

An audit of the surgical load at the Charlotte Maxeke Johannesburg Academic Hospital

Claire Nicolette Lownie

A research report submitted to the Faculty of Health Sciences, University of the
Witwatersrand, in partial fulfilment of the requirements for the degree of
Master of Science in Medicine in the field of Emergency Medicine

Johannesburg 2011

CANDIDATES DECLARATION

I, Claire Nicolette Lownie declare that this research report is my own work. It is being submitted for the degree of MSc (Medicine) in the field of Emergency Medicine in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

..... Signature of Candidate

..... day of Month, 20.....

In memory of my late Father

Professor J F Lownie

BDS, H. Dip. Dent, M Dent (MFOS), FCMFOS, PhD.

1943 – 2008

ABSTRACT

The Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) has a trauma unit which consists of the emergency treatment / resuscitation area, an Intensive Care unit (ICU) and a trauma ward. For non-trauma surgical admissions, a different management system is in place. There is a general medical emergency area where surgical patients are triaged and assessed then sent on for admission to the wards and / or operation as required. Currently the structures described necessitate a total of at least 4 medical officers and 2 registrars on duty in the hospital in addition to consultants and other staff on call from home. The potential exists for the unacceptably frequent rostering of doctors on call and therefore in terms of total hours worked by each.

With a view to optimising the existing human resources and improving the quality of patient care by reducing the number of working hours of the doctors, an audit of the surgical workload inclusive of trauma at CMJAH was undertaken. The number of admissions and operations, both elective and emergency, were captured, for the trauma unit and three surgical wards at CMJAH for the 2009 calendar year. Total emergency admissions to all four wards combined were 13032 of which 86.1% were trauma admissions. An average of 15 patients per week (sometimes many more) were operated in the trauma unit. The burden of trauma is extremely heavy compared to that of the other surgical units. An important suggestion would be to look at restructuring the existing resources into a more organised system of practice such as an Acute Care Surgery Unit thus optimising both emergency and non-emergency care of surgical patients.

ACKNOWLEDGEMENTS

I would like to thank my two main supervisors for this report

Prof P E Cleaton-Jones and Prof K D Boffard for their tireless guidance and assistance and

Prof B Sparks for his assistance as an “interim supervisor”

I would also like to thank the Department of Surgery at the Charlotte Maxeke Johannesburg Academic Hospital for the administrative and financial support given during completion of this research report.

Lastly I would like to thank my family - in particular my mother, Prof M A Lownie for putting up with my numerous questions and bad moods and for continuing to encourage me through this project from beginning to end.

TABLE OF CONTENTS

	Page
DECLARATION	ii
DEDICATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENTS	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	x
LIST OF TABLES	xi
CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW	1
1.1 Historical background	1
1.2 Current structures	1
1.3 Literature review	1
1.3.1 Acute care surgery	7
1.3.2 Objective	9
CHAPTER 2. MATERIALS AND METHODS	10
2.1 Definitions	10
2.2 Study design	11
2.2.1 Source of data	11
2.2.2 Study population	11

2.3 Data analysis	11
2.4 Methodology	12
CHAPTER 3. RESULTS: ADMISSIONS – YEARLY TRENDS	13
3.1 Introduction	13
3.2 Area 163 (Trauma unit)	13
3.3 Ward 394 (General surgery)	14
3.4 Ward 395 (Vascular surgery)	16
3.5 Ward 396 (General surgery)	17
CHAPTER 4. RESULTS: ADMISSIONS – SEASONAL TRENDS	19
4.1 Introduction	19
4.2 Materials and methods	19
4.3 Area 163 Admissions	20
4.4 Ward 394 Admissions	20
4.5 Ward 395 Admissions	22
4.6 Ward 396 Admissions	24
CHAPTER 5. RESULTS: OPERATIONS – YEARLY TRENDS	26
5.1 Introduction	26
5.2 Area 163 (Trauma unit)	26
5.3 Ward 394 (General surgery)	28

5.4 Ward 395 (Vascular surgery)	29
5.5 Ward 396 (General surgery)	30
CHAPTER 6. RESULTS: OPERATIONS – SEASONAL TRENDS	31
6.1 Introduction	31
6.2 Materials and methods	31
6.3 Area 163 Operations	31
6.4 Ward 394 Operations	33
6.5 Ward 395 Operations	34
6.6 Ward 396 Operations	36
CHAPTER 7. DISCUSSION	38
7.1 Principal findings	38
7.1.1 Admissions	39
7.1.2 Operations	41
7.2 Strengths and weaknesses	43
7.2.1 Strengths of the current study	43
7.2.2 Weaknesses of the current study	44
7.3 Strengths and weaknesses in relation to other studies	44
7.3.1 Strengths of the current study	44
7.3.2 Weaknesses of the current study	45

7.4 Implications of the study	45
7.5 Unanswered questions and future research	47
REFERENCES	48

LIST OF FIGURES

	Page
Figure 3.1 Admissions per week for area 163.....	14
Figure 3.2 Total and emergency admissions for ward 394 by week	15
Figure 3.3 Total and emergency admissions for ward 395 by week	16
Figure 3.4 Total and emergency admissions for ward 396 by week	18
Figure 5.1 Total and emergency operations for area 163 by week	27
Figure 5.2 Total and emergency operations for ward 394 by week	28
Figure 5.3 Total and emergency operations for ward 394 by week	29
Figure 5.4 Total and emergency operations for ward 396 by week	30

LIST OF TABLES

	Page
Table 4.1 Calendar weeks by season used in this study	19
Table 4.2 Seasonal trends for all admissions to area 163 (trauma)	20
Table 4.3 Seasonal trends emergency admissions ward 394 (general surgery)	21
Table 4.4 Seasonal trends non-emergency admissions ward 394 (general surgery)	21
Table 4.5 Seasonal trends total admission ward 394 (general surgery)	21
Table 4.6 Seasonal trends emergency admissions ward 395 (vascular surgery)	22
Table 4.7 Seasonal trends non-emergency admissions ward 395 (vascular surgery)	23
Table 4.8 Seasonal trends total admissions ward 395 (vascular surgery)	23
Table 4.9 Seasonal trends emergency admissions ward 396 (general surgery)	24
Table 4.10 Seasonal trends non-emergency admissions ward 396 (general surgery)	24
Table 4.11 Seasonal trends total admissions ward 396 (general surgery)	25
Table 6.1 Seasonal trends emergency operations area 163 (trauma)	32
Table 6.2 Seasonal trends non-emergency operations ward 163 (trauma)	32
Table 6.3 Seasonal trends total operations ward 163 (trauma)	32
Table 6.4 Seasonal trends emergency operations ward 394 (general surgery)	33
Table 6.5 Seasonal trends non-emergency operations ward 394 (general surgery)	33
Table 6.6 Seasonal trends total operations 394 (general surgery)	34

Table 6.7 Seasonal trends emergency operations ward 395 (vascular surgery)	35
Table 6.8 Seasonal trends non-emergency operations ward 395 (vascular surgery)	35
Table 6.9 Seasonal trends total operations ward 395 (vascular surgery)	35
Table 6.10 Seasonal trends emergency operations ward 396 (general surgery)	36
Table 6.11 Seasonal trends non- emergency operations ward 396 (general surgery)	36
Table 6.12 Seasonal trends total operations ward 396 (general surgery)	37