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# Safety in the Playing Environment

## Document

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# **SAFETY IN THE PLAYING ENVIRONMENT**

## **1. Introduction**

Rugby is a contact sport that requires a fit, trained and skilled participant in order to reduce the risk of catastrophic injury. In addition, the playing environment needs to be suitable and hazard-free, with the correct supporting personnel at hand in order to minimise injury and enhance safety.

Rugby event management, from a medical perspective, is designed to provide on-site medical care and administration to all participants in rugby matches. SARU, an affiliate of World Rugby, has provided guidelines for the minimum emergency medical requirements. This includes safety advice and medical care at the events. The minimum requirements are those necessary to ensure that the likelihood of a catastrophic event is minimised, and in the event that such an injury occurs the player is managed appropriately. These minimum requirements will differ based on the level of competition, socio-economic conditions and demographics. These minimum requirements are divided into two main categories depending on the type of match being played: “Green” and “Gold”.

This document also aims to give practical guidelines to coaches and referees to allow play to take place in a safe environment.

**Green** guidelines refer to the minimum requirements for the following designated rugby levels of play:

- Normal School Rugby matches
- Normal Club rugby matches
- Community rugby
- All Sevens format matches in the above mentioned categories.

**Gold** guidelines are the minimal safety requirements for elite level events. Gold level events can be subdivided into two sub-categories – **Gold** and **Gold+**

### **Gold**

- Absa Currie Cup tournaments (all formats and age-groups, except for the Premiership Competition)
- Vodacom Cup
- All other interprovincial level matches, including Amateur Interprovincial matches and tournaments
- Cell-C Community Cup
- Varsity Cup and Shield
- SARU Youth Weeks
- Schoolboy festivals

- Classic Clashes
- All Sevens matches or tournaments at these levels

### **Gold+**

- Absa Currie Cup Premiership
- Vodacom Super Rugby
- All International Test Matches
- All International Sevens matches and tournaments

For the **Gold** standard matches, or for **Gold+** standard matches, these minimum safety requirements, in addition to the **Green** standard necessities, are more stringent.

**These requirements are the very minimum requirements that should be in place for a rugby match to take place. The minimum requirements for sanctioned competitions, tournaments and rugby festivals are however more stringent. One should however, where possible, continuously strive to improve the medical support available at matches at all levels of play to ensure player safety at all times.**

The home team management is responsible for the design, implementation and presentation of an emergency action plan. At “**Green**” level events, this must be presented to the referee before the game. The referee is responsible for confirming that all requirements for a safe environment and emergency plan are in place before allowing a match to start.

To ensure the safety of players in rugby matches, the following must be assessed:

- Environmental conditions
- Personnel
- Equipment
- Medical Facilities
- Accessibility – Units for Advanced care
- Emergency Action Plan – Potential Catastrophic Injury

The assessment and acceptance of these conditions will be determined in professional events and tournaments by the level of competition, and in amateur competitions by the level of competition as well as the socio-economic and demographic circumstances.

## 2. Environmental conditions

Ensuring safe environmental conditions requires assessment of both the weather conditions as well as the playing environment

### - **Playing Environment**

The Playing Environment includes the field of play as well as the immediate surrounding area. Advertising hoardings, poles, pylons and barriers must ideally be 5m from the touchline. If one or more of the abovementioned obstacles cannot be removed they must be suitably covered up to provide maximum protection to the players. If areas of the playing surface comprise an asphalt / tartan track it should be suitably covered as well.

The playing surface should be grass, artificial grass (conforming to World Rugby regulation 22), sand or clay. It must be firm and free of hazards, including stones and glass. In cold environments, the surface must be free from ground ice. If there is surface water sufficient to realistically raise the risk of drowning, the game should not commence. The decision to start a game where ground water is present is at the sole discretion of the referee and common sense should prevail.

### - **Weather Conditions**

Environmental conditions	Green	Gold	Gold+
Whirling Hygrometer/WBGT*	✓	✓	✓
Lightning warning system*	✓	✓	✓
Telephone access	✓	✓	✓
<b>* = Telephonic access to this information is also sufficient</b>			

## **Hot conditions:**

Research has not identified a specific temperature and / or humidity when the playing of a rugby game is not advised; however, it has been recommended that conditions are considered unsafe for athletic competition when the ambient temperature is  $> 30^{\circ}$  and the Humidity is greater than 60%. This correlates with a wet bulb globe thermometer (WBGT) reading of greater than 28 degrees. As rugby is a sport where fluids are more readily available and the potential for cooling is greater, these recommendations have not been ratified for rugby union.

The heat index has been found through research to be a better measure of heat stress and relies on readings taken on a whirling hygrometer. This is both practical and reliable and it is ideally recommended that each rugby ground (for Gold and Gold+ events) where possible has access to a Whirling Hygrometer to measure the weather conditions. This Index takes into account air temperatures at various relative humidities. Prior studies have confirmed that if the Heat Stress Index % is below 150, the risk to players should be minimal. If the heat stress index is above 150 then the risk to competitors is high and the game should not be started unless there is full access to heat reducing measures as listed below.

- Provision of fans in the change-rooms.
- Provision of pitchside shade
- Water and towels placed in ice water must be strategically available alongside the field.
- Water breaks should be held regularly, e.g. a 1 min break at the 20 min point of each half.
- The halftime break should be increased from 10 min to 15 min.

## **Lightning:**

No play should start when lightning is present in the immediate vicinity. If available, a lightning warning system should be used. Telephonic communication with the SA Weather Service can provide information on the prediction of inclement weather.

***Please keep revisiting the BokSmart Website on lightning advice, as this section will be updated from time to time!***

### 3. Medical Personnel

The medical personnel required at a rugby game will vary depending on the level of competition. However, the higher the level of training of medical support personnel together with more personnel being available on match day is desirable.

Medical Personnel	Green	Gold	Gold+
Match Doctor	✗	✗	✓
Venue Doctor	✗	✓	✓
Specialist services on site	✗	✗	✓
Specialist services on standby	✗	✓	✓
Nursing sister	✗	✗	✓
Medical liaison	✗	✗	✓
ALS paramedics	✗	✗	✓
ILS paramedics	✗	✓	✓
BAA	✗	✓	✓
Trained First Aider	✓	✗	✗
Ambulance and staff on site	✗	✓	✓
Ambulance and staff on standby	✓	✗	✗
Air staff (on standby)	✗	✓	✓

#### Match Doctor:

This is ideally a Sports Medicine trained doctor or a medical doctor experienced in treating sports injuries. One of these persons is to act as the official Match Doctor where applicable. The match doctors' duties are clearly defined in World Rugby handbook for International matches and in the Participation Agreements for domestic competitions. These will be given to the relevant medical personnel via the host union.

#### Venue Doctor:

This is ideally a Sports Medicine trained doctor or a medical doctor experienced in treating sports injuries. The Venue Doctor's primary duty is to oversee all primary field side care management, manage the medical room and assist the visiting Team Physicians should their assistance be required. These include prompt management of injuries, referral to hospital and management of "blood injuries". This person should ideally be trauma trained and should manage the medical room.

The following Specialist services, if available, will benefit all players.

**Specialist service on-site (“Gold+”)**

- Physician
- Orthopaedic surgeon
- ALS paramedic

**Specialist service on standby (“Gold”)**

- Radiology Unit
- Radiologist
- Orthopaedic Surgeon
- Physician
- Sports Physician
- Neurosurgeon
- Cardiologist
- General Surgeon
- Dentist
- Maxilla Facial Surgeon
- Plastic/reconstructive Surgeon
- Emergency Services
- Pharmacist
- ENT surgeon

**“Gold” and “Gold+” Category Events**

The following personnel should be present to manage the player from the field to the medical room. At elite events the qualifications and training of the personnel should be as high as possible.

- Minimum of 2 paramedics (Intermediate Life Support). Gold and Gold+
- Two First Aiders or Basic Ambulance Assistant (BAA) as support to the paramedics. Gold and Gold+
- Qualified nursing sister to assist Venue Doctor in the Medical facility. Gold+
- Medical liaison officer to act as intermediate between teams and medical personnel. This is often the venue doctor. Gold+
- Nursing sister to man separate spectator medical facility. Gold+
- Fully equipped ambulance staffed by paramedics. Gold and Gold+
- If problems with traffic are foreseen then a helicopter should be on standby. Gold and Gold+

## “Green” Category Events

The minimum personnel required for a rugby game to take place are:

- One or two persons suitably trained in Emergency Field-Side Care (A Trained First Aider, or Paramedic).
- BokSmart Rugby Medic(s) – Minimum requirement at match venues in communities who are considered socio-economically disadvantaged or underprivileged (for further information go to [www.boksmart.com](http://www.boksmart.com)) – these should not be seen as replacement personnel for a first aider or paramedic, where they are available!

Referees/coaches who have First Aid knowledge add immense value, and all referees and coaches must be BokSmart certified as of 2011. The presence of a Sports Medicine trained doctor or a doctor experienced in treating sports injuries will also be valuable.

### 4. Equipment - Sideline

Equipment	Green	Gold and Gold+
Spinal Board and harness	✓	✓
Cervical collars and head blocks	✓	✓
BLS equipment	✗	✓
BokSmart Concussion Guide	✓	✓
SCAT tool	✓*	✓
First Aid bag	✓*	✓
ALS Equipment	✗	✓
Golf cart	✗	✓
<b>* = where indicated, in certain underprivileged or disadvantaged communities, this cannot be seen as a requirement</b>		

The following equipment is recommended as a minimum requirement, and is by no means extensive. The amount and type of equipment available should be dependent on the qualifications of the personnel available.

- Spinal board with all attachments, and spider harness
- Cervical collars & head blocks
- BokSmart Concussion Guide
- Side line concussion assessment tool (SCAT tool)
- Golf cart - Patient transport (from the field of play to medical room) Gold+



- Basic life support (BLS): Gold and Gold+
  - Airway (nasopharyngeal-, oropharyngeal, laryngeal devices/tubes)
  - Breathing (Oxygen, face mask, ambubag)
  - Circulation (AED – automated external defibrillator)
- Advanced life support (ALS): Gold and Gold+
  - Equipment and drugs to manage advanced cardiopulmonary support
  - IV lines and fluids
- First aid bag - first aid kit which typically includes: Green\*, Gold and Gold+
  - scissors (blunt ended)
  - surgical gloves
  - gauze swabs
  - nasal pack
  - towel
  - compression bandages (5cm, 7.5cm, 10cm)
  - sterile gauze bandage
  - adhesive skin closures, (e.g. Band Aid)
  - elastic adhesive bandages (2.5cm, 5cm)
  - petroleum jelly
  - tincture of benzoin
  - irrigation solution (sterile eyewash)
  - antiseptic ointment / spray (e.g. Bethadine, Savlon)
  - melolin
  - triangular bandages
  - skin care pad (e.g. Second Skin)
  - ice pack
  - water bottle
  - adhesive dressings (e.g. Opsite)
  - adhesive tape
  - ice
  - suture material

\* = where indicated, in certain underprivileged or disadvantaged communities, this cannot be seen as a requirement

All the above items should be located in the technical zone.

## 5. Medical Facilities

Medical Room	Green	Gold	Gold+
Medical tent/station	✓	✗	✗
Emergency treatment room	✗	✓	✓

## Emergency treatment room:

A treatment room or station should be available at each ground and this should be used specifically for this purpose only. It should be easily accessible from the playing field and for advanced care personnel, ambulance for transportation and or helicopter evacuation. If multiple fields are being used the medical station should be centrally situated and accessible to all fields and to emergency transport.

## A medical room (Gold and Gold+) must have the following facilities available:

- Suitable electrical lighting
- Telephone access – a telephone should be available and working. This is imperative to assess environmental conditions prior to game commencement. In the Emergency action plan for a potentially catastrophic injury a telephone is required for communication with :
  - BOKSMART SPINELINE - TOLL FREE NUMBER: **0800 678 678**;
  - Emergency personnel
  - Referral hospital
    - Government hospital (for non-medical aid patients)
    - Private hospital (for those with medical aid)
  - Family or friends as required
- Running water – hot and cold
- Visible and available EMERGENCY ACTION PLAN with contact details
- Two examination couches
- A trauma board or any other suitable stretcher.
- Medications necessary to deal with all life-threatening situations.
- Suturing equipment
- Protective clothing and equipment
- Sharps container
- Basic life support equipment:
  - Blood pressure cuff
  - Stethoscope
  - Thermometer
  - Glucometer
  - ENT set
- Advanced life support equipment (including medications and AED)
- Equipment for neurological examination e.g. penlight, reflex hammer
- Equipment for management of blood injuries and lacerations
- Splints
- Blankets/ Space blankets
- Fridge/ Freezer and ample available ice

- Medical equipment, consumables and suitable medication to treat common musculoskeletal injuries.

## 6. Accessibility – Units for advanced care:

Appropriate emergency transport should be readily available if it is not possible to have an ambulance with advanced care on site. An ambulance at the playing venue is the ideal.

Ideally, the trauma unit and spinal unit identified in the emergency action plan must be accessible to an injured player within 4 hours for a spinal unit and in less than an hour for other trauma requiring advanced care.

Advanced care	Green	Gold	Gold+
ALS equipped ambulance on site	✗	✗	✓
BLS equipped ambulance on site	✗	✓	✗
Access to Emergency medical services	✓	✗	✗
Trauma unit (<1hour)	✓	✓	✓
Spinal unit (<4hours)	✓	✓	✓
Air transport (Helicopter)	✗	✓	✓

***Rugby organisations, rugby bodies or groups are expected to abide by the Public Safety Act as legislated by the South African Government***

## 7. Emergency Action Plan – Potential Catastrophic Injury:

An emergency action plan must be in place prior to a game commencing. This plan must be accessible, affordable, reproducible and current. This means that all personnel, equipment, emergency transport and referral partners are available at all games throughout the season. The emergency action plan should be amended prior to every fixture. Changes in personnel and their contact details should be clearly marked and their availability confirmed prior to commencement of the fixture. Where rosters of personnel are in place, ensure all relevant personnel are contacted and their availability confirmed prior to the match.

The following algorithm may be used to manage any potential catastrophic injury. This algorithm may vary from venue to venue depending on the support and facilities available in the immediate area.

However, each Emergency action plan should detail the following:

- *Layout of the facility and access to the facility*
- *Equipment available*
- *Internal support personnel*
- *External support personnel*
- *Communication required*
- *Follow up required post catastrophic injury*

### **Emergency Action Plan – Potential Catastrophic Injury:**

A document should be available that is easily accessible to all emergency personnel and team management involved on match day, and should contain the following:

#### **Facility Details:**

This should include the Directions to the match venue – GPS coordinates if known would be beneficial to the emergency personnel – including details regarding access and access control procedures.

#### **Facility layout including access to field and emergency vehicles:**

This should also include the position of keys and other security measures that may hinder quick access of emergency personnel.

#### **Emergency Equipment:**

A detailed list should be readily available and visible, detailing all equipment and emergency medication available. Its whereabouts should also be clearly defined.

#### **Personnel:**

Both host club/union personnel as well as emergency support personnel contracted for the event should have clearly defined roles and responsibilities delineated in the emergency action plan.

#### **Communications:**

Clear communication is the key to effective management of an injured player. Communication w.r.t. the role of each member of the medical team as well as communication between the internal; external and emergency unit/ BokSmart SpineLine personnel is imperative to ensure not only the optimal care of the player but also to ensure the players management and family are fully informed as to his situation.

#### **Follow up:**

A designated person, normally the Medical Doctor for “Gold” and “Gold+”, or the team coach or manager for “Green” categories, should be nominated to ensure all parties are kept informed as to the condition of the injured player until that time he is returned to the safekeeping of his nearest kin or designated team management member, whichever may be applicable at the time.

Emergency Action Plan	Designated Responsibility	Name	Contact info.	Confirmed ✓/✗
<b>Management : (Pitch Protocol)</b>	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
<b>Management: (Medical room Protocol)</b>	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
<b>Evacuation Protocol: (Field)</b>	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
<b>Evacuation Protocol: (Medical room, Spinal unit, General Hospital, Trauma Unit)</b>	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
<b>Communication: (BokSmart Spine, SICM, Ambulance service, Spinal unit/hospital)</b>	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
<ul style="list-style-type: none"> <li>• <b>In some instances as with the “Green” standard, the officiating medical support staff personnel may need to be assisted by the Manager, Coach, teacher or parents to fulfill some of these tasks mentioned above, e.g. assist in communication with the involved emergency medical personnel.</b></li> <li>• <b>Sometimes, the most qualified support personnel might also be a BokSmart Rugby Medic, who would need to fulfill any or all of these roles</b></li> </ul>				

**Management protocol: (Pitch)**

The highest qualified medical staff takes control of coordinating and managing the injury situation on-field, including establishing correct communication signals and channels with the referees, match officials and relevant care givers.

**Management protocol: (Medical room)**

The highest qualified medical staff takes control of coordinating and managing the injury situation off the field, including establishing correct communication with emergency transport personnel and relevant care givers. This person should have access to all the relevant facility directions and layout information as stipulated.

**Evacuation protocol: (Pitch)**

The highest qualified medical staff takes control of coordinating and managing the removal of the injured player off the field to the medical room or station with the assistance of the relevant field-side care givers. This usually would be the same person who coordinates the pitch management protocol above.

**Evacuation protocol: (Medical room, Spinal unit/general hospital)**

The highest qualified medical staff takes control of coordinating the transport of the injured player from the medical room or station to the relevant medical facility (trauma/spinal Unit), including establishing correct communication channels with the team manager, emergency personnel and designated emergency unit care givers. This usually would be the same person who coordinates the medical room management protocol above.

**Communication protocol: (BokSmart SpineLine, SICM and Spinal unit/emergency room)**

The highest qualified medical staff member takes control in establishing correct communication channels with the team manager, emergency personnel, designated emergency unit care givers, the BokSmart SpineLine and the BokSmart Serious Injury Case Manager (SICM) as per the BokSmart Serious Injury Protocol. This usually would be the same person who coordinates the medical room management protocol above.

For more advice on this matter consult your ***Safety in the Playing Environment*** and ***Tournament Medical and Safety Minimum Standards*** documents for the additional safety measures and protocols that are compulsory for these levels of matches and tournaments.

These are available on the BokSmart Website [www.BokSmart.com](http://www.BokSmart.com) or linked Page: <http://boksmart.sarugby.co.za/content/playing-environment-safety>.

The minimum requirements with regards to ***Field Safety standards*** are also available on the BokSmart website at the same link.

Where the ***Safety at Sports and Recreational Events Act of 2010*** applies, this also needs to be addressed according to Law

## 8. References:

1. SARU Minimum First Aid Requirements, Dr I Jakoet, July 2007
2. Mass Participation Event Management for the Team Physician: A Consensus Statement, Team Physician Consensus Statement, American College of Sports Medicine, American Academy of Family Physicians, American Academy of Orthopedic Surgeons, American Medical Society for Sports Medicine, American Orthopedic Society for Sports Medicine, American osteopathic Academy of Sports Medicine
3. Sideline Preparedness for the team Physician: A Consensus Statement, American College of Sports Medicine
4. WORLD RUGBY Regulations International handbook
5. IRB Heat Regulations 2008
6. IRB Rugby ready document 2008: 7-9
7. Australian Rugby Union 2010 – Medical and Safety recommendations
8. IRB Rugby Ready 2008: Developing an emergency action plan
9. BokSmart - Safety in the Playing Environment, Dr P Viviers, 2008
10. BokSmart - Safety in the Playing Environment, Dr J Suter, C Readhead, Dr W Viljoen, 2010

**CHECKLIST:**

<b>Environmental conditions</b>	<b>Green</b>	<b>Gold</b>	<b>Gold+</b>	<b>Confirmed ✓/✗</b>
Whirling Hygrometer/ WBGT*	✓	✓	✓	
Lightning warning system*	✓	✓	✓	
Telephone access	✓	✓	✓	
<b>Medical Personnel</b>	<b>Green</b>	<b>Gold</b>	<b>Gold+</b>	<b>Confirmed ✓/✗</b>
Match Doctor	✗	✗	✓	
Venue Doctor	✗	✓	✓	
Specialist services on site	✗	✗	✓	
Specialist services on standby	✗	✓	✓	
Nursing sister	✗	✗	✓	
Medical liaison	✗	✗	✓	
ALS paramedics	✗	✗	✓	
ILS paramedics	✗	✓	✓	
BAA	✗	✓	✓	
Trained First aider	✓	✗	✗	
Ambulance and staff on site	✗	✓	✓	
Ambulance and staff on standby	✓	✗	✗	
Air staff (on standby)	✗	✓	✓	
<b>Equipment</b>	<b>Green</b>	<b>Gold</b>	<b>Gold+</b>	<b>Confirmed ✓/✗</b>
Spinal Board and harness	✓	✓	✓	
Cervical collars and head blocks	✓	✓	✓	
BLS equipment	✗	✓	✓	
BokSmart Concussion Guide	✓	✓	✓	
SCAT tool	✓*	✓	✓	
First Aid bag	✓*	✓	✓	
ALS Equipment	✗	✓	✓	
Golf cart	✗	✓	✓	
<b>Medical Room</b>	<b>Green</b>	<b>Gold</b>	<b>Gold+</b>	<b>Confirmed ✓/✗</b>
Medical tent/station	✓	✗	✗	
Emergency treatment room	✗	✓	✓	
<b>Advanced care</b>	<b>Green</b>	<b>Gold</b>	<b>Gold+</b>	<b>Confirmed ✓/✗</b>
ALS equipped ambulance on site	✗	✗	✓	
BLS equipped ambulance on site	✗	✓	✗	
Access to Emergency medical services	✓	✗	✗	
Trauma unit (<1hour)	✓	✓	✓	
Spinal unit (<4hours)	✓	✓	✓	
Air transport (Helicopter)	✗	✓	✓	



Emergency Action Plan	Designated Responsibility	Name	Contact info.	Confirmed ✓/✗
Management: (Pitch Protocol)	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
Management: (Medical room Protocol)	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
Evacuation Protocol: (Field)	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
Evacuation Protocol: (Medical room, Spinal unit, General Hospital, Trauma Unit)	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			
Communication: (BokSmart Spine, SICM, Ambulance service, Spinal unit/hospital)	Match/Venue Dr/ Highest qualified paramedic/first aider or BokSmart Rugby Medic			

**Emergency Action Plan – Responsibility Matrix**

