Chapter 9: General Discussion

GENERAL DISCUSSION
The main purpose of this thesis was to evaluate the implementation of BokSmart – a nationwide injury prevention programme for rugby union ('rugby') in South Africa. Within this evaluation the main goal of the programme implementer, SARU, was also embedded: i.e. to evaluate the effectiveness of the programme in reducing catastrophic injuries in players. [1]

**MAIN FINDINGS**
This thesis used the 6 TRIPP stages to evaluate the implementation of BokSmart (figure 1). [2]

![Six stages of TRIPP](image)

*Figure 1. Six stages of TRIPP (Translating Research into Injury Prevention Practice) model. [2]*

The main findings, according to TRIPP stages are summarised and discussed in this chapter. Based on this TRIPP evaluation, some practical recommendations are
suggested. Also, the limitations of the study are discussed, some future research is suggested and finally a conclusion of the entire thesis is provided.

TRIPP stages 1 and 2
The extent of the injury problem and aetiology of injuries in rugby in South Africa is described in Chapters 2 – 5 of this thesis.

The incidence and severity of general rugby injuries has been well described in youth [3] and in adult [4] populations. However, in South Africa the only well-conducted injury incidence study was performed in one region of South Africa over 30 years ago. [5] Using a prospective design, Chapter 2 describes the incidence and severity of all injuries at four SARU youth tournaments – with players ranging in age from under-13 to under-18. While the findings of this chapter confirmed that the injury rates were not different to other youth rugby studies, [6] some practical suggestions were made for SARU for the future medical planning of these youth tournaments. For example, based on this chapter SARU now schedule the number of medical doctors, based on the observed number of ‘time-loss’ injuries per match at each age group (see also the ‘Practical Implications’ section in Chapter 2 and this General Discussion).

While the economic burden of injuries associated with rugby league had been estimated previously, [7] there were no such studies in rugby union. The economic burden of injuries is commonly overlooked as a measure of severity of sports injuries in general. [8] This economic measure of severity is particularly important for the parents of children involved in sport – particularly in a high-risk sport such as rugby. [4,6] Chapter 3’s findings were consistent with Chapter 2 in that injury costs and rates were not different by age group (under 13 – under 18). However, Chapter 3 revealed that costs were significantly less in players who did not have medical insurance in comparison to those players who did. This suggests that player’s without medical insurance are not receiving optimal treatment for their injuries. This phenomenon of medical insurance presence or absence affecting optimal medical treatment has been described previously in South Africa with hypertension treatment. [9]

Although a previous study described the absolute number of rugby-related catastrophic injuries in South Africa, [10] Chapter 4 provided the first prospective
investigation in the country of injury incidence and severity of these life altering injuries. As a result, this chapter established the following risk factors: senior age group players, hooker playing position and the scrum phase of play (mainly the engagement phase of the scrum). As with Chapter 2, SARU also introduced a policy change as a result of the findings of Chapter 4. In January 2013, SARU altered the laws of the scrum engagement sequence at all amateur levels of play, in an attempt to reduce the effect of these risk factors identified in this chapter.[11]

Using conventional methods for reporting rugby injuries, [12,13] in Chapters 2 - 4 it became clear that the true risk of scrum-related injuries to front-row players (hooker and two props) was being under-estimated. This chapter concluded that only those players who were at risk of suffering a scrum-related injury should be included in the exposure value when calculating injury incidence. The players at risk of injury should be determined through epidemiological studies. When using this altered calculation, although the injury rate was obviously much higher for props and hookers and lower for other positions, it was a more realistic assessment of the risk of scrum-related injury to the different playing positions.

TRIPP stage 3
As the BokSmart programme was introduced by SARU on an immediate and pragmatic basis and without the authors’ input, the development of the intervention will not be described here. However, the details of the programme have already been described in Chapter 1 (subheading ‘The BokSmart programme’). Although implementation theory suggests that intervention development should be guided by an established framework such as Intervention Mapping (IM) [14] the RugbySmart and BokSmart programmes were not developed according to such a framework.

TRIPP 4
BokSmart was never assessed for its efficacy in a randomised control trial, but was implemented by SARU based on the effectiveness of its parent programme, RugbySmart, in New Zealand. [15,16]

TRIPP 5 and 6
While South Africa and New Zealand are comparable in their passion for rugby, there are numerous differences between the two countries that could affect the implementation of an injury prevention programme. [17] The most prominent of these differences may be the socioeconomic disparities within the general and rugby
populations of South Africa. [17] Furthermore, the science of the evaluation of the implementation of injury prevention programmes has advanced rapidly since the RugbySmart programme was evaluated in 2009. [14] For example, the implementation of RugbySmart was described as successful mainly due to its effect on general and catastrophic injury rates. [15,16,18] However, it is now recognised that intervention success is underpinned by a requirement for behaviour change in the intervention targets. Accordingly, these intervention targets need to be a part of the evaluation. [19,20] Moreover, contemporary implementation research requires that a comprehensive description is provided of the ecological context of the intervention. [14] The RE-AIM framework was initially proposed for public health programmes or interventions that required behaviour change and thus provided the perfect tool for the evaluation of BokSmart. [14] Owing to its use in intervention evaluation, the RE-AIM framework can also be incorporated as part of TRIPP stages 5 and 6: this was described in Chapter 1. [2]

The RE-AIM definitions specific to this programme are described in detail in Chapter 1 (‘BokSmart evaluation’), however they are also repeated here in (Table 1) for reference and context. BokSmart has two distinct target groups for which the programme’s goals are different: [21] (i) the coaches and referees who attend the rugby safety workshops (‘researcher intervention’), and (ii) the actual players (‘injury prevention intervention’) (Table 1).

<table>
<thead>
<tr>
<th>RE-AIM component</th>
<th>Researcher intervention: coaches and referees</th>
<th>Injury prevention intervention: players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reach</td>
<td>All 40,000-50,000 coaches and referees attend RSW</td>
<td>N/A</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Acquire RSW knowledge</td>
<td>Reduction in catastrophic injury rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SARU internal goal)</td>
</tr>
<tr>
<td>Adoption</td>
<td>Employ RSW methods/regulations</td>
<td>Adopt RSW behaviour</td>
</tr>
<tr>
<td>Implementation</td>
<td>Positive about the RSW format and content</td>
<td>N/A</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Make use of RSW material after the RSW</td>
<td>Employ RSW behaviours after initial teaching</td>
</tr>
</tbody>
</table>

A comprehensive RE-AIM evaluation requires the use of both quantitative and qualitative methods. [21] In this thesis, quantitative evaluations of Effectiveness and Adoption of the BokSmart programme (in players – injury prevention target) are presented in Chapters 6 and 7, respectively. To supplement this, a qualitative
evaluation was performed on the perceptions of BokSmart from coaches and referees (researcher intervention). These results were then categorised using the RE-AIM framework (Chapter 8). While there are numerous quantitative evaluations of injury prevention programmes using RE-AIM, [22-24] this is the first time the findings from a qualitative investigation of an injury prevention programme have been analysed using this framework.

Based on the BokSmart RE-AIM definitions described in Table 1, the following summarises the qualitative and quantitative results described in Chapters 6 - 8.

Reach
Establishing the Reach of an intervention enables one to understand what proportion of the target population that received the intervention. In this case, SARU expected all active coaches and referees to attend the BokSmart rugby safety workshop, as this course was mandatory from January 2010. Chapter 8 describes a qualitative evaluation of the perceptions of the coaches and referees (researcher intervention target) of the BokSmart programme they had attended. The coaches and referees felt some teams were missing the BokSmart rugby safety workshop. However, the teams that these coaches and referees were referring to were independent and therefore not actually under SARU’s control. Nonetheless, the coaches felt that it was SARU’s role as the national federation to involve these independent teams. However, the coaches and referees also felt that other role players, beside themselves, should be required to attend the rugby safety workshops: parents of junior players and the players themselves were mentioned. In reality, this could be difficult for SARU to implement, as this would carry an enormous financial and logistical burden. However, there may be less expensive methods such attracting parents through BokSmart’s social media (Facebook and Twitter) portals.

According to BokSmart’s records, 56 732 coaches and referees have attended the rugby safety workshops at least once since July 2009.[25] The only objective quantification for the Reach of BokSmart was a ‘rugby census’ conducted by SARU with the support of the Sports Science Institute of South Africa in 2012. This census found that between 70-94% of active rugby coaches had attended the rugby safety workshops in juniors and seniors. [26] Although this is not the required 100% of
SARU, this is acceptable considering the huge number of coaches and referees across the country. Although this report did not investigate referees, they are also required to attend the rugby safety workshop as part of their required training and therefore it is highly unlikely that any active referee has not attended the course.

**Effectiveness**

For coaches, the perception of rugby safety workshop knowledge acquisition was skewed by their socioeconomic status (SES) in the qualitative investigation of *BokSmart* (Chapter 8). While coaches with a high SES generally thought the course was a waste of their time, as they knew all the information already, coaches with a low SES felt that they had gained knowledge from the course. Owing to the negativity of the coaches with a high SES, it is unlikely that the coaches with a high SES retained any knowledge from the course - this effect has been described in a similar intervention for ice-hockey coaches. [27] Future studies should attempt to quantitatively establish if knowledge is different in coaches, referees and players of different socioeconomic statuses. Because the data from the behaviour study in Chapter 7 were obtained from a merit-based tournament, the majority of respondents would be from a relatively high SES and thus it would not be possible to investigate this effect in the current data.

Although coaches with a low SES were more positive about the course’s effectiveness, it emerged that they had an exaggerated opinion of their knowledge gain from the rugby safety workshop. This became apparent when these coaches were found to be unaware of some critical information that the rugby safety workshop would have provided, such as what to do in case of a catastrophic injury (Chapter 8). This was even observed in coaches who had recently had a player in their team experience a catastrophic injury. This is unexpected considering that other literature describing catastrophic events suggests that these coaches should have the best knowledge of how to respond.[27,28]

The effectiveness of *BokSmart* in players (reduction in catastrophic injuries) is also the main goal from the perspective of the programme implementer: SARU. According to Chapter 8, the perceptions of almost all coaches and referees were that the rugby safety workshop was able to reduce catastrophic injuries in players. Furthermore, this positivity about the anticipated outcomes of a particular behaviour
is an important enabler for behaviour change in intervention targets. [22]. Similarly, in the quantitative evaluation of the effectiveness of BokSmart (Chapter 6) the programme was partly successful. In the four years after its implementation, there had been a nationwide reduction of, on average, 2.5 catastrophic injuries per year in junior players over a four-year period. However, the injury rate was unchanged in senior players over the same time period. The reasons for the differences in effectiveness at junior level may be related to the 5:1 ratio of junior to senior players (and thus the potential for effect). Alternatively, Chapter 8 suggests that coaches felt that junior players might be easier to influence than senior players. To investigate this theory, future studies could assess if specific self-reported behaviours of Chapter 7 where better in juniors than senior players. Similarly, Chapter 8 also suggests that senior coaches might also be less receptive to the rugby safety workshop than junior coaches. While this difference in effectiveness at junior and senior age groups was not described in the evaluation of RugbySmart [16] there was only one catastrophic injury in the post-RugbySmart period and thus no stratification of age group.

Adoption
Similarly to perceived effectiveness, the perception of the adoption of BokSmart prescriptions in coaches and referees was different, depending on their SES (Chapter 8). As described in Chapter 8, there was some evidence of referees and coaches with a low SES adopting rugby safety workshop prescriptions, while coaches with a high SES mentioned the difficulties in adopting the course’s prescriptions. Both the lack of knowledge gain described in coaches with low SES in the previous section (‘Effectiveness’) and the difficulties described by coaches with high SES in the current section (‘Adoption’) are barriers to overall Adoption.

According to social cognitive theory, for a behaviour to be adopted, intervention targets need to feel they have the necessary knowledge and skills to implement the specific behaviour. [22] To overcome this issue, all coaches, regardless of SES, felt that the rugby safety workshop could be less theoretical and more practical: for example a field-based course with active examples and interaction rather than a passive DVD-facilitated session. In reality, this would have far greater financial implications for SARU, as the administration of practical courses to the same number of coaches and referees would require more employees that could deliver
the courses. In players, Chapter 7 describes that some behaviours had improved since *BokSmart* was launched. Most importantly, the targeted behaviours (according to SARU - programme implementer) of the practicing of safe tackling and scrumming techniques had improved significantly between 2008 and 2012. However, due to the differing injury risks depending on the forward’s role in the scrum (Chapter 5), it would have been interesting to compare these scrumming behaviours between the different forward positions. A shortcoming of the KAB questionnaire that collected the behaviour data presented in Chapter 7 was that it only assessed whether the player was a forward or a back, but not what type of forward (e.g. prop or hooker) the player was. Chapter 8 described the perceived barriers to adoption in players, from the perspective of coaches. Again, these perceptions varied by SES. Coaches with low SES mentioned their lack of resources as a barrier to the adoption of safety prescriptions: this was a legitimate problem in some cases – such as not having access to grass fields to practice safe techniques. Coaches with high SES described difficulties of altering player behaviour, in general, not just in response to the rugby safety workshop prescriptions.

Unfortunately, the negative perceptions described in this section may affect the overall impact of *BokSmart*: interventions need to be widely adopted if they are to have a good impact. [29]

**Implementation**

In coaches and referees, Chapter 8 describes the general positive perception that the rugby safety workshop content was capable of reducing catastrophic injuries in players. However, in the same chapter there was a negative perception from coaches with high SES about the chosen delivery strategy. Coaches with high felt that SARU’s investment in the rugby safety workshops would be better spent on improving the low SES teams’ infrastructure. As described in the previous section, low SES coaches also felt they needed more resources. Furthermore, coaches with high SES felt the rugby safety workshops should be more of a coaching course with an emphasis on correct techniques rather than a safety course that instilled negative reactions in attendees. Coaches with high and a number of SARU trainers felt that the course could be shorter if the content focused purely on high risk areas of the game and that a shorter course would also reduce negativity. These high-risk areas have already been identified and mentioned in the TRIPP stages 1 and 2 of this
section. Another suggestion from coaches and SARU trainers was for SARU to provide free optional and informal workshops for coaches on topics they find relevant, such as recovery or supplement use. These workshops could also solve the problem described in the ‘Reach’ section if other interested parties, including parents of rugby players and players themselves, could attend the workshops.

There was no objective quantitative evaluation of the implementation of BokSmart. However, there are BokSmart biannual internal reports that summarise the evaluations of each rugby safety workshops (Appendix III). These evaluations show very high ratings of between 4 (= ‘good’) and 5 (‘excellent’) for each component of the course. [30]

**Maintenance**
In coaches and referees, only the low and mid SES coaches, as well as referees, showed evidence of making use of the RSW DVD and associated materials after the course (Chapter 8). This was not surprising, given the general negativity of the high SES coaches towards the RSW described throughout the effectiveness and adoption components of Chapter 8. There was no quantitative evaluation of Maintenance in coaches and referees or players.

**SUMMARY**
While rugby-related injury rates do not appear worse in South Africa than in other countries, the large amount of participants in the sport warranted the implementation of a nationwide injury prevention programme by the national rugby federation, SARU.[31] The programme was implemented based on the success of RugbySmart, its parent programme developed in New Zealand, and fulfilled a pragmatic and immediate need in South Africa. Thus, the programme development did not follow a comprehensive intervention development procedure as is suggested for injury prevention interventions. [14,32]

There were positive indications towards quantitative evaluations of Reach, Effectiveness, Adoption and Implementation of BokSmart. However, if the negative perceptions of the Effectiveness, Adoption, Implementation and Maintenance of the programme are not addressed, these factors may reduce BokSmart’s quantitative effectiveness in the long term.
The positive effects of the quantitative evaluations of Effectiveness and Adoption in players were comparable to findings in the evaluation of *RugbySmart* in New Zealand. [15,16] However, the barriers identified through qualitative research (Chapter 8) are not comparable to those in New Zealand, as the New Zealand qualitative study was not performed in as structured a manner as it was in the present study.[33] In contrast, the qualitative component of the safety education for ice-hockey coaches had similar effects in that negativity reduced the programme effectiveness. [27]

**LIMITATIONS**

There are a number of limitations of this thesis. Although *BokSmart* was evaluated using the RE-AIM framework in this Chapter, neither *RugbySmart* nor *BokSmart* were originally developed with this framework in mind. [14] As a result, it is possible that the RE-AIM definitions may have been different if the programme had been developed using this framework. Nonetheless, it was felt that the RE-AIM framework provided a structured format to evaluate BokSmart and thereby provide useful information to the programme implementers, SARU.

The qualitative data described in Chapter 8 were only collected from one of the fourteen rugby regions of South Africa. Qualitative research is location specific and is not generalizable to other settings.[34] Thus, the qualitative evaluation in Chapter 8 may not explain the nationwide quantitative evaluations of Chapters 6 and 7. However, the findings of Chapter 8 indicate the importance of socioeconomic disparity in determining perceptions of the programme. This socioeconomic disparity is a nationwide issue and would probably supersede any region-specific differences.

The quantitative assessment of adoption in players in Chapter 7 is based on self-reported information. Thus, the fidelity of *BokSmart* – whether the players were actually using course-prescribed techniques is unknown. To truly assess the fidelity of the programme one would require a more focused observational investigation. However, it was felt that it was too early for such a study on a nationwide intervention and that the larger, more descriptive effects were an important first investigation.
Besides players, coaches and referees should also be assessed, as they are the actual direct researcher intervention targets. Understanding the effectiveness and adoption of BokSmart in coaches and referees could explain the effects in the injury prevention intervention target (players). For example, Chapter 6 showed that BokSmart was more effective in reducing catastrophic injuries in junior than senior players. If the programme is more likely to be adopted by the coaches of junior players, then it would be logical that this effect would reflect ultimately in player injury rates.

Also, both quantitative studies that assessed the effectiveness and adoption of the BokSmart assumed that this programme was the only change that could have improved safety in players over this time period: 2008 – 2013. Having said this, due to BokSmart being a nationwide intervention, it encompasses any nationwide safety change, from rules and laws to coaching and refereeing input. Thus, it is likely that any safety-related changes are most probably attributable to the BokSmart.

PRACTICAL IMPLICATIONS AND RECOMMENDATIONS
The present study showed that a nationwide injury prevention programme was partly effective in achieving the stated goals of reducing catastrophic injury. This occurred despite significant barriers to the widespread adoption of the rugby safety workshop prescriptions in the intervention target (coaches and referees).

The structured evaluation of the present study, using the RE-AIM framework which is recommended for the evaluation of injury prevention interventions, [14], identified specific and manageable areas for improvement for the programme implementers. Although BokSmart has achieved its internal goals in a short period of time, the suggestions below are made with the intention to further optimise the impact of the programme:

1. **Address barriers in perceived effectiveness and adoption of BokSmart prescriptions (identified in Chapter 8).** These barriers are mainly SES-specific, so the programme may have to be tailored based on the league position of the team, which in most cases closely matches SES in South Africa. This would eliminate concern about SES discrimination. However,
from the qualitative study in Chapter 8 coaches and referees of all SES levels suggested a more practical and interactive course. While this would provide a logistical and financial issue to SARU with its 50,000+ attendees, addressing these barriers could improve the impact of the RSW.

2. **Understand the lack of effectiveness of the RSW on catastrophic injury rates in senior players (identified in Chapter 6).** This difference could simply be related to greater player numbers in junior levels and thus have potential for impact. However, in Chapter 8 there was some indication that the perceived effectiveness was less in senior than junior players. If this is confirmed through further research, this could indicate that the *BokSmart* rugby safety workshop is less effective at the senior level. If this were indeed the case, SARU would need to act on this information to ensure optimal uptake of the *BokSmart* in future. On the positive side, the current junior players will eventually become senior players as they progress through their careers, thus improving this situation, in part, without intervention.

3. **Improve delivery (implementation) with a shorter course, focused on high-risk areas.** Coaches with high SES as well as most SARU trainers mentioned that coaches and referees felt the rugby safety workshop was too long. A suggestion from the coaches with high SES was to focus the course content purely on the high-risk areas of the game, identified through epidemiological research.

4. **Continue to evaluate the RSW in a structured, objective manner.** These findings and recommendations are specific to the period in which the evaluations were performed: 2008 – 2013. It should be recognised that perceptions of the intervention target may change over time, as was observed with the implementation of a New Zealand injury prevention programme. Changing perceptions could have a knock-on effect to components of the RE-AIM framework, and thus ultimately effect the adoption and effectiveness of the programme.

5. **Evaluate effect of law changes.** As a result of research conducted for TRIPP stages 1 and 2, SARU changed two major policies. Part of the continued evaluation of *BokSmart* should examine the effect of these law changes.

6. **Have regular informal *BokSmart*-associated workshops for coaches, referees and other interested parties on a range of topics.** Both SARU
trainers and coaches with low SES requested more regular informal workshops where topics of interest are discussed in a non-threatening manner. These courses might be a way to introduce other attendees such as parents of players and players themselves to the BokSmart materials. Additionally, these informal workshops would provide a direct communication line between the general public and SARU.

SUGGESTED FUTURE RESEARCH
The preceding sections: ‘limitations’ and ‘practical implications and recommendations for future research’ suggest some directions for future research.

- To date, there has been no quantitative evaluation of Maintenance of the programme. The qualitative perceptions of coaches and referees appeared to indicate that Maintenance would be reduced in coaches with high SES. A one-year follow-up of the coach adoption study described in the previous paragraph may provide some of this information.

- Finally, any injury prevention programme evaluation is incomplete without a fidelity study assessing if the player's self-reported behaviours are truly reflective of their actions. For example, while they may think they are practicing ‘safe’ techniques, their actual technique may not be safe or BokSmart-prescribed. To truly understand if coaches, referees and players are adopting BokSmart-prescriptions, an observational study would need to be conducted.

- Besides players, the adoption of the programme goals needs to be assessed in the researcher intervention target: coaches. This would enable researchers to answer the question of whether BokSmart's effectiveness is determined by level (junior or senior) of the coaches.

CONCLUSIONS
The present study identified that the BokSmart programme was at least partly successful in achieving the implementer’s goal of a reduction in catastrophic injuries. However, recent research has indicated that simply evaluating the effectiveness of an intervention is insufficient to understanding the implementation context. Without widespread adoption of the intervention, an effective intervention could still be at risk
of ultimately failing. [14,35] It is critical to understand the implementation context when a previously successful intervention is introduced into a new environment, as occurred with RugbySmart. [2] South Africa presents a different implementation context to that of New Zealand. [17] Thus, the barriers identified in this thesis and summarised in the section headed ‘Practical implications and recommendations’ may be specific to South Africa and should be addressed by SARU if the impact of programme is to be optimised.

Despite the specificity of the findings to South Africa and the BokSmart programme, this thesis provides a blueprint for the structured evaluation of an injury prevention programme in any context. A continual evaluation of the BokSmart programme, will provide evidence to guide the implementers of the programme in making decisions which will optimise the impact of the BokSmart programme in future years.

REFERENCES


James was born in Cape Town, South Africa in 1985. As a result, his early school years coincided with a tumultuous time in South Africa's political history. One of his earliest sporting memories was of the national rugby team winning the Rugby World Cup tournament in their own country (Figure 1). As incredible the tournament victory was for the Springboks - who had only just been re-admitted to international sport - the lasting impression the tournament left upon James was the power of sport to unify a nation. While the book *Invictus* (John Carlin) eloquently describes the political effect this victory had, it was the television images of masses of people, regardless of skin colour cheering for the same team that left an impression James would never forget. Coincidentally, the Sports Science Institute of South Africa - where James trained as an Exercise Scientist - was founded by Morne Du Plessis and Tim Noakes in the same year as the Springbok victory (1995). Morne and Tim had both realised the power of sport through their involvement in sport: Morne Du Plessis was assistant coach of the Springboks at the Rugby World Cup and Tim Noakes was a young Medical Doctor with an interest in sport's medicine.

The game of rugby was changed irrevocably after the 1995 Rugby World Cup with the dawn of professionalism. This era had a concomitant increase in the rates of rugby-related injuries which had some experts, including Tim Noakes, calling for the game to be stopped altogether. As a schoolboy in a rugby-loving country, this post-1995 era coincided with an increase in James' affinity for the game of rugby: he played the game (albeit at a low level) for his entire school career and at university, where he was now studying Exercise Science as a Master's student. Coincidentally, James was beginning to become interested in the world of injury prevention. As an undergraduate, he had studied a Bachelor of Science, majoring in Biochemistry and Physiology. His Honours and Master's theses in Exercise Science examined the genetics of Range of Motion (flexibility) as an important intrinsic risk factor for injury.

The pragmatic implementation of the *BokSmart* programme in South Africa in July 2009 had emerged from a growing concern about the number of unnecessary rugby-related catastrophic injuries in South Africa. The PhD project that planned to
evaluate the *BokSmart* programme afforded James' the unique and fortuitous opportunity to combine both sporting and academic interests. Therefore, this thesis is a product of James' labour of love and he is eternally grateful to all those who made this possible in the acknowledgments section at the front of the book.

James is frequently asked: "After completing this thesis and having a better understanding of the risks involved, would you still play rugby?" His answer to this question is "Yes - with nationwide prevention programmes such as *BokSmart* in place, the game is safer now than ever before. The benefits of playing the game far outweigh the injury risks associated with it."

*Figure 1. President Nelson Mandela congratulates Springbok captain Francois Pienaar on winning the 1995 Rugby World Cup, hosted by South Africa. Photo Gallo Images ©*
APPENDICES
APPENDIX I – KNOWLEDGE, ATTITUDE AND BEHAVIOUR (KAB) QUESTIONNAIRE

BokSmart KAB STUDY 2010 - Rugby Player Questionnaire

Please tick the box or circle the number that matches your answer. The target group is males over the age of 19 for the Club study and between the ages of 16-19 in the School study.

<table>
<thead>
<tr>
<th>1a. When was your last Rugby ligament sprain or muscle strain? In the last...</th>
<th>Week</th>
<th>Month</th>
<th>Year</th>
<th>Longer (go to Q2)</th>
<th>Never (go to Q2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area affected...</td>
<td>Ankle</td>
<td>Knee</td>
<td>Leg</td>
<td>Upper limb/shoulder</td>
<td>Trunk/pelvis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1b. Was ice applied to the injury?</th>
<th>No (go to Q1d)</th>
<th>Yes (if yes when was it applied?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 10 mins</td>
<td>1-4 hrs</td>
<td>4-8 hrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1c. During the next 24 hours, ice was applied for about</th>
<th>mins</th>
<th>every hours</th>
<th>when I remembered</th>
<th>don’t know</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>1d. Was compression/bandaging used on the injury?</th>
<th>No (go to Q1e)</th>
<th>Yes (if yes when was it applied?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 10 mins</td>
<td>1-4 hrs</td>
<td>4-8 hrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1e. In the 24 hours after injury did you elevate the injury?</th>
<th>No (go to Q1f)</th>
<th>Yes (if yes when was it elevated?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 hrs</td>
<td>4-8 hrs</td>
<td>8+ hrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1f. In the first 72 hours after the injury did you:</th>
<th>(i) apply heat to the injury?</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ii) drink alcohol?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>(iii) exercise the injured part?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>(iv) massage the injured part?</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

2a. At practice this season, do you... warm-up at the beginning? | always | usually | occasionally | never |

| 2b. If you play in the backs and spend time on safe scrumming techniques, then why? |

2c. At games this season, do you... warm-up at the beginning? | always | usually | occasionally | never |

3a. In relation to rugby, have you received information in the last year on... |

3b. What do you think are the best ways of receiving that information (select only 1 option per ROW e.g. “Warm-up”, “Cool-down” etc.)? |

4. How should you treat a ligament sprain or muscle strain?

<table>
<thead>
<tr>
<th>Use Ice</th>
<th>Don’t know</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>

| Use compression or a bandage | Don’t know | No | Yes |

| Raise or elevate the injury | Don’t know | No | Yes |

| If yes, for how long? Ranging from “Minimal amount of time” (1) to “Most of the time” (6) | 1 | 2 | 3 | 4 | 5 | 6 |
Appendices

5a. Following an injury that caused you to miss practice or game time, how do you decide when to return to rugby training or competition?
   Advice of...
   - Doctor
   - Physio
   - Sports Medic
   - Trainer
   - Coach
   - How it feels
   - Don’t know

5b. Before returning to rugby training or competition after an injury that caused you to miss practice or game time, you need to be...
   At least...
   - 100% fit
   - 90% fit
   - 80% fit
   - 70% fit
   - 60% fit
   - 50% fit
   - Depends on the injury
   - Don’t know

6. Do you think these people have a role in preventing injuries in sport?
   - Referee
   - Players
   - Coach
   - Doctor
   - Physio
   - Sports Medic
   - Trainer
   - Coach
   - How it feels
   - Don’t know

7a. If there was an off-season training guide for Rugby freely available, would you use it?

7b. Do you undertake off-season training for Rugby?

8a. If there was a pre-season training guide for Rugby freely available, would you use it?

8b. Do you undertake pre-season training for Rugby?

9. How long before the season did you take part in pre-season strength training?
   - Never
   - 1-2 weeks prior
   - 1 month prior
   - 2 months prior
   - 3 months or more prior

10. How long before the season did you take part in pre-season fitness training?
   - Never
   - 1-2 weeks prior
   - 1 month prior
   - 2 months prior
   - 3 months or more prior

9a. Is it important to you that your coach completes compulsory annual Rugby safety courses?

11. What is your age? ________

12. What is your position?
   - Forward
   - Back

13. What is your ethnic origin?
   - African
   - Coloured
   - White
   - Asian
   - Other (specify) ________

13. There would be fewer rugby injuries if players… (Provide an answer for every ROW)

   - Avoid applying heat
   - Avoid drinking alcohol
   - Avoid exercising the injured part
   - See a health professional
   - Always wore a mouthguard
   - Played fair
   - Did not play when injured
   - Used good technique
   - Played within the rules
   - Warmed up
   - Avoid exercising the injured part
   - Avoid drinking alcohol
   - Avoid applying heat
   - See a health professional
   - Always wore a mouthguard
   - Played fair
   - Did not play when injured
   - Used good technique
   - Played within the rules
   - Warmed up

   Today’s Date ________/______/2010

THANK YOU FOR YOUR HELP
APPENDIX II – ATTENDANCE REGISTER FOR BOKSMART RUGBY SAFETY WORKSHOPS
APPENDIX III — BOKSMART RUGBY SAFETY WORKSHOP TRAINER EVALUATION FROM (COMPLETED BY ATTENDEES OF THE COURSE)

**BOKSMART WORKSHOPS**

**PEER-REVIEWED CRITICAL ASSESSMENT OF PRESENTERS**

1. **EXPECTATIONS OF THE PEER-REVIEW PROCESS**
   - Please be honest and unbiased in your assessment of the BokSmart Workshop presenter.
   - This will assist BokSmart in having the right people presenting the courses around the country and ensuring that the complete BokSmart message is getting to all involved in rugby in South Africa.
   - In the categories below, please rate your Course Presenter for each question by circling e.g. [ ] for crossing e.g. [ ] the appropriate rating e.g. 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor.
     - Excellent (5), means the best be far; fantastic, wow. Good (4), means it was really good and informative, well presented. Average (3), means it was OK, and learnt from it. Fair (2), means it was below average, and could have been better presented. Poor (1), means, it was really bad, and needs to be rethought or:
     - Provide only ONE option for each question.
   - This forms an important part of the program's quality assurance process. Thank you for taking the time to complete this brief questionnaire.

2. **COURSE PRESENTER EVALUATION**

<table>
<thead>
<tr>
<th>COURSE PRESENTER</th>
<th>DATE</th>
<th>VENUE &amp; PROVINCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME &amp; CONTACT NUMBER OF ASSessor</td>
<td>Name:</td>
<td>Contact Number:</td>
</tr>
</tbody>
</table>

- Welcome and Introduction
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 1:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 2:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 3:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 4:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 5:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 6:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 7:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 8:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 9:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 10:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 11:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 12:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 13:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Chapter 14:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Course conclusion summary:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Certification/Hand-out process:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Overall course presentation:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Communication ability of the presenter:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Neatness and appearance of the presenter:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Overall organisation by the presenter:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Knowledge and understanding of the presenter:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
- Overall BokSmart workshop:
  - 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor
APPENDIX IV – BOKSMART RUGBY MEDIC PROGRAMME REPRESENTATION INFORMATION SHEET AND COURSE EVALUATION

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<thead>
<tr>
<th>TYPE OF INSTITUTION</th>
<th>CLUB</th>
<th>HIGH SCHOOL</th>
<th>OTHER</th>
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<td>W.P.R.U</td>
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<tr>
<td>LIONS R.U.</td>
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<td>CHEETAHS RUGBY</td>
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<tr>
<td>E.P. ELEPHANTS</td>
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<tr>
<td>PUMAS R.U.</td>
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<td>BOLAND R.U</td>
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<tr>
<td>BORDER RUGBY</td>
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<tr>
<td>LEOPARDS RUGBY</td>
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</table>

Agreement between ___________ and SA Rugby

and conditions: The school/club named above agrees to accept BokSmart Rugby Medic Training under the following terms:

1. The training session is conducted free of charge, within the constraints of the annual and regionally allocated budget, to those who meet the necessary criteria and agree to take part in assisting with first aid duties at rugby matches and practice sessions for their respective clubs/schools.

2. First Aid coordinators, coaches or teachers agree to ensure that they comply with SA Rugby minimum safety standards.

3. As part of this agreement, the school/club agrees to nominate a coordinator who will take responsibility in completing a Rugby Medic Logsheet and submitting the Logsheet on a monthly basis to the BokSmart Administrator.

4. Schools/Clubs which receive equipment from the BokSmart Programme are to ensure that the equipment is placed on the side of the field for matches/practice sessions and is available for all First Aiders.

5. Tick this box on the day of training to indicate that the logsheet has been received and explained in full.

RUGBY MEDIC PROGRAMME TRAINING REPLY FORM

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<tr>
<th>DATE TRAINING WAS CONDUCTED</th>
<th>D</th>
<th>D</th>
<th>M</th>
<th>Y</th>
<th>Y</th>
<th>Y</th>
<th>Y</th>
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<td>I</td>
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</tr>
<tr>
<td>WAS THE INSTRUCTOR PROMPT?</td>
<td>YES</td>
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<tr>
<td>WAS THE INSTRUCTOR NEAT?</td>
<td>YES</td>
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<tr>
<td>WAS THE INSTRUCTOR PROFESSIONAL?</td>
<td>YES</td>
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<td>WAS THE WORKSHOP INFORMATIONAL?</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>DID THE STUDENTS ENJOY THE WORKSHOP?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>WAS THE PRACTICAL COMPONENT SUFFICIENT?</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOES YOUR INSTITUTION OWN ITS OWN SPINAL IMMOBILISATION EQUIPMENT?</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAS YOUR INSTITUTION BEEN ISSUED WITH SPINAL IMMOBILISATION EQUIPMENT ON THIS PROGRAMME IN THE PAST?</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>DID ALL THE STUDENTS RECEIVE EXPLANATION IN THE USE OF THE SPINAL IMMOBILISATION EQUIPMENT?</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAS THERE SUFFICIENT EXPLANATION AROUND HEAD NECK AND SPINAL INJURIES?</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
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<tr>
<td>CONCUSSION MANAGEMENT</td>
<td>YES</td>
<td>NO</td>
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</tr>
<tr>
<td>DID THE STUDENTS LEARN ABOUT PROMOTING A POSITIVE SPORTING CULTURE IN RUGBY?</td>
<td>YES</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| NAME & SURNAME |
| MANAGER |
| REFEREE |
| OTHER (SPECIFY) |

SIGNED

Joint initiative by SARug and the Chris Burger/Petrus Jacobs Players Fund.
### APPENDIX V – BOKSMART INJURY SURVEILLANCE FORM FOR SARU TOURNAMENTS

**BokSmart**  
*National Rugby Safety Programme*  
**YOUTH WEEKS INJURY SURVEILLANCE DATA CAPTURE FORM**

1. **PERSONAL DETAILS**

<table>
<thead>
<tr>
<th>Surname:</th>
<th>Date of birth (dd/mm/yyyy):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full names:</td>
<td>Date of injury (dd/mm/yyyy):</td>
</tr>
<tr>
<td>Known as (nickname):</td>
<td>ID Number:</td>
</tr>
<tr>
<td>Ethnic origin:</td>
<td>Gender:</td>
</tr>
<tr>
<td>Height (cm):</td>
<td>Weight (kg):</td>
</tr>
<tr>
<td></td>
<td>Age (yrs/months):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Club/school/team name:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Provincial Union:</th>
<th>Estimated Date of Return from injury (dd/mm/yyyy):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Do you have medical insurance?</th>
<th>Number of days missed due to injury:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Did the player consult with a medical professional regarding their injury?</th>
</tr>
</thead>
</table>

**I understand that the information obtained from the injury report will be treated confidentially with my right to privacy assured. I also understand that should the information be used for a statistical analysis or a scientific report, my identity will not be disclosed in the report.**

<table>
<thead>
<tr>
<th>Player signature</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Team</th>
<th>Age Group</th>
<th>Pitch conditions</th>
<th>Weather conditions*</th>
<th>Mechanism of injury</th>
<th>Type of injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Junior (14/15)</td>
<td>Options: Soft</td>
<td>Hot</td>
<td>Acceleration</td>
<td>Concussion</td>
</tr>
<tr>
<td>Club</td>
<td>U13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U15 Elite squad</td>
<td>U14</td>
<td>Firm</td>
<td>Light rain</td>
<td>Cleared</td>
<td>Broken bone/fRACTure</td>
</tr>
<tr>
<td>U17 Elite squad</td>
<td>U12</td>
<td>Hard</td>
<td>Heavily rain</td>
<td>Collapsed soft</td>
<td>Joint injury</td>
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<tr>
<td>U18 Elite squad</td>
<td>U16</td>
<td>Very hard</td>
<td>Overcast</td>
<td>Collapsed collar</td>
<td>Ligament injury</td>
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<td>U19 Elite squad</td>
<td>U17</td>
<td>Option: Cold</td>
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<td>Deceleration</td>
<td>Muscle injury</td>
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<tr>
<td>Grant Home week U16 squad</td>
<td>U10</td>
<td>Even</td>
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**Instructions for Reading the Injury Table:**
- **Pitch type:** Grass, Synthetic, Sand, Gravel, Other
- **Stage of season:** Off-season, Pre-season, in-season

**Mechanism of injury**
- Acceleration
- Collision
- Deceleration
- Double tackle (high)
- Double tackle (regulation)
- Elbowed
- Fanged
- Head butt
- Kicked
- Landed
- Manipulation
- Popped
- Scratched
- Scrum engagement
- Sidestep
- Slipped
- Tackled from behind (high)
- Tackled from behind (regulation)
- Tackled from front (high)
- Tackled from front (regulation)
- Back of thigh
- Knee
- Lower leg
- Ankle
- Foot/toe
- Stream
- Lineout
- Open play
- Tackle
- Ball carry
- Roll
- Tackling from behind (regulation)
- Tackling from front (high)
- Tackling from front (regulation)
- Back of thigh

**Type of injury**
- Concussion
- Broken bone/fracture
- Joint injury
- Ligament injury
- Muscle sprain
- Tendon injury
- Bruise
- Slap abrasion
- Laceration
- Other injury

**Estimated severity**
- Slight (0-5 days missed)
- Moderate (1-3 days missed)
- Moderate (4-7 days missed)
- Moderate (8-20 days missed)
- Severe (>20 days missed)
- Concussion
- Non-fatal catastrophic (Fatal)

**Injury definition**
- Time loss injury
- Medical attendance injury
APPENDIX VI – SERIOUS INJURY QUESTIONNAIRE

WHAT TO DO!

- In the event of a serious and/or catastrophic injury meeting the above mentioned criteria, the following form should be completed by the injured player and/or coach in conjunction with the Serious Injury Case Manager (Ms. Gail Ross – Cell: 0728903538, email: gailross@mweb.co.za, fax: 021-6595653)
- If for some reason this is not possible, then the questionnaire should be completed by the Serious Injury Case Manager in consultation with the coach, other players, and family who might have seen the incident
- Although it might be sensitive and emotional to recall the incident, it would benefit rugby and future rugby players if the follow-up questionnaire is completed while the incident is still fresh in everyone’s minds
- This form should then be kept on record pending any inquest or investigation
- Copies should be sent to the SARU Medical Manager and BokSmart General Manager

RESEARCH

All serious injury data collected will be recorded and stored on a SARU database. Personal details will be provided to the Chris Burger/Petro Jackson Players Fund, who may provide financial assistance and support to catastrophically injured rugby players. This information will be stored at SARU’s offices for official records of these injuries. The injury data may be used for research and publication purposes to help improve the safety standards of the game of rugby in South Africa, and to potentially prevent other injuries of this nature from occurring in the future. However, in this instance, all personal information will be regarded as confidential in any ensuing research analyses and reports on the catastrophically injured players.

☐ By ticking this box, the player agrees to the above

INTERNATIONAL RUGBY BOARD (IRB)

All data collected will be forwarded anonymously to the IRB and stored in a secure IRB database of catastrophic injuries. These data may be analysed by the IRB for audit, player welfare, research purposes in relation to the prevention, and management of Rugby-related catastrophic injuries.

☐ By ticking this box, the player agrees to the above

PLAYER’S CONSENT

It is hereby confirmed that the player or player’s family, whichever may be applicable, has given permission to use and submit the information requested by this form and that they agreed that the information can be forwarded to the IRB, and be
used by both SARU and the IRB for the purposes of monitoring and investigating the causes of catastrophic injuries sustained in Rugby Union.

☐ By ticking this box, the player agrees to the above

**SECTION A: PERSONAL DETAILS (PRINT CLEARLY)**

Surname: ____________________ Age of Player: ____________________

Forenames: ____________________ Known as (nickname): ______________

Date that form was completed:

Email address: ____________________________________________________

ID Number: ________________

Passport Number: ____________________

Passport type (country of issue): Marital status:

Playing position: SARU Registration number:

Residential address: Tel./Cell. Number:

__________________________ _________________________

__________________________ _________________________

__________________________ _________________________

Next of Kin: Contact number (next of kin):

Name of Rugby Club/School: Provincial Union (e.g. Bulls):

   

   

1. Date of Birth

   / / /

2. Gender: Male Female

3. Player’s Weight in Kilogram (kg)

   a. At the time of Injury: ___________kg

   b. What is the player’s current weight? ___________kg

4. Player’s Height in Cm at the time of injury (cm): ___________cm

5. Country of birth:
6. Ethnicity:

☐ Arabic  ☐ White
☐ Asian ☐ Coloured/Mixed Ancestry
☐ Black African ☐ Indian
☐ Black Caribbean ☐ Other
☐ Pacific Islander

7. What age did the player start playing rugby?

_______________________________

8. Number of years that the player has been playing rugby:

______________________

9. How many seasons of rugby has the player played prior to this season:

_______________

10. Grade of play

a. Player’s current grade of play (please select highest level of play)

☐ School ☐ Non-professional
☐ School Provincial  ☐ Provincial
☐ School International ☐ Professional Provincial
☐ Club ☐ International

b. Player’s current playing age-group

☐ Junior (<U13)  ☐ U18
☐ U13  ☐ U19
☐ U14  ☐ U21
☐ U15  ☐ U23
☐ U16  ☐ Senior
☐ U17

c. Is the player registered at their Province?

☐ Yes  ☐ No

d. Is the player registered at SARU?

☐ Yes  ☐ No

11. Player’s Usual playing position:

☐ 1 – Loose-head prop  ☐ 6 – Open-side flank
☐ 2 – Hooker  ☐ 7 – Blind-side flank
☐ 3 – Tight-head prop  ☐ 8 – Eighth man
☐ 4 – Lock  ☐ 9 – Scrum/Inside half
☐ 5 – Lock  ☐ 10 – Fly/Outside half
Appendices

☐ 11 – Left Wing  ☐ 14 – Right Wing
☐ 12 – Inside centre  ☐ 15 – Full back
☐ 13 – Outside centre

12. Number of years the player has been playing in this position: ___________

13. Provide any specific, relevant information about the player’s background:

___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________
___________________________________________________________________

SECTION B: INJURY CIRCUMSTANCES (PRINT CLEARLY)

14. How well did the player recall the events of the day?

☐ No recollection  ☐ Vaguely remembered  ☐ Somewhat  ☐ Well  ☐ Extremely well

15. a. Date of Injury

D D / M M / Y Y Y Y

b. Time that the injury occurred:

H H : M M am / pm

16. Did the injury occur during:

☐ Match  ☐ 15-a-side match  ☐ 7-a-side match

☐ Training activity  ☐ Rugby skills training, Full contact
☐ Rugby skills training, Semi-contact  ☐ Rugby skills training, Non-contact

☐ Was match/training under:

☐ Natural light  ☐ Artificial light

☐ Other (please specify):
17.

a. At what stage of the season did the injury occur?

- [ ] Off-season
- [ ] Pre-season
- [ ] In-season
  - [ ] First month of the season
  - [ ] Mid-season
  - [ ] Last month of the season

b. What type of match was it?

<table>
<thead>
<tr>
<th>Level of the game</th>
<th>Type of game</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Tournament/Competition</td>
</tr>
<tr>
<td>School Provincial</td>
<td>Friendly match</td>
</tr>
<tr>
<td>School International</td>
<td>League match</td>
</tr>
<tr>
<td>Club</td>
<td>Practice match</td>
</tr>
<tr>
<td>Non-professional Provincial</td>
<td>Social match</td>
</tr>
<tr>
<td>Professional Provincial</td>
<td>Hostel league match</td>
</tr>
<tr>
<td>International</td>
<td>Farm league match</td>
</tr>
<tr>
<td></td>
<td>Informal league match</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade of opposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
</tr>
<tr>
<td>School Provincial</td>
</tr>
<tr>
<td>School International</td>
</tr>
<tr>
<td>Club</td>
</tr>
<tr>
<td>Non-professional Provincial</td>
</tr>
<tr>
<td>Professional Provincial</td>
</tr>
<tr>
<td>International</td>
</tr>
</tbody>
</table>

d. In which period of the game did the injury occur?

- [ ] Warm-up
- [ ] 1st Quarter
- [ ] 2nd Quarter
- [ ] 3rd Quarter
- [ ] 4th Quarter
- [ ] Cool-down

e. Was the incident leading to the injury as a result of foul or dangerous play as defined in Law 10.4 “Dangerous Play and Misconduct”?

- [ ] Yes
- [ ] No

If Yes, then answer 17f and if answered No, then complete 17g

f. Classifications of dangerous play

- [ ] Punching or striking
- [ ] Stamping or trampling
- [ ] Kicking
- [ ] Tripping
- [ ] Early or late tackle
- [ ] Tackle above the line of the shoulders
- [ ] Stiff-arm tackle
Appendices

- Playing a player without the ball
- Tackling an opponent whose feet are off the ground
- Dangerous charging
- Scrum front row rushing opponents
- Scrum front row lifting opponents
- Collapsing a scrum, ruck or maul
- Tip/lifting/spear tackle
- Retaliation

**g. Did the referee take any action?**

- Yes
- No

**Explain:**

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

18. Who was officiating or leading the match / training session?

- Referee
- Coach
- No-one
- Player
- Spectator
- Teacher
- Other

19. Was a Union-appointed referee in control of the game?

- Yes
- No

20. 

- a. Had the referee attended a SARU or IRB Level referee-training course?

---

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Appendices

☐ Yes  ☐ No

b. If Yes then give details of referee’s training:

___________________________________________________________

___________________________________________________________

c. Date of the most recent course attended

D  D  /  M  M  /  Y  Y  Y  Y

d. Had the referee attended a BokSmart Rugby Safety course?

☐ Yes  ☐ No

e. If Yes then provide the referee’s BS-number: _________

f. Had the coach attended a SARU or IRB Level coaching course?

☐ Yes  ☐ No

g. If Yes then give details of the coach’s training:

___________________________________________________________

___________________________________________________________

h. Date of the most recent course attended

D  D  /  M  M  /  Y  Y  Y  Y

i. Had the coach attended a BokSmart Rugby Safety course?

☐ Yes  ☐ No

j. If Yes then provide the coach’s BS-number: _________

21. Briefly describe the events that led up to the injury (if possible in the player's own words):

___________________________________________________________________

___________________________________________________________________

___________________________________________________________________

 SECTION C: INJURY EVENT (PRINT CLEARLY)

22. 

a. Did the player warm-up properly before the match or training session?

☐ Yes  ☐ No

b. Did the player stretch before the match or training session?

☐ Yes  ☐ No
23. Indicate the event causing the catastrophic injury (thereafter, please describe and answer the relevant and corresponding event section):

- Collision
- Tackle
- Scrum
- Ruck
- Maul
- Lineout
- Kicking
- Running
- Other: __________________
- Unclear
- Not applicable

24. ☐ Tackle

a. What was the injured player’s role in the tackle?

- Ball carrier
  - Tackled from behind
  - Tackled from the side
  - Tackled from the front

- Support player to ball carrier

- Tackle
  - Tackling from behind
  - Tackling from the side
  - Tackling from the front

- Support player to tackler

b. What type of contact was involved?

- Arm
- Collision (no-arms, deliberate)
- Jersey
- Lift (example spear)
- Shoulder
- Smother
- Tap

c. Indicate the following specifics as best you can with regards to the tackle situation;

<table>
<thead>
<tr>
<th>ROLE</th>
<th>TACKLE HEIGHT</th>
<th>TACKLE DIRECTION</th>
<th>TACKLER’S VELOCITY</th>
<th>BALL CARRIER’S STANCE</th>
<th>BALL CARRIER’S VELOCITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ball carrier</td>
<td>High</td>
<td>Front-on</td>
<td>Fast</td>
<td>Upright</td>
<td>Fast</td>
</tr>
<tr>
<td>Tackler</td>
<td>Middle</td>
<td>Side-on</td>
<td>Slow</td>
<td>Low position</td>
<td>Slow</td>
</tr>
<tr>
<td>Support player</td>
<td>Low</td>
<td>From behind</td>
<td>Standing still</td>
<td>Falling/diving</td>
<td>Standing still</td>
</tr>
</tbody>
</table>

d. Tick off all the additional specifics as best you can with regards to the tackle situation;
Appendices

<table>
<thead>
<tr>
<th>Number of Tacklers</th>
<th>Tackle Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arms wrapped around the player</td>
</tr>
<tr>
<td>2</td>
<td>Shoulder charge (no arms used in the tackle)</td>
</tr>
<tr>
<td>3 or more</td>
<td>Spear tackle/pile drive (head below shoulders)</td>
</tr>
<tr>
<td></td>
<td>Head is first point of contact with the ground</td>
</tr>
<tr>
<td></td>
<td>Pulled /scragged by the collar</td>
</tr>
</tbody>
</table>

e. Please provide any further information relevant to the tackle e.g. head was first point of contact with the ground, upper body was first contact with the post, etc.

25. ☐ Scrum

a. Was the scrum part of a training session or match

☐ Training session
☐ Match

b. If during Training, then was this against a scrum machine or live opposition?

☐ Scrum machine
☐ How many players were going in against the machine?____

☐ Live opposition

Indicate below how many players were contesting the scrum for both packs?

<table>
<thead>
<tr>
<th>Injured player's team</th>
<th>Opposition team</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 3</td>
<td>☐ 3</td>
</tr>
<tr>
<td>☐ 5</td>
<td>☐ 5</td>
</tr>
<tr>
<td>☐ 6</td>
<td>☐ 6</td>
</tr>
<tr>
<td>☐ 7</td>
<td>☐ 7</td>
</tr>
<tr>
<td>☐ 8</td>
<td>☐ 8</td>
</tr>
</tbody>
</table>

c. Which team had the put-in in the scrum?

☐ Player's own team
☐ Opposition team
Appendices

d. Did the injury involve any of the following:

- Collapsed scrum
- Impact on engagement
- Player popping out of the scrum
- Scrum wheeling/rotating

![Diagram of Scrum Injuries]

e. Please provide any further information relevant to the scrum e.g. which player popped first, which team collapsed first, number of scrum resets, make and age of scrum machine etc.


26. □ Ruck or □ Maul

a. What was the injured player’s role in the ruck/maul?
   - Ball carrier
   - Support player to ball carrier
   - Tackler
   - Support player to tackler

b. Body position at the time of injury
   - On feet
   - Off feet
   - Bridging
   - Supported

c. During the ruck/maul did the injury occur during any of the following?
   - Cleaning out
   - Cleaned out
   - Collapsed maul
   - Squeeze ball (ball pinned between legs)
   - Screwing (rotation in the scrum)
   - Other (please specify)________________________


d. Please provide any further information relevant to the ruck/maul
27. □ Lineout

a. Identify how the injury occurred:
   - [ ] ‘Lifted player’ fell during landing (no other player involved)
   - [ ] ‘Lifted player’ fell during landing (other player(s) involved)
   - [ ] ‘Lifting player’ injured (no other player involved)
   - [ ] ‘Lifting player’ injured (other player(s) involved)
   - [ ] Other (please specify below)

b. Please provide any further information relevant to the lineout e.g. which body part first made contact with the ground, etc.

28. Other categories

   - [ ] Non-contact training
   - [ ] Collision (if accidental, then describe below)
   - [ ] Kicking
   - [ ] Running

   a. Please provide relevant information to the activity being undertaken at the time of injury e.g. weight training, passing drills, running drills, phase play simulations etc.

SECTION D: IMMEDIATE POST-INJURY CARE (PRINT CLEARLY)

29. a. Who of the following medical or allied health professionals were the first to provide on-field treatment or support to the injured player during the match or training session?
Appendices

☐ Medical Doctor  ☐ Physiotherapist  ☐ Biokineticist  ☐ Emergency Service Medic (paramedic)  ☐ First Aider  ☐ Nurse  ☐ None

b. When was the injured player FIRST attended to by the medical or allied health professional?
☐ On the pitch  ☐ Off the pitch

30. Was the player FIRST attended to by someone OTHER than a medical or allied health professional?
☐ Yes  ☐ No

a. If answered Yes, then by whom?
☐ BokSmart Rugby Medic  ☐ Coach  ☐ Referee  ☐ Spectator  ☐ Team official  ☐ Other (Please specify) __________________________

b. What actions were taken by this person?
☐ Player moved on the pitch  ☐ Player removed from the pitch  ☐ None e.g. waited for arrival of the paramedics/doctor  ☐ Other (Please specify) __________________________

31. Who managed/assisted with the removal of the player from the pitch?

☐ Medical Doctor  ☐ Physiotherapist  ☐ Biokineticist  ☐ Emergency Service Medic (paramedic)  ☐ First Aider  ☐ Nurse  ☐ BokSmart Rugby Medic  ☐ Coach  ☐ Referee  ☐ Spectator  ☐ Team official  ☐ Player walked off unassisted  ☐ Other player(s)  ☐ Other (Please specify) __________________________

32. What equipment was used in the removal of the injured player from the pitch?

a. Did they place a brace/collar over the neck? ☐ Yes  ☐ No
b. Was the injured player placed on a stretcher? ☐ Yes  ☐ No
c. Was the injured player placed on a spinal board? ☐ Yes  ☐ No
d. Was the injured player stabilised using a spider harness? ☐ Yes ☐ No

e. Were head-blocks used to immobilise/stabilise the injured player’s head and neck? ☐ Yes ☐ No

f. Was Oxygen used? ☐ Yes ☐ No

g. Other (Please specify) ______________________________

33. Did the player leave the field at any time during the match before the injury and return to the field of play?

☐ Yes ☐ No

34. Was the BokSmart Spineline number (0800 678 678) contacted at any given stage during the management of the injured player?

☐ Yes ☐ No
If answered No, then why not?
____________________________________________________________
____________________________________________________________

35. Was the player taken immediately to hospital?

☐ Yes ☐ No

a. How long did the player have to wait before being taken to hospital?

☐ < 1 hour ☐ 3-4 hours
☐ 1-2 hours ☐ > 4 hours
☐ 2-3 hours

b. If more than 4 hours passed before being taken to hospital, then please specify the reasons why?
____________________________________________________________
____________________________________________________________

36. How was the injured player taken to hospital?

☐ Ambulance  ☐ Car
☐ Helicopter  ☐ Other (Please specify) ______________________________

37. What hospital/medical facilities was the player taken to?
____________________________________________________________
____________________________________________________________

38. Was the injured player wearing any of the following at the time?

☐ Mouthguard
SECTION E: EXPERIENCE AND TRAINING (PRINT CLEARLY)

39. The number of games played by the injured player this season prior to injury?
________________________

40. Within the last 12 months did the injured player receive training from a qualified coach/trainer on how to safely and correctly perform the following activities?
   a. Tackling techniques □ Yes □ No
   b. Ball carrying techniques □ Yes □ No
   c. Safe techniques in contact □ Yes □ No
   d. Scrum techniques □ Yes □ No □ Not relevant
   e. Scrum engagement □ Yes □ No □ Not relevant
   f. Falling correctly in a collapsed scrum □ Yes □ No □ Not relevant
   g. Ruck techniques □ Yes □ No
   h. Entering the ruck □ Yes □ No
   i. Maul techniques □ Yes □ No
   j. Entering a maul □ Yes □ No
   k. Lineout techniques □ Yes □ No □ Not relevant
   l. Supporting in a lineout □ Yes □ No □ Not relevant
   m. Supporting a jumper at kick-off □ Yes □ No □ Not relevant

41. Did the player have a regular coach other than the head coach of the team in charge of his/her rugby development?

   □ Yes □ No

   If Yes, then answer 41 (a- e)

   a. Had the coach attended a SARU or IRB Level coaching course?

      □ Yes □ No

   b. If Yes then give details of the coach’s training:

      ____________________________________________________________
      ____________________________________________________________

   c. Date of the most recent course attended

      D D / M M / Y Y Y Y

   d. Had the coach attended a BokSmart Rugby Safety course?

      □ Yes □ No

   e. If Yes then provide the coach’s BS-number: ________

42. 
a. Did the player receive specific coaching for his/her position by a qualified coach?

☐ Yes  ☐ No

b. Did the player receive specific conditioning for his/her position by a qualified trainer?

☐ Yes  ☐ No

43. How long before the season did the player take part in pre-season strength and fitness conditioning?

☐ Never  
☐ 1-2 weeks  
☐ 3-4 weeks  
☐ 1-2 months  
☐ 2-3 months  
☐ ≥ 3 months

44. How many training sessions did the player undertake each week during the pre-season training period? (Please give number of sessions or 0 if none was undertaken)

a. Individual training sessions per week __________

b. Team training sessions per week __________

45. On average, how many formal structured rugby training sessions did the player perform per week (at the time of injury)?

☐ Never  
☐ 1  
☐ 2  
☐ 3  
☐ More than 3

46. Other than the official team training sessions, what individual training did the player perform? Specify how often, the type of activity, average duration of each session, etc.

<table>
<thead>
<tr>
<th>Activity (min)</th>
<th>Easy</th>
<th>Moderate</th>
<th>Tough</th>
<th>Very hard</th>
<th>How many times per week</th>
<th>Average duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______________</td>
<td>E</td>
<td>M</td>
<td>T</td>
<td>VH</td>
<td>_______________________</td>
<td>_______min</td>
</tr>
<tr>
<td>_______________</td>
<td>E</td>
<td>M</td>
<td>T</td>
<td>VH</td>
<td>_______________________</td>
<td>_______min</td>
</tr>
<tr>
<td>_______________</td>
<td>E</td>
<td>M</td>
<td>T</td>
<td>VH</td>
<td>_______________________</td>
<td>_______min</td>
</tr>
<tr>
<td>_______________</td>
<td>E</td>
<td>M</td>
<td>T</td>
<td>VH</td>
<td>_______________________</td>
<td>_______min</td>
</tr>
</tbody>
</table>

47. Did the player participate in any strength/resistance/weight training at least twice per week during the season?

☐ Yes  ☐ No

If YES, then for how many years has the player been performing structured strength/resistance/weight training and specify to what degree?
48. Did the player participate in any neck strengthening exercises?

☐ Yes  ☐ No

If YES, specify:

☐ Rarely, no more than 1 session per season
☐ Occasionally, less than 1 session per month
☐ Often, at least 1 session per month
☐ Regularly, at least 1 session per week

For more detail on neck strengthening, please complete the table below:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Intensity</th>
<th>How many times per week</th>
<th>Average duration (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Moderate</td>
<td>Tough</td>
<td>Very hard</td>
</tr>
<tr>
<td>E</td>
<td>M</td>
<td>T</td>
<td>VH</td>
</tr>
</tbody>
</table>

49. Compared to the injured player’s normal training regime, in the week preceding the injury, what was the training level?

a. Training Volume

☐ Lower  ☐ The same  ☐ Higher

b. Training Intensity

☐ Lower  ☐ The same  ☐ Higher

50. If injured in the scrum, then please answer the following:

a. How many scrum engagements did the injured player typically practice per session? _________________

b. Compared to the injured player’s normal training regime, in the week preceding the injury, what was the SCRUM SPECIFIC training level:

   i. Training Volume
      ☐ Lower

      ☐ The same
      ☐ Higher
ii. Training Intensity

☐ Lower  ☐ The same  ☐ Higher

51. Did the player follow any special diet/eating plan before or during the season?

☐ Yes  ☐ No

52. Did the player use any specific supplements before or during the season?

☐ Yes  ☐ No

a. If YES, elaborate

______________________________________________________________

______________________________________________________________

SECTION F: PLAYING CONDITIONS (PRINT CLEARLY)

53. What was the weather like on the day of injury? Please tick all of the appropriate answers:

☐ Hot  ☐ Heavy Rain
☐ Dry  ☐ Windy
☐ Light Rain  ☐ Other (Please specify):
☐ Overcast
☐ Cold

a. Were the weather conditions on the day of the player's injury *typical* for the location and time of year?

☐ Yes  ☐ No

b. If NO, what are the typical weather conditions for the location and time of year at which the injury occurred?

______________________________________________________________

______________________________________________________________

c. What was the temperature at the time of injury? (You can get this information from the local weather service)___________________________

54. On what type of surface did the injury occur?

☐ Wood e.g. gym floor  ☐ Other (Please specify):
☐ Tarmac or similar
☐ Concrete
☐ Natural grass
☐ Artificial turf – rubber infill
☐ Artificial turf – sand infill
☐ Dirt or sand
☐ Gravel
55. How hard was the field or surface?
   - Soft
   - Firm
   - Very hard

56. How was the surface of the field?
   - Slippery
   - Medium grip
   - Good, solid footing (hard grip)

57. What was the condition of the playing surface?
   a. Even
      - Flat and rough
      - Flat and smooth
   b. Uneven
      - Sloping and rough
      - Sloping and smooth

58. Does the player feel that the field condition contributed towards the injury?
   - Yes
   - No

59. If answered YES, please specify

60. What type of footwear was the player using at the time of injury?
   - None
   - Trainers/tekkies
   - Studded boots
   - Other (Please specify):

61. If wearing studded boots, please tick all applicable answers below:
   - Brand new
   - Worn in
   - Old/damaged
   - Short studs
   - Long studs
   - Multi studs
   - Six studs
   - Other (Please specify):

62. In the player’s opinion, what was the main cause of his/her injury?
63. Does the player have any recommendations to prevent others from sustaining a similar injury?

---

**SECTION G: OUTCOME OF INJURY (PRINT CLEARLY)**

**Outcome of Injury Classification Matrix for Cervical Spinal Cord Injuries (C1-C7):**

<table>
<thead>
<tr>
<th>Asia Scale A, B &amp; C</th>
<th>Asia Scale D</th>
<th>Asia Scale E</th>
<th>Deceased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quadriplegia and wheelchair-bound</td>
<td>Residual Damage but walks WITH assistive devices and may be in a wheelchair</td>
<td>Residual Damage but walks WITHOUT assistive devices</td>
<td>No apparent damage and full recovery expected</td>
</tr>
</tbody>
</table>

64. What was the initial hospital-based *diagnosis*?

- [ ] Deceased
  - [ ] A fatal spinal cord injury
  - [ ] A fatal head injury
  - [ ] Cardiac event
  - [ ] Other e.g. stroke: ____________________________

- [ ] Non-fatal Spinal Cord Injury
  - [ ] Quadriplegia and Wheelchair bound

---

Deceased

---
Potential catastrophic injury with recovery (residual damage but walks with assistive devices and may be in a wheelchair)
Potential catastrophic injury with recovery (residual damage but walks without assistive devices)
No apparent residual damage and full recovery expected

Head injuries (see Question 66)
Fully recovered
With disability

65. Asia Impairment Scale for Cervical Spinal Cord injured players at time of diagnosis

A – Complete: no motor or sensory function is preserved in the sacral segments S4-S5
B – Incomplete: sensory but not motor function is preserved below the neurological level, and includes the sacral segments S4-S5
C – Incomplete: motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less than 3
D – Incomplete: motor function is preserved below the neurological level and at least half of key muscles below the neurological level have a muscle grade of 3 or more
E – Normal: motor and sensory function are normal

Outcome of Injury Classification Matrix for Head or TBI Injuries

1. **Glasgow Coma Scale** (GCS) for Head or Brain (TBI) injured players at time of diagnosis:
   - Mild (GCS ≥ 13) – loss of consciousness and/or confusion and disorientation was shorter than 30 minutes
   - Moderate (GCS 9-12) – loss of consciousness >30 minutes; physical or cognitive impairments that may or may not resolve; benefit from rehabilitation
   - Severe (GCS ≤ 8) – Coma; unconscious state; no meaningful response; no voluntary activities

2. **Glasgow Outcome Scale** (GOS) for Head or Brain (TBI) injured players at discharge:
   - Death
   - Persistent Vegetative state – A vegetative state that lasts for longer than 1 month. A vegetative state consists of sleep-wake cycles, arousal but no interaction with the environment and no localised response to pain
Severe Disability (conscious but disabled) – patient depends on others for daily support due to mental or physical disability or both

Moderate disability (disabled but independent) – patient is independent as far as daily life is concerned. The disability found includes varying degrees of dysphasia, hemiparesis, ataxia, as well as intellectual and memory deficits and personality changes

Good recovery – Resumption of normal activities even though there may be minor neurological or psychological deficits

SECTION H: PLAYER’S MEDICAL HISTORY (PRINT CLEARLY)

3. Did the player suffer from any medical conditions or illnesses that interrupted their training or match play in the week prior to the injury?

☐ Yes  ☐ No

b. If YES, then describe the conditions/illnesses:

4. Does the player have any long-term medical conditions or illnesses that may be relevant to the injury e.g. epilepsy, diabetes?

☐ Yes  ☐ No

b. If YES, then describe the conditions/illnesses:

5. Does the player have a history of “stinger” (also known as burner, nerve pinch and brachial plexus injuries)?
6. a. Had the player ever sustained a previous neck/spinal injury before?  
☐ Yes  ☐ No  
b. If YES, then describe the history:
__________________________________________________________________________
__________________________________________________________________________

6. a. Had the player ever sustained a previous neck/spinal injury before?  
☐ Yes  ☐ No  
b. If YES, then please provide details of the nature and circumstances of the previous neck/spinal injury:
__________________________________________________________________________
__________________________________________________________________________

c. Had the player ever sustained a previous SIGNIFICANT neck/spinal injury (that is requiring hospital admission or scans (MRI or CT scan), with prolonged symptoms for over 1 month, associated with arm symptoms or preventing play for more than 2 weeks):  
☐ Yes  ☐ No  
d. If YES, then please provide details of the nature and circumstances of the previous SIGNIFICANT neck/spinal injury:
__________________________________________________________________________
__________________________________________________________________________

e. Had the player fully recovered from the previous SIGNIFICANT neck/spinal injury before starting the match/training session in which the current injury was sustained?  
☐ Yes  ☐ No  
f. Did the player receive treatment for the previous neck/spinal injury?  
☐ Yes  ☐ No  
g. Briefly describe the treatment received:
__________________________________________________________________________

7. a. Had the player ever sustained a previous head/brain/concussion injury before?  
☐ Yes  ☐ No  
b. If YES, then please provide details of the nature and circumstances of the previous head/brain/concussion injury:
__________________________________________________________________________
__________________________________________________________________________

c. Had the player ever sustained a previous SIGNIFICANT head/brain/concussion injury (with symptoms lasting more than 3 weeks or requiring hospital admission or scans (MRI or CT scan)):  
☐ Yes  ☐ No
Appendices

d. If YES, then please provide details of the nature and circumstances of the previous SIGNIFICANT head/brain/concussion injury:

_____________________________________________________________
___________________________________________________

e. Had the player fully recovered from the previous SIGNIFICANT head/brain/concussion injury before starting the match/training session in which the current injury was sustained?
☐ Yes ☐ No

f. Did the player receive treatment for the previous SIGNIFICANT head/brain/concussion injury?
☐ Yes ☐ No

g. Briefly describe the treatment received:
__________________________________________________________
APPENDIX VII – COST DIARY FOR QUANTIFICATION OF MEDICAL TREATMENTS SOUGHT AND WORK AND SCHOOL MISSED

SARU Youth Tournaments 2012:
Injury Cost Diary

Injury period: __/__/_____ - __/__/_____
STOP RECORDING AS SOON AS PLAYER RETURNS TO PLAY (contact practice or match)

Are you speaking with the Parent (preferable) OR Player (PLEASE CIRCLE)

Player name:______________________________
Player Cell number:__________________________
Player Parent Name:____________________________
Parent Cell number:_________________________

CONFIRMED AS TIME-LOSS (missed >1 match or >1 day training or usual activities) YES/NO
MEDICAL AID (includes Hosp. Plan)? YES/NO
COMPANY (e.g. Discovery, Momentum)
SCHEME (e.g. Key Care, Hospital Plan only, Health Saver)
### WEEK____ OF INJURY: DATE: ___/___/____ - ___/___/____ (TODAY’S DATE)

<table>
<thead>
<tr>
<th>Medical professional (e.g. GP, Dentist)</th>
<th>Details (e.g., ankle brace, surgery)</th>
<th>OOP/C?</th>
<th>Cost and currency</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Dentist</td>
<td>Root Canal and stitches removed</td>
<td>C</td>
<td>R4000</td>
<td>13/07/2012</td>
</tr>
<tr>
<td>e.g. GP</td>
<td>Follow-up and neck brace</td>
<td>OOP</td>
<td>Zim$1600</td>
<td>15/07/2012</td>
</tr>
</tbody>
</table>

1.  
2.  
3.  
4.  

OOP – Out of Pocket expense; C – covered expenses

<table>
<thead>
<tr>
<th>Player/Parent/Caretaker of Player</th>
<th>Time lost (e.g total school hours/total work hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Player</td>
<td>5 days of school (7 x 5 = 35 hours)</td>
</tr>
</tbody>
</table>

1.  
2.  
3.  

Extra notes:

___________________________________________________________________

___________________________________________________________________