



QUEENSLAND
COURTS

OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION: **Inquest into the death of Glenn Richard NEWPORT**

TITLE OF COURT: Coroner's Court

JURISDICTION: Brisbane

FILE NO: 2013/166

DELIVERED ON: 20 April 2016

DELIVERED AT: Brisbane

HEARING DATE(s): 26 October, 5 to 6 November 2015

FINDINGS OF: John Hutton, Coroner

CATCHWORDS: CORONERS: Inquest – dilutional hyponatraemia, prevention and management of heat injury in the course of work

REPRESENTATION:

Counsel assisting: Mr A Marinac

McConnell Dowell
Contractors (Aust) Ltd: Mr A Anderson, i/b Norton Rose Fulbright
Australia

Falck Pty Ltd: Mr A Herbert (Counsel) i/b
Hopgood Gannim Lawyers

Office of Fair & Safe
Work Queensland, Queensland
Ambulance Service: Mr K Parrott i/b (Crown Law)

Pursuant to s. 45 (2) of the *Coroners Act 2003* in relation to the death of Glenn Richard Newport, I find as follows:

- (a) The deceased person is Glenn Richard Newport, DOB 4 January 1975.
 - (b) Glenn Richard Newport died as a result of a cardiac arrest precipitated by dilutional hyponatraemia.
 - (c) Glenn Richard Newport died on the night of 13 January 2013.
 - (d) Glenn Richard Newport died in an ambulance en route to Roma in the state of Queensland.
 - (e) The principal cause of Glenn Richard Newport's death was his physiological reaction to the exposure to heat in his work environment.
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Evidence, discussion and general circumstances of Mr Newport's death

Mr Glenn Newport was born on 4 January 1975, and had just turned 38 years of age when he died on 13 January 2013.

Mr Newport was an extremely muscular and physically fit man, which made him well suited to the demands of heavy construction labouring. Even among such labourers, he was regarded as particularly strong, and was nicknamed "Grievous" in reference to a robotic character from the *Star Wars* movies, who was built to resemble a particularly well-muscled human. He was clearly popular among his workmates, and had a close and loving family.

At the time of his death Mr Newport was working as a "fly-in-fly-out" worker on a project known as the Roma 2 GLNG Project, creating infrastructure for a future Liquefied Natural Gas project. He was required to work in various locations in the general vicinity of Roma, Queensland, and was accommodated at a project village in Blythdale, again in the vicinity of Roma. The project overall was a Santos project, but Mr Newport was employed by McConnell Dowell, who were contractors to Santos on this project.

On the weekend prior to his death, Mr Newport had obtained leave to attend a funeral. He returned from leave, and undertook his first work shift on the day he died. Along with a number of other men, Mr Newport travelled to a worksite and undertook concreting formwork. The day was extremely hot, and Santos had declared the day to be a "red alert" day. It is not possible to say what the temperature was at Mr Newport's worksite, as no measurements were taken, but it appears the temperature is likely to have exceeded 40 degrees Celsius, with high humidity.

The leading hand of Mr Newport's crew was Mr Bradley Hall. He gave evidence that the significance of the heat was discussed at the "pre-start" meeting at the commencement of the day, and that there was insistence on all workers having protection against the sun (such as long sleeves, hats and sunglasses), and carrying sufficient water. He also gave evidence that there was a shade tent set up at the worksite, to provide some relief from the sun. Finally, Mr Hall gave evidence that the crew's practice on that morning was that when one person felt they needed to stop and rest, the entire crew stopped for a "smoko". I find that Mr Hall acted in a reasonable way as the leading hand.

During the morning the crew was visited periodically by safety officer Paul Hanna, who distributed water and ice blocks and emphasized the need to remain hydrated.

During the morning, through to around lunchtime, Mr Newport appeared to be working in the same manner as his workmates. Evidence suggests that they were all finding the heat to be oppressive, but Mr Newport no more than the others. After lunchtime Mr Newport became unable to work. He spent time sitting in the shade tent and at one stage used a hose to douse himself with (non-potable) water.

Mr Newport's colleague Mr Brendan Weiss shared water and ice with him, and then suggested that Mr Newport sit in the air-conditioned cabin of the crew's vehicle. Mr Newport did so, but was later seen outside the vehicle, stating that he did not feel well. Another worker, Mr David Appleton, suggested that Mr Weiss take Mr Newport back to the project village (or "camp") where there was a clinic staffed by paramedics. Mr Weiss did so. On the drive to the clinic Mr Newport was conscious and coherent but "a bit agitated".

Mr Newport was seen immediately by the staff of the clinic, Mr Edward Davis and Mr Colin Filippi. They took basic vital measurements, although it seems there was some resistance by Mr Newport to having his blood pressure taken (and some difficulty fitting the cuff on his large biceps in any event). The key issue identified by Mr Davis and Mr Filippi was Mr Newport's rate of respiration. They treated him by giving him oral fluids and later watermelon. Mr Newport remained in the clinic for two hours, at which time his vital signs had stabilized and he had a Glasgow Coma Score of 15 (essentially fully alert).

There is some dispute as to whether Mr Newport left the clinic willingly (and that dispute will be considered below) however he did leave the clinic and return, with Mr Weiss' assistance, to his accommodation. Mr Weiss arranged to meet him thirty minutes later to go to the mess for dinner. Mr Newport agreed. When Mr Weiss returned thirty minutes later Mr Newport stated that he was still feeling shaky and not ready for dinner. Mr Weiss left, and returned another half hour later. Mr Newport was laying on his bed, and stated that he just wished to remain in his room.

Another friend, Mr Wayne Brann, stopped in around 8.00pm to check on Mr Newport. Mr Newport answered the door but was incoherent. Mr Newport shut the door, opened it, and shut it again. At that time Mr Brann heard a loud bang in the room, so he opened the door himself. Mr Newport was on the floor, having apparently fallen. He had reached for a towel rail to support himself, but it had torn free from the wall. Mr Brann immediately sought assistance from others. The two paramedics (Mr Davis and Mr Filippi) arrived almost immediately afterwards. They called for an ambulance and applied advanced first aid. Mr Newport appeared to recover somewhat – for instance, he was sufficiently coherent to give Mr Davis the passcode for his telephone.

The Queensland Ambulance Service arrived just before 9.00pm, having attended as rapidly as the distance between Roma and the camp permitted. The attending QAS officer was Mr Carl Radford, along with Mr Simon Bowden. Mr Newport was placed in the ambulance, and Mr Radford attended to the patient while Mr Bowden drove. At this time, Mr Radford regarded all of Mr Newport's vital signs as satisfactory.

A few minutes into the trip, Mr Newport appeared to become agitated. He indicated the need to urinate. Mr Bowden stopped the ambulance and the two QAS officers assisted Mr Newport to urinate. Almost immediately afterwards, Mr Newport was observed in a

decerabate position (a rigid extended position indicating a severe brain injury). Mr Radford gave Mr Newport an injection to try to control the seizure, but Mr Newport's condition deteriorated rapidly. He became cyanosed, and asystole. Mr Radford commenced CPR and called for additional help, which arrived. Mr Newport was transported to Roma Hospital where attempts at resuscitation continued, but those attempts were unsuccessful. He was pronounced life extinct at 11.10 pm.

Clinical cause of death

The general circumstances of Mr Newport's death, as described above, were subject to only minor disputes in the course of the inquest. However the precise medical cause of his death was the subject of some consideration.

An autopsy was undertaken by Dr Roger Guard. He made a number of observations, including high levels of sodium and potassium in Mr Newport's vitreous humour, and evidence of swelling of many of Mr Newport's organs (which were therefore heavier than the usual range). He also observed flattening of the sulci and gyri of Mr Newport's brain. The sulci and gyri were described in later evidence as being the grooves and mounds which give the brain its characteristic external shape. He also found that Mr Newport had suffered a cardiac arrest.

Dr Guard considered that the high sodium level suggested dehydration and that the high potassium level was an artifact of post-mortem cell rupture (where the breakdown of cells releases nutrients into the body). He concluded that "this is a particularly difficult case with basically negative autopsy findings. In the absence of any other findings I conclude that this is a case of heat shock. It is still possible that there may be additional cardiac factors which may have precipitated a cardiac arrest."

I should pause at this point to note that the inquest has discovered no such additional factors. There was some discussion of Mr Newport's use of supplements for muscle building (he had a particularly muscular physique, and some supplements were discovered in his accommodation room) however there was no evidence in toxicology analysis of either Mr Newport's body or the drugs, to suggest that the drugs were unlawful or that he was taking them improperly. I find that they did not contribute to his death.

Given Dr Guard's express uncertainty about the cause of death, his findings were referred to the Clinical Forensic Medical Unit for review. This review was undertaken by Dr Gary Hall, who also gave oral evidence at the inquest. Dr Hall's view was that the observations made by Dr Guard, together with what was known about Mr Newport's circumstances prior to his death, were more suggestive of dilutional (hypotonic) hyponatraemia. He stated that this condition has mostly been seen in athletes such as marathon runners who were participating in high temperature environments. In his oral evidence, Dr Hall described how dilutional hyponatraemia resulted in "free water" within the body, which in turn results in swelling of the organs, including the swelling of the brain which is likely to have resulted in both the flattening of the sulci and gyri observed by Dr Guard, and the confusion and fitting observed when Mr Newport was in distress in his accommodation room.

In the ordinary course of events, Dr Hall's observations would have been put to Dr Guard for his comments. Dr Hall's report was completed on 10 April 2014, but sadly Dr Guard died aboard Malaysian Airlines flight MH17 on his return from a holiday on 17 July 2014.

Falck Pty Ltd, in their written submissions, suggest another theory, “the somewhat unusual circumstance of a delayed neurological disturbance arising as an unexpected consequence of heat stroke or heat stress suffered earlier in the day.” Falck submits that “the only conclusion that can be reached with any certainty is that the chain of events that led to the death was commenced by an adverse reaction on the part of Mr Newport to the heat in which the employees were working.”

I agree that it is certainly clear that the chain of events which led to Mr Newport’s death was commenced by an adverse reaction to the heat in which he had worked. However before I could conclude that there had been a delayed reaction to heat stress or heat stroke, I would need some evidence of what might cause such a delay in the reaction. A delayed heat stress/heat stroke reaction is (at the very least) a *plausible* reason for Mr Newport’s death, but the best evidence before me suggests dilutional hyponatraemia. Dilutional hyponatraemia accounts for the sodium and potassium levels observed; it accounts for the heavy condition of Mr Newport’s organs; it accounts for the flattening of the sulci and gyri of Mr Newport’s brain surface; it accounts for the cardiac arrest which was the final mechanism of his death; and it accounts for the timeline in which these events occurred.

I find that the cause of Mr Newport’s death was a cardiac arrest triggered by dilutional hyponatraemia, which in turn was a consequence of his reaction to physical labour in excessive heat.

Policies in relation to heat management

The first key issue which arises from the facts described above relates to the suitability of McConnell Dowell safety procedures relating to heat. This was a particular concern for Mr Newport’s family, whose request for an Inquest focused on this issue. The submissions of the family following the inquest similarly raised concerns about what the family regarded as being “a combination of somewhat inadequate and static written procedures that simply protect them from liability and prosecution, and to have on hand to show to government agencies when required, and so not appear to be produced to actually protect their workers in the dynamic and somewhat dangerous working environment.”

McConnell Dowell, on the other hand, have submitted that the company “had adequate policies and procedures in place, having regard to best practice within the industry at the time and the relevant guidance and regulatory materials available. That is not to say, though, that, having considered the evidence in this Inquest with the advantage of hindsight, there are no improvements which could be made in the future.”

The McConnell Dowell safety processes were extensively tested by Counsel Assisting at the inquest, both in terms of the policies themselves (the focus of this section of my findings) and the procedures by which those policies were implemented (which is the focus of the next section). Counsel Assisting submitted that there were in place heat stress management policies, which were typical of the industry at the time, but which were shown by the circumstances of Mr Newport’s death to be inadequate. McConnell Dowell accept this.

I accept the family’s position that the policies could have been better, but I am unable to accept the submission that the policies were only intended as a regulatory compliance measure, and not taken seriously.

Consistent evidence before me, both in submissions and in the Inquest itself, was that the safety processes were given effect. Heat as an issue was discussed at daily and weekly work meetings. A safety adviser moved between work positions to distribute ice blocks and water. Shade tents were erected in the vicinity of the workplace. A buddy system was (at least) discussed. Work rates during the day were substantially reduced compared to the work rate which might have been expected in more amenable weather conditions.

It may well be argued that the policies and their implementation were deficient. This will be discussed below. However it cannot, in my view, realistically be argued that these policies were mere window dressing for regulatory compliance.

In the course of the Inquest I was somewhat startled to learn that there is in effect no industry standard or “best practice” in relation to the management of heat in the heavy construction industry. The policies which are in place appear to me to have been constructed on the basis of very rudimentary and innocent risk assessments, essentially uninformed by either meteorological science or medicine. Had this inquest been able to discover an industry-based best practice, and had McConnell Dowell failed to implement that best practice, then these findings would be much more critical of McConnell Dowell specifically. As it is, it seems to me that it was only a matter of time before a heat-related death occurred in this industry, and McConnell Dowell happened to be the company whose employee died. This incident might easily have happened on any number of other work sites.

An analogous situation was brought to my attention by Counsel Assisting. On 10 November 2004, Trooper Angus Lawrence of the 2nd Cavalry Regiment, Royal Australian Armoured Corps, died from heat stroke at Royal Darwin Hospital. An inquest was held by Mr Greg Cavanagh SM [*Inquest into the death of Angus Lawrence* [2005] NTMC 069].

During that inquest – indeed before the inquest itself had commenced – the Department of Defence moved to substantially reform its policies and procedures in relation to heat stroke. As Mr Cavanagh noted in his findings, it was unfortunate that it took the death of a soldier to prompt this reform, but the reform was undertaken. As a result of these reforms, it appears there have been no further heat related deaths in the Australian Army – despite Australian personnel being continuously at war from 2003 until 2014 in some of the most inhospitably hot climates in the world.

The Department of Defence was kind enough to provide the Inquest with copies of their relevant policies. I was particularly impressed by a document known as *Health Directive No. 286, Health Management for the Prevention and treatment of Heat Casualties* and by *Health Manual, Volume 20, Part 5, Chapter 3: Heat Injury and Dehydration*. These are detailed guidelines, pitched at different audiences – the first at an operational, non-medical audience and the second at those with (at least) basic medical training. They are far more comprehensive than anything produced by McConnell Dowell. The difference could not be starker.

While it is a tragedy that Mr Newport has died, there is the potential for Mr Newport to be, to construction workers, as Trooper Lawrence was to soldiers. His death should be, in itself, a call for far more detailed and effective policies within the heavy construction industry.

I do not, of course, suggest that the construction industry should simply adopt Defence’s policies. However I accept the suggestion of Counsel Assisting, which was

broadly consistent with the family's views, and also was supported by McConnell Dowell, that the heavy construction industry should develop, as a matter of urgency, an industry code of practice in relation to the prevention and management of heat injuries. In fact, I would go beyond this and suggest that such a code of practice should be developed and implemented by any industries in which workers are required to work in significant heat. This might include, for instance, agriculture, mining, building industry operators, landscape industry operators, and so on.

Recommendation 1: The heavy construction industry should devise and implement an industry-wide code of practice in relation to the prevention and management of heat injury in the course of work. This code of practice should become the baseline against which operations can be assessed in terms of safety.

McConnell Dowell, in their final written submissions, put to me that Safe Work Australia might be an appropriate lead agency for this process, and that the resulting code of practice might become a legislative instrument under the *Work Health and Safety Act 2011*. While I will not seek to direct the government or industry in the best process, there seems to me to be considerable merit in both of those submissions.

Practice in relation to heat casualty management

I have identified that the policies set in place by McConnell Dowell were inadequate (and indeed that the policies of the entire industry were inadequate). A separate question arises as to the extent to which those policies, such as they were, were actually implemented.

I should commence by stating that I was grateful for the evidence of Mr Newport's co-workers Mr Appleton, Mr Weiss and Mr Hall. I concur entirely with the submission of Counsel Assisting that "they looked out for him with the very best intentions implied by [the] quality of mateship." It is sadly inevitable that each of these men, and Mr Newport's other workmates, will carry with them some sense of grief and perhaps responsibility for his death. It is appropriate, notwithstanding the usual prohibition upon a Coroner affixing blame, that I clearly state my view that these men were in no way responsible. They did as well as they could.

I should also state at this point that I am acutely aware of the potential effects of hindsight bias; that is, the potential to look at circumstances in retrospect and to criticize the decision-making of those who were only able to view events in prospect.

Even bearing this in mind, it appears to me that it was unfortunate that Mr Newport was kept at the worksite even after he became sufficiently unwell that he was unable to work. Evidence varies, but it appears he remained on site somewhere in the order of 40 minutes after it became clear that he was unwell. The safety adviser, Mr Hanna, made at least one visit to the worksite after Mr Newport became a casualty, and yet did not insist on his return to the residential camp. Any speculation about whether an earlier transfer would have affected the outcome must be laden with hindsight bias; however without engaging in such speculation it appears clear that as soon as someone is so affected by heat that they are unable to work, they are a casualty and ought to be removed from the worksite and taken to a hospital for a proper assessment.

A second point in relation to the implementation of the safety policy related to the "buddy system". Much was made of the buddy system in evidence. Counsel Assisting criticized the operation of the buddy system on the day of Mr Newport's death by submitting that a buddy system requires pairing of personnel, each with responsibility

for the other. He notes that there is no evidence of such a system operating, despite it being called for by McConnell Dowell policy. Such a policy abrogates the responsibility of worker care to the workers themselves. This abrogation of responsibility for worker care to untrained workers is unacceptable. A system of management control in this area needs to be specifically addressed as a matter of Workplace Health and Safety.

The submissions of Counsel Assisting were very critical of Mr Paul Hanna, the safety adviser. Submissions on behalf of McConnell Dowell came to his defense. In the main, I agree with the submissions of Counsel Assisting. Mr Hanna was an unimpressive witness, and he did struggle to outline what his duties were. However he did so in an environment where he was the “safety advisor” within a safety framework which, I have found, was inadequate in relation to heat. Had there been in place policies complying with an adequate code of practice, Mr Hanna’s role and conduct might have been entirely different.

Evidence before the inquest indicated that the policies being implemented at the time of Mr Newport’s death did not include either a means to measure temperature at each local worksite, or thresholds at which work activity should be reduced or ceased altogether. There was some evidence that union-negotiated work arrangements in other states do include threshold temperatures, but it was suggested that this was a result of work conditions negotiation, rather than a matter of safety as such. In submissions, McConnell Dowell suggested that measures of climate might be useful if the risk assessment method was quantitative, rather than the qualitative method which they submit was in use at the time of Mr Newport’s death.

In my view a “qualitative” assessment of climate, based on the way in which workers feel at any given time, is fraught with danger. I do not accept that personnel are readily able to assess either climate or their own response to it. In my view, thresholds of temperature/humidity, and effective ways to measure these, should be integral parts of any heat injury prevention strategy.

Recommendation 2: I recommend that any future industry-wide code of practice should be based on a quantitative assessment of climate, including an ultimate cut-off temperature at which work must cease. Qualitative measures may be implemented in support of such quantitative measures, but quantitative measures should be in place. It follows that work sites should have appropriate equipment and personnel to measure temperature and humidity.

Finally, during the Inquest both Counsel Assisting and myself asked witnesses why work was not conducted at night. Daytime work was only able to proceed at a very slow rate, and any motorist is now familiar with floodlit roadwork sites in which work is conducted on major arterial roads overnight. I see no reason why similar arrangements could not be made for construction projects of the type Mr Newport was engaged in. When this was put to witnesses, the key response appeared to be that overnight work would complicate the logistical arrangements of operating the workers’ camp in two ways: first, it would mean that meals etc. would need to be provided at unusual times; and second, it may mean staff are no longer all working on the same shift, so there may be noise-related difficulties if some staff are sleeping while others are preparing for work, or returning from work.

I accept that these would be complications, and I accept that they are complications of a type not encountered by urban roadworks. Having said that, these do not at all seem to be impossible challenges, which have been overcome in other industries,

particularly mining. Redesigned camps with separate “day shift” and “night shift” wings, and additional staffing for kitchens etc., should account for the logistical difficulties, and one imagines that any additional costs would be offset by the additional productivity which could be expected of personnel working in the relative cool of night, rather than the heat of the day.

I find that there were no compelling reasons advanced for why night-works would have been inappropriate on this project.

Recommendation 3: I recommend that any future industry-wide code of practice should include provisions for night-based work in times when the heat of the day is expected to be dangerous.

Operation of the camp clinic

The residential camp for project workers included a clinic, operated in normal circumstances by a paramedic or nurse. On the day of Mr Newport’s death, there was a paramedic (Mr Davis) and a paramedic/nurse (Mr Filippi). The presence of both was simply a matter of fortune, as they were undertaking a handover prior to Mr Filippi’s departure. It is clear, in consequence, that at the time of Mr Newport’s presentation the clinic was appropriately staffed, by well-trained professionals.

In assessing the performance of the camp clinic staff it is important to bear in mind the limited role of the camp clinic. As it was staffed by paramedics rather than doctors, I consider the camp clinic to have been nothing more and nothing less than an advanced first-aid station to provide treatment for minor ailments, with a helpful triage and advanced first-aid role in the case of more substantial medical issues. Such a clinic is not able to diagnose or treat dilutional hyponatraemia or indeed heat stroke.

Finally, before proceeding to an assessment, I note the clarification, made by Mr Davis that he had been less than forthright on one issue in his statement (relating to the placement of a cannula). I accept that he corrected the record at the first reasonable opportunity. I carefully observed his embarrassment that he had to do so. In my view both the correction and the embarrassment spoke of a professional man and honest witness who made a momentary error of judgment. I consider his oral evidence, and the balance of his written evidence, to be reliable and professional and I proceed on that basis. No submission has been made to me that I should do otherwise.

Mr Newport was already quite unwell when brought to the camp clinic. It is unfortunate, as I have noted above, that he was not transferred sooner. Mr Davis and Mr Filippi assessed Mr Newport. Their first priority was to reduce his rate of respiration. Counsel Assisting submissions also suggest that reducing Mr Newport’s core temperature was a key concern; submissions for Falck Pty Ltd (the current incarnation of HES, the operators of the clinic) are that Mr Newport’s core temperature was already sufficiently low on presentation. I accept Falck’s submission, but in any event the key point is that Mr Newport’s symptoms were quickly identified and managed.

It is appropriate at this point to distinguish between diagnosis and the identification of symptoms. Evidence before the inquest was that paramedics (including the QAS paramedics and the HES paramedics) are trained to identify and manage symptoms; their role is not to diagnose an illness or injury. I accept this distinction to an extent, although I am concerned that it should not be taken too far. Inevitably, when treating symptoms, a trained paramedic will have in mind the types of diagnoses which might result in those symptoms, and that knowledge will at least be relevant to their care. In

this case, for instance, I consider the paramedics were clear that they were not merely dealing with a patient with a high respiration rate, but rather with a patient who had likely suffered a heat injury. However this general awareness does not equate to a diagnosis in the formal sense, and the two should not be conflated.

This general awareness can be seen in the treatment which was given to Mr Newport. He was treated for his high respiration rate, which slowly reduced; however the clinic staff also gave him isotonic drinks, water and watermelon, none of which were necessary to treat the symptom of rapid respiration. They suggest an effort by the clinic staff to rehydrate Mr Newport, when they were incapable of properly diagnosing his condition.

There is a great deal of divergence in the evidence regarding Mr Newport's discharge from the camp clinic. Mr Weiss, who was with him at the clinic, maintains that Mr Newport did not feel sufficiently well to leave, and that he at first refused to leave the clinic, before leaving fifteen minutes later. Mr Davis and Mr Filippi disagree, stating in essence that Mr Newport was both willing and able to leave at the time which he did leave. Mr Davis and Mr Filippi were satisfied, at this point, that Mr Newport's temperature and rate of respiration were satisfactory (i.e. that he was now asymptomatic) and that rest, fluids and food would restore him in due course.

The question of Mr Newport's willingness to leave is difficult for me to resolve. I found Mr Weiss to be a convincing and intelligent witness; however I made the same observation of Mr Davis and Mr Filippi. On balance – though a fine balance – I consider it more likely that Mr Newport left the clinic reluctantly but willingly. I do not accept that he was ejected from the clinic against his will. The primary factor which leads me to this view is that even on Mr Weiss' evidence, Mr Newport was allowed to stay a further fifteen minutes after Mr Davis and Mr Filippi felt he was ready to leave. This does not suggest the paramedics were simply determined to have Mr Newport depart.

Counsel assisting suggests a third possibility, that Mr Newport expressed his reluctance to Mr Weiss but not to the paramedics. This is possible, and may reconcile the diverging evidence. However what is clear, in my view, is that no criticism can be made of Mr Davis or Mr Filippi in this regard.

On his departure, Mr Newport was given a mobile telephone number for the paramedic. He was told to rest, drink, eat, and to call the paramedic if he felt worse. He then left the clinic with the support of Mr Appleton. He made his way via a pathway from the clinic to his "donga" or accommodation room. Again, there is a divergence of opinion as to this walk. Mr Appleton and Mr Weiss state that Mr Newport was walking very unsteadily and that he required considerable assistance. Mr Filippi and Mr Davis had the view that Mr Newport was walking normally, although they acknowledged they did not observe his entire transit.

I do not consider that anything turns on this difference of observations. It is quite apparent that Mr Newport had been through an ordeal during the day. While his vital signs had returned to normal and remained there for a considerable period, not even the paramedics considered that he had yet recovered from those symptoms. Further rest, fluids and food were required. It would in fact have been more remarkable if Mr Newport's gait was unaffected.

Had Mr Appleton and Mr Weiss turned Mr Newport back to the clinic, on account of his manner of walking, it is difficult to see what the clinic might have done. His rate of respiration might have been elevated from the exertion, but on the evidence it would

have soon returned to normal. Other vitals signs would likely have been normal. The clinical presentation would therefore not have changed, and no further treatment would have been required at that point.

The key remaining concern in relation to the clinic is the question of whether Mr Newport should have been sent back to his accommodation, or whether he should have been sent to Roma Hospital for observation. A related question is whether Mr Davis and Mr Filippi should have been more persistent in trying to contact the supporting doctor and, in the absence of such contact, whether they should have been more inclined to transfer Mr Newport to Roma.

The risk of hindsight bias in considering this question is especially high. Clearly, viewing the circumstances with hindsight, transferring Mr Newport to hospital would have been the better option. It would likely have saved his life. However the duty of the court is to consider the matter from the perspective of the information held by the clinic staff at the time.

I shall deal first with the issue of communicating with the doctor. On the evidence there was a doctor available to provide advice to the camp clinic. It appears, based on the submissions of Falck Pty Ltd, the doctor was in fact located at some distance from the camp. However the doctor's advice remained available. Mr Filippi sought to contact the doctor in relation to Mr Newport, but was unable to do so, and did not persist.

Counsel Assisting, and the Newport family, have drawn attention to this failure. Counsel Assisting submissions described the communication failure as "unfortunate" but acknowledged that there can be no more than speculation as to what the doctor might have contributed. The Newport family's submissions state "...they tried unsuccessfully to contact a doctor by phone to get some further advice and then never tried to contact him again after that initial call."

Submissions by Falck Pty Ltd suggest that this phone call should be seen in a different light, as a "protocol" phone call, essentially as a courtesy to advise the doctor that a cannula had been inserted into Mr Newport. On those submissions (and on the evidence of Mr Davis) the clinic staff never felt the need to seek advice from a doctor, and never in fact sought such advice. The result of this submission would be that the failure to contact the doctor amounted to no more than an unremarkable lapse in protocol. This was not a lapse in protocol. It was indeed a fatal mistake.

Having viewed the decision flow-charts in the Defence Department's *Health Directive No. 286, Health Management for the Prevention and Treatment of Heat casualties*, I am convinced that an appropriate clinical decision-making framework could be made. A copy of the relevant flowchart is at Annexure A to these findings.

Under that directive, as I understand it, the final requirement for any patient who has had a core body temperature higher than 39 degrees is that they be evacuated to a "Level 3" health facility for treatment, namely a hospital as recommended by Dr Dux, as the only effective way to diagnose and treat such a condition.

Recommendation 4: I recommend that any future industry-wide code of practice should include measurable, objective criteria which would require a casualty to be evacuated to a hospital, and further, measurable objective criteria which would require a casualty to be immediately evacuated to a hospital.

Ambulance transfer to Roma

I turn now to the treatment of Mr Newport by the Queensland Ambulance Service, and in particular by Mr Carl Radford. I am able to deal with this matter very briefly. The evidence before this inquest shows that Mr Radford, and the other QAS personnel who attended Mr Newport, undertook their duties efficiently and diligently. They gave him every possible hope of surviving his illness, but it was not to be.

No party, including the family, has submitted that I should make findings critical of the QAS or Mr Radford.

Summary of recommendations

Mr Newport's death was tragic, and has highlighted substantial deficiencies in the way in which the heavy construction industry or infrastructure construction industry in Australia manages work in the heat. No doubt the same could be said for many other industries where men and women work in the Australian climate.

In my view the following recommendations, if adopted, may prevent the future death and/or injury of men and women from heat injuries, whether dilutional hyponatraemia, or heat shock/heat stroke.

Recommendation 1: The heavy construction industry should devise and implement an industry-wide code of practice in relation to the prevention and management of heat injury in the course of work. This code of practice should become the baseline against which operations can be assessed in terms of safety.

Recommendation 2: I recommend that any future industry-wide code of practice should be based on a quantitative assessment of climate, including an ultimate cut-off temperature at which work must cease. Qualitative measures may be implemented in support of such quantitative measures, but quantitative measures should be in place. It follows that work sites should have appropriate equipment and personnel to measure temperature and humidity.

Recommendation 3: I recommend that any future industry-wide code of practice should include provisions for night-based work in times when the heat of the day is expected to be dangerous.

Recommendation 4: I recommend that any future industry-wide code of practice should include measurable, objective criteria which would require a casualty to be evacuated to a hospital, and further, measurable objective criteria which would require a casualty to be immediately evacuated to a hospital.

I pay my respects to the family of Mr Newport, and thank them for their active involvement in this inquest.

I close the inquest

John Hutton
Brisbane Coroner
Office of the State Coroner
20 April 2016

DECISION FLOWCHART FROM
DEFENCE HEALTH DIRECTIVE 236

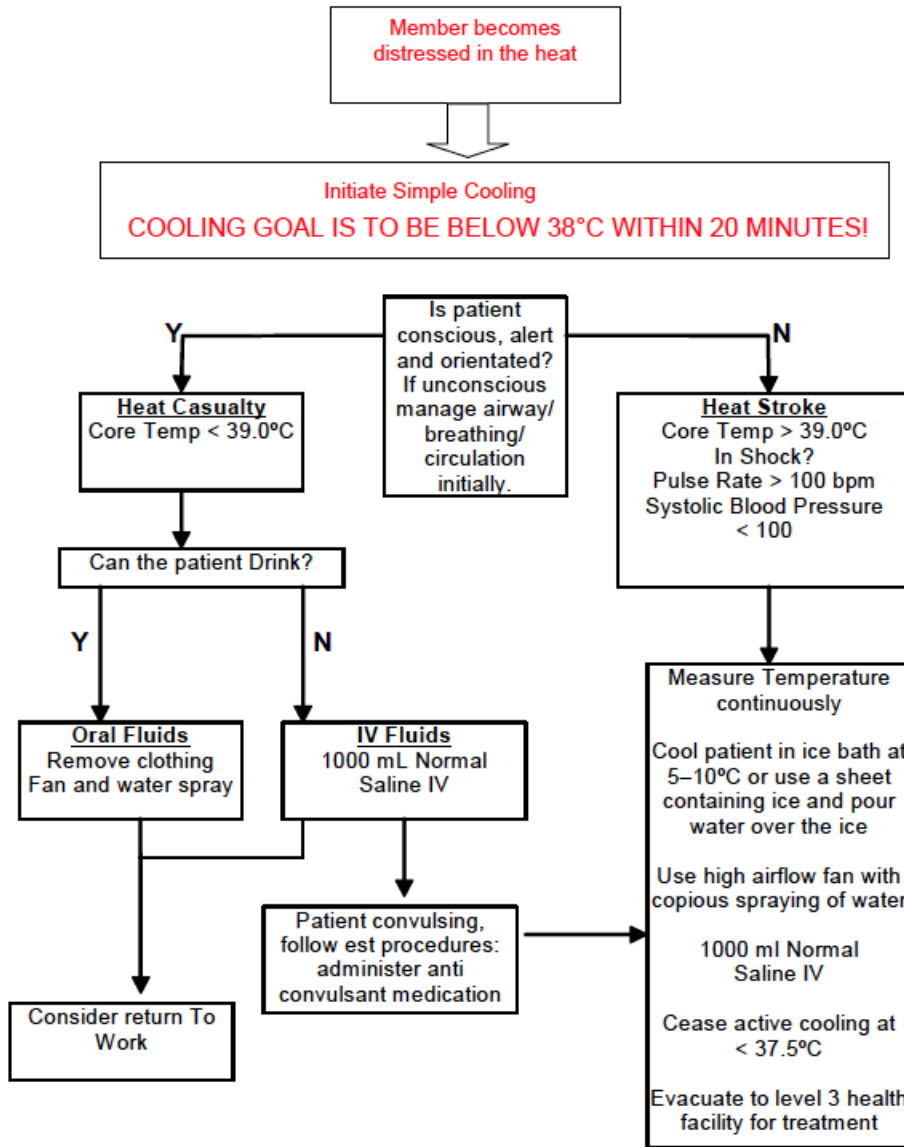


Figure B-1: Heat Casualty Management