

## Urgent government funding needed for rural curriculum

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New Zealand currently faces a shortage of rural doctors.<sup>1,2</sup> In recent years we have seen both our medical schools and the government make efforts to address this problem. A recent review<sup>3</sup> found that there were four main factors at the undergraduate level that promote rural recruitment and retention:

- Selecting students of rural origin
- Teaching and placements in rural locations
- A curriculum with a primary care emphasis
- Other student support such as rural mentorship and rural health student clubs

In 2004 the government created 40 additional funded places in our medical schools for students of rural origin (i.e. with schooling or other significant life experience in towns of under 20,000 people). Overseas studies show that students with rural backgrounds are more likely to pursue careers in rural medicine.<sup>3,4</sup> However, "rural recruitment requires far more investment than simply a change in the medical school selection process."<sup>5</sup> As indicated above, another crucial aspect will be the provision of high quality undergraduate medical education in rural settings and with a primary care emphasis.<sup>3</sup> Curricular changes such as these are also important for developing a vertically integrated career pathway for rural practitioners.

Teaching medicine in rural locations is more expensive than in centralized urban teaching hospitals. Additional funding is required for the infrastructure and support that students need on rural attachments, such as transport, accommodation, distance teaching technology, and rural general practitioner reimbursement. There is at present no specific government funding of rural undergraduate curricula in New Zealand medical schools. In 2004, the medical faculties of Auckland and Otago submitted a proposal to Government for \$12 million to fund a twelve month rural curriculum for the rural origin students and a twelve week rural attachment for all students. The full funding was agreed to, and promised in 2004, but has not been delivered.

There is presently a successful and popular seven-week rural GP placement existing at Dunedin School of Medicine, but it is at risk of termination due to funding constraints. This course is enjoyed by students for the practical skills, clinical contact, and community involvement, and students who had never considered rural practice have changed their attitudes following this course.<sup>6</sup> It is also popular because the essential student support (e.g. accommodation, transport, technology, supervision) are provided by the university and rural stakeholders. The communities and rural doctors themselves benefit from the relationships with students and the medical schools. Rural practice offers not only experience in the primary care, but also extends to secondary and lower tertiary level care. However, the rural programme at Dunedin School of Medicine is operated on a tight budget and depends upon the generosity of many rural general

practitioners. Without extra funding from government, even this seven week course is at high risk of being removed from the curriculum.

The New Zealand Medical Students' Association (NZMSA) supports the development of a fully funded twelve month rural curriculum. The NZMSA will work closely with the universities and other stakeholders of rural health. The NZMSA believes there is a lot of good to be gained from rural medical education - for students, the communities they work in, the rural workforce, and New Zealand as a whole. For rural education to be successful, it must be a positive, well supported experience for students and their rural teachers, and this will require additional funding.

Rural medical education represents an investment in the health system, as well as education. The rural community is an integral part of New Zealand, and deserves health care equity. The rural origin students are entering their fourth year in 2006. Without government funding, our medical schools cannot deliver a rural curriculum. We must convey this sense of urgency to government to deliver this funding.

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## The Patient Flow Project: what impact has it had?

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### ABSTRACT

As the New Zealand population grows, so too does the demand for health care. Health care providers must service as many people as possible while operating on a limited budget and with limited resources. In June 2002, the Canterbury District Health Board commissioned the *Patient Flow Project Report*,<sup>1</sup> the recommendations of which were later piloted and implemented in May 2003 at Christchurch Hospital. This initiative focused on increasing patient throughput while maintaining an acceptable standard of care. Among its policies was the aim to maximise hospital bed utilisation, and two of the tools used to achieve this included a reduced Average Length Of Stay (ALOS), and early morning discharges. This summer studentship conducted a small-scale literature review to analyse international methods for managing patient flow, and investigated concerns that the increased flow afforded by the *Patient Flow Project* would manifest itself in preventable readmissions, declining patient satisfaction and higher workloads.

### KEYWORDS

*Patient Flow Project*; patient throughput/ flow; Average Length of Stay (ALOS); readmission; discharge planning; patient satisfaction

### INTRODUCTION

The changing nature of hospital care to accommodate increasing demand is becoming apparent with a more dominant presence of management organisations in the health care system. One such initiative employed at Christchurch Hospital is the *Patient Flow Project*, which has adopted some of the policies practiced in other countries following their success in better meeting patient demand.

In the United Kingdom the National Health Service (NHS) Modernisation Agency has earned a reputation for its innovative solutions,<sup>2</sup> which appear to get results. It seems the crux of their approach in aiding the NHS deliver effective health care is to provide "the right skill at the right time in the right place".<sup>3</sup> Hence their proposals often involve whole systems analyses for identifying and rectifying potential bottlenecks to patient flow.<sup>2</sup> Similar tactics have been employed in hospitals in the United States upon the recommendation of the Clinical Advisory Board in Washington DC<sup>4</sup>. Here the focus is on maximising the use of currently available resources. Future expansion of resources may increase capacity, which may meet demand, but in the meantime

Courtney Hore has an interest in Maori Health and hopes to become more involved in this field having enjoyed her first Summer Studentship last year. Courtney feels the exposure she gained to the public health system and its limited resources this early in her medical career was extremely valuable.

increasing patient flow appears to be the most effective way to do this.

The *Patient Flow Project's* key objectives include admission to the correct ward, early morning discharge, discharge planning for provision of support following discharge, and improved communication between health providers. In line with these objectives the aims of the studentship were to review acute medical activity, gauge patient satisfaction, and to report on any associated impact. The preliminary findings may form the basis of future investigations.

### METHODOLOGY

Two types of data were analysed; quantitative data and qualitative data.

### Quantitative Data

Two data sets of acute medical activity were compiled and processed by Emendo Limited<sup>5</sup> from January 2002 – November 2004. The raw data was sourced from the Patient Management System (PMS), which records patients' movements through the hospital.

The data sets and the specialties included were:

- The General Medicine ward data set:  
General Medicine, Dermatology, Infectious Diseases, Immunology, Gastroenterology, and Rheumatology, (and weekend Otolaryngology activity).
- The Cardiology/Respiratory ward data set:  
Cardiology, Endocrinology, and Respiratory.

Patient flow and key trends were then investigated with consideration for:

- **Average Length Of Stay (ALOS):**

The average length of time spent in hospital. This may enable some insight into the level of burden on hospital resources, which can vary considerably amongst different specialities.

- **Readmission rates:**

The number of patients discharged and readmitted to the same specialty / for a similar condition within: 24 hours, 7 days, 30 days or 60 days. The extracts of graphical representation of this data from the summer studentship depict readmission rates within a 60-day period. These graphs give an overview of the total readmission rate, which is useful when making comparison between and within the data sets. Admission after a 60-day period decreases the likelihood that the presentation is related to a previous admission.

- Comparison of **Total Number of Discharges** and **Total Readmission Rate**. This involves evaluating whether there has been a disproportionate increase in the difference between the total readmission rate and the total number of discharges. If this were the case, ie. the disproportionate increase being attributable to a significant increase in the total readmission rate, it may suggest that the policies of the *Patient Flow Project* to promote early discharge are to the detriment of patients.

- Comparison of **ALOS** and **Total Readmission Rate**. Not only may this comparison give some indication of how the aim to reduce the ALOS per patient has impacted on readmission rates, it may also allow some prediction of the subsequent burden on hospital resources and how this has changed following the implementation of new policies like the *Patient Flow Project*.

Occupancy rates and 'outliers' (patients admitted to wards other than their home ward following an absence of beds) were also monitored and analysed in the final report<sup>6</sup>.

Comparing trends between the two data sets may only indicate progress in the relative areas observed, as acceptable standards have not yet been established for specific specialities.

### Qualitative Data

Patient satisfaction data comprised 173 inpatient satisfaction survey comments from July 2003 to June 2004. This information was collected and processed by the Corporate Quality and Risk Office at Princess Margaret Hospital. The data was further analysed to identify common perceptions of the quality of care received.

The comments from inpatients admitted and discharged from the following specialities were analysed:

- General Medicine
- Cardiology
- Respiratory

It is possible that this method of data collection would not yield results representative of the entire patient population. Those patients responding may have communicated extreme opinions allowing for bias in the resulting analysis. The data analysis required identification of common concerns. Views and attitudes for the feedback did not always communicate clear feelings of satisfaction/dissatisfaction and did not involve numerically graded responses.

### RESULTS

#### Quantitative Data

##### ALOS

The ALOS in General Medicine decreased from 5.80 to 4.00 days per patient, while in Cardiology/ Respiratory it increased from 3.95 to 4.05 days per patient (Figure 1). Hence there appears to have been a greater effect in General Medicine. It must be noted that comparing individual values may be misleading as what may be deemed progress for one specialty may be inappropriate for another.

### READMISSION RATES

The total readmission rate in General Medicine increased by 0.05 per cent per month on average to give a total rate of 17.2 percent (Figure 1). However, when compared with the total number of discharges there was no relative change in the difference between their individual rates of increase. In Cardiology/ Respiratory the total readmission rate remained constant at 15.6 per cent, and when compared with the total number of discharges it had decreased ie. there was a decrease in the difference between their individual rates of increase. Cardiology/ Respiratory had a lower patient throughput than General Medicine did, and hence if patient throughput were to increase in this area the readmission rate may no longer decrease.

### GENERAL MEDICINE WARD DATA SET: COMPARISON OF ALOS AND TOTAL READMISSION RATE

While there has been a slight increase in the total readmission rate there has been a dramatic decrease in the ALOS.

### CARDIOLOGY / RESPIRATORY WARD DATA SET: COMPARISON OF ALOS AND TOTAL READMISSION RATE

Figure 2 illustrates the marginal increase in the ALOS and the consistency of the total readmission rate. While there has been a slight increase in the total readmission rate there has been a dramatic decrease in the ALOS.

Figure 2: Cardiology, Respiratory & Endocrinology ALOS vs % of Readmissions

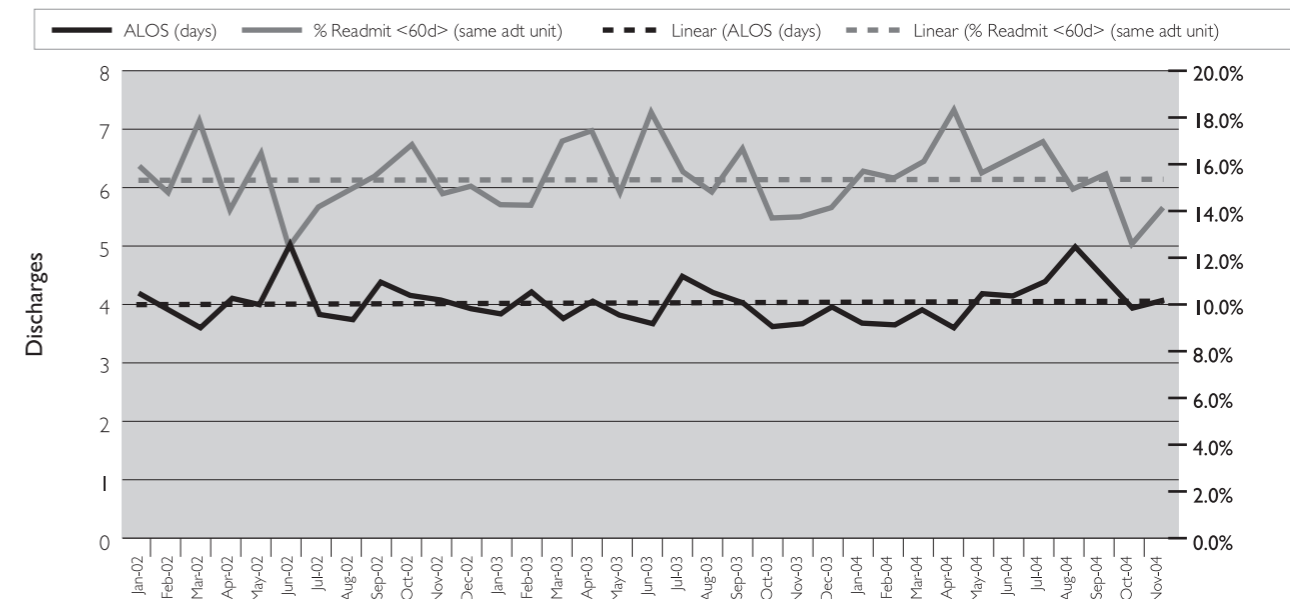
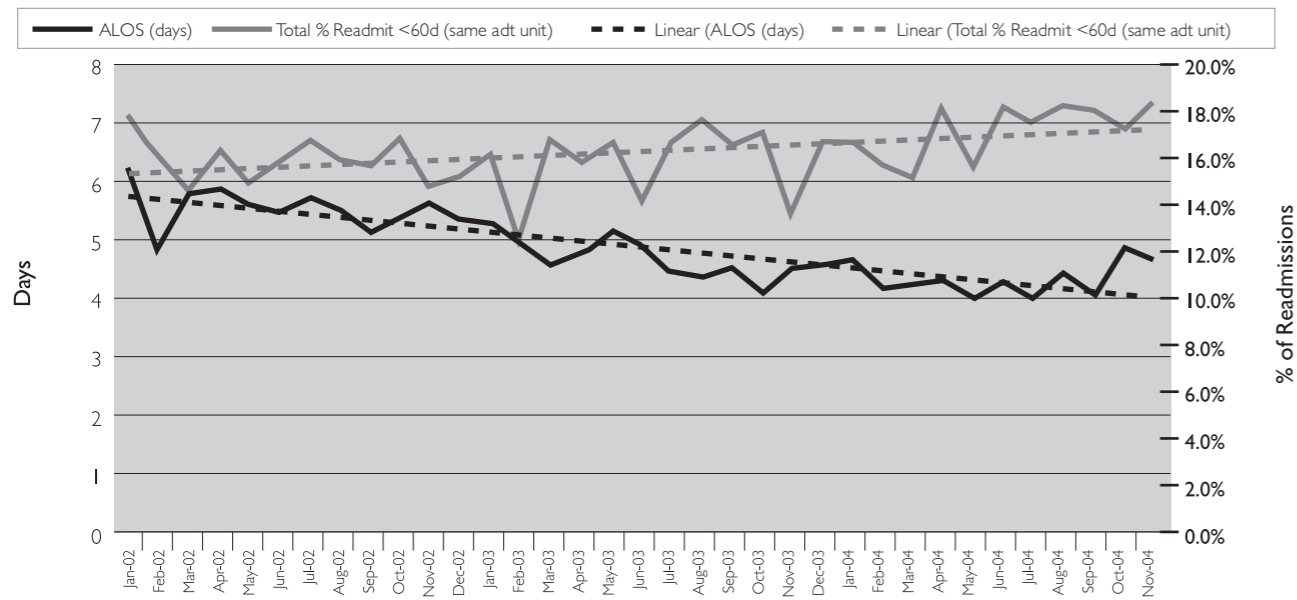


Figure 1: General Medicine, Dermatology, Otolaryngology, Infectious Diseases, Immunology, Gastroenterology & Rheumatology ALOS vs % of Readmissions



### Qualitative Data

Patients did not demonstrate specific knowledge of the *Patient Flow Project*. Some felt their short stay impacted negatively on the quality of care received as staff tried to accommodate more patients. Several patients commented on the lack of discharge planning and the long waits endured.

### GENERAL MEDICINE WARDS

Overall patients commented on receiving professional and attentive service. Other patients were not quite as satisfied. There were several comments expressing disappointment over the lack of information given upon discharge, and distress over the eagerness to vacate hospital beds, and complete hospital discharges. Some patients acknowledged the high workloads for staff, but also felt this inhibited them from providing adequate care.

*"You were there when we needed you and we were very impressed with the service and care we received. My husband was admitted immediately via A&E. They were terrific."*

*"She (the Doctor) told me to go back to the hospital, but staff were in such a hurry to get rid of me so they could have the bed I couldn't face it."*

### CARDIOLOGY / RESPIRATORY WARDS

Several patients praised staff for their organisation, efficiency, attentiveness and skill. Other patients felt communication was lacking between staff during changeover, between staff and patients during their stay, and throughout the discharge-planning process. Several patients were unhappy with the duration of the discharge process, and were distressed by the constant movement between beds in order to accommodate other patients.

*"I experienced happy, smiling people around me. A feeling of a strong team working together with calmness and great organisation when busy. The one thing I do struggle with is on the day I left I was asked to sit in the lounge or in an armchair so that the bed could be changed. The bed then remained empty for the following three hours at which time I was picked up by family. There were times when I would have appreciated being able to lie down, especially as I had an hour's journey to get home."*

## DISCUSSION

### ALOS

The differences in the trends identified in the two data sets may be explained by differences in the acuteness of patients presenting at the relative specialities, thus allowing for overestimation/ underestimation of the ALOS. Another possibility is that the *Patient Flow Project* is influencing the differences in the respective trends as it was introduced in different specialties at different times. It was first introduced in May 2003 in General Medicine and data collection began in June 2003 and in Cardiology/ Respiratory in October 2004. Other data on patient flow, prior to June 2003, has been and still is being collected and stored in the Patient Management System (PMS). Hence it is possible to make comparisons between the two data sets over the past three years, however there is not as much specific data on patient flow relating to the *Patient Flow Project's* policies in Cardiology/Respiratory. It may still be useful to make such comparisons to see what effect the project has made in one area, where it has been in practice for longer. The trends observed were evident before June 2003, but any initiatives taken to maximise patient throughput are bound to have had some impact in this area.

### READMISSION RATES

The total readmission rate in General Medicine increased, while it remained static in Cardiology/ Respiratory. It is unclear whether these trends are directly related to the *Patient Flow Project's* implementation and the timeframe in which this occurred.

### COMPARISON OF TOTAL NUMBER OF DISCHARGES AND TOTAL RE-ADMISSION RATE

The fact that there had been no relative change in the readmission rate in General Medicine suggested the efforts to reduce the ALOS and increase patient throughput were not to the detriment of patients. In Cardiology/ Respiratory the relative decrease in the total readmission rate suggested the increased patient throughput was again not to the detriment of patients. While this appears to be a more desirable outcome the level of patient throughput had not increased to the same extent as in General Medicine.

### COMPARISON OF ALOS AND TOTAL READMISSION RATE

In General Medicine the ALOS decreased by a greater factor than the total readmission rate had increased. In Cardiology/Respiratory the ALOS had increased marginally, but overall both the ALOS and the total readmission rate appeared constant. As previously noted, the reduced ALOS in General Medicine did not appear to increase readmissions. Cardiology/Respiratory appeared to have an ideal outcome, but this might change should the patient throughput be increased or the ALOS

Future expansion of resources may increase capacity, which may meet demand, but in the meantime increasing patient flow appears to be the most effective way to do this.

decreased. If more patients may be treated adequately and without a greater chance of readmission this may be a desirable outcome from the perspective of patient flow management.

Future efforts to designate specialty-specific targets for the ALOS and readmission rates may improve the usefulness of such data analyses. In this way both patient flow management staff and medical personnel could monitor such progress.

### Qualitative Data

#### EFFICIENCY AND EFFECTIVENESS OF MANAGEMENT SYSTEMS

In general patients did not demonstrate knowledge of the Patient Flow Project but commented on some of its related policies. This suggests that the relationship between the policy changes and patients' satisfaction may not be completely applicable. Several patients recognised the effort to reduce the ALOS with the majority of patients equating a shorter length of stay with a reduction in the quality of care provided. Patients were aware of changes made to discharge procedures and highlighted particular concerns regarding the length of the discharge process. This might be an area in which to improve the efficient use of resources, and the standard to which discharge procedures are completed. If deciding to discharge patients and initiating discharge-planning procedures was done before 11AM, patients might feel better informed and prepared. This would also enable patients to organise transport and make arrangements with caregivers without experiencing unnecessary delays. The Patient Flow Project already has policies regarding discharge planning, however these have not yet succeeded in diminishing the waiting period between informing the patient of their eligibility for discharge and their actual discharge.

### CONCLUSION

The general conclusion has been that while patient flow has increased this has not occurred without some compromise. Quantitative data analyses demonstrated that relative to an increased number of discharges the total rate of readmissions had not significantly increased. Qualitative data analyses of patient satisfaction suggested there was a general lack of knowledge amongst patients surrounding the *Patient Flow Project's* policies. Patients were unhappy with the reduced lengths of stay they experienced and the lack of discharge planning. At the same time many patients acknowledged the demands placed on hospital staff and were happy with the quality of care they received.

#### THE FUTURE OF PATIENT FLOW MANAGEMENT

It is inevitable that there needs to be new initiatives to manage patient flow, as a response to the increasing demand for health services. There are many ways in which current procedures could be improved, such as by following the recommendations outlined in our final report.<sup>6</sup>

### ACKNOWLEDGEMENTS

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