



Perspective

June 2011

Ambulance Victoria



Blood on board

Ambulance Victoria helicopters are now carrying supplies of blood to administer to patients in need of an urgent transfusion.

'We believe this is the first time in the world that paramedics in a primary response helicopter have carried their own supply of blood,' said AV's Chief Executive Officer Greg Sassella. 'This is a real breakthrough, and it will save lives.'

Blood is already being carried on the two Essendon-based helicopters, and will be carried by AV's three other helicopters - based at Bendigo, Morwell and Warrnambool - by the end of the year.

The new procedure follows a \$55,000 donation from VicForests to buy special fridges, and an agreement with the Red Cross and Melbourne Health to supply blood products.

'People who suffer serious external or internal bleeding as a result of car and other accidents can deteriorate quickly,' Greg said.

'There are times when, despite the pharmacology, the drugs, the medical procedures and the equipment in a helicopter that our paramedics are trained to use, we need additional help - which in this case is blood.'

'Instead of just putting fluid into a person - and effectively diluting their blood - we can give them

whole blood.

'This carries oxygen around their body better, meaning their brain and organ injuries are less severe. It also helps clotting factors if the patient is bleeding internally, which improves their chance of survival.'

Health Minister David Davis, who attended the official launch of the blood project, praised the work of paramedics and welcomed the initiative. 'This life-saving intervention is an emblem for what can be achieved by AV.'

AV's MICA flight paramedics have been giving blood products on scene or en route to hospital for about five years, but only if blood could be brought to an accident scene, usually from a local hospital.

Under the new procedure, blood is returned to Melbourne Health after a short period to ensure none goes to waste. 'The blood has a shelf-life of 42 days but we will be changing our supply every fortnight,' Greg said.

Blood can only be given with authorisation from a doctor, which will be managed through a 24-hour on-call medical specialist working for AV's Adult Retrieval Victoria.

The first patient to receive a transfusion of the helicopter-borne blood was a 24-year-old woman, who was critically injured in a car accident in Yea on 25 April 2011. The woman had fractures to her leg and pelvis, and internal injuries, and was given a transfusion en route to the

Continued Page 2



WORLD FIRST COOLING TRIALS
Finding the best possible treatments P8



CHRISTCHURCH EARTHQUAKE
The lessons from AV's Peer Support P6



COME FLY WITH ME
New planes ready to take off P4



From page 1
trauma centre. The woman survived and was later discharged from hospital.

Greg said he wanted to thank all those involved in the blood project, particularly HEMS3 Team Manager Murray Barkmeyer, who was instrumental in putting it together.

By carrying four units of blood (about 1600 ml) on each flight, AV can ensure that patients in remote areas of the state have access to the highest level of care.

The decision to have AV helicopters carry blood products fulfils a 2010 Coroner's recommendation that AV and the State Government implement a system to provide blood services anywhere in the state, after the death of Cobram woman Veronica Campbell from an ectopic pregnancy.

'We always want to do better for patients, so it is pleasing we are able to fulfil that Coroner's recommendation so quickly after it was made,' Greg said.



AV's Chief Executive Officer Greg Sassella and Health Minister David Davis announce the helicopter blood program.

'Transfusion saved my life'

Amanda Gibbins has no memory of the car accident that almost killed her. But she does know that the blood transfusion she received from a paramedic helped save her life.

Amanda, 18, was involved in a car accident on the Princes Highway at Bolwarra, near Warrnambool, about 9am on Saturday 26 February this year.

Her injuries were horrific: a dislocated and fractured ankle, a broken arm, her pelvis broken in more than five places and facial injuries. (Amanda later needed a skin graft near her knee, pins in her ankle, a plate in her arm and a plate and screws in her pelvis).

En route to the scene, HEMS4 MICA Flight Paramedic Peter Jenkins asked for blood to be brought from the nearest hospital after the road crew relayed the seriousness of Amanda's injuries, and her high heart rate.

'Police arrived at the scene with the blood about the same time as the helicopter,' Peter said. 'The patient was haemorrhaging internally as

a result of major blunt trauma to multi body regions. She was given fluid resuscitation at the scene and a blood transfusion during the flight to the trauma centre.'

'It's amazing I'm still here and still alive,' said Amanda, who attended

the official launch of the helicopter blood project.

'I don't remember anything of that day. I was put in an induced coma on site (and stayed that way) until the next Thursday.'

Amanda said she strongly

supported the idea of all AV's helicopters carrying blood. 'Accidents can happen a long way from a hospital and this way you can get blood to people straight away,' she said. 'It's going to save lives, for sure.'



Amanda Gibbins was given blood by a paramedic after her car accident.



Perspective

Ambulance Victoria
Registered Office and Headquarters

375 Manningham Road
Doncaster Victoria 3108

Postal Address
PO Box 2000
Doncaster Vic 3108

Email information@mas.vic.gov.au
Website www.ambulance.vic.gov.au
Administration 03 9840 3500
Facsimile 03 9840 3583
Membership 1800 648 484

Perspective is produced by the People & Community division of Ambulance Victoria.

General Manager
Margaret Pettitt

Editor
Tom Noble

Contributing Authors
Tom Noble
Phil Cullen

Published by
Editorial and Publishing Services
Tel 03 9525 8603

Designed and typeset by
The Modern Art Production Group
Tel 03 9525 2005

Printed by
Erwins Printing
Tel 03 9793 4844

Disclaimer and Copyright

This publication is produced as a vehicle for raising awareness and dialogue relating to issues of concern to the ambulance sector. The views contained herein are not necessarily those of Ambulance Victoria, the State Government of Victoria or any Government agencies or departments.

Articles herein are published in good faith but Ambulance Victoria and its agents do not warrant the accuracy or currency of any information or data contained herein. Ambulance Victoria and its agents do not accept any responsibility or liability whatsoever with regard to the material in this publication. In no event shall the publisher or authors be liable for any incidental or consequential damages resulting from use of the material contained herein.

ISSN 1832-2611

Where possible authors and sources of articles and information reproduced herein have been acknowledged. Where material is based on a copyrighted source, the source is always acknowledged. To the best of the knowledge of Ambulance Victoria and its agents, there is nothing contained in this publication that is the copyright material of another person or organisation. In the event that articles are misquoted or wrongly attributed, Ambulance Victoria will, at its discretion, rectify the situation by publishing correct details in a following issue.

© Ambulance Victoria. This publication may not be in whole or in part photocopied, lent, reproduced in printed or electronic form without the written permission of Ambulance Victoria. Inquiries should be directed to the General Manager People & Community division of Ambulance Victoria at the contact number provided.



More staff, new branches

Additional recruits, new 24-hour branches and the introduction of motorcycle paramedics in inner Melbourne are part of a five-year plan unveiled in the State Government's 2011-12 Budget.

AV is set to recruit 310 paramedics and 30 patient transport officers, with 100 of the new paramedics to work in metropolitan areas and the remaining 240 staff in rural regions, made up of Barwon South West Region (50 new staff), Grampians Region (49), Loddon Mallee Region (49), Hume Region (46) and Gippsland (46).

Other commitments include:

- Upgrading branches at Belgrave, Emerald, Yarra Junction, Maryborough and Castlemaine to 24-hour paramedic rosters
- New 24-hour branches at Beaufort, Grantville and Wallan
- A complete rollout of MICA single responder units in 10 major rural towns (see page 12).

Health Minister David Davis said the Government would also set up a new paramedic motorcycle unit in inner Melbourne.

'Motorcycle paramedics will carry life-saving drugs and similar equipment to that currently carried in emergency ambulances,



including defibrillators for cardiac arrest patients.

'These paramedics will often be the first response to accidents and incidents, as they will be able to dodge through congested traffic in inner-city areas.

'The first paramedics will be on the road later this year, and the program's effectiveness will be reviewed at the end of three years.'

AV's Chief Executive Officer Greg Sassella welcomed the Budget

announcements, saying they represented good news for the ambulance service.

The 3 May Budget followed the release of the Government's Metropolitan Health Plan for 2012-2022 (with the rural-regional plan to be released at a later date).

Greg said the plan also contained positive aspects for AV, which would lead to more ambulance availability and a better service for patients.

This included a commitment to a

hospital performance website that will publish data including ambulance diversions, ambulance bypass and Hospital Early Warning System (HEWS) incidences, and information on ambulance patient transfers.

'This is consistent with the new hospital performance measure of 90 per cent of ambulance patients transferred to hospital care within 40 minutes, as announced in the Budget, which will hopefully lead to an improvement for patients.'

Membership costs halved

The price of ambulance membership will halve as part of the State Government's election promise to make membership more affordable.

Fees will drop from \$150 to \$75 for families and from \$75 to \$37.50 for singles. The decrease does not take effect until 1 July, and applies only to membership renewals and new memberships.

Membership money has been a key funding source for ambulance services for decades, and the Government will provide AV with \$52.1 million in 2011-12 to cover the impact of the changed fee structure.

AV's Chief Executive Officer Greg Sassella welcomed the move, saying it provided more certainty for AV's Budget, while also offering the incentive to recruit more members and earn more revenue.

'One of our biggest challenges



Membership campaigns encourage people to join and renew.

has always been operating on a year-to-year basis funding-wise and this is a good step to provide us with opportunity to grow memberships,' Greg said.

Greg said members joining before

the fee change could elect to pay quarterly, and thus take advantage of the reduced rates once they came in on 1 July.

He urged people not to drop their membership and wait until

the fee decrease came in.

'Today's membership still provides excellent value, as well as peace of mind and security against the cost of ambulance transport, which can start at almost \$950 and go much higher,' Greg said.

'Members should also remember that all profits generated by membership fees go directly into providing a first class ambulance service by investing directly into operations.'

Last year, AV's one millionth membership was taken out by a Lockington family.

More than 2.2 million Victorians are covered by ambulance memberships.

More information on the fee change can be found at www.ambulance.vic.gov.au



In with the new: one of AV's new King Air aircraft at its Essendon base, replaced the existing planes (below).

New planes ready for flight

Ambulance Victoria's new fixed-wing aircraft are being used for crew and pilot training before they begin service on 1 July.

The four King Air B-200s replace the existing fleet of 16-year-old aircraft.

The new planes have an upgraded stretcher system, which allows them to carry a patient weighing 160 kilograms, with the contingency to transport a patient up to 240 kilograms, if necessary.

An improved stretcher-loading system means that the aircraft

stretchers are able to be carried on road ambulances in Victoria and New South Wales.

The aircraft also have improved communications and avionics equipment.

The planes were built in the United States and flown to Cairns last year, where they underwent a comprehensive fit-out.

'This is the first time we have had aircraft that have allowed us to make important changes that reflect the way we work including assisting rural hospitals with the transfer of obese patients,' said

the Acting Manager of Air Operations, Simon Ronalds.

AV's four planes carry more than 4,000 patients each year. Most patients fly from regional Victoria to Melbourne to gain access to specialist medical and hospital facilities.

The aircraft also carry critically ill patients, who are usually transported from regional hospitals to critical care hospital beds in the metropolitan area.



Statewide communications project on track

Ambulance Victoria's plan to centralise its rural communications centres is on track with the successful transition of Bendigo's communications centre in May.

Under the changes, the functions of the five communications centres in the rural regions are being gradually relocated to Mt Helen, Ballarat, where emergency calls will be answered by call-takers from the Emergency Services Telecommunications Authority (ESTA).

The new call centre will be known as the Ballarat State Emergency Communications Centre (BALSECC) and, by the end of 2011, it will handle the five rural regions' emergency and non-emergency calls.

The move to one communications centre will bring consistent, proven and auditable processes to emergency call-taking and dispatch across the state.

The metropolitan region will continue to run a separate call centre managed by ESTA in Burwood and

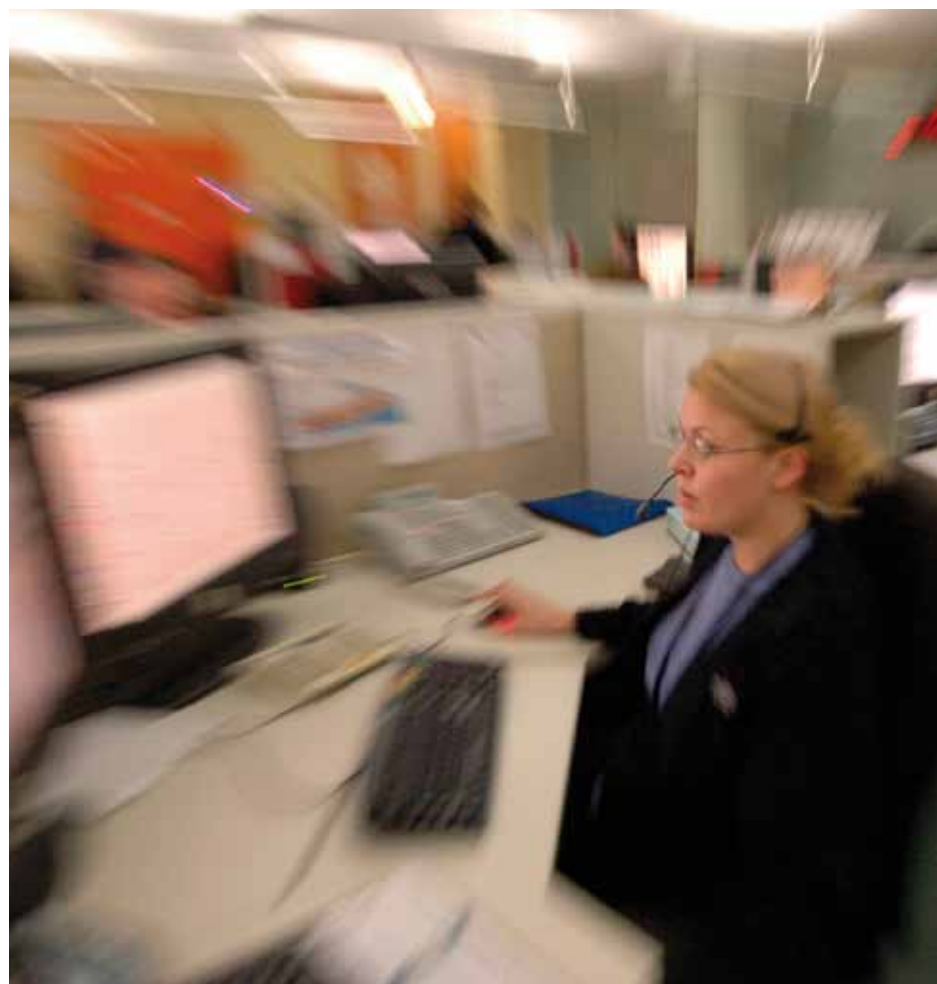
the two centres are connected to provide a 'virtual' single statewide computer aided dispatch system.

Previously, the rural regions had call centres at Ballarat, Bendigo, Geelong, Morwell and Wangaratta, with 000 calls and non-emergency cases managed by AV staff and dispatched by paramedics.

'This change in the rural regions will ensure callers receive a fast and consistent response when they call 000,' said AV's Chief Executive Officer Greg Sassella.

The project's next step is the transition of the Geelong Operations Centre, which is handling emergency calls from its own region (Barwon South West Region) and Ballarat (Grampians Region).

'The technical scope and difficulty of this reform cannot be underestimated and the fact that AV has transitioned three OpCens in a very short period of time, with essentially no major problems, is a reflection on the professionalism of the project team and the cooperation received from operational staff,' Greg said.





Disaster capability on display

Ambulance Victoria has taken part in the inaugural Disaster Response Capability Exhibition, showcasing the resources and capabilities of the state's emergency services.

The event included demonstrations by AV, the Metropolitan Fire Brigade, State Emergency Service, Country Fire Authority and Department of Sustainability and Environment.

The event was held in April at the Royal Melbourne Showgrounds.

Deputy Premier and Minister for Emergency Services Peter Ryan said the exhibition explored an all-hazards, all-agencies approach, and showed key partners exactly what was available in the face of disasters.

He said recent events in Queensland, New Zealand, Japan, Western Australia and Victoria had shown the need for flexible multi-agency models to support disaster response efforts.

'In the event of a crisis, Victoria has the ability to ramp up response efforts and deploy urban search and rescue specialists, set up self-sustainable camps or even portable hospitals as part of any high impact response.'



Flood deployment ends

The Field Primary Care Clinic deployed in the wake of February's floods has been dismantled after more than nine weeks of operation.

The Ambulance Victoria facility was set up in Charlton on 20 January after severe flooding inundated the town's hospital and GP clinic, rendering them unusable.

The clinic provided a safe and clean venue for a temporary medical clinic, and was attended each day it was open by a GP, a nurse and a MICA paramedic.

'A total of 1,313 patients were treated between the medical, nursing and AV staff,' said Justin Dunlop, the manager of AV's Emergency Management Unit.

'The clinic proved popular and people

were often waiting for it to open each day,' said Justin. 'What made it even more important to residents was the fact 200 vehicles in town were lost in the floods, making it

harder for many people to get to a medical appointment elsewhere.'

The clinic was set up in the Charlton Secondary College's basketball stadium, one of the

town's few buildings unaffected by flood waters.

The portable clinic was developed following the deployment of emergency GP clinics at Kinglake

in February 2009, in response to the devastating Black Saturday bushfires.

'We learned from the 2009 deployment and were much better prepared,' said Justin. 'And while Charlton was not a full deployment because it was inside a building - so we did not need air-conditioning, power generation and toilets, for example - the equipment we did deploy worked well, and the anecdotal evidence is the doctors and nurses were positive about the experience.'



The clinic in Charlton Secondary College's basketball stadium.



Peer Support in New Zealand

Two days after the Christchurch earthquake, AV's Peer Support Coordinator David Cooper received an email from New Zealand seeking advice on dealing with paramedics post-disaster.

'They recognised we had a well developed Peer Support program and wanted to draw on our experience and expertise,' said David. Within hours the inquiry became a request for help. The following night a team of four AV Peers was on a plane.

'We had no idea what we would find when we got there, so took what we considered a balanced team, and it worked out well.'

The team was made up of David and three experienced Peers: Leanne Carlson (Team Manager at Rowville), Luci Mannix (a Phillip Island paramedic who worked as a Peer during the Black Saturday bushfires) and MICA Paramedic Brendan Webster.

'One of the first things I noticed when we arrived was the level of fatigue, which was affecting everyone from paramedics to their managers,' said David.

'Some people had been working 20-hour days since the event and, four days in, they were exhausted. This was especially true of the administration and 'back-room' staff, who had a massive increase and change in their workload, while having to work from makeshift locations.'

After the initial quake, at 12.51pm on Tuesday 22 February, the ambulance communications centre in Christchurch was evacuated (and later re-established in Auckland) with effective communications very limited. More than 180 people died in the quake.

'In the first hours, ambulances were essentially self-responding. Local paramedics ran the show, fending for themselves, and they did a great job.'

'People flagged down ambulances in the street and paramedics ran a shuttle service to the local hospital, which for a while took only Category One (critically ill) patients. Those with serious injuries were taken to a local park.'

Three welfare shelters were set up, where walking wounded were treated. Many roads were impassable and paramedics could often not get to patients.

'It was a half-day holiday for schoolchildren and many had headed into the city centre. It was amazing that paramedics stayed working, even while not knowing if their families were still alive, or their house still standing.'

A team of paramedics attending an ECG training course in the city when the quake hit all responded, meaning extra paramedics were immediately available.

The violent damage caused to buildings left most of the city's ambulance branches too dangerous to use and paramedics worked from a car park, with equipment stored in the open.

About 120 paramedics from outside Christchurch were brought in to provide extra support. Some came straight from day shifts, arriving with only the uniform they were wearing. 'These paramedics had to be housed, given meals plus toiletries and extra clothes. It must have been a logistical nightmare, and it is a credit to those who organised it because they did a great job under the circumstances.'

The additional paramedics were all needed due to the additional workload and the fact that some locals took time off to look after

their families and find suitable accommodation.

The AV team arrived to this scene, 84 hours after the disaster. 'There was still a sense of emergency in the air,' said David. 'People didn't know if there would be another earthquake, resulting in even more deaths. People didn't feel safe and everyone was wearing safety vests.'

'When we arrived we were placed at a camp with the paramedics from other parts of New Zealand. They cheered when their manager introduced us as "Australia had arrived" to help. It was very humbling given what they had all been through.'

While Christchurch had local Peers, all were affected by the quake, so Peers were brought from other NZ cities.

There were four NZ and four AV Peers on the ground for the first three weeks and then the numbers were reduced. 'We set up two Peer Responder vehicles like we have in AV and kept them on the road during daylight hours. The condition of the roads made it simply too dangerous to drive at night, so we worked during the day and set up an after-hours phone service.'



The devastation in Christchurch. Peer Support Coordinator David Cooper (right) with New Zealand colleagues and AV Peer David Reinhard.



The Peers travelled around Christchurch, meeting paramedics and listening to their experiences, which provided an insightful overview of what had happened. 'We dealt with a few challenging situations involving distressed employees and the unexpected death of a 20-year-old female volunteer from asthma, which was tragic for all involved.'

'We went to debriefings, social barbecues and spoke to a lot of people, and managed to identify issues in the field that we passed on to senior managers, which allowed them to take action and make a difference to events on the ground. AV Peer Support believes that the content of individual conversations is confidential but when we identify a trend or issue that is causing staff to become distressed we are happy to report this back as it is anonymous, and in the hope that something can be done to improve the welfare of staff.'

'In those first days paramedics would talk about what they had seen and what they did, but did not talk about their feelings. It was simply too soon, but we went around making ourselves known,

and building relationships with people.'

'It wasn't until about Day 10 post-quake that the first person talked about their feelings.'

David said the Peer model and methods used in AV worked well, and NZ colleagues saw the value of the MANERS Model of Psychological First Aid Program and the Peer Responder vehicles.

'How people are affected is a continuum. There are stages to a disaster and as time goes by people become happier to talk. Weeks later some people still didn't want to talk about the events, and that's where our training came in.'

'If they didn't want to talk, that was fine. We let them go. If they want to talk in six months' time, that's fine with us.'

David said in the days after the quake, the patient presentations also changed.

'Paramedics were coming across elderly people who lived by themselves. Some were slightly senile, and had simply stayed in their homes for days, without water, power and sewerage. Some were found alive, simply sitting in a chair not moving, which prompted a search of every home.'

'Suddenly there was a different workload, with some difficult and sad cases where people had been abandoned by their carers for whatever reason. They also found wheelchair bound people who had been shaken out of their chair during the quake, and were lying on their floor.'

There were also people injured trying to repair their homes, an increase in heart attacks and respiratory problems that were made worse by people not calling an ambulance because they thought other people were more in need. There were more suicide attempts and some accidental overdoses as people self-medicated in an attempt to deal with their grief.

'Then there were the psychiatric patients, many of whom had lost their medication as a result of the quake, and who were simply not coping with the increased stress in their life.'

AV sent five Peer teams in consecutive weeks post-quake: three four-person teams, then two two-person teams. The peers deployed were David Cooper (twice), Mark Watkinson (Hartwell, twice), Lynn Reeve (Geelong, twice), David Reinhard (Bayside, twice),

Leanne Carlson (Rowville), Luci Mannix (Phillip Island), Brendan Webster (MICA), Tim Clancy (Broadmeadows), Mick Carroll (Berwick), Ross Salathiel (MICA Bairnsdale), Rob Simons (Bayside) and Lisa Macready (Rosebud).

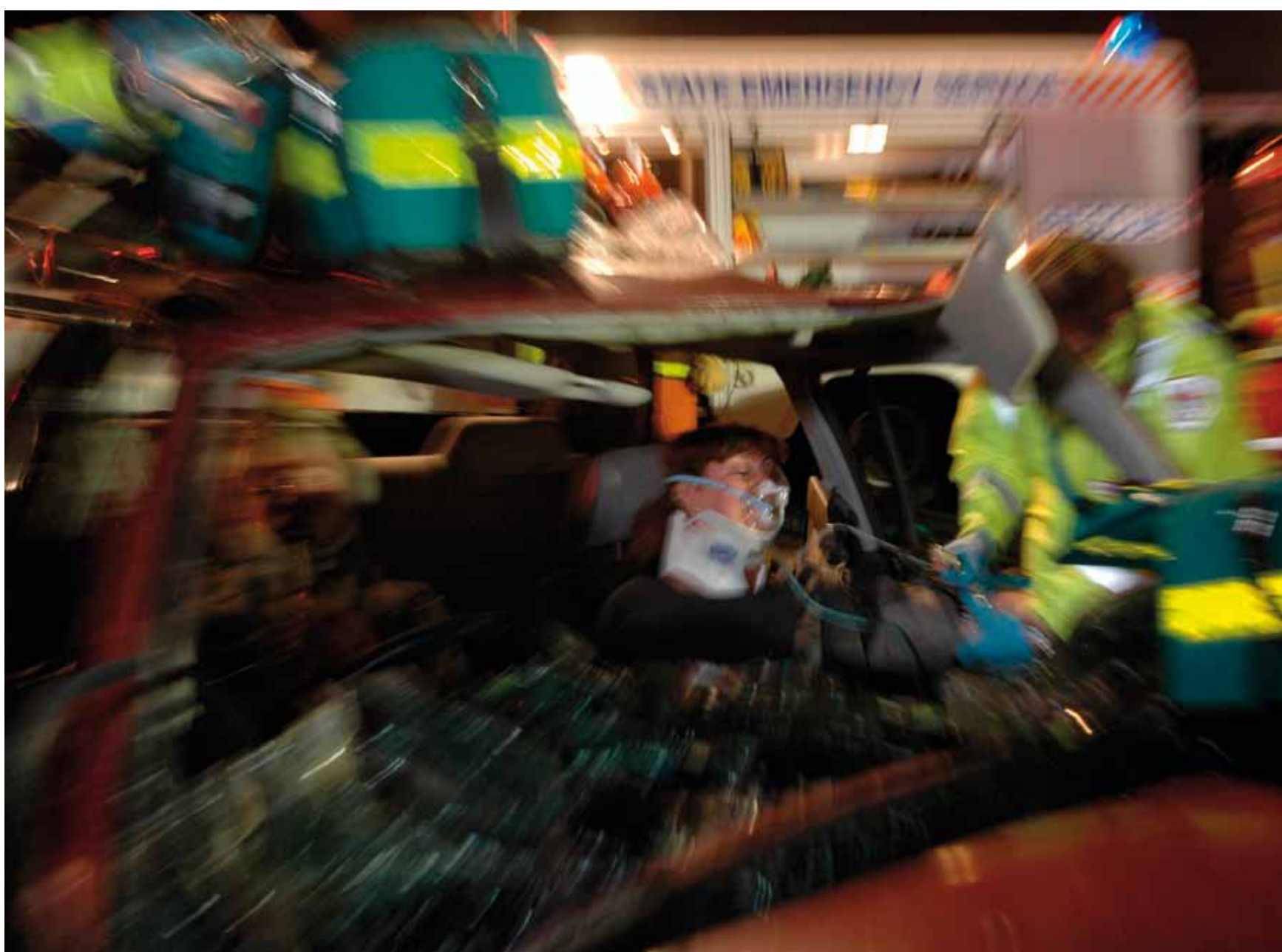
David said the deployment was unexpected, and next time AV would be better prepared. There were also lessons from the way NZ reacted to the disaster.

'The Christchurch ambulance service is big, with about 20 per cent paramedics and 80 per cent volunteers,' David said.

'After the quake the service phoned every volunteer and employee and asked how they were, and how they had been affected. They phoned 1400 people in four days, which was impressive, and a practice that would be good for us to follow in the event of another major event in Victoria.'

The service also coordinated staff breaks from the disaster area, taking advantage of free flights, and donated hotel rooms and holiday homes to give their people some time away, which in many cases was extremely beneficial, David said.

'They have learned from us, but we have certainly learned from them.'



Ambulance Victoria's world-leading research is defining the benefits of cooling patients with traumatic head injuries.

World-first cooling trials begin

Mobile Intensive Care Paramedics are cooling brain trauma and cardiac arrest patients as part of two world-first medical trials that will determine the benefits of the procedures.

The two trials – known as Polar and Rinse – are being carried out in conjunction with Monash University, and follow successful AV research projects that have changed paramedic practice and improved outcomes for patients.

In the Polar trial (*Prophylactic HypOthermia to Lessen TrAumatic BRain Injury*), MICA paramedics inject cold saline solution into patients with brain injury at a trauma scene and en route to hospital. Hospitals continue cooling the patient to 33 degrees (about four degrees below normal) and keep the patient cool for three days.

In the Rinse trial (*Rapid Infusion of Cold Normal SalinE*), MICA paramedics give cold saline solution intravenously to patients in cardiac arrest during resuscitation.

Both studies will examine whether the cooling intervention reduces brain injury compared with standard current practice ('normal' temperature fluid in trauma cases,

and cool fluids after resuscitation in cardiac arrests).

MICA Group Manager Mick Stephenson said paramedics at a scene identify whether a patient is suitable for inclusion in one of the trials. If so, the paramedic opens an envelope, which determines if the patient is in the 'active' or the 'control' arm of the trial.

Mick said studies in animals suggested cooling during CPR improved survival. 'In this trial, if the person is eligible and selected for cooling, the cooling starts straight away.'

'Very few ambulance services have the qualifications, the ability and the experience to conduct these sorts of trials,' Mick said. 'This is a great opportunity for us to be at the forefront of medicine and advance our profession.'

'Most importantly, though, this is about improving the outcomes for patients, and not just in Australia. These questions are unanswered, and we have the opportunity to influence mortality and morbidity around the world, which is a rare opportunity.'

Mick said the trials follow successful MICA studies, including research showing the benefit of MICA paramedics sedating, paralysing and taking over the

breathing for patients with traumatic brain injuries, and cardiac arrest patients being cooled before arrival at hospital.

The Polar study will run for about three years and involve 512 patients across Queensland, Western Australia and Auckland, New Zealand. Victorian hospitals taking part in the trial, The Alfred and Royal Melbourne Hospital, can enrol eligible patients themselves within three hours of an incident. The study is funded by the National Health and Medical Research Council and the Transport Accident Commission.

The two-and-a-half year Rinse study is the largest cardiac arrest trial ever undertaken in Australia, and is also funded by the National Health and Medical Research Council. It will analyse the outcomes of 2,512 adult patients who are in cardiac arrest on arrival of paramedics. It will also run in South Australia and Western Australia.

Associate Professor Stephen Bernard, from AV and The Alfred, said the trials built upon findings of previous AV research.

'The process of injecting cardiac arrest patients with cold fluids after resuscitation was first trialled by MICA paramedics from 2005-07. This new trial brings forward the cooling

to try to improve outcomes further,' Associate Professor Bernard said.

'When a person's core temperature is lowered, metabolism inside the body is slowed down meaning that organs such as the brain can maximise the limited oxygen available.'

'The Rinse trial aims to see whether cardiac arrest sufferers have a better chance of survival and if survivors have a better quality of life if cooled as soon as possible during resuscitation.'

'In regards to the Polar trial, despite best efforts, current management of severe traumatic brain injury still results in poor outcomes with approximately 50 per cent of victims either dying or being unable to live independently afterwards. This is associated with huge socioeconomic costs with many of those affected by severe traumatic brain injury being young.'

'Previous research in animal trials and also in some clinical trials in humans has shown benefit, however there is no definitive evidence to prove that cooling is beneficial. We now have the opportunity to perform a trial that will answer the question about the role of early cooling in the management of severe traumatic brain injury.'



RINSE

Cooling after cardiac arrest



On a warm summer's morning, a car reversed down the driveway of a Mornington Peninsula home, slowly rolled across the road and came to a stop. Curious passers-by looked in to find the driver collapsed at the wheel in a cardiac arrest.

The man, in his 70s, was pulled from his car and bystanders began cardio-pulmonary resuscitation. A doctor from a nearby clinic arrived and took over, giving effective CPR

until the first ambulance arrived.

On arrival at the scene, MICA Paramedic Glen Ward assessed that the man was a candidate for the Rinse trial, and tore open an envelope that determined the patient would get cold fluid during resuscitation.

The patient was given two litres of cold fluid, plus the medications adrenaline and amiodarone. Defibrillation restarted the man's heart, and he was admitted to hospital.

POLAR

Cooling after brain trauma



A man in his 20s was the first patient MICA Paramedic Cam Asker enrolled into the Polar trial.

The motorcyclist was involved in a collision with a car in January, hitting the vehicle at speed, leaving him with multiple limb fractures.

'When the first paramedics arrived the patient was in an altered conscious state,' Cam said. 'The patient received pain

relief, fluid and was successfully given rapid sequence intubation, including paralysis and sedation.'

The man was a suitable candidate for the Polar trial; an envelope was opened, putting him into the control arm (using standard treatment of normal fluids).

'Bands were placed on his arms and wrists to show he was participating in the trial and to notify hospital staff on his arrival at The Alfred.'

The Rinse Trial

- For patients over 18 in cardiac arrest (no pulse) on arrival of paramedics
- Ineligible patients include patients who are pregnant, in cardiac arrest following trauma, in hospital or nursing homes or those with significant pre-existing neurological injury
- Paramedic opens envelope at scene to randomise an eligible patient to standard care or cooling during resuscitation
- Standard care follows AV's Clinical Practice Guidelines, with the patient cooled when they reach hospital
- Cooling involves infusion of patients with intravenous cold fluid as soon as possible at the scene (during resuscitation)
- Cooling continues (up to a total of two litres of cold fluid) if the patient has return of spontaneous circulation
- The study will analyse the outcomes of 2,512 adult patients.

The Polar Trial

- For patients aged 18-60 with a severe traumatic brain injury who are intubated (or intubation is imminent)
- Ineligible patients include those who are bleeding, pregnant, drug-affected or more than 2.5 hours post-injury
- Paramedic opens envelope at scene to randomise an eligible patient to standard care or hypothermia (the trial treatment)
- Every patient receives a wristband to ensure hospitals know they are enrolled in the trial
- Standard care follows AV's Clinical Practice Guidelines
- Hypothermia involves paramedic injecting up to two litres of cold saline solution (about four degrees) into patient
- Hospitals continue cooling the patient to 33 degrees (about four degrees below normal) and keep the patient cool for three days
- The study will run for about three years and involve 512 patients.



When a plan comes together

Retiring General Manager Alex Currell has seen sweeping changes in his 15 years at ambulance.

When Alex Currell began working for the Metropolitan Ambulance Service in May 1996, there was little forward planning, inadequate data and negligible clinical research. 'Within the health system we weren't seen as being particularly important,' said Alex. 'At the same time the organisation was under a lot of pressure, and Intergraph was a

regular front page news story.' It was a difficult time. 'Not long after I arrived we were reviewed by the Auditor General. The conclusions were generally positive, but just when everything seemed to settle down, there was a change of government followed by the Intergraph Royal Commission, resulting in further upheaval.'

Alex's initial role was to improve the organisation's planning and data collection.

'When I arrived I found there was

no dedicated planning person, many of the systems were in a basic state and not a lot of reporting was going out.

'So I worked on getting some decent reporting of our performance, particularly response times and case times, so our managers knew how we were performing and could make improvements. I also began developing an annual plan and a strategic plan, as well as putting together an operations plan, which essentially defined what resources

we needed from government.'

By the early 2000s, effective planning was in place and the data flow had greatly improved, but there was a desire to move planning to a new level.

'In about 2003, we asked a small New Zealand company to build us a simulation model, which we developed in collaboration with them. From an operational planning perspective, this is one of the most important things we have done.

'The model is very flexible and



comprehensive details of a patient's treatment.

'This is one of the most important things that has happened since I have been here,' said Alex. 'It has enabled more comprehensive evaluation of clinical practice and the continuing development of clinical performance measures. This helps us improve practice and show the value of what we do for the community - beyond getting to the patient quickly. For example, there has been a clear improvement in cardiac arrest outcomes over the last 10 years.'

'We have built clinical quality systems around VACIS, which allows us to identify, review and audit high-risk events with the aim of improving the care we provide to patients.'

'It also allows us to continually review the dispatch grid, which can tell us the level of care and urgency required for each case type.'

'VACIS also provides the basis for a lot of the clinical and epidemiological research we undertake, which is a growing field,' said Alex. 'When I came there was no internal research capability, and now we have two research fellows and participate in many significant research collaborations with universities and hospitals.'

Key research projects have included the cooling of cardiac arrest patients and Rapid Sequence Intubation for head injured patients, both of which have led to significant changes in practice to improve patient outcomes.

'The better availability of data has also informed system changes and improved coordination with hospitals, which has particularly benefited major trauma, heart attack and stroke patients.'

The creation of Ambulance Victoria in July 2008 was a significant change, which came with little prior notice. 'First we developed an annual plan - within a month or two - then by March 2009, we put together the first AV draft strategic plan, which identified the key things we wanted to achieve through to 2012.'

Alex said perhaps the most important of these was the transition of rural call taking and dispatch to the ESTA computer aided dispatch system, which will provide a consistent statewide system.

AV also completed the first statewide emergency operations plan early in 2010. 'The analysis for the plan told us something we already knew - we have major resourcing requirements across the state, with significant issues in rural regions.'

'The Government and the Department of Health now have a very clear statement on where AV sees its resource priorities through to 2015. It was very satisfying to have the Auditor General say some complimentary things about our operational planning in his recent report on access to ambulance services.'

allows us to look at our future resourcing requirements, test efficiency strategies and look at the implications of forecast demand increases and system changes.

'It allows us to test strategies before we put them in place, and shows the impact, for example, of a change in our dispatching rules or the way we prioritise cases.'

'We now use this as the basis for our future resource planning, and many ambulance services around the world have followed suit.'

Alex said the rollout of the VACIS computer system, which began in 2005, had provided a greater insight into the effectiveness of ambulance services. VACIS records

Making a difference



Operational Planning

'Having a simulation tool has allowed us to test strategies before putting them into place, as well as assess the impact of increasing demand and system changes. For example, we can look at the impact of what happens if times at hospitals change, or if we change the location of an ambulance branch.'



VACIS

'In terms of the future development of ambulance services, VACIS has been a massively important innovation, enabling us to evaluate our clinical performance in detail.'



Referral Service

'This has been one of the most successful demand management strategies across the whole Victorian health system, with eight per cent of 000 callers now getting an alternative to an emergency ambulance dispatch.'



Research capacity

'We have been involved in a number of significant research collaborations with universities and hospitals, and that will continue to grow.'



Strategic role

'The biggest change over my time here has been the increasing integration of ambulance into the health system, and the recognition of the importance of ambulance across the sector.'



Paramedics

'All our recruits are now university educated, and the gender balance has changed over 15 years, with many more women. Exactly how this plays out remains to be seen, but we will need to address a lot of issues to help people achieve the sort of lifestyle they are after.'



Shepparton single responder unit manager Michael Whelan.

Four new MICA units begin work

Mobile Intensive Care Ambulance (MICA) single responder units have begun operations in four more regional towns, providing a top-level rapid response to medical emergencies.

Single responder units (SRUs) were introduced in Shepparton, Mildura, Wangaratta and Warrnambool during April, providing enhanced triage at more scenes and ensuring effective response times for the most critically ill patients.

Last year, MICA SRUs were introduced in Ballarat, Bendigo, Geelong and Morwell, and 13 extra SRUs were introduced across the metropolitan region.

'The SRUs combine speed, flexibility and the highest level of paramedic assessment and care available,' said AV's Chief Executive Officer Greg Sassella.

'This means patients get a timely, high-quality service of triage and treatment, which reflects our priority as an ambulance service to put the patient first.'

Each SRU is manned by one experienced MICA paramedic, who drives the vehicle to an incident, before treating any patients. The SRUs do not transport patients, so are always backed up by at least one ambulance.

'If a patient is critically ill, we can provide a MICA level of care immediately on arrival of the single responder. And because they are generally quicker, if the patient is time-critical they are getting that MICA level of care more quickly.'

'The single responder can report back from the scene on important things, such as whether we need



Health Minister David Davis at the launch of the Shepparton single responder unit.

an ambulance at all. If the decision is made not to send an ambulance, it's important we have our highest level of triage as the patient may be advised of alternative providers for their care.'

Launching the Shepparton SRU, Victorian Health Minister David Davis said the State Government was committed to six further single responders, based in Bairnsdale, Horsham, Sale, Swan Hill, Wodonga and Wonthaggi.

'These vehicles are not designed for transporting patients but provide a quick and convenient way for MICA paramedics to respond to cases and provide clinical back-up to other paramedics,' the Minister said. 'Victoria's MICA paramedics are some of the best-trained, most experienced paramedics in Australia.'

Rural single responders

- Ballarat
- Bendigo
- Geelong
- Mildura
- Morwell
- Shepparton
- Wangaratta
- Warrnambool

