STATE CORONER'S COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Phillip Joel Hughes
Hearing dates:	10-14 October 2016
Date of findings:	4 November 2016
Place of findings:	NSW State Coroners Court Glebe NSW
Findings of:	Magistrate Barnes State Coroner
Catchwords:	CORONIAL LAW – violent and unnatural death; cricket match; head trauma; emergency response; protective equipment; review of rules
File number:	2014/350714
Representation:	**Counsel Assisting the Coroner**, Ms K Stern SC assisted by Mr P Aitken instructed by Mr I Linwood and Ms H Sewell Crown Solicitor's Office **Hughes family** - Mr Greg Melick SC **Cricket Australia Cricket NSW**, **Cricket SA players & umpires** - Mr B Hodgkinson SC assisted by Mr D Chitty instructed by Mr J Makris and Ms E Elliott K&L Gates **Sydney Cricket and Sports Ground Trust** – Mr A Coleman SC instructed by Mr S Gorry and Mr B Wilford Henry Davis York **Ambulance NSW-** Mr M Fordham SC instructed by Mr L Sara Hicksons **Australian Cricketer's Association** – Mr C O'Neill instructed by Mr T Johnston Crawford Legal **SafeWork NSW** – Ms K Lockerby SafeWork NSW **Dr Orchard** – Dr P Dwyer instructed by Mr T Mineo Avant Law **James West** – Mr G Stapleton instructed by Mr J Mulally John Mulally & Associates

Findings:	**The identity of the deceased** The person who died was Phillip Joel Hughes. **Date of death** Mr Hughes died on 27 November 2014. **Place of death** He died in, St Vincent’s Hospital, Darlinghurst, NSW. **Cause of death** The cause of death was traumatic basal subarachnoid haemorrhage. **Manner of death** Phillip Hughes died from injuries sustained two days before his death when he was accidentally struck on the head by a ball bowled to him while he was batting in a first class cricket match at the Sydney Cricket Ground.

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The Coroners Act in s81 (1) requires that when an inquest is held, the coroner must record in writing his or her findings as to various aspects of the death. These are the findings of an inquest into the death of Phillip Joel Hughes

Introduction

1. It was cricket season in Sydney and New South Wales was playing South Australia in the Sheffield Shield competition at the Sydney Cricket Ground in a match that commenced on 25 November 2014.

2. Phillip Hughes opened the batting for South Australia and was still batting when the teams returned to the field after lunch. He was batting confidently when unexpectedly he mistimed a hook shot and the ball struck Phillip on the base of his skull on the left hand side. He staggered and collapsed to the ground, unconscious. Medical assistance came onto the field.

3. Phillip was stretchered off and transported by ambulance to St Vincent's Hospital. He underwent emergency surgery that night but did not regain consciousness. Two days later, his family agreed that life sustaining measures should be withdrawn. Phillip was pronounced dead later that day.

The inquest

4. Section 81 of the *Coroners Act 2009* requires a coroner presiding over an inquest to confirm that the death occurred and make findings as to:-

   - the identity of the deceased;
   - the date and place of death; and
   - the manner and cause of the death.

5. Under s. 82 of the Act a coroner may make such recommendations considered necessary or desirable in relation to any matter connected with the death, including in relation to public health and safety.

6. In this case, there is no doubt that Philip Hughes died at St Vincent's Hospital on 27 November 2014. The focus of this inquest has been upon the manner and cause of death, and whether any recommendations should be made under s 82.

7. His family has expressed concerns that his fatal injury occurred in circumstances where the rules of the games designed to protect players from undue risk were not adequately adhered to or enforced.

8. There is also a basis for concerns about aspects of the emergency response after Phillip was injured that warranted investigation to ensure that in future, if a player is seriously injured, the best available medical assistance might be provided as soon as possible.

9. The issues list distributed by those assisting the inquest prior to its commencement identified the following matters as warranting attention:-
   i. The cause of Phillip Hughes' death.
   ii. The manner of the death, including:
      - the nature of the play in the afternoon of 25 November 2014 at the Sydney Cricket Ground and whether that in any way exacerbated the risk of injury to Phillip Hughes;
      - the appropriateness of the emergency planning and response to Phillip Hughes' injury, including the calling of ambulances, time of response to ambulance, conveying of information to ambulance service for the purpose of 000 calls, and emergency response training and management as relevant to injury to players; and
      - whether or not any protective helmet would have prevented or minimized the risk of Phillip Hughes' sustaining the fatal injury he sustained.

10. An inquest is not a forum for determining civil liability, or for apportioning blame. It is an opportunity to expose the facts of the matter, with a focus on considering any steps that might be taken to prevent similar deaths occurring, or to protect cricketers from such risks, in the future.

11. This investigation is focused on providing a greater understanding of what happened on the day Phillip was fatally injured and identifying reforms and improvements to the protection of cricketers and in emergency responses.

The evidence

Social history

12. Phillip Joel Hughes was born on 30 November 1988, the second of three children of Greg and Virginia Hughes. He was just 25 years old when he died.

13. Aspects of Phillip's life and personal qualities are referred to in the heartfelt statements provided to the inquest by Greg Hughes, jointly by Virginia and sister Megan Hughes, and by his brother Jason Hughes. Further information has been gleaned from a biography by cricket writers Malcolm Knox and Peter Lalor.[1]

14. Phillip grew up on the family's farming property near Macksville. Despite his brother Jason being three years older and his sister Megan being six years younger, the three siblings were and remained very close, sharing accommodation when they each moved to Sydney. When Phillip moved to Adelaide to play for South Australia in 2012 he continued to communicate with Jason and Megan most days.

[1] Knox M and Lalor P, *Phillip Hughes: the Official Biography*, McMillan, 2015.

15. Phillip became focused on playing cricket professionally from an early age and dedicated himself to it.

16. Greg Hughes wrote of Phillip's dream as a young country kid of playing cricket for his country and his uncomplaining dedication to achieving this ambition. He described his son's resilience and his moral strength as well as his passion for the game of cricket.

17. Virginia and Megan described Phillip as an amazing individual who was looked up to by many. They wrote of his talent and hard work.

18. Jason also described how no one worked harder that Phillip and how positive and uncomplaining Phillip was, and how when he died Phillip was working hard to make his way back into the Australian team.

19. Phillip attended St Patrick's Primary School in Macksville from when he was five, following in his brother's footsteps. It has been said that "*Phillip adored Jason and cricket was an entrée to the world of his older brother and his older mates*."[2]

20. When he was nine Phillip played his first game in an Under-12 representative team. He scored his first century as captain of the Under-12 Nambucca Bellingen district side at Bellingen Oval.

21. When he was 12, Phillip started playing for the Macksville A-Grade team, competing against grown men. Apparently, he overcame the age difference on the field *"but away from the game he was still a cheeky kid who rode his pushbike about town with his mates, went fishing and got swooped by magpies…"* [3]

22. Phillip attended secondary school at Macksville High and when he was 15 was selected for the NSW Schoolboys Team, which provided him with the opportunity to tour India and play cricket.

23. Phillip moved to Sydney to complete his HSC at Homebush Boys High and to play for the Western Suburbs District Cricket Club.

24. On 20 November 2007, when he was 18, Phillip stepped out on the SCG representing NSW for the first time. Although Phillip was said to be disappointed with his 51 runs, NSW won the match by an innings and Phillip was hooked on Sheffield Shield cricket.

25. In March 2008, then aged 19, Phillip became the youngest player to reach a century in a Sheffield Shield final.

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[2] Knox and Lalor, 2015, p36.
[3] Knox and Lalor, 2015, p76.

26. In early 2009 Phillip was selected in the Australian test team for the three match test series against South Africa. He debuted on 26 February 2009, scoring 75 in the second innings. In the second test he scored 115 and 160, becoming the youngest batsman in test cricket to make two centuries in a test match.

27. When he was 23, Phillip moved to Adelaide and play for South Australia in the 2012-2013 season.

28. Phillip Hughes was highly regarded throughout the cricket world as a very talented player. But of course, he was much more than just a cricketer: he was a loyal friend and a loveable bloke who is missed by many. He was a treasured member of a very close and supportive family who continue to grieve his loss deeply. I offer his family and friends sincere condolences for their terrible loss.

Events preceding the death

29. The Sheffield Shield game between NSW and South Australia began at around 10.30 am on 25 November 2014, with South Australia winning the toss and electing to bat first.

30. Phillip Hughes and Mark Cosgrove opened the batting for South Australia.

31. Mr Hughes got off to a relatively slow start - at the end of the tenth over he was on 8 but he and Mr Cosgrave had seen off the opening bowlers without loss and the team was well placed on 35 runs.

32. In the next ten overs the openers consolidated their position with steady batting: by the end of the 20th over they had reached 53 without losing a wicket. Phillip was on 15.

33. No incidents had occurred and there was nothing out of the ordinary – just good solid cricket according to all of those who saw it. Five bowlers had been utilised – three fast, a medium pacer and a spinner. Mr Hughes had faced a variety of deliveries from bouncers[4] to full tosses. He appeared untroubled and was in good form.

34. David Warner had played cricket with Phillip Hughes for many years – they had progressed through grade cricket and first class cricket at about the same time and played for Australia together. They were close friends. On the day in question he was playing for NSW and so he was in the field while Phillip was batting.

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[4] The term is not defined in the Laws of Cricket and there is some imprecision in its use. It certainly includes fast, short pitched balls that bounce over shoulder height but can also include balls that bounce lower but because of their speed and direction they cause the batsman to duck under them. As discussed below, different rules apply to each type of “bouncer”.

35. Mr Warner said Mr Hughes appeared comfortable at the crease and he was playing well; *"He looked like he was playing easily - in control of what he was doing".*

36. In the 23rd over South Australia lost their first wicket when Mark Cosgrove was caught off the bowling of Nathan Lyon. He was replaced by the experienced Callum Ferguson.

37. Hughes and Ferguson consolidated the position so that at lunch NSW was 1 for 74, with Hughes on 32.

38. Play resumed after lunch at around 1:00 pm and Phillip Hughes continued to score freely. He reached 50 midway through the 33rd over having faced 114 balls.

39. In the 40th over Ferguson was caught behind and Hughes was joined at the crease by Tom Cooper who had also played for NSW earlier in his career. He too had played with Phillip in age sides and they were firm friends as well as team- mates.

40. Mr Cooper told the inquest that when he came to the crease the wicket was a little "*two paced*" making it challenging to time the ball perfectly but batting was "*pretty good and there was no real issue".*

41. He said that Mr Hughes "*was making the batting look easy".* Mr Cooper had no concerns about the bowling. He didn't consider it was unfair or dangerous and he didn't feel that the umpires should have been cautioned the bowlers for bowling too short.

42. In the 43rd over, Mr Cooper was struck in the shoulder by a short ball bowled by Doug Bollinger but was not injured or concerned by it. The recorded vision of play suggests they exchanged words.

43. Mr Warner gave evidence that the NSW team considered Messrs Hughes and Cooper to be key batsmen in the opposing team. He said his team-mates were aware that they needed to restrict Hughes' rate of scoring and that bowling short balls on middle and leg stump were a way of doing that. Mr Warner denied that there was any plan to target Mr Hughes with bouncers as did the NSW captain, Brad Haddin.

44. Mr Haddin said the main change he instigated after lunch, when it was clear that Mr Hughes was set and threatening to score a big total, was to change the field placements regularly to create doubt in Phillip's mind about where he could safely hit the ball and to tempt him to hit riskier shots.

45. He said at lunch there was a discussion about the plan for the afternoon which was "*to try and get Phil to nick the ball by moving his feet*".

46. Mr Warner described the team plan as being to bowl at or over leg stump to get Phillip playing off the back foot rather than moving forwards with a view to him pulling or hooking so that they could get a nick and take a catch.

47. Mr Cooper recalled there was more short pitched bowling after lunch to limit runs, and that this was more aimed at Phillip because "*he was the one that was making it look easy*". However, he was adamant that Phillip didn't express any concerns about the bowling, on the contrary he seemed very confident.

48. Mr Warner also described how, having played with Phillip including in test matches, Phillip was never anxious or unsettled by short deliveries but would tackle it to score runs or get out of the way.

49. Analysis of the bowling undertaken for the inquest by an independent expert umpire indicated the use of short balls to Mr Hughes increased in the period after lunch: He faced 10 bouncers in the 29 overs before lunch and the same number in the 19 overs after lunch.

50. There is no doubt Phillip was targeted with this type of bowling. Of the 23 "bouncers" bowled on that day, 20 were bowled to him.

51. Initially, that seemed to have little effect. In the 10 overs after lunch, Mr Hughes hit 24 runs, but in the ensuing nine overs he scored only seven.

52. By the end of the 48th over, Hughes was on 61, Cooper was on 5 and the score was 2 for 134.

53. Umpire Ash Barrow said in evidence that at Sheffield Shield level, a top order batsman would almost always have the skill to play shorter bowling safely. He did not see the bowling on this day as presenting an increased risk to Phillip, having regard to Phillip's skill level.

54. Umpire Michael Graham-Smith, who was officiating at the bowlers end in the 49th and 47th overs, said that he wouldn't invoke the law prohibiting unfair bowling that did not bounce above shoulder height for an opening batsman. Further, having reviewed the footage, he didn't find anything in the bowling on the day in question contrary to the laws of the game. In interpreting those laws, he said that he understood it to apply not only to the balls above shoulder height but to bowling that might be dangerous having regard to its length, height and direction.

The fatal incident

55. The 49th over was bowled by Sean Abbott, a fast-medium right hander. Phillip Hughes was on strike. The first ball was slightly short and was easily defended with no run being scored. The second ball was short and on about middle stump. It bounced to about shoulder height. Mr Hughes moved across in front of his stumps and pulled it comfortably to fine leg for two runs. The third ball was shorter still and bounced higher. It too pitched on about

middle stump. Phillip again attempted a leg-side stroke but seemed to get through the hook shot before the ball was with him – either he mistimed the strike or the ball came on more slowly than expected.

56. After he missed the ball, Mr Hughes carried through with the stroke so that his bat was horizontal and across his body and he was facing down the pitch. The ball continued on its trajectory and struck Phillip on the left hand side of his neck near the base of his skull.

57. Immediately following the blow he stepped to the side of the pitch and bent over, head down, and then placed both hands on his knees. Other players approached him, and after only a matter of a couple of seconds he fell to the ground making no attempt to break his fall, apparently unconscious. The bowler Sean Abbott, the wicket keeper Brad Haddin and others immediately ran towards Phillip to render assistance. The players and both umpires beckoned to the dressing rooms for assistance.

58. As best can be calculated using the video footage which at some points has an image of the clock tower on the Members' Stand, and then using the timing on the video recording itself, the incident occurred at 2:23pm.

Emergency response

59. Dr John Orchard is a sports physician who was the NSW Team Doctor but responsible for the medical care of both teams on the day in question. He was in a medical room under and at the back of the Members' Pavilion when the incident occurred. He saw it on the live TV feed he had access to for the purpose of monitoring play and immediately realised that he needed to get to Mr Hughes.

60. He went upstairs and through the Members' Pavilion onto the field.

61. In order to ensure that he could run without obstruction and as quickly as possible, Dr Orchard did not take his medical bag with him.

62. The South Australian physiotherapist, Jon Porter, was watching the game from the visiting team's viewing room. He saw Phillip get hit and saw him collapse. He grabbed a small medical bag and he too hurried onto the field.

63. The doctor and the physiotherapist arrived at the prone player at the same time – about 40 seconds after Phillip had collapsed.

64. They found Phillip to be profoundly unconscious but still breathing and with a strong pulse of about 150 bpm. Over the next few minutes, Phillip's respiration rate decreased so that soon he was taking only about 3 breathes per minute.

65. Dr Orchard immediately called for the medicab and for an ambulance to be summoned.

66. One of the umpires used his two way radio to advise the match referee of the incident. The referee called the mobile phone of the NSW Cricket Event Coordinator, James West, to ask him to arrange for the doctor to go onto the field.

67. Mr West was in the Member's Pavilion at the time and so it took him only about 10 seconds to rush to the medical room. Dr Orchard was not there. After checking around the area, Mr West saw that Dr Orchard was already making his way onto the field.

68. He came across Murray Ryan, the NSW team physiotherapist, who had already found the room attendant, Doug Williams, to ask him to arrange for the medicab to go out to the pitch.

69. Mr Ryan told Mr West that they needed a stretcher because Phillip Hughes had been hit on the head and, *"He's not in a good way".*

70. They could not find a stretcher in the medical room and therefore they ran to the NSW Cricket physiotherapy room which was in a building about 500 metres from the SCG. They got the stretcher and ran back to the field, by which time Phillip had already been loaded onto the medicab using a spinal board. From the CCTV footage it is estimated that this was about 4 minutes after the incident.

71. Dr Orchard instructed that the medicab move Phillip to the sideline adjacent to the Members' Pavilion so that resuscitation equipment would be closer to hand if needed while awaiting the ambulance. As he walked beside the medicab he noticed that Phillip's breathing had become more laboured, he was becoming cyanosed and his respiration then stopped.

72. Dr Orchard commenced expired air resuscitation and Phillip's perfusion returned to normal.

73. Dr Tim Stanley, a medical practitioner with specialist qualifications and experience in emergency and intensive care medicine attended the game that day as a spectator, with his two children. He saw the incident and immediately realised that Phillip would need urgent medical care. He made his way onto the field where Phillip was being attended to by Dr Orchard and the two physiotherapists, close to the sideline in front of the Members' Pavilion.

74. He introduced himself and told Dr Orchard of his qualifications. His offer of assistance was readily accepted. He took over monitoring Phillip's pulse and maintaining his airway. He could see by the rise and fall in Phillip's chest that Dr Orchard was performing effective expired air resuscitation

75. The doctors asked Mr Ryan to retrieve an oxygen tank and a defibrillator from the medical room. He could not locate the bag in the medical room so ran again to the NSW Cricket physiotherapy room and retrieved two orange medical bags, an oxygen bottle and a defibrillator.

76. These were taken to Dr Orchard who, together with Dr Stanley, was able to provide effective bag and mask ventilation with oxygen. Dr Stanley identified that Phillip's pupils were dilated and not responsive to light which indicated a severe injury. He sought to hyperventilate Phillip as a means of lowering intracranial pressure.

77. The first 000 call in relation to the incident was made by Scott Henderson, the Event Coordinator employed by the Sydney Cricket and Sports Ground Trust (the Trust). He was in his office when he was advised that a player had been struck.

78. He began making his way to the ground a couple of hundred metres away. *En route* he received a telephone call from James West who told him, *"We need an ambulance urgently."* However, he did not think to ask for more details about the injured man's condition and Mr West didn't volunteer them.

79. As a result, he was not able to give vital information when he made the 000 call which was picked up at 2.29:55 – over 6 minutes after Phillip was struck.

80. Mr Henderson was able to tell the operator the address of the ground and that the ambulance should come to Gate 1. He advised that a cricketer had been stuck in the head by a ball. He guessed the player to be in his mid 20s. He was unable to advise if the patient was breathing; whether there was any serious bleeding; or whether he was conscious. The 000 operator told Mr Henderson to call back "*if he gets worse in any way … or if you get any further information*".

81. He suggested that he was still on the 000 call when he sighted Mr Hughes and those attending to him. He said in his statement that he asked the medical team if they needed him to pass on any information to the ambulance, although that is not recorded on the 000 transcript of the call. He said they just said to try to get the ambulance to the ground as quickly as possible.

82. Because Mr Henderson was unable to advise the ambulance of Mr Hughes' vital signs the call was allocated a 1C response, the third highest of seven levels level for which the response guideline is "*the most timely ambulance resource*" and a response time is required by NSW Ambulance to be within 12.9 minutes of the call being placed in the pending queue (which with this call was 2 minutes and 20 seconds after the call was picked up).

83. By way of contrast, a call allocated a level 1A response – which this call would have been given had the available information been conveyed - has a response guideline of "*<u>closest</u> and most timely approved ambulance resource and highest clinical skill available*" and an expected response time of 10 minutes. It is the only category where more than one ambulance can be dispatched as an initial response.

84. Ambulance no. 1958 was assigned the job at 2.35 pm and was *en route* a minute later at 2.36 – that is approximately 13 minutes after Phillip was struck.

85. This ambulance was being driven by Intensive Care Paramedic Jacquelyn Jacobs who was driving alone that day. She was based at the Summer Hill Ambulance Station, and at the time that she was contacted about this dispatch she had just left an incident at Croydon Park. She arrived at the SCG at 3:02pm by which time another unit had already arrived.

86. According to Jamie Vernon, Director of the Control Division, NSW Ambulance, at the time of the first 000 call there was no ambulance in the Sydney East dispatch area to respond to this call and that is why Ambulance no. 1958 from the Sydney South area was dispatched to respond.

87. After calling the ambulance, Mr Henderson arranged for other Trust staff to ensure both gates 1 and 9 were open and clear of obstruction and to be on the look-out for the ambulance.

88. A second 000 call, from Donna Anderson, the Team Operations Manager at Cricket NSW, was made at 2.36:05. Ms Anderson saw the incident on CCTV as she was heading back to her office and immediately went back to the Members' Stand. She found Virginia and Megan Hughes near the stand, moved them to a more private place to wait and got them a drink.

89. She saw some players run into the medical room and gather some medical equipment. She said that the players were coming and going a few times and on one such occasion one of the players yelled at her to "*ring back the ambulance and see where they* are".

90. She called 000 from her mobile phone. She was standing about 50 metres away from where Phillip was being treated. She told the ambulance operator that the team doctor was with Phillip who was unconscious and barely breathing - that those caring for the patient "*had to get oxygen and they've been doing resus.*"

91. She moved closer to the patient and relayed information provided by the medics. She stayed on the phone to give advice about accessing the ground. She was asked which gate the ambulance should come through and she immediately can be heard asking someone else "*what gate do we want them to come through?*" then indicating "*gate 1*". Later in the call there is reference to gate 9.

92. This second 000 call was allocated a category 1A response.

93. Mr Vernon advised that the ambulance which responded to this call became available at the Prince of Wales Hospital at 2.37 pm and was immediately dispatched to the SCG. Paramedic officer, Greg Bradbury, explained that he had just completed a transport of a patient at the Prince of Wales Hospital a

few minutes beforehand and was dispatched to this assignment together with Julie Terry, who was driving.

94. Mr Bradbury said that when they drove along Driver Avenue they were flagged down by an official who directed them to go back to gate 9 and down the tunnel onto the field, which they did.

95. That ambulance arrived at the patient at 2:44 pm, 21 minutes after the incident. At that time, Phillip was on the boundary line at the far side of the field. Dr Orchard was holding his wrist and checking for a radial pulse and Dr Stanley was doing intermittent positive-pressure ventilation (IPPV) with an oropharyngeal airway. Defibrillation was performed at 2:46 pm. Mr Bradbury inserted a laryngeal mask airway (LMA) at 2:49 pm. He was not qualified to perform intubation and did not have a carbon dioxide detector in his ambulance but the LMA resulted in good bilateral air entry that was confirmed by holding a stethoscope to Phillip's chest. He then inserted a cannula for intravenous access at 2:55 pm.

96. At around 2:40 pm, the Sydney Helicopter Emergency Medical Service, which is part of the NSW Ambulance, received a tasking from the Rapid Launch Trauma Coordinator in the Aeromedical Control Centre. The crew, comprising a duty pilot, a duty air crewman, an intensive care paramedic, Aaron Davidson, and a doctor, Michael Culshaw, were based at Bankstown Airport. They were asked to attend an unconscious patient who was struck in the head by a cricket ball in the Moore Park area. They departed Bankstown Airport at 2:46 pm. Once in the air they were informed that the patient was at the Sydney Cricket Ground.

97. The helicopter arrived at the ground at around 3:00 pm. Mr Henderson had been told it was coming and had arranged a landing site.

98. Phillip Hughes was still being hand-ventilated using a laryngeal mask by Paramedic Jacobs when Dr Culshaw examined him at around 3:02 pm. He found the patient had a Glasgow Coma Score of 3 with fixed markedly dilated pupils and no spontaneous movements. This is the lowest score on the series where 15 is the normal score of an uninjured, fully alert person. Dr Culshaw says that he thought it most likely that Phillip had had a significant traumatic intracranial haemorrhage but he thought it unusual that there were no obvious external signs.

99. All of the medics and paramedics knew that Phillip required urgent transport to hospital for neurosurgical evaluation. Dr Culshaw and Mr Davidson, together with Intensive Care Paramedic Jacobs, travelled with Phillip Hughes in an ambulance vehicle to St Vincent's Hospital.

100. They decided that it was best for the transfer to commence while they commenced preparation for urgent intubation. The ambulance (driven by Ms Terry) was then stopped in the tunnel at the stadium to facilitate rapid sequence intubation – a procedure to establish a secure airway without resort to general anesthesia. This was successfully completed on the first attempt.

101. According to the ambulance retrieval record, Phillip Hughes was loaded into the ambulance at 3:04 pm; the ambulance departed the scene at either 3:07 pm or 3:09 pm; left the SCG at 3:17 pm; and arrived at St Vincent's Hospital ambulance bay at approximately 3:21 pm, approximately 1 hour after the incident. This includes the delay in the calling of an ambulance and the unavoidable travel time to the SCG.

102. At the hospital Phillip was immediately transferred to the care of the trauma team.

Hospital medical treatment

103. Dr Pell, a neurosurgeon at St Vincent's Hospital, provided a report to the court. In it he said that Phillip Hughes arrived at the Emergency Department at 3:23 pm. Assessment of his neural state revealed both pupils to be dilated and unresponsive to light stimulus and a Glasgow Coma Scale score of 3.

104. He was immediately taken for computerised tomography imaging - a CT scan - which showed a massive subarachnoid haemorrhage in the posterior fossa – a small space in the skull near the brainstem. No blood flow in the left vertebral artery was detected. There was also a small un-displaced fracture at the lateral mass of C1 vertebrae.

105. Although the primary injury was at the level of the neck, the vertebral artery travels upwards and enters within the skull to provide, with its corresponding partner on the right side, a significant contribution to brain circulation and oxygen supply. Damage to the arterial wall had resulted in blood spreading upwards beyond the confines of the artery, breaching the circulation, and occupying the space between the brain surface and the arachnoid membrane, which is one of the coverings of the brain. This was the subarachnoid haemorrhage noted in the first scan.

106. Haemorrhage in this tissue plane is commonly associated with severe brain damage and swelling, known as cerebral oedema.

107. These findings suggested severe brain injury with likely a very poor outlook.

108. While still in the CT scanner, Mr Hughes was assessed by a neurosurgical registrar and transferred straight to an operating theatre where he underwent the insertion of a right frontal external ventricular drain designed to reduce the dangerous cranial pressure which had developed as a result of the head trauma and uncontrolled arterial bleeding Phillip had suffered. Dr Pell arrived as this surgery was being undertaken and supervised it.

109. As the skull protects the brain, it also necessarily constrains it, being a rigid box, and accordingly, cerebral oedema is associated with a rise in pressure within the skull, which further disrupts brain function and leads, if of sufficient severity, to compromise of brain circulation. This is what happened to Phillip Hughes.

110. He was then transferred to the Intensive Care Ward but after increased intracranial pressure was again detected he was returned to surgery.

111. At 5:43 pm a bi-frontal craniectomy was performed and further drainage was undertaken.

112. Upon return to the ICU at 7:45 pm, Phillip initially had healthy cranial pressure but it quickly climbed to dangerous levels despite the ventricle drains which had been inserted. He was managed for the rest of the night/morning with barbiturate induced coma therapy in an attempt to control the increased intra cranial pressure (IICP).

113. A CT scan performed the next day showed significant worsening in the degree of generalised cerebral oedema and herniation in various areas – a reaction to the IICP whereby parts of the brain are squeezed across or through structures in the skull.

114. The next day there was further deterioration found on CT and angiogram– increased oedema and no intracranial vascular perfusion – movement of blood through the brain.

115. At 11:05 am Phillip was declared brain dead.

116. After explaining to the members of Phillip's family that the treating team considered the brain damage irreversible they agreed to the life support devices that had been maintaining his respiration and circulation being gradually withdrawn. Phillip was declared dead at 3:15 pm on 27 November 2014.

Expert evidence

Autopsy evidence

117. A limited post-mortem examination was conducted by Professor Duflou on 28 November 2014. Because the incident had been witnessed and Phillip's injuries had been precisely documented by the various scans undertaken during treatment at St Vincent's Hospital, there was no need for an internal autopsy. Instead, Dr Duflou reviewed the medical results, operation reports and medical records, and undertook an external examination of Phillip's body.

118. He found an area of bruising in the region of the left ear which corresponded with where the ball appeared to strike Phillip. A 17 mm superficial laceration was found on the left side of the chin and a 13mm scratch was observed on the thyroid prominence. These were likely caused when Phillip collapsed unconscious next to the pitch.

119. Dr Duflou also noted the CT scans revealed a fracture in the left lateral mass of the C1 vertebra.

120. This information, together with that which he gathered from viewing the recorded vision of the fatal incident led to conclude the cause of death was a traumatic basal subarachnoid haemorrhage, due to a vertebral artery injury.

121. In preparing his report, Professor Duflou undertook a review of the relevant medical literature which led him to write; "*Death due to subarachnoid haemorrhage brought on by vertebral artery laceration is a not uncommon finding in coronial autopsy practice*". While the injury most commonly occurs in the setting of interpersonal violence, he also referred to "*isolated reports of these injuries being sustained as a result of a hard ball or similar object striking the head or neck during sport*".

122. Professor Duflou advised that dissection of the vertebral artery has been described in both contact and non-contact sports. He referenced a scientific article which presented five cases of vertebral artery dissection in sport. This included two cases of fatal vertebral artery dissection in Australian Rules football, one case in rugby league, and two cases of non-fatal vertebral artery dissection following increased hours spent playing tennis, both of which resulted in full recovery. The article reports 24 cases of stroke due to vertebral artery dissection in sporting patients, and describes vertebral artery dissection as a rare and incompletely understood condition, the precise incidence of which is unknown.

Emergency medicine

123. Professor Brian Owler, a consultant neurosurgeon, was briefed by the court to provide an independent review of the medical care provided to Mr Hughes.

124. He agreed with the description of the fatal injury as provided by Dr Duflou. He described this as an injury which carries "*a very poor prognosis*" and in Mr Hughes' case he said that "*death was inevitable as a result of the injury.*"

125. He advised that dissection of the dominant vertebral artery leads to an absence of arterial blood supply to the brainstem which will cause sudden loss of consciousness and respiratory arrest. While respiratory support may prevent immediate cardiopulmonary arrest and death, it will not reverse the ischaemia to the brainstem and the resulting fatal neurological injury.

126. In Professor Owler's view, once arterial blood supply to the brainstem was compromised almost immediately after the blow to the head was sustained, there was no intervention, no matter how early, that could have been performed to avoid Phillip Hughes' death.

127. He described the medical care Phillip Hughes received as appropriate at all stages subsequent to his injury.

128. As to the mechanism of Phillip Hughes' injury, Professor Owler explained that it was the violent movement of the skull relative to the cervical spine that was the most likely mechanism by which this injury was sustained. This is because the vertebral artery is relatively fixed in the lateral mass of the

cervical vertebrae, such that movement of the head can apply a sudden and violent force to the artery leading to vertebral artery dissection.

129. In his view, Phillip's injury was likely to have been contributed to by a number of factors. The magnitude of the force applied to his head would have increased the force applied to the artery. The way in which the force was applied to create movement of the head relative to the neck was also significant, as was the posture of Phillip at the time when the ball struck his head, in that the effect of the ball striking him was that his head was lifted, laterally flexed and rotated. In this way the speed of the delivery, the location of the blow, and Phillip Hughes' posture at the time of impact, were all significant contributors to his ultimate injury and death.

130. Dr Duflou and Dr Owler gave concurrent evidence at the inquest and largely agreed with each other in their assessment as to the mechanism of Phillip's death.

131. However, Dr Duflou was less confident that the degree of force applied to the head or neck was necessarily a contributing factor. He said he was aware of cases in which death had resulted from a similar injury without there being any great force applied to the relevant area – such as when a person moves their own head suddenly while engaged in innocuous activity such as painting a ceiling.

132. The speed of the bowling was not being measured during this match. Various estimates of the speed of the ball that struck Phillip were put into evidence but none was scientifically verified, with calculations having to take into account the differences in the speed when the ball left the bowler's hand, when it bounced, and when it was at the batsman. The estimates vary between 110 kph and 140 kph.

133. This issue has little relevance to the mechanism of Phillip's death as it is clear that the force applied to his head when the injury was sustained was significant and was sufficient to cause the tearing of the artery. However, it may be relevant to the design of protective equipment, which is discussed further below.

Independent umpire

134. An expert umpire, Simon Taufel, reviewed the recorded vision of the whole day's play in order to provide the court with an independent assessment of the nature of the play and the quality of the umpiring on the day. He has been a cricket umpire since 1991 and has officiated in 700 matches at various levels in 14 countries. He now has a role with Cricket Australia, although at the time he was engaged he was an umpire training manager for the International Cricket Council.

135. His ability to review the height and speed of the bowling on the day in question was to some extent limited by there being no side-on recorded vision of play and no measurement of the speed of the deliveries. His

evidence was nonetheless very helpful and proceeded on the basis that the fast bowlers propelled the ball towards the batsman in the vicinity of 120kph - 140 kph and the knowledge that the projectile was a hard ball weighing 156 gms.

136. He said was able to gauge whether the bowling created a risk for the batsman and whether it complied with the rules by looking at visual cues – where the ball landed on the pitch; the climb angle of the ball; the gap between the batsman ducking and the ball; the continued trajectory of the ball once it passed the batsman; and the positioning of the wicket keeper.

137. Phillip's family is knowledgeable about cricket rules, tactics and the expectations of those who play the game. They are concerned that because he batted so successfully throughout the morning session of play, a plan was devised to try and intimidate Phillip with short pitched balls bouncing near his head and upper body. They were also concerned that threatening remarks were made with a view to distracting or unsettling him or the other batsman at the crease at the time of the incident, Tom Cooper.

Sledging

138. "Sledging" is a term used to describe humorous, insulting or threatening remarks directed at a batsman or spoken in his hearing with a view to intimidating the batsman or breaking his concentration. It is very common at all levels of the game: indeed, one experienced player said it had occurred in every high level game he had played in, except the one he participated in the weekend after Phillip's death.

139. Particularly offensive or threatening sledging is contrary to the rules requiring players to conform to the spirit of the game and should be stopped by the umpires if they become aware of it.

140. When he gave evidence, Mr Cooper denied he had told Phillip's brother, Jason, of a particularly violent threat issued by one of the NSW fast bowlers, as Jason alleged. The bowler also denied making the threat when he gave evidence and the umpires denied hearing any sledging. After those witnesses had given evidence, a statement was produced from a player who was not involved in the game in question but who had attended a function on the day of Phillip's death. It corroborated Jason's account.

141. However, as all of the evidence about how Phillip was batting on that afternoon indicated he was not intimidated or unsettled – on the contrary he seems to have been batting very comfortably - there was no need to try and resolve the conflict in the evidence about what may have been said. It is apparent that even were the threat made, it had no effect on Phillip.

The rules

142. Cricket matches around the world are governed by the Marylebone Cricket Club (MCC) Laws of Cricket, except to the extent that they are varied by local Playing Conditions, stipulated by the governing body with jurisdiction over the

competition in question. Local governing bodies also promulgate guidelines or protocols to assist the umpires interpret and apply the laws (as modified) consistently.

143. The Sheffield Shield Competition 2014/15 was played under a variation of the MCC Laws in relation to "Dangerous and Unfair Bowling". In Sheffield Shield Law 42.2.1 it was provided that: "*A bowler shall be limited to two fast short pitched deliveries per over"*. A "fast short pitched delivery" was defined as *"a ball, which after pitching, passes or would have passed above the shoulder height of the striker standing upright at the crease"*.

144. The umpire at the bowler's end was required to notify the bowler when a fast short pitched delivery was bowled. Provision was made for steps to be taken in the event the maximum of two was exceeded in any one over and in subsequent overs, which could, after a final warning, lead to the bowler being banned from bowling further in the innings.

145. In addition, if a ball was adjudged to have passed over the batsman's head height, a wide was to be called.

146. The interpretation or guidelines applicable to the match were the ICC Match Officials' Test Match Almanac. The provisions of the Almanac encouraged umpires to give the benefit of the doubt to the batsman so that if a delivery was at or about shoulder height, or at or about head height, it was to be treated as if it exceeded the limits in relation to balls above shoulder height and above head height respectively.

147. Further, even if the batsman managed to hit a ball that would have passed above shoulder height, it should still be included as one of the two such balls allowed in an over.

148. Sheffield Shield Law 42.3.1 provided for restriction on the bowling of "*fast short pitched balls*" as distinct from the "*deliveries*" referred to in 42.2.1. It is unclear if this distinction was intended, although it may enable the law to be more easily interpreted if it were, as is explained below.[5]

149. Law 42.3.1 invited an umpire to have regard to the frequency, length, height and direction of the balls and the skill of the batsman when considering whether the bowling was likely to inflict physical injury and so amount to "*unfair bowling*." If he/or she reached that conclusion, the umpire

[5] The difficulty with this analysis is that the terms are used interchangeably, with no apparent consistency. For example, in law 42.2.1, the word 'delivery' is used in 42.2.1a,b, c,e, f and h, is replaced by the word 'ball' in 42.2.1g, while refering to precisely the same thing. Further, SS Law 42.2.1 identifies that it is replacing the MCC Law 42.6(a) which relates to the bowling of fast short pitched 'balls'. Similarly, corresponding MCC Law 42.6 refers to 'balls' of 2 particular types in 42.6(a)(i) and (b) but then uses the term 'delivery' to further clarify the meaning in each case, in 42.6(a)(ii) and (b) (i).

should disallow the ball and caution the bowler. There is some ambiguity as to whether or not this applied to all deliveries, or only to fast short pitched deliveries as defined.

150. Umpire Graham-Smith was asked whether he understood Law 42.3.1 only to apply to shoulder height balls and he said that the law required focus on length, height and direction and looking to protect lower order batsman as opposed to just fast short pitched deliveries. As described earlier, he said wouldn't invoke the law for bowling that did not bounce above shoulder height if bowled to an opening batsman.

151. Mr Taufel said that in his opinion Sheffield Shield Law 42.3.1 only applied to balls at shoulder and above, although he agreed that the law appeared to give an umpire extra power to intervene before two such balls are bowled. He also said that an umpire could intervene under this law if he believed it likely that a player would be injured even if the ball was not above shoulder height, but not in professional cricket.

152. Because Law 42.2.1 limited short fast pitched deliveries to only two per over, there was little room for considering their frequency and as they were automatically determined to be of the necessary character if they passed above shoulder height, whether or not they in fact posed a danger, it would seem the "*fast short pitched **deliveries***" referred to in that law, may be different to the "*fast short pitched **balls***" referred to in Law 42.3.1. (although the weakness of this literal interpretation is explained in fn 5)

153. Conversely, the obligation of umpires to intervene if they judge the bowling dangerous could be interpreted as empowering them to take action even before two balls above shoulder height were bowled, although that approach does not sit well with the requirement for them to have regard to the "repetition" of the questionable bowling.

154. The restriction on unfair bowling and dangerous bowling would seem to involve the umpires being required to have regard to the potential for the bowling to cause injury, even if it was bouncing below shoulder height, when determining whether it amounted to unfair bowling.

155. The interpretation or guidelines published by the MCC, colloquially referred to as Tom Smith, provides that if a delivery would have hit the batsman in the upper rib level or higher, it is "high" in the context of potentially unfair bowling. The ICC Match Officials' Test Match Almanac applicable to this match provides no guidance on the issue.

156. Repetition of high balls may pose a danger even if the batsman appears to be dealing with them competently because receiving them continually is likely to unsettle him, wear down his resistance through frustration and may as a result, eventually put him at risk. The umpires are urged to judge whether repetition of high balls is "*taking its toll of the striker, or when it is simply of itself becoming excessive*."

157. When considering whether the bowling is unfair, the umpires should consider the sequence of balls by the same bowler to the same batsman over successive overs.

158. In Mr Taufel's words:

> *In order to make an assessment that the bowling is dangerous … the umpires would need to see the batsman hit or nearly hit. … In order to judge that this type of bowling was repetitive, the umpire would be looking for at least 3 bouncers (*high balls) *in an over, normally in a row.*

159. It is inherent in these rules that, from time to time, a batsman may face balls which are fast and short and that may pass over shoulder height without any of the rules being breached. All of those who gave evidence acknowledged that part of the skill-set of an accomplished batsman playing first class cricket will include strategies for safely dealing with such deliveries. However, the laws include specific provisions for action to be taken by an umpire who forms an opinion that there is a likelihood of physical injury being inflicted upon a batsman.

160. To summarise, the laws as written seem to require the umpires to adjudicate on whether short fast pitched bowling was deemed to be dangerous because of its height and subject to the restrictions contained in Law 42.2.1, or unfair because of its frequency, height and direction and the skill of the batsman and so in breach of Law 42.3.1, even if it was passing below shoulder height.

161. However, as outlined above, the laws are difficult to interpret unambiguously and there seems to be a difference of opinion among experienced umpires as to how they should be applied.

162. The uncertainty among the very experienced umpires who gave evidence at the inquest as to how the two laws discussed in this section interact and how and when an umpire should intervene suggests some clarification would be helpful. This is addressed in the recommendations section of this report.

Application of the rules to the match in question

163. Applying these considerations to the recorded vision of play on the day Phillip was fatally injured led Mr Taufel to make the following observations:-

- *All of the bouncers in the post lunch session appeared to be played by Phillip Hughes easily by ducking under them and not actually playing a shot. He appeared to have plenty of time in doing so and did not appear to be in any danger until the bouncer he played in the 49th over.*

- *Phillip Hughes on the most part was playing the short deliveries with relative ease.*

- *If anything, Phillip Hughes was more productive in scoring in the post lunch session against the NSW bowlers.*

- Only one ball bowled to Phillip that passed above shoulder height was not called as such by the umpire. The other 22 balls which Mr Taufel considered should have prompted a response under the Dangerous and Unfair Bowling laws were appropriately responded to by the umpires.

- The short pitched bowling which did not bounce above shoulder height did not pose such a danger to the batsman as to warrant the umpires intervening under the unfair bowling rules.

- The umpires applied the Laws and the Playing Conditions in relation to short pitched bowling "*extremely well.*"

- The relevant Laws were not breached and no other action was required by the umpires.

Safety equipment

164. Professor Duflou's evidence and the scientific literature he attached to his statement suggests that vertebral artery dissection *per se* is not uncommon, but that vertebral artery dissection leading to intracranial haemorrhage is rare, but not unheard of in contact sports.

165. Dr Orchard has prepared a table of concussion and head injury cases of which he is aware from 2013 onwards. That includes six cases in which cricketers were hit on the neck or neck guard, one of which was fatal.

166. The inquest considered whether any protective equipment could have prevented the injuries which Phillip Hughes suffered, or their consequences. The evidence of Professor Duflou and Professor Owler goes to that issue, as does the evidence from Masuri Group Ltd, a cricket helmet manufacturer.

167. When he was hit, Phillip Hughes was wearing a Masuri brand original series "Test Cricket" helmet, a model which was manufactured between 2005 and 2013. It was manufactured from a composite structure of fiberglass shells and polyurethane foam.

168. There is no suggestion that it in any way malfunctioned or was damaged prior to the incident. However, the area where Phillip Hughes was hit was an area of his neck on the left hand side which was not protected by his helmet.

169. As at November 2014, the most recent Australian Standard for cricket helmets dated from 1997, and was known as ASNZS 4499:1997. The most recent British Standard was from December 2013: BS7928:2013. There is some lag time between the adoption of a new standard, and the production of helmets in compliance with the standard.

170. From 15 February 2015, the International Cricket Council notified all member Boards that the 2013 British Standard would be the new *de facto* international standard for cricket helmets. From 18 March 2015, the 1997 Australian Standard for cricket helmets was withdrawn, and from 18 June 2015 it was determined to be obsolete. It is understood that there is no current plan to move towards a new Australian standard. *De facto*, therefore, it appears that the only applicable current standard applicable to cricket helmets is the 2013 British Standard.

171. It is likely that the helmet Phillip was wearing complied with the Australian Standard but not with the 2013 British Standard. However, it does not appear that the British Standard helmet would have offered any additional protection at the relevant location of Phillip Hughes' injury. Nevertheless, it is a safety issue that warrants further consideration from a prevention perspective.

172. Since October 2015, Cricket Australia has required all players wearing helmets when representing Cricket Australia or participating as State or Territory representatives in Cricket Australia competitions to wear helmets that comply with the 2013 British Standard.

173. Cricket Australia now has a Concussion and Head Trauma policy which expressly requires that helmets be worn when facing fast or medium paced bowling and recommends the use of products or attachments that provide additional protection for "*the vulnerable neck/occipital area of the batsman*".

174. Since the incident, Masuri has produced a product called a "stem guard" which clips onto a cricket helmet and provides additional protection to the neck area of the wearer.

175. Sam Miller, Managing Director of the Masuri Group Ltd, explained in his statement that this was developed as a direct response to the incident involving Phillip Hughes.

176. A number of the cricketers who provided statements indicated they sometimes, or always, wear the stem guard.

177. Impact tests in relation to the stem guard were included in the brief of evidence. As may be expected, that testing does not look at whether the equipment would protect specifically against the mechanism of injury sustained by Phillip Hughes. Rather, it tests for the effect of impact upon the equipment.

178. Professor Owler has considered the potential for helmets to protect against the risk of fatal traumatic vertebral artery dissection. In his view, improved helmet design may have only a limited role in preventing this injury in the future. This is because the role of a helmet is in reducing the force applied to the head, whether by absorbing the energy or by deflecting the blow. However, he says that it is less likely that helmet design could prevent the resulting movement of the head relative to the cervical spine, which lead to the dissection of the artery and caused the death of Phillip Hughes. He also

says that any restriction of head movement may be counterproductive in terms of prevention of other injuries.

Conclusions

The inquest

179. Some bereaved families derive comfort from knowing their loved one died doing something he or she particularly enjoyed; that in their last conscious moments they were engaged in an activity that gave them great joy or satisfaction. For the survivors, the dead person is still gone and just as unreachable, but this altruistic perspective of a fatality focusses on the pleasure of the departed rather than the pain of those left grieving.

180. Phillip Hughes' family members were denied that solace because they believed their son and brother died unnecessarily, as a result of his colleagues, his cricketing mates, treating him unfairly, and the umpires failing to protect him by enforcing the laws of the game.

181. The family is entitled to hear those who were involved in the fatal incident explain what occurred. If the claims of Cricket Australia that it and the cricketing community share the suffering of the Hughes family are to be meaningful, the discomfort the players who were present might feel relating the events in court must give way to the family's right to answers.

182. From a legal perspective, this was a workplace death that occurred in a hazardous but regulated environment in the presence of the primary regulators – the umpires. Witnesses to such incidents are often distressed by their participation in an inquest, but most discharge their civil responsibility without complaint.

The rules

183. This sad and violent death, which is not the first to occur in a cricket match, reinforces that cricket is a potentially dangerous game: it involves a heavy, hard ball being speared at the batsman from a relatively short distance at great speed. It is a testament to the skill and courage of those who play the game at the highest levels that more incidents don't occur. Still, safeguards are essential if death and injury is to be minimized.

184. The precautions upon which player-safety depend are: the rules; their enforcement; and personal protective equipment.

Sledging

185. Throughout its long history, fair play has been paramount in the game, so much so that in the vernacular "it's just not cricket" is still used to describe something that is unjust or improper. Until recently, the spirit of the game was so well-regarded that batsmen were expected to give themselves "out" by "walking" even if the umpires failed to detect the dismissal.

186. With increased commercialization and very lucrative contracts dependent upon individual performances, it is perhaps inevitable that these honorable

qualities would fray. The administrators have demonstrated their desire to preserve them by, for example, stipulating adherence to the spirit of the game in the rules.

187. In the latest edition of the Laws of Cricket promulgated in 2013, the Spirit of Cricket is described in a preamble and the responsibility of the players, captains and umpires to uphold it is spelt out. The preamble provides that umpires can intervene if they consider any action to be unfair. It is against the spirit of the game to direct abusive language towards an opponent.

188. “Sledging” is a term used to describe humorous, insulting or threatening remarks directed at a batsman or spoken in his or her hearing with a view to intimidating the batsman or breaking his or her concentration. It is very common; indeed, one experienced player said it had occurred in every high level game he had played in except the one he participated in the weekend after Phillip’s death. The repeated denials of *any* sledging having occurred in the game in which Phillip Hughes was injured were difficult to accept.

189. Members of Phillip’s family considered that the spirit of the game had been disrespected by an opposition bowler who they allege had made threats of violence towards Phillip or his batting partner. That was denied by the bowler in question and the batting partner but there was other evidence contradicting those denials and supporting the family’s claims.

190. The inquest did not have jurisdiction to investigate whether the rules had been complied with during the game unless any alleged breach may have contributed to the death.

191. The presiding umpires, Phillip’s batting partner and other players on the field at the relevant time, all gave evidence that Phillip appeared comfortable, relaxed and in control in the session of play after lunch when the threats were allegedly made. That suggested that even if the threats were made, they did not affect Phillip’s composure so as to undermine his capacity to defend himself against short-pitched, high bouncing bowling and so the threats could not be implicated in his death.

192. On that basis, no finding is made as to whether the sledging alleged actually occurred. However, hopefully, the focus on this unsavoury aspect of the incident may cause those who claim to love the game to reflect upon whether the practice of sledging is worthy of its participants. An outsider is left to wonder why such a beautiful game would need such an ugly underside.

Dangerous bowling

193. There was also concern that Phillip had been subjected to excessive short pitched and high bouncing balls which increased the risk of his being hit.

194. The rules regulating the bowling of balls that bounce at or above shoulder height are detailed above. In summary, no more than two per over are allowed.

195. The rules also prohibit short pitched bowling bouncing below shoulder height if it poses a danger to the batsman. In assessing whether that is likely, the umpires are to have regard to the height of the bouncing balls, their direction, the frequency with which they are bowled and the competency of the batsman.

196. The family was concerned that the umpires failed to intervene as required to prevent such dangers arising.

197. As detailed earlier, an independent expert umpire, Simon Taufel, was retained to review recorded vision of the day's play. He provided to the court a report summarizing his findings and he gave evidence at the inquest.

198. Mr Taufel concluded:-

- The umpires applied the laws and the Playing Conditions in relation to short pitched bowling "*extremely well.*"

- The relevant laws were not breached and no other action was required by the umpires.

199. Phillip was targeted with short pitched balls bowled at or over leg and middle stump that placed him in greater danger of being struck. Of the 23 "bouncers" bowled on that day, 20 were bowled to him. However, in view of the evidence of the other players, the presiding umpires, and Mr Taufel that Phillip was, because of his very high level of skill and competence, comfortably dealing with the short pitched balls, I conclude that no failure to enforce the laws of the game contributed to his death.

200. Compliance with the rules makes the game safer, but it cannot make it risk free. In this case, despite the rules relating to dangerous and unfair bowling being appropriately enforced, Phillip Hughes was struck a fatal blow by a high bouncing ball.

201. Such was his skill and experience, he was well able to deal with such bowling, but even the best can't perform perfectly all of the time. He could have avoided the ball by ducking under it, but such was his competitiveness he sought to make runs from it. A minuscule misjudgment or a slight error of execution caused him to miss the ball which crashed into his neck with fatal consequences. There is absolutely no suggestion the ball was bowled with malicious intent. Neither the bowler nor anyone else was to blame for the tragic outcome.

Safety equipment

202. Phillip was not wearing the most up to date safety helmet when he was struck and the rules that then applied did not require him to do so.

203. However, even had he been wearing the most modern equipment then available, it would not have protected the area of his body where the fatal blow landed.

204. Since Phillip's death, the rules and the equipment have changed. The Sheffield Shield Playing Conditions for 2016/17 stipulate that a batsman must wear a helmet compliant with the 2013 British Standard when facing fast or medium pace bowling. Development of equipment to protect a batsman's neck is on-going and Cricket Australia recommends its contracted players wear neck protectors, an issue that I will return to in the recommendations section below.

The emergency response

205. The independent medical evidence given to the inquest establishes conclusively that the injury suffered by Phillip was unsurvivable, irrespective of the efficiency and skill of the emergency response.

206. However, had there been a small window in which urgent medical care may have altered the outcome, it is possible that opportunity may have been missed because aspects of the non-medical response were suboptimal. Not that anyone involved was lackadaisical or cavalier, rather the systems in place to respond to such an incident were inadequate. Unless addressed, those failings could result in a preventable death occurring.

207. Because these events are reviewed to identify changes that will reduce the likelihood of further fatalities, it is inevitable the focus will be on failings because they are aspects that can be improved upon. However, that should not obscure the fact that all of those who responded to Phillip's injury did so selflessly and to the best of their ability. They are to be commended.

208. The aspects of the response which cause concern are:-

- None of those on the field at the time of the incident knew how to summon medical assistance onto the field.

- Although it was immediately obvious that Phillip was seriously injured, it was not clear whose responsibility it was to call an ambulance.

- An ambulance was not called for over 6 minutes after he was hit.

- The person who called the ambulance did not have sufficient information to enable an accurate triage to be made by the ambulance dispatcher.

- As a result, the ambulance response was given a lower order of urgency than it would have been given had the relevant information about Phillip's condition been conveyed.

- Inconsistent instructions were given to the ambulance service about accessing the patient.

- Important medical equipment was not immediately to hand and had to be sought from remote locations.

- By chance, there was an emergency medicine specialist in the stand watching the game who stepped in to help. Otherwise the only first aid assistance available to the team doctor pending the arrival of an ambulance was from the teams' physiotherapists.

209. Significant improvements have been affected since this incident:-

- The medicab now has all necessary emergency equipment stored on it.

- A professional paramedic is present at all first calls games, in addition to the team doctor and two team physiotherapists.

- The medical room at the SCG has been re-positioned making for easier access to the field.

- Wall charts provided by the NSW Ambulance Service detailing the information that should be provided to the 000 operators are posted around the ground at key points and augmented by information specific to the location supplied by the Trust.

- As part of its review of the First Aid and Medical Treatment Policy the Trust clarified that generally speaking its employees have no role in providing medical assistance to players and officials of venue hirers or in summoning ambulance services.

- To ensure the respective responsibilities of the parties are clear, a Player and Official Emergency Medical Plan (POEM Plan) was developed. It did not change the general position outlined above, but was designed to ensure that those responsibilities were recorded in a document signed off by the Trust and the hirer before any event proceeded.

- In the case of Sheffield Shield matches, a POEM Plan is developed with Cricket NSW that covers the whole season. It dictates that a medical briefing be held prior to each day's play and that the team doctor and/or physiotherapist and their contracted paramedic attends as well as the CNSW event manager.

- The Sheffield Shield POEM Plan provides that if needed, ambulance access to the SCG will be via Gate 1 and that the ambulance will be called by the "Hirer Medical Representative".

- Relevantly, rules which previously prohibited the team doctor from carrying a mobile phone in the ground as an anti-gambling, anti-corruption measure have been relaxed. However, Dr Orchard is adamant that in an emergency the team doctor needs to focus on providing medical treatment to an

injured patient and cannot be responsible for calling an ambulance. Neither he nor other key personnel could say they had ever seen a POEM Plan.

210. While the policy reforms undertaken by the Trust and Cricket NSW are undoubtedly a valuable improvement, the evidence at the inquest from key office holders within both organizations demonstrated that daily practice does not yet reflect the certainty and precision outlined in the policy documents. This is dealt with in the recommendations section of this report.

Findings required by s81(1)

211. As a result of considering all of the documentary evidence and the oral evidence given at the inquest, I am able to confirm that the death occurred and make the following findings in relation to it.

The identity of the deceased

The person who died was Phillip Joel Hughes.

Date of death

Mr Hughes died on 27 November 2014.

Place of death

He died in St Vincent's Hospital, Darlinghurst, NSW.

Cause of death

The cause of death was traumatic basal subarachnoid haemorrhage.

Manner of death

Phillip Hughes died from injuries sustained two days before his death when he was accidentally struck on the head by a ball bowled to him while he was batting in a first class cricket match at the Sydney Cricket Ground.

Recommendations

212. Pursuant to s 82 of the *Coroners Act 2009*, Coroners may make recommendations connected with a death, particularly as to issues which may relate to public health and safety or ways in which the likelihood of similar deaths occurring may be reduced.

213. In this inquest a number of issues which would otherwise have warranted consideration from that perspective have been resolved by Cricket Australia, Cricket NSW and the Trust reviewing the circumstances of Phillip Hughes' death and implementing changes. Those remedial responses have been described earlier in this report. They are commendable. There remains however, opportunity of further reform in relation to the following issues:-

- The rules governing dangerous and unfair bowling;
- PPE for batsmen;

- Emergency response procedures; and
- The role of the umpires in medical emergencies

Dangerous and unfair bowling

214. All involved in cricket recognise that fast bowling can be perilous for the batsman. The dangers are sought to be mitigated by the wearing of protective equipment and the empowering of the umpires to limit it. The laws in question are described in detail above. They focus on balls bouncing above shoulder height, which can only be bowled sparingly, and balls which are dangerous because of their height, direction or frequency and the relative skill of the batsman involved, which can also be prohibited.

215. The laws seek to balance the opportunity for the bowlers to use a full array of deliveries to challenge the batsman while providing protection from balls aimed at the batsman's head or persistently at his or her body. They seek to allow a keen contest between bat and ball while limiting the likelihood of harm.

216. An analysis of the laws in question showed there is some ambiguity in their wording which may make interpretation challenging. Further, the umpires who gave evidence acknowledged that more guidance in how the laws should be interpreted and applied would be of assistance.

Recommendation 1 – Review of dangerous and unfair bowling laws
In view of apparent inconsistencies in the drafting of Sheffield Shield Playing Conditions Laws 42.2.1 and 42.3.1 and the uncertainty even among senior umpires as to how those laws interrelate, it is recommended that Cricket Australia review them with a view to eliminating any anomalies and that umpires be provided with more guidance as to how the laws should be applied.

Neck protectors

217. Since the incident which led to Phillip's death, attempts have been made to design and manufacture a neck guard that will provide some protection for batsmen hit below the coverage of the helmet on the back and sides of the head and neck.

218. This is challenging because any such device needs to be flexible so as not to restrict movement, light so as not to increase fatigue and permeable so as not lead to overheating of the player.

219. Some such devices have been developed and Cricket Australia recommends their use. It has not gone further and made wearing of the devices mandatory because there is currently insufficient evidence to prove that they are effective.

220. It was submitted that the rules of the game should be amended to ensure no player is discouraged from wearing the existing devices for fear of their detaching and dislodging the bails. However, absent any evidence that has

occurred, there is no basis for making such a recommendation. Rather, it is proposed that the relevant organisations be encouraged to continue to undertake the necessary research and development.

Recommendation 2 – Research and development into neck protectors
It is recommended that Cricket Australia continue its collaboration with sports equipment developers, consultation with players' associations and testing of existing and yet to be developed devices with a view to identifying a neck protector that can be mandated for wearing at least in all first class cricket matches.

Medical emergency response

221. As described previously, the expert medical evidence indicated that Phillip's life could not have been saved by a better response to his being injured. However, Cricket Australia, Cricket NSW and the Trust recognised that in other circumstances a life could unnecessarily be lost if the emergency response was not improved. Consequently, the three organisations undertook a detailed review of their relevant policies and procedures. Undoubtedly the reforms that have been implemented as a result have improved player safety, but more can be done.

222. As part of the reforms the Trust requires hirers of its venues to complete a Player and Official Emergency Medical Plan (POEM Plan) which stipulates a daily medical briefing occur between the medical staff and operational staff at which the emergency response responsibilities set out in the plan are confirmed.

223. Evidence given at the inquest indicates that aspects of that plan are still not clearly understood by people in key positions. Further, no record is made of the meeting and no single document records what is to actually occur on a particular day should an emergency occur, in so far as the individuals in attendance on that day are concerned. This is particularly problematic in view of the use of casual staff in those roles on occasions.

Recommendation 3 - Medical briefing
It is recommended that the Trust and Cricket NSW review the implementation of the policy governing the daily medical briefing to ensure that all key staff members are aware of its purpose. Consideration should be given to mandating that a single page document is created at the beginning of each day's play that identifies the individuals who will discharge the key functions should an emergency occur, and that records the contact numbers of those people. Each participant should leave the meeting with a copy of that document.

224. It was submitted that there should be further training of umpires and other match officials in first aid, in particular the immediate management of head injuries. In view of the extra, dedicated, expert, medical resources now available at all first class matches this seems unnecessary, particularly as the team doctor and the contracted paramedic are required to constantly monitor play.

225. However, it is essential that the umpires, who control what occurs on the field, are trained to facilitate access to that medical assistance in a timely fashion. They have two way radios that can be used to contact the match referee and they can signal for appropriate medical assistance or equipment to come onto the field.

Recommendation 4 - The role of the umpires
It is recommended that the training of umpires be reviewed so that they can ensure medical assistance is summoned effectively and expeditiously.

Epilogue

226. As acknowledged earlier, the family's grief at losing their much loved son and brother was exacerbated by their belief that unfair play had contributed to his death. In the course of this inquest they have heard from independent experts, high ranking cricket officials and some of the players who were on the field with Phillip when he played his last game of cricket. Clearly, they do not agree with all that they heard. However, it is hoped that they accept the compelling evidence that the rules were complied with; that Phillip was *excelling* at the crease as he so often did, and that his death was a tragic accident. Nothing can undo the source of their never ending sorrow but hopefully, in the future, the knowledge that Phillip was loved and admired by so many and that his death has led to changes that will make cricket safer will be of some comfort.

227. I close this inquest.

Magistrate M A Barnes

State Coroner