



Blue Card Concussion Data | 2020

Dr Wayne Viljoen

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BokSmart

WINNERS PLAY SMART



BLUE CARD

GUIDING THE DECISIONS FOR BETTER CONCUSSION MANAGEMENT

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BLUE CARD SYSTEM



RUGBY IS ONE OF THE FEW SPORTS, WHERE THE REFEREE CAN DECIDE WITH OR WITHOUT MEDICAL ADVICE THAT IT WOULD BE INADVISABLE FOR THE PLAYER TO CONTINUE, AND HE CAN SEND THAT PLAYER OFF.

Law 3.22 (c)

Why is this relevant?



7 339

Face-to-face courses have been presented countrywide



161 401

Attendees at these courses



101 142

First time exposure of 101 142 people to the rugby safety programme courses



30 178

An average of 30 178 people have attended each two-year cycle of training

BokSmart Rugby Safety courses

Referee's/Coaches' On-field CONCUSSION GUIDE

www.BokSmart.com @BokSmart /BokSmart

4 Rest – Rest the player until they are totally sign and symptom free, and off any medication that might mask the symptoms of concussion. Use the minimum stand-down periods for each age-group category, before entering the graduated return to sport process.

5 Recover – Full recovery of signs and symptoms is mandated before entering in to the age-appropriate graduated return to sport process.

6 Return – To return to sport safely following a concussion or suspected concussion, the players: (1) must be sign and symptom-free, (2) must be medically cleared by a doctor to do so, and (3) must complete the age-appropriate return to sport protocol. For the purpose of concussion, full contact practice equals return to sport.

The 6 R's of Concussion

1 Recognise – You need to be able to recognise the signs and symptoms of a potential concussion in your players. Learn them and know them!

2 Remove – When you recognise any signs and symptoms, and suspect a concussion, remove the player immediately.

3 Refer – Once you have permanently removed the player from the field, refer them to a medical doctor who understands concussions for a thorough clinical assessment.

Urgent RED FLAGS

Which may indicate an even more serious life-threatening injury

- ✓ Neck pain
- ✓ Increasing confusion, irritability or aggressiveness
- ✓ Repeated vomiting
- ✓ Seizures or convulsions
- ✓ Weakness or tingling/burning in the arms or legs
- ✓ Deteriorating levels of consciousness
- ✓ Severe or increasing headaches
- ✓ Unusual behaviour changes
- ✓ Deteriorating or double vision
- ✓ Increasing sensitivity to noise or light

6 If any of these are present either on the field or in the hours and days after the incident, then get this player to the hospital or a suitably experienced medical doctor for urgent medical attention.

'BLUE CARD' CONCUSSION PROCESS

1. Referee or Medical professional recognises a potential concussion event
2. Referee then signals the **Blue Card** to the player
3. Visual cue to all watching -> Concussion or suspected concussion
4. Player is permanently removed from the field of play
5. Player is logged onto the Club or Schools' submitted Team Sheet as a Concussion
6. Referee to submit **Blue Card** report to the Provincial Rugby Union
7. Referee, Coach, Team management, Player, Parent or Family member logs the **Blue Card** onto the SA Rugby Online software www.sarugby.online/bluecard
8. All contact persons listed when logging the **Blue Card** on the App will receive emailed advice on the required GRTS processes to follow with the player
9. All **Blue Card** concussion events recorded on the App will be stored on a national database
10. Sport Concussion SA's information: 011-3047724, 0825746918, Email: sportsconcussion@mweb.co.za will also be emailed to them should they wish to access Medical Doctors who are sufficiently knowledgeable in Concussion management for rugby union

Automatically assume Concussion in the following situations

- ✓ Players who present with convulsions (fits)
- ✓ Players who present with abnormal muscle contractions or stiffening
- ✓ Players with confirmed or even suspected loss of consciousness
 - ✓ Players who lose balance or look unsteady on their feet
 - ✓ Players who are clearly disorientated OR confused
 - ✓ Players who show definite changes in behaviour
- ✓ Players who are clearly dazed, dinged or can't remember plays

5 If any of the above are present, permanently remove the player from the field!

Empowering coaches & Referees



It is the LAW!

Law 3.24 states, *‘If, at any point during a match, a player is concussed or has suspected concussion, that player must be immediately and permanently removed from the playing area. This process is known as “Recognise and Remove”.’*



BOKSMART SERIES 4/11 THE REFEREE SPOTLIGHT PAGE 2 OF 2

THE REFEREE SPOTLIGHT BLUE CARD

SA RUGBY CONCUSSION REGULATIONS
<https://www.springboks.rugby/en/pages/BokSmart-Legislation>

BLUE CARD CONCUSSION PROCESS

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The following are 11 OBVIOUS SIGNS & SYMPTOMS that you as a referee, coach or medical support staff simply cannot miss, and cannot allow players presenting with any of these to continue in a match or practice. THESE ARE IMMEDIATE BLUE CARDS!

THOSE SIGNS AND SYMPTOMS TYPICALLY SEEN ON-FIELD:

1. Confirmed loss of consciousness, this is clear and obvious, the player was knocked out
2. Suspected loss of consciousness, or from what you saw happen on the field, where you have a strong suspicion of the player having lost consciousness
3. Convulsions or fits after making contact
4. Tonic posturing, abnormal muscle contractions or muscle stiffening
5. Balance disturbance, ataxia, stumbling or falling over
6. Clearly dazed, dinged or unable to think or react properly

THOSE ADDITIONAL SIGNS AND SYMPTOMS TYPICALLY IDENTIFIED DURING AN ON-FIELD ASSESSMENT:

7. The player is clearly not orientated in time, place or person or doesn't know what time it is, where they are or who they are talking to
8. Definite signs of confusion in the player
9. Definite changes in behaviour for that player
10. Oculomotor signs for e.g. spontaneous nystagmus or rapid involuntary eye movements
11. On-field identification of regular signs or symptoms of concussion as highlighted in your pocket BokSmart Concussion Guides

LAW 9.22 (C): The referee decides (with or without medical advice) that it would be inadvisable for the player to continue. The referee orders that player to leave the playing area.

LAW 9.24: If, at any point during a match, a player is concussed or has suspected concussion, that player must be immediately and permanently removed from the playing area. This process is known as "RECOGNISE AND REMOVE".




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SA RUGBY OFFICIAL HOME OF THE **SPRINGBOKS**

BLUE CARD INCIDENT

1. What happened?
2. Tell us who you are
3. Who was involved
4. Add Additional contacts

Date that concussive injury occurred? *

Estimated time of the concussive injury? * :
(Please enter in 24 hours time format eg: 17:15)

Venue where concussive injury occurred? *
(Please enter the venue/school or field name)

Event that caused the concussive injury? *

Injured player's Club/School TEAM? *

Opposing Club/School TEAM? *

Provincial Rugby Union where concussive injury occurred? *

It must be clear and obvious...





REFEREE/ASSISTANT REFEREE BLUE CARD REPORT

SARU Competition:			
Provincial Rugby Union			
Home Team		Visiting Team	
Player's Full Name:			Team/Division:
Playing Position:			Playing Number:
Player's Age:			Date of birth:
Venue:			Date of Match:
Contact person(s) from family, school or club:	1.	Email address(es)	1.
	2.		2.
	3.		3.

Period of Game when incident occurred: 1st Half 2nd Half
(Please circle)

Elapsed Time in Match: Match Kick-off Time:

THE BLUE CARD EVENT WAS DETECTED BY:

Official ** <i>(Please circle)</i>	Name	Contact Number	Email Address	Signature
Referee				
Assistant Referee				

DESCRIPTION OF INCIDENT: *(Please continue overleaf if necessary)*

Injury causing event: *(Tick the appropriate event observed)*

Tackling	Ruck	Scrum	Collision
Ball carry	Lineout	Open play	Hitting head on the ground
Other (specify)			

Signs/Symptoms: <i>(Tick the appropriate signs/symptom's observed)</i>		BRIEFLY DESCRIBE WHAT HAPPENED:
Unsteady on Feet	Confused	
Nauseous	Vomiting	
Headache	Dazed	
Dizzy	Blurred Vision	
Unconscious	Other (specify)	

Submit a copy to the local Provincial Rugby Union BokSmart Coordinator (<http://boksmart.sarugby.co.za/content/boksmart-contact-us/>), the local Referee Manager (<http://www.sareferees.com/about/provincial-contact-details/>) and eugenev@sarugby.co.za within 1 working day after the match. The Match Referee must also capture this report onto Footprint at www.sarugby.online/bluecard.

Reporting...



The screenshot shows the BokSmart website interface for reporting a blue card incident. The header features the SA Rugby logo and the text "OFFICIAL HOME OF THE SPRINGBOKS". The main content area is titled "BLUE CARD INCIDENT" and contains a sidebar with four steps: "1. What happened?", "2. Tell us who you are", "3. Who was involved", and "4. Add Additional contacts". The main form fields include: "Date that concussive injury occurred?*" (text input), "Estimated time of the concussive injury?*" (time picker showing 00:00), "Venue where concussive injury occurred?*" (text input with a note to enter venue/school or field name), "Event that caused the concussive injury?*" (dropdown menu with "Tackle" selected), "Injured player's Club/School TEAM?*" (text input), "Opposing Club/School TEAM?*" (text input), and "Provincial Rugby Union where concussive injury occurred?*" (text input).

Online reporting is critical for the player and their immediate support group to access the correct concussion return to sport information for managing and supporting these players properly!

<https://sarugby.online/bluecard>

First online report: 21/03/2019

CONCUSSIONS PAGE 1 OF 2

CONCUSSION MANAGEMENT

PREVENTION 5Es

1. EDUCATE your team, club or school on concussions
2. ENFORCE the laws, protocols and policies in your players
3. ENHANCE your players' protection against concussion by preparing them properly for rugby
4. EQUIP your players with the right information about what works and what does not
5. EVALUATE your concussion prevention process and policies yearly to ensure that you remain up to date with what is expected at the time

IDENTIFICATION 6Rs

1. RECOGNISE concussions
2. REMOVE the player
3. REFER them to a medical doctor to clear them of any complications. NOT for going back to rugby
4. REST them according to their age-group requirements
5. RECOVER until sign and symptom free
6. RETURN them to play, once they have gone through the rugby specific return to sport process without any hiccups

CONCUSSION IS A BRAIN INJURY!

MANAGEMENT MEDICAL CLEARANCE STEPS

1. Medical doctor clearance of complications straight after event
2. Clearance to start GRTS after age-appropriate stand-down period
3. Clearance to progress to full contact after Stage 4 of GRTS

MADDOCKS' QUESTIONS

QUESTIONS YOU NEED TO ASK TO PLAYERS 13 YEARS OF AGE AND OLDER

- What venue are we at?
- What team are you playing?
- What half is it?
- Who scored last in this game?
- Who did you play last week/game?
- Did your team win the last game?

QUESTIONS YOU NEED TO ASK CHILDREN AGED 5 - 12

- Where are we now?
- Is it before or after lunch?
- What did you have last lesson/class?
- Who scored last in this game?
- What is your teacher's/coach's name?

Where there is any hesitation, uncertainty or one cannot verify the information, have the player permanently removed from the game or training session, and suspect a concussion.

MONITORING: CONCUSSION REGISTER

1. Must be done by a responsible person at School or Club
2. Step by Step monitoring of progression through the rugby specific GRTS
3. Recordal of medical steps and processes

NAME OF PLAYER	SURNAME OF PLAYER	TEAM FOR WHICH PLAYING	OVERSEAS	AGE	DATE OF BIRTH	COACH	DATE OF CONCUSSION	DATE OF MEDICAL ASSESSMENT TO RULE OUT CONCUSSION	NAME OF MEDICAL DOCTOR	COMPULSORY REST PERIOD	CLEARANCE TO RETURN TO PLAY PROCESSES	DATE OF MEDICAL ASSESSMENT TO CLEARANCE TO RETURN TO PLAY PROCESSES	DATE OF CLEARANCE TO RETURN TO PLAY PROCESSES	SIGNED OFF BY APPROVALS BY COACH	DATE RETURNED TO PLAY
Chris	Anderson	Senior A	0	46	1954	Dave Ingram	August 1, 2016	August 2, 2016	Dr. Jerome Mwanuzi	7 weeks	Yes	August 2, 2016	August 15, 2016	Yes	August 20, 2016

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VISIONZERO ONE IS ONE TOO MANY

CONCUSSIONS PAGE 2 OF 2

PLEASE USE A COMMON SENSE APPROACH

HEADS UP! CONCUSSIONS

www.boksmart.com/concussion

You don't need a handbook to identify a suspected concussion. If you suspect one, take the player off, it's really that simple.

THE GRADUATED RETURN TO SPORT (GRTS) PROTOCOL

EACH STAGE PROGRESSION AFTER THE STAND-DOWN PERIOD IS A MINIMUM OF 24 HOURS

STAGE	REHABILITATION	OBJECTIVE	EXERCISE ALLOWED
1	Minimum age-appropriate rest period	RECOVERY	- Complete body and brain rest for the first 24-48 hours - Followed by rest and light exercise (walking, slow, stationary cycling) that does not worsen symptoms
2	Light aerobic exercise (20 minutes)	INCREASE HEART RATE	- Light jogging swimming or stationary cycling at low to moderate intensity - No resistance training - Symptom free during full 24-hour period
3	Sport-specific exercise (25-30 minutes)	ADD MOVEMENT	- Running drills - No head impact activities
4	Non-contact training drills	EXERCISE, COORDINATION AND COGNITIVE LOAD	- Progression to more complex training drills, e.g. passing drills - May start progressive resistance training - Player MUST be medically cleared at the end of this Stage before going to Full-contact training or Stage 5
5	Full-contact practice	RESTORE CONFIDENCE AND ASSESS FUNCTIONAL SKILLS BY COACHING STAFF	- Normal rugby training activities - If player remains sign and symptom-free for the full 24 hours, they then move on to Stage 6
6	Return to match play/sport	RECOVER	- Player rehabilitated and can be progressively re-introduced into full match play

NOTES:

- a player may only start the GRTS process once cleared by a medical doctor and all symptoms have disappeared
- a player may only progress to the next stage if no symptoms occur during or after exercise in each stage
- a player must again be cleared by medical doctor before starting full-contact training

AGE-APPROPRIATE STAND-DOWN & GRTS – EARLIEST RETURN TO SPORT

PLAYERS 18 AND YOUNGER: 2 weeks rest post injury + 4 days GRTS (Earliest return to rugby – Day 19 post injury)

PLAYERS 19 AND OLDER: 1 week rest post injury + 4 day GRTS (Earliest return to rugby – Day 12 post injury)

PLAYER AGE GROUP	COMPULSORY REST PERIOD POST CONCUSSION	CAUTION!	GRTS	CAUTION!	NUMBER OF MISSED FULL WEEKS
18 AND YOUNGER	Minimum of 2 WEEKS off before starting the GRTS process, even longer if any signs or symptoms remain	CAUTION! Return To Sport protocol should be started only if the player is symptom free and off medication that modifies symptoms	4 Stage GRTS with progression every 24 hours if no symptoms. Total GRTS days = a minimum of 4 days	CAUTION! Contact Sport should be authorised only if the player is symptom free and off medication	Earliest Return To Sport = 2 weeks rest post injury + 4 days GRTS (Play – DAY 19 post injury)
19 AND OLDER	Minimum of 1 WEEK off before starting the GRTS process, even longer if any signs or symptoms remain				Earliest Return To Sport = 1 week rest post injury + 4 days GRTS (Play – DAY 12 post injury)

CAUTION: Any player with a second concussion within 12 months, a history of multiple concussions, players with unusual presentations or prolonged recovery should be assessed and managed by health care providers (multidisciplinary) with experience in sports-related concussions. It is recommended that if this expertise is unavailable then as a minimum the player should be managed using the protocol from the lower age group.

EXAMPLE: 1. Players 18 and older uses the 'Players 18 and younger' protocol and 2. for 'Players 18 and younger' the minimum rest period should be doubled.

However, the medical doctor clearance is non-negotiable and must always be provided before entering the GRTS and before starting full-contact training, regardless of who is available to manage or monitor the GRTS process.

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CONCUSSIONS PAGE 2 OF 2

THE REFEREE SPOTLIGHT BLUE CARD

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CHRIS BURGER PLAYERS FUND

PETRO JACKSON

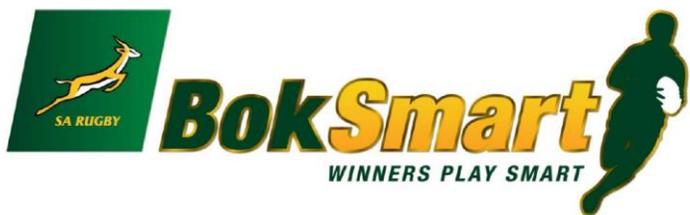
Rugby's Caring Friends

Provides ACCESS to emailed advice & information



CONCUSSION REGISTER FOR RUGBY PLAYERS

Name of player	Surname of player	Team played for	Division	Age	Date of birth	Coach	Date of concussion/suspected concussion	Date of Medical Assessment to rule out complications	Name of Medical Doctor	Compulsory recovery Rest period used	Clearance received to enter Graduated Return to Play Process	Date of Medical Assessment Clearance received	Date of completion of GRTP	Signed off & acknowledged by Coach	Date Returned to Full match play
Clint	Readhead	Senior Adult	d	46	May 14, 1970	Dawie Snyman	August 1, 2016	August 2, 2016	Dr Jerome Mampane	1 week	Yes	August 9, 2016	August 13, 2016	Yes	August 20, 2016



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Concussion Advice Sheet

What is a concussion?

A concussion is an **injury to the brain** caused by a direct or indirect blow to the head or caused by the head striking something else such as the ground or a bony hip. A concussion can occur **whether or not a person is "knocked out."**



How Can Concussion Be Prevented?

Why is prevention important?

Concussion is a brain injury which should be identified, treated and managed correctly. Failure to do so can potentially have **serious short and long-term consequences**. Reducing the incidence or rate of concussion is



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When can a player safely return to play following a concussion?

Why is it so important to return to play at the appropriate time?

Returning too soon following a concussion may have serious short and long-term consequences including:

- More serious brain injury and even death

Also provides PRACTICAL tools for monitoring progress...



Provides opportunity for accessing appropriate medical expertise...

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Find a Concussion Doctor

Locate a South African Sports Concussion Centre

A joint initiative by Sports Concussion South Africa and SA Rugby

Gauteng | Mpumalanga | Limpopo | North West | N-Cape | Free State | W-Cape | E-Cape | KZN

Location	Co-ordinator	Physical address	Contact No.
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<http://www.sportsconcussion.co.za/medical-team/>

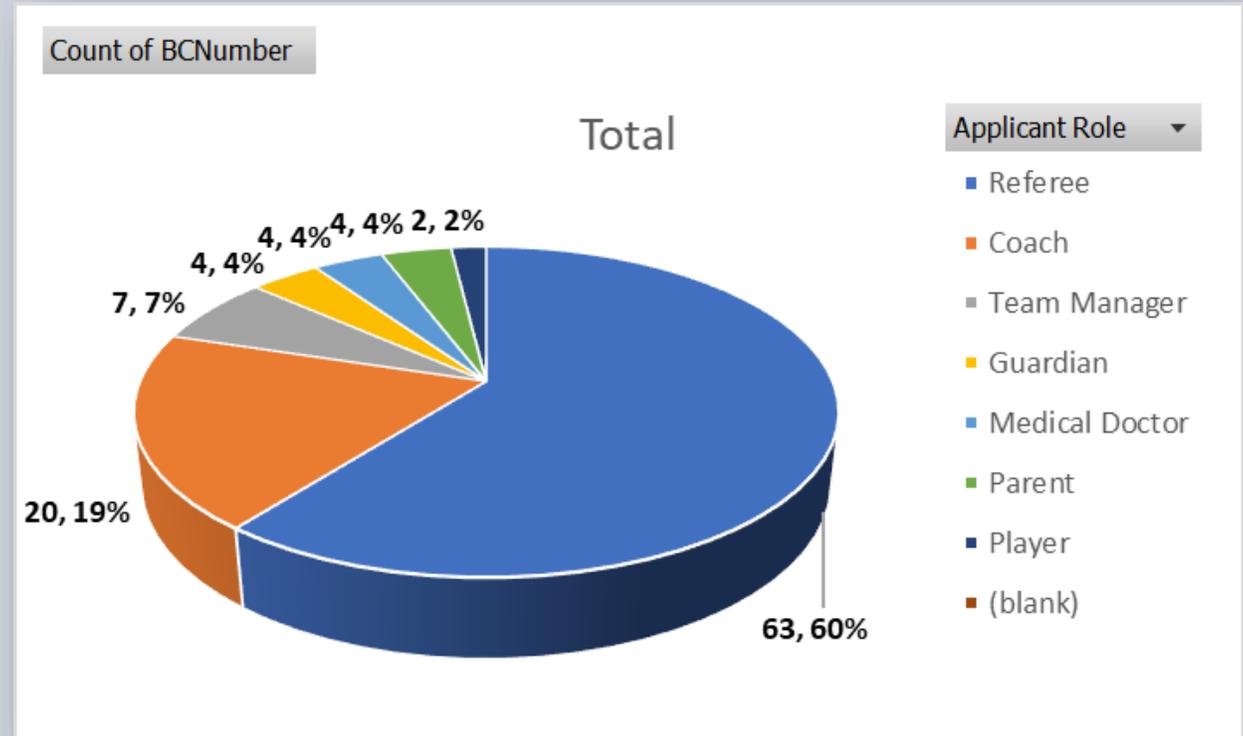
SOME BLUE CARD DATA



**PRELIMINARY DATA:
MARCH 2019 → 31 DECEMBER 2020**

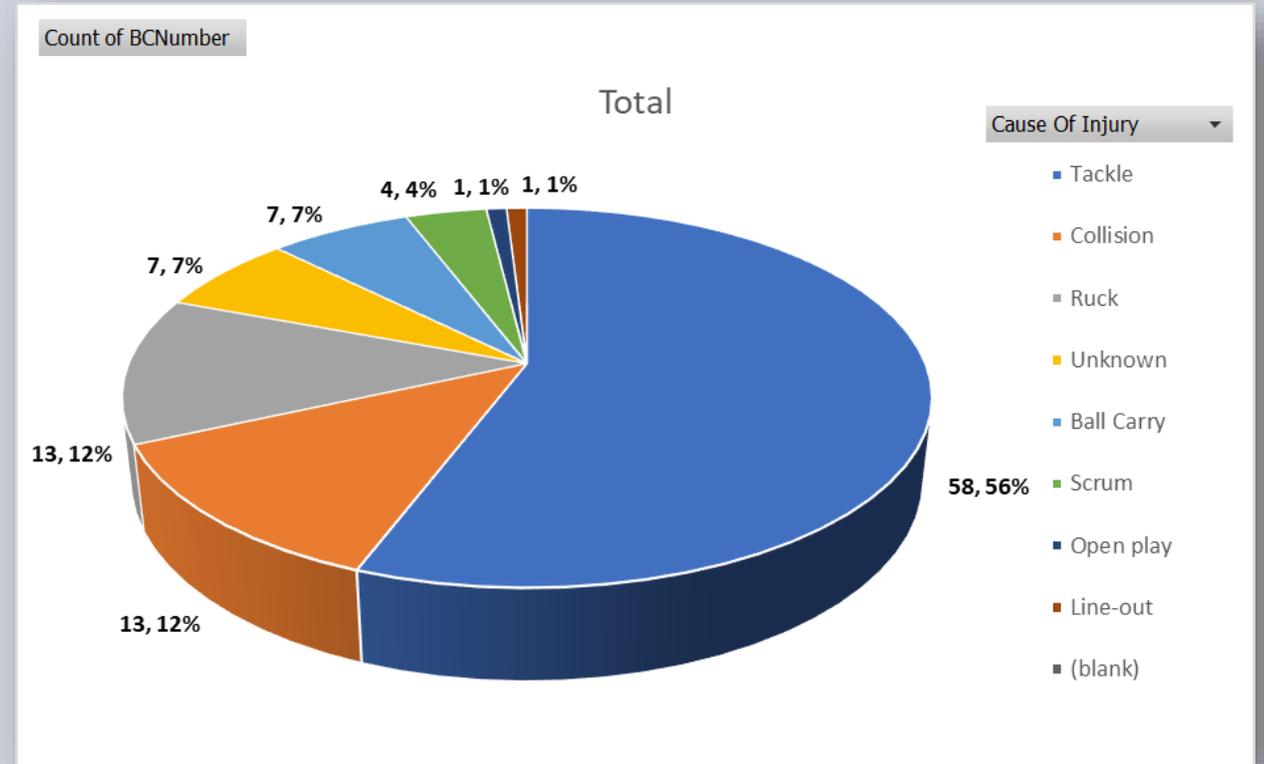
Who is capturing Blue Cards?

Count of BCNumber		
Applicant Role	Total	Percentage (%)
Referee	63	60.6%
Coach	20	19.2%
Team Manager	7	6.7%
Guardian	4	3.8%
Medical Doctor	4	3.8%
Parent	4	3.8%
Player	2	1.9%
(blank)		
Grand Total	104	100.0%



What events lead to **Blue Cards**?

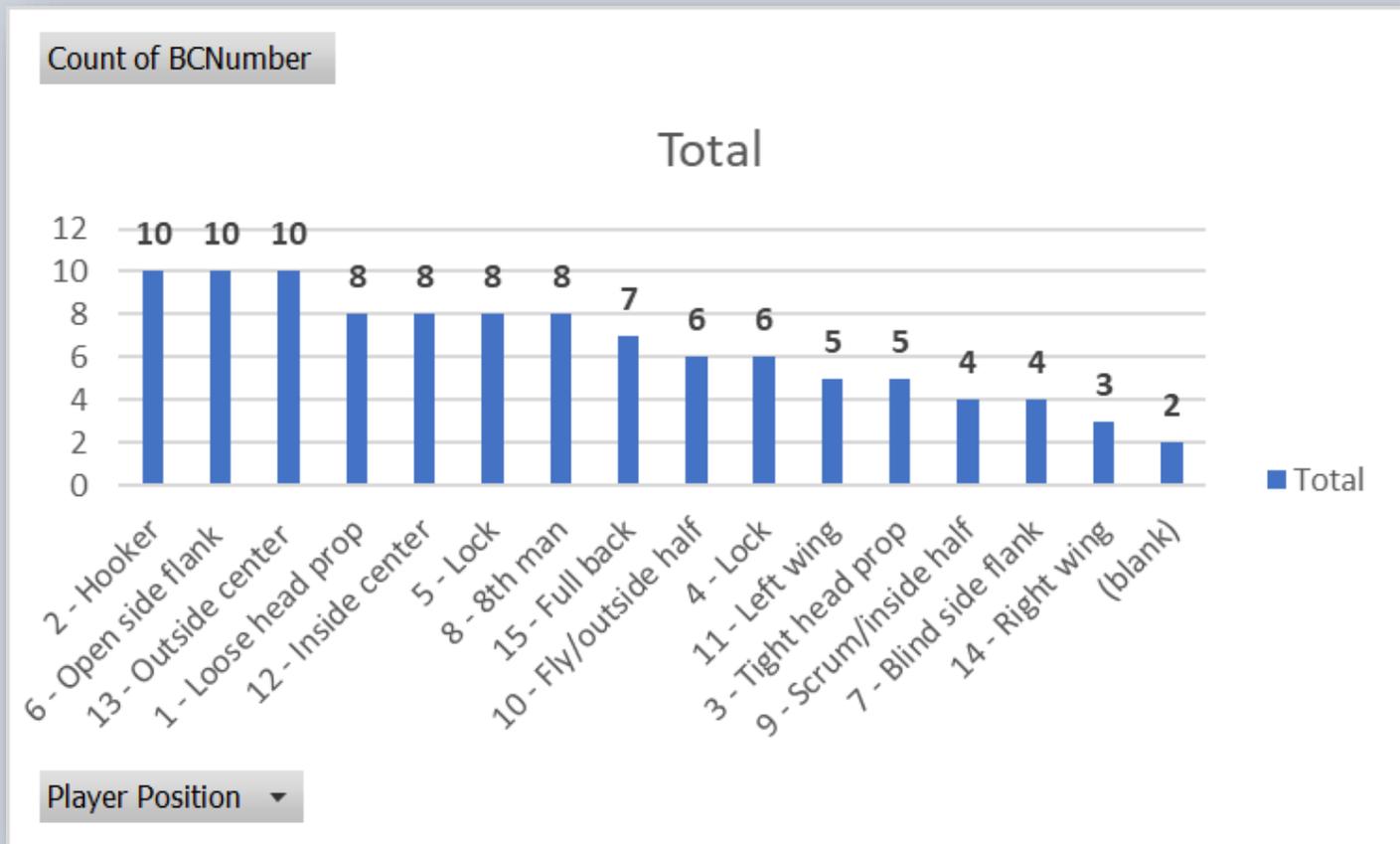
Count of BCNumber			
Cause Of Injury	Total	Percentage (%)	Rank
Tackle	58	55.8%	1
Collision	13	12.5%	2
Ruck	13	12.5%	2
Unknown	7	6.7%	4
Ball Carry	7	6.7%	4
Scrum	4	3.8%	6
Open play	1	1.0%	7
Line-out	1	1.0%	7
(blank)			
Grand Total	104	100.0%	



What are the individual high-risk positions for **Blue Cards**?

(based on **TOTAL** Blue Card events per individual player position)

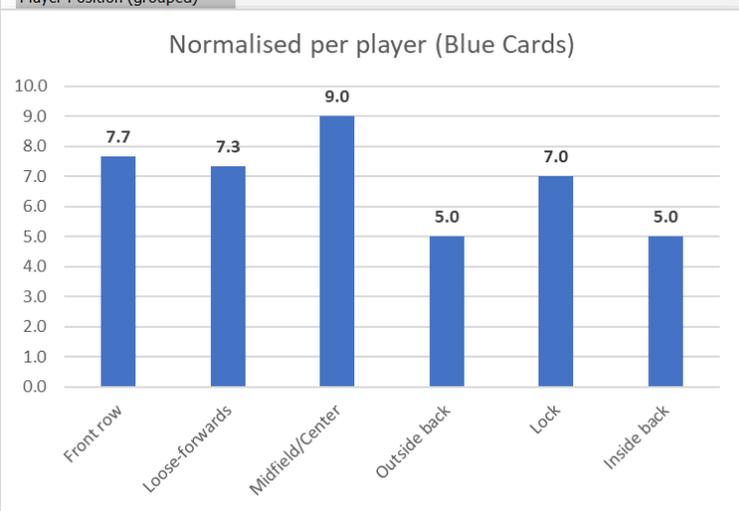
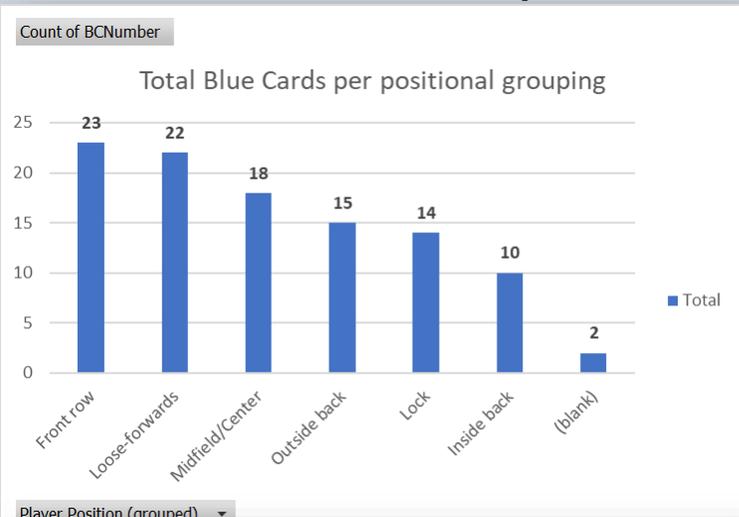
Count of BCNumber			
Player Position	Total	Percentage (%)	Rank
2 - Hooker	10	9.6%	1
6 - Open side flank	10	9.6%	1
13 - Outside center	10	9.6%	1
1 - Loose head prop	8	7.7%	4
12 - Inside center	8	7.7%	4
5 - Lock	8	7.7%	4
8 - 8th man	8	7.7%	4
15 - Full back	7	6.7%	8
10 - Fly/outside half	6	5.8%	9
4 - Lock	6	5.8%	9
11 - Left wing	5	4.8%	11
3 - Tight head prop	5	4.8%	11
9 - Scrum/inside half	4	3.8%	13
7 - Blind side flank	4	3.8%	13
14 - Right wing	3	2.9%	15
(blank)	2	1.9%	16
Grand Total	104	100.0%	





What are the high-risk positional groupings for **Blue Cards**?

(based on **TOTAL** Blue Card events per positional grouping and **NORMALISED** per number of players in the positional grouping)



Count of BCNumber		<i>RANK per TOTAL</i>	%Total	Number of players in positional grouping	Normalised per player	<i>RANK per player</i>
Player Position (grouped) ↓	Total					
Front row	23	1	22.1%	3	7.7	2
Loose-forwards	22	2	21.2%	3	7.3	3
Midfield/Center	18	3	17.3%	2	9.0	1
Outside back	15	4	14.4%	3	5.0	5
Lock	14	5	13.5%	2	7.0	4
Inside back	10	6	9.6%	2	5.0	5
(blank)	2	7	1.9%			
Grand Total	104		100.0%			

Which Rugby Unions are capturing and reporting more **Blue Cards**?

Count of BCNumber			
Rugby Union	Total	Percentage (%)	Rank
Blue Bulls	40	38.5%	1
Kwazulu-Natal	17	16.3%	2
Eastern Province	9	8.7%	3
South Western Districts	7	6.7%	4
Golden Lions	7	6.7%	4
Border	4	3.8%	6
Western Province	4	3.8%	6
Griquas	4	3.8%	6
Valke Rugby Union	3	2.9%	9
Pumas	3	2.9%	9
(blank)	2	1.9%	11
Free State	2	1.9%	11
Griffons	1	1.0%	13
Leopards	1	1.0%	13
Grand Total	104	100.0%	

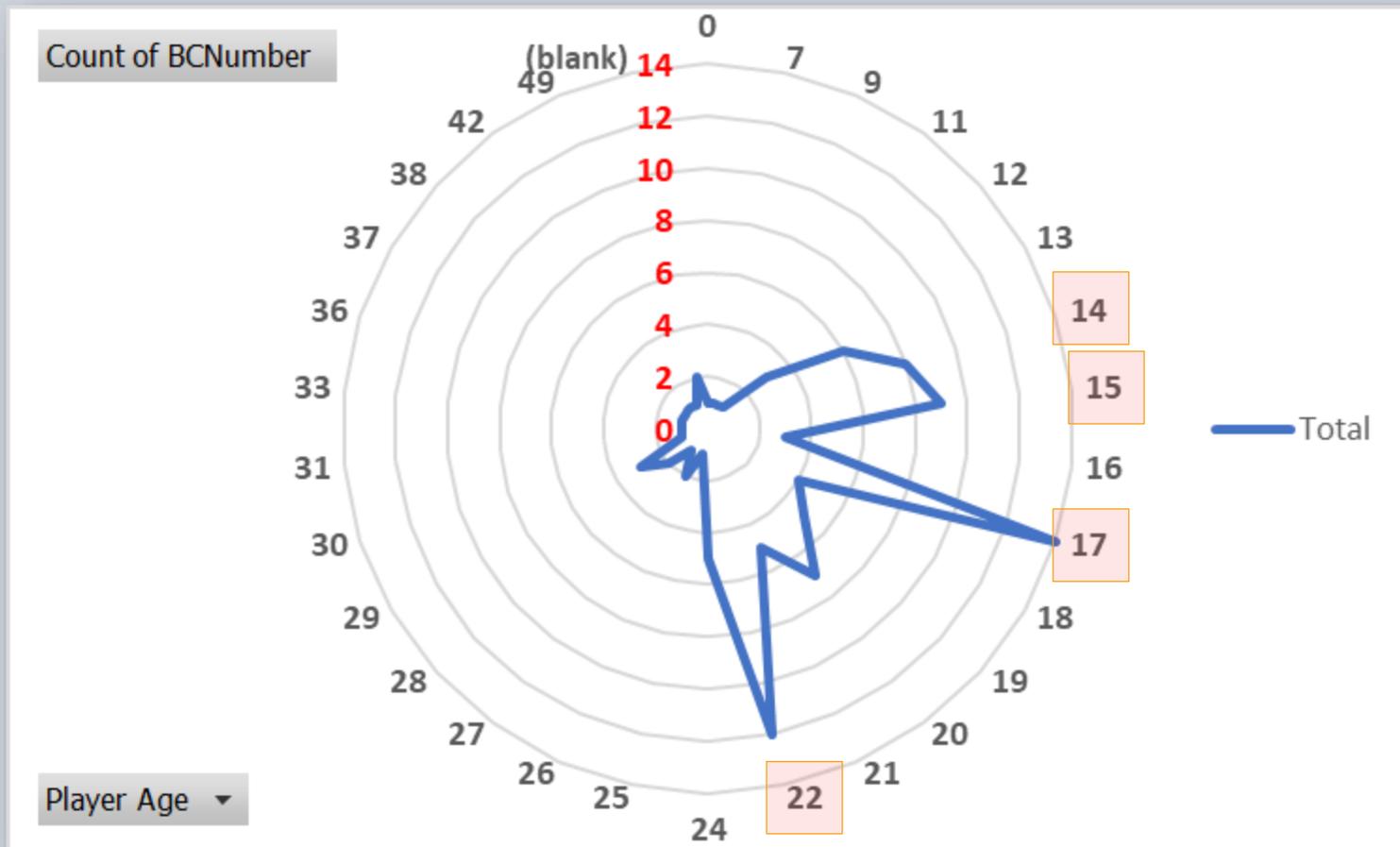
NOTE:

Higher numbers are not necessarily related to more dangerous play or greater concussion risk.

Better implementation of the Blue Card system, improved identification of concussions, and increased compliance to regulations will increase numbers reported and are therefore viewed as a positive.

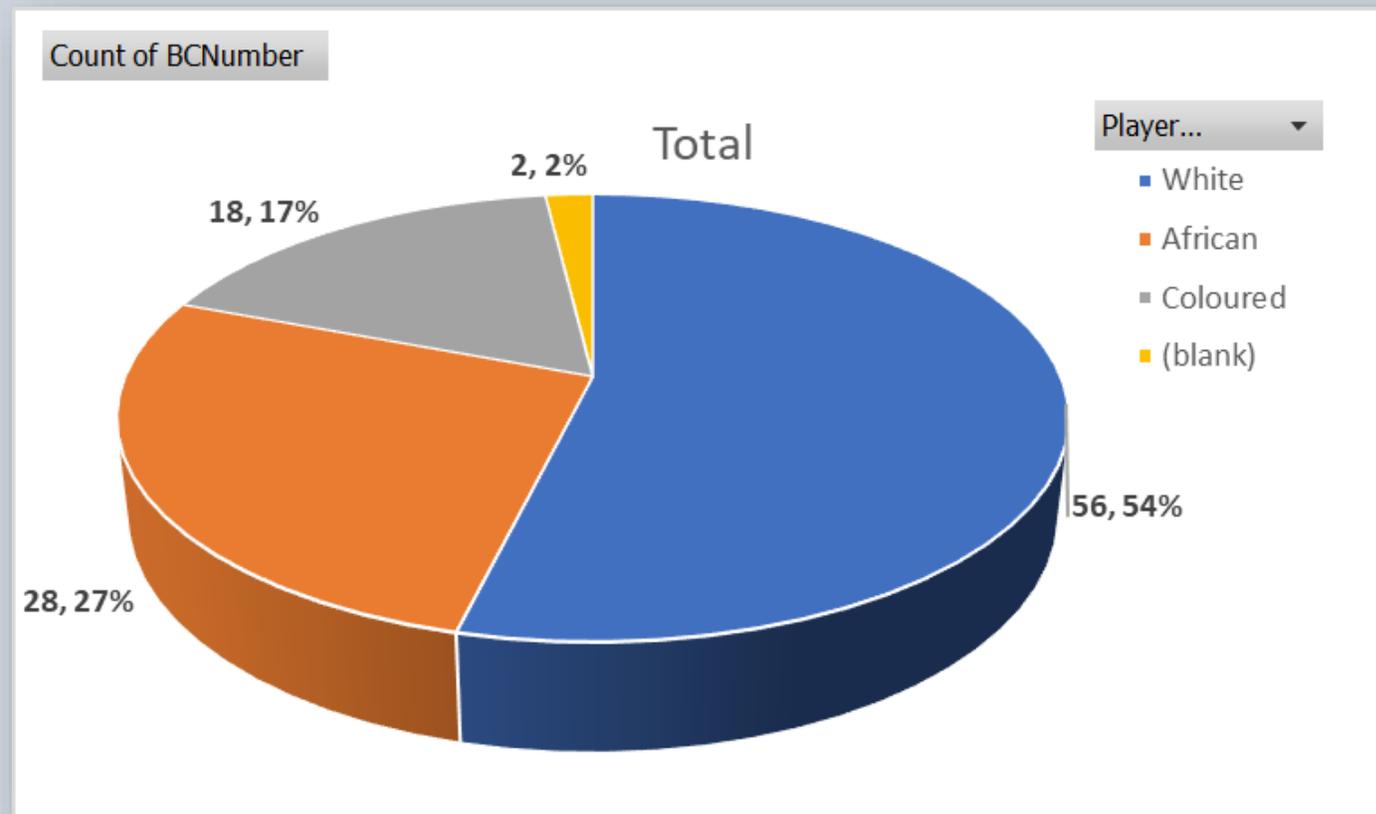
What are the main age groups receiving Blue Cards?

Player Age	Total	Percentage (%)	Rank
0	1	1.0%	17
7	1	1.0%	17
9	1	1.0%	17
11	1	1.0%	17
12	3	2.9%	11
13	6	5.8%	6
14	8	7.7%	4
15	9	8.7%	3
16	3	2.9%	11
17	14	13.5%	1
18	4	3.8%	10
19	5	4.8%	7
20	7	6.7%	5
21	5	4.8%	7
22	12	11.5%	2
24	5	4.8%	7
25	1	1.0%	17
26	2	1.9%	14
27	1	1.0%	17
28	2	1.9%	14
29	3	2.9%	11
30	1	1.0%	17
31	1	1.0%	17
33	1	1.0%	17
36	1	1.0%	17
37	1	1.0%	17
38	1	1.0%	17
42	1	1.0%	17
49	1	1.0%	17
(blank)	2	1.9%	14
Grand Total	104	100.0%	



What are the main racial groups receiving **Blue Cards**?

Count of BCNumber		
Player Ethnicity	Total	Percentage (%)
White	56	53.8%
African	28	26.9%
Coloured	18	17.3%
(blank)	2	1.9%
Grand Total	104	100.0%





COMMONLY ASKED QUESTIONS



- **Number of Blue Cards?**
 - *This we can measure from our online data*
- **Follow-ups and clearance received from the doctors?**
 - *This we cannot measure, and is not the purpose of the Blue Cards*
 - *The main purpose of the Blue Card is awareness, education and access to concussion advice, medical expertise and management information*
- **Any problems (e.g. financial impact to see the qualified professional)?**
 - *This we cannot measure, but there are always pragmatic solutions*
 - *Unions, Clubs and Schools are responsible for developing access pathways*
- **Adherence to the protocols and monitoring Return to play?**
 - *This we cannot measure, and is not the purpose of the Blue Cards*
 - *This remains the responsibility of the involved Clubs, Schools and Coaches involved to manage as per the SA Rugby Concussion Regulations & World Rugby Regulation 10*
 - *Concussion registers are provided to attendees at BokSmart Rugby Safety courses*



IN SUMMARY



- *It's all about player safety!*
- *'Recognise and Remove' as per the Laws!*
- *Creating greater awareness around concussions*
- *Blue Card Implementation and online Reporting*
- *Increased access to correct advice for those closest to the player*
- *Expanding the medical doctor concussion network in rugby union*
- *Best practice management for community Rugby Union players*
- *Less risk for players; fewer catastrophic outcomes*



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ESSM team

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- Dr Sharief Hendricks
- Lara Paul
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THANK YOU FOR YOUR ATTENTION!

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