Queen Elizabeth National Spinal Injuries Unit

Annual Report

2000/2001

Queen Elizabeth National Spinal Injuries Unit
South Glasgow University Hospitals NHS Trust
1345 Govan Road, Glasgow, G51 4TF

Telephone : 0141 201 2555
Facsimile : 0141 201 2991

1.0 Introduction

The Queen Elizabeth National Spinal Injuries Unit has had a successful year in improving its overall service to patients in Scotland.

Significant improvements have been made in pre-hospital care, emergency management, and rehabilitation and discharge services.

The number of new referrals and admissions continue to rise due principally to an increase in thoracic lumbar paraplegia.

The emphasis on research and teaching continues to lead improvements in the clinical management of patient. Collaboration is underway with the University of Strathclyde, the University of Glasgow and Caledonian University. A joint venture is proposed with Edinburgh University and funding has been applied for. It is anticipated that this clinical research will have significant impact on improvements in patient services.

The annual report and its associated appendices contains a comprehensive analysis of the Spinal Injury Unit activity and the individual reports of each department or associated body.

2.0 Activity

The workload of the Unit continued to increase in 2000/2001 with the development of new services and clinical initiatives.

2.1.1 New In-Patient Activity

The number of acute new admissions has risen in 2000/2001 after being fairly constant in the previous three years. The majority of the increase is attributed to thoraco-lumbar fractures with paraplegia. The number of patients without neurological deficit has also increased but at a slower rate than in previous years.

	1997/8	1998/9	1999/00	2000/01	TOTAL 1992-2001
NEW ADMISSIONS	167	163	180	199	**1347**

Appendix DA1

These figures do not include all referrals, which were referred to the Unit. Acute receiving units made over 240 initial contacts. Some patients are managed by advice alone or by managing the patient in the referral hospital with Outreach Medical Services. Another group of patients is managed in the Neurosurgical and Orthopaedic wards in the Southern General Hospital because of concomitant injuries or shortage of beds. In a few cases the referrals are inappropriate for admission but can be treated as an outpatient. We continue to receive referrals for advice via the Internet.

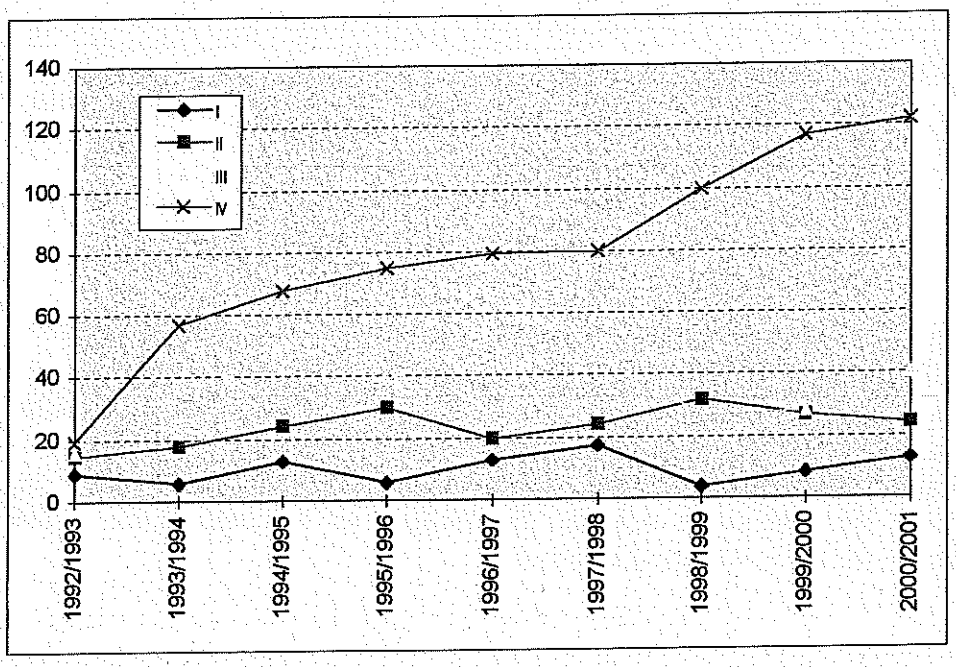
2.1.2. New Admissions : Casemix Complexity

The severity of a Spinal Cord Injury is dependent on the anatomical level of and the extent of neurological damage . This has considerable bearing on the type and extent of rehabilitation each patient requires. This case mix complexity has been classified as follows.

	ANATOMY	NEUROLOGY
GROUP I	Cervical Injury 1 - 4	High Tetraplegia
GROUP II	Cervical Injury 5 - 8	Low Tetraplegia
GROUP III	Thoracic,Lumbar and Sacral Injury	Paraplegia
GROUP IV	All levels of Injury with	Incomplete or no Paralysis

Group I patients have the most severe neurological injuries and the numbers are expected to vary considerably each year. Groups II and III are the next most dependant and require significant periods of rehabilitation and long term follow-up. Group IV includes all patients with spinal fractures and incomplete or no paralysis. This group has increased consistently since the Unit opened. In general this group can be managed conservatively or by surgical stabilisation. Conservative management requires prolonged bed rest and an increased risk of deformity or chronic mechanical back pain. The increased demand for surgical stabilisation and the increased awareness of the Unit has resulted in an increased referral pattern. Quality of care issues regarding stabilisation surgery, early mobilisation and specialised rehabilitation along with the continued development of a clinical network and the measurement of outcome indicators is likely to lead to an continued increase in the referral of Group IV patients.

2.1.2 New Admissions by Case-Mix Complexity



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GROUP	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	Total 1992/2001
I	17	4	8	13	**89**
II	24	32	27	24	**214**
III	46	27	28	40	**327**
IV	80	100	117	122	**717**
Total	**167**	**163**	**180**	**199**	**1347**

There has been a significant increase in the Group I severely dependant patients with high tetraplegia. The number of Group II or low tetraplegic patients has stabilised. There has been a very significant increase in patients with thoraco-lumbar paraplegia. The number of patients admitted with a spinal fracture and incomplete or no neurological injury has continued to rise but at a slower rate than the previous three years. The throughput is seen as very significantly higher than comparable spinal injury units in the UK.

2.1.3. New Admissions by ASIA Impairment Level & Health Board

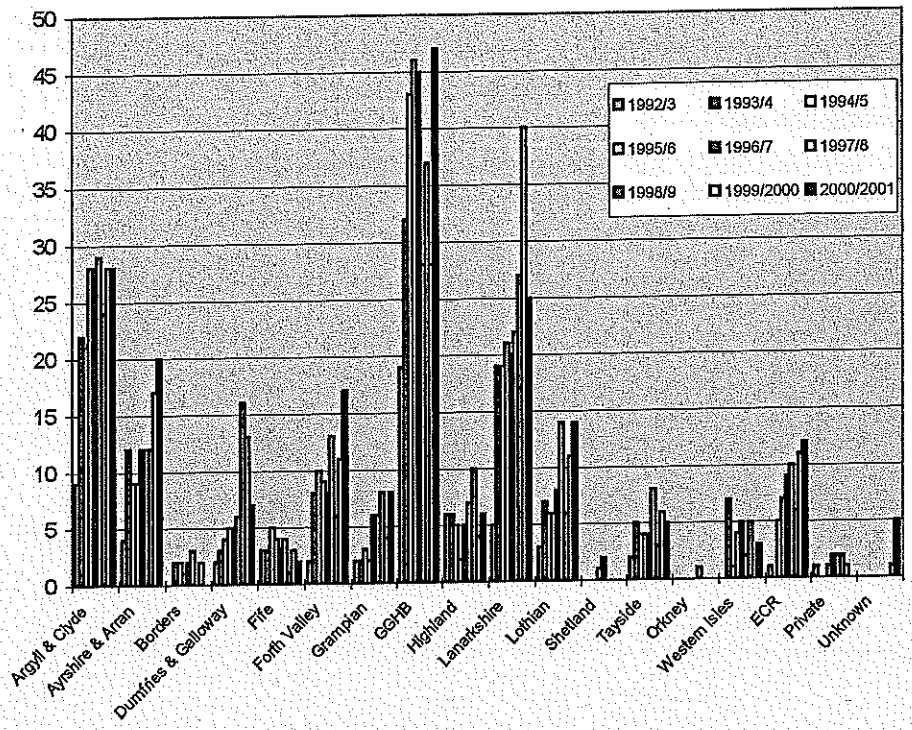
2000/2001	A	B	C	D	E	Total
Argyll & Clyde	2	2	3	6	15	**28**
Ayrshire & Arran			6	5	9	**20**
Borders						
Dumfries & Galloway	2			1	4	**7**
Fife	1				1	**2**
Forth Valley	3	1	2	3	8	**17**
Grampian	5		1	1	1	**8**
Greater Glasgow	4	3	4	6	30	**47**
Highland	3				3	**6**
Lanarkshire	5	2	2	3	13	**25**
Lothian	4	1	2	3	4	**14**
Shetland						
Tayside	1	1			3	**5**
Orkney						
Western Isles	1				2	**3**
ECR	8				4	**12**
Private						
Unknown	**1**				4	**5**
TOTAL	**40**	**10**	**20**	**28**	**101**	**199**

ASIA Impairment Scale

A	Complete: No motor or sensory function
B	Incomplete: Sensory but not motor function is preserved below the neurological level and includes S4-5
C	Incomplete: Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a motor grade less than three
D	Incomplete: Motor function is preserved below the neurological level, and at least half of the key muscles below the neurological level have a grade more than three
E	Normal: Motor and sensory function is normal

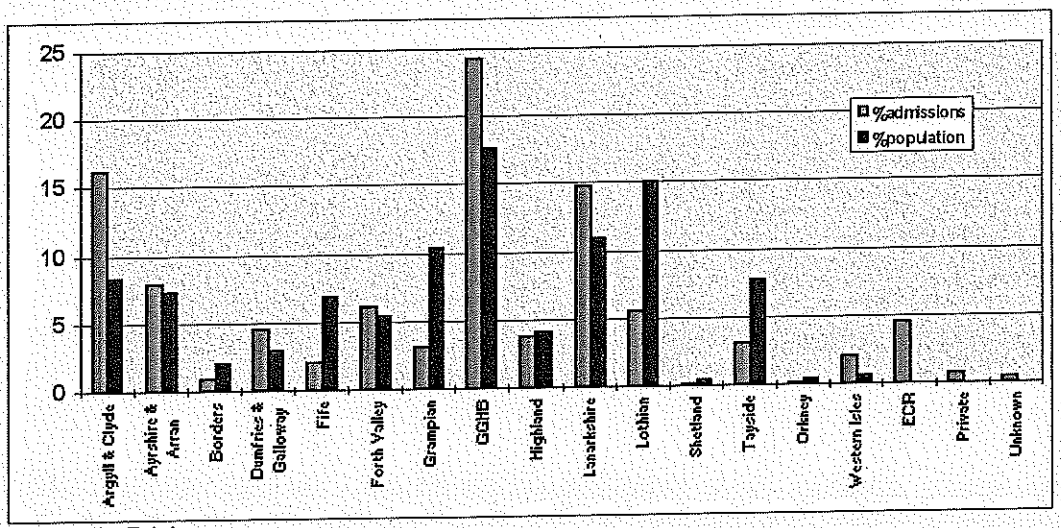
2.1.4 New Admissions by Health Board Of Residence

Appendix DA3



The Unit continues to accept patients from throughout Scotland. An increased referral pattern from Ayrshire and Arran, Highlands and increased number of ECR referrals reflect leisure-related accidents.

2.1.5 Admissions by Health Board compared with Population Size

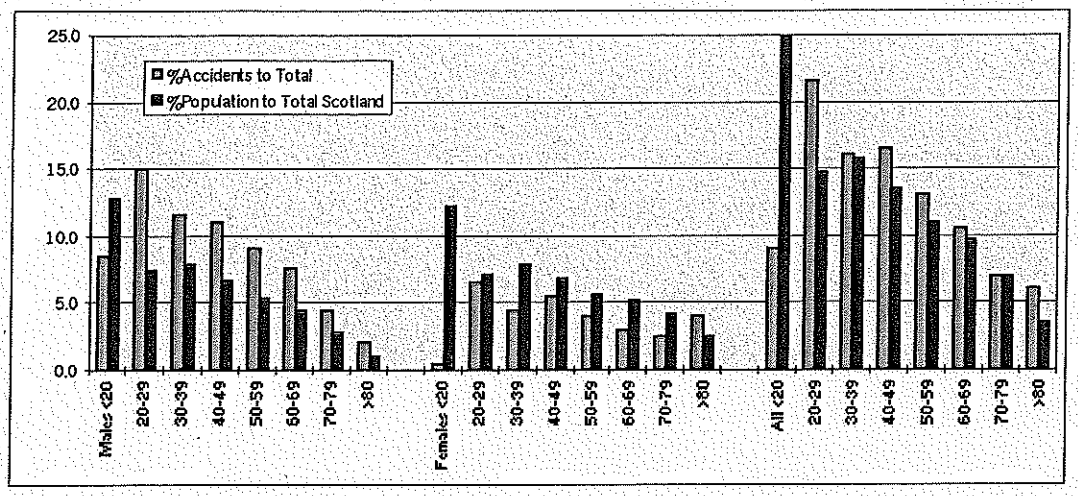


Appendix DA4

There continues to be a slight preponderance of referrals from the adjacent Health Authority of Greater Glasgow Health Board, Argyll & Clyde, Lanarkshire and Ayrshire and Arran.

There has been positive encouragement for consultant medical staff in Lothian, Tayside and Grampian to develop services for those patients with no neurological injury. Support is always available from the unit in the management of these patients. This has significant benefits for both patients and relatives.

2.1.6 New Admissions by Age Group



The age distribution is as expected. There is a preponderance of young males. The increasing number of age-related degenerative spinal fractures are noted in the elderly population.

2.1.7 Length of Stay for Traumatic Injury by Level of Spinal Cord Lesion

Casemix	No. of patients	Mean L.O.S. (days)	Range of L.O.S.
I	10	145	6 - 348
II	28	201	8 - 894
III	34	114	2- 338
IV	117	19	0 - 229
All	**189**	**70**	**0 - 894**

The wide variation of length of stay within each classification is indicative of the variation in the rehabilitation needs within each group. Benchmarking with other units in the United Kingdom continues to be developed but comparable figures are not available from other units.

The median length of stay of Group IV is indicative of the efficient management of such patients by appropriate surgical stabilisation or use of halo jackets or lumbar spinal supports. The total number recorded in this section is lower than the total number of admissions because not all patients are discharged within the calendar year.

2.2 In-patient Procedures

The acute management in rehabilitation of the spinal injured patient can involve a significant number of in-patient procedures. This section outlines the major surgical procedures carried out during the year.

2.2.1 Surgical Stabilisation

Surgical stabilisation of spinal fractures is carried out to prevent further neurological damage, aid early rehabilitation and to promote good long-term function. Rarely late surgery is indicated to reduce pain and deformity or to deal with neurological complications. Failure of orthotic management is a further indication for surgery. A team approach to decision making is used to optimise patient outcome.

There has been continued Orthopaedic and Neurosurgical development of internal fixation devices. A pro-active approach to cervical and thoraco-lumbar surgery is followed to permit early rehabilitation, a reduced length of stay and better functional outcome. It is probable that there is a higher rate of intervention than in other UK units. To date no comparable data is available
Over the thirty-nine throacolumbar fixations and eighteen cervical fixations were carried out by the orthopaedic and neurosurgical teams.

2.2.2 Spinal Injury Specific Surgery

A wide range of procedures encompassing ENT,plastic,orthopaedic and general surgery is required for acute and long term patients. The spinal unit staff and appropriate specialists from the Southern General Hospital provide this service. Over thirty-eight theatre lists were carried out over the course of the year involving fifty-four individual procedures and ten surgical specialities. Day Case procedures carried out within the unit are recorded in a later section.

2.2.3 Implanted Pain Control

An increasingly sophisticated approach is taken to the management of chronic pain. One approach to the management of chronic pain and spasm is the surgical implantation of reservoirs of drugs. There is a continued demand for such procedures in the long-term management of patients. Over the year eight pumps were implanted. Some concern has been raised regarding the funding of such implants. At present the unit provides the service but the cost of the implant is charged to the relevant health authority. This has worked well in the past but concerns have been raised whither the cost should be included in the core funding.

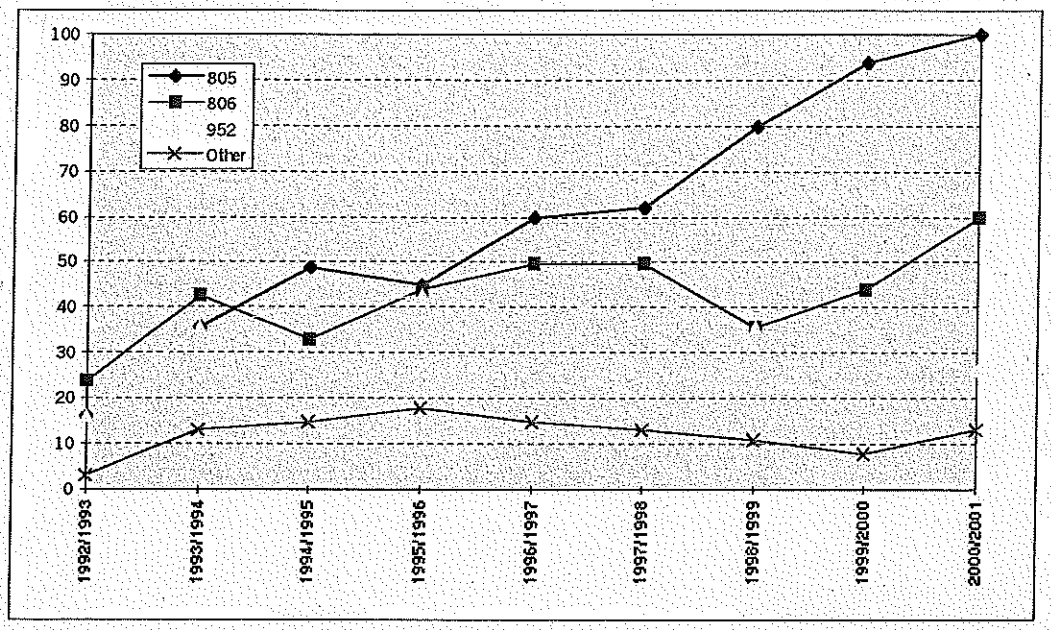
2.3 Admissions and Discharges by Degree of Injury

The degree of injury is dependent on the type and effect of the injury. A non-traumatic spinal cord injury may be more serious in terms of outcome and dependency than a traumatic lesion with a major neurological deficit. The spectrum of activity in the unit can be shown by using the appropriate ICD9 codes.

The ICD9 codes are as follows

805	Fracture of vertebral column without mention of spinal cord injury
806	Fracture of vertebral column with mention of spinal column injury
952	Spinal Cord Lesion without evidence of spinal bony injury
OTHER	Other Spinal Cord Related Conditions

2.3.1 Admissions by Degree of Injury



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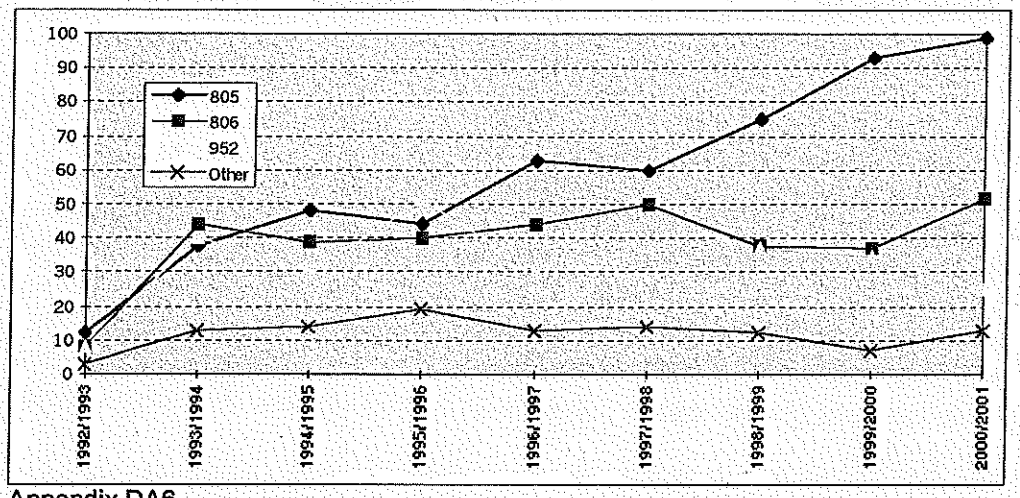
2.3.2 Discharges by Degree of Injury



Appendix DA6

The number of patients referred with a spinal fracture without spinal cord injury continues to rise albeit at a slower rate. This increased is related to greater patient expectation, Clinical Governance and the need for specialised rehabilitation.

The variations in the number of patients with a neurological deficit fluctuates as expected. The overall numbers remains fairly constant although there has been a worrying increase in the number of patients with a thoraco-lumbarInjury associated with paraplegia.

Other admissions and discharges include incomplete paraplegia, incomplete quadriplegia and incomplete Cauda equina lesions.

2.3.3 Admissions and Discharges for Non Traumatic Spinal Cord Injury (ICD 9 Code 952) by aetiology

2000/2001	Admissions	Discharges
Central Cord Lesion	12	16
Infection	4	1
Vascular	3	5
Tumour	0	0
Intra medullary Cyst	0	0
Non-specific Lumbar Lesions	2	1
Stab Wounds	0	1
Other	4	1
Total	**26**	**25**

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Non traumatic spinal cord injury is misleading as it includes Central Cord Syndrome that is traumatic in origin but does not involve bony damage. Central Cord Syndrome often results in major paralysis. It usually occurs in the elderly populations who have osteoarthritic changes in the cervical spine and results in a severe disability with a predominantly upper limb paralysis with high dependency. It is anticipated that this type of injury may increase in line with demographic changes.

2.3.4 In-patient Bed Days

2000/2001	Edenhall (HDU)	RCU	Philipshill (Rehab)
Beds	12	4	32
Actual	3434	1881	10468
Available	4380	2190	10950
Bed Occupancy %	78.4	85.9	95.6
ALOS	13.6	19.9	91.4

Bed occupancy continues to rise and is near maximal for an acute receiving/rehabilitation unit. The Respiratory Care Unit has significantly increased the flexibility of bed usage, inter unit transfer between Edenhall, Respiratory Care Unit and Philipshill makes individual length of stay calculation difficult. The dataset is currently being altered to accommodate this. There has been a continued improvement in the overall length of stay during the course of the year. This has been achieved by reduction in the delay between and actual and intended date of discharge.

2.3.5 Delay Between Actual and Intended Date of Discharge

	No. of patients discharged	No. of Patients Delayed	Mean delay (days)	Range of Delay (days)
1999/2000	172	21	122	22-410
2000/2001	189	27	68	1- 877

The vast majority of patients are discharged on their intended date (85%).

The figures show an overall improvement over the previous year. There was a slight increase in the number of patients (27) who had an identifiable delay between the actual and intended date of discharge. There was a slight increase in the mean delay attributed to a small number of patients who had a considerable delay to discharge. The final placement of patients who have completed their rehabilitation but require further hospital or nursing care continues to be a cause of concern. Further discussion is required with the Social Work Department and other care services to reduce the incidence and extent of this delay.

There has been a significant bed day gain by attention to this area (726 days). There was a slight increase in the number of patients delayed and there was an episode of extended delay but the reduction in mean delay resulted in a significant saving.

2.3.6 Re-admissions to the unit

Most patients discharged from the unit never need re-admission but are simply seen for an out patient review that continues during their lifetime. In some ways readmission at any time must be seen as a failure. Some re-admissions are however inevitable and cannot be prevented by greater education or increased care in the community.

The number of re-admissions to the Unit remains low at 115 over the year. This is a reduction of 43% on the contract agreement of 200.

Case-mix complexity and individual patient circumstances are outwith the control of the Unit but a continued emphasis on discharge at the appropriate level of rehabilitation and education should ensure that the number of re-admissions remains at a satisfactorily low level.

2.4 Out patient Activity

The out patient activity of the unit is focused on the post discharge management of acute injuries and the long term follow up including the management of complications. Dedicated clinics in Orthopaedics, Neurosurgery, Urology, Rehabilitation and Pain Management supplement the nurse led annual review clinics for those patients with a substantial neurological deficit. Early discharge of fully treated patients with no expectation of future disability to the General Practitioner is encouraged.

New patients are referred to the out patient clinic for consultant opinions regarding chronic neurological dysfunction secondary to spinal cord injury, pain, deformity, and bladder or bowel disturbance.

Out reach clinics are held in Raigmore Hospital (Inverness) and Edenhall Hospital Edinburgh and Foresterhill Hospital (Aberdeen) and Dumfries and Galloway Royal Infirmary, Further discussions are being carried out at Dundee and Borders and District Hospital regarding outreach clinics.

2.4.1 Summary of Out-patient activity

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001
Return	2407	2401	2017	2074
New	36	73	104	139

The number of return outpatients has stabilised. There has been continued development of long term follow-up protocols which has enabled the Liaison Nursing Service to increase its role in out patient management.

There has been a further substantial increase in the number of new out-patients over the year. The vast majority of these patients are tertiary referrals involving complex medical assessment. This is a significant increased workload on the part of the Out-Patient Medical and Nursing staff.

2.4.2 New Out-Patient Activity by Health Board

	1999/2000	2000/2001
Argyll & Clyde	32	32
Ayrshire & Arran	6	4
Borders	0	1
Dumfries & Galloway	2	2
Fife	4	1
Forth Valley	10	15
Grampian	0	0
Greater Glasgow	31	45
Highland	0	0
Lanarkshire	13	29
Lothian	2	6
Shetland	0	0
Tayside	3	1
Orkney	0	0
Western Isles	1	2
ECR	0	1
Total	**104**	**139**

2.4.3 Out -Patient Activity by Centre

	1998/ 1999	1999/ 2000	2000/ 2001	TOTAL 1992-2001	CHANGE
New QENSIU	73	103	139	382	**35%+**
Return QENSIU	2083	1740	1729	9449	**1%-**
Edinburgh Edenhall	279	224	255	1183	**14%+**
Raigmore Inverness	39	41	51	214	**27%+**
Aberdeen	0	13	46	59	**28%+**
Dumfries	0	0	18	18	
	2474	**2121**	**2238**	**11305**	**5.5%+**

The continued development of the Outreach services has been a success in promoting long term follow-up. It is expected that there will be a small gradual increase in all of the Outreach clinics which will stabilise around four years.

2.4.4 Outpatient Activity by Specialty at QENSIU

		1998/ 1999	1999/ 2000	2000/ 2001
DBA Orthopaedics		98	150	123
RAJ Neurosurgery		82	109	86
GC Urology		159	277	370
Urodynamics		16	-	-
Halofixation		8	-	-
Hand		-	5	10
Skin Care		224	199	200
Pain / Acupuncture		120	92	96
Neuroprosthetics (Fraser)		-	-	3
Sexual Dysfunction		53	22	27
Spinal Injury Annual Review	TOTAL	1007	989	953
	MEDICAL			564
	NURSING			425
Total		**1767**	**1843**	**1868**

There has been a further increase in the number of patients seen at the Consultant Specialist Clinics. Urodynamaics and halofixation are now designated as day case procedures. The numbers attending specialised clinics are stable. Spinal Injury Annual Review clinics are a large component of the commitment to life long care. Fifty seven percent of patients are seen by medical staff and the rest at nurse led clinics. The Hand Out-Patient service continues to be developed. This is a specialised service which is extremely time-consuming despite the small number of patients attending.

Measurement of activity at clinic level indicates that there is a underreporting of activity by 7%. This is accounted by the system failing to capture referrals from the wards, informal drop in attendance's and follow up appointments.

2.5 Day Case Activity

Day case activity continues to offer an important service for minor surgical procedures, medical interventions and nursing care. The new developments in spinal fracture management, pain control and sexual dysfunction are expected to maintain this activity. The level of Day Case activity exceeds the contracted activity but will be self limited due to the finite population of spinal injured patients.

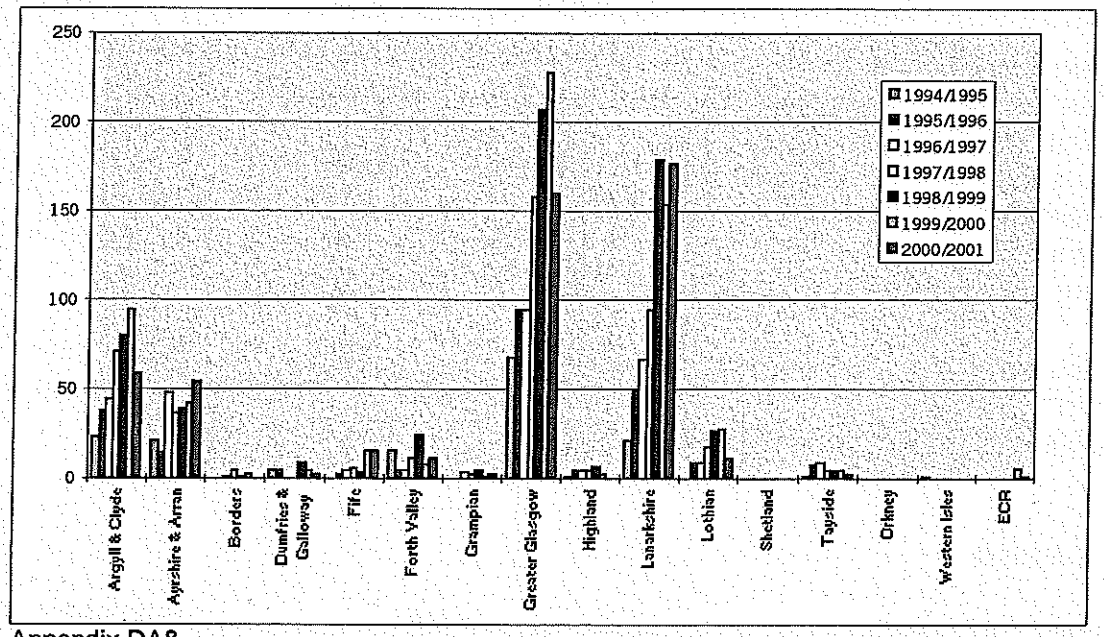
2.5.1 Day Case Attendances by Reason For Admission

	1998/ 1999	1999/ 2000	2000/ 2001
Urology	44	42	15
Halo Fixation	133	169	234
Skin	6	8	7
Orthopaedic/Neurosurgery	60	7	1
Pain/Acupuncture	294	350	231
Sexual Dysfunction	21	14	11
Total	**558**	**590**	**499**

All day case procedures involve a formal intervention carried out by medical or specially trained nursing staff. Overall there is a 12% under reporting of activity. This is due to the systems currently in place to formally monitor activity.

2.5.2 Day Case Attendances by Health Board

As a national service Day Case activity is limited by geographical constraints. Many patients who could be managed as a day-case require in-patient stay due to difficulties in travelling.



Appendix DA8

3. 0 Waiting Times

3.1 Waiting Times Outpatient Clinics

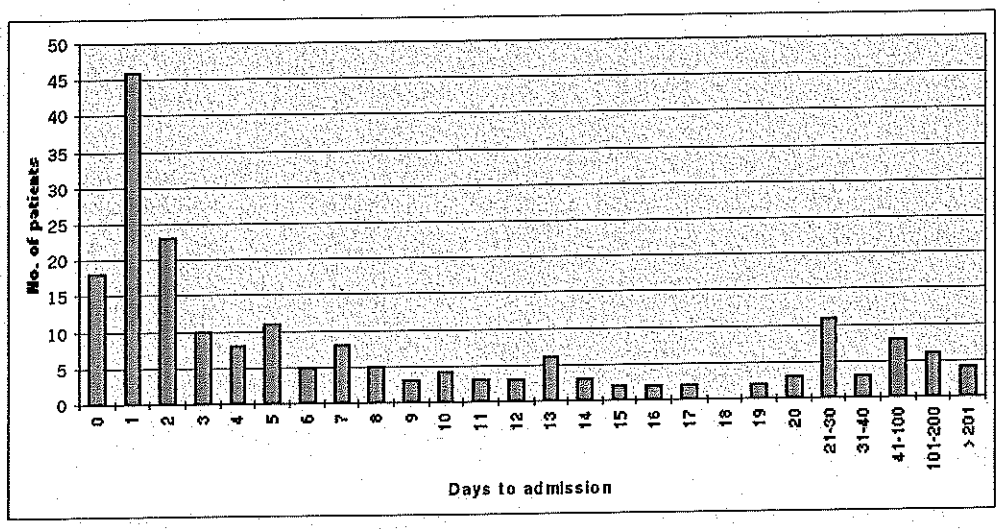
There is an open door policy to the Nurse Led Spinal Injury Clinics. Medical advice is always available to patients at these clinics if appropriate. The maximum waiting time for elective outpatient appointments is four weeks.

Patient satisfaction with Nurse Led Review Clinics continues. Approximately twenty per cent of patients attending these clinics require medical input.

3. 2 Waiting Times Acute Admissions

Acute referrals are admitted as soon as appropriate on clinical grounds. It is Unit policy to admit all patients with neurological injury within twenty-four hours as long as there are no concomitant medical problems. Patients requiring specialised Neurosurgical or orthopaedic care may be managed in the appropriate ITU or ward.

3.3 Time from Injury to Admission



Early admission to the Spinal Injury Unit provides immediate support to the patient and family and aids early recovery. In 2001 thirty-two per cent of patients were admitted within twenty-four hours. Forty-four per cent were admitted within forty-eight hours and fifty-eight per cent within four days.

This pattern of early admission is not seen in other Spinal Injury Units in the United Kingdom. It is however seen as an advantage both to the patient and relatives.

Co-operation between the staff in the Unit and the referral hospital ensures immediate admission if clinically indicated. Telephone advice is always available for assistance in the immediate care of patients who are not transferred immediately. Direct admission to orthopaedic or neurosurgical wards for surgical stabilisation may increase the time to admission but is appropriate to minimise transfers of potentially unstable patients.

Approximately twenty-percent of patients have associated orthopaedic injuries. Co-operation between Surgical Intensive Care (SGH), the referring hospital and other specialised units is often required. (Plastic Surgery, Burns Unit, Maxilla-Facial Renal etc.)

Most patients admitted after four days have conditions that do not require immediate treatment or have additional co-morbidities that require medical intervention in the referring hospital prior to transfer.

	No. of Patients	Mean Time (Days)	Range of Time
2000-2001	199	163.3	0 – 12575

This analysis includes all patients admitted. Some patients may have had an acute injury on top of a pre-existing injury which explains the prolonged delay.

Four patients were admitted after 200 days. Theses patients had been initially cared for in other centres or had developed a secondary complication due to a further insult at a previous fracture. One patient was admitted 12, 575 days from his initial accident as a new patient for an episode of definitive care from outwith the region.

4. Quality of Care Issues :

4.1 Charter Mark

The Unit was once again successful in obtaining the Charter Mark in June 2000. This award is a tribute to all the staff working within the Unit.

4.2.1 National Service Division Visit

Staff from NSD has regularly visited the Unit throughout the year. Continued close co-operation has ensured that standards are maintained and there is an early response to increased or changing clinical needs.

4.2.2 Formal Complaints

Three formal complains were received during the year. Two complaints were regarding the hospital services with regard to delay in the provision of radiological investigation and the provision of brown bread at meal times. The third complaint was regarding a patient discharge to the referral hospital on completion of their rehabilitation.

An informal complaint/suggestion system is in place. This ensures constant monitoring and improvement of the service.

4.2.3 Relatives & Patients Meetings

A pro-active approach to formal and informal contact with relatives and carers is encouraged. All staff are encouraged to attend patient social activities and events. Formal meetings with patients and relatives are organised be the senior nursing staff. The medical staff encourages an open dialogue with patients and relatives regarding treatment and progress. Consent issues are in constant review and the implications of the Incapacity Act in the management of the acutely injured are being investigated.

4.2 Benchmarking

Discussions continue between the Spinal Injury Units in the United Kingdom regarding appropriate benchmarking for the care of spinal injured patients. To date it has been difficult to obtain comparable figures from other units and it is probable that the QENSIU will have to look to Europe or further afield for appropriate benchmarking models.

4.3 Education

The unit perceives itself as having an important role in education. This education extends to prevention of the initial accident and the subsequent complications in the early of late stage of rehabilitation.

A National meeting on "The First Forty Eight Hours" is planned for May 2001. The meeting has attracted over one hundred and twenty-five applicants and a superb faculty covering the Ambulance Service, Paramedics, Nursing, A & E and Spinal Injury.

The Senior Nurse Manager lectures at both Paisley and Caledonian University. Further meetings have been organised with GPs and District Nurses by the Liaison Nursing staff. The Education Sister has co-ordinated Study Days for nurses from Aberdeen, Dublin, Paisley and Caledonian Universities.

The Out-Patient Sister provides training and education for University students and District Nurses at Paisley and Caledonian Universities.

The Director has given Post-Graduate Medical lectures at Aberdeen, Edinburgh, Dundee and Glasgow. The Consultant medical staffs have lectured in Edinburgh, Glasgow University and Fort William.

Glasgow University Medical students continue to attend the unit as part of the Year Three special study module and on placement.

The Unit has been fortunate in receiving a number of Overseas visitors at both the Medical and Paramedical level.

4.4 Hospital Acquired Infection

Hospital acquired infection continues to be a problem in the Unit mirroring the experience throughout the hospital population.

	1998/1999	1999/2000	2000/2001
Total patients req. isolation	31	45	52
Clostridium Difficile	1	1	1
MRSA	25	42	48
Streptococcus pyogenes	5	1	0
Scabies	0	1	0
TB			1
Varicella Zoster			1
Patient days in isolation	1 – 82 days	-	
Ave. days in isolation	-	55.8	53.75

The problem of MRSA continues to be monitored. A review of the hospital policy regarding medical and nursing requirements has been carried out. Periods in isolation significantly affect the patients rehabilitation programme and every attempt is made to reduce this to a minimum.

4.5 Pressure Sore Prevention

Spinal injured patients are the most susceptible population to the development of pressure sore due to the absence of sensation and movement. The Unit continues to be at the forefront of pressure sore management with the introduction of protocols and training programmes for patients, carers and nursing staff.

4.6 Pressure Sore Prevalence

The number of pressure sores on admission or acquired is static. Continued education and constant vigilance is required to maintain or reduce this number. Monitoring of sacral splits will be carried out in future.

	No. of patients	No. of acquired sores	No. of admitted sores	Total number of sores	Point prevalence
1999/2000	38	3	3	6	16%
2000/2001	42	2	4	6	15%

4.7 Bed & Mattress Hire

There has been a consistent need to hire low-pressure beds and mattresses throughout the year this matter will be monitored over the forthcoming year. The current management and hiring protocol is felt to be cost effective.

On average 2 therapeutic beds and 2 mattresses were hired per day at a cost of £13,000 and £3000 respectively.

4.8 Ventilated Bed Days

		No. Patients	Ave. Ventilated Days	Total Ventilated Days
2000/2001	Edenhall	12	71.5	858
	RCU	10	80.9	809

Appendix DA20

The number of ventilated bed days will be dependent on the case mix presenting to the unit. Improvements in ventilation protocols are being developed by the respiratory care team to reduce the total time on a ventilator.

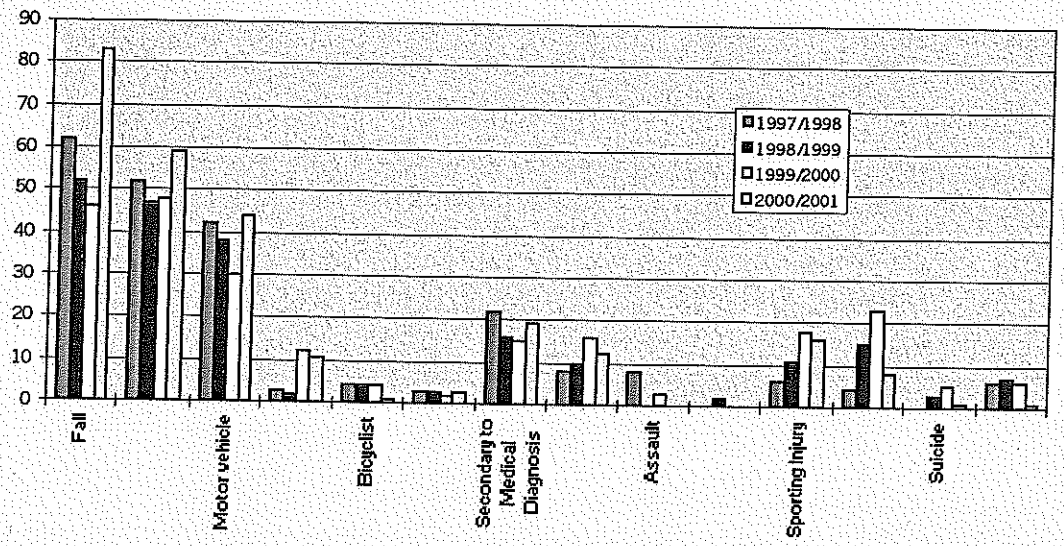
4.9 Respiratory Care: Ventilation Needs of Low Tetraplegic Patients

Protocols have continued to be developed for the maintenance and weaning of low tetraplegic ventilator dependent patients. Changes in protocols have resulted in a reduction in the number of ventilated days. Continued developments are expected in this area in the next five years.

5 Mechanism of Injury

	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001
Fall	**62**	**52**	**46**	**83**
RTA	**52**	**47**	**48**	**59**
Motor vehicle	42	38	30	44
Motorcyclist	3	2	12	11
Bicyclist	4	4	4	1
Pedestrian	3	3	2	3
Secondary to Medical Diagnosis	**22**	**16**	**15**	**19**
Industrial Injury	**8**	**10**	**16**	**12**
Assault	**8**	**0**	**3**	**0**
Stabbing		**2**	**0**	**0**
Sporting Injury	**6**	**11**	**18**	**16**
Domestic Injury	**4**	**15**	**23**	**8**
Suicide		**3**	**5**	**1**
Other	**6**	**7**	**6**	**1**
Total	**168**	**163**	**180**	**199**

5.1 Mechanism of injury by year



The number of road traffic accident and falls has risen dramatically. This has been off-set by a significant reduction in domestic injury. Industrial injuries appear stable as does those secondary to a medical diagnosis.

It is perhaps disappointing the increase in road traffic accident figures. This is especially true with the increased reduction in the number of road traffic accident deaths in Scotland over the same period.

The rise in motor cycle accident continues to cause concern.

Overall the pattern generally mirrors social trend within the population. Alcohol continues to be implicated in the aetiology of many spinal injuries. The causes of injury are important as a guide to the development and promotion of prevention programmes.

6. Financial Report

	Budget £	Actual £	Variance £
Dedicated Staff Costs			
Medical	488,902	499,145	(10,243)
Nursing	1,983,909	1,828,812	155,097
Paramedical	321,471	323,324	(1,854)
Administrative	103,172	108,460	(5,288)
Total Staff	**2,897,454**	**2,759,741**	**137,712**
Total Supplies	**1,274,843**	**1,384,633**	**(109,790)**
Overhead Costs			
Fixed Costs :-			
Rates	188,972	188,972	0
Capital Charge	602,764	602,764	0
Trust Overheads	109,329	109,329	0
Total Overheads	**901,065**	**901,065**	**0**
Total Expenditure	**5,073,361**	**5,045,438**	**27,923**
Post Graduate Dean Funding	112,608	112,608	0
Total less Post-Graduate Dean	**4,960,753**	**4,932,830**	**27,923**

7. Service Developments and Future Plans

7.1 Respiratory Care Unit

The Respiratory Care Unit is now an established part of the National Spinal Injuries Unit. It provides a vital step-down service for high level tetraplegic patients with ventilators who no longer require the care of the acute ward (Edenhall). The average stay for ventilated tetraplegics is over one year and the Unit has admitted four of these patients from Edenhall thus freeing up a large number of beds for acute admissions.

The Unit has also had elective admissions of ventilated patients for re-assessment of respiratory function, phrenic nerve testing and elective surgical procedures which would otherwise have required a stay in Edenhall ward.

The Unit has also received many acute patients who, although weaned from a ventilator, still require the expertise of the RCU staff for tracheostomy and respiratory care in a step-down environment before moving on to the general rehabilitation ward (Philipshill)

7.2 Outreach Clinics

Outreach clinics are attended by Medical, Nursing, Occupational Therapy and Physiotherapy staff. The increasing demand for the service does place strains on providing the core service at the Unit.

The planned programme for Outreach clinics in 2001/2002

Edinburgh - monthly
Inverness - quarterly
Aberdeen - quarterly
Dumfries - six monthly

Continued discussions are taking place with Borders District General Hospital and Ninewells Hospital regarding services for the Borders and Tayside.

7.3 Training & Development Post

This post has allowed a greater intensity of in-house training and education to take place. A comprehensive rolling programme of education for the staff is in place. Regular education is carried out for patient and carer. Further work is being done in developing integrated care pathways.

The senior nurse group involving all spinal injury units in the UK continues to provide momentum to develop protocols in benchmarking.

7.4 Further Developments within Nurse Led Clinics

Nurse Led clinics continue to develop with rotation of ward staff and the provision of specialised services. One Sister has recently completed the RCN Leadership Course and a number of auxiliaries from within the Unit are undertaking the Auxiliary Competency Course. In-house training modules consist of key worker training, tracheostomy training and theory and practical training for carers. Ward staff continue to rotate to develop skills with regard to Nurse Led Clinic. Discharge planning review and protocols are being further established.

7.5 Flexible Outpatient Department Development – Liaison Nurses

There has been an increasing emphasis on discharge planning. This will complete the integrated care plan and provide a smoother transition for completion of rehabilitation.

7.6 Nursing Recruitment

The Unit continues to attract nursing staff of the highest calibre. Retention is a continued problem throughout the Health Service and an active policy of educational and personal in-house development is pursued. The continued high profile of the Unit at Paisley and Caledonian University continues to attract a number of excellent applicants. The high quality development programme has the disadvantage of making the staff highly competitive when applying for promoted post outwith the Unit

7.7 Medical Recruitment

The introduction of the junior doctors hours of work legislation has posed some difficulties for the unit. Continued negotiations with the trust and other departments in the hospital should result in satisfactory cross cover. The continued increase in the number of admissions and out-patient responsibilities poses particular problems for the consultant staff. There are significant difficulties in obtaining consultant rehabilitation consultants with expertise in spinal cord injury. At present there is one trainee in post but the majority of his time is spent in general rehabilitation and does not participate in the units activities. Some consideration will have to be given to the appointment of a second rehabilitation consultant to the core team.

7.8 Non Invasive Ventilation

Non Invasive respiratory support is likely to play an increasing role in the management of a number of patients. The programme continues to be developed to facilitate patients requiring moderate respiratory support. There has been continued co-operation between the neuroanaesthesia consultants and the unit to ensure ventilation protocols are developed,

7.9 Implanted Electrodes for Upper Limb Function

There is an on-going rolling programme of implant procedures. A separate paper is currently being prepared on this subject. It is probable that computerised control of implanted electrodes to stimulate upper limb and lower limb function will develop in the next five years. This is an important area, which provides significant gain for patients at a functional level.

7.10 Phrenic Nerve Stimulators

No patients this year have required a phrenic nerve stimulator.

7.11 Integrated Care Pathways

It is anticipated that a pilot of the initial Integrated care Pathways will commence in September 2001. The current model involves introduction of Integrated Care Pathways immediately following the admission proforma. It is probable that five separate pathways will be required to cover the spectrum of spinal cord injury. This work is the next stage in the production of seamless documentation from the initial accident to the ultimate discharge to the community.

7.12 Clinical Networking

National and Regional meetings have been held in order to promote the concept of increasing sophistication in the clinical network regarding the care of the spinal cord injured patient. A programme of dissemination of ASIA charts, Admission Protocols, Transfer Protocols and the initial proforma has been commenced. Feedback on the draft documentation is awaited prior to formal institution at all A & E departments in Scotland.

Clear guidelines have been given regarding the use of steroids in the immediate post accident phase. This information is freely available both in Accident & Emergency Departments and at the initial telephone contact.

Excellent relationships are being forged with the Ambulance, Paramedical, Fire Brigade and Mountain Rescue services. Greater integration of care between all service professionals will undoubtedly benefit all patients throughout Scotland.

7.13 Telemedicine

The recent application to obtain funding for the development of a Telemedicine Service was unsuccessful. Continued applications will be made in order to complete the existing Telemedicine network to the appropriate Tertiary Care Centre. The NHS Net has been utilised to refer limited patient information prior to transfer. The Internet has been used to advise regarding transfer of patients from the Falklands Islands and Germany

7.14 Clinical Governance

Clinical Governance and Appraisal are playing an important role within the Unit. A programme of regular meetings is established covering both Senior and Junior Medical Staff.

Consultant Clinical Appraisal will be instituted in the forthcoming year following the development of Consultant portfolios. The Unit actively participates in SSAM (Scottish Surgical Audit of Mortality). Audits have recently been completed on the transfer of patients and DVT Prophylaxis.

7.15 Medical Research

Progress in the management and prognosis of spinal cord injury is dependant on an active policy of research.

The unit has developed a network of scientists and clinicians that are interested in areas pertinent to spinal cord injury. This has resulted in fruitful collaboration with the Universities of Glasgow, Strathclyde, Caledonian and Edinburgh.

All research to date has been clinical but we hope to provide a focus and impetus to develop basic research programmes.

7.15.1 Grants and Grant Applications

The following have been granted or applied for to allow work to be done in the unit. Principal researchers indicated.

Functional electrical stimulation augmented treadmill training for incomplete spinal cord injured patients Dr HH Granat
Scottish Executive £77,709

A pilot study of lower limb FES cycling in paraplegia Prof K Hunt
Inspire £3,886

An Open long term study to evaluate the efficacy and safety of Tamsulosin in the treatment of neurogenic voiding dysfunction in patients with supra-sacral spinal cord lesions Mr. M.H. Fraser
Yamanouchi £10,000

An randomised double-blind placebo-controlled study to evaluate the efficacy and safety of Tamsulosin against placebo in the treatment of neurogenic voiding dysfunction in patients with supra-sacral spinal cord lesions Mr. M.H. Fraser
Yamanouchi £10,000

A multi-center Phase III ,Double blind placebo controlled flexible dose study to evaluate the efficacy and safety of Silfanidil in women who have female sexual dysfunction resulting from spinal cord injury. D.B.Allan

Pfizer £ 20,000

Prof K.Hunt Six month secondment
Royal Academy of Engineering Secondment Scheme

Development of Systems for tetraplegic Arm Cranking using Functional Electrical Stimulation: a pilot study Prof K Hunt
ROPA

FES cycling systems for paraplegic people Prof K Hunt Dr N Donaldson
EPSRC

Upper Llimb Arm Cranking using FES Dr H. Gollee
European Commission : two year funding

Neurocontrol Implants for the upper and lower limbs Dr M.Granat
Scottish Executive

7.15.2 Projects

Non-invasive electrophysiological assessment of cortical spinal pathways in subjects with spinal cord injury
Gillian McColl Mres student

Development and testing of a visual feedback system for the Freehand upper limb Prosthesis
S. Coupaud Mres student

Reflex Modulation during sitting and walking
B,Conway T.Eldho

The Suitability of a ten week circuit class to increase physical capacity
And activity levels in paraplegics
K.Cunningham MSc student

7.15.3 Publications

Deep K., Jigajinni M.V., McLean A.N., Fraser M.H. Prophylaxis of thromboembolism in spinal injuries - results of Enoxaparin used in 276 patients. *Spinal Cord 2001* 39:88-91

Prempeh R., Gibson J. Battacharya J. Mid-Line cleft atlas-a diagnostic dilemma. *Spinal Cord 2001.* In press

7.15.4 Recent Submissions

Deep K., Jigajinni M.V., McLean A.N., Fraser M.H. Prophylaxis of thromboembolism in spinal injuries - survey of practice in spinal injury units in the British Isles, Submitted to *Injury* April 2001

Prasad R., Fraser M.H., Urquhart G.D.K., McLean A.N. Extension of tuberculous spinal abscess with diaphragmatic rupture and chylothorax. Submitted to *Thorax* April 2001.

Prempeh R., Gibson J., Johnston R.A., Mid-line myotomy secondary to stab wound. Submitted to *Spinal Cord* March 2001

Mitchell A.D., McLean A.N., Henretty M., McGee C. Dysphagia in spinal injury: review of mechanisms and associated factors. Submitted to *Spinal Cord* March 2001.

Deep K., Allan D.B., The acute abdomen in spinal cord injury. Submitted to *Injury*

7.15.5 Recent Presentations and Papers in Progress

Hearns S., McLean A.N., Fraser M.H. Spinal Injuries in Scottish mountaineers. Presented at British Association of Accident and Emergency Medicine Meeting, Spring 2001. MS under preparation.

Thomas S.J., Fraser M.H., McLean A.N. Is rehabilitation possible in patients with known malignant disease? Outcome of twenty cases. Presented at British Society of Rehabilitation Medicine, Winter 2001. MS under preparation.

Hussein M. Fraser M.H., Johnston R.A., McLean A.N., Allan D.B. Outcome of halo jacket fixation in 104 cases of cervical injury Poster Scoittish Orthopaedic Meeting June 2000.

Hussein M. Fraser M.H., Johnston R.A., McLean A.N., Allan D.B. Outcome of halo jacket fixation in 104 cases of cervical injury. MS under preparation.

McLean A.N., Fraser M.H., Jackson S. Prospective, randomised comparison of T-piece and ventilator weaning in spinal injury.

Platts M. Allan D.B. Spinal Injuries due to horse riding. Retrospective survey.

7.16 Pain Management

There has been continued discussion regarding the provision of a Consultant Led Pain Service. To date this service has been provided by one of the Rehabilitation Consultants with support from the out-patient nursing staff. The identification of obsolete Consultant sessions within the budget has resulted in the application to appoint two Consultant sessions in pain management. This would cover out-patient/in-patient consultations and operative intervention. It is anticipated that this service will be introduced in the coming year

8. Summary and Conclusions

The Queen Elizabeth National Spinal Injuries Unit has continued to develop its services over the last year. The success of the Unit is due to the dedication, energy and innovation of all the staff who work within or who are connected to the Unit. There is also significant input from the Voluntary Sector including Spinal Injuries Scotland, Rehab Scotland and SPIN.

Working together a successful model has been developed for a continued process of improvement and innovation.

Appropriate thanks must be given to the National Services Division and the South Glasgow University Hospitals NHS Trust for their help and support in delivering the service.

Mr. D.B. Allan FRCS
Consultant Orthopaedic Surgeon
Director, National Spinal Injuries Unit

Appendix A Physiotherapy Report

Appendix B Occupational Therapy Report

Appendix C Rehab Scotland Report

Appendix D Spinal Injuries Scotland Report

Appendix E Clinical Psychology Report

Appendix F Social Work Report

Appendix G Raw Data

DA1 New Admissions
DA2 New Admissions by Casemix Complexity
DA3 New Admissions by Health Board of Residence
DA4 New Admissions by Health Board compared with Population Size
DA5 New Admissions by Degree of Injury
DA6 Discharges by Degree of Injury
DA7 Admissions and Discharges for Non Traumatic Spinal Cord Injury (ICD 9 Code 952) by aetiology
DA8 Daycase Attendances by Health Board
DA9 New Admissions by Age Group
DA10 Age & Sex of New Patients by Category of Injury Female Patients 1999/2000
DA11 Age & Sex of New Patients by Category of Injury Male Patients 1999/2000
DA12 Age & Sex of New Patients by Category of Injury All Patients 1999/2000
DA13 Length of Stay for Traumatic Injury by level of Spinal Cord Lesion
DA14 All Discharges
DA15 Discharges by Casemix Complexity
DA16 Discharges by ASIA Impairment Level & Health Board
DA17 Discharges by ASIA impairment Level and Health Board
DA18 Delay between actual and intended date of discharge
DA19 Time to admission
DA20 Ventilated bed days

Appendix A: Physiotherapy Report

The physiotherapy service to the Q.E.N.S.I.U. is provided by the Physiotherapy Department of the Southern General Hospital.

Staffing Levels:

1 Superintendent Lead Clinical Specialist.
2 Permanent Senior 1 posts.
1 Permanent Senior 11 post.
1 Nine month rotating Senior 11 post.
2 Four month rotating Basic grade posts.

Between September 2000 and June 2001 we had one fifth of a whole-time Senior One Physiotherapist, on a fixed term contract, to enable the Physiotherapy input for the joint QENSM/Glasgow University FES Cycling Research Project to be provided.
Our four permanent physiotherapists provide an excellent base of experience and expertise totalling 60 years of spinal cord injury rehabilitation demonstrating stability, reliability and dedication.

Service Access.

- Weekday Service Hours: 8.30am- 4.30 Mon-Thurs and 8.30-4.15 Fri.

  Weekend Service Hours: One of the SIU physiotherapists covers any work that is needed at the weekends. Once this work is completed they leave the hospital and the emergency call-out system is reverted to.

  Emergency cover: Mon-Fri 4.30pm-8.30am via the on-call physiotherapy service.

  Weekends once the SIU physiotherapist has left the hospital, usually from midday onwards until 8.30 the following morning.

Service Activity.

Breakdown of patient groups treated.

New admissions:	98/99.	99 / 00.	00 /01.
Neurological Deficit	Total	Total	Total
Incomplete Quadraplegia	34	26	29
Incomplete Paraplegia	32	9	14
Cauda Equina lesions	--	12	3
Complete Quadraplegia	15	17	17
Complete Paraplegia	16	16	22
Monoplegia	--	--	4
Incomplete Others	--	--	4
No deficit/ Intact.	71	100	106
Total:	168	180	199

All patients are seen by the physiotherapy department. The incomplete tetraplegic patients taking the most time, through to the intact patients who, although seen daily, are usually only on the unit for two weeks.

Re-admitted patients.

All re-admissions receive physiotherapy input if appropriate. This may be a number of times per day, in the case of a chest infection, to twice per week to maintain range of movement if the patient is on bed rest to treat a pressure sore.

Inpatient attendance's and direct patient contact treatment units.(15 minute units)

April-March	98/99.	99/00.	00/01.
Attendance's	11732	11538	11592.
Units.	30400	29559	27470
New patients	173	180	190.

Combined indirect patient contact and non patient contact units.(15 minute units).
98/99: 14916 99/00: 10938 00/01: 10363,

Hydrotherapy.

All acute rehabilitation patients are offered hydrotherapy as part of their rehabilitation programme. During this year there were 150 attendance's (ave 17/month) requiring 540 units (ave 60/month[15 hours]) of physiotherapy input. These figures are down as compared to last year due to the pool being shut down for approximately 3 months due to mechanical problems.

Weekend cover.

To ensure the highest level of care, the spinal injury trained physiotherapists cover all the weekend work on the spinal unit. This year the work-load has been as follows:

Year.	98/99.	99/00.	00/01.
Attendance	1090	1126	903
Direct units:	2008	2093	1839
Indirect units:	-----	774	680
Ave hours/wkd:	10	14	12

On call after 5pm.

This service is provided by the on call physiotherapists for the whole of the Southern General Hospital, and is provided as pre arranged treatments for patients with chest complaints that will deteriorate if not treated at night, and emergency call outs from a Registrar or Consultant.
During the past 2 years the figures were:

Year:	99/00.	00/01.
Attendance	229	105
Direct units	440	98
Total hours	110	24.5 physiotherapy input.

The monthly breakdown of these figure's for 00/0 land 99/00 were as follows :

Weeknights.				Weeknights.				Weekends. (00/0 1)			
Pre- arranged.				Emergency call out.				Emergency call out.			
								Day.		Night.	
Attendance(A)			Units(U)		Attendance		Units.		A.	U.	A.	U.
	00/01	99/00	00/01	99/00	00/01	99/00	00/01	99/00				
April	6	3	12	6	2	6	3	18	0	0	0	0
May	0	10	0	18	0	11	0	29	0	0	0	0
June	15	6	29	7	9	6	17	7	0	0	4	9
July	3	13	5	27	1	3	1	6	0	0	0	0
Aug	4	28	7	50	2	11	7	20	0	0	0	0
Sept	5	17	10	28	3	21	7	38	0	0	0	0
Oct	0	3	0	4	3	3	7	4	0	0	0	0
Nov	0	4	0	7	1	3	3	5	1	2	0	0
Dec	9	7	17	15	1	8	2	19	0	0	7*	18
Jan	5	30	10	57	3	15	6	33	0	0	3	6
Feb	4	10	8	21	2	11	3	19	1	3	2*	4
Mar	0	0	0	0	0	1	0	2	0	0	0	0

* Pre-arranged.

Out Patients.

There are four types of out patient seen by the physiotherapy department. Firstly those patients continuing their rehabilitation having had an early discharge, secondly those patients returning for further rehabilitation having made some form of recovery, or deterioration. Thirdly patients requiring pain management, predominantly with acupuncture, and finally, those patients requiring a one off assessment.

Outpatients:

The figure's were as follows:

Year:	98/99	99/00	00/01
Attendance	491	377	209.
Direct units	1661	1064	535.
New patients	63	65	54.

Education/ Training.

As in years past we have been very active in the education of Physiotherapy students. The management of the patient with a spinal cord lesions is a largely post graduate area and so all the Scottish training establishments send their students to us to cover the basics of this specialist area.

During the year we ran 4 courses here in the unit for the physiotherapy students of the following universities:

Caledonian University Glasgow.

Robert Gordon Aberdeen

Queen Margaret Edinburgh.

We also gave clinical supervision placements to 17 students from these universities. These placements vary in length from 3 weeks to 6 weeks. In all a total of 59 weeks of student supervision was given in 2000/01.

Presentations were also given to the "Seating and Wheelchairs" course at the University of Strathclyde.

All new keyworkers within the unit and all new SHO's were trained in the use of the Functional Independence Measure (FIM, enabling them to participate in the units recording of our patient's FIM scores.
Lectures were presented to the visiting Bioengineers and Prosthetics students from The University Of Strathclyde.
The Superintendent attended both of the Inter Spinal Injury Unit OT Heads and PT Superintendents meetings and also the Multi-disciplinary Association of Spinal Cord injury Professionals (MASCIP) where he chaired one of the main sessions and gave a poster presentation. At all of these meetings he was able to keep abreast of, and share, the latest developments within spinal cord injury physiotherapy, standards of care, and related topics of interest.
Finally our commitment to training our own staff continued with regular in service training both for physiotherapy staff, the multidisciplinary team, and staff from other hospitals within Scotland.
Our staff also lecture to patients within the patient education programme.

Service Clinical Governance Framework.

- Clinical effectiveness.
  - Biannually the Superintendent attends the inter-SIU. Superintendent Physiotherapists meeting where exchange of current clinical effectiveness issues is undertaken. Clinical speciality standards for the management of SCI individuals are also reviewed.
  - Current research/development papers are sometimes reviewed during in-service training and by attending specialist conferences.
  - Each patient has outcome measures using the Functional Independence Measure (FIM) set at the beginning of their rehabilitation and these are monitored especially pre discharge.

- Clinical Risk Management.
  - This is also discussed between the SIU's.
  - Each individual physiotherapist assesses their abilities and those of their patients. This alters as the rehabilitation process continues. This however is not formally recorded at present.
- CPD.
  - Weekly in-service training within the SIU.
  - SGH Physiotherapy Department in-service training monthly.
  - Courses attended by staff this year:
    - See Appendix 2.
  - Research projects have been undertaken:
    - Jon Hasler Superintendent Physiotherapist completed his MPhil thesis which has been accepted by the University of Strathclyde.
    - Willie Stewart, Senior 1 physiotherapist, along with an engineering team from Glasgow university have commenced a nine month pilot research project investigating the possibilities of FES leg cycling and the effects of such cycling within the complete paraplegic population.

Developments in 00/01.

The assessment powered wheelchair with a multitude of control systems, purchased two years ago, has continued to be of growing use within the department. This has been especially true, as the number of domicilary ventilator dependent patients has increased through the year. This makes us

one of the few centres in Scotland that can assess the mobility needs and provide solutions for ultra high, ventilated tetraplegics patients.
The use of acupuncture in the pain management of our Patients has continued to be a very useful tool.
Jon Hasler superintendent Physiotherapist gave a poster presentation at the International FES Society 2000 meeting in Denmark during June 2000.
A nine-month pilot research project investigating the possibilities of FES leg Cycling and the effects of such cycling within the complete paraplegic population.

We have also had the use, on a long-term loan basis, of a commercially available arm and leg ergometer, the "Motomed Veva". This has proved a very popular piece of equipment both with the patients and the staff enabling both complete and incomplete SCI subjects to:

1. Decrease the level of spasm in their legs by passively putting their legs though repeated reciprocal ranges of movement.

2. Increase the power and endurance of partially innervated arm and leg muscles.

3. Undergo a cardiovascular workout.

A joint research bid, from the University of Strathclyde and ourselves, to undertake a one year pilot study into the effects of augmenting traditional physiotherapy with Treadmill Gait Training combined with Functional Electrical Stimulation during the acute stage of rehabilitation has been successful. This project is due to start in late July/August 2001.

Future Research.

- A Physiotherapist at Senior 1 grade will be employed to work 0.5 WTE on the treadmill research project from July/Aug 0 1 for one year.

- A second research bid made by Professor K. Hunt of the Engineering Department Glasgow University has been successful. In collaboration with the physiotherapy department it is intended to investigate the use of FES arm cycling in complete tetraplegic patients. This includes the employment of a physiotherapist for up to 1 day per week over a 2-year period.

Areas for Development.

Respiratory Physiotherapist

As the role of Dr A McLean our new Consultant, and his interest in the respiratory management of high tetraplegia patient develops, and the Domiciliary Ventilation Service continues to develop, we strongly believe that a specialist Physiotherapist should oversee the breadth of physiotherapy input these patients could benefit from. This would also be true of the increasing number of short-term ventilated patients, and tracheostomy patients that the unit is now treating. Most spinal injuries units within the UK that treat ventilated patients now have a physiotherapist leading the work with this group of patients. This would necessitate an additional Senior IWTE being employed.

Patient Community Reintegration.

The physiotherapy and occupational therapy departments of the spinal injuries unit have long believed that a community re entry programme is a vital part of the rehabilitation process. Assisting spinal cord injured patients to learn to deal with social and environmental barriers through excursions into the community, including sporting, recreational and social activities should be fully incorporated into our programme of rehabilitation. This should be a part of our role as rehabilitation therapists. In the past it has been difficult to undertake this kind of activity as no transport has been available to access the wider community. This has also been problematic because of the increased staffing implications it necessitates. The first of these issues has been addressed with the purchase of the new minibus, through Options fund raising, and many trips for patients have been organised out with the spinal injuries unit, but these are still very limited due to the limitation of staff availability. These staffing issues still need to be addressed.

Appendix B: Occupational Therapy Report

	1998/ 1999		1999/ 2000		2000/ 2001	
	IN	OUT	OUT	IN	IN	OUT
PATIENT CONTACT	3279	644	707	3719	3568	774
PATIENT UNITS	9136	1504	1755	9224	7580	1394
HOME VISITS	100	78	66	69	72	103
H.V. UNITS	971	500	508	713	659	881
TOTAL PATIENT CONTACTS	3519	722	773	3788	3640	877
TOTAL PATIENT UNITS	10,107	2004	2263	9937	8239	2275
INDIRECT CONTACTS	2644	1022	1101	2704	2460	1445
INDIRECT UNITS	3809	1471	1566	3650	2991	1787
TOTAL UNITS	**13,916**	**3475**	**3829**	**3475**	**11230**	**4062**
COMBINED TOTAL UNITS	**17,391**		**17,416**		**15292**	

KEY: IN = In-patients, OUT = Out-patients, UNIT = 15 minutes.

SERVICE ACTIVITY

The decrease in units can be attributed to a rise in sickness absence to 7% in the year 2000/2001. This is compared to 4% in 98/99 and 4.5% in 99/00. This year's increase is primarily due to a member of staff being on long term sick. In addition, for three months following her return to work her hours were reduced from 18 hours per week to, on average, 12 hours per week.

SERVICE AIM STATEMENT

To provide a quality Occupational Therapy service that will minimise disability, maximise independence and maintain health in the Spinal Injured of Scotland. This is achieved through assessment, treatment and evaluation.

SERVICE FUNCTION STATEMENT

Occupational Therapy aims to assist the recovery or rehabilitation of functional skills, educational skills,vocational skills, social skills

This is to enable the individual to be maintained in the community or care environment at their maximum potential.

* provide advice and support to carers and other agencies supporting the spinal injured.

Individual Occupational Therapists strive to:
* achieve the maximum level of service within allocated resources

* maintain a sound level of clinical expertise and excellence through skill sharing and education.

ASSESSMENT

Activities of daily living, hand function, seating,home environment, school,community skills, lifestyle/leisure,keyworker/needs assessment, driving assessment screening (informal), power wheelchair control needs, pre and post-op assessment in tendon transfer surgery, pre and post-op assessment in neuro-control implantation

TREATMENT

self-care skills, domestic skills, vocational skills,hand and upper limb function/remedial activity, orthotics,communication skills, functional mobility, family/carer training, education, neuro-control training, tendon transfer post-of training,,mouthstick training, environmental control, unit training, adaptation of equipment prescription/ recommendation of aids and equipment

EVALUATION

* FIM scale
* Ongoing functional evaluation

SERVICE SPECIALITIES

* Seating assessment with specific attention to the special needs of the spinal injured
  This includes posture control in high level tetraplegia and pressure sore prevention with the use of a pressure reading monitor
* Splinting the tetraplegic hand and fabrication of splints to aid specific functions e.g. writing, shaving.
* Patient Education: Skin care/pressure sore prevention in ADL
  Community resources
  Cushion care
  Recreation and leisure
* Environmental control unit and assessment for switch selection
* Mouthstick training
* Home assessment training and recommendations for alteration to home or for rehousing, depending on the needs of patients and family
* Equipment: assessment of patients needs with regard to specialist aids and equipment required to aid function
* Adaptation of equipment and aids
* Workplace and work skills assessment
* Unique information service for patient, carers and staff

Pre and post-op assessment and treatment in tendon transfer surgery and neuromotor control implantation.

SERVICE ACCESS

Service hours: Monday - Friday , 8.30 - 16.30 (Fri 16.15)
System of referral: Blanket
Location: Based within the Queen Elizabeth National Spinal Injury Unit, a comprehensive Occupational Therapy Service is provided to the Spinal Injured of Scotland.

Within the unit there are 48 beds, 12 of which are designated High Dependency, 6 are within the Respiratory Care Unit and 30 are rehabilitation beds.

In keeping with the Spinal Unit's life-long care policy, the Occupational Therapy Service is extended to outpatients and home follow-up. The unit open door policy is also adhered to.

A holistic, multi-disciplinary team approach is adopted by the QENSIU

STAFFING

The service is staffed by 3.75 WTE -
Head 111 Occupational Therapist x 1. Average caseload 20 patients, ward based
Senior 1 x 0.75 WTE. Out-patient service 8 sessions per week plus 5 in-patients
Senior 1 Hand Therapist x 0.5 WTE. In-patient hand service, average 15 pts plus f/u
Senior 11 x 1 (rotational) Average 22 patients
Occupational Therapy Assistant x 0.5

The Head Occupational Therapist is responsible for
* the day to day management of the National Spinal Service
* co-ordination of service development within what was the Rehabilitation Directorate
* staff supervision and development
* a full caseload that typically comprises 20 spinal injured patients of whom 5 are in the High Dependency Ward
* Caseload allocation
* Administration and statistical collation
* Fieldwork Educator
* Line management of the Senior 1 staff within the Rehabilitation Directorate

The Head OT is responsible to the
* Clinical Director of the Spinal Injury Unit
* OT Manager

Senior 1 x 0.75 WTE - out-patient service - is responsible for,
* assessment and treatment to the out-patient population of spinal cord injured. This service includes follow-up, annual review of needs and function and care for those re-admitted to the unit with complications associated with SCI
* Patients contacting the service on the open door policy
* development of and administration of out-patient service

Senior 1 x 0/5 WTE - (Hand Therapist) - is responsible for,
* co-ordination of the all spinal unit upper limb assessment and treatment service
* identification of patients who would benefit from or be suitable candidates for
    * tendon transfer surgery
    * neuromotor control implantation
* Hand Service development
* Out-patient follow-up as appropriate
* Supervision of the Occupational Therapy Assistant

Senior 11 is responsible for,
* assessment, treatment and rehabilitation of newly injured patients. Average caseload 22.
* Fieldwork educator
* Other duties as assigned by the Head OT

Occupational Therapy Assistance x 0.5 WTE is responsible for
* carrying out assigned patient treatment under the direction of a qualified member of staff
* various clerical, administration and other duties as assigned

All staff are well motivated, cohesive and committed to high quality patient care

Advice and expertise is often called upon by other Occupational Therapists and health care workers based in both hospitals and in the community

With the following service demands a review of staffing levels is required to accommodate the developments. This is currently underway.

- increase in the number of intact patients requiring input,
- the developments of further satellite clinics
- increased demands on the hand service for pre and post surgery treatment
- development of hand clinic
- proposals for brachial plexus service

TEACHING AND TRAINING ACTIVITY

At the National Spinal Injury Unit all qualified staff are heavily involved in education and training of patients, relatives, carers, other health care professionals, lecturing at workshops/courses and to OT and PT students at the universities. In addition the Head OT and Senior 11 are fieldwork educators. Sen I now supervisor rep for HNC OT support course

Lectures/presentation the year

Presentation at NANOT conference "upper limb implant and OT"
BRSM Case study presentation of upper limb implane candidate
BSRM – Use of technology with high level injured patients
Presented Pressure sore audit review at Posture and Seating meeting
Edinburgh students
Prosthetic students
Pressure seating – OT Staff
Posture and seating – OT Staff

SHO – FIM training & posture and seating
Patient education
Relatives Education
Inner wheel – role of OT

CLINICAL GOVERNANCE ACTIVITY

As with all OT departments all staff have annual review of their Personal/Professional Development Plan. This reviews their strengths, objectives and training needs.

All staff have full access to the library facilities here and at GCU.

All are encouraged to attend the OT in-service programme..

Head Ot completed the Trust Clinical Efectiveness course

Within the Spinal Unit there are monthly audit meetings where staff present projects they are working on. Also all staff have access to the training budget as per department policy.

There are bi-annual Spinal Unit OT and PT Heads of Department meetings where the Heads of the UK Spinal Units meet to discuss issues related to service provision and development. Every attempt is made to attend these.

Staff are encouraged to attend the annual MASCIP and Guttman lectures which are held in one of the spinal units, on rotation. Due to staffing levels only one member of staff can attend and this depends on costs.

ACHIEVEMENTS/DEVELOPMENTS

- First upper limb implant surgery in Scotland
- Hand therapist invited to be on working party looking at AADL task assessment in pre and post op assessment
- Pressure study of Egerton mattress
- Head OT invited to join joint working party looking at housing provision for disabled on Glasgow
- Head OT invited to join REMAP committee giving advice on adaptive equipment for disabled
- Continuing efforts to enable patients through knowledge and education patients were taken to the Mobility Roadshow and Independent Living exhibitions
- Post discharge education and training visit to Tiree to assist carers of a patient with complex needs. Accompanied by Liaison Sister.
- Jan 2001 commenced 3rd audit of pressure sore prevalence

Appendix C: Rehab Scotland Report

Rehab Scotland

Spinal Injury Unit - Annual report Input

During year 2000 a total of 83 patients were seen by the service, including 23 who were brought forward from 1999. An analysis of the referrals is: -

Brought forward from 1999	Inpatient	16
	Outpatient	3
	Outreach	4
	Total:	**23**
Returning Patients	Inpatient	4
	Outpatient	10
	Outreach	4
	Total:	**18**
New Patients	Inpatient	37
	Outpatient	4
	Outreach	1
	Total:	**42**
Service Discharges	Inpatient	- 46
	Outpatient	- 14
	Outreach	- 1
	Total:	**- 63**
Carried Forward into 2001	Inpatient	11
	Outpatient	3
	Outreach	6
	Total:	**21**

From the above referrals the following Positive Outcomes have been achieved: -

	1998	1999	**2000**	Total
Referrals	68	76	**83**	227
Employment Related	6	7	**2**	15
Education Related	3	2	**1**	6
Pre-vocational / Exploration	9	15	**24**	48
Therapy / A – T Related	15	16	**24**	55
Skill Level Acquisition	-	-	**9**	9
Total Outcomes	**33**	**40**	**60**	**133**

Highlights from 2000

- Patients continued to be seen on home visits, as appropriate after discharge. A new innovation has been the remote linking patient's computers with the unit "master" computer. This can result in support being given, and files transferred, remotely without the need to travel.

- Continuing excellent relationships with adaptive technology developers and vendors. This allows us access to the evaluation of several new hardware devices and software programs.

- The service has benefited several times during the year by support from speech recognition manufacturers. This has resulted in patients having access to the latest the speech recognition software programs.

- Donations from a charitable trust to Rehab Scotland has enabled the purchase of the following devices for use within the unit: -

    - "MessageMate" communication device + Eyeblink switch

    - Switched Mouse Controller, including switches

    - TASH Large Button Keyboard

    - Hardware to secure keyboards to wheelchairs

- With participation from Inpatients the unit website was commissioned during 2000. The site provides ex-patients, health care professionals and people interested in spinal cord injury with information on the following: -

    - The Unit and its services

    - Guide for Inpatients and Outpatients

    - Complaints procedure

    - Links to related organisations and websites

    - The ability for ex-patients to download spinal cord injury booklets

Future development needs

- Follow up service for outreach to be "formalised" and expanded.

- Increase opportunities in wards for patients on bed rest.

- Expand pre-vocational activities to include a link with a local college.

Appendix D : Spinal Injuries Scotland Report

Report on the work of SIS (Spinal Injuries Scotland) at QENSIU from 1st April 2000 to 31st March 2001

Introduction

SIS maintained their voluntary work at the Queen Elizabeth National Spinal Unit through their patient-visiting scheme, co-ordinating the Joint Volunteers Group, providing representation at the Spinal Unit Outreach Clinics at Aberdeen and Inverness, undertaking a training day for four student doctors and providing sponsorship and an SIS Information display for a Sexual Function Study day. A pool of SIS volunteers and staff (15 people) carried out the work and underwent regular training provided by an experienced spinal cord injured Psychologist. All volunteers receive travel and out of pocket expenses.

1. Visiting Scheme

1.1 The twelve monthly visits by our representatives were carried out on the first Wednesday of the month from 6-8pm and the third Wednesday of the month from 2-4pm. Representatives visit in pairs with a spinal cord injured person paired with an able bodied volunteer/representative. The visits provide peer group support and advice. The most asked questions remain benefits and housing, though patients seek reassurance about lifestyle possibilities. In response to patient request we arrange for a person with a similar level of injury to visit them.

1.2 In addition to the above patients expressed their dissatisfaction with the long waiting times for NHS electric wheelchairs and the criteria for the issue of lightweight NHS wheelchairs for paraplegics. Patients said they would appreciate being able to have some privacy – after all even prisoners have conjugal visits! High level tetraplegic patients are often in the spinal unit for a long period with no chance of being "alone" with their partner or children.

1.3 We were unable to visit on the third Wednesday of May, August and December because of illness and unavailability of volunteers. Despite this the regular two weekly visits has provided more continuity with the patients than has been achieved in the past.

1.4 56 new members to SIS were recruited during the year. Their first year of membership is free and includes a £7.50 associate membership of SIA (Spinal Injuries Scotland)

2. Outreach Clinics, Aberdeen and Inverness

2.1 From August we arranged for an SIS representative to provide information and advice at three Spinal Injury Outpatient clinics at Aberdeen and two at Inverness. Outpatients were pleased to have the opportunity of talking with SIS and Outpatient Clinic staff appreciated the value of this extra resource provided to their Clinic. SIS gained new members, increased their network with local people and organisations involved with the spinal cord injured, provided information and support but more importantly gained an insight into members' lives in Aberdeen and Inverness. The staff of the QENSIU has actively encouraged this unique outreach support programme, which has been a key element in the programme's successful start.

3. Joint Volunteer Group

3.1 SIS undertook the co-ordination and administration of this group which brings together Options, SPIN, SIS, the Hospital Chaplaincy service and QENSIU staff. They met six times

during the year at the Spinal Unit and used the meetings to update each other on their individual work programmes and to co-ordinate a two monthly updated calendar of activity within the spinal unit which was circulated to all patients and staff. In particular they looked into ensuring that each organisation had appropriate public liability insurance to cover their volunteers. The group works within the parameters of the Southern General Hospital Volunteering policy.

3.2 A Joint Volunteer Group leaflet was designed by a Spinal Unit patient and described the three organisations, their addresses and contact numbers. The costs of printing 1000 leaflets were met by SPIN and SIS. The leaflet was mailed to the SIS mailing list (600), 200 were provided for an Options mailing with the remaining 400 being used for distribution within the Spinal Unit and for information display.

3.3 ventilated patients.

4. Social/Sport Activities

4.1 An SIS volunteer received training in how to use the Options bus.

SIS provided a stall at the QENSIU September fete.

4.2 SIS researched and compiled a list of suitable restaurants in Glasgow for

4.3 SIS donated £500 to assist the Options Key Largo scuba diving trip.

4.4 SIS arranged for the St Constantine's Liturgy group to sing carols in the Dayroom.

5. Conclusion

5.1 Spinal Injuries Scotland has maintained and extended it's role within the Queen Elizabeth National Spinal Injuries Unit. Their working relationship with the Spinal Unit is unique and envied by the English Spinal Units and English organisations involved in spinal injury. Consistency of work and a regular review of our working practice underpin this relationship and ensure its success

S Sandeman
Chief Executive 23/05/01

Appendix E: Clinical Psychology Report

The main focus of Clinical Psychology's work in the unit is the issues and problem of adjustment to spinal injury both for the individual patient, their family, as well as those who have been injured some time and are now encountering new problems (pain management, anger management and impulse control; coping with low mood and depression).

A significant proportion of work continues to be involved in consultancy and discussions, both formally and informally, with the various professional working in the multidisciplinary team; sharing ideas, methods and skills.

New developments in the past year have included communication training with the junior medical staff, allowing them to highlight some of the difficult areas which need both skill and sensitivity to deal with effectively. Relating to this, an audit project is currently being carried out looking at communication of prognosis and diagnosis with inpatients, the results of which will be presented later this year. A research project is also underway, looking at lifting behaviour and beliefs in the prevention of pressure sores, this study has been running since January and will take approximately a year to complete.

Teaching and training in the unit has cover a variety of psychological topics and the post holder has also been invited to teach the undergraduate medical students in the communication training and the postgraduate clinical psychology and physiotherapy students on psychological aspects of disability.

A.J. Walker 11.05.01.

Appendix F: Social Work Report

Social Work Services to In-patients in the Queen Elizabeth National Spinal Injuries Unit
Southern General Hospital Team

Social Work Services are provided to individuals admitted to the Spinal Injuries Unit from a number of sources. All in-patients, with the exception of those resident in West Dunbartonshire, can be referred to the Southern General Hospital Social Work Team for a screening service, which would incorporate the provision of advice/information and/or assistance with e.g. benefits/financial issues.

Glasgow City Council has an agreement with the remaining four "Greater Glasgow Health Board Authorities" to provide a screening service on their behalf, and to refer individuals to their home authorities for the completion of Community Care Assessments.

There has been an increase over the last year in the number of Community Care Assessments undertaken by other Local Authorities who are not part of the cross boundary agreement. Glasgow City Council has operated a charging policy on a per capita basis in relation to work undertaken in respect of individuals resident in these authorities. When the outcome of an initial assessment is a recommendation that a full Community Care Assessment is required, the "home authority" is notified and given the option of undertaking responsibility for this piece of work or paying Glasgow City Council for so doing.

The Social Work Team based in the Southern General Hospital continues to provide most of the Social Work service to the individuals within the Spinal Injuries Unit.

Summary of Social Work Services 01.04.2000 – 31.04.2001

Referrals and Outcomes

Within the above time period one hundred and sixteen referrals were received by the Southern General Hospital Social Work Team in respect of individuals within the Spinal Injuries Unit. Of these one hundred and sixteen, seventy three emanated from Edenhall Ward, thirty two from Philipshill Ward and eleven from the Respiratory Care Unit. Following screening forty nine of these referrals required no further action. This would suggest that in the majority of cases advice/information and/or assistance was provided by the Duty Social Worker and it was not considered necessary and/or appropriate to proceed with a full needs community care assessment at this stage.

Referral to one of the Greater Glasgow Health Board authorities was made in fifteen instances recommending full community care assessment. In the case of nine individuals other Local Authorities chose to undertake the assessments recommended. No information is available to Glasgow City Council on the outcome of these assessments.

Forty three referrals were allocated to social work staff within the Southern General Hospital Social Work Team. In keeping with established practice over half of these assessments were undertaken by the Social Worker who has a base within the unit, although does not work exclusively within the unit. The rest were distributed between four other members of staff, all of whom have a bias towards working with young disabled people.

The flow of referrals is not always steady, which is one reason that allocation of work has to be distributed among the wider staff group. There is an expectation that the current social work staffing

establishment will provide a service to the whole of the acute hospital, inclusive of the specialist units.
Between 31 March 2001 and 21 May 2001 a further fifteen referrals have been processed from the unit. Of these, four are requiring allocation to Southern General Hospital Social Work staff. In addition, the pace of progress varies with each individual and this in turn has an effect on the workload of the team. There are currently twelve individuals that were referred during the last year (up to 31 March 2001) who are still within the unit.

The precise outcomes of assessments and the resultant service plans vary, naturally with each individual. From the information recorded on our referral log it is possible to offer the following broad outline of assessment/implementation outputs/outcomes.

No assessment was required in respect of four cases which had been allocated for Community Care Assessments. This was due to the individual in one case making a significant recovery, and in the others moving onto acute hospitals in their local area prior to the assessment being completed.

Of the thirty two patients discharged during this time period only one moved onto residential care and one onto nursing home care. Seven of the total group were transferred to local acute hospitals.

Twenty one of the thirty two completed community care assessments/care plans resulted in the provision of some form of home care service. This could vary widely in terms of both nature and level of service. In practice this could mean anything from a low level service providing e.g. assistance with shopping and domestic tasks to a time intensive support package e.g. of 50+ assistance hours per week with costs of upwards of £500+. In the case of these time-intensive home care packages this will form only part of a complex service plan involving several agencies, not the least of which will be the local primary health care trust. Input from Community Nursing Services was recorded as a significant service outcome in eight of the thirty two, which is almost certainly an underestimate and probably only reflects those with regular and/or timetabled input from the District Nursing Service. In six cases housing adaptations are recorded as a significant service outcome, and in the majority of cases it is recorded that aids and adaptations for daily living have been provided.

The deficiencies in our current database, particularly in relation to the recording of outputs and outcomes, is self evident, and reflected in the absence of precise data and frequent use of the "other " category in our current log. I would further suggest that whilst there undoubtedly exists a recognition of the need for outcome measurements which reflect the interests and concerns of the service users, we are still a long way from achieving this. It would be useful both in terms of service evaluation and planning to develop recording systems further, and, perhaps, progress an earlier suggestion that there is some work done on creating a shared heath/social care database. Agreement was reached some time ago that the use of performance indicators related to the Joint Agreement for Discharge Planning is inappropriate and ineffective for measuring performance in relation to the Rehabilitation Units within the Southern General Hospital.

Inter-disciplinary Practice

Whilst there has already been some work carried out on process mapping of the community care assessment/service planning process this has not resulted in the production of a jointly agreed alternative to the current mechanisms for measuring performance in relation to successful discharge. The latter would require a jointly agreed "protocol" including agreed timeframes and trigger points. The Social Work Team welcomes the appointment of a Discharge Co-ordinator within the unit, and look forward to working constructively with the occupier of this post towards the ongoing improvement of joint working practices.

Funding Issues

Whilst is it possible to state that this is a perennial issue in the implementation of service packages for individuals, it is difficult to summarise the issues, as they vary between Local Authorities, between individuals, and over time. There is often a problem in Local Authorities for example being able to identify a budget source for the payment of Independent Living Services Monies (Glasgow City Council term). This situation is fluid, and, to date, we have not yet been prevented from implementing packages of care due to lack of funding. However resolution of funding issues can take time, and cannot always be phased to synchronise with the rehabilitation process.

Accommodation Issues

The provision of suitable accommodation can often be a pivotal issue in the implementation of a successful service package. Again the range of problems associated with this vary almost with the number of individuals involved.

Recently information emanating from practice experience has been passed onto a representative from the Joint Accommodation Strategy Group 2, and all attempts are made to ensure that particularly issues with more universal application are progressed within the appropriate forums. We have not, however, experienced any significant delays in implementation of discharge from the unit due to solely accommodation issues.

Training/Standards Issues in relation to Personal Care Providers

There has already been some work carried out in relation to this issue within the unit, and there may be some benefit in further discussion where experience can be pooled. There is likely to be an increasing tightening of regulations and procedures in this area as we move towards registration of home care services in the future.

Links with other services

Staff within the Southern General Hospital Social Work Team have established formal and informal links with a range of services for people with a disability, particularly in the Glasgow area.

There is currently an ongoing review of Community Day Services within Glasgow City Council Social Work Services, managed mainly from the four Disability Resources Centres located in the city. Community Day Services are intended to provide assistance to people with a disability in accessing mainstream community services, and directly assist individuals to promote their own social, educational and vocational development. The Southern General Hospital Social Work Team has always attempted to ensure that appropriate links are made with these services, and we will be seeking to build on our existing links as the service develops in the future. Most members of the Social Work Team have worked with the Centre for Independent Living, and have facilitated contact of individual clients with the Centre.

The planning of complex service packages does of course involve significant liaison with community health services. Within the Glasgow area there are established links, built up through individual casework with both the District Nursing Service and the Community Physical Disability Teams,

recently integrated into a city wide managed service. Social work staff who have frequently worked with individuals from other areas also have established contacts in other regions of the country.

There has been in the past contact with the network of professionals who are concerned primarily with the community reintegration of spinally injured individuals. There are no active links at present however, and, we intend to remedy this in the near future.

Summary

It is not possible to offer an overview of all Social Work Services provided to individuals within the unit due to the involvement of a number of Local Authorities. It would be useful if an audit of all services provided could be undertaken, and the Southern General Hospital Social Work Team would be happy to work with health colleagues within the unit in undertaking this.

There is a ongoing need to work together to improve the overall service to individuals by reviewing practices and processes relating to discharge planning, and we look forward to participating in this ongoing exercise. This would include working on improving the database in relation to outcome data, and indeed would address the other issues referred to above.

1. West Dunbartonshire have elected to undertake all Social Work Services on behalf of their own residents.

2. This group reports to the Physical Disability Planning and Implementation Group, which is a multi-agency forum with responsibility for monitoring achievement of the objectives of the Joint Community Care Plan.

Sheila C Johnston
Senior Social Worker
Glasgow City Council Social Work Services
Southern General Hospital
1345 Govan Road
Glasgow
G51 4TF
24th May 2001

Appendix G : Raw Data

DA1 : New Admissions

	Admissions
1992/1993	59
1993/1994	128
1994/1995	137
1995/1996	150
1996/1997	164
1997/1998	167
1998/1999	163
1999/2000	180
2000/2001	199
Total	**1347**

DA2 : New Admissions by Case-mix Complexity

Admissions	I	II	III	IV	Total
1992/1993	9	15	16	19	**59**
1993/1994	6	18	47	57	**128**
1994/1995	13	24	32	68	**137**
1995/1996	6	30	39	75	**150**
1996/1997	13	20	52	79	**164**
1997/1998	17	24	46	80	**167**
1998/1999	4	32	27	100	**163**
1999/2000	8	27	28	117	**180**
2000/2001	13	24	40	122	**199**
Total	**89**	**214**	**327**	**617**	**1347**

DA3 : New Admissions by Health Board of Residence

	1992/ 1993	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	Total
Argyll & Clyde	9	22	21	28	28	29	24	28	28	**217**
Ayrshire & Arran	4	12	9	9	12	12	12	17	20	**107**
Borders	0	2	2	1	2	3	0	2	0	**12**
Dumfries & Galloway	2	3	4	5	5	6	16	13	7	**61**
Fife	3	3	5	4	3	4	1	3	2	**28**
Forth Valley	2	8	10	9	8	13	6	11	17	**84**
Grampian	2	2	3	2	6	6	8	4	8	**41**
GGHB	19	32	43	46	45	28	37	28	47	**325**
Highland	6	6	5	2	5	7	10	4	6	**51**
Lanarkshire	5	19	19	21	20	22	27	40	25	**198**
Lothian	3	7	6	6	8	14	6	11	14	**75**
Shetland	0	0	0	1	2	0	0	-	0	**3**
Tayside	2	5	4	4	4	8	3	6	5	**41**
Orkney	0	0	0	0	0	1	0	-	0	**1**
Western Isles	0	7	1	4	5	2	5	-	3	**27**
ECR	1	0	5	7	9	10	6	11	12	**61**
Private	1	0	0	1	2	2	2	1	0	**9**
Unknown								1	5	**6**
TOTAL	**59**	**128**	**137**	**150**	**164**	**167**	**163**	**180**	**199**	**1347**

DA4 : Admissions by Health Board compared with population size

	1992/1993 - 1999/2000	2000/ 2001	Total	% to Total		Population Size	% to Total
Argyll & Clyde	189	28	217	16.2		430500	8.4
Ayrshire & Arran	87	20	107	7.9		376500	7.3
Borders	12	0	12	0.9		106100	2.1
Dumfries & Galloway	54	7	61	4.5		147600	2.9
Fife	26	2	28	2.1		349300	6.8
Forth Valley	67	17	84	6.2		274600	5.4
Grampian	33	8	41	3.0		531200	10.4
GGHB	278	47	325	24.2		909600	17.7
Highland	45	6	51	3.8		208700	4.1
Lanark	173	25	198	14.7		560800	10.9
Lothian	61	14	75	5.6		767800	15.0
Shetland	3	0	3	0.2		23020	0.4
Tayside	36	5	41	3.0		393600	7.7
Orkney	1	0	1	0.1		19800	0.4
Western Isles	24	3	27	2.0		28880	0.6
ECR	49	12	61	4.5			
Private	9	0	9	0.7			
Unknown	1	5	6	0.4			
TOTAL	1148	199	1347			5128000	

DA5 : Admissions by Degree of Injury

	805	806	952	Other	Total
1992/1993	16	24	16	3	59
1993/1994	36	43	36	13	128
1994/1995	49	33	40	15	137
1995/1996	45	44	43	18	150
1996/1997	60	50	39	15	164
1997/1998	62	50	42	13	167
1998/1999	80	36	36	11	163
1999/2000	94	44	34	8	180
2000/2001	100	60	26	13	199
Total	542	384	312	109	1347

DA6 : Discharges by Degree of Injury

Discharges	805	806	952	Other	Total
1992/1993	12	8	8	3	**31**
1993/1994	38	44	40	13	**135**
1994/1995	48	39	30	14	**131**
1995/1996	44	40	51	19	**154**
1996/1997	63	44	31	13	**151**
1997/1998	60	50	46	14	**170**
1998/1999	75	38	37	12	**162**
1999/2000	93	37	35	7	**172**
2000/2001	99	52	25	13	**189**
Total	**532**	**352**	**303**	**108**	**1295**

DA7 : Admissions and Discharges for Non Traumatic Spinal Cord Injury (ICD 9 Code 952) by aetiology

Admissions	1998/1999	1999/2000	2000/2001
Central Cord Lesion	22	15	
Infection	2	2	
Vascular	7	8	
Tumour	3	2	
Intra medullary Cyst	0	0	
Non-specific Lumbar Lesions	0	0	
Stab Wounds	0	0	
Other	2	7	
Total	**36**	**34**	

Discharges	1998/1999	1999/2000	2000/2001
Central Cord Lesion	18	16	
Infection	3	2	
Vascular	9	6	
Tumour	2	2	
Intra medullary Cyst	0	1	
Non-specific Lumbar Lesions	0	3	
Stab Wounds	0	3	
Other	5	2	
Total	**37**	**35**	

DA8 : Daycase attendances by Health Board

	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	Total
Argyll & Clyde	23	38	44	71	80	95	59	315
Ayrshire & Arran	21	14	48	37	39	42	54	213
Borders	0	0	1	4	1	2	0	6
Dumfries & Galloway	4	4	0	0	9	4	2	19
Fife	0	2	4	6	3	16	16	31
Forth Valley	16	5	5	11	24	8	11	72
Grampian	0	0	3	2	5	1	2	12
Greater Glasgow	68	95	94	158	207	228	160	782
Highland	1	5	5	5	7	2	0	23
Lanarkshire	21	50	67	95	179	153	177	589
Lothian	0	9	9	18	27	28	11	74
Shetland	0	0	0	0	0		0	0
Tayside	1	8	9	4	5	5	2	29
Orkney	0	0	0	0	0		0	0
Western Isles	1	0	0	0	0		0	1
ECR						6	1	7
Total	**156**	**230**	**289**	**411**	**586**	**590**	**495**	**2173**

DA9 : Admissions by age group

Males

	<20	20-29	30-39	40-49	50-59	60-69	70-79	80-89	>90	Total
1992/1993	9	15	9	6	3	3	4	1	0	50
1993/1994	11	24	16	9	11	10	4	4	0	89
1994/1995	8	26	17	14	17	12	4	1	0	99
1995/1996	11	19	20	19	15	6	4	0	0	94
1996/1997	12	19	19	17	20	11	9	1	0	108
1997/1998	12	22	26	23	19	11	13	3	0	129
1998/1999	9	30	21	16	18	16	4	2	0	116
1999/2000	15	26	28	16	22	11	5	0	0	123
2000/2001	**17**	**30**	**23**	**22**	**18**	**15**	**9**	**4**	**0**	**138**
Total	**104**	**211**	**179**	**142**	**143**	**95**	**56**	**16**	**0**	**946**

Females

	<20	20-29	30-39	40-49	50-59	60-69	70-79	80-89	>90	Total
1992/1993	1	1	1	2	2	2	0	0	0	9
1993/1994	11	7	6	7	1	4	2	1	0	39
1994/1995	2	6	11	3	5	4	5	2	0	38
1995/1996	6	9	11	12	6	4	3	5	0	56
1996/1997	6	7	10	7	9	8	6	3	0	56
1997/1998	5	7	9	2	5	5	3	0	2	38
1998/1999	8	8	6	4	6	3	9	3	0	47
1999/2000	8	10	9	7	8	6	5	2	2	57
2000/2001	**1**	**13**	**9**	**11**	**8**	**6**	**5**	**7**	**1**	**61**
Total	**48**	**68**	**72**	**55**	**50**	**42**	**38**	**23**	**5**	**401**

All Admissions

	<20	20-29	30-39	40-49	50-59	60-69	70-79	80-89	>90	Total
1992/1993	10	16	10	8	5	5	4	1	0	59
1993/1994	22	31	22	16	12	14	6	5	0	128
1994/1995	10	32	28	17	22	16	9	3	0	137
1995/1996	17	28	31	31	21	10	7	5	0	150
1996/1997	18	26	29	24	29	19	15	4	0	164
1997/1998	17	29	35	25	24	16	16	3	2	167
1998/1999	17	38	27	20	24	19	13	5	0	163
1999/2000	23	36	37	23	30	17	10	2	2	180
2000/2001	**18**	**43**	**32**	**33**	**26**	**21**	**14**	**11**	**1**	**199**
Total	**152**	**279**	**251**	**197**	**193**	**137**	**94**	**39**	**5**	**1347**

DA 10 : Age & Sex of New Patients by Category of Injury
Female Patients 2000/2001

Casemix	No. of patients	Mean Age	Range of Ages
I	3	62.2	43.8 - 77.5
II	2	41.7	20.5 - 62.8
III	15	39.8	18.9 - 70.2
IV	41	51.3	20.3 - 91.2
Females	**61**	**48.7**	**18.9 - 91.2**

DA 11 : Age & Sex of New Patients by Category of Injury
Male Patients 2000/2001

Casemix	No. of patients	Mean Age	Range of Ages
I	10	37.8	13.8 - 64.4
II	22	45.0	17.9 - 72.5
III	25	38.4	16.6 - 70.9
IV	81	43.2	18.3 - 87.4
Males	**138**	**42.2**	**13.8 - 87.4**

DA 12 : Age & Sex of New Patients by Category of Injury
All Patients 2000/2001

Casemix	No. of patients	Mean Age	Range of Ages
I	13	43.4	13.8 - 77.5
II	24	44.7	17.9. - 72.5
III	40	39.0	16.6 - 70.9
IV	122	45.9	18.3 - 91.2
All Patients	**199**	**44.2**	**13.8 - 91.2**

DA 13 : Length of Stay for Traumatic Injury by level of Spinal Cord Lesion 1999/2000

Casemix	No. of patients	Mean L.O.S. (days)	Range of L.O.S.
I	5	305	28 - 581
II	27	190	22 - 454
III	22	120	4 - 512
IV	118	18	1 - 126
All	**172**	**67**	**1 - 581**

DA 14 : All Discharges

1992/1993	31
1993/1994	135
1994/1995	131
1995/1996	154
1996/1997	151
1997/1998	170
1998/1999	162
1999/2000	172
2000/2001	189
Total	**1295**

DA15 : Discharges by Casemix Complexity

Discharges	I	II	III	IV	Total
1992/1993	2	7	8	14	**31**
1993/1994	9	19	47	60	**135**
1994/1995	10	20	33	68	**131**
1995/1996	11	34	38	71	**154**
1996/1997	7	16	49	79	**151**
1997/1998	19	22	46	83	**170**
1998/1999	7	26	33	96	**162**
1999/2000	5	27	22	118	**172**
2000/2001	10	28	34	117	**189**
Total	**80**	**199**	**310**	**706**	**1295**

DA16 : Discharges by ASIA Impairment Level & Health Board

2000/2001	A	B	C	D	E	Total
Argyll & Clyde	2			7	15	24
Ayrshire & Arran	2	1	2	5	10	20
Borders						
Dumfries & Galloway	3				5	8
Fife	1				1	2
Forth Valley	2			5	8	15
Grampian	5			1	1	7
Greater Glasgow	3	2	1	6	31	43
Highland	2		1	2	3	8
Lanarkshire	4	3	2	1	15	25
Lothian	3	1	2	3	7	16
Shetland						
Tayside	2	1			3	6
Orkney						
Western Isles					2	2
ECR	5	1			4	10
Private						
Unknown	1				2	3
TOTAL	35	9	8	30	107	189

DA17 : Discharges by ASIA Impairment Level & Health Board

Discharges	A	B	C	D	E	Total
1999/2000	25	1	12	25	108	172
2000/2001	35	9	8	30	107	189

DA18 : Delay between actual and intended date of discharge

	No. of patients discharged	No. of patients delayed	Mean delay (days)	Range of delay (days)
1999/2000	172	21	122	22 - 410
2000/2001	189	27	68	1 - 877

DA19 : Time between accident & admission

	No. of patients	Mean Time (Days)	Range of Time
1999-2000	180	158.3	0 - 18770
2000-2001	199	163.3	0 - 12575

DA20 : Ventilated Bed Days

		No. Patients	Ave. Ventilated Days	Total Ventilated Days
1998/1999		12	121	1452
1999/2000	Edenhall	12	63.4	761
	RCU	4	187	748
2000/2001	Edenhall	12	71.5	858
	RCU	10	80.9	809

STAFF LIST

ALLAN DB.
ARMSTRONG N
BARR KN
BEWICK A
BLAIR F
BRADLEY C
BROWN F
CALDWELL M
CAMERON S
CAMERON S
CAMPBELL D
CARR A
CASSIDY D
CHISHOLM S
CLARK I
CONN G
COYLE TA
CRAIG K
CRAWFORD W
CURRIE J
DARGAN H
DAVIES K
DONNELLY S
DUFFY L
DUNCANSON T
EDEN C
ELDER P
FARREN P
FERRIER KIM
FLANNIGAN E
FOLEY C
FORREST S
FRASER M
GALLACHER I
GOVAN EM
GRANT E
GRANT ANNE
HANDS L
HANNAH MM
HASLER JON
HEMS T
HENDRY EA
HONEYMAN MA
HUGHES M
HUNTER S
IRVINE G
JIGAJINNI MV
JOHNSON F
JOHNSON RA.
KELLY VA
LANG L
LAZZERINI C
LEHANE M
LEVY C
LOESCH K
LOWE M
MACDONALD J
MACDONALD L
MACDONALD S
MACINTYRE K
MACLEAN LJ
MAGEE E
MANN CA
MARTIN D
McALOON E
McCABE A
McCALLUM D
McCARRON K
McCUE K
McCUE M
McDONALD J
McDONALD J
McGROARTY J
McINULTY PP
McKEAND A
McKENZIE JL
McKILLOP M
McLEAN A
McLENNAN K
McMAHON RD
McMURTRIE I
MEEKE G
MERCHANT P
MERRY JA
MONTEITH M
MOONEY D
MULHOLLAND L
NORMAN S
O'BRIEN A
ORRY GEOFF
PATERSON S L
PATTERSON M
PETTIGREW H
PREMPEH S
PRITCHARD L
PROCTOR M
PURCELL NL
RAMSAY C
RENFREW E
ROONEY B
ROONEY M
SEN D
SIMPSON AA
SMILLIE V
SMITH L
STARK V
STEWART W
STOBIE V
SUBRAMANYA
SWEENEY AL
THOMSON C
THOMSON NP
TURNER M
WALKER A
WALLACE L
WATSON JB
WEIR F
WHITEFORD G
WILSON J
WOODS L