(s) to ensure that all IAAF Rules and Regulations are complied with. If necessary, appoint

- a Medical Committee/Team member to serve as a liaison to the IAAF Medical/Anti-Doping Delegate(s);
- 1.1.9 Promote and/or invite teams to check the external validity of insurance cards of their participants (for possible mutual recognition of health assistance between different states), and/or to cover their travel and accommodation periods by temporary insurance contracts;
 - 1.1.10 Promote the LOC in organising a Doping Control Team with the National Anti-Doping Organisation;
 - 1.1.11 Develop policies and procedures for all departments of the medical organisation, for final approval by the MedDir and Meeting Organiser;
 - 1.1.12 Advise National Teams' medical staff of any government regulations required for the importation of medication and medical supplies, and provide forms necessary to meet these requirements;
 - 1.1.13 Work with venue coordinators and department heads to develop supply and equipment needs. Determine whether these materials must be obtained by purchase, or by loan or donation from local medical sources;
 - 1.1.14 Deal with the Food Services Department and the Support Services Chair to assure that meals and beverages are available for Medical and Doping Control personnel. Be sure that meal services are adapted to the particular early and late work schedules of these staff members. Guarantee that inadvertent food contamination with prohibited substances (e.g: clenbuterol or nandrolone in meat; morphine poppy-seeds, stimulants in soft drinks, etc.) is avoided;
 - 1.1.15 Work with local health authorities to implement the control and prevention of contagious diseases. Pay specific attention to epidemic outbreaks of infectious diseases (A type influenza, dengue fever, etc.). MedDir should also ensure water and air sanitation as well as control of vectors. If needed, implement monitoring programmes of local pollution, radiation, or any environmental disturbance that can create concern and alarm for the visiting teams;

- 1.1.16 Work with the Housing Office to provide for the housing needs of Medical and Doping Control members, especially Medical staff who are scheduled for on-call emergency care during the night;
- 1.1.17 Ensure that convenient medical records are kept from all medical and physical therapy encounters from all relevant medical centres in various sites. (medical encounter form is suggested in appendix 9);
- 1.1.18 Make the necessary arrangements to compile daily and final statistical data from medical records. It is suggested that a Daily Medical Report be prepared for review by the MedDir and other officials on a 'need to know' basis;
- 1.1.19 Work with the IAAF Medical Delegate to enable the implementation of data collection for athletes' injuries and illnesses epidemiology study; and
- 1.1.20 During the actual period of the Championships, appoint a Medical Committee/Team member with adequate language skills to serve as a liaison with visiting teams' medical staff.

Table 1 – Summary of the Medical Director Responsibilities

1. Recruitment and supervision of the medical staff ensuring accreditation, licensing and insurance as well as logistics (housing, transportation and food);
2. Design a comprehensive health care system (adequate personnel, facilities, supplies and equipment available at all official sites, venues and accommodation areas);
3. Recruitment and co-ordination of community medical resources (emergency, hospitals, public health, etc.);
4. Development of a budget;
5. Provision of information;
6. Liaising with IAAF Delegates; compliance with IAAF Rules and Regulations;
7. Drafting of policies, procedures and protocols;
8. Advising visiting national teams' medical staff on national regulations on licenses and importation;
9. Ensure food, air and water sanitation, as well as infection control; and
10. Guarantee that Medical Records are kept and organise for appropriate reporting.

1.2 The Scope of Health Care Services

Goal: Provide health care and sports medicine services to athletes, team officials, VIPs, media, spectators and local workers and volunteers, through the organisation of local personnel and facilities, and by working with accredited national teams' medical personnel.

The scope may vary with the size of the competition and the responsibilities assigned to other departments in the organisation. The goal is to provide health care and sports medicine services through an organisation of local personnel and facilities. The extent of services depends on the location, duration and type of competition, as well as the type and number of patients expected, and the nature of the injuries or illnesses which are predictable. Patient groups may include not only athletes, but also health care staff, team officials, LOC workers/volunteers, judges/referees, IAAF Family and VIP's, media, and spectators. The services shall be available at all training sites and competition venues, including all accommodation areas.

Health Care Services include, but are not limited to the following:

- 1.2.1 Adequate facilities available for medical services to cover all accredited people and all competition, training and accommodation sites;
- 1.2.2 Provision of primary and emergency care to all above mentioned people at the various venues and areas of the Championships, at no charge to all eligible persons;
- 1.2.3 Provision of other medical support services needed to ensure the safety and health of the aforementioned, and of the spectators;
- 1.2.4 Maintenance of a data-recording system for all medical and physiotherapy encounters (acute incidents, injuries, illnesses assistances and treatments provided);
- 1.2.5 Supervision of pharmacy services, medication and medical equipment supplies;
- 1.2.6 Establishment of liaison for specialty services and consultations: such as imaging studies (i.e. X-ray, ultra-sound, CT, MRI, etc.); laboratory services; dental; ENT; eye; gynecology; and orthopedic

- care (X-ray, Musculo-Skeletal –MSK- diagnostic ultra-sound and orthopedic services may be on-site at major Championships);
- 1.2.7 Coordinating service with the hospital network and emergency services; including the development of a liaison system with admitting hospitals to ensure timely reports of hospital admissions, daily progress reports and hospital discharges;
 - 1.2.8 Supervision of environmental, meteorological health and safety at all official sites, venues and accommodation areas;
 - 1.2.9 Public health and safety surveillance;
 - 1.2.10 Administration of official emergency treatments (including intramuscular or intravenous infusions) for athletes at IAAF competitions only by LOC medical personnel in LOC medical care sites or by licensed persons;
 - 1.2.11 Organised training sessions for the various medical care teams; including those in charge of road race events. Topics should include: information on Athletics and its rules; basic sports medicine skills; evacuation; transfers and refer medical criteria on competing, on training and accommodation areas; List of Doping Prohibited Substances and Methods as well as TUE protocols; medical guidelines for common conditions in athletes, etc.
 - 1.2.12 Integration of services with the Doping Control programme;
 - 1.2.13 Supervision of meal quality for participants, and general food sanitation in cooperation with the LOC; sealed water and drinks are preferred - both for health and legal/doping problems - and should be available at any site of accommodation or competition; maximum attention should be paid to the choice, storage, conservation and presentation of foods; consider a wide choice of different meals, taking into account different needs linked to possible medical necessities and/or different cultural, ethnic or religious uses (vegetarians, coeliac disorders, religious restrictions for meat, etc.); the timing of meals should be as wide as possible, and will take into account not only the competition schedule, but also possible

particular needs (Ramadan, etc.); ensure adequate and diversified collection of meal waste (humid, plastic, paper etc);

- 1.2.14 Contribution towards the prevention or early detection of possible food-linked problems and/or of general epidemic diseases, if any;
- 1.2.15 Provision of adequate support (fluid drinks, ice, hot drinks, blankets, conditioned or warmed areas, etc.) in case of particular heat or cold environmental conditions, in accordance with the LOC;
- 1.2.16 Provision of information - by means of the team manual: website, or other tools - on particular vaccinations requested by the World Health Organisation (WHO) and/or national or international travel laws, if any;
- 1.2.17 An orientation session or medical meeting for visiting teams' medical staff, outlining available medical services and doping control procedures;
- 1.2.18 Liaison with Security Services to facilitate access to medical areas for accredited team medical personnel, when necessary, for athlete care; and
- 1.2.19 Producing a plan against full-scale disasters and accidents in cooperation with relevant LOC departments.

Table 2 – Scope of Health Care Services

Goal: To provide health care and sports medicine services to competing athletes, team officials, LOC workers/volunteers, VIPs, Media and spectators.

1. All accredited people should have health care and safety available at all competition, training and accommodation sites;
2. Guarantee medical data recording and reporting;
3. Appropriate supply of pharmacy, medication and medical equipment in all medical sites;
4. Provide with specialty services (i.e.: imaging, laboratory, dental, etc.) through local resources including coordination of hospitals' emergency services;
5. Supervise meteorological and environmental conditions as well as public health;
6. Training and education of the various medical care teams;
7. Draft policies, procedures and protocols; and
8. Provide with preventive and informative medical information to the different involved populations (athletes, team officials, media, spectators, etc.)

2. Staffing and Equipment Guidelines for Events

2.1 Workload

There is a paucity of information concerning the number and type of injuries and illnesses seen during major athletics competitions. The MedDir is urged to maintain complete records which should be included in the report to the Meeting Director and to the IAAF.

Previous experience suggests the following numbers:

- Polyclinic - general medicine/sports care: 40 - 60 visits/1,000 athletes/day.
- Physiotherapy: 40 - 50 visits / 1,000 athletes / day; and
- Massage therapy: 40 - 50 visits / 1,000 athletes / day.

Stadium: small and variable work-load of acute injuries / illnesses; representing 5 - 10% of the total.

Staffing for ancillary facilities and spectator care will depend upon the number of venues required for training, housing of teams, officials, VIPs and media.

2.2 Staffing

Staffing at events is recommended to be as outlined through Appendices 1 to 8. These recommendations provide approximate staffing guidelines for the minimal number of on-duty personnel needed to cover all official sites and venues during Track and Field championships:

- Physicians - one per 100 athletes;
- Physiotherapists - one per 30-50 athletes; and
- Massage Therapists - one per 50-75 athletes

Staffing for ancillary facilities care will depend on the number of official sites, venues and accommodation areas.

Spectator care should also be provided in IAAF Track and Field Events.

Depending on the level of competition, a pharmacy will be organised, and be supervised by a licensed pharmacist.

For road race events, the number of medical personnel should depend on the number of participants and weather conditions. The following numbers are recommended:

- Physicians - 2-3 per 1,000 runners;
- Nurses - 4-6 per 1,000 runners;
- Other professional staff (Emergency Medical Team –EMTs-, paramedics and athletic trainers): - 4-6 per 1,000 runners; and
- Non-medical personnel (stretcher bearers, walkers, clothing fetchers, drivers and administrative recorders):
- 4-6 per 1,000 runners.

The provision with adequate medical equipment is of paramount importance. Detailed suggestions of equipment can be seen in the appendices. Above all, the setting up of Automated External Defibrillator (AED) at the competition track, warm-up, training sites, road race courses and accommodation is crucial to implement adequate secondary prevention of sudden cardiac death/arrest.

Distinctive identification markers including caps, arm bands, vests, T shirts and/or bibs labeled with individual training level (physician, physiotherapist, nurse, EMT, etc.) allow for easy recognition of the medical team by competitors.

All members (doctors, nurses, chaperones, personnel, both of medical and of anti-doping staff) must be officially accredited.

2.3 Site Coordinator

An experienced sports medicine professional should be appointed to supervise the medical function at each medical station. These personnel are the key point for a high-quality medical care.

Duties include:

- 2.3.1 Supervising venue health care services;
- 2.3.2 Working with the MedDir to determine daily staffing needs;
- 2.3.3 Assigning daily duties of all medical personnel;
- 2.3.4 Ensuring adequate supplies and equipment for the station;

- 2.3.5 Coordinating requests for consultations with physicians;
- 2.3.6 Coordinating requests for ancillary support services, transportation, specialty referral, and transfers to E.R. and hospital etc., according to the MedDir, or whoever he nominates;
- 2.3.7 Ensuring maintenance of complete medical records;
- 2.3.8 Supervising the use of diagnostic or therapeutic medical instruments, if any; and
- 2.3.9 Ensuring continuous availability of sealed drinks for athletes (water) and of ice.

3. Location of Medical Care Sites

Medical services must be available at all official sites related to the competition, and available to all accredited persons, including teams' medical staff. Full details on staff, facilities, location and equipment at each site can be found in the appendices.

3.1 Polyclinic / Central Treatment Area (see also 9.3.1)

This is the primary care centre for medical evaluation and treatment. If athletes are dispersed over several locations, a central location must be selected. The clinic should include: treatment areas; examining rooms; offices; dispensaries; and waiting area with all necessary equipment. Physical and/or massage services should be offered to athletes from countries without medical staff. Ambulance service should be located on-site or, alternatively be easily available by phone/radio.

3.2 Athletes' Accommodation

Medical care must be established at all official sites and be staffed by physicians and physiotherapists/athletic trainers during the day and evening hours (according to the schedule of the competition). Physicians should establish medical care hours, and be available on-call for emergencies at all other times. It is desirable that each Team with a medical staff should be placed in separate room for medical care as part of the Team's housing allocation.

3.3 Other IAAF/LOC Official Hotels

As a minimum, first-aid should be available on-site, with access to on-call at all times.

3.4 Training Venues (see also 9.3.2)

Medical care must be available whenever these sites are in use, and be staffed by a physician and physiotherapists. An emergency physician and an ambulance service should be available by phone/ radio. At Major Championships, a physician should be assigned as a part of the on-site medical staff.

3.5 Main Competition Stadium (see also 9.3.4)

Medical staff must be available at least 1 and 1/2 hours before the start of the competition, and remain until the competition is over. The medical areas provided must include, as a minimum; a pre-competition treatment area (near the call room); a triage/ emergency area (with an ambulance stationed nearby); and the main treatment area.

At major championships, 3-4 field emergency medical teams should be stationed at the perimeter of the track. All should be connected by radio with a Medical Supervisor who should watch the competition from a prominent place in the Stadium so that he/she has an overall view of the whole competition enabling him/her to notice immediately any medical incident on the field of play that would require prompt medical assistance. Upon notification from either the Medical Supervisor or the medical teams themselves, under strict co-ordination with marshals and judges/referees, the first-aid teams should assist speedily, at the earliest time, all injured/ sick athletes on the track, and transfer them immediately to the main treatment area in the Stadium. AED should be available at the competition track, as well as a variety of appropriate medical equipment.

Ensuring the immediate care of an injured or ill athlete on the field of play is of utmost importance. The chain-of-command to allow first-aid teams to intervene should be quick and efficient. First-aid teams and medical supervisors- as well as marshals and judges/referees - should be trained to activate immediate assistance to injured/ill athletes without unnecessary delay. Neither the injured athlete, nor the first-aid teams should interfere with the competition, nor disturb other competing athletes. Evacuation from the field of play and subsequent transfers to the Main Treatment Area in the Stadium should always be done at the earliest time (see 9.3.4.4).

Team Doctors from the different countries should be permanently informed whether their athletes required medical assistance in the field, or in the main treatment area. The Medical Director should make the necessary arrangements (see 1.1.20) to ensure that a member of the Medical Committee, in constant communication with the Medical Coordination Centre (see 11.7), will liaise with Team Doctors and provide them with any medical information on their athletes.

3.6 Warm-up Area (see also 9.3.3)

This is the most important site for visiting medical teams. It should be open at least 2 hours before the start of the competition and remain open until 1 hour after the last competition is over.

A wide area should be made available to all team doctors and team physical therapists to provide care to their own athletes. This area should be in the shade and/or air conditioned, and be equipped with power supply and lightning for night hours.

Cold water immersion therapy for recovery should also be provided (see Appendix 11). Medical care must also be available, including first-aid and ambulance services. Physical and/or massage services should be offered to athletes from countries without medical staff.

3.7 Spectator Areas (see also 9.3.5)

The provision of emergency care and first-aid for spectators is a responsibility of the medical organisation; according to the national health and security rules on public events. Community resources, such as the Red Cross or Local Emergency Services may be recruited to assist.

AED have to be available to implement adequate secondary prevention of sudden cardiac death/arrest.

An ambulance service, proportional to the number and/or sectors of spectators, should be available to evacuate, if any, patients to a critical care facility.

First-aid teams should be available at easily accessible, well-identified areas for the treatment of minor medical problems.

3.8 Road Race/ Walking/Cross Country Events

The scope of services includes: critical care; first-aid; treatment for environmental illnesses; as well as the general medical problems associated with road running.

Experienced medical personnel, proportional to the number of participants, must be present at all aid-stations and finish line, in addition to the roving medical vehicles and first-response teams. The medical areas provided can include a pre-competition treatment area (near the call room), medical first-aid teams along the course (ideally every 5km), a triage/ emergency area (with an ambulance stationed near-by), and the main treatment area close to the finish line.

Advanced life support emergency ambulance coverage should be available along the whole course, up to the finish line. AED should be provided for the course and the finish line. The first-aid teams should evacuate all injured or sick athletes from the course at the earliest time, and transfer all of them to the main treatment area at the finish line.

Similar assistance must be available in cross country events, proportional to the number of participants and the characteristic of the course (see Appendices 5 and 6).

3.9 Pharmacy: Prescription Guidelines

The pharmacy will be supervised by a licensed pharmacist. All attending staff physicians and visiting team physicians should be provided with adequate medication, so as to provide optimal medical care. The size and complexity of the supplies stored and managed will vary considerably, and will be determined by the size and number of teams, and the duration of the competition.

- 3.9.1 Medication should be dispensed only by a pharmacist or by a staff member of the local Medical Committee/Team;
- 3.9.2 Only prescriptions from the staff physicians and accredited team physicians will be evaluated and, if any, honoured;
- 3.9.3 Team physicians can only prescribe medication for members of their own delegation;

- 3.9.4 Prescriptions should be written on a form provided by the organiser and should be written for a maximum of seven days' therapy; and
- 3.9.5 WADA prohibited medication should be kept separately, and be clearly marked. The responsibility for using these substances, due to emergent situations, will lie with the prescribing physician and patient. Prohibited substances should be avoided, unless there is no therapeutic alternative. However, athlete health should be the first priority, and prescriptions of prohibited substances should not be excluded if they are needed to treat any particular medical condition. All prohibited substance prescriptions should be counter-signed by a staff physician. The pharmacist will inform the patient that the medication is prohibited, and the patient will acknowledge this fact by counter-signing the prescription, prior to dispensing.

The athlete must submit a TUE application to the IAAF Medical/Anti-Doping Delegate on-site before participation in any competition, and to the IAAF TUE Sub-Commission whenever a prohibited substance is administered. IAAF TUE forms are available on the IAAF website: <http://www.iaaf.org/about-iaaf/documents>

4. Environmental Health and Safety

4.1 Food Poisoning and Contagious Diseases Prevention

The LOC Medical Committee/Team shall supervise environmental health, sanitation of food and safety at all venues, including housing facilities, and training and competition sites. The Medical Committee/Team will be informed about any possible reports of communicable and food-borne illnesses, and will co-operate with local public health authorities, especially in cases of infectious diseases manifested by a rash and fever (measles, rubella, varicella, dengue fever, etc.), gastro-intestinal illnesses; hepatitis; influenza-like illnesses; and sexually-transmitted diseases.

The Medical Committee/Team shall make a plan for the isolation or hospital admission of individuals with contagious diseases.

The Medical Committee/Team should make a comprehensive public health plan including, at least, the following aspects:

- Food Safety and Food manipulation Control

In close relationship with the relevant LOC department, supervise the meal quality for participants and general food sanitation; prevent from, or enhance early detection of, possible food poisoning, if any; and make every best effort to guard against inadvertent food contamination with prohibited substances (clenbuterol or nandrolone in meat; morphine in poppy-seeds, stimulants in soft drinks, etc.); check whether food manipulators carry germs and give a Typhoid fever injection before the Event; ensure adequate and diversified collection of meal waste (humid, plastic, paper etc).

- Contagious diseases

Work with local health authorities to implement control and prevention of contagious diseases; pay specific attention to epidemic outbreaks of infectious diseases (A type influenza, measles, dengue fever, etc.).

- Drinking Water / Air conditioning / Swimming pools sanitation

Sealed water and drinks are preferred, both for health and legal/doping problems, and should be available in any site of accommodation or competition. The LOC will supply the stadium, warm-up, training and accommodation facilities with bottled water that is manufactured only by an authorised bottled water supplier. Tap water sanitation at accommodation should be assured. Appropriate control of air conditioning and swimming pools to prevent legionella outbreaks should be implemented.

- Air Sanitation and Air Quality

Implement monitoring programmes of local pollution, pollen ratings, radiation or any environmental disturbance that either can create concern and alarm for the visiting teams, or originate real health hazards.

In close collaboration with the relevant LOC Departments, the IAAF Green Project can be implemented via a diversity of initiatives such as: operation of eco-friendly vehicles in and out of Stadium area; use of electric cars and scooters around road race courses; having a green system and utilisation of bicycles within the Athletes' Village/Accommodation, etc.

- Vector Control

Adequate programmes of Sanitation in competing, training, accommodation and spectators areas should be implemented as well as appropriate control

of animals. Fumigation of the above-mentioned areas should be done an adequate number of times and, with appropriate timing.

- **Biological Waste Disposal**

Clearly-marked “biohazard waste” disposal containers shall be provided at all medical sites, including visiting teams’ medical treatment areas. Collection and disposal of containers will be carried out according to treatment of contaminated medical waste, and national health and prevention rules.

4.2 Weather conditions

The risk of heat illness increases above 21°C (70°F) and 50% relative humidity. The wet bulb globe temperature (WBGT) which measures the combined thermal stress from the wet bulb (WBT), dry bulb (DBT), and black globe (BGT) thermometers has been widely used to assess environmental heat stress.

The WBGT is calculated as $0.7WBT + 0.2BGT + 0.1 DBT$, measured outdoors.

A corresponding coloured flag system can be used to visually signal the thermal injury risk of current weather conditions to competitors and spectators.

The WBGT and colour coded flags to indicate the risks of thermal stress are:

- BLACK FLAG: Extreme Risk - WBGT is above 28°C (82°F),
- RED FLAG: High Risk - WBGT is 23-28°C (73-82°F),
- YELLOW FLAG: Moderate Risk - WBGT is 18-23°C (65-73°F),
- GREEN FLAG: Low Risk - WBGT is below 18°C (65°F) and
- WHITE FLAG: hyperthermia,
but increasing risk for hypothermia
 - When WBGT is below 10°C (50°F).

The LOC shall work with local meteorology sources to provide statistical information on prior weather patterns, in order to assist competition organisers in developing the competition schedule. Many athletes have dropped out of marathon races and walking events due to heat casualty in the recent IAAF World Championships. LOC should consider the risk of heat injuries.

The LOC Medical Committee/Team should implement a thorough monitoring system of weather conditions. During the competition, daily and hourly weather forecast information should be available on the LOC Official Website. For the period of the competition, and on road racing days, the LOC shall arrange to take frequent readings of temperature, humidity and WBGT at different competition sites in order to assess possible heat stress for athletes, officials, volunteers and spectators. Readings will be performed at various times and the measurements displayed in banners of sufficient size to facilitate information available to athletes, officials, and health staff:

- Warm-up Area: one banner indicating the WBGT measured every 60 minutes on-site. If the competition has a separate throwing warm-up area, another WBGT banner should be set up displaying measurements also taken every 60 minutes;
- Stadium: one banner on the Technical Information Centre (TIC), displaying the WBGT measured every 60 minutes on the home-straight (50 metre line); and
- Road events:
 - Marathon: one banner close to the Finish Line, and another one at the half-waypoint showing the WBGT measured every 20 minutes on-site; and
 - Race walking: one banner in front of the Team-Refreshments Station showing the WBGT assessed every 20 minutes on site.

The Medical Committee/Team will work with the Supply Department, Venue Management, and Competition Management to ensure that, during competitions held both in hot or cold weather conditions, adequate shelters (tents, canopies, awnings, umbrellas, etc.) are provided for athletes and officials in the field events and multi-events, where prolonged exposure is likely to occur. Adequate water and glucose/ electrolyte solutions shall be provided at each site.

In general, particularly considering endurance events, better performance and less adverse results are obtained when the environmental conditions are going to improve, rather than worsen, during the event. As an example, in hot environmental conditions, start times would be better set for late afternoon, rather than early morning (increased thermal stress in sunny morning), for road racing.

The Medical Committee/Team should work together with the Competition Department to monitor weather conditions and a specific contingency plan

should be implemented to consider the scenario of extreme meteorological situations that could force a delay or even cancel the competition.

5. Communication with Media

The communication of medical information to the Media should be in strict accordance to local regulations of medical confidentiality and data protection. In the very unusual situation of an adverse outcome such as death or other very serious health problem, the LOC MedDir shall discuss the matter with the IAAF Medical Delegate. Both will deal with the matter through the Media LOC Department and IAAF Media and Communication Department. The latter have the responsibility of communicating the matter to the media in a limited extent, and in the appropriate way, site and time. All members of the LOC Medical Staff should keep all medical information confidential, and are not authorised to give any kind of information to the media. A protocol should be drafted for any kind of sensitive situations, such as: deaths; contagious disease outbreaks; or similar.

6. Translation Services

The LOC shall arrange availability of adequate interpreters for several languages in medical care areas and the Doping Control Station (DCS).

7. Security

The LOC shall ensure that Security personnel are posted at key medical areas to control access. These include stadium emergency treatment areas, main treatment areas, and the doping control station. Security personnel must allow medical staff rapid access to competition venues in cases of emergency.

8. Doping Control

The LOC shall ensure that doping control is well organised by the local Doping Control Team, under the supervision of the IAAF and IAAF Anti-Doping Delegate.

9. Support Services

Goal: To work within the structure of the Championship Organisation to obtain appropriate support Services for the medical organisation to fulfill its responsibilities.

9.1 Communication

9.1.1 Fixed stations

Ensure telephone service between all fixed medical care facilities, including the DCS. Make sure that all phone numbers are in the Championship Directory, or in the information package provided to all Teams.

9.1.2 Mobile service

Arrange portable radios (walkie-talkies or cellular phones) for key medical personnel; especially the Chairman; Department Heads; field facilities and staff; and DCS.

9.2 Transportation/Ambulances

9.2.1 Pre-competition

Ambulance service, or emergency vehicle transportation, should be available on-call for all training venues, headquarters hotel, meeting sites, media headquarters, etc. This is best arranged with community service organisations. Site and route maps should be provided to emergency ambulance personnel, who may not be familiar with the training sites and access routes. Ambulance services must be coordinated as part of the entire emergency response.

9.2.2 Competition

During the competition, one or more ambulances should be located as close as possible to the main treatment area in the main stadium.

Other ambulance(s) may be placed near the spectator First-Aid Station.

Ambulances should be able to provide advanced cardiovascular life support (ACLS).

9.3 Coordination of Facilities

Adequate work spaces are essential for the provision of high-quality medical care. Medical care areas must be clearly identified well in advance, in cooperation with the various venue managers, and adapted to the needs of the Medical Committee/Team, if necessary.

9.3.1 Polyclinic/ Central Treatment Area

This is the primary care centre for medical evaluation and treatment. Many of the medical conditions observed here may be not only sports-related, but also concerning general medical problems, including heart, respiratory, gastrointestinal, gynecological, dental and other illnesses. If the 'Village' is part of a university housing complex, the university health services facilities may be an ideal site for the Clinic. If athletes are dispersed in several housing areas, a different central location must be selected.

The Clinic areas should include:

- Waiting area for patients and accompanying personnel;
- Administrative area for staff, records, and record storage;
- Nursing triage area;
- Physician offices and examining rooms;
- Treatment areas for physiotherapy, with tables and therapy equipment;
- Massage therapy area with tables; and
- Pharmacy (locked) for storing and dispensing medication and supplies.

Laboratory, MSK diagnostic ultrasound, X-ray, etc. services may be available on-site at large competitions, or may also be arranged through community resources.

Dental and ophthalmology services may also be made available at major competitions.

9.3.2 Training Sites

Minor treatment areas must be established at each training venue. These may be situated in a tent, trailer, or medical room of the training facility. Acute care for minor emergencies, and limited care for sub-acute conditions, should be provided. Telephone or radio contact should be available to call for consultations or ambulance evacuation in case of emergencies. The ACLS treatment should be readily available by the provision of AED and trained staff.

9.3.3 Warm-up Area

This may be one of the training venues, and should be adequately staffed and equipped for minor medical care. It should provide separate work

spaces for all national teams and their medical staff. Sufficient toilets should be provided, as well as ice, sealed water and a variety of sealed refreshments. Cold water immersion therapy for recovery should also be provided (see Appendix 11). The ACLS treatment should be readily available by the provision of AED and trained staff.

9.3.4 Main Competition Stadium

9.3.4.1 Pre-competition treatment area

A small area near the call (check-in) room may be established for last minute medical situations and massage. This will require minimal staffing. A larger area (and greater staffing) could be required during the multi-events, depending upon the stadium layout, and access to other medical care by these athletes.

9.3.4.2 Triage / Emergency Area

This area (often a tent) should be located close to the finish line, particularly when the main treatment area is located at some distance from the field itself. Fast and secured access from the field should be assured, for rapid athlete evacuation. Staff should include a physician, physiotherapist/athletic trainer and, possibly, a nurse. Basic equipment for the management of acute injuries, heat stress, and cardiac emergencies should be on hand. Easy and fast communication with ambulance services and with the Main Treatment area must be assured.

9.3.4.3 Main Treatment Area

This is the central treatment space for most acute injuries and illnesses seen during the competition. Ideally, it should be located near the finish line, with security zones for rapid access into and out of the stadium, possibly near the Mixed Zone or Post-event Control Room. In this case, a Triage Area is not needed. Availability of a large number of treatment spaces and tables is required, preferably curtained-off for privacy. Staff should include physicians, physiotherapists, nurses and receptionists. Interpreters for several languages may be required in international competitions. Equipment for management of injuries and illnesses should be available. AED should be provided.

9.3.4.4 Field Emergency Teams

At major competitions, 3-4 emergency medical teams equipped with stretchers should be stationed at specified sites around the perimeter of the track, so as to be able to reach injured or sick athletes immediately. These first-aid teams should evacuate all injured or sick athletes from the field of play at the earliest time, and transfer all of them immediately to the main treatment area in the Stadium.

Ideally, each team should consist of a physician and a therapist, equipped with an emergency equipment kit (AED among others) and radios. An emergency vehicle (electric cart or ambulance) equipped with a stretcher, intravenous supplies, cardiac emergency equipment, and other emergency medications and supplies may be available immediately.

Locations of these teams, and arrangements for immediate field access, must be clearly arranged with venue management, competition management, Technical Committee, and Security forces.

All first-aid teams should be in communication by radio. All should be connected by radio with The Medical Supervisor, who shall watch the competition from a prominent point.

9.3.5 Spectator Care Areas

First-aid stations, according to national health rules on public events, should be strategically located throughout the stadium, clearly marked, and staffed by nurses and para-medics. In addition, an emergency response system should be in place throughout the stadium, staffed by personnel with basic life support skills (cardio-pulmonary resuscitation; CPR), and supported by a team of physicians who are trained and equipped to provide ACLS. AED should be available.

9.3.6 National Teams Housing Medical Space

Each National Team with a medical staff should be ideally allocated in a separate room for medical care, as part of the team's housing allocation. (This may need to be arranged as requested by each National Team's managerial staff).

9.3.7 Headquarters Hotels and Media Centre

First-aid and minor treatment facilities should be available on site. Alternatively, arrangements may be made through the on-call medical resources of the hotel or accredited persons may be taken to the Polyclinic through the Organisation's Medical Care System. Headquarters staff should be able to arrange or call for emergency transportation (ambulance), if necessary.

10. Supplies and Equipment

Consideration must be given to facilities in medical care areas:

- Waiting room chairs, clerical desks, chairs, laptop computers connected to the internet service, printers, record files and copying machine.
- Examination room tables and chairs, examination equipment; therapy/massage tables; ice-making equipment (freezer); ultra sound and electrical stimulator; hot pack machine; equipment for suturing lacerations and removal of foreign bodies; and
- Fluids, containers and cups for training venues, warm-up areas, treatment area, field facilities, and technical officials.

Adequate cooled water, bottled water, and non-caffeinated drinks should be provided. Treatment supplies should include various dressings, bandages, tape, under-wrap, ointments, massage lotions, syringes, needles, alcohol wipes, as well as supplies and equipment for managing major emergencies, etc.

11. Miscellaneous

11.1 Temporary license for team doctors and physiotherapists

The LOC Medical Committee/Team should check with Local Health authorities on the regulations for visiting Team Physicians and Physiotherapists. Usually a temporary license is needed for practicing medicine or physiotherapy just for the period of the Championships and only within the own Team. Visiting Team Doctors and Physiotherapists should be communicated well in advance of the documents and protocols needed to obtain the temporary license.

11.2 Requirement for medicine importation

The LOC Medical Committee/Team should check with Local Health authorities on the regulations for the importation of medicines by visiting team physicians. Visiting Team Physicians wishing to bring their own medical bags should be advised well in advance of the documents and protocols needed to obtain the medicine importation approval.

11.3 Medical Insurance for visiting Teams

The LOC is only responsible for covering first-aid treatment for accredited people during the period of the Championships. Any further medical need should be covered by the visiting Team. For that purpose visiting Teams should come to the host country with valid medical insurance to cover any medical cost. The IAAF General Secretary office usually helps IAAF Member Federations to take out such insurance at convenient rates. The LOC Medical Committee/Team should implement the necessary arrangements to determine medical costs to the relevant body, and to obtain payments before departures. Other groups of accredited people should, or could, have different insurance: such as IAAF Family members (acting officials as delegates, international judges/referees, etc.), Media members, foreign spectators etc.

11.4 Registration of medical records and statistics

The LOC Medical Committee/Team shall register all medical records during the Championships. The LOC will use an individual 'Injury and Illness Medical Encounter Form.'

The LOC Medical Committee/Team has to produced daily statistics (and at the end of the Championships) concerning the number of medical and physical therapy encounters by categories (athletes, officials, VIP, Media, LOC, spectators, others) and medical centres (Stadium, Warm-up areas, Athletes' Accommodation and training places). Daily reporting of Hospital transfers/admittances shall be organised too. It is recommended that the LOC Medical Committee/Team appoint a person to coordinate this important duty. Ideally, this person should also be the one dealing with the coordination of the Athletes' Injuries and Illnesses Study.

11.5 Athletes' injuries and illnesses surveillance study

Injury and illness study provides not only important epidemiological information, but also direction for injury and illness prevention. The aim of such studies is to

record all newly acquired illnesses and sports injuries incurred in competition and/or training during the Championships. The Surveillance systems have been in place in Athletics since the Osaka 2007 World Championships. The Team Physicians or Physiotherapists of all participating national teams are requested to report, on a daily basis, all injuries newly incurred in competitions and/or training and all illnesses (or the non-occurrence) using a specially designed, single-page report form. Additionally, LOC medical staff should collect Injury and illness data from all medical encounters with athletes across medical sites. All information will be treated as strictly confidential.

The LOC shall appoint a person to co-ordinate data collection from LOC medical doctors. He/she shall retrieve the relevant information from athletes from all daily medical encounter forms. Ideally, this person should be the same who was appointed for Item 11.4 (Registration of Medical Records).

It is suggested that the LOC appoint 2-3 volunteers (Medicine, Nursing or Physiotherapy students) fluent in English to participate in the study as volunteers. They will be responsible for

- a. Collecting daily forms from Team Physicians, and keeping a record of the teams who report;
- b. Assisting doctors in completing the forms;
- c. Liaising with the IAAF Medical Delegate at all times;
- d. Communicating with the LOC person responsible for passing on the medical information;
- e. Recording of all data into computer files; and
- f. Recovering daily reports from Athletes' Accommodation Polyclinic boxes.

These volunteers should have adequate accreditation and transportation to fulfill their duties.

The LOC shall set up a place of work in a designated part of the Warm-up area. This area has to be equipped with power supply, internet connection, tables and seats, as well as being appropriately signed. This place will be a primary place for form delivery for team doctors. A secondary and alternative place could be a box for the delivery of reports at the Polyclinic.

11.6 Disaster management

The LOC Medical Committee/Team should work in cooperation with relevant LOC departments to produce a plan against full-scale disasters and accidents.

11.7 Medical coordination Centre

It is strongly recommended that the LOC medical committee/team will set up a medical co-ordination centre in the stadium. This centre will provide a central co-ordination office for the whole LOC medical care during the full competition period. It should be adequately equipped, mainly with communication supplies: internet connection, phone landline, fax and other wireless devices. All information on medical assistance given to athletes in the field (including marathon and race walking courses) or at any medical site, must be sent by radio communication to the medical coordination centre. A specific member of the medical committee, who has been appointed by the MedDir, must liaise with team doctors (see 1.1.20). The team doctors should be informed promptly of their athlete's medical status. It is also recommended that this will be the place of daily briefing of the MedDir and medical delegate.

B. MEDICAL MANAGEMENT FOR ROAD RACE EVENTS AND CROSS COUNTRY

1. Objectives

There are a smaller number of participants in IAAF road races, compared to that of mass - participation races. Competitors should be well-trained for IAAF road events. However, many athletes face medical problems during road races. In the mass-participation road races, 10% of participants retire due to heat exhaustion in races of 10km or longer on average (depending on weather conditions).

Optimum medical support for road race events should be:

1. Minimisation of the potential hazards of road racing by scheduling events at the safest possible period of the year, and time of the day, and by modifying the event's schedules in extreme conditions;
2. Organisation of medical personnel, communications systems, equipment and supplies to swiftly handle medical emergencies;
3. Appropriate triage and management of injuries and illnesses that affect competitors;

4. Education of runners by means of printed material in race packs and pre-race announcements to allow informed and rational decisions with respect to participation in an event given the environment, distance, and individual factors which affect risk on a specific race day;
5. To ensure continuous and adequate supply of sealed drinks (water, etc.) along the race; and
6. To ensure adequate protection tools, according to hot or cold weather conditions.

2. Scope of Services

2.1 Critical Care

Equipment and supplies for obtaining vital signs, instituting basic CPR and ACLS should be available in the roving medical vehicles, at major on-course medical stations, and at the finish line medical station. The critical care response teams should be prepared to evaluate and treat cardiac arrest; exertional heat stroke; hyponatremia; diabetic insulin shock; status asthma; and exercise-or allergic-anaphylaxis.

2.2 First-aid and General Medical Problems

Initial field care for major medical, minor medical, dermatologic, and orthopedic problems will be of concern. The evaluation and treatment of environmental and exercise related medical problems like dehydration; hyperthermia; hypothermia; and exercise associated collapse, and problems associated with road racing; including allergic responses such as anaphylactic shock; hives; asthma exacerbation; and diabetic insulin reactions is of notable importance.

2.3 Special Problems

Facilities shall be available for dealing with stretchers or wheelchair athletes and other types of disability.

3. Administration

3.1 MedDir and other Personnel

Each race should appoint a MedDir, knowledgeable in the particular concerns and problems of runners. Other personnel include;

- a. Physicians with experience and expertise in sports medicine and emergency medical care;
- b. Nurses (RN) with critical care and/or emergency room experience;
- c. Paramedics and emergency medical technicians (EMT);
- d. Sports physiotherapists and physical therapists (PT);
- e. Certified athletic trainers (ATC); and
- f. First responders.

All of these personnel should be familiar with medical problems associated with runners and be recently CPR certified. Non-medical support personnel act as recorders, transporters, and supply technicians.

3.2 Personnel Organisation

3.2.1 Aid stations:

A physician, RN, paramedic, and/or EMT (PT, ATC, or massage therapist optional) will take care of injured runners. Aid stations shall be located every 5 km or at pre-defined medical points around the course (in case of circuit marathons, walk races, or cross country.) AED and first-aid kits shall be available.

3.2.2 Roving medical vehicles:

Physician, RN, paramedic or EMT

Defibrillator or AED experience is helpful. Roving medical vehicles and mobile medical aid, though they are impeded by runners, offer the best solution for rapid response to a collapsed athlete on a road course. The use of fully-equipped ambulances on the course is advantageous, and increases the medical response capabilities.

3.2.3 First response teams:

AED-equipped motorcycles or bicycles to have rapid access to collapsed athletes with potential cardiac arrest. Operators must be trained in the use of AED, and the team must be integrated with the local emergency medical system. Several teams must be assigned along the course to follow the main pack, and separated by 2-4 km giving rapid access to most runners.

3.2.4 Finish line personnel:

- a. A Triage Officer and team to direct the flow of casualties to the proper area for care; and
- b. Field medical site personnel divided into medical care teams that can manage medical illness, dermatological conditions, and orthopedic injuries.

Larger medical areas may separate the teams by injury or illness category. But the triage team must make appropriate decisions when directing runners to the proper care centre. Non-medical staff should also be available for recording medical data, retrieving dry clothing, distributing census information to concerned parties, (such as LOC MedDir); and for general assistance.

3.3 Transport

ACLS emergency ambulance coverage should be available at the finish line and along the course. Course configuration and access may dictate a greater number of vehicles or the use of “first response teams” on bicycles motorcycles, or motorised carts equipped with minimal supplies and AED. Transportation for drop-outs without medical problems should be arranged separately, so that those who cannot complete the event due to fatigue or minor injury/illness do not suffer further problems due to exposure after their race participation has stopped. Medical support vehicles or ambulances should be reserved for transportation of non-healthy runners who are unable to finish the race. The dedicated vehicles that will pick up healthy, retired runners should be provided by the LOC.

3.4 Public Authority Notification

Coordination with local hospitals, emergency medical vehicles, fire fighters, and police is crucial. They must be notified of the race date, start and completion times, course route and intersection closures, and anticipated casualties. If the proposed course involves traffic lanes or intersection closures, permission and traffic controls may need to be arranged with local police, and proper permits obtained. The telephone-accessible emergency notification system should be used by the race volunteers, when available.

4. Race-day Organisation

4.1 Start Area

4.1.1 Spectator and Vehicle Control

There must be adequate crowd- and traffic-control to allow for the unimpeded flow of runner traffic. The LOC should communicate with the local Police prior to the events.

4.1.2 Adequate Toilet Facilities

Toilets or portable commodes should be provided for runners. Be sure of the availability of adequate facilities for female participants. The providers of such services should have charts to estimate the number of commodes necessary for an event, based on duration, number of expected participants, and gender distribution.

4.1.3 Health and Weather Announcements

A pre-race announcement should be made describing the current and anticipated weather conditions; the race medical organisation (including aid station locations); medical volunteer identification; and types of fluid available (and hot and cold weather self-care and hydration advice).

4.1.4 Heat Stress Flags

Colour coded WBGT index flags for heat stress should be displayed prominently at the start area (if used), and announced in the pre-race weather announcement. For longer races like the marathon flags can be placed at selected aid stations along the course to alert runners to changing conditions.

4.2 Course Management

4.2.1 Traffic Safety

Course monitors or marshals should be located at every intersection and change of course direction. Vehicular traffic should be diverted if possible or directed across intersections during breaks in the flow of runners.

4.2.2 Crowd Control

Cordoning off starting pens, finish line area, and designated medical areas should help yield an efficient flow of runners. At the finish line, good security

will allow an efficient flow of runners through the chutes, medical triage, cool down, fluid replacement, and reception areas, with easy transfer to the medical facility, if necessary. For collapsed runners, wheel-chairs and stretchers should be on-site, together with an adequate number of medical staff.

4.2.3 Communication

To speed delivery of medical care, it is essential to use cell phones among medical personnel in spotter vehicles located at the start; aid stations; stationary points on the course, and finish line, or in roving medical vehicles; dropped out runner vans; sweeper buses; and on bikes.

Every volunteer who has his/her own cell phone can become a medical spotter. A phone directory for the race printed on a small card distributed to all volunteers will speed communications. Information can be directly conveyed to the medical communications director who can dispatch the nearest medical or pickup van to the scene. A finish line telephone or direct communication to emergency aid vehicles can act as a backup source of communication for medical assistance.

4.2.4 Vehicles

Roving medical vans equipped with a cell phone, medical personnel, and supplies adequate to deliver ACLS shall be provided. The race aid vehicles should be supported by local emergency vehicles through the communications network. Medical vehicles should have access lanes to the course.

Vehicles for runners who drop out of the event should be equipped with cell phones, fluids, and blankets. An ambulance should be at the finish line Medical Station, and others (depending on the number of competitors, and on the length or characteristics of race) should be located in different sites along the course, or moving behind the competitors. All should be in communication with the finish line and course Aid Stations. A different vehicle should be available to pick up dropped-off athletes, if any.

4.2.5 Medical Evaluation of Impaired Runners

Medical evaluation of impaired runners should be allowed at the discretion of the medical staff, but should not result in automatic runner disqualification. Any authorised medical official has the authority to examine

a runner who appears ill, and to remove that runner from further competition if, in the medical official's opinion, it is in the runner's best interest for health and safety.

The medical staff should evaluate runners who appear compromised, and are not proceeding toward the finish without staggering or weaving; or are not oriented to person, place and time; or are not maintaining good running posture; or are not appearing clinically fit.

Runners and medical staff should be informed in registration materials and pre-race announcements of the evaluation criteria, and that aggressive or emotional behaviour is an early sign of hot-and-cold-injury which will be interpreted as such by the medical staff. Stopping the runner and checking mental state, blood pressure, pulse and respirations will allow for decision-making on medical disqualification, and transport to Finish Line medical station or local hospital emergency facility.

If medically warranted after evaluation, the runner may return to the race.

4.2.6 Time Limits

Establish a reasonable time limit for competitors and volunteers and make transportation available to those who are not able to finish within the allotted time.

4.3 Aid stations

4.3.1 Type

Major aid stations are equipped and staffed with the capacity to deliver the same care provided at the finish line medical station. Minor aid stations are usually located in conjunction with water stations to provide comfort cares and minor first-aid with the intent of transporting any serious medical casualties to a facility equipped to deliver definitive care.

4.3.2 Location

Major aid stations are usually placed at high risk areas on the course which have high casualty rates or difficult access for evacuation. Minor aid stations should be located every 3 kilometres.

4.3.3 Medical Personnel

Aid station staff should include: an MD; paramedic; EMT; RN or CPR trained first-aid volunteers; communications person; and a recorder.

4.3.4 Supplies

Aid stations should have: sealed drinks; ice and small plastic bags; towels; petroleum jelly; blankets for races under 21°C (70°F); athletic therapist kit and supplies for minor musculoskeletal injuries; chairs; cots; and covered shelter (van or tent).

4.3.5 Fluids

180-300 ml (6 to 10 oz.) of water and appropriately-mixed glucose-electrolyte replacement drink solutions, per runner, in sealed bottles totaling 1.5 times number of entrants for each fluid type should be provided at all water stations. Double this total if the course is out-and-back. Possibly provide sealed bottles with straws.

4.3.6 Signs

Provide adequate signs notifying competitors of the fluid type and the location of medical personnel. Colour-coded flags describing current environmental heat stress can be located at each station, or at a central aid station, if marked changes in conditions are expected during the race.

4.3.7 Toilet Facilities

Portable toilets should be located at aid stations along the course based on the number of entrants and recommendations of the portable toilet vendor.

4.4 Finish Line

4.4.1 Medical Facility Area

The medical facility should be located near the finish line. This will minimise transport of runners who collapse just before or after the finish line. It must be wide enough, considering the continuous arrival of many exhausted athletes together, (mainly in the case of severe hot conditions).

4.4.2 Security

The area should be cordoned off and secured from spectators and media. Rigid barriers such as snow fencing are recommended. Credentials should be required to enter the medical area. Runners should be permitted to enter only if they are injured or unwell.

4.4.3 Personnel

The medical staff should include a triage officer (for races over 1,000 runners) who is, preferably, a primary care or emergency room physician with special interest in sports medicine. Other physician staffing can include Orthopaedic surgeon; Family Practice; Emergency Room; Internal Medicine; and intensive care physicians. Nurses; physicians' assistants; EMTs; paramedics; and athletic trainers make up the remainder of the medical team.

4.4.4 Supplies

Finish line medical centre supplies should include: a large tent or adequate shelter from weather, with heaters if cool weather is expected; or fans and ice immersion tubs if hot weather is expected; toilet facilities; lighting, electricity source or generator; defibrillator, cardiac resuscitation drug kit; intubation kit; oxygen tank and administration sets; hand-washing stand; cots; chairs; blankets; towels; water in large containers; ice in plastic bags or ice chest; tables for medical supplies and equipment; stethoscopes; blood pressure cuffs; rectal thermometers (including standard clinical thermometers); hyperthermia thermometers to 44°C (110°F) and hypothermia thermometers to at least 21°C (70°F); elastic bandages; inflatable arm and leg splints; intravenous fluids and administration equipment (supervision by a physician required); dressings; moleskin; and adhesive dressings for minor musculoskeletal injuries.

4.4.5 Injury Record Forms

Medical records will serve as a record of care for medico-legal purposes, and allow for better planning for future races as injury rates are calculated and staffing and supplies adjusted accordingly. In order to make valid comparisons among athletics events world-wide, it is strongly recommended that all medical encounters be recorded in a medical encounter form (see Appendix 9).

4.4.6 Fluids

Water, or carbohydrate-electrolyte replacement drinks, with two to four 240 ml (8 oz.) cups per runner will be prepared.

4.4.7 Physical Layout of the Medical Area

The layout of the medical area should allow for efficient movement and easy access from the finish line. The medical area can be divided by function, between medical and skin, bone, and joint sections. It is most efficient if delivery of care groups casualties requiring intravenous lines in the same section of the tent. Emergency vehicle access should be arranged to allow unimpeded entrance and exit to the medical area.

5. Medical Conditions in Road Race Events

Medical personnel should be familiar with the wide variety of medical conditions which may be associated with road race events. Education in these areas should be addressed as part of a medical team orientation.

5.1 Exercise Associated Collapse (EAC)

One of the most common medical problems is likely to be with athletes who collapse at, or after the finish. EAC is most accurately viewed as a symptom, with many possible etiologies or diagnoses (including post-exercise postural hypotension). EAC is simply defined as a situation involving an athlete requiring assistance during or after endurance activity, not of orthopedic or dermatologic origin (including: post-exercise postural hypotension; exertional heat induced and associated injury; exercise exhaustion; exertional leg cramps; and hypothermia).

5.2 Cardiovascular Collapse

Sudden death of cardiac origin occurs more frequently in runners with known heart disease and those with clearly defined risk factors. However, it should be stressed that sudden cardiac death occurs in runners even without any documented heart diseases. The risk of death from cardiac events at all ages during marathon competition is in the range of 1 per 50,000 –100,000 finishers. Heat strain markedly increases cardiac workload and, ultimately, increases the risk of cardiovascular collapse, especially when combined with dehydration. Runners should be warned of the risks on the entry form, and with pre-race announcements. They should also be advised to seek medical clearance from

their personal physician, and to avoid “sprinting” to the finish line, especially if they are in higher-risk categories. A pre-race medical questionnaire to identify high-risk runners is used by some race organisations, but is difficult to administer and enforce. Self-assessment sheet for cardiovascular problems should be distributed to participants in runner education packs.

5.3 Allergic Reactions

Exercise-induced/related asthma, hives, and anaphylactic shock are sometimes experienced, and, if not controlled medically, should preclude racing. The medical team must be prepared to handle these problems on an emergency basis, and transport to established medical facilities, if necessary.

5.4 Dehydration

This is the most common problem encountered in participants under hot-and-humid conditions. Appropriate fluid intake before, during, and after the race is essential. Medical personnel should remind race staff and athletes that it is possible to take on too much fluid, which can be fatal. Runners should replace sweat losses, but should not assume that fluid replacement beyond the losses is beneficial. Fluids should be cooled to speed gastric emptying and intestinal absorption. Maintaining intravascular volume is the critical factor for thermoregulation. Rapid rehydration after the race will speed recovery and, decrease incidence of post-race collapse.

5.5 Exertional Hyponatremia

Athletes who ingest more fluid than lost through sweating, or who lose excessive salt in sweat, can dilute serum sodium to dangerous levels, and develop cerebral and pulmonary edema. Athletes should be encouraged to replace sweat losses, but never to drink as much as possible. Exertional hyponatremia should be suspected in marathons when a collapsed or ill runner has a finish time greater than 4 hours. Treatment of hyponatremia often requires hospitalisation.

5.6 Skin

Blisters and blood blisters should not be opened. If the lesion is on a pressure area, or is very tense, it may have to be drained. Make several openings in the blister roof, but do not remove the skin. Cover with an antibiotic compound and a sterile bandage or blister pad. If the athlete wants to continue running, a low friction tape will help decrease the shear stresses on the blister area. Subungual

fluids may be drained dorsally through the nail plate by using a heated needle, or drilling through the nail with an 18-22g hollow bore needle.

C. MEDICAL MANAGEMENT FOR SINGLE DAY EVENTS

This section is dedicated to single day (rarely 2 days) events/meetings conducted worldwide in track and field (road or cross country events, have already been considered above).

1. Objectives

Optimum medical support for single-day events is oriented to organise medical and physiotherapy services, both at the athletes' accommodation site, and in the competition and training venues, according to the number of participating athletes.

The following must be organised:

- 1.1 Ensure recruitment and supervision of the various medical personnel with knowledge in Athletics and sports medicine skills;
- 1.2 Design a health-care system, making sure that adequate facilities, supplies and equipment are available for medical care at official sites and accommodation areas;
- 1.3 Recruit and co-ordinate community medical resources, including emergency transport services, emergency room(s) and hospital admissions;
- 1.4 Ensure the correct accreditation and formal licensing of medical staff;
- 1.5 Assist the LOC in obtaining liability insurance for medical staff (doctors, nurses, physiotherapists, volunteers etc.), and negotiate, if any, an insurance contract to cover care and consultative services for all accredited personnel;
- 1.6 Support the LOC in developing a medical budget, according to the planned medical services;
- 1.7 Maintain administrative liaison with the IAAF Medical and Anti-Doping Delegate(s) and ensure that all IAAF Rules and Regulations are complied with;

- 1.8 Promote the LOC in organising a Doping Control Team with the National Anti-Doping Organisation, and cooperate in the logistic organisation of doping control stations both pre and in-competition;
- 1.9 Develop policies and procedures for all health staff;
- 1.10 Work with venue coordinators and department heads to develop supply and equipment needs (independent of achievement of these materials by purchase, or by loan or donation from local medical sources);
- 1.11 Make every effort to guard against inadvertent food contamination with prohibited substances (eg: clenbuterol or nandrolone in meat; morphine in poppy-seeds, stimulants in soft drinks, etc.). Deal with the Food Services Department and the Support Services Chair to assure that meals and beverages are available for Medical and Doping Control personnel, considering the particular early and late work schedules of these staff members;
- 1.12 Work with local health authorities to implement the control and prevention of contagious diseases;
- 1.13 Work with the Housing Office to provide for the housing needs of Medical and Doping Control members, and especially for Medical staff who are scheduled for on-call emergency care during the night;
- 1.14 Ensure that convenient medical records are kept from all medical and physical therapy encounters from all relevant medical centres in various sites (hotel, training and warm up areas, competition field etc). A medical encounter form is suggested in appendix 9; and
- 1.15 Make the necessary arrangements to compile final statistical data from medical records.

2. Scope of Services

2.1 Critical Care

Equipment and supplies for obtaining vital signs, instituting basic CPR, and ACLS should be available at the finish line medical station. The critical care response teams should be prepared to evaluate and treat cardiac arrest; major traumatic events; exertional heat stroke; hyponatremia; diabetic insulin shock; asthmatic status; and exercise-or allergic-anaphylaxis.

2.2 First-Aid and General Medical Problems

Initial field care for major medical, minor medical, dermatologic, and orthopedic problems will be concerned with the evaluation and treatment of environmental and exercise related medical emergencies, (such as: dehydration; hyperthermia; hypothermia; and exercise-associated collapse; problems associated with allergic responses, such as: anaphylactic shock; hives; asthma exacerbation; and diabetic insulin reactions).

2.3 Special Problems

An ambulance service must be organised, and facilities should be available for dealing with stretchers or wheelchair athletes, and other types of disability.

2.4 General

Medical and physiotherapy services will be available not only in the field, but also in the training field(s), and at the accommodation hotel(s) of athletes. Physiotherapy instruments will be available through the LOC, and will be used only by LOC-authorized medical/physiotherapy staff.

3. Organisation

3.1. MedDir and other Personnel

Each event should appoint a MedDir, knowledgeable in the particular concerns and problems of competitors. Other personnel include:

- a. Physicians with experience and expertise in sports medicine and emergency medical care;
- b. Nurses (RN) with critical care and/or emergency room experience;
- c. Paramedics and emergency medical technicians (EMT);
- d. Sports physiotherapists and physical therapists (PT); and
- e. First responders.

All of these personnel should be familiar with medical problems associated with athletes, and be recently CPR certified. Non-medical support personnel act as recorders, transporters, and supply technicians.

3.2 Personnel Organisation

3.2.1 Aid stations:

Medical staff must be available at least 1 and 1/2 hours before the start of the competition, and remain until the competition is over.

3.2.2 First response teams:

AED-equipped teams must have rapid access to collapsed athletes with potential cardiac arrest, and to otherwise injured athletes.

Operators must be trained in the use of AED, or in the management of other different acute medical or traumatic problems, and the team must be integrated with the local emergency medical system. Several teams assigned along the course will give rapid access to competitors and officials (judges/referees).

3.2.3 Finish line personnel:

- a. A Triage Officer and team will direct the casualties to the proper area for care; and
- b. Field medical site personnel will be distributed in medical care teams able to manage medical illnesses, and traumatic injuries. Non-medical staff should also be available for recording medical data; retrieving dry clothing; distributing census information to concerned parties (such as LOC MedDir); and for general assistance.

3.3 Transport

ACLS emergency ambulance coverage should be available at the finish line. Other ambulances will be distributed in different sites of the competition venue (including the warm up area). The availability and number of ambulances will be proportionate to the duration of competition and to the number of competitors.

3.4 Public Authority Notification

Coordination with local hospitals, emergency medical vehicles, fire fighters, and police is crucial. They must be notified of the competition date, start time, and estimated finishing times, Traffic permission and controls may be arranged with local police, and proper permits obtained.

4. Competition-day Organisation

4.1 Competition start

- 4.1.1 Ensure and organise the presence of medical staff and ambulances, (including CPR-equipped ambulances) in the competition field, and in warm-up area well in advance of the athletes' arrival to the venue.
- 4.1.2 Ensure the presence of ambulance services for spectators, (according to the different seat zones), in accordance with public security rules and requests of police and fire fighters. The LOC should communicate with local Police office and fire fighters, prior to the events.

4.2 Track Management

- 4.2.1 Distribute medical staff in different stations, or corners or entrance of the competition field and warm-up area.
- 4.2.2 Stretchers and wheelchairs should be available for fast recovery of sick or injured athletes. Electric cars would also be useful for this purpose.

4.3 Main Treatment

- 4.3.1 The Aid station area is the central treatment space for most acute injuries and illnesses seen during competition. It should be located near to the finish line, with security zones for rapid access into and out of the stadium (possibly near the Mixed Zone or Post-event Control Room). Availability of treatment spaces and tables is required, preferably curtained-off for privacy. Staff should include: physicians; physiotherapists; nurses; and receptionists. Interpreters for several languages may be required in international competitions. Equipment for the management of injuries and illnesses should be available. AED must be available.
- 4.3.2. Field Emergency: 3-4 emergency medical teams with a stretcher - stationed at specified sites around the perimeter of the track - should be able to reach injured athletes immediately, and evacuate them from the track at the earliest time, transferring immediately to the main treatment area in the Stadium. Ideally, each team should consist of a physician and a therapist, equipped with an emergency equipment kit (AED among others) and radios. An emergency vehicle (electric cart or ambulance), equipped with a stretcher, intravenous

supplies, cardiac emergency equipment, and other emergency medications and supplies may be available immediately.

Locations of these teams and arrangements for immediate field access must be clearly arranged with venue management, competition management, Technical Committee, and Security forces.

4.4 First-aid management

- 4.4.1 Security: The area should be cordoned-off, and secured from spectators and media;
- 4.4.2 Credentials should be required to enter the medical area. Competitors should be permitted to enter only if they are injured;
- 4.4.3 Personnel: The medical staff should include a primary care or emergency room physician with special interest in sports medicine. Other physician staffing can include: orthopedic surgeon; intensive care physicians; nurses; physicians' assistants; EMTs; and paramedics;
- 4.4.4 Supplies. Defibrillator/AED; cardiac resuscitation drug kit; intubation kit; oxygen tank cots; chairs; blankets; towels; ice in plastic bags or ice chest; tables for medical supplies and equipment; stethoscopes; blood pressure cuffs; rectal thermometers (including standard clinical thermometers); hyperthermia and hypothermia thermometers; elastic bandages; inflatable arm and leg splints; intravenous fluids and administration equipment (supervision by a physician required); dressings; moleskin; and adhesive dressings for minor musculoskeletal injuries;
- 4.4.5 Large amount of sealed water and/or different sealed drinks must be available for athletes both on the finish line and on different zones of the competition venue and warm-up area.
- 4.4.6 Warm-up area: Enough physiotherapy beds should be provided in the warm-up area, both for LOC or personal therapists of athletes. They should be located in appropriate conditions, depending on hot or cold conditions, considering protection from sunny or rainy or any different adverse weather conditions;
- 4.4.7 Ice packs should be easily available for athletes and physiotherapists, both in competition fields and in warm-up areas; and

- 4.4.8 Injury Record Forms: Medical records will serve as a record of care for medico-legal purposes and allow for better planning for future competitions, as injury rates are calculated and staffing and supplies are adjusted accordingly.

5. Anti-doping

5.1 General

- 5.1.1 According to IAAF Rules and Regulations, a DCS shall be provided at the competition site or area for in-competition controls, and at the accommodation site for out-of-competition controls.

5.2 Station

- 5.2.1 The DCS will be clearly identified. It will be large enough for the number of requested controls, adequately furnished and equipped, and will include doping control working room(s) with WCs for men and women, and large waiting room(s);
- 5.2.2 Enough sealed water, or other permitted sealed drinks, will be available in the waiting room;
- 5.2.3 If requested, further DCS will be organised for out-of-competition controls in different locations (hotel, medical centre, training centre);
- 5.2.4 Dedicated transportation service will be organised for late finishing controls (both for athletes and for doping officers and delegates); and
- 5.2.5 Detailed information on anti-doping control organisation is updated in the IAAF Anti-Doping Rules and Regulations.

APPENDICES



Appendix 1- Recommended numbers of medical personnel at the IAAF World Championships

	Doctor *				Nurse	Physiotherapist	EMT	Pharmacist	Receptionist	Translator	Room Manager	
	General Practitioner	Emergency Doctor	Orthopaedist	Sports Doctor								
<i>TRACK & FIELD</i>												
Main Stadium												
Athletes' Medical Centre	1	1	1	1	2	1	2		1	several	1	<i>2 shifts</i>
Finish Line				1			2					
Track Perimeter **							6					
Post Event Control Room							2					
Spectators area		1X2=2			2X2=4				1X2=2			<i>at least 2 stations</i>
VIP Area					1							
Media Area					1							
Warm Up Area												
Medical Centre				1	2				1		1	<i>2 shifts</i>
LOC Physio Room						10			2			<i>2 shifts</i>
Partner Village					1		1					
Training Venue												
First-Aid Station				1	1	1						<i>at each venue</i>
Main Athletes' Accommodation												
Medical Centre	1		1	1	2			1	1	several	1	<i>3 shifts</i>
LOC Physio Room						5			2			
Other Athletes' Accommodation												
First-Aid Station					1							<i>at each hotel</i>
LOC Physio Room						1						<i>at each hotel</i>
VIP Hotel												
First-Aid Station	1				1							
<i>ROAD EVENTS</i>												
Start and Finish												
Medical Centre		1	1	2	10	1	4		2	several	1	<i>Close to finish line</i>
Finish Line							8					
Post Event Control Room							2					
First Aid stations on the course												
Marathon / Walk				1	1		2					<i>at each</i>

* At least one doctor should be trained and have enough expertise in advanced life-support. EMT at track perimeter and finish line should also have AED training; ** If Race events finish at the Stadium keep a minimum of a first-aid team at track perimeter.

Appendix 2.- Recommended medical equipment at the IAAF World Championships

	Bed	ECG	AED	Diag Echo	Oxygen saturation monitor	Oxygen	IV Drip kits	Ice maker	Table	Chair	Stretcher	Wheel-Chair	WBGT	Ambulance	Phone/walkie talkie	Cold Immersion	Computer/Internet	TV monitor	Crutches
TRACK & FIELD																			
Main Stadium																			
Athletes' Medical Centre	8 private	2	2	1	2	1	5*	1	2	6	2	2	1	1	2		2	1	4 pairs
Finish Line											4				1				
Track Perimeter>**			4								4				4				
Post Event Control Room											1				1				
Spectators Area	2X2=4		3	1X2=2						1X2=2				2***	2X2=4				
Vip Area																			
Media Area																			
Warm Up Area																			
Medical Centre	2 private	1	1	1	1	1	2	1	1	4	1	1	1	1	2		1		2 pairs
LOC Physio Room	10						1	1	1	4									
Team Physio Room	30						1	1								6		1	
Partner Village																			
Training Venue																			
First-Aid Station	2									1	2	1	1		1				
Team Physio Room	3																		
Main Athletes' Accommodation																			
Medical Centre	3 private	1	1	1	1	1	2	1	2	6	1	1			2		2		4 pairs
LOC Physio Room	10						1	1	2	6									
Team Physio Room	10																		
Other Athletes' Accommodation																			
First-Aid Station	2				1		1	1	1	2					1				
Team Physio Room	5																		
VIP Hotel																			
First-Aid Station	1				1		1	1	1	2					1				
ROAD EVENTS																			
Start and Finish																			
Medical Centre	10	1	1	1	3	10*	1	2	6	2	2	2	1	2***	2	3	2	1	2 pairs
Finish Line											4	2							
Post Event Control Room											2				1				
First Aid on the course																			
Marathon/Walk			1		1	1	1	1	1	1	1	1		1	1				

* Figures of Drip IV are a suggested minimum. Increase if in severe weather conditions (hot). ** If Race events finish at the Stadium keep a minimum of one first aid team at track perimeter. *** Two ambulances, one of which should be equipped with a resuscitator.

Appendix 3.- Recommended Numbers of Medical personnel at the IAAF World Cross Country Championships

	Doctor				Nurse	Physiotherapist	EMT	Pharmacist	Receptionist	Translator	Room Manager
	General Practitioner	Emergency Doctor	Orthopaedist	Sports Doctor							
Main Stadium											
Medical Centre			1	1	4	1			2	several	1
Finish Line		1					8				
Along the course				1X3=3			4X3= 12				
Main Athletes' Accommodation											
Medical Centre	1		1	1	2			1	2	several	1
LOC Physio Room						8			1		
Other Athletes' Accommodation											
First-Aid Station					1		2				
Team Physio Room											
VIP Hotel											
First-Aid Station	1 (on call)				1						

3 first aid stations

at each hotel
at each hotel

* At least one doctor should be trained, and have enough expertise in advanced life-support. EMT along the course and finish line should also have AED training.

Appendix 4.- Recommended medical equipment at the IAAF World Cross Country Championships

Competition Course	Bed	ECG	AED	Diag Echo	Oxygen saturation monitor	Oxygen	IV Drip Kits	Ice maker	Table	Chair	Stretcher	Wheel-Chair	WBGT	Ambulance ^{*/} revolving vehicle	Phone/Walkie talkie	Computer / Internet	TV Monitor	Crutches
Medical Centre	10	1	1	1	1	3	10	1	2	4	2	2	1	2	2	1	1	2 pairs
Finish Line			1								6				1			
Along the course	3 tents		1		1				1	2	1			2	1			
Main Athletes' Accommodation																		
Medical Centre	2 private	1	1	1		2	6	1	1	4	1	1	1	1	2	1	1	2 pairs
LOC Physio Room	5								1	4					2			
Team Physio Room	10																	
Other Athletes' Accommodation																		
First-Aid Station at each hotel	2					1	2	1	1	2	1				1			
Team Physio Room at each hotel	5																	
VIP Hotel																		
First-Aid Station	2					1			1	2					1			

* At least one of the ambulances should be equipped with a resuscitator.

Appendix 5 - Recommended numbers of medical personnel at the IAAF World Indoor Championships

	Doctor				Nurse	Physiotherapist	EMT	Pharmacist	Receptionist	Translator	Room Manager
	General Practitioner	Emergency Doctor	Orthopaedist	Sports Doctor							
Main Indoor Arena											
Athletes' Medical Centre**	1	1	1		2	1	2		1	several	1
Finish Line							2				
Track Perimeter							4				
Post Event Control Room							2				
Spectators Area		1			2X2=4				1X2=2		
Warm Up Area											
Medical Centre				1	1				1		1
LOC Physio Room						5			2		
Training Venue											
First-Aid Station				1	1						
Physio Room											
Main Athletes' Accommodation											
Medical Centre	1		1		4			1	1	several	1
LOC Physio Room						5			1		
Other Athletes' Accommodation											
First-Aid Station					1						
Team Physio Room											
VIP Hotel											
First-Aid Station					1						

* At least one doctor should be trained, and have enough expertise in advanced life-support. EMT at track perimeter and finish line should also have AED training.

Appendix 6.- Recommended medical equipment at the IAAF World Indoor Championships

Main Indoor Arena		Bed	ECG	AED	Diag Echo	Oxygen	Oxygen saturation monitor	IV Drip kits	Ice maker	Table	Chair	Stretcher	Wheel-Chair	Ambulance *	TV monitor	Cold Immersion	Phone/Walkie talkie	Computer / Internet	Crutches
Athletes' Medical Centre	ample space	4 private	1	1		2	1	5	1	2	6	2	2	1	1		2		2 pairs
	Finish Line			1								2							
	Track Perimeter											1					2		
	Post Event Control Room								1			1					1		
	Spectators Area	2 stations		1X2=2		1X2=2											2X2=4		
Warm Up Area																			
Medical Centre		2 private		1	1	1	1		1	1	4	2	1	1		6	2		2 pairs
LOC Physio Room		10								2	4				1		1		
Team Physio Room		10													1				
Training Venue																			
First-Aid Station																			
Team Physio Room		5															1		
Main Athletes' Accommodation																			
Medical Centre	ample space	4 private	1	1	1	2		5	1	2	6	2	1	1			2		2 pairs
LOC Physio Room		6								1	4								
Team Physio Room		20-As needed																	
Other Athletes' Accommodation																			
First-Aid Station	at each hotel								1	1	1						1		
Team Physio Room	at each hotel	5																	
VIP Hotel																			
First-Aid Station		1								1	1						1		

Appendix 7

Medication Supplies

1. **Anti-infective agents**

Anti-bacterials - oral and systemic

Anti-fungal – oral, vaginal and topical

Anti-viral - oral and topical

2. **Anti-histamines (local, nasal, ophthalmic and systemic)**

Cetirizine

Loratadine

3. **Central Nervous System Agents**

a. Analgesics, Anti-pyretic (Acetaminophen, Salicylates, Morphine and/or similar for emergencies)

b. Anxiolytics, Sedative, Hypnotics (Diazepam, flurazepam, lorazepam, midazolam etc.)

c. Anticonvulsants

d. Naloxone

e. Myorelaxants

4. **Non-steroidal anti-inflammatories (NSAID's) local and systemic**

Ibuprofen

Declofenac

Piroxicam

Ketorolac

5. **Electrolyte and Fluid Balance**

Calcium gluconate

Sodium Chloride 0.9% in Water

Sodium Bicarbonate injection

Glucose (dextrose) water solution 5-10-20-33%

6. *Eye, Ear, Nose and Throat Preparations*

- a. Anti-bacterial
Ophthalmic solution and/or ointment
Optic solution
- b. Anti-inflammatory
Ophthalmic solution and/or ointment;
Nasal aerosol
- c. Vasoconstrictor
Oxymetazoline or naphazoline (local solutions or nasal spray)
- d. Expectorant/Anti-tussive
Dextromethorphan, Levodropropizine, etc.
Acetylcysteine, carbocysteine, etc.

7. *Gastro-intestinal*

Antacids
Anti-diarrheic
Antispastics
Antiemetics
Stool softeners
Histamine (H₂) antagonist and/or proton pump inhibitors (PPI)

8. *Hormones and Synthetic Substitutes*

- a. Glucocorticosteroids (see 10.c) oral, local and systemic
Beclomethasone, Budesonide, Fluticasone
Methylprednisolone Betametasone, Dexamethasone
Hydrocortisone, Fludrocortisone
- b. Oral contraceptives

9. Local Anesthetics

Lidocaine, xylocaine, carbocaine, mepivacaine, procaine, etc.

10. Skin and mucous membranes**a. Anti-cholinergic**

Atropine; belladonna alkaloids

b. Sympathomimetic Agents

(i) Epinephrine for anaphylaxis, cardiac arrest

(ii) Salbutamol (aerosol and systemic)

(iii) Salmeterol or formoterol (aerosol)

(iv) Aminophylline

(v) Ipratropium Bromure (aerosol)

c. Anti-inflammatories (see 8.a)

Inhaled Glucocorticosteroids (Budesonide, fluticasone, beclomethasone, etc.)

11. Cardiovascular system (emergency)**a. Nitrates (oral and/or systemic)****b. Diuretics (furosemide)****c. Heparin, enoxaparin etc.****d. Beta-blockers (atenolol)**

Appendix 8

Medical Supplies and Equipment

Tape

- 4 cm
- 2.5 cm
- 2.5 cm elastic tape
- 5 cm elastic tape
- 7.5 cm elastic tape Under wrap

Suture Supplies

- Suture sets w/tape envelopes
- Disposable suture sets
- 3-0, 4-0, 5-0, 6-0 polypropylene sutures
- 4-0, 5-0, 6-0 vicryl, chromic gut
- Suture removal sets
- Sterile gloves
- Sterile towels
- Eye drapes
- Sterile saline
- Instrument germicide
- Instrument trays
- Alcohol preps
- Iodine preps
- 60 mm & 30 mm
- Steri-strips
- Xylocaine 1% with epinephrine

Pharmaceutical Supplies

Assorted prescription and non-prescription medications needed by physicians.

Record Keeping

- Pharmaceutical record forms Medical Encounter form
- Treatment forms
- Referral forms Insurance forms
- Prescription pads
- Anti-doping Prohibited Substances and Methods List
- “Safe” Substances List
- Drug information booklets
- Prescription/non-prescription clipboards
- Pens/pencils/markers/hi-lighters
- Tape - packing/mending
- Stapler
- File folders Post-it notes
- Note pads
- Legal pads

Chemicals

- Skin lubes
- Analgesic lotion
- Athletic liniment
- Massage lotion/oil Tape adherent Powder
- Ammonia Inhalants Isopropyl Alcohol Tape Remover

Syringes/Needles/others

- TB syringes w/needles
- 3 ml syringes w/needles

5 ml syringes w/o needles

20 ml syringes w/o needles Needles, assorted gauges

Tourniquets

Needles 18G, 20G and 23G

Diagnostic Instruments

Electrocardiograph

Oximeter

Oto/ophthalmoscopes, Stethoscopes, Sphygmomanometers

Reflex hammers, Neurological pinwheels

Tuning forks

Nasal specula, ear syringes, ear cures

Vaginal specula

Electronic thermometers, w/probe covers rectal thermometers; or

Tympanic membrane; Thermometers lab supplies

Treatment Modalities

Cardiac and respiratory monitor

Cardiac defibrillator and resuscitation equipment

Whirlpool (Laryngoscopes, endotracheal tubes, various adult sizes)

For physio areas:

 Ultrasound

 Laser therapy

 Electrical stimulation

 TENS units

 Electrophoresis units w/electrodes

 Pression unit w/sleeves

Miscellaneous

Felt padding

Rolls 125 mm vinyl foam

Rolls 30 mm adhesive foam
 7.5 cm x 7.5 cm adaptic dressings
 Large dermicel pads
 XL band-aids ointment tins
 Iodine solution
 Moleskin
 Topper sponges
 Cotton swabs
 Cotton balls
 Plastic bags
 Prep razors
 KY jelly
 Eye-aid eye wash aspirin
 Pill envelopes
 Assorted foam
 60 mm adhesive foam
 Steripads
 7.5 cm x 20 cm adaptic dressings
 2.5 cm band-aids bacitracin ointment
 Iodine scrub
 Hydrogen peroxide packages
 2nd skin
 Basins emesis Basins portable
 Tongue blades
 Back plasters
 #15 sunscreen
 Scalpel, #11 & #15

Exam gloves
Flexible collodion
Paper towels
150 ml paper cups
300 ml paper cups
Electrolyte drink

Non-Expendable Items

w/cases air splints
Spine boards/scoop stretchers
15-litre coolers
30-litre coolers
1-litre squeeze bottles
Universal knee mobilisers
Air-cast standard ankle brace, right Air-cast standard ankle brace, left
Air-cast training ankle brace, right Air-cast training ankle brace, left Heel
cups, padded / non-padded
Felt podiatry supplies
Tape cutters
7.5 cm elastic wraps
10 cm elastic wraps
15 cm elastic wraps
Crutches (various sizes)
Cervical collars (s, m, l, xl)
Clavicle and Gilchrist straps (s, m, l, xl)
Triangular bandages
Thigh elastics (s, m, l, xl)
Double length 10 cm elastic wraps Double length 15 cm elastic wraps

Appendix 9

Medical Encounter Record Form

AD No. :	Name:	<input type="checkbox"/> Male <input type="checkbox"/> Female	Date of Birth: _ / _ / ____ dd mm yyyy	Time: ____ : ____ _ / _ / ____ dd mm yy
Country	<input type="checkbox"/> Athlete <input type="checkbox"/> Team Official <input type="checkbox"/> Competition Judge/Official <input type="checkbox"/> IAAF Family <input type="checkbox"/> Media <input type="checkbox"/> Spectator <input type="checkbox"/> LOC Worker / Volunteer <input type="checkbox"/> Other(s): _____			
Site:	<input type="checkbox"/> Stadium <input type="checkbox"/> Warm Up Area <input type="checkbox"/> Training Area, <input type="checkbox"/> Athletes' Village <input type="checkbox"/> Headquarters Hotel <input type="checkbox"/> Road Race, <input type="checkbox"/> Other(s): _____			
Event :				<input type="checkbox"/> During competition <input type="checkbox"/> During training
Round or Heat:				
Vital Signs	BP : / mmHg	Pulse : beats / min	Temperature : °C	
Injury (sport musculoskeletal conditions)				Pre-existing <input type="checkbox"/> New <input type="checkbox"/>
Cause of injury	<input type="checkbox"/> _____ (See back cover for coding)	Diagnosis	<input type="checkbox"/> _____ (See back cover for coding)	
Complaint	1. Acute Pain 2. Chronic Pain 3. Blister 4. Abrasion 5. Bleeding 6. Cramps 7. Swelling 8. Discomfort 9. Numbness 10. Other (specify): _____			
Injured body part	Location of injury: <input type="checkbox"/> _____ (See back cover for coding)	Absence in days: _____ (See back cover)		
Type of injury	<input type="checkbox"/> _____ (See back cover for coding)			
Illness (non sport musculoskeletal conditions)				Pre-existing <input type="checkbox"/> New <input type="checkbox"/>
Affected System	<input type="checkbox"/> _____ (See back cover for coding)			
Main Symptoms	<input type="checkbox"/> _____ (See back cover for coding)			
Cause	<input type="checkbox"/> _____ (See back cover for coding)			
Past History				
Diagnosis				Absence in days: _____ (See back cover)
All Conditions				
Physical Examination				
Special Investigations	Test(s):	Findings:		
Treatment				
Actions	<input type="checkbox"/> Transfer to _____ Hospital <input type="checkbox"/> Discharged to Team Physician. <input type="checkbox"/> Discharged			

Doctor Name: _____ **Date:** / /20

Signature: _____

Codes and classifications

For injuries

Event

Please state the event (e.g. 100m hurdles; shot put; 4x 400m relay; Decathlon – long jump).

Round, heat or training

If the injury occurred during competition, please state the round (e.g. heats, qualification B, final).
If the injury occurred at another occasion, please specify whether it was training, warm-up or others.

Injured body part - Location of injury

Head and trunk	Upper extremity	Lower extremity
1 face (incl. eye, ear, nose)	11 shoulder / clavicle	21 hip
2 head	12a/p upper arm (anterior/posterior)	22 groin
3 neck / cervical spine	13a/p elbow (anterior/posterior)	23a/p thigh (anterior/posterior)
4 thoracic spine / upper back	13m/l elbow (medial/lateral)	24a/p knee (anterior/posterior)
5 sternum / ribs	14a/p forearm (anterior/posterior)	24m/l knee (medial/lateral)
6 lumbar spine / lower back	15a/p wrist (anterior/posterior)	25a/p lower leg (anterior/posterior)
7 abdomen	16a/p hand (anterior/posterior)	26 Achilles tendon
8 pelvis / sacrum / buttock	17a/p finger (anterior/posterior)	27m/l ankle (medial/lateral)
	18a/p thumb (anterior/posterior)	28a/p foot / toe (anterior/posterior)

Type of injury - Diagnosis

1 concussion (regardless of loss of consciousness)	11 contusion / haematoma / bruise
2 fracture (traumatic)	12 tendinitis / tendinopathy
3 stress fracture (overuse)	13 arthritis / synovitis / bursitis
4 other bone injuries	14 fasciitis / aponeurosis injury
5 dislocation, subluxation	15 impingement
6 tendon rupture	16 laceration / abrasion / skin lesion
7 ligament rupture	17 dental injury / broken tooth
8 sprain (injury of joint and/or ligaments)	18 nerve injury / spinal cord injury
9 lesion of meniscus or cartilage	19 muscle cramps or spasm
10 strain / muscle rupture / tear	20 other

Cause of injury

1 overuse (gradual onset)	11 contact with another athlete	21 field of play conditions
2 overuse (sudden onset)	12 contact: moving object (e.g. discus)	22 weather condition
3 non-contact trauma	13 contact: immobile object (e.g. hurdles)	23 equipment failure
4 recurrence of previous injury	14 violation of rules (obstruction, pushing)	24 other

Estimated duration of absence from training or competition (in days)

Please provide an estimate of the number of days that the athlete will not be able to undertake his/her normal training programme or will not be able to compete.

0 = 0 days	7 = 1 week	28 = 4 weeks
1 = 1 day	14 = 2 weeks	> 30 = more than 4 weeks
2 = 2 days	21 = 3 weeks	>180= 6 months or more

For illnesses

Affected system

1 gastro-intestinal	5 allergic / immunological	9 dermatologic
2 uro-genital / gynaecological	6 metabolic / endocrine	10 musculoskeletal
3 respiratory / ear, nose, throat	7 haematological	11 dental
4 cardio-vascular	8 neurological / psychiatric	12 other

Main symptom(s)

1 fever	5 palpitations	9 syncope, collapse
2 pain	6 hyperthermia	10 anaphylaxis
3 diarrhoea, vomiting	7 hypothermia	11 lethargy, dizziness
4 dyspnoea, cough	8 dehydration	12 other

Cause of illness/symptom(s)

1 pre-existing (e.g. asthma, allergy)	3 exercise-induced	5 drug reaction
2 infection	4 environmental	6 other

Appendix 10

Injury and Illness Surveillance Daily Report Form

Country _____ Physician's name _____ Date of report ___/___/20__
 e-mail _____ tel _____ fax _____

Please report: **(1) All injuries (traumatic and overuse) and (2) all illness newly incurred in competition or training during the IAAF World Championships regardless of the consequences with respect to absence from competition or training.** The information provided is for medical and research purposes and will be treated confidentially.

(1) Injury - Example:

athlete's accreditation no. 1234569587979		sport and event high jump		round / heat or training final		Time: ___ : ___ __/__/____ dd mm yyyy
injured body part, side ankle, lateral	code 27 I	type of injury sprain	code 8	cause of injury slipped and fell	code 21	absence in days 10

athlete's accreditation no.		sport and event		round / heat or training		date and time of injury
injured body part	code	type of injury	code	cause of injury	code	absence in days

athlete's accreditation no.		sport and event		round / heat or training		date and time of injury
injured body part	code	type of injury	code	cause of injury	code	absence in days

athlete's accreditation no.		sport and event		round / heat or training		date and time of injury
injured body part	code	type of injury	code	cause of injury	code	absence in days

athlete's accreditation no.		sport and event		round / heat or training		date and time of injury
injured body part	code	type of injury	code	cause of injury	code	absence in days

(2) Illness - Example:

athlete's accreditation no. 1564579587979		sport and event 4x 100m relay (women)		diagnosis Tonsillitis, cold		occurred on __/__/____ dd mm yyyy
affected system respiratory	code 3	main symptom(s) fever, pain	code 1,2	cause of illness infection	code 2	absence in days 2

athlete's accreditation no.		sport and event		Diagnosis		date of occurrence
affected system	code	main symptom(s)	code	cause of illness/symptoms	code	absence in days

athlete's accreditation no.		sport and event		Diagnosis		date of occurrence
affected system	code	main symptom(s)	code	cause of illness/symptoms	code	absence in days

athlete's accreditation no.		sport and event		Diagnosis		date of occurrence
affected system	code	main symptom(s)	code	cause of illness/symptoms	code	absence in days

no injury or illness in any athlete of our team today

Codes and classifications

For injuries

Sport and event

Please state the event (e.g. 100m hurdles; shot put; 4x 400m relay; Decathlon – long jump).

Round, heat or training

If the injury occurred during **competition**, please state the **round** (e.g. heats, qualification B, final).

If the injury occurred at **another occasion**, please specify whether it was training, warm-up or others.

Injured body part - Location of injury

Head and trunk	Upper extremity	Lower extremity
1 face (incl. eye, ear, nose)	11 shoulder / clavicle	21 hip
2 head	12a/p upper arm (anterior/posterior)	22 groin
3 neck / cervical spine	13a/p elbow (anterior/posterior)	23a/p thigh (anterior/posterior)
	13m/l elbow (medial/lateral)	24a/p knee (anterior/posterior)
4 thoracic spine / upper back	14a/p forearm (anterior/posterior)	24m/l knee (medial/lateral)
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Type of injury - Diagnosis

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7 ligamentous rupture	17 dental injury / broken tooth
8 sprain (injury of joint and/or ligaments)	18 nerve injury / spinal cord injury
9 lesion of meniscus or cartilage	19 muscle cramps or spasm
10 strain / muscle rupture / tear	20 other

Cause of injury

1 overuse (gradual onset)	11 contact with another athlete	21 field of play conditions
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Estimated duration of absence from training or competition (in days)

Please provide an estimate of the number of days that the athlete will not be able to undertake his/her *normal* training programme or will not be able to compete.

0 = 0 days	7 = 1 week	28 = 4 weeks
1 = 1 day	14 = 2 weeks	> 30 = more than 4 weeks
2 = 2 days	21 = 3 weeks	> 180 = 6 months or more

For illnesses

Affected system

1 gastro-intestinal	5 allergic / immunological	9 dermatologic
2 uro-genital / gynaecological	6 metabolic / endocrinological	10 musculo-skeletal
3 respiratory / ear, nose, throat	7 haematological	11 dental
4 cardio-vascular	8 neurological / psychiatric	12 other / several

Main symptom(s)

1 fever	5 palpitations	9 syncope, collapse
2 pain	6 hyper-thermia	10 anaphylaxis
3 diarrhoea, vomiting	7 hypo-thermia	11 lethargy, dizziness
4 dyspnoea, cough	8 dehydration	12 other

Cause of illness/symptom(s)

1 pre-existing (e.g. asthma, allergy)	3 exercise-induced	5 drug reaction
2 infection	4 environmental	6 other

Appendix 11

Cold Water Immersion Recovery Recommendations

It is important to take the necessary steps to prevent the water from becoming contaminated

- Add 6 parts per million (ppm) = 6mg/l of Free Chlorine (FC) as for swimming pools and maintain the water pH in the range of 7.2-7.6;
- Keep the water temperature $\leq 15^{\circ}\text{C}$;
- The water from each container should be changed every 1-2 hours;
- Notices informing athletes with bleeding wounds to refrain from taking ice baths should be displayed clearly in the room;
- Taking a shower prior to cold water immersion should be recommended; and
- Volunteers should be appointed to ensure the above guidelines are respected.

Appendix 12.1

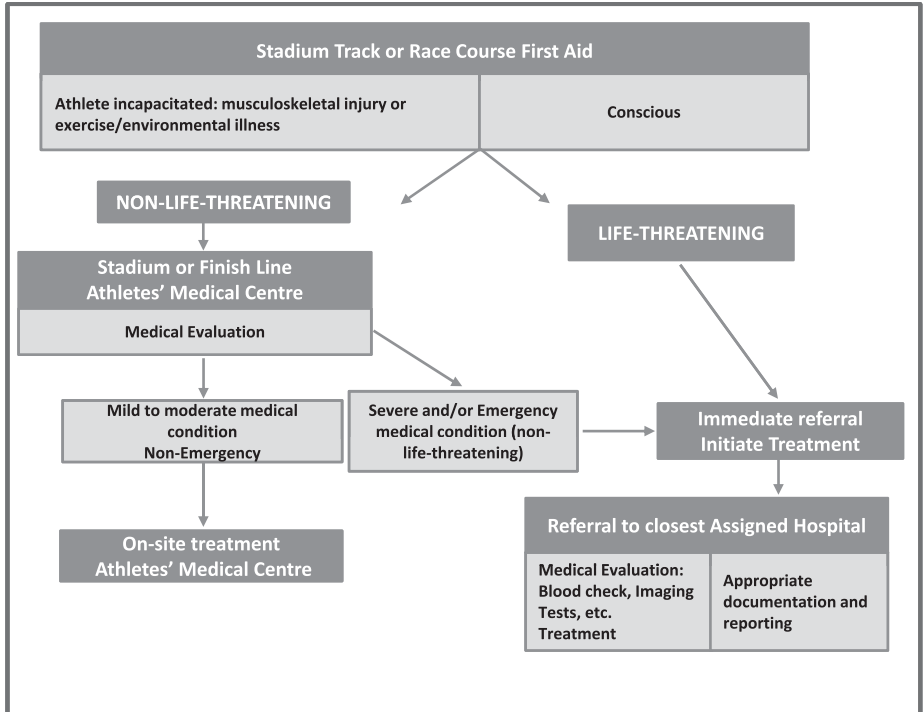
Referrals/Transfers Guidelines

- Educate medical staff in Athletics rules and regulations;
- Ensure medical staff has some knowledge, skills and experience in Sports Medicine;
- Enroll a sufficient number of medical staff with sports competitions expertise;
- Ensure the presence of at least one resuscitator-specialist doctor (and one orthopaedic specialist) in the main medical centre;
- Ensure the availability of at least one automated external defibrillator (AED) at the competition venue;
- Appoint professionals with fluent English in the most relevant positions;
- Organise adequate communication network among medical settings;
- Record complete information (name, country, gender, position, diagnosis, therapy, etc.) for each medical first-aid consultation;
- Life-threatening conditions should be immediately referred to the closest assigned hospital;
- First-aid stations, training sites, and second-level medical settings should always refer to main medical centres;
- Decisions of referrals/transfers should be taken by top medical positions - either by Medical Director or whomever he/she can delegate to. Consultation with the IAAF Medical Delegate is recommended;
- Hospital and consultation referrals should be minimised;

- Appropriate documentation of each referral should be completed. This includes: register medical records; getting insurance credentials; producing invoices; etc.; and
- Daily registers of hospitals and consultations referrals should be kept, including: name; country; hospital; medical condition; treatment; insurance; and invoiced sum. A daily report shall be sent to the IAAF Medical Delegate.

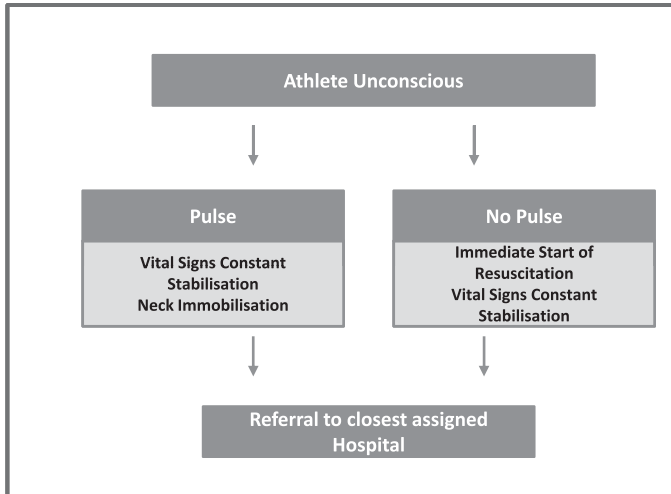
Appendix 12.2

Referrals/Transfers Guidelines



Appendix 12.3

Referrals/Transfers Guidelines





International Association of Athletics Federations

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