



Queen Elizabeth National Spinal Injuries Unit for Scotland

ANNUAL REPORT 2013-14

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Section A: Introduction

A1 Name of Programme

A2 Aim and Date of Designation of programme

A3 Description of Patient Pathway

A3: A1 Target Group for Service or Programme

A3 : B1 Abbreviated Care Pathway for Service or Programme

Section B: Quality Domains

B1 Efficiency

B1: A Report of Actual v Planned activity

B1: B Resource use

B1 C Finance and Workforce

B1 D Key Performance Indicators (KPIs)

B2 Effectiveness

B2 A Clinical Audit Programme

B2 B Clinical Outcomes/complication rates/external benchmarking

B2 C Service Improvement

B2 D Research

B3 Safety

B3 A Risk Register

B3 B Clinical Governance

B3 C HAI,SPSP, KSF AND HEAT Targets

B3 D Adverse Events

B3 E Complaints/Compliments

B4 Timely (Access)

B4 A Waiting/Response Times

B4 B Review of Clinical Pathway

B5 Person Centred

B6 Equitable

Section C: Looking Ahead/Expected Change/Developments

Section D: Summary of Highlights (Celebration and Risk)

A1: Queen Elizabeth National Spinal injuries Unit for Scotland

A2: Aim and Date of Designation of Service

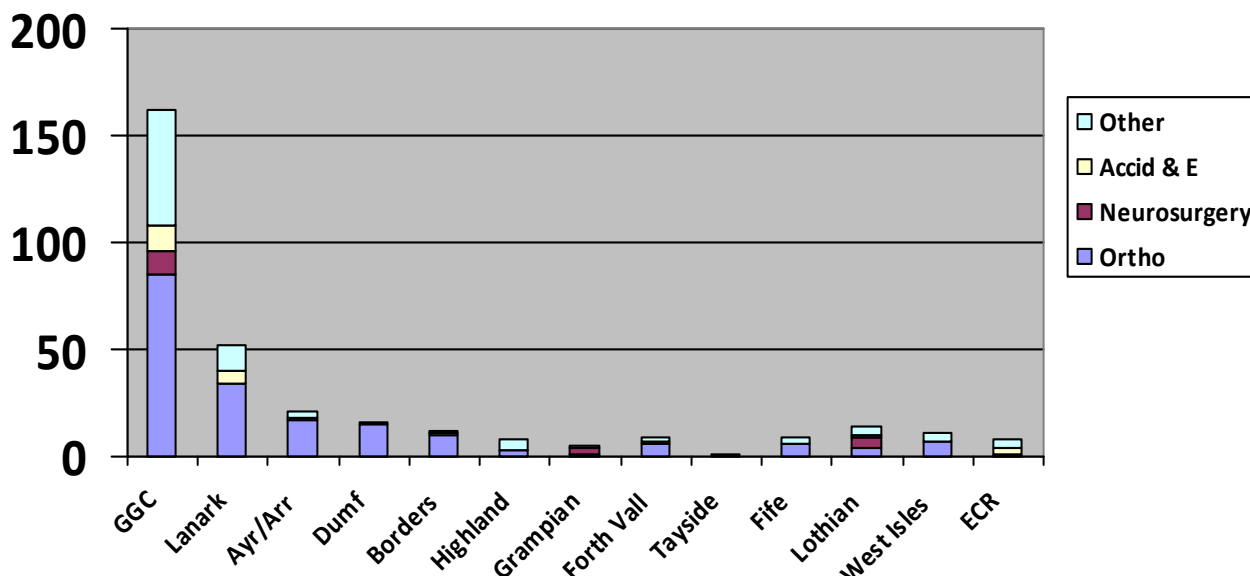
The Queen Elizabeth National Spinal Injuries Unit is responsible for the management of all patients in Scotland who have a traumatic injury to the spinal cord. Commissioned in 1992 it has continued to develop the management of the acute injury and life time care of all of its patients to maximise function and to prevent the complications of paralysis. Its facilities include a combined Admission Ward and HDU (Edenhall) and a Rehabilitation Ward (Philipshill). In addition there is a custom built Step-Down Unit and Research Mezzanine (Glasgow University). Clinical Services are provided at the Glasgow centre and appropriate outreach clinics as required.

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

A3: Description of Patient Pathways and Clinical Process

The unit accept all patients who are injured or domiciled in Scotland and are referred with a spinal cord injury. In addition complex fractures without neurological injury but who are at risk of neurological compromise or require expert assessment and treatment are admitted. Multiple pathways exist for the differing aetiologies and source of referrals. Patients are primarily referred from Acute Orthopaedic Services but referrals are received from Accident and Emergency Medicine, General Medicine, Neurosurgical, Vascular and Cardiovascular units throughout Scotland.

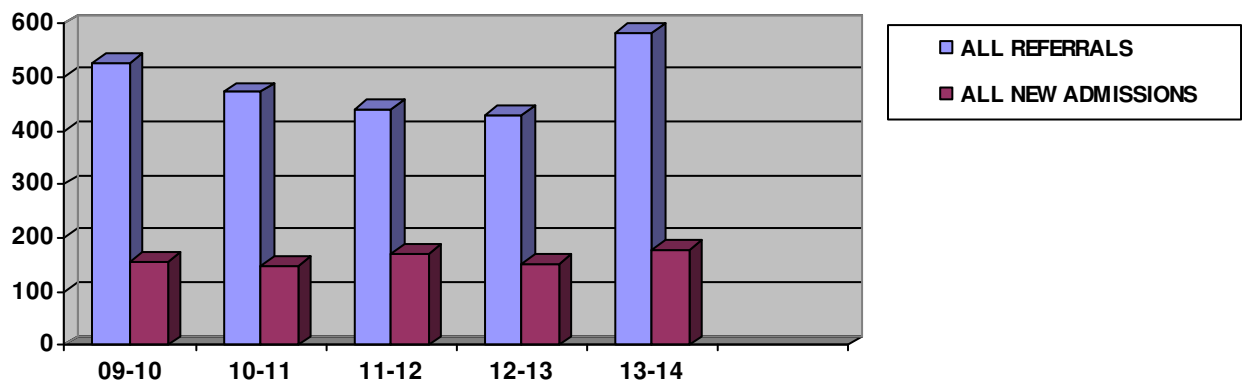
Fig One Typical Distribution by Health Board and Speciality



A3 A1 Target Group

Traumatic spinal cord injury is relatively uncommon but can result in a devastating disability. It requires highly specialised multidisciplinary care to maximise the chances of recovery and

Fig Two



reduce complications. Life expectancy without proper treatment is limited (36 months) but should approach normal with appropriate immediate care and life long follow up.

All patients referred with a neurological injury (110) were admitted as soon as clinically indicated. The total number of patients (582) referred to the unit rose again, especially in the second half of the year. This was particularly noticeable from the West of Scotland

The number of neurological injured patients rose slightly and is consistent with the population size. The number of non-neurological injured spinal fractures (67) remains challenging but a much larger number were managed with advice in their local service.

Four hundred and five non neurologically injured patients were referred but not admitted as they fell outside the scope of the service and were not identified as being of a risk of neurological compromise. A small increase in the number of neurological injured patients significantly reduces the number of beds available for shorter stay patients. They were managed in the referral hospital with appropriate advice and support from consultant medical staff.

Fig Three

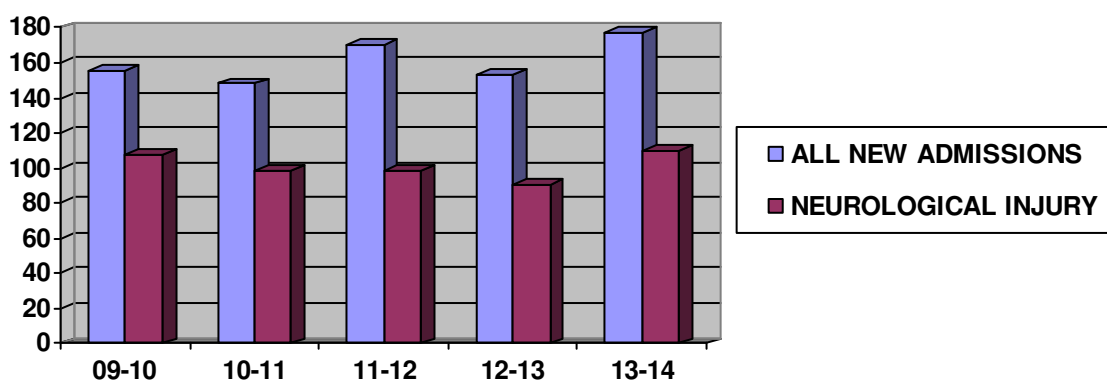


Table One

	09/10	10/11	11/12	12/13	13/14	92-14
ALL NEW ADMISSIONS	155	148	170	153	177	3491
Neurological	108	99	99	91	110	1826
Non-neurological	47	49	71	62	67	1665

The number of patients admitted with a neurological deficit rose to its highest level (177). The number of referrals related to relatively minor spinal fractures without neurology continues cause concern. These patients are referred because of local bed pressures or a perceived difficulty in conservative management. The rationale for admitting all fractures is limited because of the distance involved, the lack of need for specialist care, the number of available beds and the varying case-mix amongst the neurological injuries.

Orthopaedic consultants or less often neuro-surgeons managed over four hundred and five patients without neurological deficit in the referral hospital. A number of patients were managed in the Neuro-surgical and Orthopaedic wards of the Southern General Hospital by the unit staff because of concomitant injuries or bed issues.

A3 A2 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 of Injury with	Incomplete or no Paralysis

Group I 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.

Fig Four: New Admissions by Case-Mix Complexity

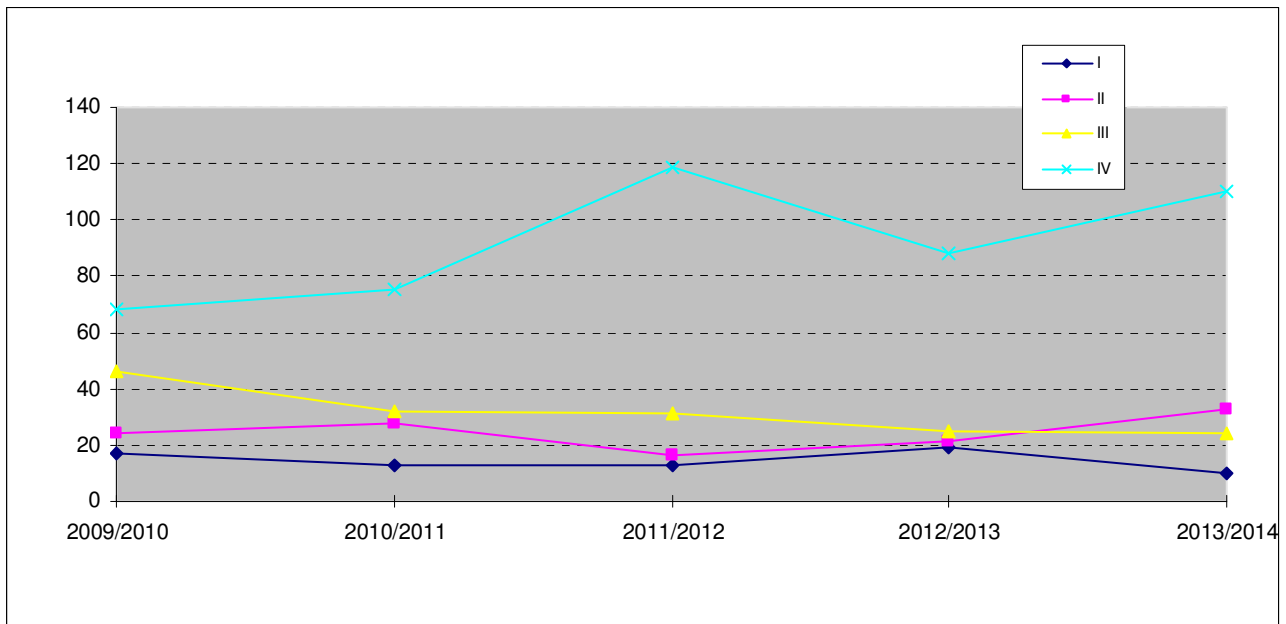


Table Two:

GROUP	09/10	10/11	11/12	12/13	13/14	92/14
I	17	13	13	19	10	264
II	24	28	16	21	33	552
III	46	32	31	25	24	749
IV	68	75	110	88	110	1926
Total	155	148	170	153	177	3491

The case mix varied within acceptable levels. There was a significant increase in the highly dependent group II. The number of incomplete cervical injuries continues to rise. The variation in complexity in Group IV is better demonstrated by ASIA grades.

A3:A3 New Admissions by ASIA, Impairment Level.

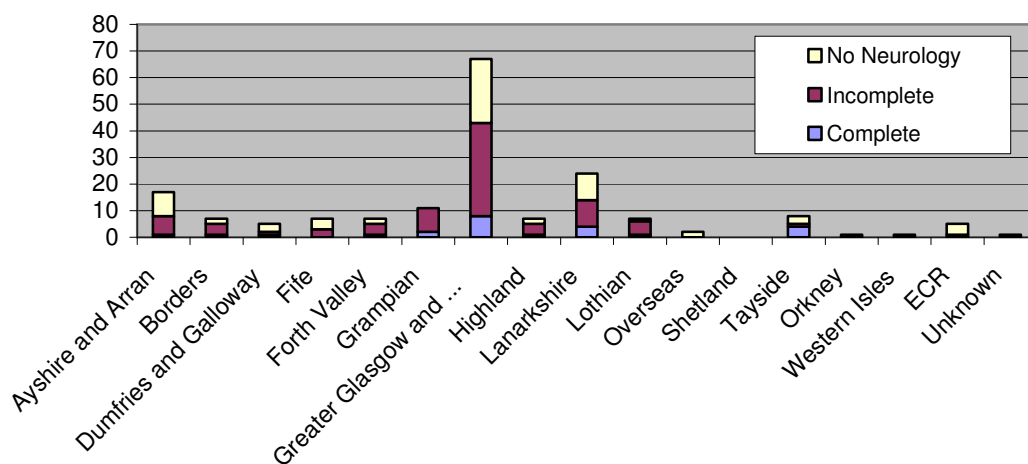
A	Complete: No motor or sensory function
B	Incomplete: Sensory but not motor function is preserved below the neurological level and includes S4-5
C	Incomplete: Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a motor grade less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

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

Table Three: New Admissions by Asia Impairment Level & Health Board

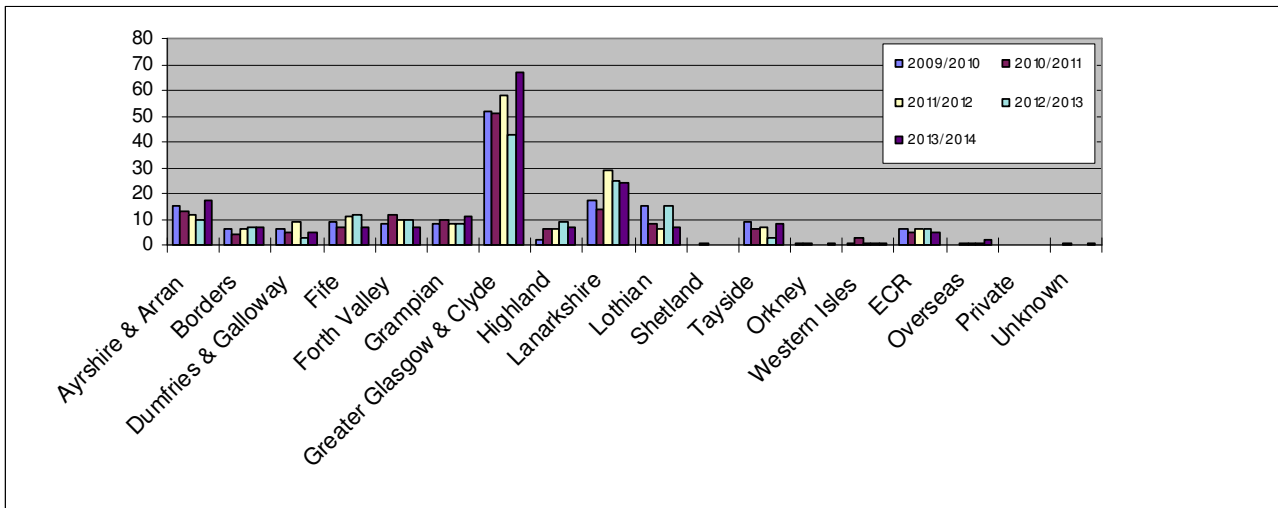
2014/2014	A	B	C	D	E	Total
Ayrshire & Arran	1	0	0	7	9	17
Borders	1	0	1	3	2	7
Dumfries & Galloway	1	0	0	2	2	5
Fife	0	0	3	0	4	7
ForthValley	1	0	2	2	2	7
Grampian	2	2	2	5	0	11
Greater Glasgow Clyde	8	2	10	22	25	67
Highland	1	0	3	2	1	7
Lanarkshire	4	0	5	5	10	24
Lothian	1	1	3	1	1	7
Overseas	0	0	0	0	2	2
Shetland	0	0	0	0	0	0
Tayside	4	0	1	0	3	8
Orkney	0	1	0	0	0	1
Western Isles	0	0	0	0	1	1
ECR	0	0	0	1	4	5
Unknown	1	0	0	0	0	1
TOTAL	25	6	30	50	66	177

Fig Five: Admissions by Neurological Deficit and Health Board



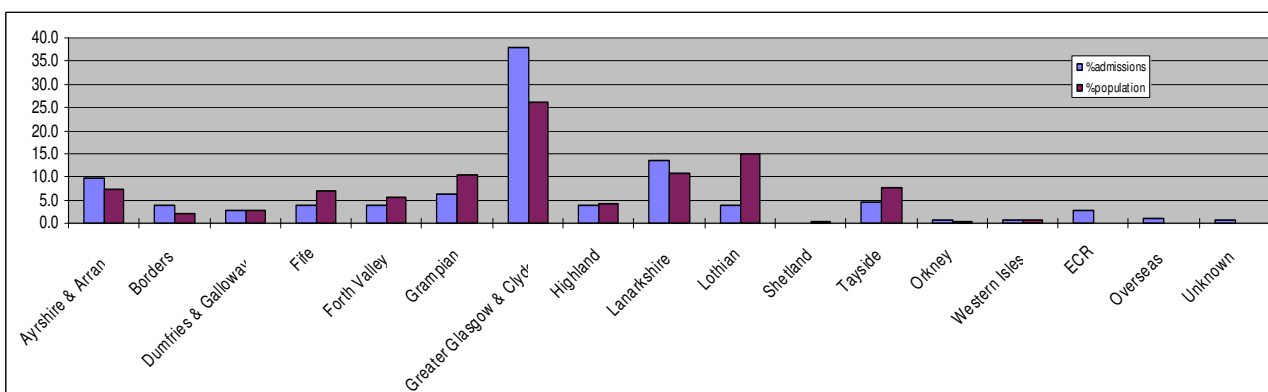
GGC is responsible for the largest number of complete and incomplete spinal cord injuries. The number of non-neurological injuries admitted from all regions and particularly from GGC has stabilised. The distribution of complete and incomplete injuries varies by year. All areas referred one or more patients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

Fig Six: New Admissions by Health Board of Residence 2009-2014



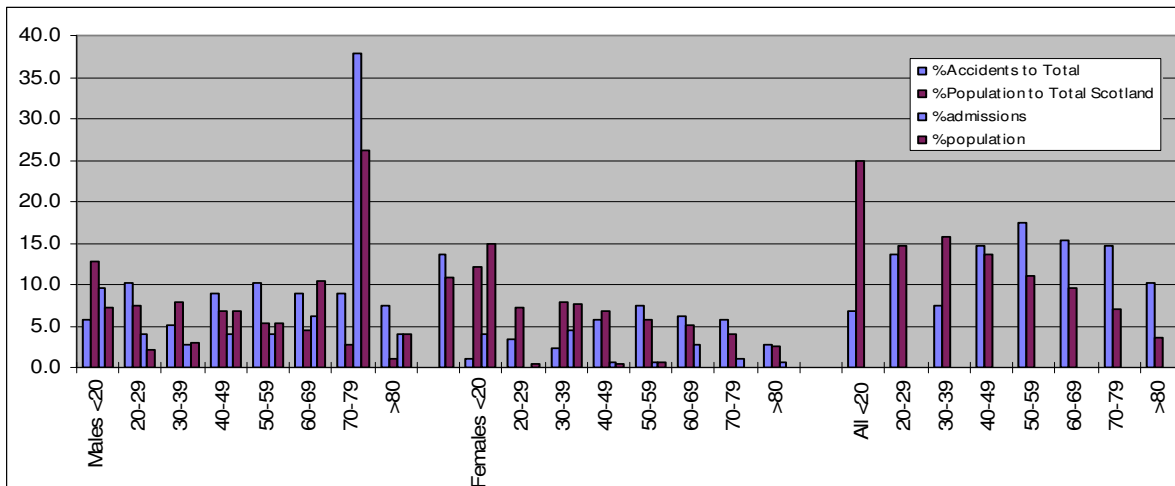
An increased referral pattern from some health boards reflects leisure-related accidents. Patients domiciled in Scotland but who are injured abroad are repatriated when clinically indicated and then recorded under their own health board.

Fig Seven: Admissions by Health Board compared with Population Size



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 disproportionate number of admissions from other areas compared with population size who have no regional spinal service. Support is always available from the unit in the management of these patients.

Fig Eight: 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 admission figures but in the figures for referrals.

Fig Nine

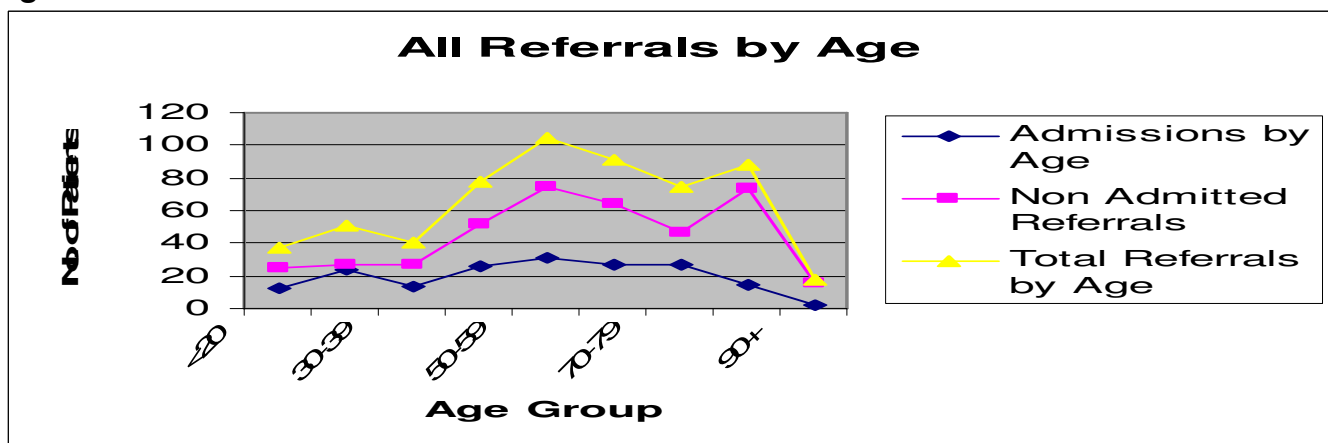


Fig Ten

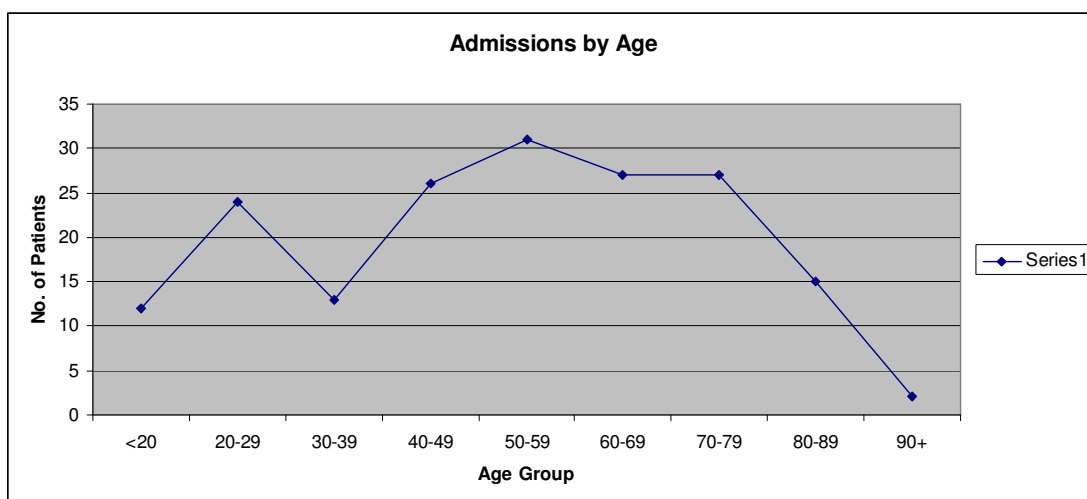


Table Four: Admissions by Anatomical Level and Severity

	Level	Complete	Incomplete	No Neurology	Total
	C 1	1	2	6	9
	2	1	4	11	16
	3	0	3	2	5
	4	5	14	1	20
	5	5	19	8	32
	6	4	13	5	22
	7	0	5	1	6
	8	0	2	0	2
	Sub-total	16	62	34	112
	T 1	0	0	0	0
	2	1	0	2	3
	3	1	0	1	2
	4	0	0	1	1
	5	0	0	3	3
	6	1	2	1	4
	7	0	2	0	2
	8	0	0	0	0
	9	0	1	0	1
	10	1	3	4	8
	11	2	1	1	4
	12	1	1	7	9
	Sub-total	7	10	20	37
	L 1	0	7	6	13
	2	1	0	2	3
	3	0	5	3	8
	4	0	0	2	2
	5	0	0	0	0
	Sub-total	1	12	13	26
	S1-5	1	1	0	2
	Sub-total	1	1	0	2
	TOTAL	25	85	67	177

Higher level counted in five multi level injuries

A3: B Care Pathway for Service or Programme

The unit is commissioned to care for all cases of non progressive spinal cord injury in Scotland. Immediate care, comprehensive rehabilitation and life-long care is provided at the centre in Glasgow and appropriate outreach clinics. If appropriate an integrated service is provided with local medical, nursing and paramedical services. Close cooperation is sought with social services and voluntary groups to ensure that the difficult transition to secondary care either at home or a care establishment is achieved.

A3: B1 Details of Referral and Admission by Region

The service has a clearly defined target group based on need and specialisation. Some degree of filtering is inevitable and welcome to ensure that all appropriate need is met. Unrestricted demand or inappropriate referral can distort the system and increase the risk of appropriate care not being provided timeously. There is an increasing recognition of weaknesses in the provision of spinal orthopaedic services in Scotland and moves to rationalise the neurosurgical and orthopaedic components. A further pressure is the increasing referral of elderly patients with cervical fractures not requiring specialised acute management or rehabilitation. These lie out with the remit of the National Service and in many areas are managed extremely well locally, in close contact with their family. Many of these issues are illustrated in the patterns of referral seen in the last year.

Table Five: Health Board Referrals and Outcome

Referring Board	Total Referrals	Admissions	Not Admitted	% Admitted	Complex Advice Given
GGC	249	67	182	27	51
Lanarkshire	97	24	73	25	20
Ayr/Arran	58	17	41	29	10
Dumfries	23	5	18	22	7
Borders	11	7	4	64	2
Highland	21	8	13	38	2
Grampian	16	11	5	69	4
Forth Valley	39	7	32	18	11
Tayside	13	8	5	62	3
Fife	17	7	10	41	3
Lothian	20	7	13	35	8
Western Isles	6	1	5	17	1
ECR	12	8	4	67	1
Total	582	177	405	30	123

The number of referral mirrors the population density and presence of local spinal services. All patients with a spinal cord injury are admitted as soon as practicable. All non-admissions had no significant neurology. The number of patients referred remains high and in (18%) cases detailed advice was given regarding management in the local hospital.

Table Six: Health Board Referrals and Referring Speciality: Non Admissions

Referring Board	Level of Injury		Referring Specialty				Total
	Cervical	Thor/Lum	Ortho	Neurosurgery	A&E	Other	
GGC	99	83	75	3	39	65	182
Lanarkshire	40	33	49		12	12	73
Ayr/arran	24	17	32		2	7	41
Dumfries	10	8	12		2	4	18
Borders	3	1	1		3		4
Highland	9	4	2		1	10	13
Grampian	3	2	1	3		1	5
Forth Valley	13	19	22		4	6	32
Tayside	4	1		3		2	5
Fife		10	4		3	3	10
Lothian	5	8	2	5	2	4	13
Western Isles	3	2	2		1	2	5
ECR	2	2	1	2		1	4
Total	215	190	203	16	69	117	405

These indicate the Health Board, Anatomical Area and Speciality Referring for those patients not admitted. Orthopaedics (50%) remains the principle user of the service. Neurosurgery (4%) and increasingly Accident and Emergency (17%) refer relatively small numbers (19%) but "Others" (28%) including Medicine, Neurology, Care of the Elderly etc. are an increasing user.

Section B: Quality Domains

B1 Efficiency

B1: A Actual v Planned activity

B1: A1 In-patient Activity: Table Seven A

	12-13	13-14
New admissions	153	177
New outpatients	232	271

B1: A2 Out-patient activity: Table Seven B

	09/10	10/11	11/12	12/13	13/14
Return	2182	2193	2293	2243	2389
New	192	229	188	232	271

The out-patient activity of the unit is focused on the post discharge management of acute injuries and lifelong 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. Increasingly efficient clinical management limits annual increases in return patients.

B1: A3 Summary of Out-patient activity: Table Seven C

	09/10	10/11	11/12	12/13	13/14	%
Return	2182	2193	2293	2243	2389	
DNA Return	-	804	527	665	642	27%
New	192	229	188	232	271	
DNA New	0	0	33	49	49	18%

The number of return outpatients is stable and reflects the prevalence of the spinal cord injured population in Scotland. The DNA rate reflects the nature and length of follow up and the fragility of the population, the rates have both reduced this year..

B1: A4 Out Patient Clinic Location and Frequency

Table Eight

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	Huntly

Location and frequency of out-patient clinics and outreach services are based on the National Database that commenced in 1992. The outreach clinics are supervised by medical staff and are involve medical, nursing and paramedical staff. Spinal Injuries Scotland attend for peer group support.

B1: A5 New Out-Patient Activity by Health Board

Table Nine

	09/10	10/11	11/12	12/13	13/14
Ayrshire & Arran	18	21	15	16	16
Borders	3	1	2	2	1
Dumfries & Galloway	8	7	3	6	6
Fife	1	7	4	2	2
Forth Valley	16	17	14	4	11
Grampian	4	3	3	0	2
Greater Glasgow Clyde	91	136	105	154	193
Highland	2	4	4	0	9
Lanarkshire	32	20	27	35	21
Lothian	11	8	3	7	8
Shetland	0	1	0	0	0
Tayside	4	3	8	4	0
Orkney	0	0	0	0	0
Western Isles	1	0	0	1	2
ECR	1	1	0	1	0
Unknown	0	0	0	0	0
Total	192	229	188	232	271

B1: A6 Out -Patient Activity by Centre

Table 10:

	09/10	10/11	11/12	12/13	13/14	CHANGE YEAR	TOTAL 1992-2014
New QENSIU	192	229	188	232	271	+17%	2744
Return QENSIU	1825	1861	1876	1878	2014	+7%	33951
Edinburgh	168	162	174	148	154	+4%	3491
Inverness	45	49	62	60	63	+5%	911
Aberdeen	68	61	85	66	74	+12%	882
Dumfries & Galloway	14	9	27	20	17	(15%)	262
Borders	36	19	15	26	24	(8%)	233
Arbroath	26	14	31	26	29	+12%	247
Huntly	0	18	23	19	14	(26%)	74
Total	2374	2422	2481	2475	2660	+7%	42795

B1 A6 Outpatient Activity by Specialty at QENSIU

Table Eleven:

		09/10	10/11	11/12	12/13	13/14
Orthopaedics	DBA	128	126	163	144	139
Neurosurgery	LA	52	41	70	50	55
Neurosurgery	JB/ CM	53	46	25	24	39
Urology	GC/ VG	475	541	390	450	524
Skin Care		68	52	59	68	64
Pain / Spasm		29	19	16	13	17
Neuroprosthetics	TH/MF	23	22	32	21	25
Sexual Dysfunction		19	28	19	14	22
Respiratory		7	8	9	28	21
Fertility		8	3	11	3	8
Spinal Injury Annual Review	TOTAL	963	975	1082	1063	1100
	MEDICAL	638	595	690	680	698
	NURSING	325	380	392	383	402
Total		1825	1861	1876	1878	2014

The Consultant Clinics in Orthopaedics and Neurosurgery see new and return patients until they can be discharged or referred to the annual review clinics. The Spinal Injury Annual Review clinics are a large component of the commitment to life- long care. These are nurse led with only sixty four per cent of patients requiring medical input. There is an open door policy for patients and inevitable some activity remains under-reported. Urology clinics are available to investigate or treat bladder dysfunction at any stage. Neuro-prosthetics includes assessment and surgery for upper limb problems principally in tetraplegics.

B1: A7 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 is self-limited due to the finite population of spinal injured patients.

B1: A8 Day Case Attendances by Reason

Table Twelve:

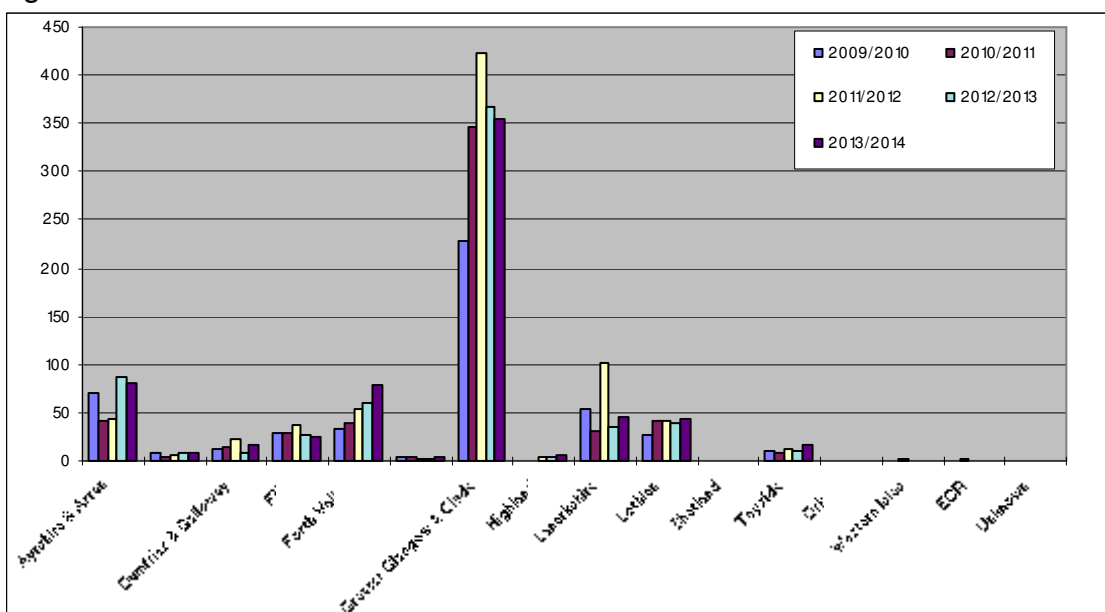
	09/10	10/11	11/12	12/13	13/14
Urology /Urodynamics	27	27	40	36	41
Halo Fixation	99	99	247	146	232
Skin	13	17	14	14	18
Orthopaedic/Neurosurgery	0	0	0	0	0
Acupuncture / Pain / Spasm	311	363	429	429	374
Sexual Dysfunction	3	6	2	3	2
Fertility	21	28	16	24	12
Other	3	28	1	0	1
Total	477	568	749	652	680

The activity remains stable over the last few years except for a substantial number of pain and acupuncture interventions. It is appreciated that sexual dysfunction and fertility remains underdeveloped although the fertility programme is very successful.

B1: A8 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 local hospital either by staff from the unit or appropriate specialists.

Fig Eleven



B1: A9 Waiting Times

B1: A10 Waiting Times Outpatient Clinics

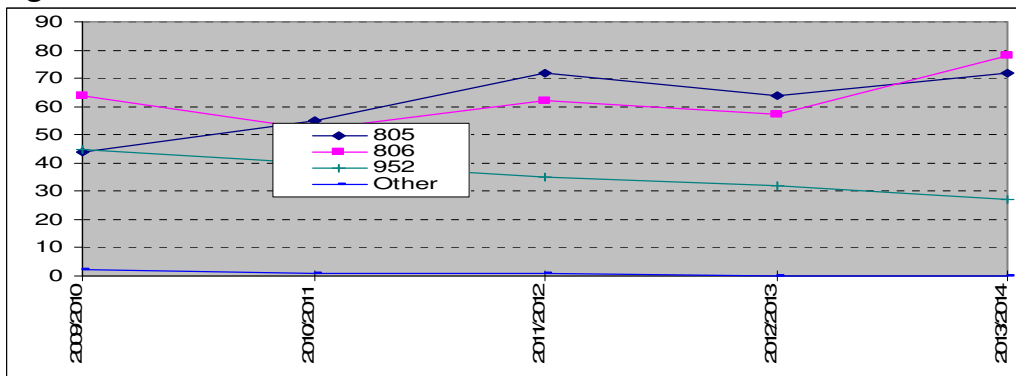
There is an open door policy to the Nurse Led Clinics. Medical advice is always available and was requested in thirty six per cent of patients. Patient satisfaction remains high with this team approach. The maximum waiting time for new elective outpatient appointments is four weeks.

B1: B1 Use of Resources

The unit admits on clinical priority and safety of transfer. Appropriate support facilities are available in the majority of hospitals in Scotland but international and regional data support early transfer if possible. The changing demands in acute care may result in shorter transfer times of bed occupancy allows. Bed availability is dependent on the case mix presenting over time and the length of stay of each patient. The more severe injuries but not the most severe have the longest length of stay because of the complexity of their rehabilitation. The degree of injury is important in determining throughput.

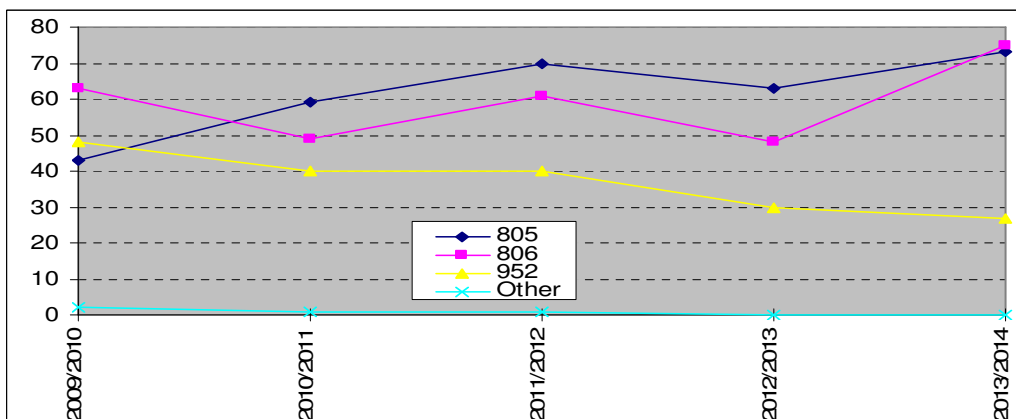
B1: B2 Admissions by Degree of Injury

Fig Twelve



B1: B3 Discharges by Degree of Injury

Fig Thirteen



B1: B4 Admissions and Discharges for Non Traumatic Spinal Cord Injury (ICD 9 Code 952)

This includes eligible admissions who do not sustain a bony traumatic injury and whose cord injury is non-progressive and suitable for rehabilitation.

Table Thirteen:

2013/2014	Admissions	Discharges
Central Cord Lesion	20	19
Infection	0	1
Vascular	4	3
Tumour	1	1
Surgical	1	2
Non-specific Lumbar Lesions	1	1
Penetrating Wounds gun/stab	0	0
Other	0	0
Total	27	27

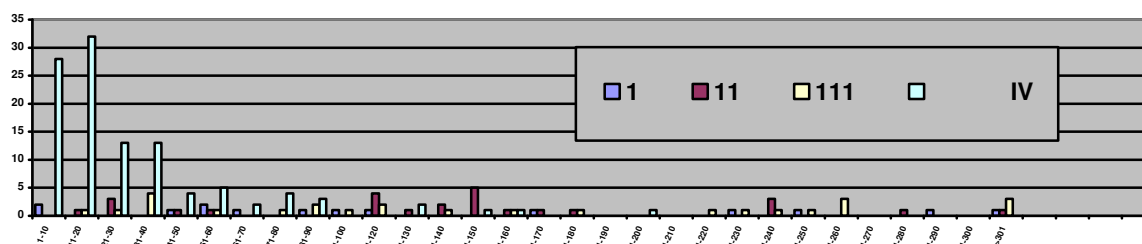
B1: B5 Length of Stay by Level of Spinal Cord Injury

Table Fourteen

Case Mix	No. of Patients	Mean L.O.S.	Range of L.O.S.
I	14	126	1 – 306
II	26	138	14 – 355
III	26	159	12 – 455
IV	109	31	1 – 192
All	175	74	1 - 455

Throughout the last ten years there has been significant effort spent on reducing the mean 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.

Fig Fourteen:



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

B1: B6 Bed Utilisation

Table Fifteen:

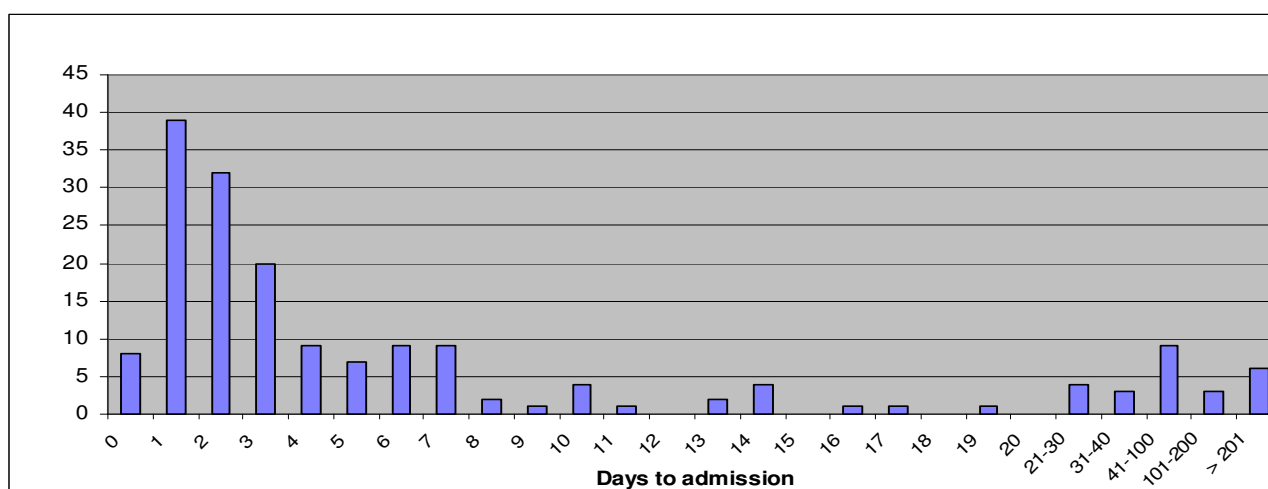
Spinal Injury Unit									
Edenhall HDU 12					Philipshill36				
Bed Comp	Alloc staffed	Borrowed	Lent	Temp	Available staffed	Total Occ Bed Days	Pats on Pass	Actual Occ Bed Days	% Occupied
48					17446			14161	81.2%
Discharged									

B1: B7 Time to Admission, Length of Stay and Delay in Discharge

B1:B8 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. Early referral is encouraged. In 2013-14 22 per cent of patients were admitted within twenty-four hours of referral. Forty four per cent were admitted within forty-eight hours and fifty five per cent within four days. Sixty eight per cent were admitted within one week. This time pattern is consistent with previous years and early admission was achieved wherever possible. This provides immediate support to the patient and family and prevents complications. 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. The introduction of early intervention strategies will increase pressure for earlier admission.

Fig Sixteen A:



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-per cent 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 seven 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 many months post injury.

Table Sixteen A: Days to Admission by Range

	No. of Patients	Mean Time (Days)	Range of Time
2009-2010	155	15	0 - 265
2010-2011	148	258	0 - 19749
2011-2012	170	19	0 - 438
2012-2013	153	185	0- 10598
2013-2014	177	151	0 - 8478

* includes admissions years after injury: managed elsewhere

Fig Sixteen B: Days to Admission by Grade

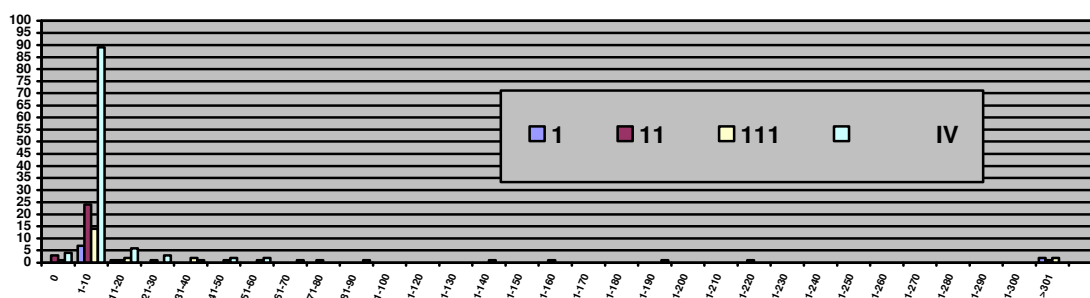


Table Seventeen: Delayed Discharge

	No. of Patients Discharged	No. of Patients Delayed	Mean delay (days)	Range of Delay (days)	NO DELAY
2009/2010	156	3	92	29 – 151	98%
2010/2011	149	2	52	2 – 101	99%
2011/2012	171	2	37	35 – 38	98.8%
2012/2013	141	2	130	62 – 197	98.6%
2013/2014	175	7	34	1 – 91	96%

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.

B1: B9 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 sixty five readmissions to the unit during the year, a significant shortfall on the contract estimate of two hundred readmissions, skin problems predominate.

B1: B10 Ventilated Bed Days

High-level spinal cord injury often requires temporary or permanent ventilator support. The Respiratory Care Team consists of a Consultant Respiratory Physician and a Respiratory Care Sister who work closely with the neuro-anaesthetic service providing in-patient care and a domiciliary ventilation service throughout Scotland.

Table Eighteen:

		No. Patients	Ave. Ventilated Days	Total Ventilated Days
09-10	Edenhall	19	30	572
	RCU	7	160	1117
10-11	Edenhall	17	32	551
	RCU	6	51	305
11-12	Edenhall	13	29	383
	RCU	5	29	146
12-13	Edenhall	16	14	229
	RCU	7	22	151
13-14	Edenhall	21	25	529
	RCU	6	79	472

Each patient is counted only once but may be responsible for multiple episodes of care or inter ward transfers if their condition varies. The variable number of patients requiring ventilation and the increasing importance of RCU mirrors changes in the age and type of patient needing respiratory support. Case-mix and increasing expertise explains the decrease in the average and total ventilated bed days in the last two years.

B1: Finance Report 2013-14

	AfC	WTE	Contract £	Budget YTD £	Actual YTD £	Variance £	Forecast £	Variance
Staff Costs								
Medical		9.19	944,551	944,551	1,009,027	-64,476	1,009,027	-64,476
Administrative	4	6.50	155,431	155,431	123,576	31,855	123,576	31,855
Administrative	3	0.14	3,165	3,165	3,230	-65	3,230	-65
Administrative	2	2.49	55,495	55,495	59,692	-4,197	59,692	-4,197
		<i>9.13</i>	<i>214,091</i>	<i>214,091</i>	<i>186,498</i>	<i>27,593</i>	<i>186,498</i>	<i>27,593</i>
Senior Manager		0.50	34,601	34,601	26,979	7,622	26,979	7,622
Nursing	7	7.80	335,984	335,984	330,902	5,082	330,902	5,082
Nursing	6	9.36	419,214	419,214	417,044	2,170	417,044	2,170
Nursing	5	52.30	1,748,729	1,748,729	1,907,655	-158,926	1,907,655	-158,926
Nursing	2	23.88	537,174	537,174	478,355	58,819	478,355	58,819
Housekeepers	2	2.00	55,210	55,210	50,506	4,703	50,506	4,703
		<i>95.84</i>	<i>3,130,912</i>	<i>3,130,912</i>	<i>3,211,440</i>	<i>-80,529</i>	<i>3,211,440</i>	<i>-80,529</i>
Psychologist	8B	1.00	62,830	62,830	0	62,830	0	62,830
Paramedical	7	12.26	530,758	530,758	572,914	-42,156	572,914	-42,156
		<i>13.26</i>	<i>593,588</i>	<i>593,588</i>	<i>572,914</i>	<i>20,674</i>	<i>572,914</i>	<i>20,674</i>
Total Staff		127.42	£ 4,883,142	£ 4,883,142	£ 4,979,879	- £ 96,738	£ 4,979,879	- £ 96,738
Supplies Costs								
Administrative			108,465	108,465	108,667	-202	108,667	-202
Medical			4,139	4,139	4,139	0	4,139	0
Nursing			11,771	11,771	17,285	-5,514	17,285	-5,514
Paramedical			18,802	18,802	2,973	15,829	2,973	15,829
Pharmacy			607,765	607,765	584,792	22,973	584,792	22,973
Appliances			104,540	104,540	117,320	-12,780	117,320	-12,780
			£ 855,482	£ 855,482	£ 835,176	£ 20,306	£ 835,176	£ 20,306
Lothian Clinic			5,071	5,071	5,000	71	5,000	71
Allocated Costs								
Medical Records			102,520	102,520	107,891	-5,371	107,891	-5,371
Building Costs			200,212	200,212	202,355	-2,143	202,355	-2,143
Domestic Services			67,031	67,031	70,543	-3,512	70,543	-3,512
Catering			184,426	184,426	194,088	-9,662	194,088	-9,662
Laundry			65,925	65,925	66,631	-706	66,631	-706
Neuroradiology			76,795	76,795	80,801	-4,006	80,801	-4,006
Laboratories			88,558	88,558	93,178	-4,620	93,178	-4,620
Anaesthetics			36,663	36,663	38,575	-1,912	38,575	-1,912
Portering			71,394	71,394	75,133	-3,739	75,133	-3,739
Phones			47,918	47,918	48,915	-997	48,915	-997
Scottish Ambulance Service			8,899	8,899	9,082	-184	9,082	-184
General Services			27,443	27,443	29,168	-1,726	29,168	-1,726
Allocated Costs			£ 977,783	£ 977,783	£ 1,016,362	- £ 38,579	£ 1,016,362	- £ 38,579
Total Supplies			£ 1,838,336	£ 1,838,336	£ 1,856,537	- £ 18,201	£ 1,856,537	- £ 18,201
Overhead Costs								
Fixed costs								
Rates			58,247	58,247	58,247	0	58,247	0
Capital Charge			435,774	435,774	435,774	0	435,774	0
Trust Overheads			148,525	148,525	148,525	0	148,525	0
Total Overheads			£ 642,546	£ 642,546	£ 642,546	£ 0	£ 642,546	£ 0
						- £		
Total Expenditure		127.42	£ 7,364,024	£ 7,364,024	£ 7,478,962	114,939	£ 7,478,962	- £ 114,939
Postgraduate Dean Funding			-119,142	-119,142	-119,142	0	-119,142	0
Dean Funding			£ 7,244,882	£ 7,244,882	£ 7,359,820	114,939	£ 7,359,820	- £ 114,939
Total Net Expenditure			£ 7,244,882	£ 7,244,882	£ 7,352,400	107,519	£ 7,352,400	- £ 107,519

B1: D1 Key Performance Indicators Summary

	11-12	12-13	13-14
New admissions	170	153	177
New outpatients	188	232	271
Key Performance Indicators			
Referrals			
All patients referred	441	430	552
Telephone advice ¹	271	277	253
Complex advice with support		79	122
New inpatient activity²			
All patients admitted with neurological injury	100	91	110
All patients admitted with non-neurological injury	70	62	67
Surgical stabilisations:			
- Thoraco lumbar fixations and removals DBA	28	34+6	42 +4
- Cervical fixations LA,CM,JB	23+	20+	20+
- Halo immobilizations	39	20	29
Spinal injury specific surgery:			
- Theatre lists	33		32
- Individual procedures	46	39	UNK
- Surgical specialties	4	4	4
Implant pain control:			
- New pumps implanted	0	0	2
- Revision pumps	1	2	4 Rem / Rev
- Operational pumps	21	16	17
- Pump Refill QENSIU	14	12	11
- Pump Refill Local	7	6	6
Step down unit:			
- Episodes of care	32	26	28
- Number of families/people	14 / 93	14 / 69	14
- Number of days (nights)	80	53	72
New inpatient occupied bed days			
Total Available (new & return)	17605	17,505	NA
Actual	13610	14,313	NA
Bed Occupancy %	78%	81.7%	NA
Mean length of stay			
I	172	135	126

¹Patients managed in referral hospital with non-neurological deficit

²To provide breakdown of: case complexity and new admissions by ASIA impairment level; admissions by neurological deficit; admissions by non-neurological deficit; reason for admission, population size; age group; and health board

Key Performance Indicators			
II	167	142	138
III	119	131	159
IV	31	28	109
All	74	80	74
median length of stay	MM	72	
Range of length of stay	1-434	1- 414	1 - 455
Delays in discharge (actual v's intended)			
Number of patients discharged	171	141	175
Number of patients with delayed discharged	2	2	7
Length of delay (mean/mode)	37	130	34
% with no delay	99%	98.6%	96%
Re-admissions – Return inpatient activity			
by NHS Board of Residence		NA	NA
by reason for admission		NA	NA
Return inpatient occupied bed days			NA
Total Available (new & return)		NA	NA
Available		NA	NA
Bed Occupancy % (target >85%)		NA	NA
mean length of stay		NA	NA
median length of stay		NA	NA
range of length of stay		NA	NA
Day case			
by NHS Board of Residence		See Table	See Table
by reason for admission		See Table	See Table
Outpatient activity			
New Patient no's Southern General		See Table	See Table
Return Patient no's Southern General		See Table	See Table
New Patient Southern General (DNAs/ % attendance)		21%	18%
Return Patient Southern General (DNAs/ % attendance)		30%	27%
New Outreach Clinics by Centre		NA	See Table
Return Outreach Clinics by Centre		See Tables	See Table
Attendance at New Outreach Clinics by Centre (DNAs/ % attendance)		NA	
Attendance at Return Outreach Clinics by Centre (DNAs/ % attendance)		See Table	
Outpatients discharged in period		NA	
Number of patients discharged from the service		Life Long Care	Life Long Care
Actual / Anticipated number of patients in service			

Key Performance Indicators			
Allied Health Professionals activity ³		See Appendices	See Appendices
New Patient no's		A3 A	A3A
Return Patient no's			
New Patient (DNAs/ % attendance)		See Tables	See Tables
Return Patient (DNAs/ % attendance)		See Tables	See Tables

As a specialised national service we conform to current and past relevant HEAT targets. (Health Improvement, Efficiency, Access, Treatment Targets) These are incorporated wherever possible in the relevant sections of the report (B3: C)

B2: Effectiveness

B2: A1 Clinical Audit Program

There is a multidisciplinary audit programme overseen by senior medical and nursing staff. Meetings and presentations are held monthly. In the last year the Unit has completed 10 audits and also participates in the National Scottish Patient's Safety programme which requires continuing re-auditing of care. Publications of National Outcomes from this audit will allow us to benchmark ourselves against other Scottish wards.

Recent changes to practice resulting from audit include optimising time of referral to social work, reduction in skin marks and faster mobilisation of paralysed patients. Details are include in relevant sections.

³Report for each individual profession e.g. physiotherapy, OT, psychology etc.

B2: A2 Mechanism of Injury

The mechanism of injury of all admissions reflects changes seen in other areas of social activity and change. Medical causes, domestic and Para suicide remain stable. The number of sporting injuries has reduced but two rugby injuries required in-patient care and two out-patient care.

Table Nineteen :

	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014
Fall	77	72	93	73	104
RTA	40	34	36	43	28
Motor vehicle	19	22	21	21	19
Motorcyclist	12	6	7	9	4
Bicyclist	9	4	4	9	1
Pedestrian	0	2	4	4	4
Secondary to Medical Diagnosis	15	21	16	13	16
Industrial Injury	6	2	5	8	4
Assault	0	2	3	0	0
Penetrating Injuries	3	2	0	0	0
Sporting Injury	10	11	13	12	14
Domestic Injury	1	3	1	0	0
Self Harm	3	1	3	4	11
Other	0	0	0	0	0
Total	155	148	170	153	177

B2: A3 Clinical Governance

Senior medical and nursing staff meets quarterly with colleagues in the Health Board Clinical Governance programme. Outstanding items include Clinical Incident Review, Mortality Review, Risk Register and putting audit into practice. There have been no serious (category 4 or 5) clinical incidents in the past year. The Unit continues to adopt National Management Guidelines as appropriate. Some patients have sustained very severe trauma or complications of paralysis and it is not possible to prevent all deaths. All have been reviewed and no risk factors or adverse events identified.

B2: B Clinical Outcomes/complication rates / external benchmarking

The unit has provided outcome figures since 1998 in the annual report and in specialised ad hoc reviews. Substantive peer reviewed papers have been published in the literature on a number of topics. Details of publications and complication rate are outlined in Sections B1 and B3.

External Benchmarking is a identified goal in SCI management. The unit is the only UK contributor to the European EMSCI database. Last year the North of England and separate South of England database where launched and became partially active. Enrolling in the UK data set is currently premature. The Scottish database combines management and clinical information and enables good service management and development.

B2 C1 Service Improvement

The service is subject to continual review.

B2 D1 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.

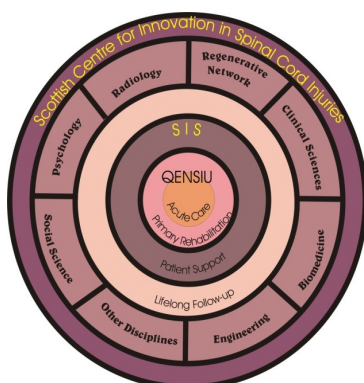
The unit has a portfolio of research ranging from olfactory stem cells, brain computer interfaces, robotic exercise, FES cycling and FES respiratory support.

A detailed research profile for the inauguration of the **Scottish Centre for Innovation In Spinal Cord Injury (SCI²)** Is available at [www.http.scisci.org](http://www.scisci.org)



Research in basic sciences, prevention and clinical treatment including translational approaches is a fundamental and embedded function of the unit. The ultimate aim is to act as a host and supporter of all basic scientists who can have a positive impact on the care of the traumatic spinal cord injured.

We have set up **SCI²**. The **Scottish Centre for Innovation in Spinal Cord Injury** as an umbrella to support translational research in a clinical setting.



The unit is principally supported by Glasgow University whose Centre for Rehabilitation Engineering is based in the GU funded Research Mezzanine.

Papers and Authorship

A detailed explanation of **SCI²** is available @ SCISCI.ac.uk

Papers 2014

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B3: A1 Safety Risk Register

The unit complies with all corporate, regional and local requirements and is actively involved in supporting and promulgating risk awareness and risk management.

B3: B1 Clinical Governance: Critical Incidence Reporting

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. The unit is included in The Regional Services Directorate for reporting purposes

Table: Eighteen Nineteen and Twenty:

Edenhall

Category	Number		
Pressure Ulcer Care			
Medication Incident			
Clinical – other	2		
Medical Device & Equipment			
Abscondment			
Slips, trips and falls	2		
Other	3		Slips, Trips and Falls
Security		Fall from bed	2

Moving & Handling	1	Fall from chair	
Violence & Aggression	2	Fall from level	
Contact with or exposure to hazard	1	Slip / trip on level	
Treatment problem	1	Suspected fall	
Labs medicine		Other	
Total	12		

Philipshill

Category	Number		
Pressure Ulcer Care			
Medication Incident	6		
Clinical – other			
Contact with object	3		
Infection control	1		
Medical Device & Equipment			
Abscondment	7		
Slips, trips and falls	53		
Other	2		Slips, Trips and Falls
Security	1	Fall from bed	8
Moving & Handling	9	Fall from chair	25
Violence & Aggression	7	Fall from level	9
Contact with or exposure to hazard	2	Slip / trip on level	6
Treatment problem		Suspected fall	1
Labs medicine		Other	4
Challenging Behaviour	1		
Fire Alarm actuation	3		
Patient observation	1		
Needlestick injury	1		
Patients record missing	1		
Transfusion incident	1		
Total	99		

OPD

Category	Number
Clinical other	1
Violence & Aggression	1
Transport related	1
Building fault	1
Total	4

OVERALL

Category	Number
Pressure Ulcer Care	
Medication Incident	6
Clinical – other	3
Contact with object	3
Infection control	1
Medical Device & Equipment	

Abscondment	7		
Slips, trips and falls	55		
Other	5		Slips, Trips and Falls
Security	1	Fall from bed	10
Moving & Handling	10	Fall from chair	25
Violence & Aggression	10	Fall from level	9
Contact with or exposure to hazard	3	Slip / trip on level	6
Treatment problem	1	Suspected fall	1
Labs medicine		Other	4
Challenging Behaviour	1		
Fire Alarm actuation	3		
Patient observation	1		
Needlestick injury	1		
Patients record missing	1		
Transfusion incident	1		
Transport related	1		
Building fault	1		
Total	115		

1- Negligible	78
2 – Minor	33
3 – Moderate	4
4 – Major	
5 – Extreme	
Total	115

The unit maintains an active CI reporting system and has encountered no level four or above incidents in the year.

B3 C1 Scottish Patient Safety Programme (SPSP)

The Scottish Patient Safety Programme aims to improve the safety and reliability of hospital care throughout Scotland. This is achieved by using evidence based tools to improve the reliability and safety of everyday health care. The current aims are to:

- Reduce Hospital Acquired Infection
- Reduce adverse drug incidents
- Increase critical care outcomes]
- Increase organizational and leadership culture and safety
- Healthcare Associated Infection (HAI)

There are five work streams, Edenhall Ward is within the Critical care/HDU work stream and Philipshill Ward is in the general work stream.

B3: C2 Hospital Acquired Infection- Sister Paterson

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.

Table Twenty:

	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014
Total patients req. Isolation	N/A	N/A	0	N/A	All
Salmonella	0	0	0	0	0
Clostridium Difficile	4	3	0	0	0
MRSA	15	11	4*	4	14
Streptococcus pyogenes	0	1	1	1	1
Scabies/ TB /Varicella Zoster	0	0	0	0	0
Patients treated in isolation	N/A	N/A			8
Patients not treated in isolation	N/A	N/A			8
Patients not suitable for isolation					3
No single room available					5

Table Twenty- one:

2013-2014	MRSA	C.Diff	Other HIA
Edenhall	0	0	1 Serratia
Philipshill	14	0	1 Gp A Strep

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. The relatively low rates of infection are a tribute to the standard of nursing care and policies within the unit especially as regards bowel and bladder care

B3: C3 Clinical Quality Indicators- Education Sister Helena Richmond

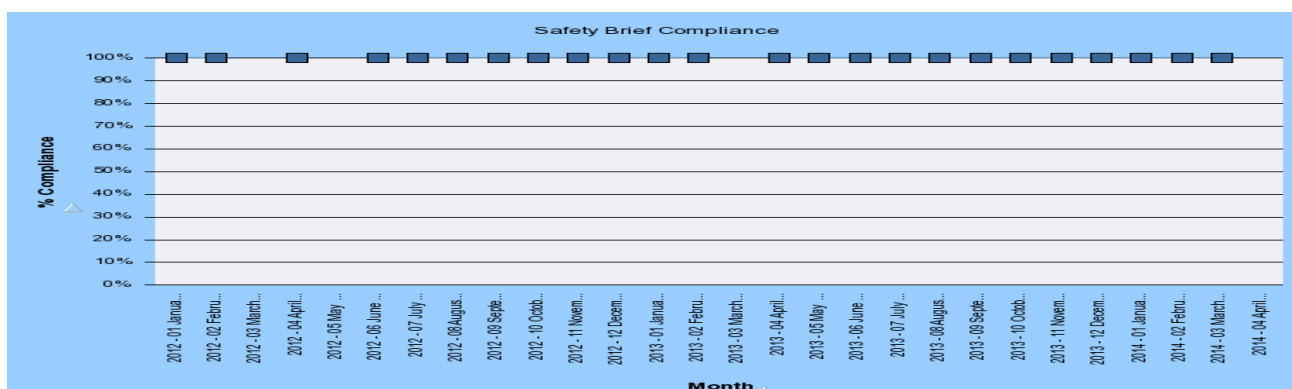
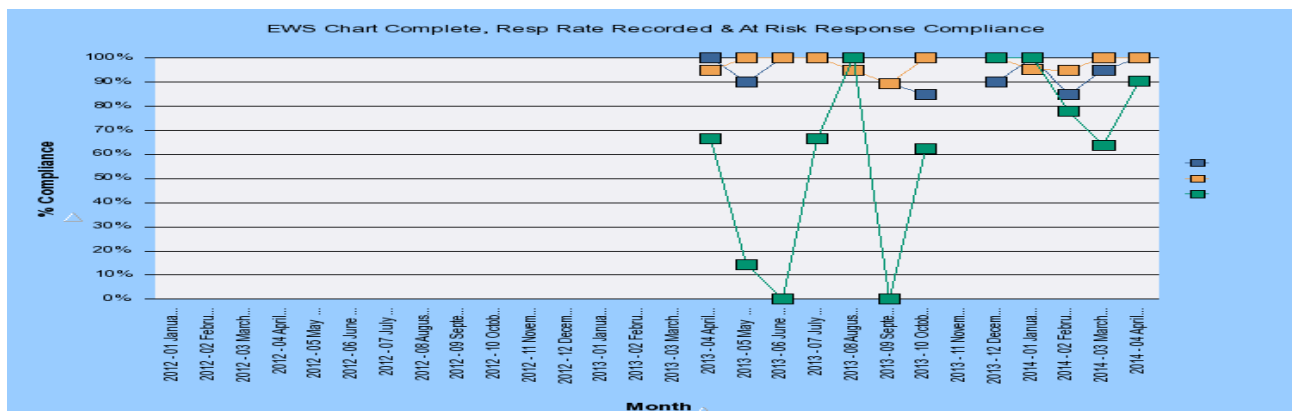
Audit and Governance

Documentation Audit

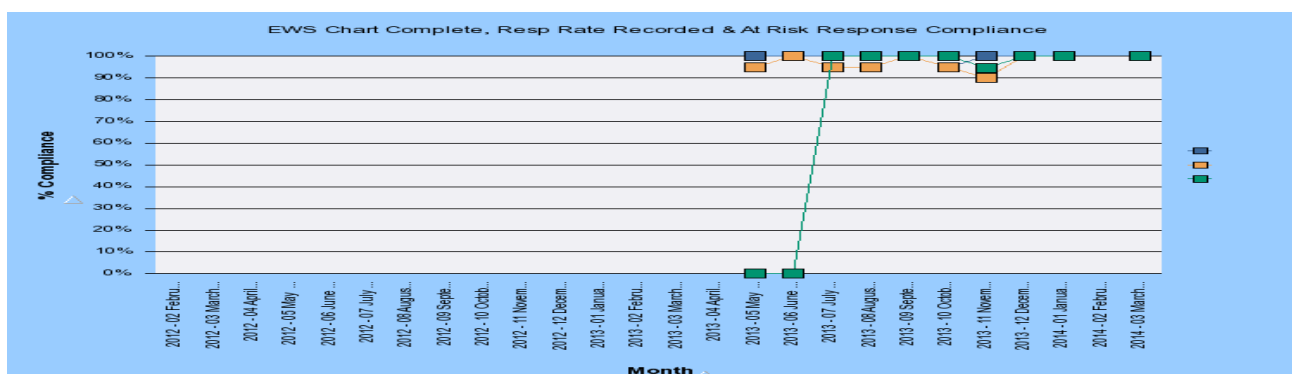
The unit aims to meet the principles of good record keeping by following the NHS GGC Professional Standards for Record Keeping Policy (2009). We ensure the documentary evidence from the healthcare professionals is safe, effective, and accurate.

There are a wide range of records utilised to demonstrate the delivery of care from the multi-disciplinary team to a patient. These include care plans, observation charts, profile notes, consultation notes, operation notes and others.

Edenhall Ward: EWS Completion and Safety Brief Compliance

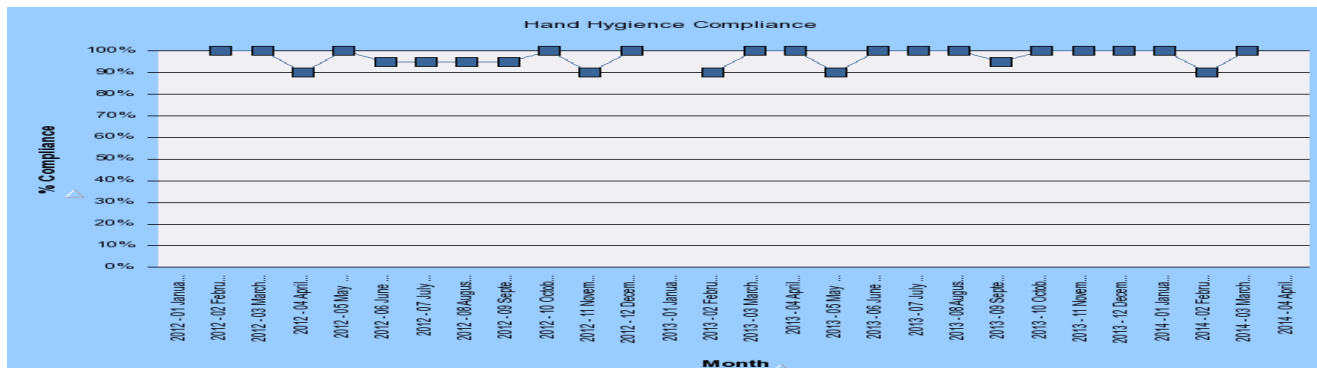


Philipshill Ward: EWS Completion and Safety Brief Compliance:

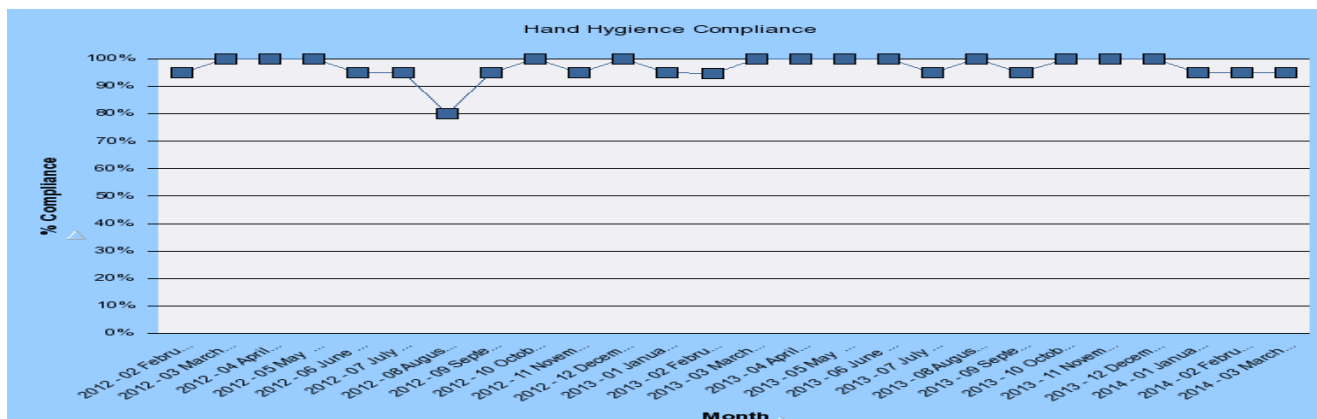


B3: C3 Hand Hygiene Compliance Scottish Patient Safety Programme

Edenhall Ward



Philipshill Ward



In 2012 the average compliance with hand washing was 97.6% with the average compliance with hand washing standard 92%. The commonest reasons for not meeting the standard included turning the taps off with hands and not removing wrist watches. This is now rectified

B3: C4 Overall CQI Compliance Trends 2011-2012

As part of Leading Better Care 3 clinical quality indicators are assessed monthly providing real time data to the wards.

B3: C KSF Targets

The unit is compliant with KSF (Knowledge, Skill Framework) targets. All nursing staff are up to date and have been reviewed in the last twelve months.

B 3 D Adverse Events

B3: D1 Pressure Sore Point Prevalence

Traditionally we have monitored point prevalence:

Table Twenty-Two:

	No. of patients	No. of acquired sores	No. of admitted sores	Total number of sores	Point prevalence
2009/2010	42	3	5	8	19%
2010/2011	36	1	8	9	25%
2011/2012	36	2	12	14	38.8%
2012/2013	39	3	12	15	38.5%
2013/2014	41	3	10	13	31.7%

This tool is very useful at identifying trends in incidence of true pressure sores but has limitations as an independent assessment of the incidence of critical skin events of all types ranging from skin marks, sacral splits and full thickness skin sores.

B3: E Complaints / Compliments

B3: E1 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 four formal complaints which were fully investigated and proved useful in reviewing current practice. Assistance was given in advising regarding complaints involving management of patients out with the unit which also have relevance to in house treatment. A proactive approach is followed with Spinal Injuries Scotland, Aspire and Back Up to improve all aspects of our service.

B3: E2 Compliments.

The unit has been the subject of numerous newspaper, magazine and media comment, all favourable over the year. Of particular note is the long running Times column by a recent

patient, which has informed, amused and provoked patients, staff and relatives. It has been of inestimable benefit in letting us see how we are perceived. Significant contributions are received from grateful patients, families and community groups to assist in purchasing items for patient treatment and comfort.

B4 Timely (Access)

B4 a) Waiting / Response Times

- 1) Waiting Times/Response Times Targets
The unit complies with its contract and details are available throughout the report.
- 2) Slippage: No slippage is recorded
- 3) Exceptional Circumstances Affecting Targets

The unit complies with all relevant targets.

B4 b) Review of Clinical Pathway

- (i) Review and Changes to Clinical Pathway
- (ii) Improvements to Local Delivery of Care

B5 Person Centred

B5 A Patient Carer/Public Involvement

The unit is fully committed to the development of integrated care and peer review. Regular patient focus groups are used and Relatives and Carers events are held in house and in cooperation with Spinal Injury Scotland (SIS). We comply fully with all national and local initiatives. The patient Education and Social Integration Programme is being Expanded with the help of SIS.

B5 B Example: Leading Better Care/Person Centred Care

“Leading Better Care“ enables Senior Charge Nurses, Team Leaders and other healthcare professionals to deliver better care in consistent, measurable evidence based ways.

All Senior Charge Nurses, Senior Charge Midwives and Team Leaders will be working in the context of the LBC components:

- To ensure safe and effective clinical practice
- To enhance the patients experience
- To manage and develop the performance of the team
- To ensure effective delivery of the organisations’ objectives

All Healthcare professionals will be able to demonstrate the contribution they make to the quality and experience of care that patients receive under the three themes

Safe, Effective and Person Centered

To ensure this was being met at a standard of high quality, Philipshill Ward became involved in a pilot for the **Caring Behaviors Assurance System (CBAS)** this involved 3 Quality Champions and Education Sister being a facilitator representing Regional Services.

The Caring Behaviours Assurance System (CBAS) is a way of exploring the perceptions of everyone involved in the delivery of healthcare with a view to enhancing understanding and co-operation, so that action can be put in place to assure greater satisfaction with the quality of care given and received.

The power of the system lies in the ownership of the quality expectations held by staff delivering direct care/service. The members of each team identify what is important about quality; *they* seek out information which reflects quality; *they* recognise and celebrate good quality of care or service; *they* decide what to do about areas that need improvement and then *they* take action and monitor progress, repeating the CBAS cycle when *they* believe it is necessary.

CBAS reflects 'the Seven Cs' identified in the Scottish Government's Healthcare Quality Strategy (May 2010) which states:

People in Scotland have told us that they need and want the following things from the NHS and we have built this strategy around these priorities:

- **Caring** and **Compassionate** staff and services
- Clear **Communication** and explanation about conditions and treatment
- Effective **Collaboration** between clinicians, patients and others
- A **Clean** and safe care environment
- **Continuity** of care
- Clinical excellence

Philipshill Ward created their own PCQI (Person Centered Quality Instrument) which embraces quality in their ward this is displayed on the notice board and highlights what quality indicators are important in their ward to ensure person centred care is being met.

As a result of the Caring Behaviours Assurance System, good practice/service is recognised and celebrated. Subsequent collaboration between all involved will result in action which reflects a steady, incremental improvement towards the quality ambitions.

B5 C User Survey

The unit is fully committed to regularly obtaining feedback and responding to issues raised. Patient Stories satisfaction questionnaires are used and are included at appropriate sections of the report. **Questionnaires** are used as appropriate.

B6 D Family Unit / Step Down Unit

The specially designed patient and relative accommodation continues to support acute admissions, long stay and pre discharge patients. The Family Suite has been occupied on 28 occasions= for a total of 72 nights including 23 weekends. This involved more than 14 families predominantly from outside the West of Scotland. Ad hoc usage during the day and for relatives staying for acute admissions is also invaluable.

B6 Equitable

B6 A Fair for all: Equality & Diversity

The unit has developed to ensure equal access for all geographical areas of Scotland.

Table Twenty-three: Out- patient Services:

	09/10	10/11	11/12	12/13	13/14
Return	2182	2193	2293	2243	2389
New	192	229	188	232	271

Table Twenty- four: Outpatient Clinic Location

Frequency	Location		
Weekly	QENSIU New x 3 QENSIU Return x4 Respiratory Care	Skin Urology Halo Fertility	Orthopaedics alt Tuesday Neurosurgery Fridays
Monthly	Edinburgh		
Three Monthly	Aberdeen	Inverness	
Six Monthly	Dumfries	Borders	Arbroath Huntly

Table Twenty-five A: Activity: Out-Patient By Centre

	09/10	10/11	11/12	12/13	13/14	CHANGE YEAR	TOTAL 1992-2014
New QENSIU	192	229	188	232	271	+ 17%	2744
Return QENSIU	1825	1861	1876	1878	2014	+ 7%	33951
Edinburgh	168	162	174	148	154	+ 4%	3491
Inverness	45	49	62	60	63	+ 5%	911
Aberdeen	68	61	85	66	74	+ 12%	882
Dumfries & Galloway	14	9	27	20	17	(15%)	262
Borders	36	19	15	26	24	(8%)	233
Arbroath	26	14	31	26	29	+ 12%	247
Huntly	0	18	23	19	14	(26%)	74
Total	2374	2422	2481	2475	2660	+ 7%	42795

Table Twenty-five B: Number of patients on the Spinal Outreach clinic lists

Clinic	April 2012	April 2013	April 2014
Inverness	80	82	77
Aberdeen/ Huntly	117	118	118
Borders	35	36	34
Dumfries	27	29	26
Arbroath	35	37	33
Edinburgh			142
Total	294	302	430

Table Twenty-six : Activity; New Out-patient Activity by Health Board

	09/10	10/11	11/12	12/13	13/14
Ayrshire & Arran	18	21	15	16	16
Borders	3	1	2	2	1
Dumfries & Galloway	8	7	3	6	6
Fife	1	7	4	2	2
Forth Valley	16	17	14	4	11
Grampian	4	3	3	0	2
Greater Glasgow Clyde	91	136	105	154	193
Highland	2	4	4	0	9
Lanarkshire	32	20	27	35	21
Lothian	11	8	3	7	8
Shetland	0	1	0	0	0
Tayside	4	3	8	4	0

Orkney	0	0	0	0	0
Western Isles	1	0	0	1	2
ECR	1	1	0	1	0
Unknown	0	0	0	0	0
Total	192	229	188	232	271

B6: B Geographical Access

B6: B1 Nationwide services

As a national service it is important to provide outpatient and domiciliary services throughout Scotland. These has resulted in the development of the liaison sister service and out-reach clinics in areas identified on our database as having a concentration of patients. All outreach clinics are now Medical Consultant led with Nursing and Occupational Therapy staff attending as required. Volunteers from SIS see and advise patients and carer. 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 Education Sister, Respiratory Sister, and Discharge Planner. They all provide assistance to the Senior Nurse.

The Spinal Nurse Specialist team (Liaison Sisters) continue to visit patients where ever they are domiciled in Scotland. These visits may be post discharge visits, follow up visits or for education/training of families or carers. A telephone help and advice service continues to be maintained by the Spinal Nurse Specialist team taking approximately 10 -15 telephone calls per week.

Sister Prempeh 87 visits covering 5,847miles.

Sister Woods 106 visits covering 9,104 miles.

Sister Duffy 130 visits covering 12,679 miles

Total numbers of visits, clinics and meetings carried out by the liaison nurses was 618 covering 27,630 miles.

B6: B2 Table Twenty –seven: Attendance and Location Outreach Clinics

Location	% Attendance 11-12	% Attendance 12-13	Number of Clinics	Number of Patients
Aberdeen	91%	95%	5	64
Inverness	92%	95%	4	60
Dumfries	90%	95%	2	20
Arbroath	94%	90%	3	26
Borders	91%	85%	4	26
Huntly	100%	95%	1	19
Ave Rate	91%	92%	19	215

Annual Review Clinics are subject to a relative high DNA rate due to morbidities and co-morbidities.

B6: B3 Activity: Liaison Sisters Table Twenty-eight:

1. Linda Woods - Spinal Liaison Sister.

Month	Meeting	Clinics	Home visits	External teaching	Miles
2013 -2014		Outreach			
April	8	2	10		980
May	6	1	12	5	814
June	4	3	8		1112
July	3	0	9	7	392
August	11	2	8		762
September	16	3	6		784
October	14	1	10		296
November	12	1	7		509
December	7	1	11	14	684
January	7	2	10		1187
February	5	1	5	5	468
March	3	2	10	1	1116
Total	96	19	106	32	9104

2. Sally Prempeh - Spinal Liaison Sister.

Month	Meeting	Clinics	Home visits	External teaching	Miles
2013-2014					
April	10	1	8	0	424
May	8	1	10	0	838
June	5	1	11	1	705
July	8	0	7	0	234
August	5	1	7	1	478
September	sick	sick	sick	sick	Sick
October	10	1	4	0	226
November	14	1	7	1	574
December	11	2	7	1	555
January	16	2	10	0	642
February	8	1	8	0	783
March	11	1	8	1	388
Total	106	12	87	5	5847

B6: B4 Activity: Respiratory Support Nurse: Table Twenty-seven:

The 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 12,679 road miles travelled and air trips to Shetland and Stornoway completed.

Laurie Duffy – Respiratory Care Sister

2013-2014	MEETINGS	CLINICS	VISITS	EXTERNAL TEACHING	RESPIRATORY REFERRALS
APRIL	7	1	13	10 staff	4
MAY		0	2	16 staff	1
JUNE	5	2	14	11 staff	1
JULY	5	1	15	6 staff	
AUGUST	3	1	2	10 staff	
SEPTEMBER	5	1	11		1
OCTOBER	4	2	23	23 staff	1
NOVEMBER	3	0	11	35 staff	2
DECEMBER	5		6		2
JANUARY	8	1	9	31 staff	
FEBRUARY	3	1	9		
MARCH	2	2	5		1
TOTAL	50	12	130	142	13

A major role has been coordinating discharge for those requiring assisted ventilation with social services and an appropriate care and training package.

B6: B5

Activity Education Sister: Helena Richmond 5 Table Twenty eight

MONTH	MEETINGS	CLINICS	INTERNAL TEACHING	EXTERNAL TEACHING	OUT-REACH CLINICS	PATIENT EDUCATION	RELATIVES DAY	AUDIT
2013-2014								
APRIL	5	2	60 CBAS Neuro SCN 8			35		Documentation/Better Together
MAY	4	1	20		Inverness	15		Documentation/Better Together
JUNE	1		25 Presented Red Flag @ Guttmans			2		Documentation/Better Together
JULY	3		30 CBAS Briefing 16 health care professionals			20		Documentation/Better Together
AUGUST	3	1	10		Inverness	19	18	Documentation/Better Together
SEPTEMBER	4	2	29 CBAS Implementation Spinal and Neuro 12			25		Documentation/Better Together
OCTOBER	2		32 Present PD Event Regional 80 District Nurses @ UWS 20			24		Documentation/Better Together
NOVEMBER	3		14 Caladonian University Student Nurses 105		Aberdeen	9	20	Documentation/Better Together
DECEMBER	2	1	16		Aberdeen	10		Documentation/Better Together
JANUARY	6		10 Active Patient Care 6			20		Documentation/Active Patient Care Audit
FEBRUARY	3	1	68 CBAS implementation Regional Services 20Meal Time Bundle20		Inverness	30		Documentation/Meal time Audit
MARCH	2	3	35 Bowel Management PDRU 3		Aberdeen	21		Documentation/meal Time Audit
TOTAL	38	11	349		210	6	230	42

B6: B6 Location of Lothian Outreach Clinic

The Lothian outreach clinic is now based at the SMART Centre within Astley Ainslie hospital. The clinics are held monthly and have proved popular with the patients in the region. Difficulties have been experienced in the drive towards E.P.R., Trakcare and PACs with outreach clinics as have all cross board services but these continue to be addressed.

B6: B7 Supporting Surgical Services

Multi-disciplinary medical rehabilitation is the keystone of the workload in Spinal Cord Injury. Surgical support is required from orthopaedics, neurosurgery and Soft Tissue Pressure Sore surgery. Approximately twenty per cent of the patients have additional limb injuries.

Service	Clinics	Patients	Acute Spinal Operations	Elective Operations
Orthopaedic DBA 2x Month	23	159	42 Thoraco-lumbar Fixations	8
Neurosurgery JB LA CM 4x Month	30	125	Circa 30 Cervical Fixations	
Skin Care MF	See Tables			

The orthopaedics service will have to be replaced after 10.05.14 and Skin Care will see MF retire within five years. Orthopaedic support will be necessary for limb trauma ,spine fractures and follow up. Neurosurgical support is required for spinal fractures

Section C : Looking Ahead / Expected Change/Developments

Next year will see new systems in place for Electronic Patient Records and will be associated with changes in patient pathways both in QENSIU and the outreach services across all boards.

The unit is involved with cutting edge research into basic science and clinical practice and over the last twelve years we have positioned ourselves to be at the forefront of anticipated translational research which will introduce interventional strategies to influence the final outcome in traumatic spinal cord injury.

A part time Sports Therapists and a Activities Co-ordinator are being investigated as possible adjuvant therapy for the changing demands.

Discussions are at an advanced stage with Horatio's Trust regarding the development of the Courtyard Garden.

The unit anticipates challenges ahead and are proactively seeking solutions to cost and development pressures. We are engaged in the CRES savings assessment and have instituted a local Cost Containment Review.

Section D : Summary of Highlights(Celebration and Risk)

The original concept, funding and organisation of the care of spinal cord injury in Scotland have proved durable and flexible over the last twenty years. This is reinforced by international recognition, a successful track record in research and its influence in service planning in the UK.

This year has seen maintenance in service standards with the development of new initiatives. The unit saw the first two patients in Europe enrolled in a Phase One Trial (Asubio) for a primary intervention for spinal cord injury. As principal investigator for the three units that will be involved in the UK we have positioned ourselves to ensure that we can deliver the best treatment for the people of Scotland. In order to address the changing demographics and the challenges of modern rehabilitation a project looking into the Design of the rehabilitation paradigm has started.

The established research programmes in psychology, osteoporosis, FES Respiratory Support and BCI Pain Control continue to develop scientifically and clinically.

There is no doubt that the demographics, expectations and service delivery patterns are evolving and it is appropriate that the service now proceeds to a full review of the nature provision and financing of the service. Key elements in forward planning are to ensure that the unit continues to provide a necessary specialised service for an identifiable need and to produce it efficiently and equitably.

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

David B Allan FRCS
Queen Elizabeth National Spinal Injuries Unit May 2014

Acknowledgement is made to Ana Bewick and Irene McGonigle for producing the report and Alan Mclean, Mariel Purcell, Michele Paterson and Helena Richmond for their contributions to the main report. Many thanks are due to all of the team that assisted in the maintenance of the database. The Appendix is a huge testament to the work done by all in developing and supporting the unit.