



REVIEW OF NON EMERGENCY PATIENT TRANSPORTATION BY THE METROPOLITAN AMBULANCE SERVICE EXECUTIVE SUMMARY

The Department of Human Services engaged Healthcare Management Advisors (HMA) as a result of a competitive tender process to:

"conduct a selective review of non-emergency patient transportation undertaken by the Metropolitan Ambulance Service over a two month period"

The objectives of the review were to

- *"map and describe the process by which non-emergency transportations are authorised and arranged;*
- *provide a clinical and demographic profile of patients transported and the reasons for their transport;*
- *determine the appropriateness of transports in the context of current policies (that is compliance with current policies); and*
- *determine the appropriateness of transports on a clinical needs basis (using patient records)."*

A Project Steering Committee was established by DHS with representation from DHS (Ambulance Services), Metropolitan Ambulance Services (MAS) and Rural Ambulance Victoria (RAV) to oversee the project. This document is the final report of the project which was carried out in the period September 2002 to September 2003. The recommendations in the report are those of Healthcare Management Advisors.

Background

Reasons for transport by ambulance can be divided into two broad categories "Emergency" and "Non-emergency". The latter can be differentiated from emergency/urgent cases as it is generally transport of patients who have been assessed by a medical practitioner and do not require immediate medical attention. In accordance with Government policy the ambulance services provide free (emergency and) non-emergency medical transport for pensioners and Healthcare Card holders (referred to as Community Service Obligation or CSO patients) and other defined groups. The increase in demand for non-emergency transport over recent years has been significant and most of the transports have been for CSO patients for which no fee is charged. The increased workload has placed a strain on MAS' ability to meet demand efficiently and DHS commissioned this project to understand the reasons for growth and to re-define (if necessary) eligibility criteria for CSO patients.

Overview of non-emergency transport

There are two forms of transport for patients under the "non-emergency transport" banner; viz "Non-Emergency Stretcher" transport and "Clinic Transport", provided by a range of transport forms including stretcher vehicles (for the former type of patient), hoist buses and cars. The non-emergency stretcher transport service has been contracted out since 1993. MAS currently has contracts with three private providers who perform nearly all the non-emergency stretcher transport.

The private providers also have direct arrangement with other purchasers, such as the public and private hospitals. The clinic car transport service, run by MAS Clinic Transport Services, is staffed by MAS employees (bookings/dispatch and most of the cars).

Patients must meet criteria for transport and all requests must be authorised by a doctor. To be eligible for transport, the requestor must consider the patient's medical condition (that it does not allow the patient to travel by other means) and the medical requirements of the patient (what clinical care they require during transport). Social factors can be taken into account. Criteria for assessing a person's eligibility for non-emergency transport have traditionally not been as well defined as those for assessing which type (stretcher or car/hoist) is appropriate for the particular patient.

There are guidelines in place for who is the responsible payer; it may be the patient, the fund to which a person subscribes, a third party such as Workcover, the instigating hospital or MAS (for CSO patients in certain circumstances). In order to know who is the responsible payer, MAS needs to know details of the clinical or social reason for transport, the source and destination, the person's mobility status and the circumstances of the transport (for example, an inpatient admission/discharge home or outpatient appointment).

Project methodology

The main features of the methodology were stakeholder consultation, process mapping, historical data analysis and a prospective survey of non-emergency carries over a four week period. Consultation and process mapping identified the context in which non-emergency transport was being provided and highlighted areas for possible improvements in the processes of authorising, booking and providing the transport. The historical data analysis was based on data for calendar years 2000, 2001, and 2002, provided to HMA from the MAS databases, which were analysed to understand the characteristics of the patients being transported, the types of transport provided and the trends.

The principal feature of the methodology was a prospective survey of carries during a four week period, to collect information to supplement data already collected in the normal MAS processes. The survey involved three parts: A, B, and C (Officer's observations; interview with Authorising Officer; and record review respectively). It was expected the three sources of information would be sufficient to understand the circumstances of the transport and contribute to a set of criteria for future use in determining eligibility.

Changes to MAS operations

During the course of the project MAS implemented a triage strategy to accept car division bookings in accordance with a designated hierarchy for clinic car services (based on medical services to which the patient was being transported). This change had an impact on the volume of car division services provided (and consequently on any comparisons with activity levels prior to the implementation of changes).

Consultation and process mapping

Consultation, analysis of historical data and the sampling strategy for the prospective survey defined the process mapping strategy and twelve sites were selected. On-site visits were combined with telephone conversations to obtain the information and draft maps were discussed with, and refined following input from, stakeholders. The maps are included in the appendices. Findings from the process influenced the survey design and the key issues were:

- (1) Larger hospitals have a Transport Officer (TO) who co-ordinates the booking and dispatch functions for the site. Smaller sites do not have such a person on their staff, but some achieve the same functionality through an arrangement with the private contractor that transports the patients for whom the hospital is the responsible payer. Other facilities (such as GP surgery) use their own staff.

- (2) Non-emergency transport bookings are made by calling or sending a fax to one of two numbers ECV (for stretcher) and MAS' Car Division (for clinic cars). Consequently, people using the service need to be aware of the criteria for eligibility and for deciding whether a stretcher or a car is required.
- (3) Hospitals (public and private) and providers use payer status in their decision-making process for determining transport. Private hospitals will use taxis when they can, if they are the responsible payer.
- (4) Work is allocated to Officers by ECV or MAS (or by the private contractors for their patients) and is essentially manual (hard copies of the necessary forms and pagers/two-way radio) and any automation is not integrated (that is ECV and Car Division systems). ECV data are integrated with the MAS billing system but Car Division information has to be entered from cards returned after the carry by couriers to MAS. Although an automated booking system linking the two services is planned it still will have separate telephone numbers for bookings.
- (5) Data collected in providing the two services is similar although stretcher patients have a more extensive clinical record. The Case Number is the unique identifier although it is only unique for one day and numbers are repeated. The value of the information varies and analysis suggested that the data content and definitions need review to make them more useful for monitoring the service (and determining a patient's eligibility).
- (6) Consultation suggested changes in medical and hospital practices (and data definitions) are changing the use and billing patterns of MAS patients. "Hospital in the Home" and "Interim Care Beds"; day only admissions for chemotherapy and rehabilitation (though not all are admitted for the latter) have changed the profile of admissions. Current MAS rules for charging do not reflect these categories nor define them and responsibility for billing is sometimes ambiguous.
- (7) The population is aging and the proportion of aged people and of those with chronic conditions (particularly those requiring renal dialysis) and demand for beds is growing.
- (8) The use by hospitals in Melbourne of volunteer drivers has reduced because of fears of litigation and the cost of insurance and taxis tend not to be used as they provide a "kerb-to-kerb" service, not taking the patient to the exact destination.

All these issues were thought to be important in explaining the increase in the demand for non-emergency transport services.

Historical data analysis

Analysis of the historical data showed carries by Car Division increased from 34,733 in 2000 to 57,620 in 2002, an increase of 66%. Bookings made on the day of travel made up a small proportion of Car Division carries, but has increased dramatically since 2000. The majority of carries occurred on Mondays, Wednesdays and Fridays between 6am and 5pm and the proportion of Car Division carries by clinic cars (as distinct from buses, hoist buses and taxis) has significantly increased since 2000. Of the hospital users, the Austin (Repatriation Campus) accounted for around 9% of pickups from hospitals. The proportion of carries to private addresses also increased significantly over the period. Close to 90% (88%) of the passengers were CSO, with an increasing proportion aged over 75 years.

Carries by stretcher increased from 101,259 in 2000 to 111,846 in 2002, an increase of 10%. Around 87% of carries occurred on business days (all days of the week), largely between 9am and 5pm, and were performed by stretcher vehicles. Since 2000, the proportion of carries from hospitals increased, as did the proportion of carries to private addresses. Over 60% of patients were CSO; however the proportion of DVA passengers increased significantly, although the way in which DVA patients have been counted and billed has varied over the years so it is difficult to draw conclusions.

The proportion of CSO patients decreased over the period (although this may be due to reclassification of patients to DVA) and there was an increasing proportion of passengers aged over 75 years.

The prospective survey

Part A of the survey was carried out over four weeks in May 2003 (following an earlier pilot survey). Completion of Parts B and C took approximately another two months. Data from Part A was merged with MAS data for the same period and cases selected for Parts B and C. These cases had to be from participating hospitals (whose Ethics Committees had given approval) and required a patient's consent to proceed to Parts B and C. Merging all the data relied on the MAS Case Number and Date of Carry. There were 8,152 valid Part A forms collected in the survey period and 7,570 matched correctly to the MAS data. Only 1,271 of these carries had provided consent to review their medical record and they formed the sample to talk to the AO (Part B) and review the medical record (Part C). Of these 919 Parts B and C were completed. Completion of Parts B and C was less helpful than anticipated however the work did contribute to the understanding of the reasons for patient transport, particularly through discussion with staff of dialysis units, whose patients accounted for the majority of all clinic car carries in the period.

Analysis of the Car Division patients confirmed findings in the historical data (numbers were less than the same time in previous years due to the introduction of the MAS hierarchy for bookings). Carries were predominantly Monday, Wednesday and Friday; were pre-booked; over short distances (despite some greater than 30km); were for dialysis; were older than 60 years; travelling to and from private addresses and 25% of individuals had more than 20 carries in the period. In terms of the mobility, 62% of patients were able to climb into the car with assistance. Many patients were frail/weak/debilitated. Travel/Social circumstances (such as inadequate public transport) were often a reason for transport and Authorising Officers considered them in 46% of cases.

Analysis of the Stretcher carries showed the maximum number of carries for an individual was 34 but a smaller percentage than in Car Division had frequent carries. Again unlike Car Division, the majority of cases are booked on the day; and patients are more likely to travel to and from hospitals. Higher usage days are Tuesday and Friday and a small number of patients who travel by clinic car to dialysis on Tuesday and Thursdays use stretcher to get to dialysis on Saturdays as there is no clinic car service. Whilst CSO patients predominate, the percentage is less than in Car Division. The mobility status questions revealed apparently appropriate carry of many patients but surprising was the presence of patients who were noted as able to "walk with assistance", "sit unsupported"; or had "no significant limitation" and other categories which appeared not to need a stretcher. "Debility" was the main clinical reason for transport of stretcher patients, indicated in 49% of responses.

Qualitative discussions

In the course of the prospective survey and its components, a number of qualitative findings were made and recorded by the HMA researchers, the most revealing were in respect of dialysis services. A number of renal units had recently reviewed their authorisation processes. For satellite services, the authorisation might come from the auspicing major hospital. This was important as dialysis patients on the whole were not re-assessed regularly. In many cases the AOs listed in the MAS data were no longer the patient's treating doctor (or even at the hospital) which made it impossible in many cases for the researcher to contact the AO. For those dialysis patients who used a clinic car regularly, their need for continuing transport was assumed, rather than being re-assessed on a regular basis. Despite the lack of regular reviews, on the whole, the researchers considered that transport appropriate.

Developing the eligibility criteria

The main reason for conducting the prospective survey was to establish and test criteria that might be used to determine the patients' eligibility (based on clinical need) for transport. To do this we drew information from a number of sources, but found little elsewhere in Australia and indeed the world and what was found tended to be oriented towards type of transport required rather than clinical need.

We considered four dimensions, based on patient characteristics, that might form the basis for the set of criteria as: mobility (physical condition); clinical status; social circumstances (economic and transport-related); and service type (the service that the patient was being transported to or from) and these were reflected in the survey form. In assessing the data gathered during the survey, HMA formed the view that there were responses to the mobility, clinical and social characteristics question which were not, either alone or in combination, indicative of a clinical need for receiving non-emergency transport. We discussed this view and the survey data with specialist clinicians to determine if a subset of the responses could form a set of criteria that established eligibility (need) for non-emergency transport.

Clinicians agreed that the characteristics to determine patient eligibility should be patient centred, not based on the service the patients is being transported to or from. Going through the questions on mobility, clinical status and travel circumstances with them led to a rationalisation of the criteria used in the survey and resulted in a list of 18 criteria that clinicians felt represented a reasonable method of screening for clinical need. These criteria included two that related to "social circumstances". After further analysis these two criteria were eliminated as it was felt that they may be a reason to provide a patient with a taxi voucher but that they were insufficient to justify the services of a trained Officer. As a result we reduced the set to 16 criteria (six mobility and 10 clinical)

The next step was to analyse the survey data using the 16 criteria to see how many patients would not have been eligible if the "essential" criteria were used as indicators of clinical need. Although this process revealed that there are differences in the relevance of particular criteria to car and to stretcher carries, pursuing the analysis would have led to the creation of separate sets of eligibility criteria for clinic cars and stretcher transport. From our process mapping work, we do not favour the use of separate sets of criteria for each form of transport. Rather, we prefer to develop a simple criteria set to be used by a clinician to assess the need for, and to authorise, transport. Having different criteria for clinic car and stretcher transport means the clinician has to decide the type of vehicle in order to determine which criteria set is applied. We feel MAS staff are in the best position to decide on the vehicle to be used.

So we combined the clinic car and stretcher carry data from the Part A survey and repeated the analyses and showed that some 38.6% (2,921) of the 7,570 carries would have been eligible for transport had the mobility criteria been used alone and 83.8% (6,347) would have been eligible if the clinical criteria had been used alone and that when the mobility and clinical status criteria are used together for all carries 87.7% (6,639) of the patients would have been eligible for transport. We further examined whether or not any of the criteria were redundant and investigated the interaction between the five least used (independently) criteria. Based on data analysis alone, all five criteria could be deleted from the eligibility criteria set without any significant impact on the number of patients who would have been eligible for transport.

Nevertheless, we feel that there are considerations aside from the data analysis that should be taken into account. The data analysis strongly suggests that the "vehicle dimension" criterion should be deleted. On reflection, it is neither a mobility nor clinical characteristic of the patient and the patient's requirement for a vehicle of special dimension should be evident from the needs-based criteria. The survey confirmed this assertion as, of the 45 carries where the criterion was used at all, it was used independently (alone) only twice. On that basis, we have deleted "vehicle dimension" from the final set of eligibility criteria.

The other four least used criteria are important for other reasons. The “vertigo/dizziness” criterion was used independently in over 10% of the 250 cases where it was used. Similarly, the “embarrassment” criterion was used independently in 7.6% of the cases where it was used. The “bedridden” criterion appeared alone in only 1.5% of the 464 cases where it appeared, but it contains significant information that might impact on the nature of the carry (staff and vehicle required) and on that basis should be retained. Finally, the “travels with wheelchair but independent criterion” was not often used, but it was poorly worded in the survey. The clinical opinion with which we agree is that it should be reworded as “travels with wheelchair - needs assistance” and be retained. Applying these conclusions, the final recommended criteria set is set out in Table ES1

Table ES1: Recommended eligibility criteria

Clinical Status	Mobility
Requires active management or monitoring	Needs assistance to get out of bed
Debility	Requires wheelchair to load/unload
Frailty	Travels with wheelchair – needs assistance
Pain and/or shortness of breath	Unable to weight bear
Vertigo/dizziness	Must lie flat
Requires guidance	
Dementia/confusion	
Behaviour/mental illness	
Bedridden	
Prefers non public transport (embarrassment)	

Conclusions and recommendations

We drew together the findings from the process mapping, discussion with key stakeholders and the prospective survey analysis to describe our specific conclusions and recommendations against the project’s objectives and deliverables. The study generated a comprehensive analysis of non-emergency transport for both CSO and non CSO clients, incorporating reasons for transports, parties ordering the transport, source destination and responsible payer and opportunities for refining aspects of these processes have emerged resulting in a series of recommendations.

The project required us to analyse the appropriateness of transports given the current policy parameters. Information leads us to conclude that, given the current policies, there is very little evidence to suggest that there is inappropriate provision of non-emergency transport services. We have concluded that the current arrangements are complex and found instances where there is poor compliance with procedures, for example non-compliance in relation to the sign-off by an “Authorising Officer” (as many are not currently treating the patient) even though the patient’s condition may warrant the service.

The terms of reference of the project also required us to analyse the links between emergency and non-emergency transport and though identifying a few areas where the emergency and non-emergency transport services affect each other, the linkage between them has only a minor impact on non-emergency transport service work. The major issue is that the booking for non-emergency stretcher work is linked with emergency work at ECV and therefore separated from the booking for non-emergency Clinic Car work at MAS Doncaster. There does not appear to be any operational reason for the booking functions to be separated and the separation leads to problems. The proposed introduction of better information systems to Car Division and review of the contract with ECV might be an appropriate time to re-consider the integration of the booking and scheduling functions directly under MAS.

We have used survey data to develop in concert with clinicians and statistical analysis a set of eligibility criteria to determine clinical need. It is based on an assessment of the mobility and clinical characteristics of the patient, not on social need or the service that the patient is being transported to or from. This is in contrast to the criteria MAS introduced in January, which represents a service hierarchy without reference to the mobility and clinical characteristics of the patients. We have chosen the "mobility/clinical status" axes as there is a risk with a service hierarchy that patients most in need will be excluded. For example, the majority of dialysis patients do not need specialist transport, yet the effect of having dialysis at the top of the hierarchy will inevitably be the transportation of more dialysis patients. The fifteen eligibility criteria developed as a result of this project should replace the service hierarchy.

Even with the eligibility criteria we propose, there are still issues of access that are affected by "who pays". Most carries are to and from public hospitals for inpatient or ambulatory services and depending on the service, either MAS or the hospital is the responsible payer. The division of responsibility has implications for the booking process and a need to understand the rules regarding who is the payer, which means understanding the definitions associated with patients attending hospitals. Definitions of an "admission", "a day case", what constitutes an outpatient visit and when attendances for diagnostic tests are admissions or not will influence responsibility for payment. The data collection at MAS currently does not provide sufficient information for MAS to identify cases for which they can charge.

The current situation in respect of who pays is complex and leads to undesirable incentives for the parties to cost shift. A better approach would be for one or other of the parties to be responsible for the non-emergency transport of eligible patients. Based on a user pays principle, we would suggest allocating the responsibility and the funds to public hospitals. We understand that a move to make public hospitals wholly responsible for non-emergency transport of eligible patients is a significant departure from current practice and may give rise to complex implementation issues. Nevertheless such a change would prevent cost shifting and allow the focus of attention to be the determination of eligibility based on need.

Should this transfer of responsibility be implemented, MAS would still need to have policies for carries where a public hospital is not the source or destination and the recommended set of eligibility criteria that focus on the condition of the patient can be used for those circumstances as well as the basis for determining need for transport to and from public hospitals (even if funding responsibility is transferred to the hospitals). In the event that the DHS decides to leave current divided responsibilities for payment then a review of the billing policies is required to ensure that the detail of data definitions and collection is improved to allow the policy to be applied consistently and effectively and be made known to those who authorise and order transport as well as to the booking staff.

We found that there is a difference between "ordering" and "authorising" transport and the system for authorising transport, in the sense of "authorisation by a medical practitioner", needs review. This need is particularly evident in the case of dialysis patients and other frequent users. Though some hospitals have regular reviews of the appropriateness of the transport required for regular users, many do not. We found that the Authorising Officer listed in the MAS data was often not directly linked to the carry though a number of the hospitals had begun to address the problem.

Transport is occasionally authorised (and ordered) by other service providers such as general practitioners, private hospitals and nursing homes and providers of diagnostic testing (such as radiology or pathology). In most of these instances the authorising officer is the GP (or a doctor at a hospital). Some patients apparently ask their GP for transport, and approving it depends on the criteria the GP uses (the process may be managed by his/her receptionist with little GP input). The problem can be addressed by providing GPs (and other relevant clinicians) with the set of eligibility criteria and advising that application of the criteria will be subject to periodic audit. To do this the booking must record more information about the authorising officer and a system of review for standing orders should be implemented.

These suggestions have implications for how transport is ordered. Where hospitals have TOs they order the transport and provide a "triage service" for the site's staff who only need to ring the TO (except after hours) to order transport. For hospitals without a TO, this "triage" function is often offered by the private contractors with whom the hospital has a contract for hospital-funded carries. Again only one number is required and the contractor then orders the transport. In our view, under the current arrangements MAS is best placed to decide the type of carry required, based on a standardised information set provided by the person ordering the transport. Accordingly, we suggest that all bookings for non-emergency transport be put through one point controlled by MAS. We have been advised that the new computer booking system being installed by MAS will simplify and add consistency to the booking process, but it should have a single point for receiving orders for non-emergency transport.

As well as providing one point of contact for bookings, the new system will generate a common data collection. There are limitations to the current dataset, in respect of deciding eligibility, and other factors. No doubt, with the development of a new booking system the data set will be reviewed and updated. We suggest adoption of a minimum data set that must be collected for each booking and the contents of that dataset should include information on the eligibility criteria that the patient meets.

Carries are identified with a "case number". This number is not unique to a patient and case numbers are repeated each day. This presented difficulties in the prospective survey, but apparently not to any other features of MAS operation, though it is extremely likely that errors occur in entering the information throughout all the current manual and repetitive processes and should be reviewed in line with current DHS definitions as should the system of classifying types of source and destination is appropriate but inconsistent. The important point is booking data need to be strengthened.

Further to data issues, though the terms of reference did not specifically require an analysis of MAS contracting processes and related issues, we raise an important point. We noted the level of compliance with the survey by outsourced contractors was lower than anticipated. Although not affecting the study it will be important that any future data collection of a once-off nature be better supported by MAS contractors and that in future negotiations of outsourcing contracts, specific clauses be introduced to ensure compliance with MAS initiated data collection processes. This need will be particularly evident once sample audits of transport eligibility against the new criteria are introduced.

LIST OF RECOMMENDATIONS

- R1: It is recommended that access to non-emergency transport be determined by applying the set of fifteen eligibility criteria developed in this study to ascertain need for transport based on the patient's physical (mobility) and clinical characteristics.**
- R2: It is recommended that public hospitals should use the same criteria as MAS to determine eligibility so as to ensure consistent access to non-emergency transport for the community.**
- R3: It is recommended that a review of current billing policies involving MAS, DHS and representatives of public hospitals should take place. This review should clarify the existing policies, produce guidelines in support of implementation of the existing policy and a strategy for promulgating the use of the guidelines to ensure their consistent application.**
- R4: It is recommended that the DHS and MAS promulgate the eligibility criteria widely to doctors and indicate that they should be used as the basis for making an approval for non-emergency transport.**

- R5:** It is recommended that the DHS and MAS institute a regular (perhaps annually in the first instance) audit of carries on a sample basis to ensure that the eligibility criteria are being effectively used.
- R6:** It is recommended that orders authorising transport can only be made by a doctor, that they have a maximum validity period of 30 days, and that the minimum data set provided on ordering the transport must include the name and contact details for the authorising officer.
- R7:** It is recommended that the minimum data set to be collected on booking transport be determined as a result of a review of the existing dataset, supplemented by the physical (mobility) and clinical characteristics of the patient required to determine eligibility. The new data set should come in to active use at the same time as the new eligibility criteria are implemented.
- R8:** It is recommended that MAS introduce a specific clause in relation to supporting survey data collections in future negotiations of outsourcing contracts.
- R9:** If the above reforms are not successful in addressing system inefficiencies, then it is recommended that the DHS consider allocating responsibility (and consequently funds) for non-emergency transport of eligible patients to or from public hospitals wholly to the public hospitals.
- R10:** It is recommended that should the DHS decide to allocate responsibility (and consequently funds) for non-emergency transport of eligible patients to or from public hospitals wholly to the public hospitals then the public hospitals should use the same criteria as MAS to determine eligibility so as to ensure consistent access to non-emergency transport for the community.
- R11:** It is recommended that there be a single point for receiving orders for non-emergency transport. Orders for transport must include a minimum data set that provides information to establish the patient's eligibility for transport as well as information to allow determination of the most appropriate form of transport.