# Athlete health and safety at large sporting events: the development of consensus-driven guidelines

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## **ABSTRACT**

All sport events have inherent injury and illness risks for participants. Healthcare services for sport events should be planned and delivered to mitigate these risks which is the ethical responsibility of all sport event organisers. The objective of this paper was to develop consensus-driven guidelines describing the basic standards of services necessary to protect athlete health and safety during large sporting events. By using the Knowledge Translation Scheme Framework, a gap in International Federation healthcare programming for sport events was identified. Event healthcare content areas were determined through a narrative review of the scientific literature. Content experts were systematically identified. Following a literature search, an iterative consensus process was undertaken. The outcome document was written by the knowledge translation expert writing group, with the assistance of a focus group consisting of a cohort of International Federation Medical Chairpersons. Athletes were recruited to review and provide comment. The Healthcare Guidelines for International Federation Events document was developed including content-related to (i) pre-event planning (eg, sport medical risk assessment, public health requirements, environmental considerations), (ii) event safety (eg, venue medical services, emergency action plan, emergency transport, safety and security) and (iii) additional considerations (eg, event health research, spectator medical services). We developed a generic standardised template guide to facilitate the planning and delivery of medical services at international sport events. The organisers of medical services should adapt, evaluate and modify this guide to meet the sport-specific local context.

# **INTRODUCTION**

The Olympic Games is the ultimate sporting event which for many athletes is the pinnacle of their sporting career. To qualify for the Olympics, athletes must compete in International Federation (IF) sporting events during the time period in-between the Games. While television and social media audiences around the globe are entertained by the athletes' acts of physical prowess on the fields of play, behind the cameras there are large numbers of sport medicine experts working as a team to achieve the goal of protecting the health and safety of all participants. The protection of athletes' health and well-being is the responsibility of all members of

the athlete entourage<sup>1</sup> and is mandated in a variety of normative frameworks including the Olympic Movement Medical Code, the Athlete's Rights and Responsibilities Declaration<sup>3</sup> and the Olympic Charter, which defines the mission and role of sport to include the obligation 'to encourage and support measures relating to the medical care and health of athletes'.4

For the Olympic Games, the Medical and Scientific Department of the IOC, in collaboration with the host country medical services, are responsible for the planning and delivery of the Games-time healthcare programme. However, for IF sport events occurring between editions of the Olympic Games, the governing IFs' medical committees take responsibility for liaising with local host city healthcare personnel and systems to meet the sportspecific health demands of their events. In the planning period prior to, and during the Olympic Games, the IOC relies on the IFs to provide sportspecific and event-specific healthcare requirements, health-related rules and regulations and the identification of high-risk events.

To accomplish the goal of delivering an optimal healthcare programme during the Olympic Games, various planning meetings occur in a 4-year time period prior to the Games to facilitate knowledge translation, foster collaboration and ensure adequate time and resources for acquiring appropriate equipment and drugs as well as recruiting and training personnel. Prior to the XXXII Olympic Games (Tokyo 2020), one such meeting of the IF Medical Chairpersons and the IOC Medical and Scientific Commission leadership was held in Lausanne, Switzerland in October 2019. On consultation with the Medical Services Department of the Tokyo 2020 Olympic Games, it became evident that the IFs were either not submitting sport-specific healthcare plans or were submitting healthcare plans that were often incomplete with inconsistent requirements. This deficit and discrepancy in the quality of IF event healthcare planning, prompted the decision to develop evidence-based guidelines to assist the IF medical committees in their planning of IF event healthcare. Therefore, to address the identified problem, the objective of this paper was to develop consensus-driven guidelines describing the basic standards of medical services necessary to protect athletes' health and safety during large sporting events.



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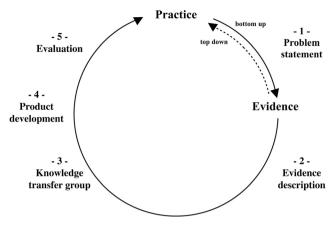


Figure 1 The five-step Knowledge Translation Scheme.<sup>5</sup>

Although originally developed for IF sporting events, this paper is also intended to facilitate the coordinated planning and implementation of healthcare initiatives for major event organisers (eg, Commonwealth Games, Beach Games and so on), Continental Championships (eg, Asian Games, Pan American Games and so on), professional sport organisations (eg, NHL, NBA and so on) and other large sporting events (eg, mass participation marathons, Ironman races and so on).

# **METHODS**

#### Theoretical framework

The theoretical framework underpinning the development of the Healthcare Guidelines for IF Events was the Knowledge Transfer Scheme by Verhagen et al, which was designed to accommodate a 'bottom up' approach to implementing change. 5 As indicated in figure 1, the impetus for developing an intervention for change can be motivated by real-life situations or 'practice' to identify the gap or problem, which then subsequently drives the evidence-based and experience-based approach to knowledge translation and implementation into practice. This approach is in contrast to the 'top down' approach, where the research or policy agenda drives knowledge translation into practice.<sup>5</sup> For this project, the identified gap in the practice of IF medical committees stimulated the development of the 'intervention for change': an evidence-based and experience-based guideline document of healthcare requirements and considerations for sport organisations to facilitate the development and implementation of comprehensive healthcare programmes for large sporting events.

## Step 1: identification of the gap

The genesis of the Healthcare Guidelines for IF Events began in August 2019 when planning the agenda for the IF medical chairpersons' workshop. A 2-day workshop on the medical planning for the 2020 Tokyo Olympic Games was held in Lausanne, Switzerland in October 2019, under the leadership of the Association for Summer Olympic International Federations' Science and Medical Consultative Group in collaboration with the IOC Medical and Scientific Department. Medical representatives from 22 summer IFs and 2 winter IFs attended, in addition to experts from the IOC Medical Games Group, the Association of Summer Olympic International Federations, the International Testing Agency and international content-expert speakers. The objectives of the IF workshop were to:

▶ define the roles and responsibilities of medical personnel at the Olympic Games;

- examine best practices for venue medical services and field of play emergency care at Olympic and IF events;
- ► collaborate with the IOC and the Tokyo 2020 Organising Committee on athlete health care-related planning and medical services provision for the 2020 Olympic Games;
- encourage the sharing of IF best practices and collaborations. Agenda topics included Tokyo 2020-related field of play emergency evacuation plans, medical emergency action plans, health risk assessment modelling, public health risks, prevention and management of environmental heat-related health issues and athletes' travel health and safety. The Tokyo 2020 medical team presented a summary of the IF medical guidelines they had received. It became evident that the IFs were either not submitting sport-specific healthcare guidelines or were submitting guidelines that were lacking key content areas and with inconsistent requirements. During the workshop process, the IF medical Chairpersons were asked to evaluate their own respective guidelines for completeness, and following discussion, they identified significant gaps and inconsistencies in their medical guidelines and implementation practices for healthcare programmes at international sporting events. This gap stimulated the development of the intervention to mitigate these inconsistencies. Therefore, to address the identified gap, the objective of this paper is to describe the development of consensus-driven guidelines outlining the basic standards of medical services necessary to protect athlete health and safety during large sporting events.

# Step 2: identification of the content areas for inclusion

Content areas for inclusion in the Healthcare Guide were identified following a narrative review of the scientific literature on Mass Gathering Medicine from both outside of sport,<sup>6</sup> and from inside sport.7 Two IFs had published event medical guidelines (FINA-aquatic sports<sup>8</sup> and IHF—handball<sup>9</sup>), which were also reviewed. The IOC circulates unpublished Games-specific health information to IFs and National Olympic Committees. The 2016<sup>10</sup> and 2018<sup>11</sup> versions of this document were included in the literature reviewed. Topic areas related to the provision of healthcare services for athlete injury and illness were determined following a review of epidemiological studies on the risk of injuries and/or illnesses during the Olympic Games, 12-19 Continental Games<sup>20</sup> and Olympic IF sport events. <sup>21–59</sup> Based on this review, the content areas were then chosen by consensus by the sport medicine physician members of the core writing group with experience at IF events and Olympic Games (MM, JM, RB, LE).

# Step 3: identification of the content expert working group

Once the content areas were finalised, criteria were identified to determine the content experts who would form the Knowledge Translation Expert Working Group. For details, please see table 1. Experts were required to have a minimum of four criteria for inclusion in this Group.

# Step 4: literature review

The content experts of the Knowledge Translation Expert Working Group were tasked with conducting a narrative review of the scientific literature to identify evidence-based recommendations in their respective content areas. In addition, they were requested to also collate best practice principles from their extensive practical experience from implementing healthcare programmes at international sporting events.

# Step 5: iterative development process to meet consensus

An initial draft was written by the project lead (MM) to provide a template for the structure, scope and style of the Healthcare

 Table 1
 Criteria for the identification of content experts to form the

 Knowledge Translation Expert Working Group

Area of expertise	Level of expertise
Academic qualifications	MD, PhD or DDS*
Practical experience at international sport events	International Federation sport events Continental Championships Olympic Games
Research	Published in a high impact peer-review journals in the identified content area
Expertise	Invited guest speaker at international conferences in the identified content area
Knowledge translation experience	Has developed and successfully implemented knowledge translation initiatives in the content area
Working group experience	Has worked collaboratively in multiauthor projects or consensus papers in the content area
Writing experience	Has demonstrated a high level of competency in written English in the identified content area
Clinical expertise	Has content area specific practical experience in their home country

<sup>\*</sup>Doctor of Dental Surgery.

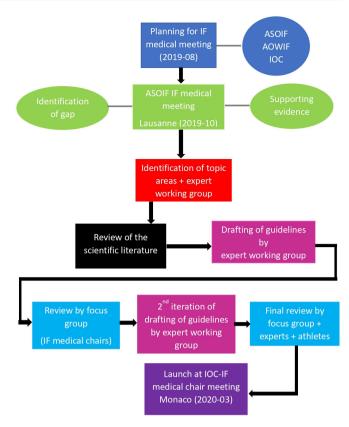
Guidelines for IF Events publication. Through remote collaboration, the Knowledge Translation Expert Working Group drafted their contributions within their specific area of expertise. A consensus was then reached through an iterative process involving the Knowledge Translation Expert Writing Group and a Focus Group consisting of a cross-sectional cohort of the 28 Summer IF Medical Chairpersons who constituted the Association of Summer Olympic International Federations Medical and Scientific Consultative Group (Handball, Athletics, Cycling, Weightlifting, Rowing, Tennis, Football). The IF Focus Group completed the first review and provided feedback addressing content quality and comprehensiveness, as well as resonance and practical applicability from their experience. This feedback was then collated in the second draft of the document which subsequently underwent a second round of review by the IF Focus Group. Following this round of feedback, the final document was reviewed by all members of the Knowledge Translation Expert Working Group and the IF Focus Group prior to formatting and publication. To obtain the athlete's perspective, Athlete Commissions of the (i) IOC, (ii) the Focus Group IFs and (iii) 2 Continental Federations (Asia and Americas) reviewed the final version and provided comment at this stage. For details, please see figure 2.

## **Step 6: implementation**

The Healthcare Guidelines for IF Events was launched in both hard cover and on-line versions at the IOC-IF Medical Chairperson meeting held in Monaco in March 2020. The IF Medical Chairpersons were advised to adapt the document with their own sport-specific rules, regulations, examples and branding for implementation in the upcoming sport season. Implementation of such guidelines is a complex and contextual process which should be objectively evaluated for efficacy. A follow-up study is planned to evaluate the IF uptake and implementation of the Healthcare Guidelines for IF Events.

# Athlete and entourage involvement

Athlete collaborators included representatives of the Athletes Commissions of the (i) IOC, (ii) the Focus Group IFs, as well as (iii) two Continental Federations (Asia and Americas). They reviewed the Healthcare Guidelines for IF Events for relevance and provided comment. Retired elite athletes and members of



**Figure 2** The process for the identification of the gap, determination of areas of content and development of the Knowledge Translation Expert Working Group, literature review and development of the athlete healthcare guidelines for international sport events. ASOIF, Association of Summer Olympic International Federations; IF, International Federation.

the athlete entourage (eg, sport medicine physicians, representatives from international sport governing bodies, sport dentistry, sport physiology, sport physiotherapy) participated in the concept development, preliminary exploration phase, literature review, drafting and review and launch phases.

## **RESULTS**

# **Step 1: identification of the gap**

Throughout the course of discussions during the Olympic Games IF workshop in Lausanne in October 2019, it became evident that (i) many IFs had not provided the Medical Services Department of the Organising Committee of the Olympic Games with sport-specific medical and safety guidelines for their respective sports, and (ii) many IFs had incomplete medical and safety guidelines for their respective sport events. For example, only 32% of attending IFs had emergency action plans for their sport disciplines, and just over half (53%) had defined sportspecific field-of-play evacuation procedures. Only two-thirds of IFs (65%) held scenario-based simulations of emergency procedures and 53% had standardised guidelines for the mitigation of environmental risks such as heat exposure. When the IF Medical Chairpersons were asked to identify essential components of their healthcare guidelines, many reported deficiencies in defining required medical equipment (62%) and sport-specific recommended pharmaceuticals (87%).

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**Table 2** Content areas for inclusion in the Healthcare Guidelines for International Federation Events, as well as content experts constituted to participate in the Knowledge Translation Expert Working Group

Content areas	Content expert
Sport medicine at international events	RB, LE, MM, JM
Sport science in elite athletes	LE, LMB, VG, SR
Sport nutrition in elite athletes	LMB
Mental health issues in athletes	VG
Prevention of harassment and abuse in sport	MM
Sport physiotherapy at international events	M-EG
Sport dentistry at international events	PP
Public health in mass gathering sport events	BM
Adverse weather impact sport science	SR
Sport-related pharmacology	MS
Emergency prehospital care for mass gatherings	DZ
Sport-related emergency medicine	JM

# Steps 2 and 3: content areas and Knowledge Translation Working Group

Table 2 summarises the results of the process undertaken to identify (i) content areas for inclusion in the Healthcare Guidelines for IF Events document and (ii) expert members of the Knowledge Translation Working Group.

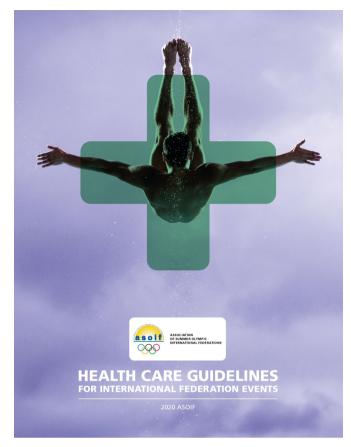
# Steps 4 and 5: development of the healthcare guidelines document

Each of the content experts conducted their own narrative literature review to develop a draft of evidence-based and experience-based recommendations for their respective sections. The iterative process for obtaining consensus, as well as the IF Focus Group and the athletes' review is described in the 'Methods' section. The outcome of the processes of steps 4 and 5 is the Healthcare Guidelines for IF Events (see figure 3).

This publication consists of comprehensive guidelines to assist the medical committees of sport organisations and sport event organising committees with the planning of healthcare services for international sport events. The document is designed to provide flexibility for users to adapt and customise the guidelines according to the sport-specific health risks, the age of the athlete participants, the size of the event and the geographical location. Table 3 outlines the contents of the Healthcare Guidelines for IF Events document. The complete document can be accessed in the online supplemental file 1 and at: http://www.asoif.com/sites/default/files/download/health\_care\_guidelines\_for international federation events.pdf

## **DISCUSSION**

The Healthcare Guidelines for IF Events intervention was stimulated from the 'bottom up' finding of significant gaps and inconsistencies in IF medical guidelines and implementation practices for healthcare programmes at international sporting events. This finding was surprising, considering the results of a 2018 survey of the same cohort of IF Medical Chairpersons which found that 'First aid minimum standards at events' was ranked by all IFs as being either 'very important' or 'important'. When asked to self-rate the sufficiency of their activities, all IFs reported that 'First aid minimum standards at events' were sufficient. <sup>60</sup> The authors of this survey, however, did not corroborate the self-analysis of the IFs. In the 'real life' example identified in this paper, at the practical level, the IF guidelines for healthcare at sport events were found to be incomplete, underpinning the



**Figure 3** The Healthcare Guidelines for International Federation Events cover page (http://www.asoif.com/sites/default/files/download/health\_care\_quidelines\_for\_international\_federation\_events.pdf).

importance of understanding the barriers to knowledge translation and evaluating the implementation component of knowledge translation. 61 62 The reasons for this discrepancy may be due to a knowledge gap for what constitutes a robust healthcare plan for sporting events, or a lack of resources, such as expertise or finances, to develop sport-specific healthcare guidelines for events.

The Knowledge Translation Scheme provided a useful framework to guide the development of Healthcare Guidelines for IF Events—particularly as the gap was identified from the 'bottom up' perspective. A strength of this theoretical framework is the organisational structure provided by the five-step process; however, modifications were required to operationalise the process to best reflect the identified gap and desired outcome.

The consensus method chosen to develop the Healthcare Guidelines for IF Events was a modified NIH Consensus Development Conference.<sup>63</sup> This methodology proved feasible and successful for the inaugural edition. As the Healthcare Guidelines are adopted, implemented and evaluated, future editions may be developed using a more formal method such as a Delphi exercise.<sup>64</sup>

A limitation of this paper is that only published guidelines for the healthcare delivery at sport events were reviewed. While it is possible that unpublished guidelines exist, these were not analysed; however, the IF Medical Chairpersons provided a self-report analysis of their guidelines during the workshop. In addition, while active athletes reviewed the draft guidelines for comment and resonance, in future editions of the Healthcare Guidelines for IF Events, the authors might explore the

Guideline content	Explanation and details
Event information	<ul> <li>Competition history</li> <li>Venues: training and competition</li> <li>Event overview</li> <li>Expected number of participants</li> <li>Competition equipment</li> </ul>
Event medical team	➤ Structure of the medical committee of the responsible event organiser
Event medical rules and regulations	Customisation to include event sport-specific medical rules
Roles and responsibilities	<ul> <li>Duties of the medical personnel of the (i) responsible event organiser, (ii) visiting teams and (iii) organising committee</li> <li>Roles and responsibilities defined for the following time periods: (i) pre-event, (ii) during the sport event and (iii) postevent</li> </ul>
Sport medical risk assessment	► A risk assessment matrix to assess venue and sport-specific health risks and a mitigation tool
Venue medical services	▶ Details of an integrated medical plan of the field of play and spectator medical services
Emergency action plan	► An algorithm example of an emergency action plan from the field of play to final disposition
Emergency transport	► Types and quantity of emergency transport mechanisms along with delineation of location and venue pathways
/enue pharmacy formulary	► Sample venue medical room and field of play medical station formularies
Hospital allocation	<ul> <li>Service provision, location, distance from venue and contact details</li> </ul>
Public health requirements*	► Environmental risks, food safety, infectious disease policy, criteria for cancelling event due to public health risk
afety and security	► Liaisons with local services and policies for major incidents/disasters
Dental requirements	Considerations for inclusion of a dentist, and minimum requirements for emergency athlete dental care
Physical therapy requirements	<ul> <li>The roles and responsibilities of a physiotherapist at sport events at the field of play and venue medical station</li> <li>Physical therapy space, location and equipment requirements</li> </ul>
Environmental considerations	<ul> <li>Specific environmental risks to consider and risk mitigation strategies, timeline and guidelines</li> </ul>
Nutrition requirements	<ul> <li>Recommended guidelines for athlete nutrition at athlete lodging, training and competition venues</li> </ul>
Athlete safeguarding (harassment and abuse)	<ul> <li>Recommended policies and procedures</li> <li>Health support requirements postdisclosure of an allegation</li> </ul>
Athlete mental health support	<ul> <li>Event-specific recommendations to mitigate and manage athlete mental health concerns</li> </ul>
Host country government regulations	<ul> <li>Medical licensing</li> <li>Drug and medical equipment importation</li> <li>Mass event policies and procedures</li> </ul>
Non-venue athlete healthcare	► Provision for after-hour medical support at athlete lodging
Health insurance	<ul> <li>Insurance considerations for healthcare during the event</li> <li>Medical personnel malpractice insurance</li> </ul>
anguage services	<ul> <li>Considerations for translation requirements during the provision of medical services</li> </ul>
Medical communication strategy	<ul> <li>Communication between the event medical team members</li> <li>Communication about event health-related information</li> </ul>
pectator medical services	► Provision of healthcare for spectators
vent health research	Considerations for health-related research during the event, including evaluation of the medical services.
Medical ethical guidelines	➤ Summary of the Olympic Movement Medical Code
Venue medical meeting	► The rationale (why), timing (when), participants (who) and what to include in the meeting agenda

<sup>\*</sup>The principles outlined in the public health section are applicable to the SARS-CoV-2 pandemic.

engagement of athletes and coaches earlier in the development process. Another limitation is that the content experts did not conduct a systematic review of the literature in their respective areas, as this was beyond the scope of this project.

# Implementation evaluation

While the Knowledge Translation Scheme was found to be an effective framework to support the implementation of this project, a limitation of this paper is the lack of evaluation of the uptake and feasibility of the intervention that was developed to stimulate change in the activities of IF medical committees. Evaluation is the final step of the Knowledge Translation Scheme. The effectiveness of the Healthcare Guidelines for IF Events document should be objectively analysed using a systematic theoretical evaluation model such as the RE-AIM framework by Glasgow *et al*, 65 66 which assesses five parameters: Reach, Effectiveness, Adoption, Implementation and Maintenance. Through this evaluation process, strengths can be identified, as well as areas requiring modification, which will inform the development

of future editions of the Guidelines, and ultimately improve uptake, implementation and effectiveness.

# **CONCLUSIONS**

The Healthcare Guidelines for planning, delivering and evaluating healthcare services at IF sport events was designed to bridge the gap that exists between best practice evidence and the current state. We employed a 'bottom up' theoretical framework of Knowledge Translation Scheme<sup>5</sup> to develop a practical guideline document for international sport event organisers. As sport organisations have the duty of care to safeguard the health and safety of participating athletes, these Guidelines should be adapted to fit the sport-specific injury risks and healthcare demands, event size and geographical location. It is our objective that the Guidelines be implemented in the 'real world' of large and/or multidisciplinary international sporting events.

According to the IOC Athletes' Rights and Responsibilities Declaration, all athletes have the right to 'The protection of mental and physical health, including a safe competition and

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training environment...'<sup>3</sup> It is the goal of the Knowledge Translation Expert Working Group and the IF Focus Group to help sport organisations achieve this right through the effective implementation of the Healthcare Guidelines for IF Events document. Athletes and all accredited participants at international sport events will potentially benefit from the application and implementation of this guideline document.

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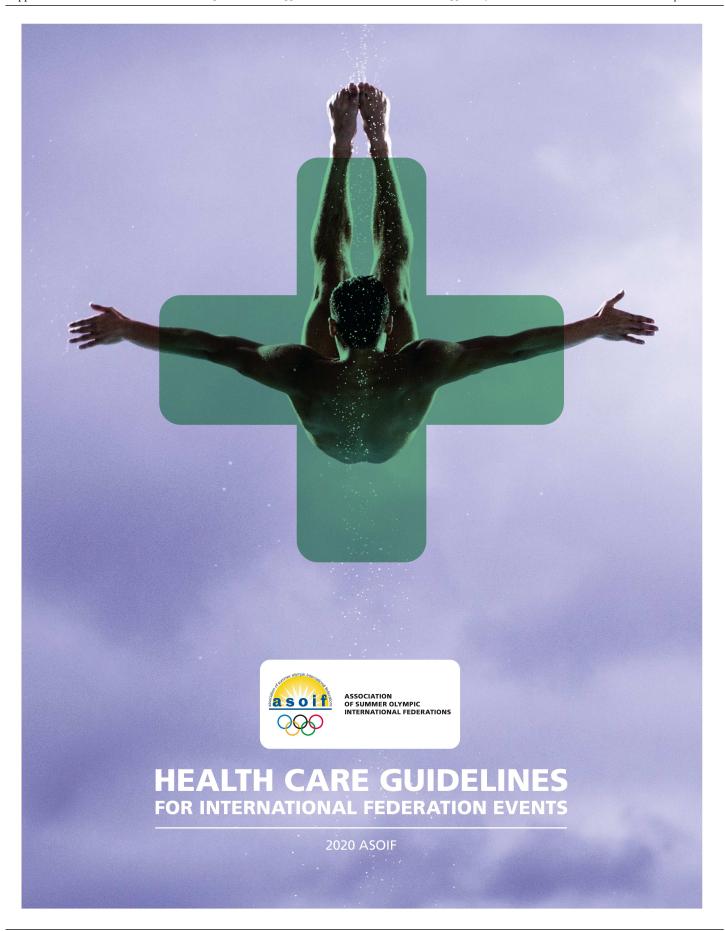
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# **Foreword**

The purpose of this document is to provide uniform guidelines for the planning and delivery of athlete and entourage medical services required for implementation at International Federation (IF) events. These guidelines have been developed with the objective of providing IFs with a template for safe, comprehensive, effective and efficient medical support services at their events. The ultimate goal is to secure athlete health and safety.

IFs can adapt and customise these guidelines according to the sport-specific health risks, the age of the athlete participants, the size of the event and the geographical location.

This document was developed by the Association of Summer Olympic International Federations (ASOIF) Medical and Scientific Consultative Group (AMSCG) in collaboration with the IOC Medical and Scientific Department, members of the IOC Medical and Scientific Commission Games Group and other specialised sport medicine and science experts.

ASOIF has a mission to represent and protect the common interests of its members and has more recently positioned itself as a value-added provider to its members, the summer Olympic IFs and to the sports movement in general. Athlete health and safety is and has always been one of the top priorities for all IFs. Consequently, ASOIF believes this document is of great value in regards to ensuring that elite athletes and their entourages can compete within a safer and more secure environment at all major sporting events.

On behalf of ASOIF and its members I would like to give special thanks to all the contributors who freely gave their time and shared their expertise and knowledge, and to the Working Group for consolidating the information that was collected to produce these guidelines.

Francesco Ricci Bitti ASOIF President











15. Environmental Considerations

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# 1. International Federation Event Information

Effective planning of athlete health care is based on a clear understanding of the size and scope of the event. In this section, the IF can provide essential details about the sporting event to assist the host or Local Organising Committee (LOC) responsible for the provision of athlete health care services. The following template should be provided in sufficient time ahead of the event to facilitate planning. In a multi-sport event (e.g., World Championships with more than one sport discipline), the IF should provide specific details for *each discipline*.

The following details should be included:

Figure 1. International Federation event name and sport discipline (e.g.: World Athletics Championships: Marathon)

#### Competition History

A brief description of the history of the sport and competition

#### Venues (Training and Competition)

- ▼ International Federation venue requirements
- Maps, description, photos from previous events for reference

#### **Event Overview**

- ▼ Championship dates
- Training dates
- Competition dates/discipline
- Competition format: round robin, qualifying rounds etc.
- Number of competition events: male, female, mixed gender
- Number of medals
- Environmental conditions
- ▼ Competition times

#### Participants

- Expected athlete numbers: male, female, total
- Expected technical officials: number and role

#### Competition Equipment

A summary of the competition equipment, required clothing etc.

Source: ASOIF

Planning for event medical care begins with an understanding of the number and roles of attending participants (see Figure 2).



06.



Figure 2. Event participant estimations

IF Discipline	Expected Number of Participants										
	Athletes	Coaches	Athlete Support Staff	IF Governing Body	IF Technical Officials	VIP Guests	Marketing Partners	Press and Broadcast	Workforce	Spectators	TOTAL
Swimming	450	50	120	15	40	60	65	30	100	1000	
Diving											$\rangle$
Water Polo											
Artistic Swimming											
Open Water											
High Diving											<b>)</b>

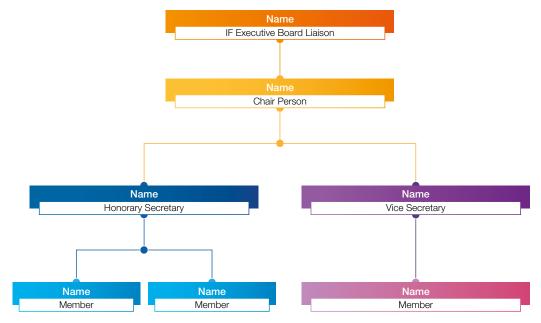
Source: ASOIF

# 2. International Federation Medical Team

Successful health programs at international sporting events require a partnership and collaboration between the IF medical team or medical department and the LOC medical team.

The IF medical team structure is included here to inform the LOC of their key contacts. It is ideal to include roles, names and contact information as applicable.

Figure 3. International Federation medical team structure



# 3. International Federation Medical Rules



To ensure that the LOC medical team has a clear understanding of the medical, health and safety rules and regulations for the IF sport event, please provide a link to the most recent approved IF medical rules/guidelines.

E.g., UCI Medical Rules: www.uci.org/docs/default-source/rules -and-regulations/part-xiii--medical-rules. pdf?sfvrsn=1734ffae\_30.

# 4. Roles and Responsibilities

## IF Medical Team/Department

The IF medical team has the responsibility to:

## 1) Prior to IF events

- a) Liaise with the LOC medical team as required to ensure adequate planning for the delivery of athlete care including the provision of:
- A medical action plan for the Field of Play (consider providing an example)
  - Positioning of the medical team in relation to the Field of Play
  - Minimum/maximum numbers in the Field of Play medical team
  - Who will access the Field of Play?
  - When to access the Field of Play?
  - How to remove athletes from Field of Play (e.g., water, mountain, road, track, pitch etc.)
  - Access and egress from the Field of Play
- Requirements for a Field of Play medical station
  - Equipment and medications
  - Healthcare personne
  - Specialist skills
  - Specialist (sport-related) equipment
- Requirements for venue medical station
  - Equipment and medications
  - Healthcare personnel
  - Specialist skills
  - Specialist (sport-related) equipment
  - Access and egress
- Requirements for medical transport provision
  - Numbers and types of transport vehicles (ambulance, helicopter)
  - Numbers and type of healthcare staff per vehicle
  - Venue evacuation pathways
  - Equipment and medications
  - Ambulance parking area (designate proximity to the Field of Play)
  - Helicopter landing site as applicable
- Requirements for medical provision at training and warm-up venues
- Requirements for medical encounter reporting
  - Medical encounter reporting mechanism (electronic/paper)
  - Review mechanism
  - Daily reports
  - Event report

- Requirements/guidelines for athlete medical care outside of training/competition venues
- b) Provide the LOC medical team advice regarding health care personnel requirements:
- Appropriate experience and skills of doctors, nurses, physiotherapists, dentists, paramedics/emergency transport
- Adequate numbers of medical personnel
- Support for training of medical personnel
- Addition of international experts (as applicable)
- c) Provide the LOC medical team with sport-specific medical regulations regarding:
- Athlete withdrawals
- Athlete substitutions
- Medical access to the Field of Play
- Treatment time limits on the Field of Play
- Limitations of practice on the Field of Play
- Sport-specific medical/health regulations and best practice (e.g., concussion/bleeding athlete protocol)
- ▼ Pre-event medical assessment requirements (if applicable)
- d) Provide the LOC with a summary of medically related concerns from past IF events to facilitate planning.
- e) Provide the LOC with the IF communication policy, along with samples of past press releases for medically related issues.
- f) As applicable, develop the IF injury and illness surveillance/audit research program, including research design, ethical approval, informed athlete consent (if required), document translation, and communication to inform the LOC medical team and the National Federations (NFs) of their roles.



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- g) In collaboration with the LOC, provide NFs with appropriate governmental logistical guidelines for:
- Importation of medications
- Importation of medical equipment
- ▼ Temporary medical licensing as applicable
- Public health precautions for travel to the host country
  - Required vaccinations
  - Water quality
- Environmental risks
- Logistical details of the local healthcare system

#### 2) During IF events

- a) Support the LOC medical team to ensure quality control of athlete medical care provision at the Field of Play, in the venues, and in the athlete hotels.
- b) Support NF medical teams to ensure access to LOC medical team and medical services as required.
- c) Provide advice to the LOC medical team and the NFs to manage medical issues as they arise.
- d) Support the LOC medical team in maintaining a registry of medical encounters.
- e) Hold regular meetings to:
- Review reports from NFs, LOC medical team and IF medical committee members
- Review medical incidents and advise on appropriate action
- Provide expert advice regarding potential cancellation or rescheduling of an event in case of athlete health risk/safety (e.g., inclement weather)
- Provide expert advice and assistance to the LOC medical team as required/requested
- f) Hold ad hoc meetings for emergency medical issues to assist in resolving acute medical issues and to review serious/critical medical events.
- g) If feasible, provide an academic program of educational seminars to the athlete entourage, visiting NF medical teams and the LOC medical team.
- h) Implement IF research initiatives (as applicable).
- i) Support and implement the IF safeguarding policies and procedures.
- j) Support the anti-doping program as per the IF regulations (as applicable) including:
- In collaboration with the doping control team for the event, develop procedures for emergency/essential medical care provision in athletes notified for doping control
- Provide expert physician members for a Therapeutic Use Exemption Committee
- k) Provide expert physician members for Needle Policy implementation (as applicable).

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## 3) Following IF events

Provide feedback to the IF governing board in the form of a written report to include:

- Summary of the organisation of the medical care delivery
  - Numbers of health care personnel
  - Venue medical clinic(s) and station(s)
  - Field of Play medical stations
  - Emergency transportation
  - Medical equipment
  - Public health program
  - Dental program
  - Physiotherapy program
  - Pharmacy program
  - Anti-doping (as applicable)
- Summary of implementations/outcomes of the medical program
  - Documentation of key health issues and trends
  - Medical encounter report summarising numbers
  - Provision of health care per station/clinic
  - Health care personnel requirements per discipline/event/day
- Summary audit of medical equipment utilised
  - Report of dental program
  - Utilisation of physiotherapy
  - Report of pharmacy program
  - Public health trends
- Utilisation of emergency transport
   Summary of any research/audit initiatives
- Based on the evaluation of the experience, provide recommendations for future IF events



# **Local Organising Committee Medical Team**

The LOC medical team has the responsibility to:

#### 1) Prior to IF events

- Collaborate with the IF in the planning of the medical program
- Undertake a sport- and discipline-specific medical risk assessment of all training and competition sites
- Provide a timeline for the organisation of the medical program
- Plan the following components of the athlete health care program as appropriate to each sport and venue as per the IF recommendations for the Field of Play, athlete venue medical station and spectator areas
  - Medical equipment
  - Medications
  - Medical personnel
  - Emergency transport
  - Medical training
- Provide venue medical plans, as per the IF template, for each training and competition venue
- Provide electronic and printed venue medical information guides for each venue
- Provide the name and contact detail of the Chief Medical Officer for each venue
- Determine appropriate designated athlete and spectator hospital locations taking into account quality, medical services required and location (to include projected transport times from a venue to the hospital)
- Arrange the necessary service contracts with the designated hospitals for the provision of athlete and spectator medical services during the IF event
- Ensure systems are in place to store, issue and manage medications, including controlled drugs, at venues according to the laws of the host country
- Develop and test an electronic medical encounter system to be used during the event that meets the IF guidelines. Train all members of the LOC medical team to use the system
- Liaise with public health authorities to plan event risk mitigation strategies
- Publish and circulate the public health event risk mitigation strategies
- Provide a list of common medications available/not available in the country
- Provide drug and equipment importation regulations
- Liaise with local health delivery government departments to ensure co-ordination of venue medical disaster plans
- Publish and circulate the venue medical disaster plans following review and approval by the IF
- In large events, practise the disaster plans

- Provide a detailed training plan to train all healthcare personnel in the required skills to an acceptable medical standard and quality of clinical practice
- Undertake training in safeguarding including how to recognise issues, how to report events and how to access the pathways for the provision of physical and psychological support for potential victims
- Arrange a referral network of licensed/registered mental health professionals
- Pilot the medical plan at local test events and evaluate and revise the plan as required
- With the IF supervision and approval, liaise with NF medical teams prior to the event as required



#### 2) During IF events

- Implement the health care program in collaboration with the IF for all areas in venues
  - Field of Play
  - Athlete medical room
  - Spectator medical room
  - Athlete hotels/villages
- Undertake scenario-based practice of the Field of Play extractions and/or parts of the medical action plan on a daily basis or at change of shift with all medical personnel and record the results in the daily medical report
- Undertake Field of Play initial assessment, treatment and evacuation from Field of Play as per the sport IF regulations and appropriate nationally/internationally recognised standards
- Undertake medical care for athletes who do not have their own medical team healthcare professionals
- Complete the required documentation for the IF in the daily medical report and electronic medical encounter system
- In collaboration with the IF medical staff, help facilitate the logistics and participate in the venue medical meeting
- Support the NF medical teams in the provision of medical care for their athletes
- Implement the IF safeguarding policies and procedures as applicable
- Provide the relevant data for IF injury and illness surveillance/ audit, and/or other research projects
- Ensure all relevant staff are familiar with the WADA Prohibited List and the requirements for Therapeutic Use Exemptions and Needle Policy (as applicable)
- Maintain medical confidentiality throughout the event
- Implement the IF communication policy related to arising athlete health issues (as applicable)

# 3) Following IF events

- Provide a summary report to the IF reviewing all aspects of the delivery of the health care program in venues
- Provide recommendations for improvements for future IF events
- Support knowledge translation initiatives

#### **National Federation Medical Personnel**

The National Federation medical personnel have the responsibility to:

# 1) Prior to IF events

- Adhere to host country governmental rules and regulations
  - Medical licensing
  - Drug and medical equipment importation, storage, issue and management
  - Utilisation/administration of medications and equipment
- Inform the LOC medical team (in confidence) of any pre-existing medical conditions for their athletes that may occur during training and/or competition
- Organise with the LOC (in confidence) any specific/unique medical treatment that an athlete may require in the event of injury or illness



#### 2) During IF events

- Attend the venue medical meeting and the team physician meeting (if applicable)
- Understand the emergency medical evacuation procedures for an injured/ill athlete from the Field of Play and the NF medical role in an evacuation
- Be present at the venue/Field of Play during times of training and competition
- Collaborate with the following IF initiatives (as applicable)
  - Injury and illness surveillance/audit research project
  - Other athlete health-related research projects
  - The academic program (educational seminars) as learners or lecturers
  - Safeguarding (harassment and abuse) rules and regulations
  - Needle Policy
- Provide expertise and collaboration as requested with the anti-doping program

# 3) Following IF events

Provide feedback to the IF as required



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# 5. Sport Medical Risk Assessment

A Sport Medical Risk Assessment should be carried out for all IF events to highlight specific areas of health risk and to stratify these risks according to 1) the probability or likelihood of occurrence and 2) the potential seriousness or risk impact of the consequences.

This exercise will then lead to the development of mitigation strategies for each identified health risk or concern. The Sport Medical Risk Assessment should be included in each venue medical plan, especially

when there are risks that are specific to a particular sport, discipline or venue.

It is recommended that the Sport Medical Risk Assessment be based on the standard risk assessment 5x5 matrix on p16. The risk rating is determined by multiplying the risk likelihood rating by the risk impact rating.

The completed risk assessment should be included in the venue medical plan.



Table 1. Risk assessment matrix

		Consequence									
		Insignificant	Minor	Moderate	Major	Catastrophic					
Likelihood		1	2	3	4	5					
Rare	1	1	2	3	4	5					
Unlikely	2	2	4	6	8	10					
Possible	3	3	6	9	12	15					
Likely	4	4	8	12	16	20					
Highly likely	5	5	10	15	20	25					

■ Lowest risk

■ Low risk

■ Medium risk

■ High risk

Each hazard is identified in the assessment table opposite and the risk scored using the matrix. Any mitigating factors and additional risk strategies are then introduced, followed by a further assessment to assess efficacy.

- Any risks that remain in the red or orange section (scores between 8 and 25) after the residual risk assessment is completed will need to be reassessed and additional mitigation strategies/ procedures or a contingency plan put in place to reduce the risk further.
- Any risks that are yellow (scores between 4 and 6) should be highlighted to ensure that all personnel are aware of the strategies/procedures for that risk and, if possible, further strategies/procedures employed.
- Risks that are green are low risk, but they must still be communicated to all members of the health care team (IF, LOC and NF personnel) for successful implementation.
- For those host countries with limited available medical services, an IF may want to bring their own medical emergency kit and trained personnel as a general risk mitigation strategy.

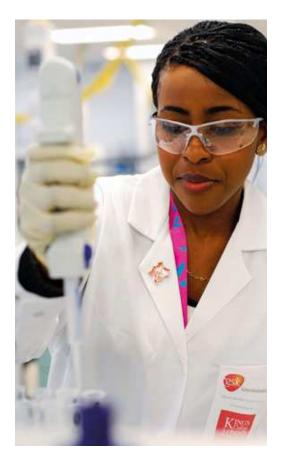


Table 2. Example risk assessment

Potential Risk	Who is affected?	Initial Risk Score		ore	Issues	Further actions/Completion date and by who	Residual Risk Score		
		С	L	Risk			С	L	Risk
Length of event	Staff	3	2	6	<ul> <li>Long days programmed with 2-3 sessions per day.</li> <li>Medical teams to be on-site 1hr before and 1hr after public access/egress.</li> </ul>	Medical teams to work on a shift basis with regular breaks.	1	1	1
Manual handling injury	Staff	4	4	16	Personnel are required to lift and carry patients and heavy equipment.	Staff to be trained in manual handling skills. Lifting aids to be provided. Incorporate within the brief the requirement for dynamic risk assessment.	2	2	4
Competency and training	Staff	3	2	6	All staff engaged in the event must be familiar with their roles and remit.     There is an appropriate skill mix of staff attending.	Staff to attend stadium training events.  All staff engaged in the event to be familiar with venue contingency plans. All staff to have current registration/qualifications.	1	2	2
Access for medical to all areas	Staff, spectators and athletes	4	4	16	<ul> <li>Limited accreditation may not allow appropriate response to medical emergency.</li> </ul>	An appropriate number of the medical and ambulance service team need to be accredited for all areas.     Field of Play team must have appropriate accreditation.	2	2	4
Ambulance loading and parking and points	Staff, spectators and athletes	3	4	12	Lack of close ambulances and access to venue and medical rooms can delay patient transfer.	Suitable ambulance loading points to be identified. Additional vehicles to be on site to avoid delays at security.	2	2	4
Inadequate briefing of medical teams	Staff, spectators and athletes	4	2	8	Risk of staff not fully understanding their roles. Staff may not be aware of any dynamic risks identified from the venue brief.	Ensure adequate briefing to all medical staff before each shift and provide summary hand-out brief.     Ensure all medical staff are aware of the operational plan.	4	1	4

■ Lowest risk ■ Low risk ■ Medium risk ■ H

## Examples

"C" = consequence, "L" = likelihood

Source: David Zideman LVO, MBBS (IOC Medical and Scientific Commission - Games Group - Emergency Medicine)

# 6. Venue Medical Services

Venue medical care should be implemented at the international standards of 'Good Clinical Practice'. For example, venue medical personnel should be competent in the latest Advanced Trauma Life Support (ATLS) and Advanced Cardiac Life Support (ACLS) guidelines. For the assessment and treatment of sport injuries, the IOC Manual of Sports Injuries may be used as a reference tool if there are not specific guidelines already defined by the IF.

Determination of the requirements for venue medical services for each training and competition venue medical station and Field of Play medical station is contingent upon the sport- and discipline-specific requirements. These requirements are developed following an analysis of the following factors:

- Sport medical risk assessment
- Expected number of athlete participants
- Duration of event
- History of IF injury and illness surveillance/ audit statistics

Items to be considered for inclusion in the venue and Field of Play medical stations shown in Figure 4.

Figure 4. IF event-specific requirements for venue and Field of Play medical stations

# **Venue Medical Station**

- Size of venue medical station
- Number of examining beds
- Transport equipment
- Communication equipment
- Dedicated emergency line
- WiFi requirements
- Computer hardware recommendations
- Emergency medications as per the International Federation Pharmacy Guide
- Emergency medical equipment based on the risk assessment
- Security requirements
- Secure lounge or storage space for healthcare professional personnel's personal belongings and/or lunch relaxation area
- Secure storage for medications, incliding controlled drugs as per the law of the host country
- Appropriate venue +/- Field of Play accreditation access for cenue medical station personnel
- Appropriate signage and location
- Access to ice
- Recommended personnel requirements including:
  - Qualifications of the venue medical team
  - Numbers of sport medicine physicians
- Numbers of allied health professionals
- Recommended coverage including:
  - Type of health care professional
  - Numbers of health care professionals
  - Hours of clinical coverage
  - Access to language translation services

Source: ASOIF

# Field of Play Medical Station

- Location adjacent to the Field of Play taking into consideration:
  - Sport rules
  - Ease of access to Field of Play
  - Ease of access to the venue medical station and/or emergency evacuation pathway
  - Ability for the Field of Play healthcare professionals to visualise the sport activity
  - Location protected from media scrutiny as feasible
- ▼ Athlete transport/evacuation equipment
- Communication equipment
- Designated secure private line/system
- Emergency medications for the emergency backpack as per the International Federation Pharmacy Guide
- Emergency medical equipment for the emergency backpack –
   based on the risk assessment
- Appropriate Field of Play access for health care personnel
- AED (automatic external defibrillator)
- ▼ Cervica spine board + collar
- Recommended personnel requirements including:
  - Qualifications of the Field of Play medical personnel
  - Numbers of sport medicine physicians
- Numbers of allied health professionals
   Recommended coverage including:
- Type of health care professional
- Numbers of health care professionals
- Hours of field of play/training coverage

Access to language translation services

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# **Field of Play Athlete Care**

IF guidelines and sport/discipline specific rules for access to the Field of Play medical care should be explicitly outlined in this section including:

- The recommended composition (i.e., specific medical skills) of the Field of Play medical team
- Positioning of the Field of Play medical team to facilitate visualisation of the competition as well as ease of access/egress
- Who has access to the Field of Play?

- When in competition is access to the Field of Play allowed?
- How is the Field of Play to be accessed?
- Sport-specific rules about injury assessment and treatment/management
- Sport-specific rules about return to play (e.g., concussion, bleeding)
- Rules regarding access of NF medical teams to the Field of Play

# 7. Emergency Action Plan

The Emergency Action Plan should be clearly defined according to the sport-specific risk. It should include:

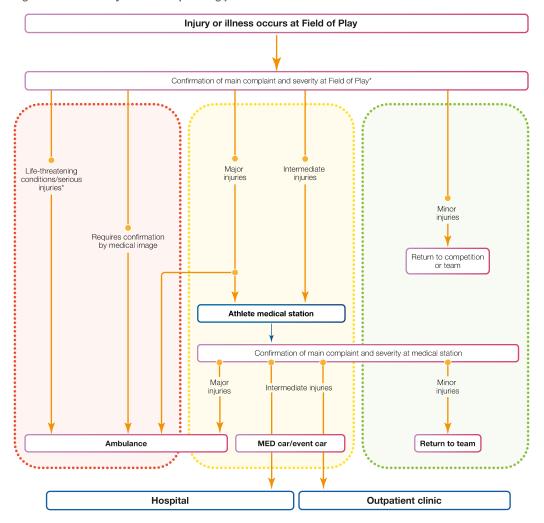
- Procedures for how and when to access the Field of Play
- Emergency treatment and evacuation procedures from the Field of Play:
  - Include educational videos (as applicable)
  - Daily medical scenario training/practice
- Emergency medical protocol for athlete medical stations
- Clearly defined protocols for the Field of Play for dealing with:
  - ▼ Cardiac arrest
  - Life-threatening injury
  - Death

- The egress pathway from the Field of Play to either the athlete venue medical station or the ambulance
- Location of ambulance transportation
- Location of automatic external defibrillators
- Sport-specific rules and regulations on:
  - Medical withdrawals
  - Return to play
  - Concussion
  - Infectious diseases
  - Blood spillage on the Field of Play
  - Etc.
- Completion of medical records, including the maintenance of confidentiality
- Communication procedures (who, how and when) for communicating with the:
  - Ambulance/emergency medical service
  - Venue medical manager
  - Designated hospital
  - Members of the LOC medical team
  - IF Medical Chairperson and Committee
  - Media

The diagram opposite is an example of the Emergency Action Plan.

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Figure 5. Field of Play standard operating procedure



("initial life-saving interventions to occur immediately prior to transportation as applicable: e.g., emergency heat stroke should receive immediate intervention at the venue prior to transfer by ambulance)

Adapted from: Yukichi HANAOKA, PhD; Manager of Venue Medical Services Team, Venue Medical Services Section; The Tokyo Organising Committee of the Olympic and Paralympic Games

# 8. Emergency Transport

The venue pathways to emergency transport to hospital for medical care that cannot be provided in the venue should be delineated to ensure adequate planning and preparation prior to the event. Assurance of appropriate accreditation access is required for all medical personnel to accompany the injured/ill athlete from the Field of Play or venue medical station to the emergency transport location. Security and protocol personnel should be aware of the emergency transport venue pathway and compliant to allow access as required.

#### Included should be:

- Number of ambulances:
  - Athlete ambulance(s)
  - Spectator ambulance(s)
  - Back-up/support ambulance(s)

- Minimum level of ambulance equipment
- Minimum skill level of ambulance crew (e.g., emergency medical transport/paramedic, ATLS, ACLS etc.)
- Location of ambulances
- Helicopters (when required by the IF):
  - Numbers of helicopters
  - Type of helicopter (including flight limitations, carrying capacity, medical limitations)
  - Availability of helicopter transfer
  - Landing site at the venue and designated hospital (requirement for secondary ambulance transfer)
  - Detailed protocol for the use of a helicopter transfer
  - Detailed national limitations for flight or medical transfer
- Non-emergency medical transport:
  - In non-emergency situations, the process/means for transportation from the venue to either an outpatient clinic or designated IF event hospital should be identified (e.g., car, taxi, event transport)

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# 9. Venue Pharmacy Formulary

The IF requirements for medications for the venue medical station and the Field of Play medical station should be explicitly included in the Health Care Guidelines for IF events document. The specific medication requirements should be chosen to reflect:

- The potential risks of the sport/discipline
- The expertise of the medical personnel present to administer the medications
- Access to other medications through the ambulance or local hospital network
- Local medication availability in the host country
- Security of the medication supply
- Environmental and public health risks
- The recommendations of medications presented in the IF formulary (if exists)

Systems for secure storage and medication management must be in place for the event according to the law of the host country. A pharmacist should be appointed to set up and manage the pharmacy service provision for the event. Controlled drugs (such as morphine for strong analgesia) may require special storage requirements and records to be kept, according to the laws of the host country. All medications must be recorded for each individual patient.



The following list of medications is a subset of the Olympic & Paralympic Model Formulary and shows examples of medications to be stored in each medical room of a venue at IF events. These medications are recommended as stock to be available for administration by physicians as first-response care at competition and training venues.

An example list of medications for emergency use is also provided, which should be rapidly accessible or carried by appropriately qualified emergency response providers, specifically in the emergency medical bag at the Field of Play medical station.

Table 3. Venue medical room stock [example list]

Medicine	Formulation	Medicine	Formulation	
Acetylsalicylic acid	Tablet: 75 to 300 mg	Hypromellose	Solution (eye drops): 0.3% (single dose units preferred)	
Acetylsalicylic acid (Aspirin)	Tablet or soluble tablet: 300 mg to 500 mg	Ibuprofen	Tablet: 200 mg; 400 mg	
Clopidogrel	Tablet: 75 mg	Ketorolac	Injection: 30 mg/1 mL	
Alcohol based hand rub	Solution: containing isopropyl alcohol 75% volume/volume (or equivalent alternative)	Lidocaine	Injection: 1% (as hydrochloride) in vial	
Antacid	Oral liquid and/or tablets (such as 200 mg potassium bicarbonate + 1000 mg sodium alginate/10 mL; or other oral combination antacid preparation)	Loperamide	Capsules or tablets: 2mg	
Aqueous cream	Cream	Loratadine	Tablet: 10 mg	
Barrier cream	Topical cream or ointment: containing dimeticone; or titanium	Massage oil	Oil: jojoba oil (or equivalent alternative)	
Benzylpenicillin	Powder for injection: 600 mg (= 1 million IU) in vial	Menthol	Topical cream or gel	
Blister treatment application	Topical gel patch: Hydrocolloid or Petroleum impregnated	Methyl salicylate + Menthol	Topical cream or gel	
Chlorhexidine	Solution or wipes: 5% (as digluconate)	Metoclopramide	Injection: 5 mg (as hydrochloride)/ mL in 2 mL ampoule	
Chlorphenamine	Tablet: 2 mg to 4 mg	Metoclopramide	Tablet: 10 mg (as hydrochloride)	
Codeine + Paracetamol	Tablet: 8 mg to 30 mg (codeine phosphate) + 500 mg paracetamol	Midazolam	Buccal solution: to provide 10mg dose for adults	
Crotamiton	Cream: 10%	Morphine	Injection: 10 mg (morphine hydrochloride; or morphine sulfate) in 1 mL ampoule	
Diazepam	Injection: 5 mg/mL	Morphine	Injection: 5 mg/mL (sulfate or hydrochloride) in 2 mL ampoule	
Diclofenac	Topical gel: 1%	Mupirocin	Cream or ointment: 2% (as mupirocin calcium)	
Diclofenac	Tablet: 50 mg	Naproxen	Tablet: 250 mg or 500 mg	
Flucloxacillin	Capsule: 500 mg	Oral rehydration salts	Powder for dilution in 200 mL	
Glucagon	Injection: 1 mg/mL	Paracetamol (Acetaminophen)	Oral liquid: 120 mg/5 mL	
Glucose	Tablets: 4 grams glucose	Paracetamol (Acetaminophen)	Suppository: 100 or 200 mg	
Glyceryl trinitrate	Tablet (sublingual): 300 to 500 micrograms (or spray)	Paracetamol (Acetaminophen)	Tablet: 500 mg	

continued... >

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Medicine	Formulation	Medicine	Formulation
Paracetamol (Acetaminophen)	Soluble tablet: 500 mg	Sodium chloride sterile	Ampoule or sachet: 100 to 200 mL
Petroleum jelly (white petroleum)	Ointment	Sunscreen	Lotion or cream: Waterproof; SPF 30 (or higher SPF)
Povidone iodine	Solution: 10% (equivalent to 1% available iodine)	Tetracaine	Solution (eye drops): 0.5% (as hydrochloride)
Prednisolone	Tablet: 5 mg; 25 mg	Tissue adhesive	Topical glue: containing enbucrilate, cyanoacrylate or equivalent
Prochlorperazine	Buccal tablet: 3 mg	Tramadol	Injection: 100 mg/2 mL
Salbutamol	Metered dose inhaler (aerosol): 100 micrograms (as sulfate) per dose	Tramadol	Capsule: 50 mg
Salbutamol	Respirator solution for use in nebulisers: 5 mg (as sulfate)/ mL	Water for injection	Injection: 10 mL ampoules
Sodium chloride for injection	Injection: 0.9% 10 mL ampoules		









Table 4. Emergency and pre-hospital care medications – Field of Play medical station [example list]

Medicine	Formulation	Medicine	Formulation
Adenosine	Injection: 3 mg/mL in 2 mL ampoule	Methoxyflurane	Inhalation (medical gas): 99.9% methoxyflurane in 3 mL vial for single administration
Amiodarone	Injection: 50 mg/mL in 3 mL ampoule (hydrochloride)	Mannitol	10% injectable solution
Aspirin	Tablets: 300 mg	Midazolam	Injection: 1 mg/mL (alternatively 5mg/mL)
Atropine	Injection: 1 mg (sulfate) in 1 mL ampoule (alternatively 0.5 mg/mL or 0.6 mg/mL)	Naloxone	Injection: 400 micrograms/mL
Chlorphenamine	Injection: 10 mg/ 1 mL	Ondansetron	Injection: 2 mg/mL (in 4 mL ampoule)
Clopidogrel	Tablets: 75 mg	Oxygen	Inhalation (medical gas)
Dexamethasone	Injection: 4 mg/mL in 1 mL ampoule (as disodium phosphate salt)	Oxygen + Nitrous oxide	Inhalation (medical gas): 50% Oxygen; 50% Nitrous oxide
Epinephrine (adrenaline)	Injection: 1 mg in 1 mL ampoule (1 in 1,000; as hydrochloride or hydrogen tartrate); or Autoinjector (self-injector): 0.5 mg dose	Propofol	Injection: 10 mg/mL; 20 mg/mL
Epinephrine (adrenaline)	Injection: 1 mg in 10 mL ampoule (1 in 10,000; as acid tartrate or hydrochloride)	Rocuronium	Solution for injection: 10 mg/mL
Glucose	Injectable solution: 10% (hypertonic)	Sodium chloride	Injectable solution: 0.9% isotonic
Hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial	Tranexamic acid	Injection: 500 mg/5mL ampoule
Ketamine	Injection: 10 mg/mL (as hydrochloride)		

As applicable, all personnel should be familiar with the IF Needle Policy if one exists for the specific IF.

# **Anti-doping Requirements**

Inclusion of reference to the current WADA Prohibited List is recommended to ensure that all LOC medical personnel are familiar with the substances and methods that are prohibited in sport:

www.wada-ama.org/en/resources/science-medicine/prohibited-list-documents

The WADA Therapeutic Use Exemption International Standard, along with IF-specific protocols for Therapeutic Use Exemption applications, should also be referenced:

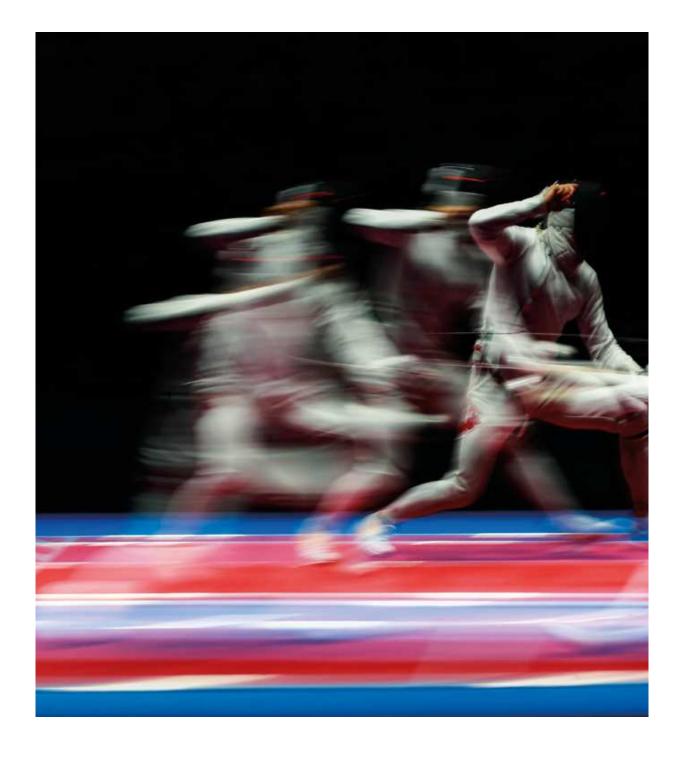
www.wada-ama.org/en/what-we-do/science-medical/therapeutic-use-exemptions

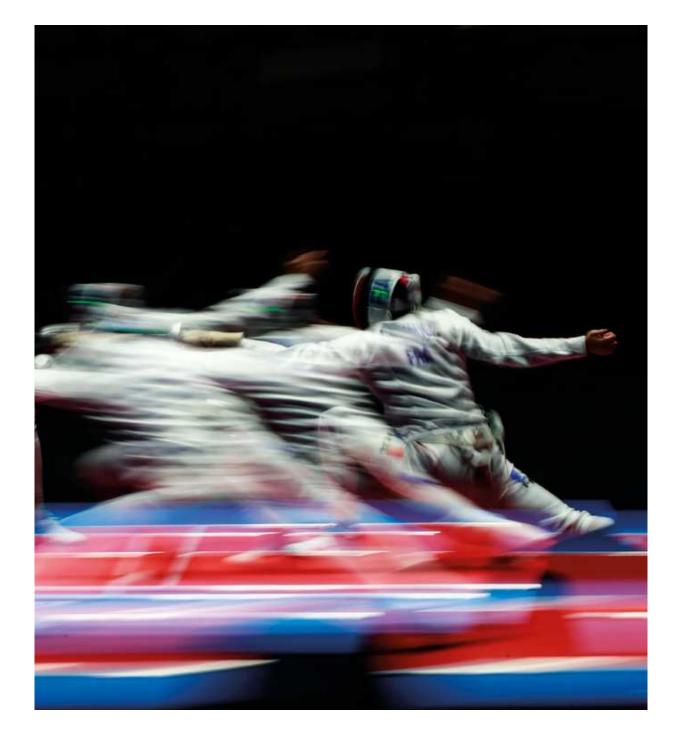
All medications at the IF event that are also on the WADA Prohibited List should be clearly marked for easy identification as a warning to prescribing clinicians for the need for a Therapeutic Use Exemption. Ideally, when giving a prescription to an athlete at the event, a duplicate copy should be given to the athlete in case of notification for doping control, so the athlete has a record in writing of recent medication intake and to aid in potential results management of an adverse analytical finding.

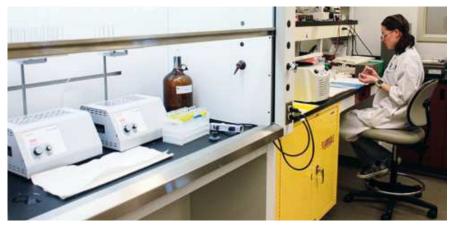
It is also recommended that all LOC medical personnel complete the Sport Physician Anti-Doping Toolkit educational modules found on WADA's ADeL (anti-doping e-learning platform):

www.wada-ama.org/en/resources/education-and-awareness/sport-physicians-tool-kit-online-version



















### 10. Hospital Allocation

Hospital allocation for the IF event should take into consideration:

- Anticipated health concerns
- Available hospital services (e.g., major trauma/ medical preparedness as in major trauma centres)
- Proximity to venues
- Insurance/financial requirements

Most IFs may have only one designated hospital. Should there be more than one hospital required, the LOC medical team should complete the following table:

Table 5. Example list of designated IF event hospitals and outpatient clinics

No	Hospital Name	Client Group	Contact Name	Contact Telephone	Distance from Venue
1	Hospital #1	Athlete/Coach/ Support Staff			
2	Hospital #2	IF Personnel, Officials, VIPs, Sponsors			
3	Outpatient Clinic #1				
4	Hospital #3	Media, Workforce, Spectators			
5	Outpatient Clinic #2				

## 11. Public Health Requirements

For large 'mass gathering' events, adherence to local public health legislation and regulations is mandatory. Contact should be made in advance to ensure appropriate planning.

The key considerations for public health at events are to:

- Reduce and manage the risk of individuals acquiring an infectious illness
- Reduce and manage the risk of infectious diseases spreading within teams and officials involved with the event
- Reduce and manage the risk of infectious diseases spreading to the host country population
- Encourage health-promoting behaviours in athletes, officials and visitors

The IF policies or requirements with respect to public health issues should be clearly stated, including, but not limited, to:

- Non-smoking policy
- Air quality
- Water quality

Safe needle disposal at all IF competition and training venues, as well as athlete and IF personnel hotels.

- ▼ Food safety quality assurance protocols for:
  - Athlete hotels/villages
  - Judges/referees and IF personnel hotels
  - Media/workforce accommodations
  - Venue food safety, storage and handling
- Infectious/communicable disease management policy:
  - Required immunisations for visiting athletes and IF personnel and guests
  - Geographical risks of host location
  - Protocols for isolation of athletes/teams with communicable diseases
  - Criteria for sport participation for ill and recovering athletes
  - Current global epidemics and consequent risks to athletes/personnel
  - Sexually transmitted infection risks and prevention strategy
  - Essential medications required for treatment of an infectious outbreak
- Environmental risks: heat, cold, altitude, pollution
- Design protocol and criteria for changing and/or cancelling events due to public health risk
- Communication strategy for the public and media

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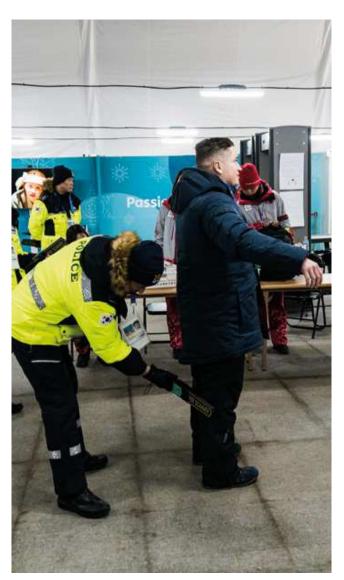


The LOC medical team should identify an event public health designated specialist from the local public health system to liaise and assist with the planning of the IF event, as well as to consult during the event as required:

- Name(s)
- Department
- Qualifications
- Contact information

It is advisable to identify in advance the communication channels between the LOC, the local public health service and IFs should there be a potential public health incident that affects the event.

### 12. Safety and Security



IF sporting events, like all other mass gatherings, should have clear safety and security protocols. It is important for the LOC medical team to have strategised with local safety and security departments for event safety and security as well as for disaster planning. Details to be addressed include:

- Liaison with:
  - Police services in case of emergency to provide additional security
  - ▼ Fire department services in case of fire emergency
  - ▼ Emergency transportation services
  - Tertiary care health services
  - Supply source of essential medications
  - Blood banks
  - ▼ Emergency mental health services for psychological support as required
  - ▼ Public health services
- Policies and procedures for major incidences/disasters:
  - ▼ Terrorist attacks
  - Environmental disasters such as earthquakes, tsunamis, fire, weathers, etc.
  - Stadium malfunction

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### 13. Dental Requirements



The objective of the dental program at IF events is to provide the treatment required to allow an athlete with an oro-facial injury to return to play as soon as is safe to do so. This requires both an adequately trained and experienced sport dentist as well as appropriate equipment and supplies. Where injuries are too severe to be treated at the venue, the venue dentist should be able to perform treatment designed to minimise further damage and stabilise the injured area prior to referral. The venue dentist should also be able to use this diagnosis to properly direct an injured athlete to the correct medical care centre – private clinic or hospital equipped to manage oro-facial injuries properly – which may be different from the primary referral hospital for that venue or event.

There are a number of summer IF sports where a venue dentist may be required due to the nature of the sport and the associated injury statistics, although not all injury surveillance methodologies capture dental injuries. Another consideration is the standard of care in the professional leagues where the athletes regularly play. For example, both the NHL (National

Hockey League) and the NBA (National Basketball Association) require a venue dentist at every league game. Athletes being 'loaned' to their national teams for international competitions should not have a lower standard of care than they are accustomed to at home.

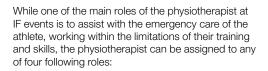
Sports with a high risk of impact or fast speeds should consider a venue dentist be a part of the venue medical team. The venue dentist must be situated at the Field of Play with full view of and access to the athletes and playing surface. If needed, the venue dentist can also be a member of the first responder/stretcher team at certain venues.

Finally, for those sports where a venue dentist is not provided, the venue medical officer should be given basic training in the management of oro-facial injuries and all venues should be given tooth-saving kits for the proper storage and transport of avulsed teeth or fractured segments. Also, a dentist should be identified to be 'on call' for emergency access during the IF event.

### 14. Physical Therapy Requirements

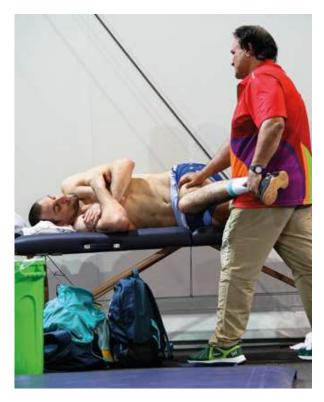
Where the physiotherapist has advanced sports physiotherapy training, including emergency care training and skills, they can perform a vital role in sport medical emergencies either as the team leader or as a member of the medical emergency multidisciplinary team. Not every sport requires physiotherapy services; however, sports with a risk of impact, fast speeds or a high prevalence of overuse injuries, should provide physiotherapy coverage. At some venues only one physiotherapist may be required; however, it is more usual to have a minimum of two physiotherapists; one at the Field of Play medical station and one at the venue medical station. In certain cases where there is a high demand for physiotherapy services, there may be as many as six physiotherapists, with a physiotherapy station located at the warm-up/training

area (e.g., athletics and aquatics).



- As a member of the Field of Play medical team as a first responder
- Providing physiotherapy treatment for acute injuries in the venue medical station
- Providing assessment of injuries and physiotherapy treatments in the warm-up/training area (e.g., taping, bracing, manual therapy) and supporting post-competition athlete recovery (e.g., cryotherapy, cryo-massage, post-event stretching and soft tissue techniques).
- ▼ Finally, the physiotherapist can provide injury prevention, recovery and management advice and education at IF educational events.

As with all members of the LOC medical team. physiotherapists should have appropriate qualifications and be educated in all aspects of the IF event medical guidelines.



### 15. Environmental Considerations

Environmental issues should be evaluated based on historical records. Risk mitigation strategies may need to be developed to address environmental risks. Environmental risks depend on the following factors at the geographic location of the event:

- Climate: heat/cold, other extreme weather conditions
- Elevation/altitude
- Air quality
- Water quality

Other factors to consider are the:

- Duration of the sport event
- Physiological requirements of the sport/discipline
- Time of day of the competition and training sessions
- Time of year of the event

For air quality and meteorological risks, at least six months prior to the event the LOC medical team should share with the IF Medical Committee and NFs records and archives from previous years. As a minimal requirement, the following monthly and/or daily trends/statistics for the following parameters should be shared:

- Air temperature
- Relative humidity
- Wind speed and direction
- Hour of sunrise and sunset

- Air Quality Index
- Particulate matters concentrations
- Ozone concentration
- NO₂ concentrations
- CO concentrations
- Seasonal and local pollen concentrations

Should there be environmental risks, consultation with sport science environmental specialists is recommended. Risk mitigation strategies may include:

- In the months preceding the event:
  - IF: athlete education on the event requirements (e.g., heat acclimation, ferritin level before altitude training etc.)
- In the weeks preceding the event:
  - LOC: provide information on the actual environmental conditions and their expected evolution
  - NF/coaches: provide suitable travel and acclimation arrangement to the athletes
- In the days preceding the event:
  - NF/coaches: take the environmental stress and requirements into account for the taper and the nutritional support
  - Athletes: drink sufficient fluid if training in hot and/or humid environment

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At the competition venue:

- IF: ensure implementation of the IF policy (e.g., event cancelation, additional break, etc.)
- LOC: aim to minimise environmental exposure by adapting scheduling, providing cooled/ warmed team tent and waiting areas, etc.
- LOC: provide mitigation measures for spectators and official (educate on behavior to adopt, provide hydration and shade, distribute goodies such as paper fans and caps if necessary)

- Medical management:
  - Training medical staff in recognition and emergency treatment protocols
  - Provision of specialist medical equipment such as ice baths for full body immersion
  - Access to essential medication which reflect the environmental risks
  - Have clear algorithms displayed in the medical venue (e.g., exertional heat stroke algorithms)
  - Planning for any specific medical equipment related to the environmental conditions (e.g. cooling bath, rectal thermometer, sodium tester, etc.)

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### 16. Nutrition Requirements

IFs and LOC medical teams should ensure adequate and appropriate nutrition at international sporting events. Nutritional requirements should include:

- Safe\* and secure food supply for
  - Athlete lodging (hotel/village)
  - Training and competition venues

\*Note that safety includes food and water hygiene as well as protection against inadvertent ingestion of substances included on the WADA Prohibited List from contaminated foods or sports products.

- At the training and competition venues, provision of:
  - Water and carbohydrate electrolyte replacement ('sports drink') as applicable
  - A variety of food options to aid athlete recovery
- At athlete lodging, delivery of a catering plan that achieves:
  - Sufficient menu variety within and between meals to manage food boredom and to provide ample choices for the needs of the athletic population
  - Attention to the food culture of the athletic population including special cultural practices (e.g., halal, kosher)
  - Food/menu options that meet the health and specific sports nutrition considerations of the athletic population (e.g., carbohydrate loading, weight management)

- Support for special dietary needs (e.g., food intolerances and allergies) or choices (e.g., vegan/vegetarian) of the athletic population
- Point of choice labelling of menu items to identify nutritional characteristics and other key information (e.g., presence or absence of allergens)
- (Ideally) provision of additional education resources around sports nutrition guidelines and how to utilise any special features of the catering plan
- Sufficient accessibility to support the overall nutritional needs of the athletic group and the logistics around training and competition schedules, including flexibility to meet special needs

Ideally, information about the catering plan should be provided ahead of the IF event to the IF medical committee for distribution to the NFs to assist in their preparations and specific plans.

Such information should include:

- Specific information on key issues that might arise around the specific competition or location (e.g., food and water hygiene, control of potential contamination of food supplies)
- Specific details of how special nutritional or cultural needs will be met, including key contacts to discuss/arrange additional needs
- Specific information regarding the importing of additional food supplies to the location (e.g., local custom or quarantine regulations) to assist teams or individuals with plans to supplement the catering plan
- Protocols and procedures for the management of any declared outbreak of food-related illness

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# 17. Athlete Safeguarding (Harassment and Abuse) Requirements

#### **Policies and Procedures**

IF safeguarding policies and procedures should be outlined in the Health Care Guidelines for IF events document to inform the LOC medical team of their role in athlete safeguarding.

<< Insert link to your IF Safeguarding policies>>

All members of the LOC medical team should be knowledgeable about the IFs':

- Codes of conduct
- Reporting mechanisms
- Safeguarding Officer name and contact information
- Access to athlete support mechanisms



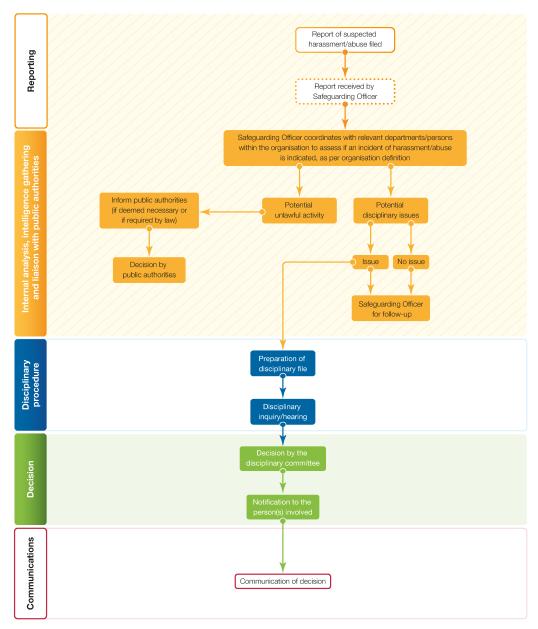
#### **Health Provisions**

For IF event-specific safeguarding policies, the LOC medical team may be required to provide trained personnel to provide psychological and/or physical support for athletes who disclose harassment and/or abuse.



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### Example flowchart demonstrating harassment and abuse report response



Please note: disciplinary procedures and procedures before public authorities can go in parallel

Courtesy of 'Safeguarding athletes from harassment and abuse in sport: IOC Toolkit for IFs and NOCs'

## 18. Athlete Mental Health Support



Evidence shows that athletes at the elite level have a higher prevalence of mental health symptoms and disorders than non-athletes. As such, IFs should ensure the provision of adequate and effective mental health support for athletes at IF sporting events.

Specific strategies to address athlete mental health issues include:

- Provision of time for adaption from travel to the IF event (i.e., 24h for each time zone crossed)
- Opportune timing of competition events
- Appropriate timing of training sessions to allow adequate recovery and sleep
- Provision of time for recovery post training and competition

- Allocation of quiet spaces of low stimulation
- Safe and comfortable sleeping arrangements conducive to enhanced sleep quality
- Provision of education to athletes, coaches and other entourage members to decrease stigma around athlete mental health
- Inclusion of a licensed/registered mental health professional with experience in elite sport on the LOC medical team
- Availability of a referral network of licensed/ registered mental health professionals

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## 19. Host Country Government Regulations

Host countries may have specific requirements relevant to the provision of athlete health care delivery that need to be considered in the planning and delivery of the health care program at IF events. These regulations fall under three categories:

- Medical licensing of visiting medical physicians
- Drug and medical equipment importation
- Mass event policies and procedures



### **Medical Licensing**

IF requirements with respect to medical licensing of both IF and NF medical personnel should be clearly stated. If the IF has no such policies, the IF shall ensure that the LOC outlines the legal requirements for medical licensing of foreign physicians in the country of the event as required. Links to regulations on official government websites should be provided.

### **Drug and Medical Equipment Importation**

The IF should encourage the LOC medical team to publish the national legal requirements for drug and medical equipment importation in sufficient time in advance of the IF event for the visiting NF medical personnel. Such guidance should cover the following scenarios:

- Importation of medication supplies by team physicians for team use
- Importation of personal medication by individual athletes
- Importation of controlled drugs (such as morphine)
- Importation of medical equipment
- Provision of medical care offered to an athlete (e.g., use of opiates in a pre-hospital environment

### **Mass Event Policies and Procedures**

Local governmental regulations for major events can be included in this section. Addition of website links and/or relevant policies should be added for reference.

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## 20. Non-Venue Athlete Health Care

IF requirements for athlete health care in non-venue locations at IF events should be clarified, including:

- After hours (out of venue) urgent care
- Medical services at hotels
- Athlete village health services (as applicable)





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## 21. Health Insurance



### **Health Insurance during the IF Event**

The health insurance requirements for the IF event should be determined and clearly communicated to all participants in advance of the event. Health insurance should cover all accredited individuals. Types of insurance may include:

- IF insurance
- Health insurance required by the organising committee
- Individual insurance to be borne by the NF, or individual participant

Details to delineate are:

- The client groups covered by the policy
- Exclusion criteria
- The procedures for activating the insurance
- Contact information
- Any associated costs such as health care related pre-payment details

### **Medical Personnel Malpractice Insurance**

Requirements for indemnity insurance for health care professionals and medical volunteers at IF events should be explicitly stated and checked by the respective IF, NF and/or LOC. Identification of the responsible organisation should also be defined.

## 22. Language Services

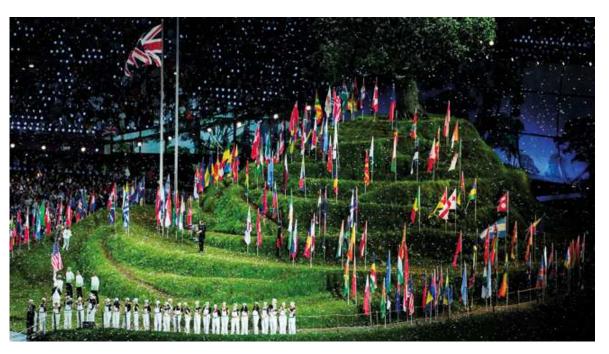
An IF policy on required language services at IF events should be circulated to the LOC medical team to ensure adequate planning.

Should no policy exist, the IF should require the organising committee to provide adequate and timely language services to facilitate the delivery of medical care at the training and competition venues.

#### Included should be:

- Contact information for access to the event language translation services
- Designation of medical translation services (if applicable)
- Languages included
- A statement about medical information confidentiality when using language services





## 23. Medical Communication Strategy

IF communication policies regarding communication about health-related information should be reviewed with the LOC medical team. There are two components to the communication strategy.

### **Event Medical Team Communication**

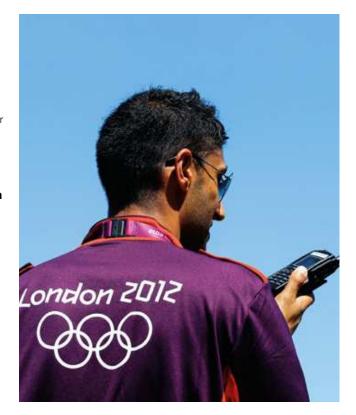
During the IF event, a reliable and confidential communication mechanism is essential to ensure clear and prompt communication between the members of the LOC medical team. The communication system should have a dedicated, secure channel for the sole use of the medical team.

### **Communication about Medical Information**

The IF communication policy should clearly define the personnel who are sanctioned by the federation as spokespersons on health issues for the IF.

Procedures for the communication of medical information should be identified to the following stakeholders:

- Athletes and coaches
- Other accredited participants
- Social media
- Public through press and social media



### 24. Spectator Medical Services

IFs should ensure that the LOC makes provisions for the health care of spectators that are distinct from athlete health care.

The spectator medical services should include:

- Designation of spectator medical personnel that are completely different from the athlete medical personnel
- Allocation of a venue medical station for spectators with designation of:
  - ▼ Medical station size
  - Medical station location
  - Medications
  - ▼ Equipment
  - Staffing qualifications
  - Staffing numbers
  - Start and finish times for spectator medical cover (1h before the opening of spectator gates and half an hour after they close)

- Delineation of a medical action plan for spectators outlining:
  - Location of automatic external defibrillators
  - Removal from spectator area
  - Triage procedures
  - Medical protocols for trauma and illness
  - Transfer procedures from spectator venue medical station to ambulance
  - Ambulance designation
  - Hospital designation
- Daily:
  - Spectator medical briefing
  - Scenario training
- Communication network (as per the athlete communication system, but on a separate network)
- Medical record system
- Public health requirements:
  - ▼ Environmental planning and protocols
  - Major incident planning and training
- Provision of medical care for VIPs

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## 25. Event Health Research



Athlete injury and illness surveillance/audit research projects or other IF research initiatives can be outlined for the LOC medical team to ensure their understanding of their role, expectations, compliance and support.

The communication should include:

- Identification of the research objective(s)
- Who reports?
  - Role of the LOC medical team
- When to report?
- What should be reported?

- What details to be included?
- How to submit the report form/data
- Confidentiality
- Names and contact information of the IF research team
- Ethics approval (if applicable)
- Any research initiatives of the LOC medical team should be reviewed and approved by the IF prior to implementation

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# 26. Medical Ethical Guidelines: Olympic Movement Medical Code

Athletes have the right to high-quality, ethical medical care. In elite sporting events, there may be external pressures or influences on athlete health care and return to sport from media, agents, coaches, NF presidents etc. who wish to sway an athlete's decision to participate. As such, it is important to emphasise the principles of ethical, athlete-centred health care delivery to all members of the LOC's medical team at IF sport events. This includes the athlete's right to:

- Confidentiality of health information
- Informed consent
- A second medical opinion
- The latest evidence-based medical care
- Safe and ethical medical practices

The LOC medical team should be reminded of the IF Medical Code of Conduct (insert link to webpages as applicable). If this does not exist, refer to the Olympic Movement Medical Code:

IOC Medical Code - PDF

















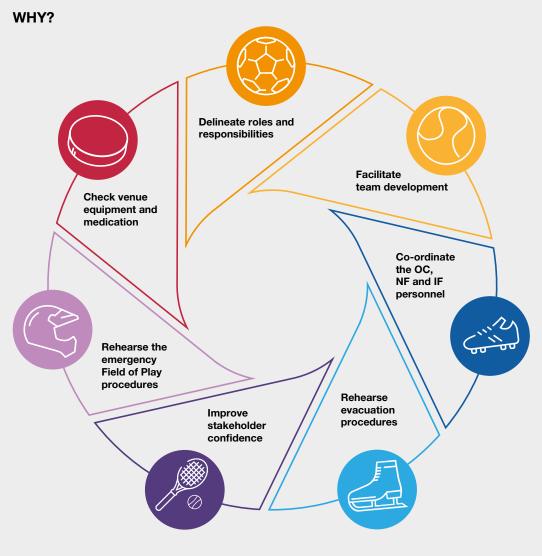




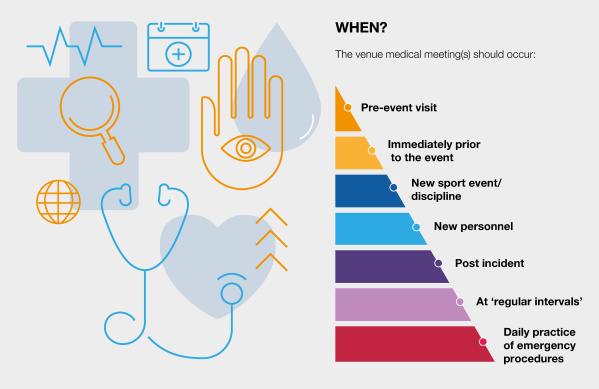


### 27. Venue Medical Meeting

During IFs' sport events, a venue medical meeting should be held. The objectives of hosting a venue medical meeting are as follows:

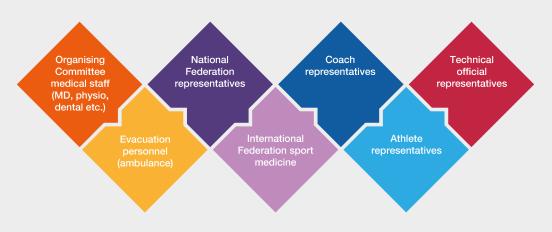


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### WHO?

Invited attendees at the venue medical meeting include:



### WHAT?

The venue medical meeting should include the following agenda items:

#### Introductions

- Welcome by IF and LOC medical team
- Sign-in sheet
- Introduction of IF medical team
- Introduction of LOC medical team
- Introduction of visiting NF medical teams
  - Names
  - Medical specialty(ies)
  - Roles and responsibilities
  - ▼ Contact information

### Venue medical plan

Who, what and access for:

- ▼ Emergency medical services
- Sport medicine services
- Dental services
- ▼ Physio services
- Pharmacy services
- Allied medical services (e.g., massage, chiropractor, registered/licensed mental health professional)

Information on location of ambulance, access route and egress pathway.

### **Sport-specific rules**

IF rules and regulations for:

- Athlete withdrawal
- Athlete return to play

### Injury and illness surveillance or audit reporting

### Field of Play

- Videos including examples of emergency evacuation procedures
- Emergency Medical Action Plan

#### Venue tour

The tour of the medical facilities includes an inspection of the space, equipment, medications of the:

- Medical room
- Medication supplies, management, storage and records
- Equipment (AED)
- Physio and dental
- Visiting medical team area
- ▼ Field of Play medical post

Inviting venue security on the tour will facilitate movement of the tour group in venues with complex security pathways.

### Scenario practice

Scenario practice of the emergency action plan

- ▼ Field of Play
- Major incident
- Spectator

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### **¬** ASOIF

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