Main Report

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Introduction

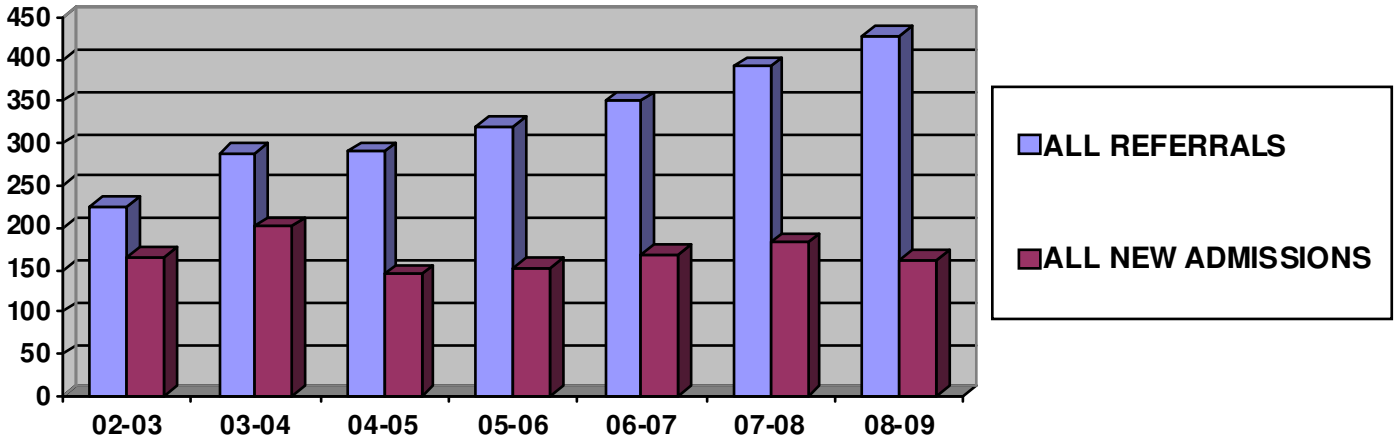
The Queen Elizabeth National Spinal Injuries Unit is responsible for the management of all patients in Scotland who have a traumatic injury to the spinal cord. Since commissioning in 1992 it has continued to develop the management of the acute injury and long term care of its patients to maximise function and to prevent the complications of paralysis. In 2008-09 the unit fully commissioned the Step-down Unit and the Research Mezzanine. This has led to an improved service for new injuries and consolidation of the services for the lifelong care of the injured.

1.0 Activity

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

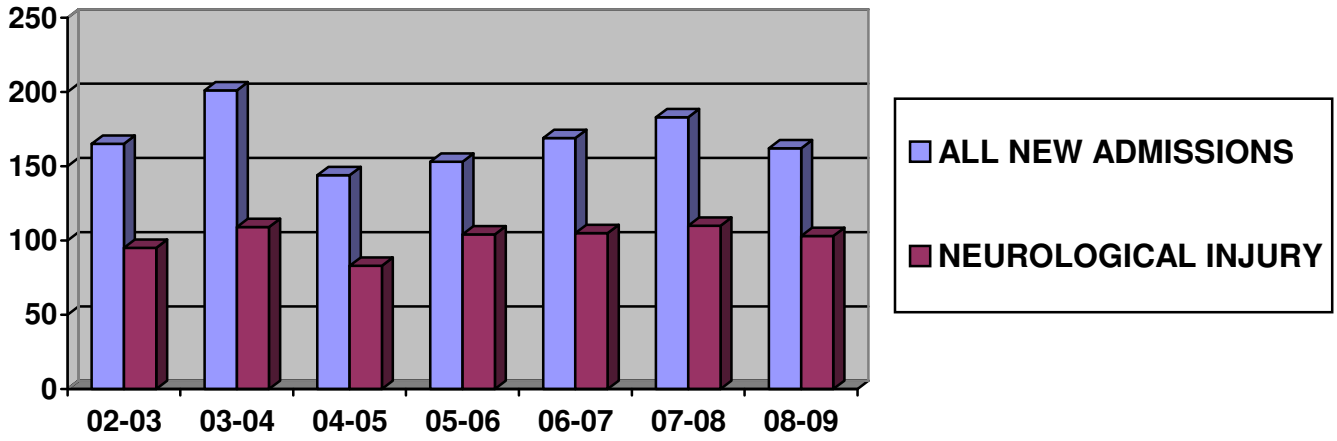
2.1.1 New In-Patient Activity

The total number of patients referred (428) to the unit for consideration continues to grow. This probable reflects changing skill sets and All patients with a neurological injury are admitted as soon as clinically indicated. Spinal fractures without neurology are admitted dependant on need and availability of beds.



The number of neurological injured patients (103) has remained stable over the last five years and is consistent with the population size. There was a decrease in the number of non-neurological injured spinal fractures (59) admitted. Two hundred and sixty six patients were not admitted and satisfactorily managed in the referral hospital.

	02/03	03/04	04/05	05/06	06/07	07/08	08/09	92-09
NEW ADMISSIONS	165	201	144	153	169	183	162	2688
Neurological	95	109	83	104	105	110	103	1319
Non-neurological	70	92	61	49	64	73	59	1369



The number of patients with a neurological deficit has now stabilised (83-110 median 104). The large increase in referrals related to spinal fractures without neurology continues to increase. These patients are referred, because of the severity of the fracture or seeking admission for conservative care. Opportunity to admit a full spectrum of fractures is limited because of the number of available beds and the varying case-mix amongst the neurological injuries.

Orthopaedic consultants or neuro-surgeons managed over two hundred and sixty six patients without neurological deficit in the referral hospital. The consultant staff or liaison nurses continued to support the management of cases in the referral hospital or as out-patients. A number of patients were managed in the Neuro-surgical and Orthopaedic wards of the Southern General Hospital because of concomitant injuries.

2.1.2. New Admissions: Case Mix 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 with Paralysis	Incomplete or none

Group 1

Patients with the most severe neurological injuries. They are the most dependant. The numbers are expected to vary considerably each year.

Group II and Group III

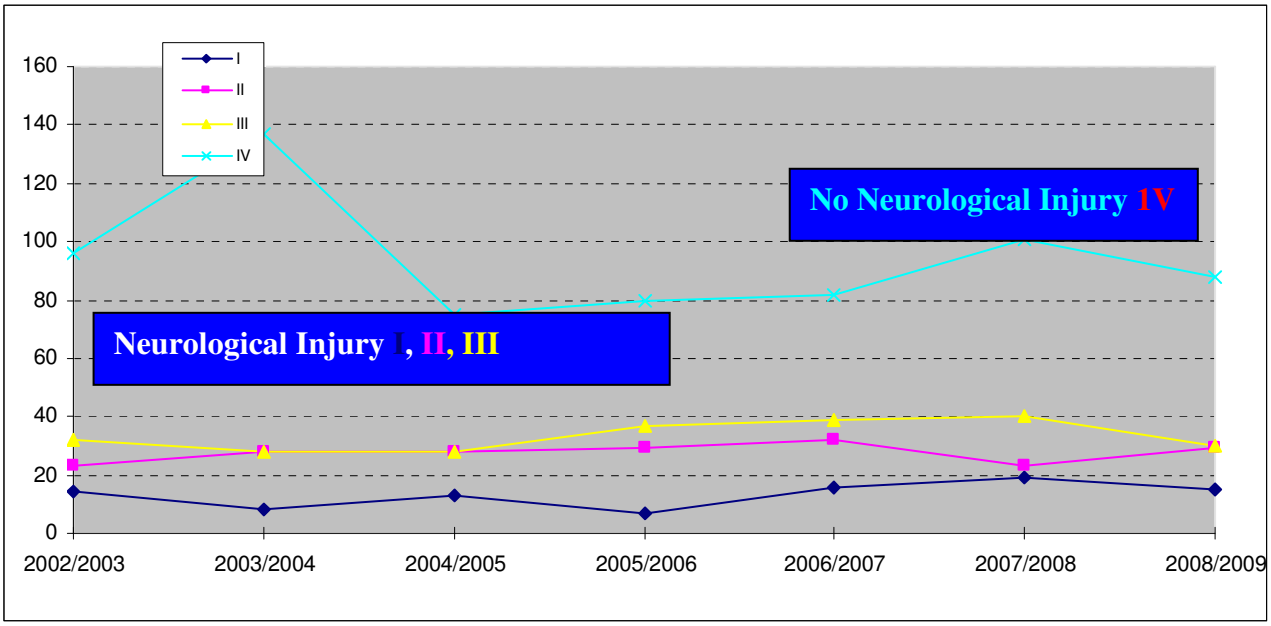
Patients with a significant neurological loss and high dependency. They require the longest period of rehabilitation.

Group IV

Includes all patients with spinal fractures and incomplete or no paralysis. Many require significant input during their rehabilitation.

2.1.3 New Admissions by Case-Mix Complexity

Appendix DA2



GROUP	02/03	03/04	04/05	05/06	06/07	07/08	08/09	92/09
I	14	8	13	7	16	19	15	192
II	23	28	28	29	32	23	29	430
III	32	28	28	37	39	40	30	591
IV	96	137	75	80	82	101	88	1475
Total	165	201	144	153	169	183	162	2688

Group I patients decreased compared with the previous year. There was an increase in the other dependent group II and a decrease in Group III. The number of patients admitted with no neurology fell to the median level.
The variation in complexity in Group IV is better demonstrated by ASIA grades. The rate of throughput appears higher than any other spinal injury unit in the UK

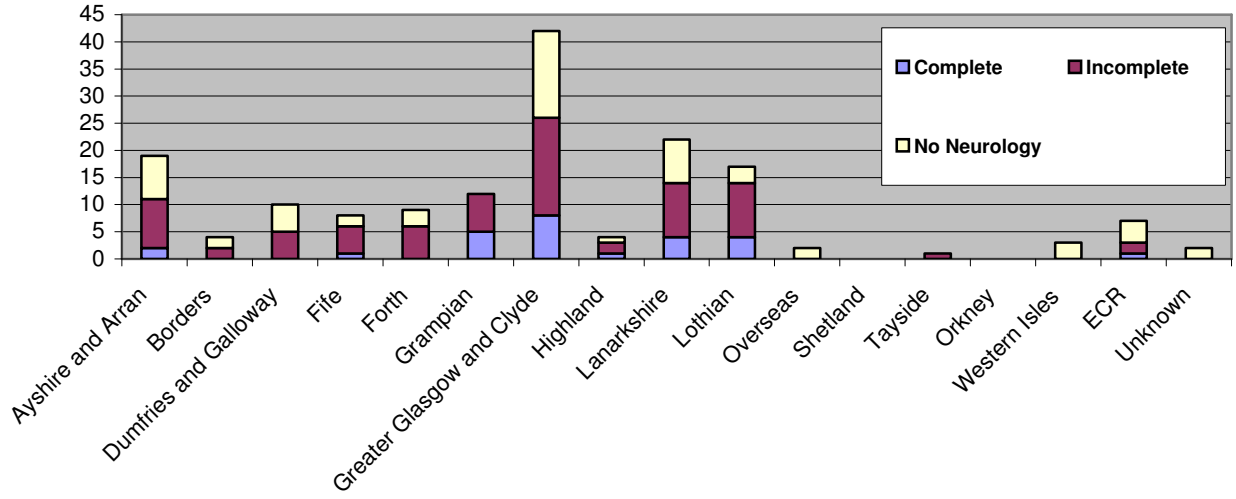
2.1.4 New Admissions by ASIA Impairment Level & Health Board

The ASIA grading system is internationally recognised as a measure of dependency and can be used to classify improvements over time.

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

2008/2009	A	B	C	D	E	Total
Ayrshire & Arran	2	1	2	6	8	**19**
Borders	0	0	0	2	2	**4**
Dumfries & Galloway	0	0	0	5	5	**10**
Fife	1	0	3	2	2	**8**
Forth Valley	0	1	3	2	3	**9**
Grampian	5	1	5	1	0	**12**
Greater Glasgow Clyde	5	4	7	10	16	**42**
Highland	1	0	0	2	1	**4**
Lanarkshire	4	4	4	2	8	**22**
Lothian	4	2	2	6	3	**17**
Overseas	0	0	0	0	2	**2**
Shetland	0	0	0	0	0	**0**
Tayside	0	0	1	0	0	**1**
Orkney	0	0	0	0	0	**0**
Western Isles	0	0	0	0	3	**3**
ECR	1	2	0	0	4	**7**
Unknown	0	0	0	1	1	**2**
TOTAL	**23**	**15**	**27**	**39**	**58**	**162**

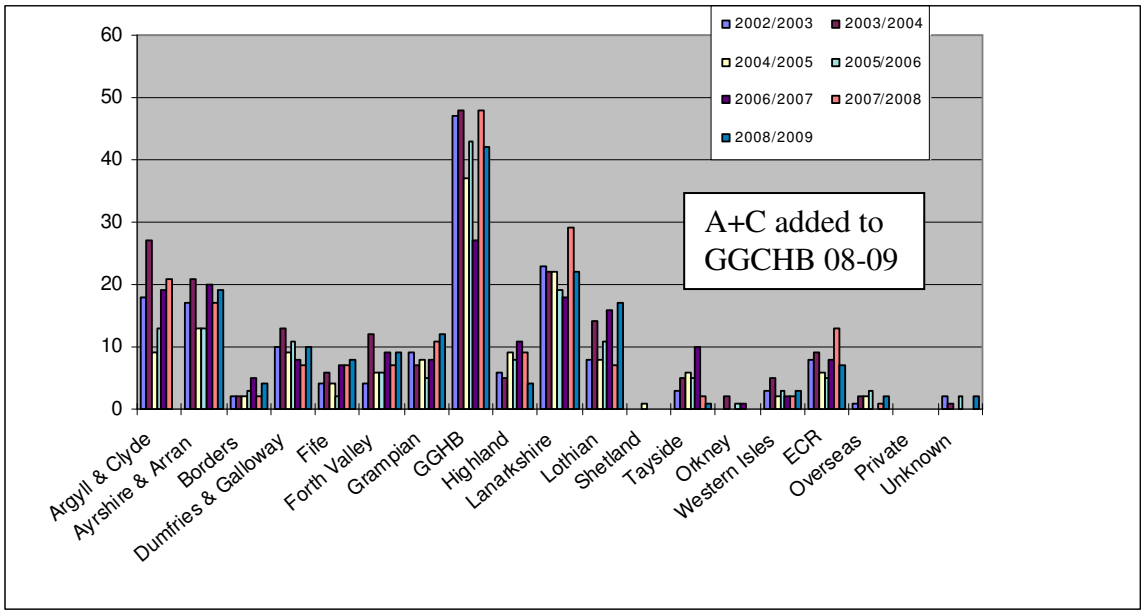
2.1.41 Admissions by Neurological Deficit and Health Board



GGCHB is responsible for the largest number of complete and incomplete spinal cord injuries. This is more marked with the incorporation of Argyll and Clyde. The number of non-neurological injuries admitted from all regions and particularly from GGCHB has stabilised. The distribution of complete and incomplete injuries varies by year. All areas except Orkney and Shetland referred one or more patients with a neurological deficit. The distribution of admissions and the annual variation since the unit opened justifies the economic benefits of a national service.

2.1.5 New Admissions by Health Board of Residence 2002-2009

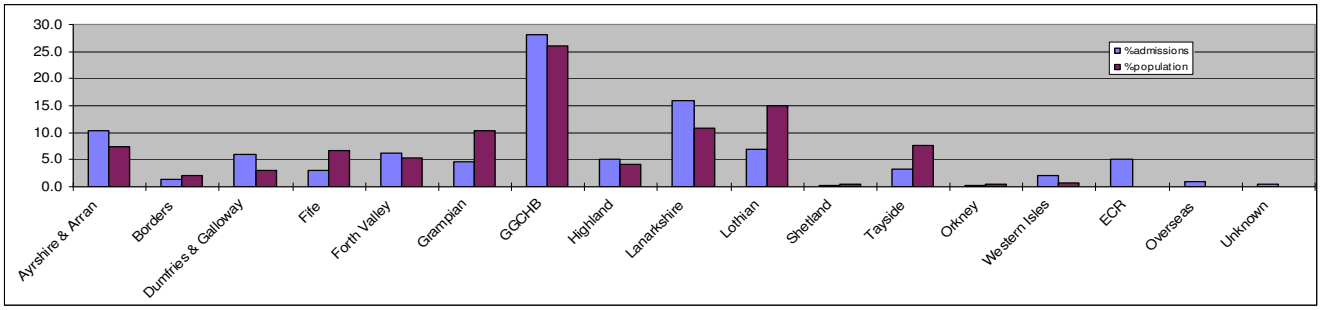
Appendix DA3



An increased referral pattern from some health boards reflects leisure-related accidents. Patients domiciled in Scotland but who are injured abroad are repatriated when clinically indicated and then recorded under their own health board.

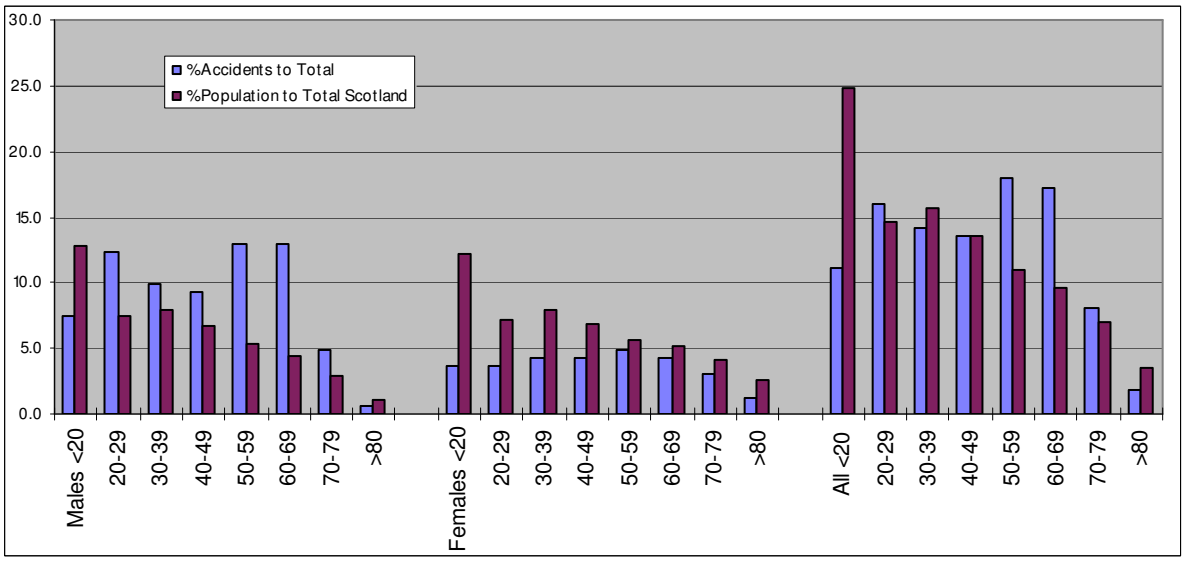
2.1.6 Admissions by Health Board compared with Population Size

Appendix DA4



There has been positive encouragement for consultant medical staff in Lothian, Tayside and Grampian to develop services for those patients with no neurological injury. This leads to a dis-proportionate number of admissions from other areas compared with population size. Support is always available from the unit in the management of these patients. Regions with higher than expected admissions are centres for farming and outdoor pursuits as well having a significant proportion of B roads.

2.1.7 New Admissions by Age Group



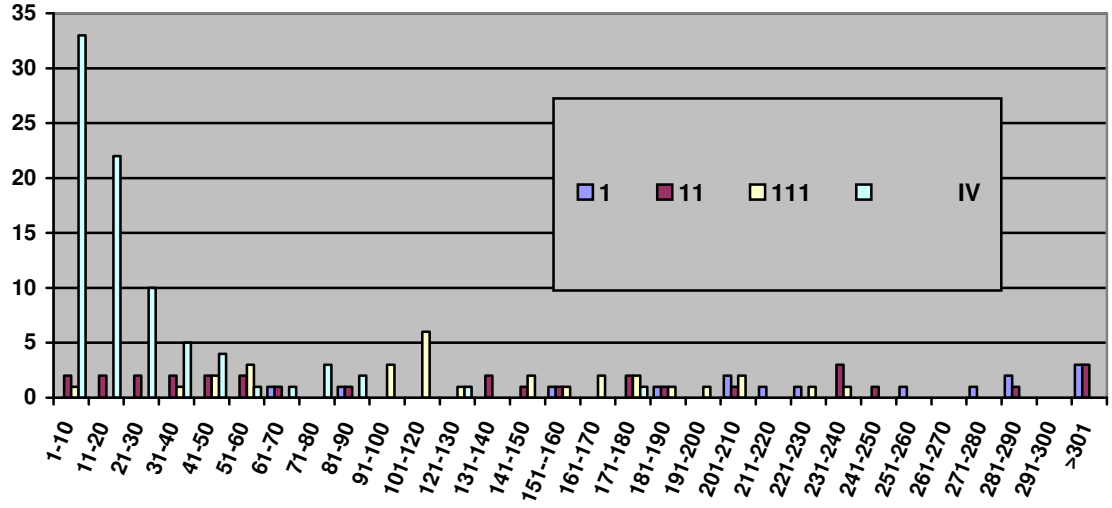
The age distribution is as expected. There is a disproportionate preponderance of males in all age groups. The number of injuries in those under twenty remains low. The increase in age-related degenerative spinal fractures continues. The management of an increasing number of elderly patients with cervical injuries with no neurological deficit are managed as outpatients, and not reflected in these figures

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

Case mix	No. of patients	Mean L.O.S. (days)	Range of L.O.S.
I	15	232	68 - 365
II	30	154	8 - 790
III	30	126	9 - 232
IV	83	23	1 - 173
AII	158	77	1 - 790

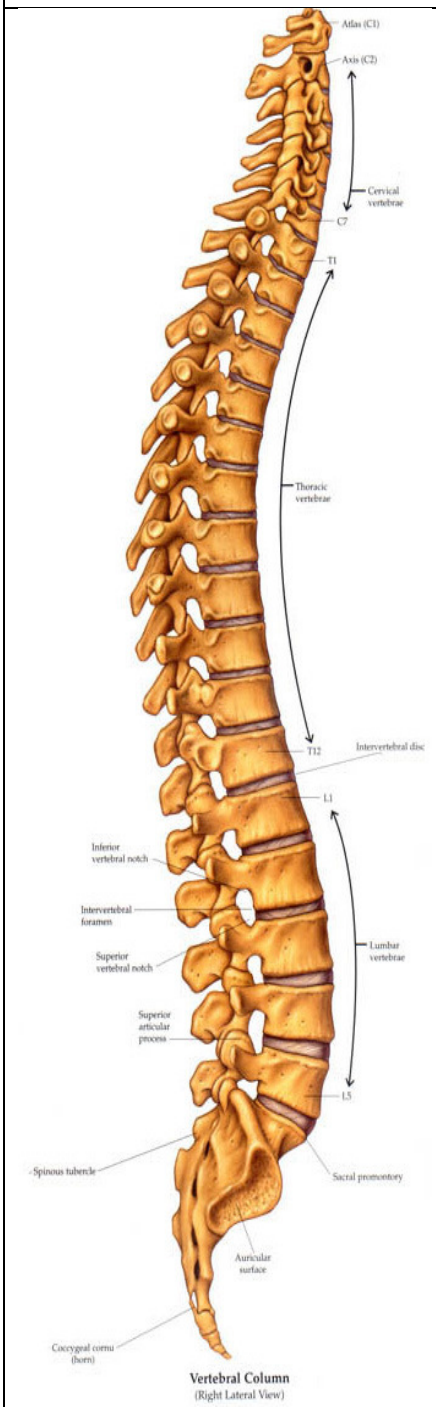
Throughout the last ten years there has been significant effort spent on reducing the length of stay within the unit. The wide variation of length of stay within each classification is indicative of the variation in the rehabilitation needs within each group.
There is a significant variation in the resources used by each group as has previously been demonstrated. The non-neurological group has a significant lower length of stay and lesser impact on the service. An in depth analysis was done in 2006.

2.1.9 Length of Stay by Grade of Injury



Over seventy five percent of Group iv (no neurology) were discharged within four weeks, fifty percent within ten days. The distribution follows the predicted dependence and rehabilitation needs of the respective injuries.

2.2 Admissions by Anatomical Level and Severity



Level	Complete	Incomplete	No Neurology	Total
C 1	**1**	**2**	**0**	**3**
2	**0**	**2**	**11**	**13**
3	**1**	**7**	**0**	**8**
4	**3**	**10**	**2**	**15**
5	**3**	**23**	**5**	**31**
6	**1**	**11**	**5**	**17**
7	**0**	**3**	**0**	**3**
Sub-total	**9**	**58**	**23**	**90**
T 1	**1**	**0**	**0**	**1**
2	**0**	**0**	**0**	**0**
3	**1**	**1**	**1**	**3**
4	**3**	**0**	**2**	**5**
5	**1**	**1**	**4**	**6**
6	**1**	**1**	**3**	**5**
7	**3**	**0**	**0**	**3**
8	**2**	**1**	**0**	**3**
9	**0**	**0**	**2**	**2**
10	**1**	**1**	**1**	**3**
11	**0**	**0**	**3**	**3**
12	**1**	**3**	**7**	**11**
Sub-total	**14**	**8**	**23**	**45**
L 1	**3**	**6**	**7**	**16**
2	**0**	**2**	**4**	**6**
3	**0**	**1**	**0**	**1**
4	**0**	**2**	**1**	**3**
5	**0**	**0**	**1**	**1**
Sub-total	**3**	**11**	**13**	**27**
TOTAL	**26**	**77**	**59**	**162**

Higher level counted in five multi level injuries

2.3 In-patient Procedures

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

2.3.1 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. Failure of orthotic management is a further indication for surgery. A team approach to decision making is used to optimise patient outcome.

Over the year the orthopaedic surgeon carried out twenty-three thoraco-lumbar fixations and the neuro-surgical team twenty-nine cervical fixations on the spinal injury lists. Further stabilisation surgery and other procedures were carried out on other surgical lists. Twenty nine patients were treated with Halo immobilisation.

2.3.2 Spinal Injury Specific Surgery

A wide range of procedures, involving orthopaedics, plastic surgery, urology, general surgery, ENT and neurosurgery, are required for acute and long-term patients. The spinal unit staff and appropriate specialists from the Southern General Hospital provide this service. Over thirty nine theatre lists were carried out over the course of the year involving fifty nine individual procedures and seven surgical specialities. This included twenty major skin procedures. Other specialist neurosurgical procedures were carried out on neurosurgery list. Three electro-ejaculations were carried out under general anaesthetic as part of the assisted conception programme. Additional upper limb and orthopaedic trauma cases were performed in the orthopaedic theatre.

2.3.3 Implanted Pain Control

Chronic pain and spasms are a significant problem for patients with a spinal cord injury. One approach is the surgical implantation of reservoirs of analgesic drugs or anti-spasmodic drugs. No new pumps were implanted in the year. Two revision pumps were carried out in the year. A detailed report was provided in 2007.
Patients attend outpatient clinics with varying frequency to have pumps refilled or reprogrammed. Between five and twelve patients attend each clinic.
At present twenty seven pumps are implanted and operational. Eighteen patients attend the QENSIU for refills and nine attend local hospitals. Some pumps are redundant and one was explanted during the year.

Pumps Active 08-09	
Isomed	**7**
Synchromed	**17**
Archimedes	**3**

The overall programme is very successful but requires continued monitoring

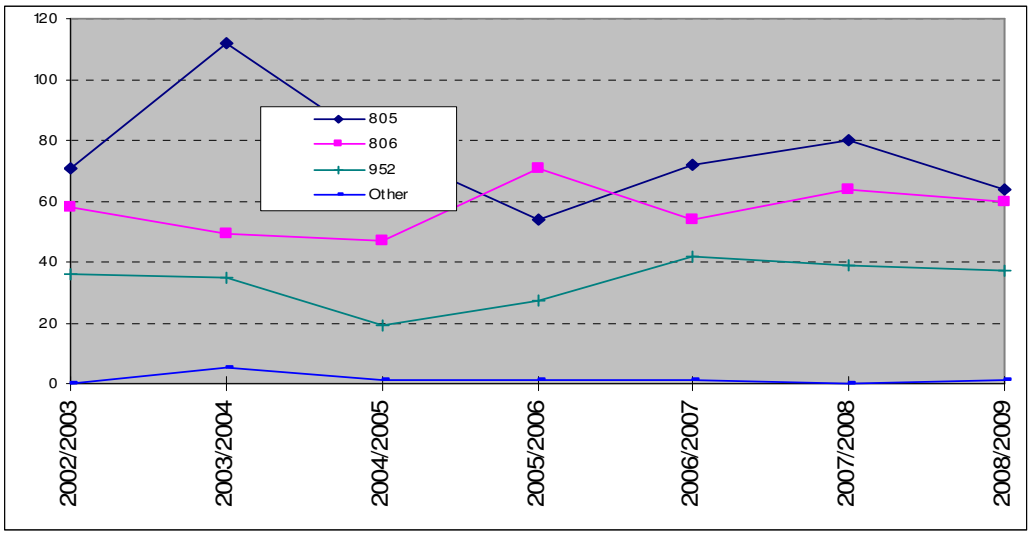
2.4 Admissions and Discharges by Degree of Injury

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 is shown by the appropriate ICD9 codes.

ICD805	Fracture of vertebral column without mention of spinal cord injury
ICD806	Fracture of vertebral column with mention of spinal column injury
ICD952	Spinal Cord Lesion without evidence of spinal bony injury
OTHER	Other Spinal Cord Related Conditions

2.3.1 Admissions by Degree of Injury

Appendix DA5



Fracture with no Neurology

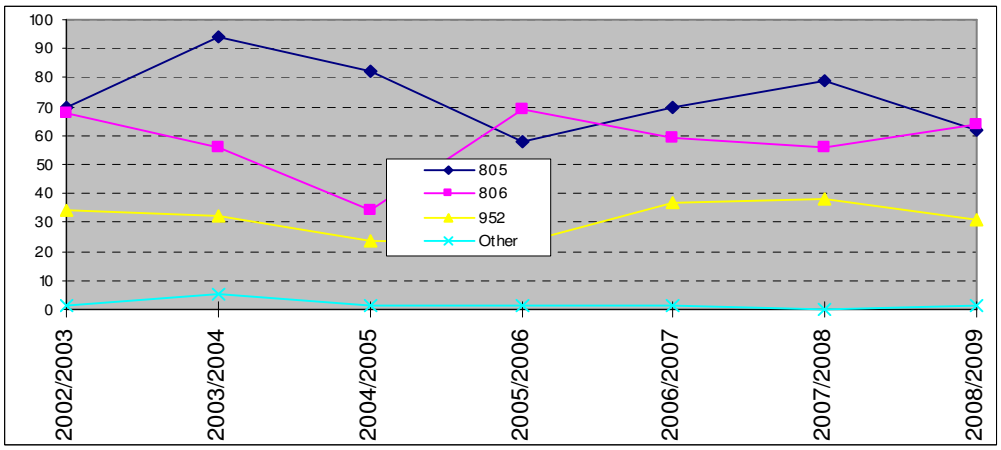
SCI with fracture

SCI no bony Injury

Other

2.3.2 Discharges by Degree of Injury

Appendix DA6



Fracture with no neurology

SCI with fracture

SCI no bony injury

Other

It is predicted that there will be around 80-90 spinal cord injuries per year for a population the size of Scotland (5.5 million). The exact nature will vary from year to year but all are admitted for treatment and rehabilitation.

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

2008/2009	Admissions	Discharges
Central Cord Lesion	19	12
Infection	3	5
Vascular	5	6
Tumour	1	1
Surgical	1	1
Non-specific Lumbar Lesions	0	0
Penetrating Wounds gun/stab	2	2
Other	6	4
Total	37	31

Appendix DA7

Non-traumatic spinal cord injury is misleading as it includes Central Cord Syndrome that is traumatic in origin but does not involve significant bony damage and often results in major paralysis. It usually occurs in the elderly population who have osteoarthritic changes in the cervical spine and results in a severe disability.

2.3.4 In-patient Bed Days

2008/2009	Edenhall (HDU)	RCU	Philipshill (Rehab)
Beds	12	4	32
Actual –TOBD	15,598		
Available	17,772		
Bed Occupancy %	88%		
ALOS	63.1		

Previous information stream now unavailable. Replaced with new format as shown

Bed Comp	Alloc staffed	Borrowed	Lent	Temp	Available staffed	Total Occ Bed Days	Pats on Pass	Actual Occ Bed Days	% Occupied
48	17,250				17,772	15,598		15,413	88%
Disch	Deaths	Day Cases	TOS Out	TSS Out	Avr LOS	Avr Turn	DD&T		
209	2	2	36	3	63.1	8.8			

Patients are admitted on a basis of clinical need. The majority of new injuries are admitted to Edenhall Ward for acute assessment. A few patients are admitted to Philipshill if they have had stabilisation in their referral hospital or have been treated conservatively and have entered the rehabilitation phase. It remains impossible to obtain separate ward occupancy figures for the unit from the HIS/PAS systems. Review analysis suggest that the true occupancy is 94%

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)	NO DELAY
2002/2003	173	8	46	2 - 212	95%
2003/2004	187	7	52	1 -188	96%
2004/2005	141	0	0	0	100%
2005/2006	151	9	65	7 -174	94%
2006/2007	167	9	54	14 -141	95%
2007/2008	173	14	96	8 - 957	92%
2008/2009	**158**	**5**	**178**	**35 - 489**	**97%**

The philosophy of the unit is to set, as early as possible, realistic targets for each patient in their rehabilitation. One such target is a discharge date. This marks a point in but not the end of rehabilitation. Over the last five years there has been reduction in the number and length of delay but there are recurrent problem issues. Housing adaptation and nursing home placements are often delayed by factors out with the control of staff. This has implications beyond the convenience of patients. Delays in moving onto the next stage of rehabilitation, such as discharge from the unit, can be demoralising and de-motivating for everyone particularly the patient. Fewer patients were delayed during the 12 months but the delay was longer.

2.3.6 Re-admissions to the unit

The majority of neurologically injured patients discharged from the unit never require re-admission. They attend annually or bi-annually as out-patients for lifelong follow up. In some ways readmission at any time must be regarded as a failure.
There were fifty two readmissions to the unit during the year. This is an increase on previous years but a significant shortfall on the contract estimate of 200. 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 long term follow up. Dedicated clinics in Orthopaedics, Neurosurgery, Urology, Rehabilitation and Pain Management supplement the nurse led Annual Review Clinics for those patients with a neurological deficit. Early discharge of patients, with no neurological injury and no expectation of future disability, is encouraged.

New patients are referred for consultant opinions regarding a wide range of associated conditions.

2.4.1 Summary of Out-patient activity

	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Return	2228	2412	2205	2235	2042	2283	**2182**
New	88	93	121	122	122	319	**307**

The number of return outpatients is stable and reflects the prevalence of the spinal cord injured population in Scotland. The majority of the new patients are tertiary referrals involving complex medical investigation and assessment. They are generally managed solely as outpatients and are separate from acute new admissions.

2.4.2 Clinic Location and Frequency

Frequency	Location		
Weekly	QENSIU New Skin Respiratory	QENSIU Return Halo Fertility	Orthopaedics Neurosurgery Urology
Monthly	Edinburgh		
Three Monthly	Aberdeen	Inverness	
Six Monthly	Dumfries	Borders	Arbroath

2.4.3 New Out-Patient Activity by Health Board

	02/03	03/04	04/05	05/06	06/07	07/08	08/09
Ayrshire & Arran	5	8	8	7	8	18	**20**
Borders	0	0	1	0	1	3	**3**
Dumfries & Galloway	1	10	2	4	6	7	**12**
Fife	1	2	2	2	3	8	**9**
Forth Valley	4	7	4	11	9	23	**20**
Grampian	1	2	1	2	3	15	**8**
Greater Glasgow Clyde	51	44	67	53	58	169	**160**
Highland	1	1	0	14	4	6	**4**
Lanarkshire	20	15	27	19	19	40	**49**
Lothian	3	3	4	3	8	18	**11**
Shetland	0	0	1	0	0	0	**0**
Tayside	0	1	1	3	2	7	**6**
Orkney	0	0	0	0	0	0	**0**
Western Isles	1	0	2	2	0	2	**4**
ECR	0	0	1	2	1	3	**0**
Unknown	0	0	0	0	0	0	**1**
Total	**88**	**93**	**121**	**122**	**122**	**319**	**307**

2.4.3 Out -Patient Activity by Centre

	02/03	03/04	04/05	05/06	06/07	07/08	08/09	CHANGE YEAR	TOTAL 92-09
New QENSIU	88	93	121	122	122	307	**307**	**No Change**	1632
Return QENSIU	1880	2090	1851	1868	1690	1905	**1830**	**(3.9%)**	24497
Edinburgh	189	189	192	193	187	212	**169**	**(20.3%)**	2685
Inverness	47	28	57	54	55	60	**62**	**+ 3.3%**	632
Aberdeen	65	55	51	63	63	59	**62**	**+ 5.1%**	528
Dumfries & Galloway	24	19	15	19	16	18	**28**	**+ 55.6%**	175
Borders	23	14	16	17	17	17	**9**	**(47.1%)**	113
Arbroath	0	17	23	21	14	24	**22**	**(8.3%)**	121
	2316	**2505**	**2326**	**2357**	**2164**	**2602**	**2489**	**(4.3%)**	**30383**

The outpatient service continues to respond to the variable demand throughout the regions. The aim is to provide as local a service as practical and in line with need. The outreach clinics are designed to provide the same level of multidisciplinary care that is available in the parent unit. All outreach clinics are consultant led with the appointment of a further rehabilitation consultant.

2.4.4 Outpatient Activity by Specialty at QENSIU

		02/03	03/04	04/05	05/06	06/07	07/08	08/09
Orthopaedics	**DBA**	114	136	143	139	99	147	**107**
Neurosurgery	**RAJ**	126	108	57	88	60	54	**39**
Neurosurgery	**JB**	0	0	64	51	50	63	**50**
Urology	**GC/ VG**	287	267	256	292	336	407	**467**
Skin Care		115	187	111	107	57	86	**75**
Pain / Spasm		191	295	222	190	138	29	**26**
Neuroprosthetics	**TH/MF**	22	29	19	29	20	20	**19**
Sexual Dysfunction		41	47	18	23	10	29	**36**
Respiratory							6	**9**
Fertility							6	**0**
Spinal Injury Annual Review	TOTAL	984	1021	961	949	920	1058	**1002**
	MEDICAL	603	681	569	526	581	385	**632**
	NURSING	381	343	392	423	339	673	**370**
Total		**1880**	**2090**	**1851**	**1868**	**1690**	**1905**	**1830**

The Consultant Clinics in Orthopaedics and Neurosurgery see new and return patients until they can be discharged or referred to the annual review clinics. Urology clinics are available to investigate or treat bladder dysfunction at any stage. The provision of anaesthetic consultant pain sessions was successful in introducing new techniques and drugs into patient management. The loss of the consultant anaesthetic input in November 2006 remains problematic. Neuroprosthetics includes assessment and surgery for upper limb problems principally in tetraplegics.
The Spinal Injury Annual Review clinics are a large component of the commitment to life- long care. These are nurse led with only thirty six percent of patients requiring medical input. A Respiratory Care Clinic commenced in 2007 with a specialist consultant. A respiratory care sister was appointed in 2008.
There is an open door policy for patients and inevitable some activity remains under-reported. The numbers exclude visit to hospitals and homes by medical staff and the Liaison Sisters.

2.5 Day Case Activity

Day case activity continues to offer an important service for minor surgical procedures, medical interventions and nursing care. 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

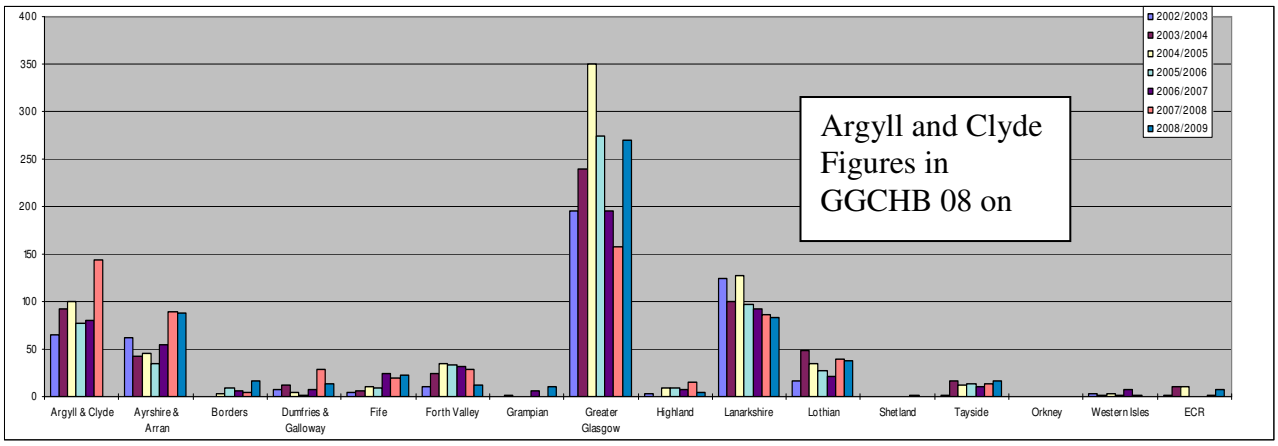
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009
Urology /Urodynamics	21	21	24	18	18	26	**37**
Halo Fixation	242	226	220	182	129	216	**120**
Skin	5	20	21	12	18	26	**29**
Orthopaedic/Neurosurgery	1	0	0	0	1	0	**0**
Acupuncture / Pain / Spasm	203	292	461	365	375	340	**370**
Sexual Dysfunction	21	33	17	8	4	4	**4**
Fertility	2	5	3	5	0	19	**20**
Other	0	0	0	0	0	0	**3**
Total	**495**	**597**	**746**	**590**	**545**	**631**	**583**

The activity remains stable over the last few years except for a significant increase in pain and acupuncture interventions. It is appreciated that sexual dysfunction remains an under resourced area and suitable for development.

2.5.2 Day Case Attendances by Health Board

Day Case activity remains limited by geographical constraints. Some patients who could be managed as a day-case require in-patient stay due to difficulties in travelling. If indicated procedures are arranged in the patients locality either by staff from the unit or appropriate specialists. One bed in Philipshill Ward is designated as an intervention bed so that patients who have to travel long distances are not disadvantaged.

Appendix DA8



3. 0 Waiting Times

3.1 Waiting Times Outpatient Clinics

There is an open door policy to the Nurse Led Clinics. Medical advice is always available and was requested in thirty six per cent of patients. Patient satisfaction remains high with this team approach. The maximum waiting time for new elective outpatient appointments is four weeks.

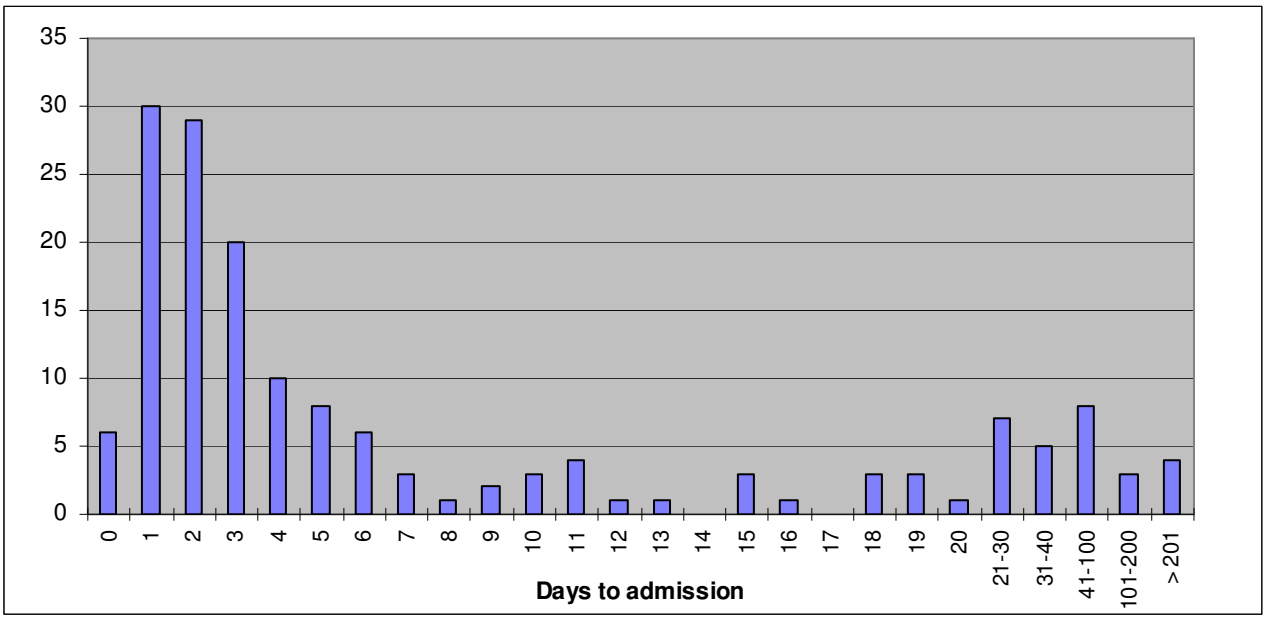
3. 2 Waiting Times Acute Admissions

Acute referrals are admitted as soon as appropriate on clinical grounds. It is unit policy to try and admit all patients with neurological injury within forty-eight hours as long as there are no concomitant medical problems. Patients requiring specialised Neurosurgical or orthopaedic care are managed in the appropriate ITU or ward prior to transfer.

3.3 Time from Injury to Admission

The policy is of early admission for neurological injury with non-neurological injury admitted as beds became available. Most patients are referred within twenty-four hours of injury. In 2008-09 twenty two per cent of patients were admitted within twenty-four hours of referral. Forty per cent were admitted within forty-eight hours and fifty-nine per cent within four days. Sixty-nine percent were admitted within one week. This time pattern is consistent with previous years. Early admission to

the Spinal Injury Unit provides immediate support to the patient and family. A previous audit of acute admissions indicated that in only one third of patients the time of admission was related to bed issues with the rest related to severity of injury, transport difficulties or delay in diagnosis or presentation.



Early admission to the unit continues to be a priority. It may become of increasing relevance if early intervention strategies become available.

Early referral and co-operation between the staff in the Unit and the referral hospital ensures immediate admission if clinically indicated. Telephone advice is always available for those patients who are not immediately transferred. The referral proforma, transfer documentation and admission form continues to be successful in facilitating and auditing the process. It has been internationally recognised and copied.

Direct admission to orthopaedic or neurosurgical wards for surgical stabilisation may increase the time to admission but may be appropriate to reduce transfers of potentially unstable patients.

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

Most patients admitted after five 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. A few new patients have undergone initial rehabilitation in another centre and are admitted to the unit for reassessment or treatment of complications.

	No. of Patients	Mean Time (Days)	Range of Time
2002-2003	165	62	0 - 4948
2003-2004	201	83	0 - 6596
2004-2005	144	231	0 -11237
2005-2006	153	518	0 - 21075
2006-2007	169	815	0 -17416
2007-2008	183	19	0 - 637
2008-2009	**162**	**81**	**0 – 9582**

As in previous years the mean was distorted as the figures include all new patients even those who had old injuries or had nearly completed their rehabilitation in other centres. Eighty seven percent of patients were admitted within one month of injury. Seven patients were admitted after one hundred days. These patients had been initially cared for in other centres or had developed a secondary complication due to a further insult at a previous fracture. As in the past one patient caused particular difficulties with final placement within GGC. Particular problems have been experienced in the last few years in returning patients to one particular hospital. The matter has been raised with the relevant Medical Director.

4. Quality of Care Issues

4.2.1 National Service Division Visit

Close co-operation between the staff of the unit and National Services Division has an important role in maintaining the service and permitting service development. It also ensures that there is an early response to increased or changing clinical needs.
The Annual and six-monthly report acts as a focus to continually evolve and evaluate the service. Twice yearly formal meetings and regular informal contact ensures quick response to any unexpected need.

Action List

1. Referral patterns are detailed in the report and continue to be monitored. Changing skill sets and a focus on elective waiting time targets inevitably put pressure on individual hospitals regarding long stay trauma patients. The number of patients referred has continued to rise. All patients with a neurological injury are admitted. Non-neurological injuries are managed according to the severity of the fracture and the availability of local care.

2. Bed reporting figures have been revised and a review is currently under way to utilise fully the potential of the HIS system. It is accepted that the current format is unwieldy and subject to errors. It is estimated that the real bed occupancy rate is 96%

3. Delayed Discharge remains an issue but it seems under control. The main concern is delayed discharge to other health facilities in particular where the venue is not the preferred or ultimate destination.

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4. The medical staff is currently reviewing the need for an outreach service in Elgin to take the pressure off Inverness and Aberdeen. The nursing provision of two liaison sisters and a support staff nurse may require review

5. The number of home visits has risen with the input of the Respiratory Support Sister.

6. Argyll and Clyde figures have been added to the totals for Greater Glasgow and Clyde. At present the NHS HIS/PAS system is insensitive to the subtle boundary changes so some inaccuracy persists. The predominate size of GGCHB does make comparisons intra-year difficult and with the past less obvious.

7. EMSCI- the proposed European network of spinal cord injury databases remains under evaluation. The Director has been invited to participate in a meeting in Zurich in July. There remain concerns regarding consent and the Freedom of Information Act.

8. There has been some progress in resolving the issue regarding the removal of one junior staff member. It is now accepted that the post was taken to create a new SpR job in General Rehabilitation. General Rehabilitation is separate from the unit although we share some cover because of EWTD. We remain short and are dependent on regular locums for night time cover and have no cover at times during the day. Discussions continue with the post-graduate Dean as to how this can be resolved. Significant costs are being incurred.

9. Hand washing facilities have been improved in line with current recommendations. As a pilot for the Scottish Patient Safety programme we have helped shape the information stream and guidelines. Audit continues across a wide range of clinical activity including infection, pressure sores and iv canulation.

10. Agenda for change discussions have been facilitated across the service and calculations completed

11. A managed Clinical Network for the future care of all patients in Scotland requiring assisted ventilation in the home would solve many of the current and envisaged problems in this growing area. The service provided by the

Spinal Unit is growing and could act as a model for other progressive neurological conditions.

12. The domiciliary ventilation programme continues successfully. The appointment of a Respiratory Support Sister has improved the in-patient and out-patient management. Details are available elsewhere in the report.

13. The Step-down unit was furnished by Regional Services. Additional equipment and furnishings were provided by individual donations and endowment funds.(£10,000)

4.2.2 Formal Complaints

A formal complaint/suggestion system is in place at both unit and hospital level. This has proved invaluable in monitoring quality and modifying the service. The management recorded two formal complaints regarding timing of and placement following discharge. It has been subject to a full investigation by management.
At unit level a number of useful suggestions have been made regarding catering, parking and the ambulance service. This has resulted in a number of meetings with the relevant bodies to review areas of service. The variation in parking regulations has not been helpful and visitors and patients continue to experience difficulties.

4.2.3 Relatives & Patients Meetings

Regular contacts are maintained with relatives and carers throughout a patients stay. Significant input to the organisation and running of the unit has been obtained from the informal meetings arranged within the unit and by SIS. All staff are encouraged to attend patient social activities and events. The medical staff encourages an open dialogue with patients and relatives regarding treatment and progress. Eighteen relatives attended a family day last April. A similar event is planned this year. SPIN volunteers from Strathclyde University holds regular social evenings including a Burns Supper, St Andrews Night, St Patrick's night and a Fourth of July celebration.

4.2.4 Benchmarking

There have been continued attempts to develop benchmarking with other UK units. There is an increasing availability of figures from other units but comparisons are difficult due the varying remits of each unit. The Spinal Injury Association (SIA) has carried out a snapshot of activity in England and Wales. Discussions have been had with The Balgrist Service (Switzerland) regarding the unit participating in the EMSCI project. There remain staffing, consent and FOI issues before we can proceed. Proposed research collaborations with the European Units will facilitate this process.
The Director and Clinical Services Manager have advised on the management of Stoke Mandeville Hospital and the Welsh Office regarding spinal injury services. The Director will continue to contribute to the Commissioning Service in South East England via SIA and ISRT.

4.3 Education

The unit places great emphasis on education of all agencies and staff that come into contact with the spinal cord injured. This extends to prevention of the initial accident, management of the early stages and the avoidance of subsequent complications in the early or late stage of rehabilitation.

The Consultant Medical staff gave lectures at Edinburgh, Oswestry, Leeds, Glasgow and Fort William to paramedical and medical groups. Medical students attend for clinical practice in 2nd, 4th and 5th year. Third years also attended the spinal injury special study module. The Senior Nurse Manager and Education staff lectured at Ayr, Paisley and Caledonian Universities.

4.3.1 Education Sister

A comprehensive educational programme is organised within the unit for all staff, patients and carers. All members of staff are encouraged to see education as part of the process of rehabilitation. In addition a more formal programme is carried out by the Education sister and support staff.
I

4/04/08	Basic Life Support for nursing staff	8
9/04/08	Basic Life Support for staff	5
14/05/08	Management of Aggression – Division Orientation	36
30/05/08	Bowel Management – Division wide	6
11/06/08	Patients Outcomes Day	7
8/07/08	Management of Aggression – Division orientation	45
14/8/08	Staff update – SPSP, MUST, No interruptions policy, falls risk assessment	14
15/8/08	Staff update – SPSP, MUST, No interruptions policy, falls risk assessment	6
19/8/08	Basic Life Support for staff	3
21/8/08	Staff update – SPSP, MUST, No interruptions policy, falls risk assessment	6
22/8/08	Staff update – SPSP, MUST, No interruptions policy, falls risk assessment	11
22/8/08	Bowel management – Division wide	5
26/08/08	Basic Life Support for staff	4
02/09/08	Management of Aggression – Division Orientation	24
10/09/08	Beat the bugs hand hygiene update for all staff	18

07/05/08	Bowel Management	Galashiels Health Centre District Nurses	12
5/06/08	Moving and Handling spinal patients	X-ray department SGH Nursing and radiography	40
02/02/09	Acute care management	GU BN3 Students	40
02/02/09	Bowel Management	Paisley University District	8

4.4 Hospital Acquired Infection

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

The problem of MRSA continues to be monitored within the Unit and every effort is made to try and reduce the periods in isolation. Periods in isolation significantly affect the rehabilitation timetable and every attempt is made to reduce this to a minimum.

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009
Total patients req. Isolation	70	N/A	44	N/A	12	N/A	**N/A**
Salmonella		6	1	0	0	0	**0**
Clostridium Difficile	6	0	4	0	2	2	**2**
MRSA	64	33	39	38	31	32	**24**
Streptococcus pyogenes	0	2	0	0	0	0	**1**
Scabies	0	0	0	0	0	0	**0**
TB	0	0	0	0	0	0	**0**
Varicella Zoster	0	1	0	0	0	0	**0**
Patient days in isolation		N/A	3480	3160	339	N/A	**N/A**
Ave. days in isolation	52.6	N/A	79	83	28	N/A	**N/A**

2008-2009						
	MRSA	**HAI**	**C.Diff**	**HAI**	**Isolated**	**Other HIA**
						Gp A Strep
Edanhall	**10**	**4**	**2**	**2**	**2**	
Philipshill	**14**	**3**	**0**	**0**	**0**	**1**

The figures are gratifying, especially as Philipshill ward had a full complement of beds throughout and includes long term ventilated patients. Edenhall Ward receives patients in the early stage after multiple trauma and many come from ITU or HDU areas and are a high risk group. It is unit policy to screen for MRSA prior to transfer but some patients require admission despite being possible MRSA positive.
All patients with SCI are at high risk of MRSA and a policy of pre-admission checks and isolation are employed. The low rates of infection are a tribute to the standard of nursing care and policies within the unit especially as regards bowel care.

4.5 Pressure Sore Prevention

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. The aetiology of pressure sores is multifactorial and some are out with our control e.g. age and co-morbidity of patients admitted. In other ways pressure sores can act as a surrogate measure of patient care and nursing procedures. A small multidisciplinary group was formed in 2008 to monitor and assess the situation. This has resulted in a significant drop in in-house sores with greater vigilance and awareness along with continued training of staff. Unfortunately there has been a significant increase in the number of sores admitted from other hospitals. Hopefully this is a statistical blip and not part of a trend. The situation will be monitored.

4.6 Pressure Sore Prevalence

	No. of patients	No. of acquired sores	No. of admitted sores	Total number of sores	Point prevalence
2002/2003	42	1	5	6	14%
2003/2004	45	1	9	10	22%
2004/2005	43	4	4	8	19%
2005/2006	40	3	5	8	20%
2006/2007	39	0	7	7	18%
2007/2008	40	7	6	13	32.5%
2008/2009	**42**	**2**	**11**	**13**	**30.95%**

4.7 Therapy Beds

	Number	Ave Units per period	Days
Mattress Units	169	11.68	4264
Core Frame Units	38	2.94	1075

4.8 Ventilated Bed Days

An essential component in the management of spinal cord injury is respiratory support in both the acute and chronic management. The appointment of a Respiratory Consultant to the Rehabilitation team and a recent appointment of a Respiratory care sister allows us to provide an exceptional service with the aid of the neuroanaesthtisits.

Appendix DA20

		No. Patients	Ave. Ventilated Days	Total Ventilated Days
2008/2009	Edenhall	15	35	527
	RCU	5	127	635

Each patient is counted only once but may be responsible for multiple episodes of care or inter ward transfers if their condition varied.
There have been further developments in protocols for the maintenance and weaning of low tetraplegic ventilator dependent patients. Changes have resulted in a reduction in the number of ventilated days.

5.0 Mechanism of Injury

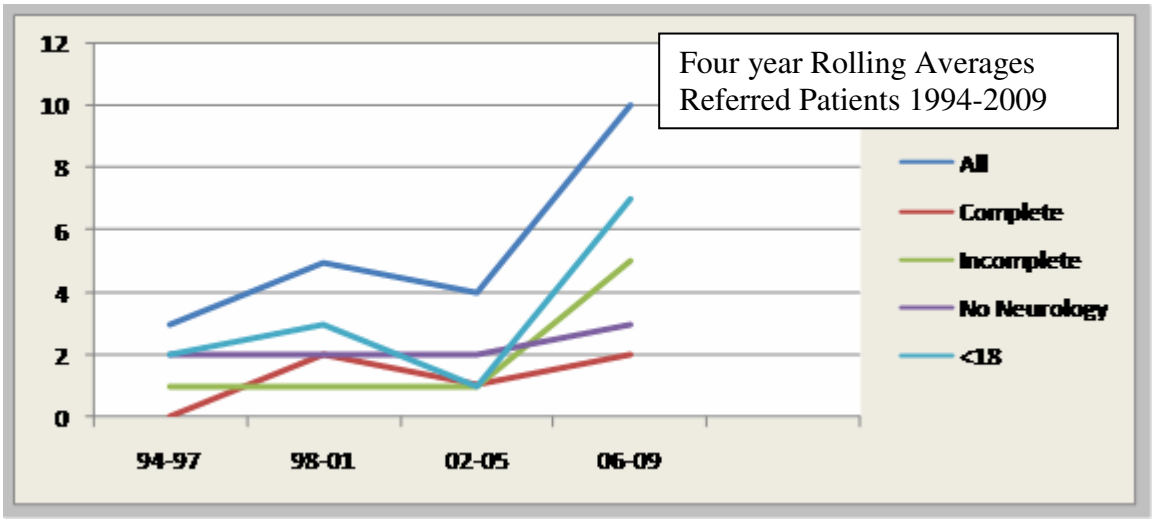
The reduction in non-neurological cases had resulted in a decrease in the number of low velocity falls admitted. The figure is now stable and likely to remain at the current level. The number of high velocity RTA admissions has not changed significantly. The continued high proportion of motorcycle and bicyclist injuries, compared with usage continues. Sporting injuries have decreased slightly after causing some concern. They occur in young patients and tend to be associated with significant neurological injuries. The number of cases clearly identified as attempted suicide has increased, but probably under represents the problem.

5.1 Mechanism of Injury

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009
Fall	**87**	**90**	**63**	**70**	**68**	**101**	**73**
RTA	**33**	**57**	**46**	**49**	**55**	**45**	**40**
Motor vehicle	26	40	35	40	35	36	**27**
Motorcyclist	4	12	6	5	8	4	**8**
Bicyclist	2	1	1	3	10	4	**3**
Pedestrian	1	4	4	1	2	1	**2**
Secondary to Medical Diagnosis	**14**	**21**	**6**	**10**	**17**	**18**	**18**
Industrial Injury	**0**	**3**	**4**	**1**	**3**	**3**	**1**
Assault	**3**	**2**	**2**	**3**	**4**	**1**	**1**
Penetrating Injuries	**4**	**3**	**0**	**0**	**3**	**1**	**3**
Sporting Injury	**17**	**19**	**16**	**10**	**12**	**13**	**19**
Domestic Injury	**3**	**0**	**3**	**1**	**1**	**0**	**1**
Suicide	**3**	**2**	**2**	**6**	**4**	**1**	**1**
Other	**1**	**4**	**2**	**3**	**2**	**0**	**5**
Total	**165**	**201**	**144**	**153**	**169**	**183**	**162**

5.2 Mechanism of Injury: Rugby Union

In 2007 we reported a significant increase in the number of spinal injuries occurring during rugby union with a trend occurring in adolescent boys. This has continued and is currently being investigated



Since January 2009 there have been four new referrals including two schoolboys.

10.01.09	35	Tackle	C6/7	No
01.01.09	45	Tackle	C6/7	Inc
28.02.09	14	Scrum	C2/3	Inc
23.03.09	14	Tackle	T6-7	No

Details of other sporting injuries are given in Appendix One. It is emphasised that most sports contain an element of risk and this cannot be completely removed. It is important

6.0 Financial report

Accounts have been submitted by The Finance Department and are included in Appendix Five.

7.0 Service Developments and Future Plans

7.1 Family Unit/Step-down Unit

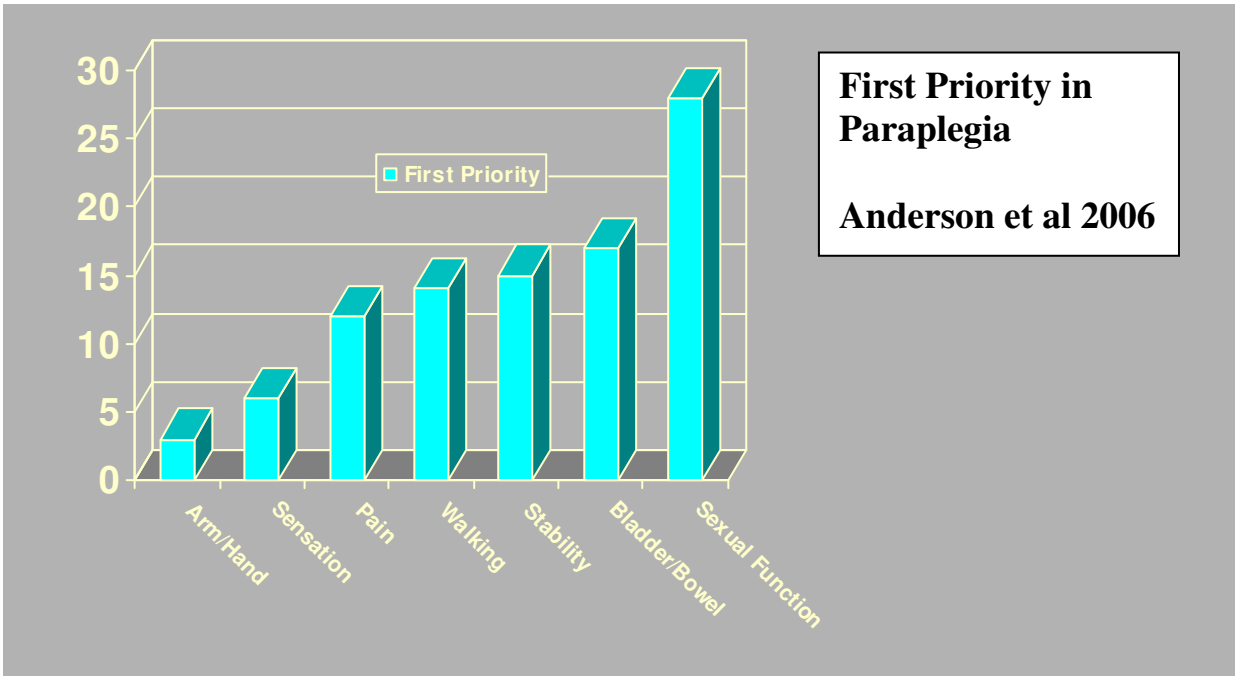
The commissioning of the stepdown unit is now complete and in full use. The Patient accommodation has proved useful for the families of acute admissions and long term patients. Many uses have been found for the Activity Area and the Family Support Unit. The Housekeeper appointment has been fundamental to the smooth introduction and maintenance of the area. New equipment is on order for the introduction of weekend activities and self rehabilitation. Formal assessment and recording of the users commenced in Feb 2009.
Twenty seven episodes have been recorded, mainly at weekends, totalling fifty seven days. This has involved 12 families with seventeen couples, one family of three and one of five. Three families have used the facilities once, two twice, two four times and one five times. Considering the number of eligible patients this is a tremendous result and its popularity continues to grow. The relatives' room within the unit remains in use due to its convenience for relatives of acute admissions.

7.2 Research Mezzanine

The first year of the Research Area was very successful and a full report is given in Appendix Two

7.3 Sexual Dysfunction and Assisted Conception

Sexual health is a significant issue for the majority of SCI patients. Management of the issues is a core responsibility of all in the multidisciplinary team but availability and access to specialist service is important.



There is a greater awareness of the availability of treatments for male dysfunction and the evolution of care for female dysfunction. A room is available in the new step-down unit for in patients and their partners. The unit has provided a sexual dysfunction assisted conception service since its inception. Recent advances in reproductive medicine and the particular needs of SCI patients means that we are currently investigating co-operative working with the Assisted Conception Unit at Glasgow Royal Infirmary.

7.4 Respiratory Care

Many acute patients experience respiratory difficulties during their initial treatment. A small number of high lesions have persisting or permanent difficulties. This is anticipated to increase with the improvements in life expectancy of the spinal injured population.

As predicted, numbers of domiciliary assisted ventilation patients are slowly rising. The Unit now looks after nineteen outpatients on long-term ventilatory support.

Secondment of a senior nurse has ensured adequate review of all outpatients' hardware and replacement where necessary. This has involved senior nursing and medical physics staff visiting patients throughout Scotland from Ayrshire to the Isle of Lewis.

Non-invasive mask ventilation is now well established in the acute and rehabilitation ward areas. A trial of non invasive ventilation with hoods as used in the Institute will be carried out next year. Methods of electrical abdominal stimulation to assist ventilation will continue to be developed as part of research programme for the University of Glasgow.

7.5 Implantable Electrical Devices

Patients with neurological injuries can benefit from implantable stimulators in a number of sites. These include the upper limb, diaphragm and bladder. The unit is involved in the development of surface and implantable electrodes to assist breathing and walking. No Phrenic Nerve stimulators have been required in the last year but some diaphragm and upper limb implantable systems remain functioning. The unit is involved in investigating alternatives to the currently available systems as part of the research programme.

7.6 Provision of Spinal Injury Services

In the, UK Spinal Injury Services developed in industrialised areas , usually in orthopaedic rehabilitation hospitals which where predominately based in rural

wartime hospitals or TB Sanatorium. Many of these hospitals are now obsolete and being replaced as part of modernising services. This process occurred relatively early in Scotland and is one type of model for the future development of services in England and Wales. The Director and Clinical Services manager are continuing to contribute to the process in Wales and the south east. This is done through BASCIS, MASCIP, SIA, ASPIRE and government bodies. The key features advocated are a dedicated geographical service integrated into a trauma centre based within a teaching hospital with full access to all disciplines and research opportunities.

7.7 Venous Thrombo-Embolism Prophylaxis

VTE in the form of Deep Venous Thrombosis with a high level of morbidity or asymptomatic, symptomatic or fatal Pulmonary Embolism are major problems in SCI due to the lack of mobility secondary to paralysis or bed-rest. QENSIU was one of the first units in the UK to have a policy of using low molecular weight heparin routinely and publishing the results.
The guidelines for England and SIGN guidelines for Scotland are in the process of being reviewed. The draft document for England is available and generally confirms our present practice for spinal cord injured patients. There is more controversy in patients without neurological injury who traditionally stopped prophylaxis on mobilisation and certainly on discharge. The continued risk and the availability of two new oral agents may necessitate a change if there are no concerns regarding a susceptibility to bleeding or stroke. There may be cost implications. The protocol is out for discussion.

8.0 General Clinical Services

8.1 Liasion Sisters: Home Visits and Outreach Clinics

As a national service it is important to provide out patient and consultation services throughout Scotland. This has resulted in the development of out-reach clinics in areas identified on our database as having a concentration of patients. Medical, Nursing, and Occupational Therapy staff attend outreach clinics as required. Volunteers from SIS also attend to see and advise patients and carers. All clinics are now consultant led. It is anticipated that the Aberdeen Clinic will soon be oversubscribed. A possible solution would be to initiate a clinic in Elgin in view of the number of patients in the area and the difficulties of them travelling to Inverness or Aberdeen. Dundee and Larbert are other potential sites of new outreach clinics.

Home Visits	Mileage	CLINICS	Aberdeen	Inverness	Arbroath	Dumfries	Borders
296	18644		5	5	3	2	2

Outreach Clinic Review

Location	% Attendance rate	Year 2003	Year 2008	% Growth
Aberdeen	86%	77 on list	104 on list	35%
Inverness	87%	63	78	24%
Dumfries	90%	24	26	8%
Arbroath	81%	21	27	29%
Borders	95%	14	25	79%
Ave Attendance Rate	88%			

Grampian Outreach Clinic Demographics

Aberdeen / local area	51
Peterhead / Fraserburgh	11
Huntley/ Keith / Dufftown (North west)	10
Inverurie /Mintlaw /Ellon (North east)	8
Buckie / Banff /MacDuff (North coast)	9
Elgin	4
Johnshaven /Stonehaven (south east)	3
Banchory / Arboyne (south west)	4
Westry /Orkney	2
Shetland	2
Elgin + ,Buckie patients seen at Raigmore Hospital.	7

The current activity would support the introduction of a clinic at Elgin to reduce the numbers of patients attending the Inverness and Aberdeen outreach clinics.

8.2 Out-Patient Department

The out-patient department has a key role in the management of the acute injuries and in preventing long term complications. The provision of ready access and the varieties of specialist clinics are fundamental to the service. The service includes an ultrasound and bladder function service which is integral to preventing renal damage, high morbidity and premature death. Unfortunately the urodynamics equipment originating from Edenhall hospital is now obsolete and the portable ultrasound machine will need replacing in the near future. Following discussions with NSD a quote was obtained for a new urodynamics machine and this has been passed to Regional Services for their approval. The ultrasound machine was last replaced utilising endowment monies but is seen as fundamental to the service as it is a requisite examination for each annual review.

8.3 Spinal Nurse Specialists

There is a continued demand for nurse specialists to provide important in-patient and outpatient rolls. As well as two Liaison Sisters there is an Educational Sister, Respiratory Sister, Discharge Planner and Support Nurse. They all provide assistance to the Clinical Support Manager/Senior Nurse Manager and compensate for the loss of junior medical staff time due to MMC and EWTD. During the year the two Liaison Sisters travelled over 16,615 thousand miles by car and carried out two hundred home visits.
The new role of Respiratory Support Sister has been a tremendous success in coordinating in-patient and domiciliary ventilation. All patients requiring assisted ventilation at home have been visited during the year with 4500 road miles travelled and air trips to Shetland and Stornaway (2) completed.

Respiratory Support Sister 2008-2009								
Patient	Last Visit	Total No visits	Miles	Month 2008/2009	Meetings	Clinics	Visits	External Teaching
	07/1/09	9	177					
	-	-	-					
	30/10/08	3	546					
	24/12/08	8	48					
	29/10/08	2	692					
	29/10/08	2	696	APR	4	1	5	43 (carers)
	16/9/08	3	216	MAY	6	1	6	26 (d/n/carers)
	13/10/08	2	368	JUNE	2	1	9	10 (carers)
	-	-	-	JULY	23	1	5	15 (d/n)
	5/3/09	3	420	AUG	1	2	6	12(staff)
	-	-	-	SEPT	1	3	9	27(carers/d/n)
	15/7/08	2	590	OCT	1	2	12	29(carers)
	9/2/09	11	156	NOV	1	1	5	12(carers)
	5/3/09	11	314	DEC	2	0	8	6 (carers)
				JAN	0	0	8	6 (carers)
	16/3/09	15	970	FEB	0	0	3	6 (carers)
	-	-	-	MAR	0	1	5	12(staff)
	-	-	-					
	3/7/08	1	301					

A major role has been coordinating discharge for those requiring assisted ventilation with social services and an appropriate care and training package. A meeting of the various care managers will be organised this year to give them peer group support and an opportunity to meet team members within the unit.

8.4 Assistive Technology

There is an increasing demand for technology in the management of the paralysed patient. The ultimate aim is to promote independence, assist in activities of daily living and to improve work opportunities. This is currently carried out by the occupational Therapy Department and Momentum- a commercial body. This is an evolving situation and involves an interface with social services and other agencies. As such it will be a challenge to develop this as a national service for out-patients. Momentum has made significant advances in this area and will be supported fully in developing such outreach services. Funding was available from Abbey Insurance to produce six standalone flat screen TVs that can be used by recumbent patient. The details of Momentums activity are included in the Departmental Reports.

8.6 Further Developments within Multi-Disciplinary Team

A multidisciplinary approach to education for patients, family and carers is followed in the unit. It is recognised that there is a need for continued education and an outreach service for patients discharged before the introduction of modern practice. There is a continued dialogue with other units to explore new methods of providing care.

8.7 Nursing Recruitment

Nurse recruitment remains a national problem. The unit has been fortunate in attracting excellent staff to fill last year's vacancies. A pro-active approach is taken by all staff to make a placement in the unit an important part of career development.

The quality and nature of the training available makes it inevitable that there will be a steady turnover of certain grades of staff.

8.8 Medical Recruitment

As with all services the changes caused by the European Working Time Directive, Modernising Medical Careers and the New Consultant Contract have placed additional burdens on the current medical staff. The unit will be recognised for Foundation Training but this will further limit the amount of time each trainee will spend in the unit.
MMC changes have resulted in a conversion of one of the core junior staff to the training in the speciality of general rehabilitation this will have significant impact on patient care within the national service. Local discussions continue to resolve this issue.

8.9 Pain Management

The introduction of two consultant anaesthetists (four clinical sessions) in 2005 had an initial impact on the demand for specialist help in managing refractory pain in a small sub group of patients. A number of novel interventions and drug regimes were introduced. The model was less satisfactory in managing in-patients and providing continuity of care for all patients. The reassignment of sessions following the new consultant contract resulted in these sessions being withdrawn. The sessions in pain management remain unfilled but were utilised very effectively to provide backup in supporting a graduated return to work after maternity leave. Discussions with the new Pain Czar who used to work in the unit are planned. Various models of medical support will be investigated.

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8.10 Paramedical staffing

We are fortunate in having a very stable and experienced paramedical support team. Continued and anticipated changes in the provision of initial and maintenance rehabilitation means this is continually under review. Exercise Physiology and sports medicine continue to offer areas for development as well as the planned Olympic and Commonwealth games. Opportunities will be investigated as how these and be utilised for the benefits of all patients.

9.0 Capital Development and Equipment Replacement

Ventilators x2	GGCHB	£13,000
Transport Monitor	GGCHB	£9,020
Wheelchair Samples	NSD	£61,065
Electronic Pumps	NSD	£12,949

9.1 Charitable Funding - Endowment Funds

The unit is very fortunate in attracting significant donations from patients, relatives, friends, individuals and corporate bodies. These are used to provide facilities and services, which cannot be reasonably expected from central funding. Specialised physiotherapy stations, occupational therapy equipment, medical record storage, televisions, computer equipment, shower chairs and travel costs have been sourced from endowment monies. Individual patient donations have paid for specialised equipment and the employment of a massage therapist.-

Research grants have provided equipment and partial staff costs. There have been significant donations in time and equipment from Celtic FC, The Murrayfield Trust, the Clydesdale Bank, Momentum, SPIN and SIS.

This has occurred without any concerted fund raising activity but has been dependant on individuals. The contribution made by these individuals is gratefully acknowledged.

9.2 Endowment Purchases

Stepdown Upper Tone Gym	£4,795	Upholstery Day Room	£3,950
Stepdown Wheelchair Trainer	£1.095	ADL Kitchen	£1,000
Stepdown Sofa x 3	£1500	Armeo 08/09	£36,200
Step Down Furnishings	£1000	Overhead TVs Momentum	£20,000
Stepdown Television	£980	ADL Kitchen equipment	£1000
WI Console and TV	£800	Megabee	£661
Sky Television Subscription	£1200	Water at Work	

We are very grateful for the many individual donations that have made these purchases possible. They enable us to maintain the fabric of the building and add to the facilities to promote early rehabilitation.

Arnold Clark Motors were approached by Mr Willie Stewart and they kindly replaced the Access Car in the Physiotherapy Dept with an up to date Ford Fiesta. This facilitates patients learning transfers and wheelchair management skills without getting wet and is much appreciated. All sporting activities are supported by an independent Charity – Options.

10.0 Clinical Networking and National Guidelines

Admission guidelines were issued to all hospitals in Scotland during 2002. This was of great benefit standardising the immediate management of patients and their subsequent referral. Standard referral proformas, transfer guidelines and admission proformas are now in place.
The guidelines were reissued during 2006 and continue to be available to hospitals on request.

11.0 Clinical Governance

Multi-disciplinary clinical governance meetings are held within the unit monthly. Separate medical audit meetings are held with the Department of Rehabilitation. Each department has separate governance meetings. The Director and Clinical Services Manager meet weekly. Consultant clinical meetings are held twice a week. Regular meetings are held with the Health Board management structure.

Consultant portfolios have been introduced and appraisal started. Junior medical staff teaching and training is closely scrutinised with introductory interviews and a established induction programme. If any junior medical staff remain then they will be incorporated into the Training Programme.

A formal Critical Incident Reporting system is in place with a Clinical Incident defined as a potential or actual danger to patients, which could have been prevented by a change in practice. Staff are encouraged to report incidents onto the Datix system which are then investigated by senior medical and nursing staff.

The number of incidents is relatively small and each has proved useful in monitoring the performance of the unit and areas in which improvements can be made. The vast majority were relatively minor with only one Category Four Drug prescription error.

Slips, trips and falls	34
Blood transfusion error	1
Violence & aggression towards staff	7
Moving and handling	8
Needlestick / sharps injuries to staff	2
Medication incidents * delays in medical attendance	13
Patients with / suspected illegal drugs	3
Burn / scald	2
Building / faults	3
Medical device / equipment	2
Security breach	1
Other / miscellaneous	10

** Medication Error Cat 4 IV Vancomycin overdose

Other / Miscellaneous incidents recorded:
1 – Theft of patient's razor
1 – Specimen issue (HIS)
1 – Patient became unwell in clinic, unable to get out of clinic's narrow doors
1 – Mislaid patients records
1 – Nurse splashed with urine when leg bag disconnected from catheter
1 – controlled drug key missing

The unit will continue to encourage this type of reporting and use the information to improve performance.

12.0 Medical Research

Morbidity and mortality following spinal cord injury was reduced dramatically following the introduction of specialised spinal cord injury units. Life expectancy has been increased from a few years to approaching normal and the complications of injury are routinely monitored for, treated or prevented. Three areas remain of concern. Mortality secondary to cardiovascular disease and suicide is unchanged and there has been no progress in developing primary treatments for spinal cord injury. The unit is involved in key research projects in all these areas

In 2008-09 the unit team published twenty eight research papers with further six submitted and gave 10 scientific presentations.
A detailed research profile for the inauguration of the **Scottish Centre for Innovation In Spinal Cord Injury (SCI ^{2})** is given in Appendix Two

13.0 Summary

The year was dominated by the final commissioning of the Step-down Unit and the inauguration of the Research Mezzanine Area. The additional facilities offer opportunities for patients and staff to develop modern rehabilitation strategies to enhance modern research. Mr Robert Calderwood, the Chief Executive of GGCHB, who was involved in the initial design of the unit and has supported whole-heartedly the development of spinal injury care in Scotland officiated at the opening of the unit.

The unit hosted the Annual Guttmann Meeting in June 2008.for all the spinal injuries units in the UK, Ireland and Wales. The meeting was held within the unit and at the Beardmore Hotel and was judged a tremendous success due to the effort of the organising committee. So successful was it that the unit has been asked to host the next meeting of the International Spinal Research Trust in September 2009. This will give an opportunity for the staff to meet many of the world leaders in spinal cord injury research.

Sadness overcame the staff with the untimely death of our social worker Mrs Jean Macdonald who will be sadly missed. At present no plans are confirmed regarding her replacement. Negotiations are awaited with the social services management. Due to the division between health and social services the initial provision of social care within the unit at a national level was funded through Glasgow directly. With successive organisational change of social services the memory of this funding appears to have been gradually eroded and may need restated or re-negotiated. This is also seen in other areas.

The original concept, funding and organisation of the care of spinal cord injury in Scotland has proved durable and flexible over the last eighteen years. This is reinforced by international recognition, a successful track record in research and its influence in service planning in the UK. It is inevitable that with time the concept on which it was based needs to be constantly reinforced for the benefit of all the patients. This became more obvious throughout the last few years as the emphasis is some areas of healthcare have shifted towards elective practice and a lack of understanding in the concept of a national service.

Appropriate thanks must be given to the National Services Division, The Regional Services Directorate, and NHS Greater Glasgow and Clyde for their help and support in delivering the service.

Mr. D.B. Allan FRCS
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