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CLINICAL FOCUS REPORT

FROM REVIEW OF ROOT CAUSE ANALYSIS AND/OR INCIDENT INFORMATION MANAGEMENT SYSTEM (IIMS) DATA

RETRIEVAL AND INTER-HOSPITAL TRANSFER

Patient safety
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This report was prepared by the Clinical Excellence Commission (CEC) Patient Safety Team.

The information contained has been de-identified and analysed in accordance with the Incident Information Management System (IIMS) datasets and where relevant, the agreed root cause analysis (RCA) report classification sets used by the RCA Review Committees which it supports.

It should be noted that all reviews of incident data, including root cause analysis, are retrospective and can reflect both hindsight and outcome bias. Such reviews are conducted to better understand the impact which patient, system and human factors may have on the provision of clinical care and to facilitate ongoing improvement across the health system.

This report is intended to provide a snapshot of issues to be further explored. It has been prepared by the Patient Safety Team, including John Carrick, Margaret Scrimgeour, Dr Tony Burrell, Bronwyn Shumack and members of the CEC Clinical Council, in consultation with NSW Health Services staff. It was first released within the NSW Health system in 2010.

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"For this transfer we have counted no fewer than ten people directly involved in the transfer, two hospitals and four transport services over three days"

"The MO (Medical Officer) advised the RCA team it was often difficult to find a bed for patients who are unstable in a coronary sense, but not sick enough to be retrieved and who did not get priority with the CCU (Coronary Care Unit)"

(Quotes from RCA reports)

Introduction

This report focuses on inter-hospital transfer and retrieval of patients in the NSW public health system. It is informed by two sources:

- a review of clinical incidents notified in the Incident Information Management System (IIMS) by the CEC patient safety team
- a workshop facilitated by the CEC Clinical Council, which involved discussions with a variety of clinical and management stakeholders around issues of transfer of care, held in October 2009. The workshop aimed to share information about current policy and initiatives around transfer of care; consider the broad issues associated with access to specialist services; identify problems and potential solutions and develop priorities for action.

Many issues were identified by both the workshop and the patient safety team review. This report provides an amalgamation of the findings of the IIMS review and the workshop.

Background

Across the State and within health services, patients regularly need to be moved, in order to access the most appropriate care for their clinical condition. Issues associated with safe and timely transfer of patients to both higher level care and for specialist treatment, particularly in rural settings, have been reported in IIMS since its inception in 2004. Review of IIMS notifications and RCA reports identified issues associated with:

- inter-hospital retrieval (of very unwell patients requiring intensive care for a life-threatening condition)
- inter-hospital transfer (for patients requiring time-critical access to specialised care).

NOTE: Most of the incident notifications related to transfers of adult patients and hence this is the focus of this report.

The CEC Clinical Council also raised concerns about transferring patients for ongoing care. Council members had first-hand experience of the challenges and frustrations faced in trying to provide the best care for patients. As this impacted on services and specialties across the State, a workshop was arranged to further explore the issues and identify potential solutions.

Incidents where inadequate treatment and/or delayed diagnosis resulted in the need for urgent retrieval of patients are acknowledged, but not explored in depth in this report. These areas are being addressed in part by the *Between the Flags* project. There is some data related to the pre-hospital management of patients, where co-ordination and selection of the first point of care impacted on the patient outcome.

Both inter-hospital retrievals and transfers for specialist care are complex processes, requiring identification of medical teams and beds to take over care of the patient, identification and co-ordination of the most appropriate transfer modality and stabilisation of the patient for safe travel between the facilities. In recognition of the importance of co-ordinating care for critically ill patients, NSW Health established a framework which was formalised under PD2006_046[1] *Critical Care Adult Tertiary Referral Networks – Intensive Care Default Policy.*

1 Critical Care Adult Tertiary Referral Networks - Intensive Care Default Policy PD2006_046 was current during the development of the clinical focus report. The PD was replaced by PD2010_021 in March 2010.

This gives direction for management of critically ill patients and those requiring specialist treatment for life-threatening injuries (severe burn injury, acute spinal cord injuries, major trauma, high-risk obstetrics and those requiring immediate cardiac catheterisation).

The policy does not, however, cover other time-critical specialist care and is only intended to apply to life-threatening cases requiring intensive care within these categories. There are many patients whose condition is not yet critical who also require urgent transfer to specialist services, to receive appropriate care. These are often the patients for whom transfer is most problematic.

IIMS Review - Method

Data was extracted at the end of July 2009 for incidents which occurred in the twelve-month period from 1 July 2008 to 30 June 2009. Data came from two sources.

1. Incident Information Management System (IIMS) - Data Manager program. Key word searches were applied to incident text descriptions as follows:
   - "retrieval" (and wild card derivatives)
   - "inter-hospital transfer"
   - "AMRS" (ambulance medical retrieval service)
   - "MRU" (medical retrieval unit)
   - "NETS" (newborn and paediatric emergency transport service)
2. RCAs in which the RCA Review Committee identified issues associated with transfer of unstable patients or the inter-hospital transfer process.

Findings

There were 294 incidents identified in IIMS that matched the keyword search criteria. Table 1 shows the snapshot classification across all Severity Assessment Code (SAC)[2] scores with inadequate treatment and delayed transfer being the most frequently notified issues.

Table 1: Snapshot Classification of Incidents

Classification	SAC1	SAC2	SAC3	SAC4
Delayed transfer	1	12	30	21
Inadequate treatment	5	15	31	21
Care co-ordination	2	5	24	18
Equipment	-	1	12	7
Communication	-	2	9	17
Transfer - no bed available	2	4	13	3
Escalation of concerns	1	3	11	3
Workforce	-	2	13	6
Total	**11**	**44**	**143**	**96**

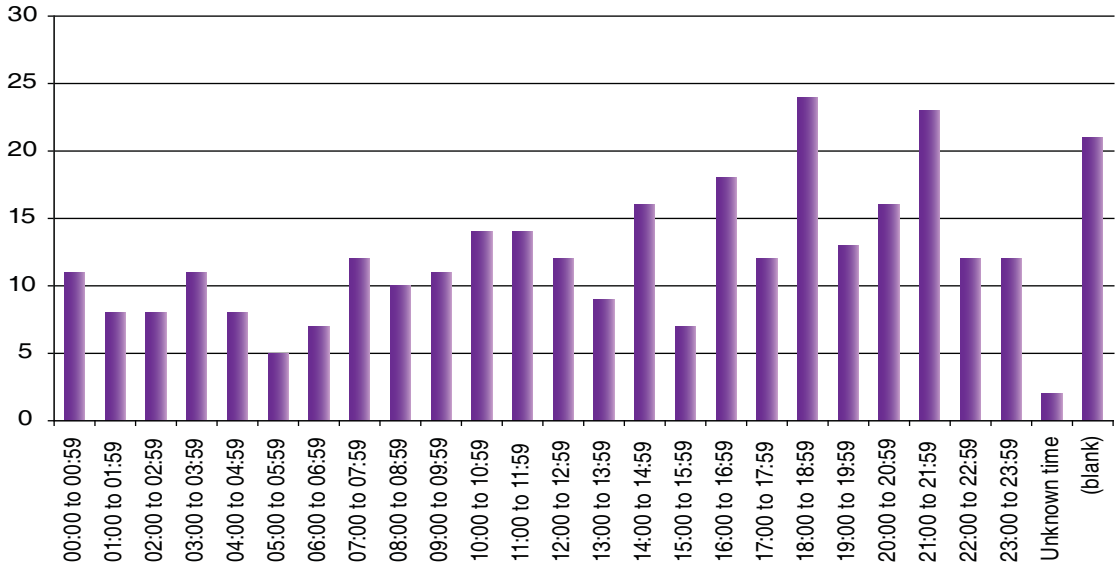
Of the specific services indicated in incident notifications, emergency medicine was the most common.

Time of Incidents

2 The NSW health system uses a Severity Assessment Code (SAC) matrix. This allows the person notifying an incident to assign a ranking, known as a SAC score, by plotting the consequences (from serious to no harm caused) and the likelihood that it could happen again (from frequent to rare). There are four ratings. SAC1 indicates extreme risk and SAC4 low risk.

Six of the 11 SAC1 incidents occurred 'out of hours' between 1800 and 0700; four between 0700 and 1200 noon. The incident time was not stated in the remaining RCAs. More than half of these were in metropolitan, rather than rural settings. Overall, incidents occurred at all hours of the day and night, with a significant number occurring during the late afternoon and evening.

Figure 2: Time of incident – all SAC ratings



NOTE: Time of incident is not a mandatory field in IIMS and was left blank in 22 incident notifications reviewed.

General Themes

If the transfer process is viewed as a continuum with underpinning principles, the issues identified fall loosely into the following categories, often with inter-relating and compounding effect and with communication and co-ordination elements present throughout:

1. Recognition of the need to transfer the patient
2. Accessing the level of care required (ICU/specialist/undifferentiated urgent (non-ICU) care)
3. Issues associated with arranging the transfer
4. Preparation for transfer
5. In-transit
6. On arrival
7. Policy and Frameworks
8. Feedback to ensure system learning

Issues at all stages of the continuum were identified by both the workshop and IIMS review.

1. Recognition of the need to transfer the patient

Many hospitals and multi-purpose centres (small rural facilities) across the State have locum, reduced or less-experienced staff available at times. Some share doctors with neighbouring towns and may not have a doctor on site for the entire weekend. Others have specialist services available on a visiting basis only. At the same time, patients can choose to present to any facility (usually the nearest) and expect to receive high-level care. Services at all levels are likely to need to transfer patients to higher-level care at some point. For those centres where it is an infrequent occurrence, the staff involved may have little experience in the recognition and early management of acutely ill patients.

All these factors can lead to delays in assessing patients, recognising the need and making timely arrangements to transfer the patient to a higher level care. For example:

"Wait until the morning…" (SAC1)

Medical staff did not initially recognise the need for immediate transfer of a patient who had deteriorated following removal of intercostal catheter. In spite of some concerns being raised, the decision was made to delay the transfer until the next morning on the basis of (in hindsight) inadequate communication. The patient died while being intubated for transfer.

There is often no process for obtaining clinical advice from a suitably experienced/senior MO prior to transfer, particularly out-of-hours. This can be compounded where no receiving hospital and therefore no receiving clinician is available. This is even more difficult if no clear working diagnosis can be determined by the referring clinicians. For example:

Delayed transfer 1 (SAC1)

Late recognition of the seriousness of a patient's condition resulted in a delay in arranging transfer for definitive management of acute coronary syndrome (ACS). This was compounded by a three and a half hour wait for an ambulance, once the decision to transfer was made.

2. Accessing the level of care required

It is important to distinguish between transfers which fall under the State PD2006_046 *Critical Care Adult Tertiary Referral Networks – Intensive Care Default Policy* and those where the patient is in need of urgent care from other specialities. It is noted that under this policy, AMRS is the contact point for retrieval of adults with severe burns, spinal cord injuries, major trauma, high-risk obstetrics and those requiring cardiac catheterisation, in addition to critically ill patients requiring ICU care. Critically ill children under 16 are managed by NETS.

Concerns raised included:

- Poor recognition and communication about need for time-critical specialist care, as distinct from higher level care
- Bed management issues were considered ahead of access to the clinical specialty required. This was particularly true when specialist beds were not available within the usual networks or default hospitals and the communication focus became getting the patient to any available tertiary level care
- Care was refused or the assessment of referring clinician was under-valued
- Confusion around criteria and processes for using AMRS, particularly by locum or new staff
- Inadequate clinical assessment of suitability for transfer (often due to lack of clinical decision support).

2.1. Higher level care

Transfers to higher level care occur within and between health services across the State. PD2006_046 provides advice about the 'default ICUs' both within each AHS[3] and at the metropolitan level, should the local facility be unable to accept the patient due to either bed availability or other specific circumstances. The local processes to facilitate transfer of critically ill patients vary considerably across the State, as does the level of application and awareness of the policy and the use of AMRS.

Concerns raised included:

- Bed availability
- Bed finding – and the role of AMRS in this process
- Communication gaps, such as receiving staff not expecting a patient whom the retrieval team were led to believe the ICU knew about.

2.2. Urgent specialist care

A number of incidents identified concerns with arranging and accessing specialist care, including time-critical care, such as cardiac reperfusion for patients in the emergency department or hospital ward. These again included bed availability, as well as complex care co-ordination between services, gaining agreement for MOs to accept the patient, inadequate communication and availability of appropriately resourced transport services (whether ambulance or AHS patient transport). A number of incidents related to mental health patients. This report, however, does not address the inter-hospital transfer to mental health services (where there is no other clinical matter).

The services identified included:

- Burns
- Cardiology
- Emergency
- Hand surgery
- Intensive care
- Mental health
- Neurology (especially stroke)
- Neurosurgery
- Neonatal and post-natal care
- Orthopaedics
- Paediatrics

Feedback from clinicians in the preparation of this report particularly highlights that, in cases where the patient has acute renal failure and/or hyperkalaemia, these arrangements must consider which services are able to provide 24-hour dialysis.

Many of the incidents related to care co-ordination issues at both the referring and the receiving service, frequently in the rural setting. For example:

Co-ordinating transfer to a specialist service (SAC1)

There were difficulties transferring a patient with chronic liver disease from a rural to a tertiary facility. The patient was on the liver transplant list, but no beds were available at the tertiary facility, which was aware of the patient's poor condition. Contact was made with AMRS but there were difficulties organising transport (air transport was not an option due to adverse weather conditions and the patient's weight). The AMRS consultant asked if urgent retrieval was required and was advised that it wasn't, although there was little discussion about the patient's condition. A decision was made to travel by road. The patient died 48 hours after arrival at the tertiary facility.

The RCA team identified that:

- The transferring consultant was unable to speak directly with the receiving consultant
- It is often difficult for rural clinicians to contact senior clinicians at major metropolitan centres
- There was miscommunication at several stages, with the result that the acuity of the patient was not recognised by the tertiary facility.

The RCA report notes that there were ten people directly involved in the transfer across two hospitals and four transplant services over three days.

Review of IIMS and RCA reports involving inter-hospital transfers to access specialist care identified that delays and incidents also occurred because there was inadequate communication.

For example:

Delayed transfer 2 (SAC1)

A 43 year-old who was hit by a car sustained multiple injuries, including a significant vascular injury to a lower limb. Concerns were identified about inadequate communication processes between pre-hospital and hospital care leading to sub-optimal clinical management and delay in transfer to definitive specialist care.

Arranging transfer to specialised services is a complex process, as described earlier. It is highly reliant on timely, succinct communication of all relevant information about the patient and the logistics of the planned transfer. RCAs and IIMS reports cited a number of communication issues which were reinforced by themes identified in the workshop:

- There was no communication to the retrieval team of need to prepare for a bariatric patient
- Poor communication resulted in an inappropriate level of clinical escort being arranged and subsequent unplanned redeployment of response teams with the specific skills required
- Poor adherence to booking procedures, including communicating with all services/staff likely to be involved
- The patient's clinical condition was worse than described when arranging transfer or was not clearly communicated to transport/ambulance officers.

For example:

Level of escort arranged (SAC 4)

An ambulance was booked to transport a patient to another hospital. When the patient was handed over, it was stated that he had a large intracranial haemorrhage. The patient also had a cubital intravenous cannula, a catheter and an arterial line in-situ. The ambulance officers were concerned that this patient's condition and treatment were outside the scope of a road ambulance crew, however the medical officer had left the unit and there was pressure to get him to the receiving hospital as quickly as possible.

Other issues were found with pre-hospital care, where patients were sometimes transported to a hospital where there is no specialist service (such as orthopaedics) when there was an alternate available. It is recognised that while, in the interests of patient safety, the need to stabilise a very unwell patient at the nearest facility over-rides considerations of specialist care, in some cases it can result in a significant delay in accessing time-critical specialist care. A number of incidents describe how, with the benefit of hindsight, a different decision could have been made.

The workshop also identified that there is no existing policy or framework for non-ICU bed access for tertiary referral patients (e.g. cardiac and neurosurgery) to assist with accessing the level of care required.

2.3. Undifferentiated urgent (non-ICU) care issues

Situations where the patient does not yet have a clear/working diagnosis (undifferentiated), but is recognised as needing a higher level of care than is available in their current location, present a number of challenges, including:

- Obtaining advice and clinical support from more experienced clinicians about a likely working diagnosis – particularly out of hours
- Identifying the most appropriate service to treat the patient
- Communicating the urgency of the situation
- Ensuring that the clinical needs of patients in smaller/remote locations receive the same level of consideration as those in larger/metropolitan services
- Defining the level and type of care required.

3. Issues associated with arranging the transfer

Once the decision is made to transfer a patient, a number of processes need to occur, usually concurrently. For patients who fit the AMRS retrieval criteria, this should be initiated by a single phone call. For patients requiring specialist/sub-specialty care or a non-ICU bed, the process is more complex and often involves bed management and clinical staff working in tandem/parallel.

Specific difficulties highlighted include:

- Access to beds, particularly for specialist and undifferentiated acutely unwell patients not immediately requiring ICU
- Co-ordination and communication issues between parties involved (MO, bed managers/patient flow units, EDs and fragmentation of retrieval services across the State). This also includes interruptions to clinical care because clinicians are required to make logistical arrangements, bed managers not advised of inter-hospital transfers arranged by medical staff and patient flow units not necessarily designed to manage time critical/urgent transfers

- Inadequate care planning, preparation and communication about the patient's specific needs, both during transfer and in relation to ongoing care
- Having the patient's care accepted quickly/at all
- Engaging families/patients in decision making
- Providing adequate transfer information – not currently standardised
- Inconsistent awareness and application of processes/policy to arrange transfer
- Failure to clearly enunciate ownership of patients at all stages of transfer
- Long waiting times for retrieval services (including flight transport) to be available, transport and crew (un)availability.

Reliance on locums unfamiliar with transfer processes was also highlighted in both the IIMS review and the workshop.

For example:

Communicating and planning for transfer of a critically ill patient (SAC1)

Delay in despatching a helicopter to a rural facility for immediate transfer of a trauma patient in favour of assessment at the rural facility first. This combined with inadequate handover between teams resulted in delayed transfer to the appropriate level of care. The patient arrested and died on arrival at the tertiary facility, some 3.5 hours later.

Inadequate communication between ED staff, paramedics and the Rapid Launch Trauma Co-ordinator were identified by the RCA team. Their report recommends single point of control to improve communication between services.

4. Preparation for transfer

Preparing patients for safe transfer to ongoing care involves both clinical and non-clinical tasks, such as stabilising the patient and assembling diagnostic results and clinical notes.

Concerns related to:

4.1. Inadequate resuscitation/stabilisation, clinical assessment and review, including:

- Difficulties organising appropriate level of medical review prior to transfer
- No medical clearance or recent review of the patient's clinical status (where this was available)
- Inadequate skill mix/skill level available for intubation prior to arrival of the retrieval service
- Requests for investigation which were either unrealistic/inaccessible for the referring service or delayed transfer
- Required equipment was not available/functioning

4.2. Inadequate communication with and/or about:

- Receiving and transport services
- Core information to be documented as part of the transfer process
- All relevant imaging and documentation to be sent with patients. In one case, this led to a repeat scan and in another, the patient's family returning to the referring hospital to collect scan results.

For example:

"Wait for the retrieval team" (SAC3)

An elderly patient presented with severe head injury - initial GCS 8/15 falling to 5 in ED. There was appropriate early notification of the need to activate the trauma response procedures. The AMRS consultant requested the patient be intubated for management of the head injury and to expedite transfer. The notification suggests that, despite available capacity, the patient was not intubated by hospital staff, but left for the retrieval team to do on arrival. This delayed both treatment and transfer and the patient's neurological condition deteriorated en route.

As stated above, a number of incidents reflected inadequate preparation and/or stabilisation of patients prior to inter-hospital transfers. This resulted in transport vehicles/ambulances having to return the patient to the dispatching hospital or another en route, or patients arriving very unwell and requiring intubation and/or resuscitation on arrival.

For example:

Another case of sub-optimal management while awaiting transfer (SAC2)

A 64 year-old patient on intermittent haemodialysis was found "shocked" in the ward following surgery and was transferred to ICU for assessment/treatment. Some resuscitation commenced, including CVC and vasopressors. Retrieval was requested and organised. When the retrieval team arrived they were concerned that patient had not been adequately resuscitated, in spite of receiving the highest level of care available at the site. (BP was 70/40 and perfusion was described as "terrible"). The patient required further resuscitation and stabilisation prior to transfer, resulting in delays and further deterioration.

5. In transit issues

Providing the right number and skill-mix of staff for safe patient transfers is often challenging, in spite of the best attempts to do so. During transfer, staff also need to have the capacity and equipment appropriate to respond to any changes in the patient's condition.

Some of the concerns raised included:

- Inappropriate skill level of escort (too high, too low, too few, wrong skill set)
- Mode of transport selected inappropriate/delayed/not available/affected by environmental conditions (e.g., airstrip found to be inaccessible)
- Equipment not available or fails in transit
- Inadequate response to unanticipated events or poor planning for predictable events
- Documentation (medical records, diagnostics results) or required medications/equipment not sent with patient.

6. On arrival issues

Communication was again a feature of the concerns raised about patient care on arrival at the receiving facility. These included:

- Bed managers not aware of planned transfer/admission
- Usual admission processes bypassed, resulting in expected assessments and handover being missed
- Medical team unaware of a planned admission or that patient has arrived
- Inadequate teamwork and consultation to address patient care needs on arrival

- Avoidable delays to definitive care (e.g., related to team readiness, theatre availability, rigid compliance with non-essential/deferrable admission processes for critically ill patients)
- Miscommunication about the exact status/acuity of the patient meant that the tertiary facility was not adequately prepared to receive the patient
- Poor communication with patient flow units, home teams or clinical units about incoming patient transfers

7. Policy issues

The main concerns raised about policy related to knowledge and applicability of frameworks and processes established at both State and AHS[4] levels to assist in providing patients with the right care at the right time in the most appropriate location. These applied to both the existing policy (PD2006_046)[5] and the absence of a Statewide framework/policy for patients requiring specialist or non-differentiated urgent care.

Specific issues included:

- Variable compliance with the existing policy directive for intensive care default networks (PD2006_046)
- There is a Rural Critical Care Plan but no Statewide plan(s) for specialty services, such as neurosurgery and interventional cardiology
- Statewide retrieval models are fragmented
- There is inadequate planning for known risks, such as surge activity
- Role delineation issues – default hospitals refusing to accept patients requiring higher level of care
- Undifferentiated time-critical patients, not requiring an ICU bed, also need default bed policy (i.e., not just neurosurgery and cardiology)
- Governance and information sharing, particularly around policy, are unclear
- Lack of consistency within AHS clinical network functions
- Poor awareness and application of transfer systems/protocol (see examples below).

For example:

Knowledge and application of retrieval policy(SAC1)

Delayed transfer from a district to a base hospital led to delayed treatment for a patient with acute coronary syndrome. Delays were associated with locating a bed after AMRS was contacted. The retrieval process was not well known to clinicians at the rural facility, DoH[6] policy (2006_046) was not followed and there was a breakdown in communication and decision making processes. There was a reluctance to accept critically ill patients for time-critical procedures if a specialist ICU bed was not available post-procedure.

The RCA report identified that the health service did not have a clear procedure to support compliance with the DoH retrieval policy, which resulted in delayed transfer of the patient.

The CEC Clinical Council forum noted that other industries, such as hotels can manage surge capacity. The Boston School of Business demonstrated that emergency care is predictable [Ref http://www.bu.edu/mvp/]. This is supported by guest editorial comment by Professor Stephen Deane (University of Newcastle and John Hunter Hospital) in the December 2009 Greater Metropolitan Clinical Taskforce (GMCT) newsletter also highlighted that planning to expect emergency surgery and prioritising patients according to clinical need, rather than current location, should be standard practice.

4 Now LHD

5 Critical Care Adult Tertiary Referral Networks - Intensive Care Default Policy PD2006_046 was current during the development of the clinical focus report. The PD was replaced by PD2010_021 in March 2010

6 Now Ministry of Health (MoH)

Other issues which may relate to all types of transfer (from IIMS review)

Other issues identified in the IIMS data include:

- Workforce issues, including staff availability, skill mix and skill base
- Equipment availability, compatibility and standardisation
- Pre-hospital and transfer decisions affected by personal preferences and past experiences, rather than protocol.

Workforce and skill-mix issues (from IIMS)

- Staff not accredited in equipment use (portable ventilator)
- Difficulties allocating/locating suitably skilled staff for patient escorts
- A paramedic was unable to locate a doctor for a helicopter response
- In some SAC2 incidents, staff notified difficulties in convincing their peers of the need to revise or escalate care needs or arrange appropriate transport for care.

Equipment issues (from IIMS)

- Equipment failures, including malfunctioning nets crib, failure of ventilator flow meter during retrieval, faulty helicopter suction unit and malfunctioning oxygen equipment
- Non-availability of equipment including monitoring, stretcher, ventilator, paediatric traction splint
- A dislodged endotracheal tube was also identified and replaced during transfer, however it is unclear in the notification whether there was a problem with equipment itself.

There were a small number of cases where the patient died soon after transfer. It is inappropriate to comment on whether or not conservative management close to family would have been more appropriate. Decisions about transfer are made on the basis of clinical information available at the time, as well as the wishes of the patient and family and seek to achieve the best possible outcome.

It was also noted at the workshop that there is little feedback to the system about what has worked and is sustainable. This reduces the chance of system-wide learning and improvement.

Priorities/Future Directions (from the workshop)

1. Non-ICU transfers

- Process
  One phone number to access clinical advice and organise transfer. It was suggested this could operate at either AHS[7] or State level. This clinical advice needs to be available independent of bed availability.
- Communication
  Standard set of information is required, including observations, investigations undertaken/results and equipment needs.

2. Bed availability

- "One-call shop" required for all patients requiring significant level of care – e.g., AMRS – when there has been no success with usual referral process.
- Regional and tertiary hospitals should be required to accept patients and referring hospitals should be required to accept their patients back. It was suggested that policy and protocols for transfer of patients requiring urgent specialist treatment require that patients be accepted irrespective of bed status.
- Each AHS[8] to organise and communicate its own referral networks based on its clinical service plans.
- Default system required to supplement ICU policy.

3. Undifferentiated non-ICU transfers

- Need to improve surge capacity.
- AHS can/should develop own internal networks and processes.
- There is currently a policy for linkages for ICU beds (ICU default bed policy) – why not apply the same solution for all beds?
- A view was also expressed that patient flow units should not have the right to refuse patients accepted by clinicians. As highlighted elsewhere in the document, discussions need to occur in tandem.

4. Communication issues

- Criteria and protocol to assist with decision-making about initiating the transfer.
- How to promulgate information to clinicians (who are a mobile workforce) in a simple way. Examples include: Web, doctors' and nurses' orientation, ID badges, beepers – the HELP number.
- Data and feedback on the outcomes and processes of transfer.
- Affiliation of smaller hospitals with larger services.
- Relatives involved.

5. Policy issues

- Responsibility and ownership of patients.
- AHS-level clinical service plans either not in place or not working (so opportunity to incorporate).
- Inconsistent adherence to "Default on" rather than "default off" – necessary care cannot be refused under the policy.
- Internal communication – including JMOs and locums, to know what the emergency response is – simple information, readily available – disseminating policy.
- Someone on call to "take the call" – funded for both clinical advice and bed access.
- Anyone working in an emergency environment must be able to provide basic emergency care – education must go beyond Early Management of Severe Trauma (EMST)[9] course.
- Patient transfer should be considered a clinical condition and as such, education provided to junior staff in that light.

8 Now LHD

9 More information available from Australian and New Zealand College of Anaesthetists website: http://www.anzca.edu.au/trainees/courses/emac-and-emst-courses

Discussion

It should be stressed that the analysis in this report is based only on cases where things do not go well and are reported as incidents. The persistent efforts of staff to get the best care for their patients and the frustrations this at times presented, was evident throughout the data. In most instances, patients are transferred safely and quickly and receive the care they need.

The issues identified in incident notifications and RCAs demonstrate the complexity of getting patients to timely and appropriate care, particularly from smaller and rural hospitals. A review of the literature relating to patient transfer identified very similar issues, ranging from the importance of having standardised processes/networks for arranging transfers (Andrews et al 2008; Stevenson et al 2005), ensuring that the skill level of staff and the transport equipment are sufficient to prevent any avoidable deterioration in the patient's condition during transfer (Belligan et al 2000; Stevenson et al 2005) and maintaining clear communication throughout. The importance of reporting incidents so that learning can occur is also highlighted (Moss et al, 2005). As in Australia, the highest number of requests for patient transfers comes from emergency departments, followed by surgical teams (Andrews et al 2008).

Only one study (Fan et al 2006) suggested that the benefits of inter-hospital transfer of ventilated patients required further review, to define the risks and benefits in terms of patient outcomes. This study reviewed both air and land-based retrievals, providing some applicability to the NSW setting.

Human factors were cited as contributing to 67 per cent of adverse events identified in a prospective review of neonatal transfers in the UK (Lim MT and Ratnavel N, 2008). This study also identified problems with preparation of patients. While there was limited information in the CEC analysis, the factors are likely to be similarly represented.

Communicating and accepting information about the patient's current status and clinical needs is at the core of many of the incidents reviewed. It was also evident that teamwork was a vital component in averting several adverse outcomes in this group of incidents. Communication was highlighted in a number of articles (Lim MT and Ratnavel N, 2008. Ligtenberg et al, 2005). A pilot study in Western Australia (funded by the Australian Commission on Safety and Quality in Health Care) identified that handover of care between hospitals would also benefit from a standardised approach, such as ISoBAR[10], in the same way that in-hospital handovers occur (WACHS 2009). An inferred lack of respect for referring clinicians' recommendations for ongoing care was also cited by Ligtenberg et al, who stated that these were ignored in 50 per cent of transfers reviewed in their study.

Workforce issues, such as availability and skill mix, at times impacted on the capacity to adequately prepare patients to be ready to transfer as soon as the arranged transport arrived. The necessary use of locum staff in rural areas and smaller hospitals is a constant challenge for patient transfer processes, which require staff to understand the networks and systems available to support patient care across NSW. An Australian study (Lee et al,1996) concluded that with only 15 minutes of training in the use of inter-hospital transfer guidelines, staff were able to make informed and appropriate decisions.

The issues which prompted the PD2006_046 and the framework for use of the AMRS are still evident in some reports, in spite of attempts to streamline the processes of obtaining a bed, medical 'ownership' of the patient and appropriately equipped transport/escorts.

Some of the most challenging transfers described were those where patients required urgent access to specialist care, outside the AMRS criteria. A number of RCAs made recommendations about the need to establish systems to co-ordinate this type of transfer. A number of AHS[11] (e.g. GWAHS[12], HNEAHS[13]) have established such systems, to identify speciality beds within the AHS[14] and assist with transfers out, but these are generally 'in-hours' services only.

10 ISoBAR and related acronyms are prompts to ensure comprehensive communication and handover of patient information. The initials stand for Introduction, Situation, observation, Background, Assessment and Recommendation. More information is available at: http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/3B7E1D9338C646CCCA257567007DB157/$File/iSoBAR.pdf

11 Now LHD

12 Now LHD

13 Now LHD

14 Now LHD

The specific issues of safe transfer of mental health patients to suitable facilities were also reported from across the State. This was in addition to the challenges of finding a mental health unit bed, often in areas removed from the patient's support systems.

Conclusions

The incident analysis and workshop discussions presented in this report give context and a degree of understanding, to the frustrations expressed by many clinicians arranging patient transfers. The findings of international studies are reflected here and may well be compounded by the geographic distance over which many patient transfers need to occur.

Some suggestions about how patient transfer processes could be improved in NSW follow.

Suggested Way Forward

The incident information, workshop and RCA recommendations reviewed indicate that the processes of retrieval of *critically ill patients* could be improved as follows:

1. Health service systems must support, dovetail and comply with the AMRS framework and PD2010_021 *Critical Care Adult Tertiary Referral Networks – Intensive Care Default Policy*
2. All emergency department staff, including locums, must be orientated to the criteria, processes and contact points for use of AMRS. If the patient is being transferred from a ward bed (including ICU), local decisions need to be made about co-ordination of the transfer either by ED or other identified and appropriately skilled staff within the hospital
3. The bed-finding role of the AMRS needs to be strengthened. Where no bed can be easily identified, the linked hospital should remain the default transfer destination
4. The communication of clinical status for all consultations with AMRS regarding retrieval needs to be standardised (for example using ISBAR/ISoBAR)
5. Communication technology must support a three-way discussion between the AMRS bed-finding unit, the most senior clinical advisor available and the staff caring for the patient
6. Where additional specific skills (for example, management of burns) are required for safe management of the patient, staff involved in the transfer, including AMRS and NETS, must comply with relevant guidelines or policy (for example, NSW Severe Burn Injury Service Transfer Guidelines 2nd Edition 2008) and complete training wherever available/applicable.

The incident information, workshop and RCA recommendations reviewed indicate that the processes of retrieval of *patients requiring time-critical specialist care* outside the parameters of PD2010_021 could be improved as follows:

7. Establishment of a single point of contact within each area health service for advice and co-ordination of transfers which the AHS has capacity to cover
8. Establish a framework for management of time-critical specialist care presentations, outside the scope of the AMRS role. For example, using the linkages outlined in PD2010_021 for referrals to urgent specialist care, including bed-finding
9. Tertiary facilities must develop strong linkages and a level of responsibility for smaller facilities within their AHS/default networks
10. Wherever they exist, specific guidelines for preparing and managing patients being transferred should be adhered to.[15] Guidelines should include processes for urgent inter-hospital transfer of inpatients from all wards/departments as well as ED, include a standardised transfer check list consistent with the current NSW Emergency Surgery Guidelines (GL2009_009) and detail the sequential steps in the activation of patient transfer in accordance with the redesign process.

15 This includes Burn Transfer Guidelines - NSW Severe Burn Injury Service - 2nd edition http://www.health.nsw.gov.au/policies/gl/2008/pdf/GL2008_012.pdf

Both groups of patients would benefit from the following high-priority recommendations from the workshop:

11. Establishment of a free-call (or 1800) number to provide direct access to appropriate clinical advice for clinicians seeking to transfer a patient who requires a higher level of care than that provided at the originating facility. This should include a system to utilise emergency clinician expertise to assist in determining the most appropriate management (including the level of transfer required), for patients for whom a working diagnosis has not yet been established. This is particularly important where the patient does not require an ICU bed, but care needs are beyond the capacity of the facility
12. It is recommended that patient flow managers operating at potential receiving hospitals work in tandem with clinicians to facilitate transfers according to clinical need rather than bed capacity. It needs it be recognised that in some cases urgent medical treatment takes priority over bed availability.

The importance of communicating clearly with families throughout the process, particularly when transferring critically ill patients, must be recognised.

It is further recommended that health services and the AMRS utilise IIMS and other relevant review processes/data sources to identify the specialities where a Statewide approach may be required. This would assist in defining the specific issues associated with transfer of patients requiring specialist care and the solutions already identified and trialled.

References, Policies and Articles of Interest

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Stevenson A, Fiddler C, Craig M & Gray A (2005) *Emergency department organisation of critical* care transfers in the UK. Emergence Medicine Journal 2005;22:795-798

Western Australian Country Health Service (WACHS) (2009). Improving clinical handover in inter-hospital patient transfers – public report on pilot study. Perth WACHS

Relevant NSW Health Policies and Guidelines

PD2006_046. Critical Care Adult Tertiary Referral Networks – Intensive Care Default Policy updated in March 2010 to:

PD2010_021 Critical Care Adult Tertiary Referral Networks – Intensive Care Default Policy

http://www.health.nsw.gov.au/policies/pd/2010/pdf/PD2010_021.pdf

PD2005_156. Emergency Obstetric and Neonatal Referrals – Policy

http://www.health.nsw.gov.au/policies/PD/2005/pdf/PD2005_156.pdf

GL2009_009. Emergency Surgery Guidelines

http://www.health.nsw.gov.au/policies/gl/2009/pdf/GL2009_009.pdf

Burn Transfer Guidelines - NSW Severe Burn Injury Service - 2nd Edition

http://www.health.nsw.gov.au/policies/gl/2008/pdf/GL2008_012.pdf

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