

# Inequality of orthopaedic workload distribution in a rural setting: Scope for centralisation of resources or satellite centres?

L Host

---

## Citation

L Host. *Inequality of orthopaedic workload distribution in a rural setting: Scope for centralisation of resources or satellite centres?*. The Internet Journal of Orthopedic Surgery. 2008 Volume 11 Number 1.

## Abstract

With an increasing rural population in Australia, access to specialist care remains highly variable. Larger rural centres have emerged which are bearing the brunt of the workload, but are not well equipped to deal with the predicted increased workload secondary to an enlarging and ageing population. For orthopaedic care provision in western NSW in Australia, Orange Base Hospital (OBH) has emerged as one of the primary centres. Our review shows that 33.6% of the workload being placed on OBH is from geographical areas located in closer proximity to Bathurst Base Hospital (BBH). Raw data would suggest that a satellite orthopaedic service at BBH is a viable option to reduce the load on OBH, and that a similar pattern of satellite services may be warranted in other rural areas.

## INTRODUCTION

The majority of the medical work force is concentrated in larger urban settings, though over the past 70 years a number of larger rural centres have emerged to share the workload. Discrepancy persists however, with 30% of the total population in rural areas, and only 10% of doctors in rural areas<sup>2,3</sup>. The population of Australia is currently ~21 million, with 6.7 million in NSW in 2004<sup>1</sup>. Of this 6.7 million, 4.2 million is based in Sydney, with the remainder 2.5 million scattered over the state. Estimates are that the population for NSW will increase to 10.1 million by 2051, with 3.8 million outside of Sydney<sup>1</sup>. Of particular note is an increase in life expectancy and subsequent increase in the number of people living beyond age 85 years. The ageing population in particular is likely to see the orthopaedic workload in all areas skyrocket, with the proportion of the population aged over 50 years predicted to increase from 30% (6 million in 2004) to 48% (14.6 million in 2051)<sup>1</sup>. Metropolitan centres have responded in part by redirecting patient flow into certain facilities by creating within area networks specific centres for managing trauma, obstetrics, paediatrics, and orthopaedics. In a rural setting, this is not readily feasible secondary to the large distances between centres. As some rural centres have grown and others diminished, a growing trend is for a large geographical distribution of population to have a particular centre as its

referral point. One such example is that of the Greater Western Area Health Service (GWAHS), in which Orange Base Hospital is the primary orthopaedic referral centre, with smaller surrounding hospitals such as Bathurst Base and Cowra District Hospitals having no trauma orthopaedic service. With an increasing demand for all specialties, the strain being placed on these larger referral centres is becoming greater, and regrettably this strain is not being met by increases in funding and staffing. Our review aimed to identify the unequal distribution of orthopaedic work in the eastern zone of the Greater Western Area Health Service, and highlight the need for an increased number of larger rural centres with specialty capability, or alternatively increasing the capacity of the existing primary centre.

## AIMS

To identify any unequal distributions of orthopaedic work in the GWAHS in order to highlight the need for more rural centres with the capability to manage the growing medical demands of an ageing population.

## METHODOLOGY

All orthopaedic admissions through the emergency department over a two-month period were reviewed and examined from a demographical viewpoint. Geographical home location and place of referral were recorded. These were cross-referenced against proximity to the two Base

## ***Inequality of orthopaedic workload distribution in a rural setting: Scope for centralisation of resources or satellite centres?***

hospitals in the eastern zone of the GWAHS, Bathurst and Orange.

### **RESULTS**

The total number of admissions to OBH was 125 patients over a 2 month period in 2007. Towns were assessed in terms of distance from Orange and Bathurst via roadways, and two areas identified (see table 1). Area X were those towns geographically in closer proximity to Orange, and Area Y those towns geographically in closer proximity to Bathurst (see table 2). When the admissions to Orange are examined by whether patients are from area X or Y it was found that 83 of the 125 were from area X and 42 from area Y. Expressed as percentages, 66.4% of admissions to OBH were from area X and 33.6% were from area Y.

#### **Figure 1**

Table 1: Distance from Orange and Bathurst, and patient load by town

Town	Distance from Orange	Distance from Bathurst	Number of admissions to OBH
Orange	0	52	37
Bathurst	52	0	29
Parkes	100	154	14
Rylstone	101	99	6
Forbes	117	172	10
Molong	35	89	2
Oberon	101	47	2
Canowindra	59	114	5
Grenfell	159	156	2
Eugowra	81	135	1
Condobolin	201	255	1
Trundle	161	215	3
Blayney	35	32	2
Mumbil	70	124	1
Mudgee	183	129	1
Cowra	72	94	9
TOTALS	N/A	N/A	125

#### **Figure 2**

Table 2: Hospital proximity to Bathurst or Orange

Closer to Orange – Area X	Closer to Bathurst – Area Y
Parkes	Rylstone
Forbes	Oberon
Molong	Grenfell
Canowindra	Blayney
Eugowra	Mudgee
Condobolin	
Trundle	
Mumbil	
Cowra	

### **DISCUSSION**

This review of admissions highlights that 1/3 of the

orthopaedic workload being serviced by OBH derives from geographical locations in closer proximity to Bathurst. With two base hospitals in such close proximity but an obvious mismatch in terms of orthopaedic load sharing, it would seem obvious that the structure of orthopaedic care provision needs to change. How this is best achieved is the question, and this issue is not easily solved. What is clear however, is that an orthopaedic service is viable at BBH as a separate entity from that at OBH with regards to public hospital workload, be it primarily located at Bathurst, or run as a satellite centre from Orange. Funding issues are regrettably the determining factor in the majority of health care decisions made, and as such rationalisation of the funding provided to Orange and Bathurst for orthopaedic care provision needs to be established to support either an increased service at Orange, or establishment of a satellite centre at Bathurst.

The contained data is but one example of a misdistribution of workload and resources for orthopaedic care in a regional setting. With the above mentioned projected increases in population size, particularly with increases in the percentage of patients > age 50 year, all public hospitals are going to struggle under the orthopaedic burden. Commonsense would suggest that an increase in the number of orthopaedic care providing facilities and/or enlarging the capacity of those available, is warranted to cope with the predicted increased demand. With funding the rate-limiting step in any health care advancement of this type, the ball is uninspiringly in the court of the state and federal health departments.

### **References**

1. Australian Bureau of Statistics - Population projections 2005.  
[www.ausstats.abs.gov.au](http://www.ausstats.abs.gov.au)
2. GWAHS annual report 2006-2007.  
<http://www.gwahs.nsw.gov.au/userfiles/file/gwahs%20annual%20report.pdf>
3. Australian Institute of Health and Welfare 2007. Australian Hospital Statistics 2005-2006. Health services series no. 30. Cat. no. HSE 50. Canberra: AIHW.

**Author Information**

**Lachlan Host, B.Medicine, RACS - BST**

Orthopaedic Registrar, Fairfield Hospital, SWSAH