Ambulance services have generally not been measured for their performance until more recent times and then primarily by their response times. Governments or other authorities set targets for the time it takes ambulance vehicles to reach patients but there are variations in the elements that comprise the response time measure. For example, some services will measure time taken from the point where paramedics are alerted until they arrive at the scene, whilst others measure (including MAS) the time taken from the receipt of the initial telephone call until the time of arrival.

Despite minor variations in what is measured, response times are a very effective business process measurement and have a logical link to patient outcomes, particularly for critically ill people. Hence the term ‘time critical patient’. How frequently ambulance services meet these response time targets is now the primary measure of their performance and is applied in all developed countries.

Response times measure the elements of an ambulance service that lead to efficient planning, call-taking and dispatch, staffing levels and other capabilities necessary for a well performing service. They do not however, measure the effectiveness of the knowledge and skill level of the treating paramedics, or the efficacy of the treatment protocols and procedures undertaken. The measurement of low occurrence screening, and adverse and sentinel events are also important parts of the ideal suite of ambulance performance measurements. This more detailed approach to performance monitoring of ambulance performance is far more effective in informing improvements directly related to patient outcomes than response time alone.

A more sophisticated approach would include consideration of how ‘pre-hospital’ and ‘hospital’ care, together, ensure positive patient outcomes: measurement of ambulance service response times is in isolation from the continuity of care provided for individual patients across the health system.

The Challenges of Multiculturalism
Good communications between paramedic and patient is essential

Victoria Police - Assault Reduction Strategy
Recent initiative shows promise

Entertainment, Sunshine and Paramedics on Tap
Emergency services and large crowds

Research - Paramedic prediction of Injury Severity and Major Trauma Status
Patient outcomes – a better measure of success

One contemporary national measure of ambulance service performance is public satisfaction surveys. Generally, all Australian ambulance services fare well in satisfaction surveys, with those people who have used an ambulance service and saying they were ‘satisfied’ or ‘very satisfied’ approaching 100 per cent, with Tasmania scoring lowest at 96 per cent. While there will always be demand for ambulance services, there is scope to reduce the level of demand arising from emergencies through prevention and mitigation strategies. For example, enhanced infrastructure and communications can reduce the level of death and injuries resulting from a natural disaster such as a tsunami. At a more local level, plans and practice for coping with emergencies in schools and workplaces can play dividends. Likewise, good OHS practices can play a valuable role.

There is also the opportunity across Australia for reducing the effects of emergencies through community preparedness programs. MAS’ support for first aid training and CPR programs, especially for programs such as 4 Steps for Life targeting at risk groups, is integral to improving community preparedness. Also integral is the Public Access Defibrillator Program that is designed to provide treatment by bystanders for cardiac arrests in public places in the critical few minutes before an ambulance arrives on scene.

Over time, national performance indicators will be developed for prevention and preparedness programs but, in the meantime, MAS actively promotes community preparedness and continues to develop its own capacity to respond to and manage major incidents.

Demand management as an indicator of success

In the context of obtaining overall better health outcomes and ensuring the most efficient use of funds for ambulance services, actions to reduce and manage ambulance demand and to also reduce dependence, by some parts of the population, on ambulances through prevention programs are on the national agenda. However defined national strategies have not yet been developed.

Internationally. Whilst the connection between response times and critically ill patient outcomes is irrefutable, there has not been enough focus on the collection of relevant information to prove the connection, in the context of improved patient outcomes. Community expectations of fast response times remain, however, a global constant.

Nevertheless, there is no uniformity across Australian response time targets and substantial variation in actual performance. In 2003-04 Tasmania had the highest 50th percentile response time (actual) of 10.3 minutes and the ACT the lowest at 7.5 minutes. The 90th percentile response time was also highest in Tasmania, at 21.3 minutes, and lowest in the ACT, at 12.3 minutes. The actual response times for MAS during the same period were 9 minutes at the 50th percentile and 14 minutes at the 90th percentile. It should be noted that the performance of the services does not reflect the environment in which they operate or indeed the volume of calls for assistance they receive.

Cardiac Arrest Survival on Arrival

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Although it covers only a small percentage of patients (1.5 per cent of MAS emergency workload), looking at MAS rates the cardiac arrest rates for the period 2003-04 were 38 per cent, with Tasmania scoring lowest at 19 per cent. 4 Steps for Life, even if it is related to outcomes, it is a very subjective process and the difference between a ‘satisfied’ and a ‘very satisfied’ customer might be of importance.

Patient outcomes, however, are not a good measure of operational performance. For a start, those patients who die or even abscond do not get a chance to participate in the surveys. Even though it is related to outcomes, it is a very subjective process and the difference between a ‘satisfied’ and a ‘very satisfied’ customer might be of importance.

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aged 16 years and over, in bystander (not paramedic) witnessed, out-of-hospital, cardiac arrest, of presumed cardiac origin on whom resuscitation was attempted and who had vital signs on arrival hospital. MAS has a further measure of these patients who survive to hospital discharge. Although this is a more onerous measure it is the one the patient and their family would regard as the most relevant and indeed is the real measure of the effectiveness of a continuity of ambulance and hospital care.

This specific patient outcome measure is now being widely used and is of increasing importance internationally. It has the advantage that it is a measure covering a period of time in which paramedics are applying their skills in a defined emergency situation. It also covers the actions of bystanders who may apply CPR and the actions taken within a hospital. This should be viewed as an advantage, however, because, in effect, it looks at the total performance of the health system and contributions by bystanders who may administer CPR. The impact of community preparedness programs, then, comes into play.

Within Australia, MAS has the best cardiac survival rate at 38.1 per cent ‘survival to hospital’ that is significantly above the national average of 24.1 per cent and well above the lowest performance of, WA at 15.1 per cent.

While many factors must come into play, the primary drivers of success are the effectiveness of CPR programs and the time-critical application of advanced skills by paramedics.

The future

As well as national moves to build prevention and preparedness indicators into measuring ambulance service performance, there must also be a continuation of the trend toward a focus on measuring patient outcomes. At the same time, access and equity will remain important with relative inferiority of service in less densely populated areas coming under further scrutiny.

A focus on patient outcomes will invariably lead to a focus on both clinical outcomes and return on investment, with the cost of achieving specific outcomes being able to be considered in the context of economic savings derived from improved quality of life outcomes by people returning as valuable and contributing members to the community.

Owing to the significance of the ageing population, governments will increasingly consider the sustainable economics of health care. This will mean finding the most cost-effective way of achieving positive health outcomes and providing evidence of the economic benefits of those outcomes. Community preparedness to reduce the demand on hospitals will be a part of the mix, as will the role of ambulance services in community education, emergency demand reduction, and non-emergency services. It will be increasingly important for ambulance services to demonstrate the gains (both health outcomes and cost savings) arising from specific investments. It could reasonably be expected that this approach will start to take precedence over CPI adjustments to budgets as governments shift responsibilities around the health sector to gain most cost-efficient outcomes.

By introducing Victorian Ambulance Clinical Information System (VACIS), the Mobile Data Network (MDN), service modelling techniques and sound financial strategies, MAS is intending to be in the forefront of designing and implementing more outcomes-focused measures of performance and value-for-dollar measures of performance. The parallel intention is to perform well against those measures.

What is the measure of a good ambulance service?
The Challenges of Multiculturalism

The panic and confusion frequently associated with a medical emergency is enough to make it difficult for many people to communicate clearly when making a ‘000’ phone call. The unfamiliarity of making an emergency call, the concern for a relative or friend who is ill and the desire to get help quickly makes the situation one of high stress. Finding the right words to facilitate assistance can be exceptionally difficult. Imagine how much more heightened this anxiety would become if you couldn’t communicate what was wrong or understand the questions you were being asked.

For nearly one third of Melbourne’s population who come from a non-English speaking background, this has been a reality. A 2003 report by the Bureau of Emergency Services Telecommunication (BEST) into Culturally and Linguistically Diverse (CALD) communities has highlighted that English speaking people are 24 times more likely to access ambulance than people from a non English speaking background. While the data may be inflated by a focus only on people using interpreter services, it is still a valid indicator of a serious problem.

For a city such as Melbourne that prides itself on multiculturalism, with more than 196 nationalities and 180 languages or dialects spoken every day, it is a problem that the Metropolitan Ambulance Service is working to resolve.

The Victoria Office of Multicultural Affairs (VOMA) provided funding for the program and MAS is pursuing its policy; ‘In a diverse society, different communities have varying needs. To address such needs, the Government is committed to improving the quality of service delivery and ensuring that government services cater appropriately to culturally and linguistically diverse community.

Prior to creation of the CALD co-ordinator’s role, MAS had a limited range of tools available for both paramedics and patients to better understand each other. New initiatives, however, are currently underway to ensure that MAS has a better level of communication with all patients, no matter what ethnic, religious or language background.

A medical emergency situation is exacerbated when there is not a good level of communication between paramedics and the patient, Mr Campos said.

"This means that people with no English or low proficiency in English are most vulnerable in these situations."

The operational Clinical Practice Guidelines (VOMA) provided funding for the program and MAS is pursuing its policy; ‘In a diverse society, different communities have varying needs. To address such needs, the Government is committed to improving the quality of service delivery and ensuring that government services cater appropriately to culturally and linguistically diverse community."

MAS is developing a palette of projects aimed at bridging the gap created by cultural and language differences.

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The creation of the position for a dedicated CALD co-ordinator officer means that the service now can co-ordinate the integrated program. The position has already provided consultation and direct, face-to-face communication to a number of cultural community groups including the Horn of Africa, the growing Arabic community and Melbourne’s large Greek population.

The proactive nature of approaching these groups means that the ambulance service is developing a higher standing, assuming a role of responsibility and approachability.

"Owing to whole range of cultural reasons, different communities have different beliefs when it comes to seeking help," Mr Campos said.

"By going out and meeting the communities, explaining our role and gaining trust through a relationship we can better explain the need for use of emergency services."

"We are also working on giving paramedics better access to translator services," he said.

A memorandum of understanding is currently being finalised between MAS and the Translating and Interpreter Service (TIS) which will create more free flowing communication at both the time of call and when paramedics arrive at a scene.

As current translating and interpreting services are underutilised by paramedics, Mr Campos is establishing a Paramedic Interpreter Tool that will create more awareness and easier access to interpreters when required.

The operational Clinical Practice Guidelines are the paramedic’s bible and are frequently used to refresh skills and treatments. These have been reviewed to include procedures for the use of interpreters. It is hoped that by providing a solution to the problem, communicating with a non-English speaking patient becomes as straightforward for a paramedic as treating an injury.

Cementing interpreter use as a fundamental tool, just as important as teaching how to take a patient’s pulse, will be further achieved through a stronger emphasis on the formal university training programs for paramedics.

The biggest step, however, will be the introduction of the Paramedic’s Interpreter Tool onto daily systems such as the new electronic patient record known as VACIS due for release early next year. VACIS will be used for every patient attended by paramedics and will capture data regarding languages spoken by patients.

By James Howe

Pursuing Diversity

The latest government figures show that the City of Greater Dandenong in Melbourne’s southeast has the highest population density of people from a non-English speaking background in Australia. Within that context, Dandenong Ambulance Paramedic George Agapitos knows better than most the challenges faced in day-to-day dealings with emergency situations when English isn’t understood.

"The challenges are very real and just as important to overcome as treating any medical illness," Mr Agapitos said.

"Dealing with patients who cannot understand English makes you realise just how much you can communicate without words. The amount of reassurance that we can provide just with our actions or facial expressions certainly makes a difference. George also has the unique benefit of coming from a culturally diverse background, somewhat of a rarity among the paramedic profession. Life experience and upbringing plays a big role in recruitment for the role of an ambulance paramedic. MAS must tackle different expectations and beliefs in various cultural groups if it is to fulfil its aim of having a workforce that reflects the cultural diversity of the Melbourne community.

With the assistance of the new Cultural Education and Development Co-ordinator, José Campos, MAS is exploring new ways of winning recruits from different backgrounds. These will include establishing international benchmarks of skills, promoting the profession among non-English media and their communities and targeting international students.

By James Howe
Victoria Police - Assault Reduction Strategy

Victoria Police has implemented a new initiative to reduce the number of assaults across inner Melbourne, the Assault Reduction Strategy. The 12-month pilot began in December 2004 and early indications show it to be a success, despite still being in its infancy.

The primary aim of the strategy is to reduce the number of assaults in and around Melbourne’s licensed venues, particularly the cities of Melbourne, Port Phillip Stonnington, and Yarra. The strategy works on the principle that improved management practices and increased accountability of licensed venues can reduce the number of assaults.

Last year there were over 26,000 assaults in Victoria, a number that is “far too high” according to Superintendent Ian Baker. The strategy is his brainchild. “Every assault is one too many, because when you look at assaults, its not just the impact it creates on Victoria Police, the hospital system, and the Metropolitan Ambulance Service, but also so on the victim … there’s an enormous cost that goes along with each assault,” said Superintendent Baker.

According to police experience, a large percentage of assaults can be attributed to excess consumption of alcohol, and many occur in or around licensed venues, particularly at night.

The strategy focuses on strengthening relationships and improving communication between police and key stakeholders, with the expectation that a reduction in the seriousness and prevalence of alcohol-related assaults will be achieved.

“The major way we saw for reducing incidents was by pushing responsibility and accountability in relation to management of licensed premises back onto the licensee, and make sure we get him or her to address those issues,” Superintendent Baker said.

Superintendent Baker believes that there are a lot of things licensed premises can do to help reduce the number of assaults. “Basically it’s all about early intervention and managing the venue responsibly,” he said.

“If they run their establishments in a responsible manner, then we’re not going to have people getting drunk, and then assaulting people, we’re not going to have conflict happening in those environments … it’s all about the management of them.”

The strategy is funded by the Victorian Law Enforcement Drug Fund, with police working in conjunction with three of Melbourne’s major hospitals, The Alfred, Royal Melbourne and St. Vincent’s, to collect data regarding the exact location of the assaults.

Jarad Henry, Senior Project Officer for the strategy, explains that information provided by the hospitals is crucial, because people don’t always report assaults to the police and therefore they don’t hear about every case. “There are a number of reasons why … but the point is that they don’t report it to police and hence the need to have the hospitals on board,” he said.

In regards to the information supplied by the hospitals, Superintendent Baker explains they’re not telling us the names of the patient, or the names of the offender or anything like that, they are simply telling us in brief the circumstances and the venue the person last attended.”

“I know from very early on in this project, that when we spoke to the hospitals they could tell us which the major problem venues were,” said Superintendent Baker, “and it was the same licensed premises that kept coming up.”

Drawing on other information banks including the Law Enforcement Assistance Program (LEAP), the Licensed Premises Incident Report, and questioning those arrested for drunkenness, ensures that police gain a full picture of where assaults are occurring.

Data is collated and analysed on a weekly basis, highlighting any trends and patterns, and enabling police to identify problem venues.

Once a link between violent incidents and certain venues is established, the strategy works by increasing the accountability of licensees and raising the standard of venue management, and allowing police to develop proactive response plans.

“The whole focus is to reduce demand upon the police services, the public hospital system and the ambulance service,” Superintendent Baker said.

“In terms of the Metropolitan Ambulance Service, the demand reduction is probably the most telling part of the strategy. So, if we can reduce the number of assaults in general, or even the severity of assaults, then it will certainly have an impact on Victoria Police and the Metropolitan Ambulance Service.”

Although in its introductory phase, the strategy is already showing that it has a great potential to significantly reduce the number of assaults. A considerable amount of police time is spent attending to assaults and processing reports. Reductions in the number of assaults will not only decrease workloads, but will create a safer environment in and around licensed venues and late night precincts.

In most of the cases thus far, “we’ve had some real success stories in the very short time that we’ve been running,” said Superintendent Baker.

In the year to date, the Stonnington area has experienced a 16 per cent reduction in the number of assaults; a majority of these can be attributed to the implementation of the strategy. “Already we’ve seen a significant decrease in assaults in the short time we’ve been running it here in [Stonnington], but we particularly attribute that to the fact that the accord between local venues is rather strong here,” Superintendent Baker said.

Although careful not to claim success at this stage, Superintendent Baker believes that the strategy is having an impact. “I am extremely confident that we will be successful. But it is really about our members, going out and sitting down with those licensees and fully discussing how their place is being managed, and holding them to account over their management.”

MAS PERSPECTIVE

Since 2000 there has been a rapid increase in the number of physical assaults against paramedics, rising from four to over 40. So far, this financial year has seen a 27.3 percent increase in the number of physical assaults.

The number of assaults involving weapons has also been steadily increasing over the past four years. In the two-month period, December 2004 to January 2005, the number of assaults involving weapons has dramatically increased, with more than double the number experienced in the entire 2003-04 financial year.

The Assault Reduction Strategy by Victoria Police works to further reinforce measures taken by the Metropolitan Ambulance Service to improve the safety of paramedics on-the-job.

These measures include:

- Technology – a computer dispatch system that flags locations/addresses where paramedics have reported violent/aggressive incidents. We do not attend these locations without police escort.
- Relationship with police – police notification and request to attend and make scene safe. The Metropolitan Ambulance Service has established direct links between police and ambulance communications to make this possible.
- Policies and training – Metropolitan Ambulance Service provides regular training in aggression management for paramedics.

Additionally, amendments to the Ambulance Services Act and the Summary Offences Act on August 3 2004 mean that paramedics now have the same type of protection from attack as police officers.

By Liana Cross
Nurse to paramedic – similar skills but a different environment

Elia Petzierides (pronounced Ill'yas) has just finished transporting one of his regular patients to hospital - a 30-year old with an extensive medical history - and is discussing the interpersonal nature of his work. "The person we just saw today, has had a fairly long, extensive medical history and he's just gone 30. He's had enough. He's just had a transplant and all these things have happened and he said he's ready to die. He's just sick of it. You can't teach someone how to deal with circumstances like that. ...Like, what do you say?" Elia asks.

 Asked if dealing with this inextricable aspect of a paramedic’s worklife is difficult, Elia simply says it's a requisite of his work. "It's not difficult. It's more a matter of whether you like hearing intimate details about people’s lives, or things that they don't share with their partner and they share with you. Its not difficult, but it can be confronting," he says. He adds in non-fussed fashion: "I guess its part of a paramedics responsibility, you take it on board, you deal with it and you pull the poker face". Elia quickly points out that he doesn't encounter cases like this daily. "Sometimes we literally take people to hospital and that’s it," he says modestly.

The 27-year-old Elia has been a paramedic for two years. However, backtrack pre-2003 and you’ll find that he was nursing in either the emergency or oncology wards at the Children’s and Austin Hospitals, while completing his Graduate Diploma in Emergency Nursing at Melbourne University.

Ask him why the job shift, and Elia jovially reasons that the paramedics he encountered throughout his nursing career lured him into the profession. "They [paramedics] all seemed quite happy when they came in and would always talk about their jobs and would say how great it was. They would always come in with their bed hair at night, so I’d see them when they just had a nap and were feeling really alright," Petzierides says.

He says waiting rooms overflowing with people, which one nurse needed to “deal with”, was “a bit much” but insists that the move didn’t arise from his dissatisfaction with nursing. In fact he still likes to think of himself as a nurse, has many friends within the nursing community, and believes that patient ratios are improving.

The shared knowledge Elia has of the two professions is evident, especially in his drawing of parallels between paramedics and triage, the nursing post that requires you to assess patients to determine their priority for medical referral. "Working on triage your aim is to prioritise and assess people and see just how sick each individual person is," he says. "And it’s the same with our job. It’s what you do when you first see someone, except you take it the next step and actually intervene and you decide what’s going to happen. Whereas on triage you might just assess them and then someone else will take over their care."

Now with dual qualifications and insider knowledge of both professions, Elia is quick to dismiss the commonly held belief that nurses require more skill than paramedics. Initially, it may seem this way because "you don't have such a large bag of tricks", but he highlights that each field demands as much expertise as the other.

"Your knowledge base is similar and lots of the skills are similar, in that working on triage your aim is to prioritise and assess people and see just how sick each individual person is," Elia says.  The major difference being the added dimension that being out on the road rather than in a sterile hospital brings.

"When putting in an IV in a hospital, you get the trolley and the person's on the bed and you put in the IV. But it’s totally different in someone’s house, or out on the ground. There are lots of things like that encountered by paramedics and they have to be able to adapt. That adds to the complexity of the job," Elia says.

"Also in nursing you tend to work the whole shift and you have lots of people in nursing [lots of patients to deal with, that is]. Or, if you’re quiet, there is always someone in the department who’ll always need a hand. So, you rarely get that down time."

Although still working the long hours – back-to-back night shifts is the hardest thing about the job, he says – especially working throughout the night when "you just want to go to sleep", Elia finds comfort in the knowledge that "you can give someone your full attention and then for perhaps an hour you don't have anyone."

So what does he want out of the job long term? "I guess my aim is try to remain on the road and be able to work the whole time. And then keep enjoying the job... I guess remaining enthusiastic and keeping motivated."

And as Elia speaks excitedly about going out to some jobs, which are "like the most interesting thing ever", it is clear he has enthusiasm in abundance...

By Lirije Memishi
The 2005 St Kilda Festival was yet another successful event for Melbourne, with crowds probably reaching over 400,000, beautiful weather (bright sunshine and a pleasant sea breeze) and a massive range of entertainment and events.
At the heart of the entertainment program was the music – with more than 50 bands performing across seven stages – but there was also a substantial range of other entertainment, including sporting events, carnival rides, a charity bed race and individual street performers.

With all gatherings of this size, a high level of organisation is needed to achieve success. Organisational priorities include co-operative planning with agencies such as the Metropolitan Ambulance Service (MAS) to adjust for access problems arising from street closures.

With parts of Jacka Boulevard, Fitzroy Street, Acland Street, The Esplanade, Pier Road, Shakespeare Grove and Cavell Street closed, any ambulance arriving from outside the Festival precinct could find it slow going to reach a patient. This problem was circumvented by MAS developing special operations orders. A command centre was established, a separate channel used for radio communications, nine ambulance vehicles (including three single responder units) were allocated specific locations, and preferred entry and exit routes were planned. In addition, six first aid posts were established and assigned operational staff by St John Ambulance.

Throughout the day, the location of MAS paramedics was tightly monitored and everybody kept in contact via radio. If it were the case that somebody needed urgent medical attention and had to be taken to hospital, then the precise location of the ambulance was tracked so that for any following requests for an ambulance the nearest available unit was always assigned.

There are always logistics problems associated with providing emergency services where large crowds are gathered but the close working relationship between the organisers of the St Kilda Festival and MAS ensures optimum ambulance coverage. This contributes to the Festival’s reputation for being safe and well organised and, no doubt, contributes to its ever-increasing popularity with families, young people and other age groups.
Research

Paramedic Prediction of Injury Severity and Major Trauma Status

A recently completed study, funded by the Victorian Trauma Foundation (VTF), focused on local predictors of blunt trauma outcome in pre-hospital settings. Results from this study suggest that anatomic injury criteria are most effective at identifying deaths and patients requiring an ICU admission. However, the ability of paramedic staff to accurately identify severe injury had not been studied previously, despite the widespread use of anatomic injury criteria in trauma triage tools.

The commencement of a follow up research project in May 2004, again funded by the VTF, aims to establish the ability of experienced paramedic staff to identify major trauma cases and those with severe injuries in the field. The project will provide insight into the appropriateness of the anatomic criteria of the current trauma triage guidelines.

The project, Paramedic Prediction of Severe Injury and Major Trauma Status, is taking place at the VTF Centre for Trauma Research & Practice, and involves Monash University Department of Epidemiology and Preventive Medicine.

The Project Leader, Stephen Mulholland, is the first paramedic recipient of a VTF Fellowship. The fellowships foster world-class trauma research and enhance career development and retention of research personnel within Victoria. Metropolitan Ambulance Service has made a significant investment in both the fellowship program and to Stephen’s project, highlighting a commitment to paramedic research within the Victorian State Trauma System.

Objectives and Method
The project endeavours to:
- Assess the ability of paramedic personnel to identify trauma patients with a severe head, abdominal or thoracic injury to determine whether anatomic injury criteria are valid components of a pre-hospital triage tool.
- Evaluate the performance of paramedic judgement for prediction of major trauma status.
- Compare the predictive performance of paramedic judgement with the performance of current pre-hospital trauma triage tools.

To achieve these aims, a prospective validation study is currently being undertaken, where data is being collected prospectively for each trauma patient transferred by Air Ambulance Victoria over a 6-month period. The ability of the paramedic staff to predict each of the outcomes; major trauma status, severe head, chest, abdominal and pelvic injuries, will then be assessed using statistical analyses for evaluation of a prediction tool.

The project findings will establish the ability of experienced paramedic staff to identify major trauma cases and those with severe injuries in the field, and will provide insight into the appropriateness of the anatomic criteria of the current trauma triage guidelines.

Project Progress
The development of the project has involved the establishment of the steering committee, a detailed systematic literature review and the design and implementation of a suitable data collection form. The data collection form was initially tested with the helicopter paramedics at Essendon. After some minor modifications, the trial was expanded to include the helicopter paramedics at Latrobe Valley and Bendigo.

The paramedics’ predictions are compared to actual patient outcomes obtained from the trauma registries.

The number of cases enrolled in the project has been fewer than anticipated, partly due to a lower than expected number of primary response trauma patients attended by the helicopter. However, the statisticians’ review of the reduced numbers suggests the validity of the results would not be affected.

This project involves the integration of experienced trauma researchers, epidemiologists, intensivists, orthopaedic surgeons and paramedics, collaborating to investigate pre-hospital trauma management in Victoria.

Paramedic Research Trends
Stephen Mulholland’s work represents an emerging trend in the trauma research community: paramedics researching paramedic issues. Professor Thomas Kossman, Director, Department of Trauma Surgery at The Alfred, supports this trend, explaining “in the emerging world of evidence-based trauma research in Australia, there is a need for paramedics to research trauma questions relevant to pre-hospital patient care activities.”

Stephen’s level of accomplishment in paramedic studies, and his field experience as a MICA paramedic put him at the forefront of a shift toward paramedic-driven research initiatives. The shift from passive to active participation by paramedic researchers signals a better way to investigate and improve pre-hospital care.

4 Steps gives early dividends

The 4 Steps for Life program has been delivering CPR training to people over 50 for six months now. Aimed at teaching the life-saving skill to people in their own communities, the joint initiative between MAS and DHS has been a success, with stories emerging of increasing community confidence in the performance of CPR.

One particular success story is that of St. Arnaud resident and Neighbourhood Watch coordinator, Elvie Perry, who knows only too well the value of learning CPR. A week after taking part in the 4 Steps for Life program in October last year, she successfully revived her 21-year-old neighbour.

Mrs Perry was alerted to the situation after the man’s girlfriend yelled across the street for someone to “get an ambulance.” Mrs Perry describes the experience as being “so quick”. She arrived at the scene to find her neighbour unconscious after he electrocuted himself and just thought, “Oh well, I will have to do what I’ve learnt.” She calmly followed the four steps taught in the program, and while modest in her efforts, she believes her “reward is that he’s quite well again and walking around.”

4 Steps for Life is a simple step-by-step package coordinated by MAS, which includes a 21-minute self-instruction training video for group viewing, instruction and evaluation cards as well as user-friendly training aids, called “pillow pal”, to support practice without the need for manikins.

The training methodology simplifies CPR into 4 critical steps to assist in learning: 1) Dial 000 for an ambulance 2) Open the person’s airway 3) Breathe mouth-to-mouth 4) Pump the person’s chest.

At 76 years old, it was the first time Mrs Perry had ever performed CPR, a skill she had thought she would never need.

“I’d read about it and thought that would be worth knowing … but I didn’t think I would have to use it,” Mrs Perry said of her newfound skills.

Despite having a “little bit of an idea of how to do CPR”, Mrs Perry found that the 4 Steps for Life video and “pillow pal” made a “huge difference”. She recommends that everyone over 50 get involved with the program, and considers it to be “very straightforward. I recommend the program to others, definitely after my experience, and just hope they have the success that I did”, she said.

Mrs Perry still practices on her “pillow pal” every opportunity she gets, confessing to leaving her pillow on the bench and practising “while waiting for the vegetables to cook.”

After participating in the program, residents who were initially apprehensive about learning CPR often comment that they are more confident in performing the life-saving skill.

With over 3500 cases of sudden cardiac arrest each year, it is essential to educate and prepare the community for medical emergency situations, and 4 Steps for Life is proving to be a good the way to do this.
In memoriam

On 6 January seventy people gathered at MAS headquarters for the dedication of a memorial garden in honour of MAS employees who had lost their lives in the course of their duties.

In the shape of a tear drop, the brick-edged garden has three standard white roses standing as sentinels behind the large central stone to which is affixed the memorial plaque dedicated to the memory of:


Greg Sassella

"... The purpose of having a memorial is to provide a tangible reminder of the loss of our people and to make sure we don't forget the spirit in which each of them provided care to the community. ...

This memorial reminds us that whilst the role we perform as paramedics can be attractive to us as a job, it also carries with it significant risks and, unfortunately, even the risk of losing life itself. It is very important that we respect those who have died in the most meaningful way possible so that they leave a meaningful and long lasting legacy. We must remember those wonderful human traits and values that come to the fore during times of tragedy and maintain that commitment to each other during our daily lives.

As an ambulance service our people are regularly in situations where they are consoling relatives, calming the chaos and restraining their own emotions. A memorial service is important for us because we are taking time to recognise our suffering and grieving after the loss of our own people. It is also to remind ourselves of the importance of remembering them and ensuring their deaths leave us a legacy of celebrating the good things in our culture and that the legacy lives on within us all in our daily lives.

This garden will serve as a reminder of those who have died while helping others. ... through remembering them and committing to their legacy we will ensure their lives were not lost in vain. ..."

The Hon. Bronwyn Pike

"... Paramedics have worn on their uniforms the Maltese Cross that signifies four important values: prudence, justice, fortitude and temperance. All of these qualities are wrapped around the people who work for our ambulance service. ...

It is important to remember that we as human beings can act together, and cross all kinds all of divides, and can act in very strong and powerful ways to support each other when tragedies occur. That has remained a core feature of people working in the ambulance service ...

Paramedics have a dedication that is above and beyond paid employment. It is a dedication that is about serving our fellow human beings. ..."

The Reverend Jim Pilmer

"... The giving of life in the line of duty, and therefore in the service of others, is a sacrifice beyond words but the years of service, the skills, the individual contribution to the organisation, and their unique interaction with colleagues are all part of the building blocks in the foundation of the way in which the Metropolitan Ambulance Service functions today. ... All of that is honoured and remembered here. ...

Family members can be assured that the ones they miss and continue to love are valued and respected, despite the apparent senselessness of their loss. Their life and their contribution has deep meaning that contributes to those who follow them. ..."
Once MAS’ new mobile data network (MDN) goes live, paramedics will have access to one of the most sophisticated communications systems of its kind in the world, and, while the advantages for staff will be numerous, there will also be follow-on benefits in the key areas of service delivery and patient care.

The mobile data network has been developed for MAS to provide for a more efficient transmission of data, from the initial case dispatch through to notifying paramedics on the road.

Communications will be fed directly from the computer aided dispatch (CAD) centre across a dedicated data network to the terminal installed in the vehicle. All the information from CAD is transmitted to the vehicle. This could include directions regarding the best way to reach a location or special access information such as the location of house keys. Crews will be better positioned to make informed operational decisions.

Before attending certain locations crews will be able to access historical data, thus obtaining vital medical information about a patient or, possibly, being forewarned that they are approaching a potentially hazardous situation such as when an aggressive dog is on the premises.

“The new mobile data network will be a quantum leap forward compared to what we are using now,” said MICA paramedic Peter Calnan, who has spent the best part of the last two years planning and preparing the system. “Essentially, paramedics will have information in the car that they may not necessarily get now over the radio,” Peter said. “If they are going to a dangerous situation or a violent incident where an offender is still on the scene they will have that information. That will be an enormous advantage.”

Peter said it was important to note that the new system was not necessarily a substitute for the existing communication network. “This is an adjunct to our current dispatch process and it is not replacing anything. It is just providing more information,” he said.

“Providing more information for paramedics to make sound operational decisions improves their ability to do their job more effectively and improves the safety of their workplace.”

Under the new system, initial calls to an ambulance will still come over the portable radio and pagers. An alarm from the terminal in the car will sound and the crew will press a function key to bring up the case details.

When they understand the case details they press an “acknowledge” button and push a “respond” button when they move out on a job. Their status at the CAD centre will then be changed to “en route” and they will select whether they are on a code 1 or code 2.

When a “transport” key is pressed there is a drop down dialogue box to record the number of patients, their condition and the hospital to which they are being taken.

MAS is currently pilot testing the new system in part of the fleet and Peter says the feedback has been very encouraging and training programs are under way.

“Getting some of the systems in place to support the pilot had been challenging but we are working through those,” he said.

“We have had some good positive feedback in relation to the information the staff are getting and we are responding to their concerns as well. For example, modifying the position of the display in some of the vehicles so it’s easier to view and use has been one issue identified so far.”

MAS has wanted to introduce a mobile data system since the mid-1980s. The current project is not isolated to MAS and involves Victoria Police as part of a “whole of government” effort.

Peter said the years of development work prior to having a network to roll out would result in a system virtually second to none. “Paramedics are going to benefit from a safer work environment, namely with a Global Positioning System attached to a duress alarm in the vehicle so we will know where they are, if they are in trouble,” he said.

“We are providing the most up to date information available from dispatch on the case they are currently attending and we are removing the reliance of crews on information from a third party, thus freeing up the voice radio network. This means that when crews need to speak urgently to a dispatcher or clinician the voice radio network is not being tied up with voice chatter.”

Peter said MAS would continue to compile information gained from the pilot testing and the full MDN network would be rolled out once all critical issues were resolved.

Less chatter and more information
MAS will face its biggest logistical operation when the Commonwealth Games hits Melbourne 15-26 March next year. However, with planning under way since 1998, the Service will be well prepared.

The project is being coordinated by the emergency management section of operations, headed by operations manager Paul Holman and ongoing development and implementation is in the hands of Justin Dunlop, the current MAS Commonwealth Games Planning Officer, who says “There has certainly been an intensive phase of planning over a considerable amount of time.”

“Virtually every department has had an involvement in the planning process and our modelling system has been prepared in line with international standards.”

The enormity of the task becomes even clearer when you consider the groundwork of people expected to converge on Melbourne for the Games. The Games will be the biggest sporting and cultural event ever seen in Melbourne, drawing over 4,500 athletes from 71 nations as well as tens of thousands of interstate visitors and international tourists. About 500,000 people are expected to converge on the CBD alone.

Justin said all divisions and key internal departments have received a briefing on MAS’ response to the Games. He said a concept of operations and project management plan have been completed and detailed planning is about to start.

Group managers have been assigned to oversee the planning for each “precinct” of the Games. MAS’ responsibilities will be vast. Operations will encompass all sporting and associated venues, the Games village, and special events such as concerts and emergency management.

MAS also will be responsible for normal pre-hospital care for cases that occur within the Games venues. “Our responsibilities will of course continue to encompass all the areas managed under our normal day to day operations,” Justin said.

“With an expected increase in case load this is mind, MAS is reviewing plans for placement of venue commanders, embedding triage paramedics on foot and provision of special resources such as 4WD vehicles, golf carts and bicycle patrols.

In terms of preparing for an event of this size and scale, we have learned a great deal from the experiences of the Ambulance Service of Victoria.

The enormous task becomes even clearer when you consider that 6000 athletes and officials and up to 20,000 volunteers. Competition venues will be located across Melbourne and Victoria.

NSW during the Sydney Olympics.

“They have given us a full briefing in how to prepare for an event like the Commonwealth Games. We have also learned from the experiences of the Manchester Games.”

The XVII Commonwealth Games in 2006 will feature 11 days of competition involving over 6000 athletes and officials and up to 20,000 volunteers. Competition venues will be located across Melbourne and Victoria.

Some of the issues to be addressed while planning for the Commonwealth Games include:

- Maintaining adequate resourcing of MAS normal operations while providing a service for the Commonwealth Games
- Making provision for potential terrorist activity
- Accreditation processes to ensure access to venues
- Ensuring all MAS staff are kept informed
- OHS issues
- Making provision for extreme weather
- Allowing for increased media activity
- Being prepared for exotic diseases
- Ensuring there are ambulance access points that accommodate the logistics of the various events
- Planning communications to handle calls for MAS attendance within the Games and local communications within different sports

It’s been an impressive 18-months for the MAS referral service. The service has redirected a staggering 5274 triple zero callers to alternative service providers (ASP) or given home self-care advice. Prior to this, these callers would have received an ambulance dispatch.

Paramedic Mark George knows first hand just what a difference the service has made to MAS operations. Mark, a paramedic for 20 years, is a referral service call taker and is at the “front line” when it comes to interacting with patients using the service.

In the time he has been with the referral service he has seen it develop into an integral part of day-to-day operations. “People and service providers have been really responsive to the service,” Mark said.

“Patients in particular are grateful. Often they have already been to hospital and don’t necessarily need an ambulance but just want advice,” he said.

“We are able to offer appropriate care once we have established the patient’s condition.”

It is the ability of referral service providers to interact with patients that is proving successful. “Callers are often distressed and anxious and ring triple zero because they are frightened. A lot of them calm down during the call once we give them good advice and reassurance,” Mark said

“Once we have assessed that the patient is okay then we can go down other avenues whereas before the service did not have as much time to do that.”

To achieve a successful redirection of the patient, the referral service team of paramedics and registered nurses determine the exact nature of the health problem. Essentially, they ensure the patient is not at risk and that they can link them safely to an appropriate ASP.

“Patients who meet a non-urgent category are referred to us and then in effect we provide a secondary triage service,” Mark said.

“We get a lot of non-urgent cases such as vomiting, children with temperatures or chronic pain patients and instead of dispatching an ambulance we can provide them with another appropriate solution,” Mark said.

These solutions centre on connecting each caller with an appropriate ASP via electronic referrals, once the patient’s symptoms and condition has been identified.

Alternative service providers are from medical, nursing and hospital outreach programs. Essentially, the referred patient is assessed within one hour by telephone, visited in the home or provided with self-care advice.

MAS established the referral service in September 2003, fundamentally as a demand management function. Since then, a growing number of ambulances have been “freed-up” by the referral service redirecting patients to ASPs.

“What this means is that more paramedics are available for more urgent emergency jobs,” Mark said. “Another advantage of the service is that crews will have more time for things like meal breaks.”

Although still in its initial phase, the expectation is that the referral service will continue to expand, particularly through its ASP network.

“It is getting busier all the time and I think it will continue to grow,” Mark said.

Ultimately, the service will become more diverse in the application of the secondary triage tool and develop a better understanding of 000 callers. This will contribute to achieving better, appropriate health care for callers.

Importantly, the referral service fosters the message that MAS is endeavouring to work collaboratively with the community and actively engaging triple zero callers to assist them with the most appropriate care.