THE NEW ZEALAND MEDICAL JOURNAL
Journal of the New Zealand Medical Association

Transfers from rural hospitals in New Zealand

Trevor Lloyd, Katharina Blattner, Garry Nixon

Abstract

Aim To canvass the experience of a group of New Zealand rural hospital doctors of transfers from their hospitals.

Method Ten rural hospital doctors were required to write an assignment on patient transfer as part of their assessment for a postgraduate diploma. The information from the completed assignments was grouped into themes for analysis.

Results The responses from the ten doctors could be grouped into six themes: resources at the rural hospital, clinical conditions, mode of transfer, communication, issues during transfer, and health system issues.

Conclusions The experience of this group of doctors is consistent with the available published information. Transfer of patients is an inevitable part of rural hospital practice. The outcome for patients could be improved through better resourcing of rural hospitals and education for staff, improved communication with transport services and with base hospital specialists, and involvement in the development of regionalised transport protocols.

Approximately 10% of New Zealanders live within the catchment of a rural hospital.[1] Over 40% of admissions to hospital of these patients can be managed at a generalist level.[2] Most of the rest are likely at some point to be transferred to a larger hospital.

Much of the published information in the medical literature about interhospital transfers relates to larger countries that contain more remote populations such as Australia,[3-5] Canada,[6,7] or the USA.[8-12] The majority of the articles[4,5,7,13,14] deal exclusively with transport by air.

Many of the studies[5,10–12] relate to trauma, specifically transfer of patients with other surgical emergencies,[2] and patients in labour.[8,15] Two papers[7,15] deal mainly with social and emotional factors.

Ironically, one of three published New Zealand papers[13] describes transfers out of an urban hospital, including some to rural hospitals, during a nurses' strike in Christchurch. The others are both from Northland: one a useful review of helicopter transfers in and out of Whangarei[14] from the perspective of the retrieval team, the other[16] a highly relevant audit of transfers out of Rawene Hospital.

We aimed to canvass a wider range of New Zealand rural hospital doctors and make some recommendations by combining the experience of these doctors with published information.

Method

As part of the assessment for the Rural Hospital Clinical Practice paper for the Diploma in Rural and Provincial Hospital Practice taught by the University of Otago in 2008, the students were required to

submit an assignment on transfers from their hospital (Box 1). They were advised at the start of the course that the information from this might be submitted for publication and, after the assignments were marked, the ten doctors who completed the paper gave their permission for the information from them to be used as the basis for this paper, for their words to be quoted if necessary, and to have their identities acknowledged.

Box 1. Transfer project

You will be required to write a project during the course of this paper. This project should attempt to illustrate the themes we have covered in this paper. The topic for the project is patient transfer. We have chosen this topic because transfer of patients, for various reasons, is an inevitable and regular part of our practice. It can lead on to an examination of our personal, our professional, our hospital's and our community's values (perhaps best understood in comparison with the doctors, the hospital and the urban centre that you are sending the patient to). It is also likely to highlight the disjunction that often exists between these sets of values (usually when there is disagreement or things go wrong). You can describe a particular transfer, or a number of transfers, or transfers from your hospital in general, as long as you take into account the wider issues that arise.

The information from the assignments was grouped into themes, which arose from the issues that each doctor had chosen to cover (Box 2), for analysis and reporting.

Box 2. Issues mentioned by rural hospital doctors

Resources at the rural hospital	Isolation (10), Variable workload(4), Doctors (4), Locums(2), Nurses (5) Laboratory (4), Imaging (2).
Clinical conditions	Acute coronary syndromes(3), Trauma(3), Bowel obstruction (3), Other surgical (4), Other medical (9), Paediatric (9), Obstetric (1), Dental (1), Unclear diagnosis (1), For investigation(3)
Mode of transfer	Air (7), Road (7), Private car (1).
Communication	Nurses (2), Specialists (6), Registrars (2), Transport services (2), Feedback from base hospital (2).
Issues during transfers	Level of escort (4), Treatments (4), Potential for the patient to deteriorate (3).
Health system issues	Audits (2), Peer review (2), Most appropriate hospital to receive patient (6), Keeping patients at their local rural hospital ((4), Equity issues (4), Education (4), Coordination (5).

Note: (number of doctors mentioning each issue in brackets).

Results

All of the doctors described working in isolation, at a distance from their base hospital. “The area is large but the population is small”. Many doctors rely on nurses to help with decision making. “Rural transfers often happen as a team process.” Several mentioned the need for education, of themselves and of the rest of the team. Lack of availability of diagnostic investigations was seen as a problem that sometimes necessitated transfer.

There were a variety of clinical conditions mentioned as examples where transfer had been required. Trauma, bowel obstructions and acute coronary syndromes were the ones most frequently mentioned.

Factors influencing the transfer were explained mainly in general terms ”Transfer is appropriate when better care can be provided elsewhere”. or “when specialist care is not available”. “To await events in a doubtful situation in rural New Zealand and not transfer is a recipe for regret.” Where further investigation and treatment were likely to be futile, there was support for the idea that people should be allowed to die near where they lived rather than be transferred out.

Air transfers (mainly by helicopter, though fixed-wing aircraft were seen as an option for longer flights) were preferred in emergencies.

Helicopters were not always available, mainly because of bad weather. There was a general feeling that the helicopter should not be overused. Not all transfers are for emergencies. “By far the majority of … transfers are conducted by road ambulance.” Ambulances were often not available when they were needed. “Our ambulance crews are almost all made up of volunteers and we rely on these volunteers heavily.”

Occasionally there were communication problems within the team at the rural hospital. More commonly, the doctors reported communication difficulties with base hospital specialists. Several doctors were critical of the poor feedback from the base hospital about patients who had been transferred.

Both registrars and consultants were perceived as sometimes obstructive, giving conflicting advice, not passing on information to the receiving team, causing delays, and generally having a lack of understanding of the rural facility and what was available. “Arguing with them takes time; time better spent stabilizing an ill patient.” “There is a perception in some quarters that, in some way, specialist treatment in a large hospital is intrinsically superior to anything that goes on at the periphery.”

Most doctors thought that it was best to discuss the proposed transfer with a base hospital consultant, rather than more junior staff .Several doctors mentioned the importance of gaining the trust of specialists within the base hospital and working together on protocols for transfers. One doctor wrote of the need to “advocate against a system trying not to use resources”.

There were also instances described where communication had gone well. “The above emergency and transfer that took place went smoothly only due to the well coordinated effort of staff and telephone communication between our hospital and the staff of the other involved hospitals.

There was mention of the need to provide treatments before and during transport. There was recognition of the vulnerability of the patient during transport, and the need for early detection of things going wrong. “It is about keeping the patient safe”.

Several doctors expressed frustration at the difficulty of by-passing the nearest provincial hospital when they knew that only a tertiary hospital would be able to provide the definitive care that the patient required. “The overriding principle in … in medical and surgical emergencies is timely arrival of the sufferer in a hospital with sufficient facilities and expertise to provide … definitive care.”

In many cases definitive care could have been provided at the rural hospital with better facilities for diagnosis and treatment, and better-trained staff. The system for patient care was seen ideally as an extended team, which was “only as strong as its weakest link”.

Discussion

As these examples illustrate, transfer to other hospitals is a reality of rural medicine.[6] Around the world, rural areas have disproportionately high death rates from trauma[5,10] A similar situation seems to exist within New Zealand with cardiology services, where patients admitted initially to some peripheral hospitals receive fewer interventions and have poorer outcomes than patients admitted to the receiving tertiary hospitals.[17]

Deciding which patients can be managed in rural hospitals is a constant dilemma for health workers in rural areas.[18] The number of patients requiring transfer is likely to vary depending upon the resources available.[6] Transport will become necessary when the care needs, or potential care needs, of the patient are beyond the scope of the facility at which the patient is receiving care.[8] This is especially relevant for rural patients.[4]

An expert opinion in a recent case before the Health and Disability Commissioner, [19] where there had been doubt about the advisability of transferring a patient, stated: “Smaller hospitals require a system of support and back-up where potentially unstable patients can be easily transferred to the larger centre … [and] medical officers have a right to the ability to transfer patients to the larger centres if they feel this is required.”

In the audit from Rawene, the primary reason for transport to an outside facility was to achieve definitive treatment for a defined medical condition.[16] The doctors in our study felt that some transfers could have been avoided by better access to imaging, up-skilling of rural generalist doctors, and improved access to specialist advice.

The arrangement of the transfer can be frustrating to the attending physician and can actually become more stressful than the patient care.[6] Decisions on transfers should always be regarded as mutual ones between the two hospitals [17]. Good communication between referring and receiving medical and nursing staff is imperative.[20]

Futile transfers, as some of the doctors in our study emphasise, should be avoided. Patient transfer should only occur if it there is a reasonable likelihood of it improving the patient’s clinical outcome.[20]

Closer liaison between referring and receiving clinicians may avoid unnecessary transfers in some cases.[4] In a 2002 audit at Dunstan hospital in Central Otago of patients surviving after an acute coronary syndrome, there was documented consultation with a specialist in 60% of cases.[18] Only 24.3% at that time were transferred to the base hospital.

Education for all categories of staff was seen by the doctors in our study as essential. Training of staff and the resources available at the hospital, will impact on the care provided.[2]

There is now an opportunity to generate the skilled generalist medical workforce New Zealand rural hospitals need with the recognition of rural hospital medicine as a new scope of practice.[21] There is a strong emphasis on the skills necessary to appropriately and safely transfer patients.[21] To remain vocationally registered in rural hospital medicine, doctors have to meet a number of requirements, including passing specified courses in resuscitation and trauma care.[22,23]

To practise safely across a broad scope, doctors need strong and healthy relationships with their specialist colleagues.[21] Trust and "knowing the person you are talking to" are important elements of effective and satisfactory communication.[3] Maintenance of professional standards will include requiring rural hospital doctors to spend some time each year working in the base hospital.[23]

For trauma patients, regionalized systems of care have been shown to improve mortality.[10] The purpose of organised trauma systems is to ensure the expeditious transfer of seriously injured patients to the facility best equipped to care for their injuries.[12] There a need in New Zealand for staff at different levels to continue to work together in the development of similar systems for all categories of patients.

To summarise, we have listed the elements of what we consider to be the ideal emergency transfer from a rural hospital in New Zealand:

- Transfers should occur as part of a regional transport system with guidelines agreed between rural hospitals, transport services, base hospital and tertiary centres;
- Rural hospitals should be adequately resourced to properly triage sick and injured patients, provide care themselves when appropriate, and organize timely transfers when required;
- Transfer when required should be to the nearest hospital capable of providing definitive care;
- There should be one doctor at consultant level at both the referring and the receiving hospital who is responsible for initiating and organizing each transfer;
- Staff at the referring hospital need to liaise closely with transport services and the receiving hospital. The receiving hospital should be kept informed of any change in plan or change in the patient's clinical status;
- Patients, where possible, should be adequately stabilized before transfer. For air transport or for longer journeys this will generally include a secure airway, two intravenous lines, an indwelling urinary catheter and a nasogastric tube;

- Transporting personnel should have the expertise and equipment required to manage any deterioration that might occur en route. There should be an adequate handover to them from the referring hospital and from them to the receiving hospital;
- A referral letter, copies of observations recorded, treatments given, laboratory test results, X-rays, medications and any signed consents should accompany the patient;
- Relatives should be kept informed, and assisted where necessary to make their own arrangements for transport and accommodation (or, where appropriate for family reasons, to go with the patient); and
- Every effort should be made to improve communication with transport services and between staff at the referring and receiving hospitals.

Author information: Katharina Blattner, General Practitioner, Rawene Hospital, Hokianga Health Enterprise Trust, Kaikohe, Northland; Garry Nixon, Medical Officer, Dunstan Hospital, Clyde, Central Otago

Acknowledgements: This paper is based on the written assignments completed by the following doctors: Tom Barry, Greymouth; Jim Corbett, Raetihi; Mohe Sierra Gonzalez, Dannevirke; Alison McAlwee, Kaeo; Steve Main, Rawene; Stuart Mologne, Westport; Alan Murray, Kawakawa; Cornelius van Dorp, Kaitaia; Rafik Wanis, Wairoa; and Eric Wegener, Roxburgh.

Correspondence: Trevor Lloyd, Medical Officer, Dunstan Hospital, PO Box 30, Clyde, Central Otago, New Zealand. Email: trevor.lloyd@cohealth.co.nz

References:

1. Janes R. Rural hospitals in New Zealand. N Z Med J. 1999;112:297–299.
2. Williamson M, Gormley A, Farry P. Otago Rural Hospitals Study: What do utilisation rates tell us about the performance of New Zealand rural hospitals? N Z Med J. 2006;119(1236). http://www.nzmj.com/journal/119-1236/2030/content.pdf
3. Hollins J, Vetch C, Hays R. Interpractitioner communication: telephone consultations between rural practitioners and specialists. Aust J Rural Health. 2000;8:227-31.
4. Wong K, Levy R. Interhospital transfer of patients with surgical emergencies: areas for improvement. Aust J Rural Health. 2005;13:290-4.
5. Gupta R, Rao S. Major trauma transfer in Western Australia. ANZ Journal of Surgery. 2003:73:372-5.
6. Dodd GAA, Peterson I. Interhospital transfers from rural hospitals: suggestions for your jump kit (what you shouldn't leave home without). Can J Rural Med. 1998;3:142-5.
7. Moszczynski A, Haney C. Stress and coping of Canadian rural nurses caring for trauma patients who are transferred out. Journal of Emergency Nursing. 2002;28:496-504.
8. Bigelow LK, Anderson KC, Camp J. (Hageman JR, section editor). Perinatal transport casebook. J Perinatology. 1997;17:411-15.
9. Wuerz R, Meador S. Adverse events during interfacility transfers by ground advanced life support services. Prehospital Disaster Med. 1994;9:50-3.
10. Rogers FB, Osler TM, Shackford SL, et al. Study of the outcome of patients transferred to a level I hospital after stabilization at an outlying hospital in a rural setting. J Trauma. 1999;46:238-33.
11. Mann N, Pinckney K, Price D, Mullins J. Injury mortality following the loss of air medical support for rural interhospital transport. Academic Emergency Medicine. 2002:9:694-8.

12. Young JS, Bassam D, Cephas GA, et al. Interhospital versus direct scene transfer of major trauma patients in a rural trauma system. Am Surg. 1998;64:88-91;discussion 91-2.
13. Dzendrowskyj P, Bowie D, Shaw S. Transport services under stress: patient air transfers due to industrial action in Christchurch. N Z Med J. 2003;116:1-11.
14. Nagappan R, Barker J, Riddell T, et al. Helicopter in transit care of the critically ill–the Whangarei experience. N Z Med J. 2000:113:303-304.
15. Jeffries D. A view from the edge: professionalism in an island practice. Medical Humanities. 2004:30:101-5.
16. Montalvo V. GPEP1 audit: rural hospital transfers. NZFP. 2008:35:328-9.
17. Wong CK. Barriers to a better management for acute coronary syndrome – insights from the Otago-Southland ACS Registry, 2000-2002. N Z Med J. 2009;122:135-8. http://www.nzmj.com/journal/122-1290/3492/content.pdf
18. Fearnley D, McLean J, Wilkins G, et al. Audit of a collaborative care model suggests patients with acute myocardial infarction are not disadvantaged by treatment in a rural hospital. N Z Med J. 8 November 2002;115 (1165):[7 screens]. http://www.nzma.org.nz/journal/115-1165/239/
19. A Health Service Company, Medical Officer, Dr C: A Report by the Health and Disability Commissioner, April 2009. http://www.hdc.org.nz/files/hdc/opinions/
20. Gray A, Bush S, Whitely S. Secondary transport of the critically ill and injured adult. Emergency Medicine Journal. 2004;2:281-5.
21. Nixon G, Blattner K; for the NZ Rural Hospital Doctors Working Party. Rural hospital medicine in New Zealand: vocational registration and the recognition of a new scope of practice N Z Med J.2007;120(1259). http://www.nzma.org.nz/journal/120-1259/2654/
22. Dawson J, Nixon G. Recent developments in rural hospital medicine II: Experiential pathway to Fellowship of the Division of Rural Hospital Medicine. NZFP; 2008;35:405-6.
23. Nixon G, Blattner K. Recent developments in rural hospital medicine I: Rural hospital medicine special scope. NZFP. 2008;35:402-4.