Scottish ECT Accreditation Network Annual Report 2015

A summary of ECT in Scotland for 2014

First published October 2009

PHI Graphics Team
NHS National Services Scotland
Gyle Square
1 South Gyle Crescent
Edinburgh EH12 9EB

Tel: +44 (0)131 275 6233
Email: nss.phigraphics@nhs.net

Designed and typeset by:
Chris Dunn, PHI Graphics Team

Translation Service
If you would like this leaflet in a different language, large print or Braille (English only), or would like information on how it can be translated into your community language, please phone 0845 310 9900 quoting reference 287407.

Summary Hospital Activity Table 2014[1]

Hospital	Patients	Episodes	Treatments for episodes commencing in 2014[8]	All Treatments Delivered in 2014[9]	Stimulations	Median Treatments per Episode	Median Stimulations per Episode
Ailsa & Crosshouse	23	30	271	285	289	9	11
Argyll & Bute	*	*	41	45	50	5	6
Carseview	13	16	138	157	150	9	10
Forth Valley Royal	14	15	160	181	198	11	14
Hairmyres[2]	15	18	151	160	182	9	12
Huntlyburn House	15	16	127	119	157	8	9
Inverclyde	14	14	140	242	149	10	11
Leverndale[3]	27	29	312	339	354	12	12
Midpark Hospital	18	27	190	219	198	6	7
Murray Royal	18	26	233	226	252	10	10
New Craigs	*	*	51	51	57	12	13
Queen Margaret[4]	20	24	255	315	289	12	12
Royal Cornhill	58	69	519	602	637	7	8
Royal Edinburgh[5]	38	47	510	632	664	10	12
St John's	24	31	239	245	272	8	9
Stobhill[6]	37	43	329	349	381	7	8
Susan Carnegie	*	*	69	68	83	8	12
Wishaw[7]	*	*	59	67	81	5	10
Total	**357**	**434**	**3,794**	**4,302**	**4,443**	**8**	**10**

Notes:

* Indicates values that have been suppressed because of the risk of disclosure.

1. In order to prevent rates being skewed by continuation/maintenance episodes administered by hospitals, medians are presented in the above table.
2. Includes patients from Udston Hospital.
3. Includes patients from Western Isles Hospital, Royal Alexandra Hospital, Dykebar Hospital and Southern General Hospital.
4. Includes patients from Stratheden Hospital and Whyteman's Brae Hospital (from November 2011 onwards).
5. Includes patients from Midlothian Community Hospital.
6. Includes patients from Vale of Leven, Parkhead and Gartnavel Royal Hospitals.
7. Includes patients from Monklands Hospital, Coathill Hospital, Beckford Lodge and Airbles Road Centre.
8. Treatments in this column are associated with episodes that commenced in 2014. These treatments may have occurred during 2014 or 2015.
9. A number of treatments may be associated with episodes that began in years prior to the year to which the majority of this annual report relates (2014). We have included this information as an extra column to recognise these further treatments that occurred during 2014.

Contents

Foreword by Dr Denise Coia

I am delighted to be asked, once again, to provide the foreword for the Scottish ECT Accreditation Networks (SEAN) annual report. SEAN continues to be a major influence in ensuring the continued high quality and safe delivery of ECT services throughout Scotland.

As Chairperson of Healthcare Improvement Scotland (HIS), the organisation with primary responsibility for ensuring the delivery of healthcare improvement in Scotland, it is reassuring to see how SEAN works effectively toward maintaining and developing improvements in the quality of ECT services provided across the whole of Scotland. In doing so SEAN remains committed to working along the lines of the three key principles of the Healthcare Quality Strategy[1] to ensure that ECT Services are patient centred, safe and effective. Their commitment to providing quality services in line with these principles is illustrated throughout this annual report.

SEAN continues to monitor and ensure the provision of high quality ECT services across Scotland through a series of regular accreditation visits to all centres involved in the delivery of ECT. It is highly commendable that SEAN continues to drive quality improvements by using evidence based standards which are reviewed on a regular basis to encompass any new guidance from the relevant governing bodies. SEAN continues to work closely with all disciplines involved in the clinical administration of ECT and through its Service Users and Carer's Reference Group is able to get feedback from the patient perspective.

Over the past year SEAN has continued to flourish and provide positive input into patient care in this highly specialised and, at times, controversial treatment. This in itself will work toward reassuring the public at large that ECT is a safe and efficacious treatment, the delivery of which is closely monitored. Their success is a testament to the enthusiasm and commitment of all those involved with SEAN and I am happy to support their continuing work and wish them ongoing success for the future. I am sure you will find this report both interesting and informative.

D. A. Coia

Dr Denise Coia
Chairman, Healthcare Improvement Scotland
September 2015

Foreword by Dr Alistair Hay

This is the seventh annual report of the Scottish Electroconvulsive Therapy (ECT) accreditation network (SEAN) since we came under the auspices of the Information Services Division (ISD) of the NHS National Services Scotland.

The main aim of SEAN continues to be to monitor the practice of ECT throughout the 19 centres in Scotland where the treatment is currently administered. We endeavour to monitor, maintain and improve where necessary, the high quality of ECT treatment that is currently provided throughout Scotland. This is achieved through a series of accreditation visits to all the centres where ECT is administered. The standards of care in each centre are measured against recognised, measurable and achievable quality standards. In doing so, SEAN adheres to the principles outlined in the Health Quality Strategy for NHS Scotland as outlined below:

Patient-Centred:

- There continues to be active input from service users and carers through an independent reference group
- Issues highlighted from this group are fed into the SEAN Steering group and acted on as appropriate
- SEAN actively encourages service users and carers to contribute to its practice and their views are always listened to and taken seriously
- Users and carers are warmly encouraged to attend and participate in the SEAN annual clinical conference
- A report from the reference group is included in this and previous annual reports

Safe:

- SEAN remains committed to onsite accreditations, the second round of which are almost completed
- In addition to formal accreditation visits, SEAN is undertaking unannounced visits to all centres to further monitor and ensure the quality of practice
- Ongoing evaluation of critical as incidents

Effective:

- SEAN uses validated outcome measures i.e. the Montgomery and Asberg depression rating scale (MADRS[2]) and the Clinical Global Improvement scale (CGI[3])
- Nurse education (through the Committee of Nurses at ECT in Scotland, CONECTS) and the online Learnpro modules currently being introduced
- In September this year SEAN ran the first training course for psychiatrists who prescribe ECT. The course received excellent feedback and we plan to run these courses annually.

In addition to actively monitoring and improving standards through our accreditation visits, the SEAN network encourages both formal and informal multidisciplinary interaction amongst professionals clinically involved with ECT. There is an opportunity to meet and hear about recent advances through the SEAN annual conference. This has led on to more informal multidisciplinary

contacts through which examples of good practice, can be disseminated, often through the NHS e-mail system

We would welcome any comments and feedback on this report.

Dr Alistair Hay

SEAN Chairman and Clinical Lead

Background

In 1996 the Scottish Electroconvulsive Therapy (ECT) Audit Network (SEAN) started out a national audit project to answer questions pertaining to the clinical practice of ECT including facilities, staffing, training and the outcome of treatment. The initial audit was paper based and funded by the then Clinical Resource Allocation Group (CRAG). The audit ran for three years and was published in 2000[4]. Since then, SEAN has continued to grow and has developed into a national clinical network moving from an audit of the service to an accreditation network whilst still retaining the acronym SEAN. The membership of SEAN comprises:

- Consultant Psychiatrists
- Consultant Anaesthetists
- Clinical Psychologists
- ECT Nurses
- Operating Department Practitioners
- Recovery Nurses
- Users and Carers Nurses

In 2008 SEAN came under the auspices of NHS ISD and a new multidisciplinary group was formed with representation from professionals involved in the delivery of ECT services, the Scottish Government and the Mental Welfare Commission for Scotland.

SEAN has always encouraged user and carer involvement as it has aspired to deliver the “patient centred” services described in the Healthcare Quality Strategy for NHS Scotland[1]. In doing so the network has invited input from a number of user led organisations as it strives to maintain its patient centred focus. In 2009 a Service Users and Carers Reference Group was established. This user led group works autonomously, with SEAN covering the costs of meetings and travel expenses for up to 20 representatives. In addition SEAN encourages user involvement in the non-academic part of their annual conference which is free to service users and carers.

Again, in keeping with the Healthcare Quality Strategy for NHS Scotland, SEAN aspires to the “Safe” principles outlined in this document. This aim has been met through accreditation visits to all ECT services in Scotland. These visits involve a multidisciplinary accreditation team inspecting each unit against recognised, valid standards developed from guidelines produced by the relevant national professional bodies. Each visiting team is comprised of the SEAN Clinical Coordinator, a Consultant Psychiatrist with responsibility for an ECT service, an ECT Nurse and a Consultant Anaesthetist.

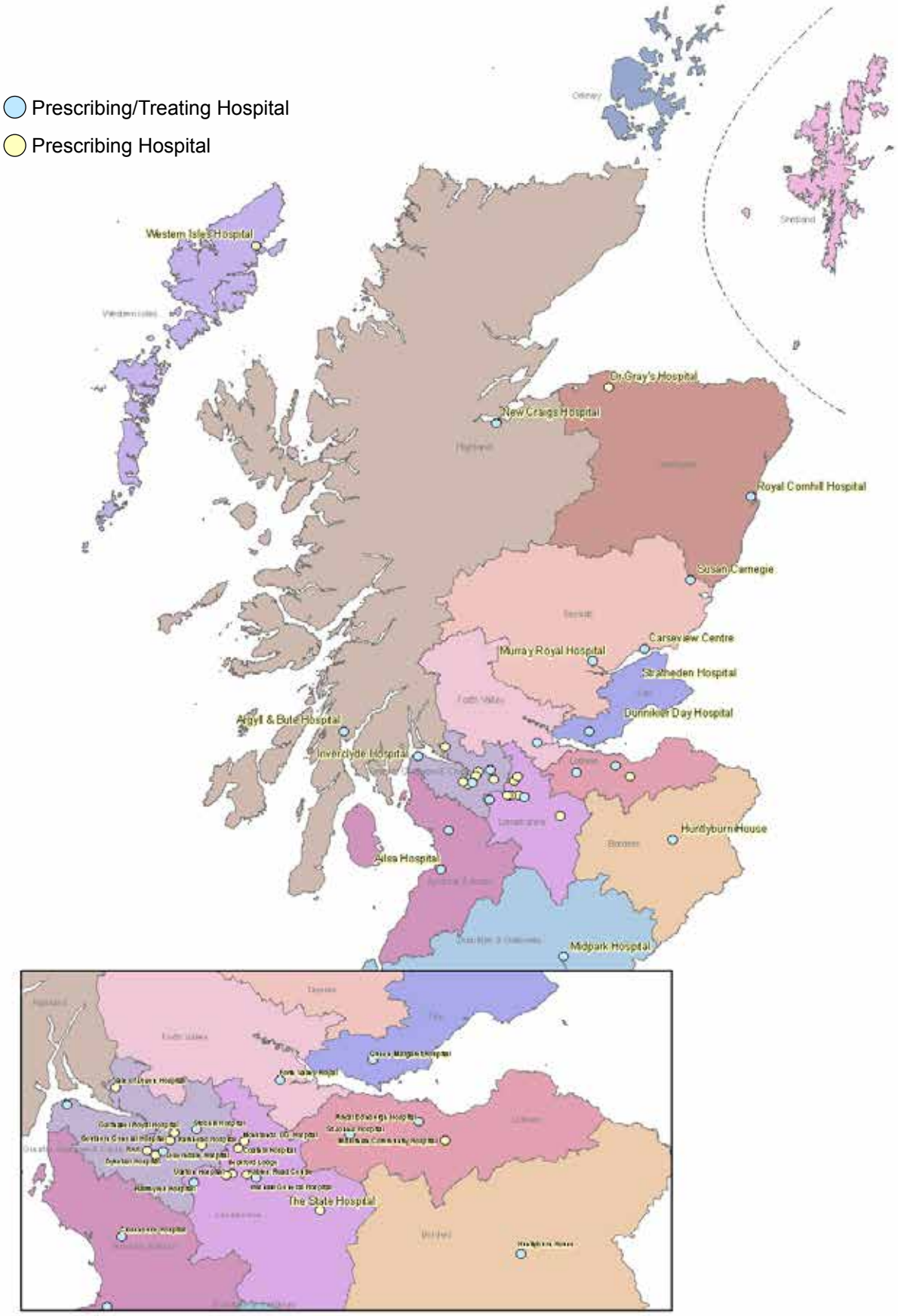
The national Steering Group reviews these standards annually. In doing so SEAN works alongside the Service Users and Carers Reference Group encouraging feedback to ensure that views of patients and relatives are included. SEAN is now coming towards the end of its second round of formal accreditation visits. In addition to these formal visits, a series of more informal, unannounced visits will be taking place to ensure that the quality of service is continued as part of routine day-to-day clinical practice and to verify that any changes recommended at the initial accreditation visit have taken place.

In working towards an improved national service, SEAN is actively involved in promoting and developing educational opportunities to maintain and enhance continuing professional development opportunities for all clinical staff involved with ECT. In 2007 the CONECTS subgroup (Committee of Nurses in ECT in Scotland) was formed through SEAN with the aim of enhancing the quality of care that was given to patients receiving ECT through improved, structured education and informal sharing of good ideas and practice. Initially this group was unfunded, however since joining ISD in 2008 some funding has been secured and the group has been expanded to include all nurses involved in the delivery of ECT (i.e. ECT nurses, Anaesthetic Nurses and Recovery Nurses) with three meetings of the group taking place each year. In addition, through the CONECTS group, a 'LearnPro' e-Learning system for all ward-based escort nurses has been developed and is in the process of been implemented nationally across Scotland. The aim of this module is to increase the knowledge and understanding of ECT for psychiatric nurses in general and thus improve the quality of care delivered.

Following on from the success of CONECTS, a Medics' subgroup was set up at the end of 2012 with representation from psychiatrists, anaesthetists and psychologists. This group looks at clinical practice, as evidenced through the data presented to SEAN, with a view to improving treatment of patients as they move through the ECT service. Further developments include a planned prescribers day open to all doctors who prescribe ECT to expand and update their knowledge on the contemporary clinical practice of ECT.

Further details of the membership of these groups can be found in Appendix A.

Location of ECT Clinics in Scotland[1]



Note:

1. Detailed list of hospitals in Appendix B.

Introduction

This report summarises data that have been collected via an electronic care pathway installed in all ECT treatment clinics in Scotland. Data are collected on every aspect of patient care relating to ECT to ensure compliance with SEAN standards[5].

The data within this report are presented in sections relating to patient characteristics, legal status, diagnosis, details of interventions and clinical outcomes. In addition to this information, there is also a summary table available at the beginning of the report to enable comparison of clinic activity in 2014.

A designated Report Writing Group with representatives from each discipline involved with the delivery of ECT has allowed us to focus on specific areas of interest. This provides clinical staff with more precise information on certain aspects of care and treatment which enables them to evaluate their current practice and potentially improve the quality of patient care.

The current SEAN standards follow the publication of the Royal College of Psychiatrists ECT Handbook (3rd Edition)[6]; the Royal College of Anaesthetists Guidelines for the provision of Anaesthetic Services[7] and the Association of Anaesthetists of Great Britain & Ireland Safety Guidelines on Immediate Post-anaesthesia Recovery 2013[8]. For 2014, we devised a new, more rigorous, accreditation process involving both announced and unannounced visits (described in Section 7).

Data are presented in tables and charts with accompanying text to alert the reader to points of interest and compliance with available national standards where appropriate. The emphasis within this report is on providing a descriptive account of ECT activity while protecting the interests and confidentiality of patients undergoing treatment. To this end, there is a degree of suppression within the report tables and charts in accordance with ISD's Disclosure Control Protocol[9]. We are continuing to work to improve our data collection by working closely with ECT clinics.

Summary and Key Findings

Nineteen centres throughout the whole of Scotland were responsible for the safe delivery of ECT as an effective therapeutic treatment in 2014. A total of 357 patients received ECT through 434 treatment episodes with a median number of 8 treatments per episode.

- The most prevalent primary diagnoses of patients receiving ECT was depression in its various manifestations. The most prevalent single ICD-10 diagnosis was *Depression without Psychosis* (40%).
- The most common indication remains treatment resistance to anti-depressant medication (56%).
- In total, 10% of episodes of ECT were administered as an emergency life saving treatment.
- The majority of treatments (65%) involved patients deemed to have capacity and thus capable of giving informed consent.
- 41% of patients receiving ECT had previously responded well to treatment.
- 22% of all patients receiving ECT had expressed a specific preference for the treatment.
- 75% of patients who completed an episode of ECT showed significant improvement as evidenced by a 50% or greater reduction in MADRS score over the course of treatment.
- 72% of the group with capacity displayed this improvement following treatment, compared with 82% of the group without capacity, possibly reflecting the more severe nature of the illness in this group at the very outset.
- ECT was given to adults of all age groups, with more females to males receiving treatment (68% vs. 32%). This reflects the relative incidence of depressive illness in woman compared with men.
- The percentage of patients from ethnic minorities receiving ECT remains lower (1%) than the percentage in the general population (4%).
- The majority of patients (70%) received just one course of treatment since the SEAN audit began in 2005 whilst a small proportion (4%) received 5 or more treatments since 2005. This would appear to be suggestive of the relapsing nature of depressive illness in these particular patients.
- 96% of treatments involved bilateral ECT, including a small proportion (2%) changing from unilateral to bilateral during the course of the treatment.
- As in previous years the most frequently recorded single side effect remains headache (25%).
- There were a total of 9 critical incidents reported (0.2% of all treatments).

Methods

The Scottish ECT Accreditation Network Annual Report uses records submitted to Information Services Division (ISD) from hospitals providing ECT treatment in Scotland. The database of records is administered by ISD analysts from the Scottish Healthcare Audits service area.

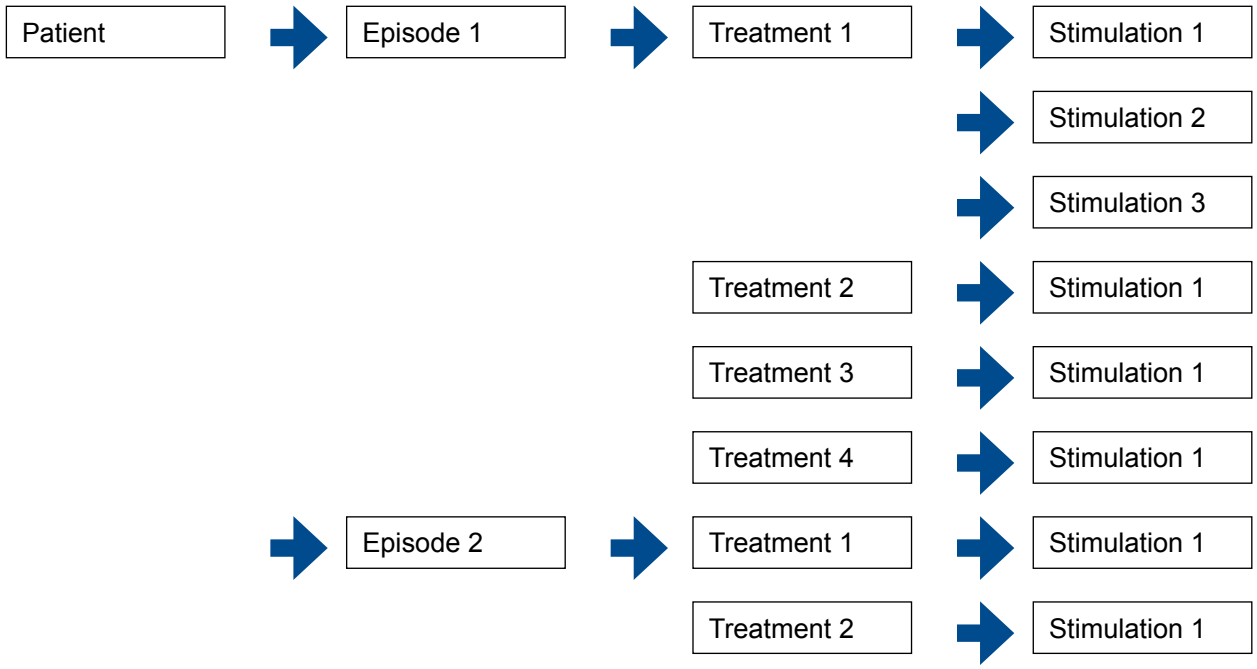
This report presents statistics for ECT episodes beginning in calendar year 2014 as well as some trend data from 2006 onwards.

It is the intention of SEAN to record details of all ECT administered in Scotland. All Scottish ECT clinics participate in the audit and the number of ECT episodes reported by each hospital during 2014 was verified with clinical leads as part of a regular validation process. Some minor differences may remain, however, when compared to local reporting sources.

Some hospitals do not deliver ECT as a treatment on site but may prescribe ECT and refer patients to another hospital for treatment. There are 39 prescribing and 19 treating hospitals represented in this report. Lists of these hospitals, their locations and descriptions of any relevant data issues are provided in Appendix B. Data presented throughout this report relate to hospital of treatment.

The analysis is mainly presented at the level of an ECT episode; an episode being a series of treatments. At the start of Section 1 the analysis reports on the number of patients, while during Section 4 the focus is on numbers of treatments (i.e. scheduled visits to the ECT suite) and stimulations (i.e. instance of administering electric current). The inclusion of a patient, treatment or stimulation within a particular time period is determined by the date of the first treatment within an episode of ECT. Figure 0.1 demonstrates how this data terminology is applied to ECT treatment and to the report itself.

Figure 0.1: SEAN data structure



In 2014, four patients, ten episodes, 34 treatments and 42 stimulations were excluded from the report as duplicate or incomplete records. Following validation, the number of ECT episodes included in this report for 2014 is 434.

Section 5 reports on outcomes of ECT where an episode is complete (i.e. treatment ended because episode completed as planned or discontinued early). When data for this report were finalised (September 2015), 268 (62%) episodes of ECT started in 2014 were identified as complete and are reported in Section 5 (the remaining 166 (38%) episodes were not identified as completed). As well as incomplete records because of ongoing treatment, records may also be incomplete because of data entry issues (data not available or not entered). When reporting on records that are not fully complete, this will be indicated in accompanying commentary or notes.

To prevent identification of patients in centres where very few patients are treated, some numbers have been suppressed within report tables and charts in accordance with ISD's Disclosure Control Protocol[9]. Where small numbers can be calculated from remaining numbers, further values are also suppressed. In charts, small numbers of patients or episodes are suppressed and the values underlying the accompanying bars are replaced with dummy values.

Population figures are based on National Records of Scotland (NRS) (formerly General Register Office for Scotland) mid-year estimates[10].

Section 1 Demographics

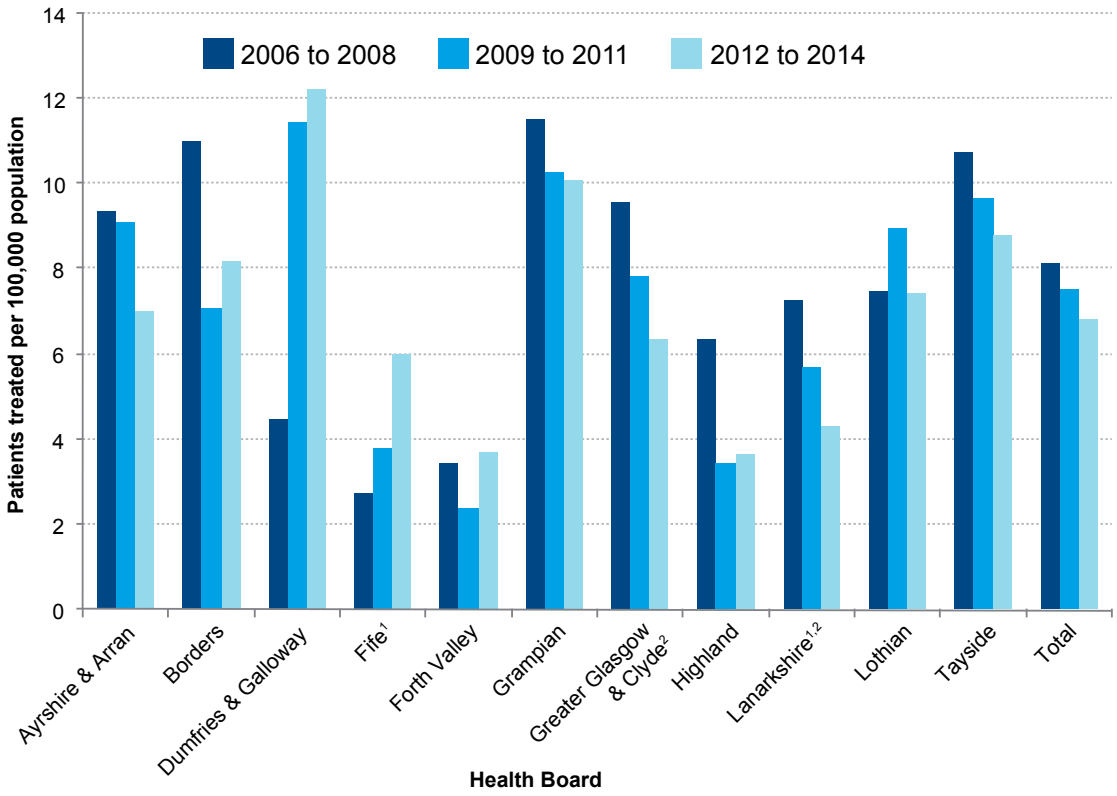
A hospital by hospital summary table of ECT activity in Scotland is presented inside the front cover of this report. The relative year-on-year use of ECT, by Health Board throughout Scotland, is illustrated in Table 1.1.

Patients

Patient data are collected via an electronic care pathway from all centres in Scotland where ECT is delivered. The number of patients per 100,000 population receiving ECT, by Health Board area throughout Scotland, can be seen in Figure 1.1 below. It is important to note that there may be some cross-board activity where, for example, patients from Orkney and Shetland are treated in Grampian and patients from the Western Isles are treated in Glasgow. There continues to be significant variation in practice between Health Board areas although the exact reasons for this remain unclear.

A total of 357 patients were treated with ECT in 2014, with ECT being given to all adult age groups as illustrated in Figure 1.2. The percentage of women to men undergoing ECT (68% to 32%) reflects the relative incidence and prevalence of depressive illness in the community. Patients from ethnic minorities constituted only 1% of the total for patients receiving ECT whereas this group accounts for 4% of the Scottish population.

Figure 1.1: Number of patients treated by Health Board, per 100,000 population (2006 - 2008, 2009 - 2011 & 2012 - 2014)[1]

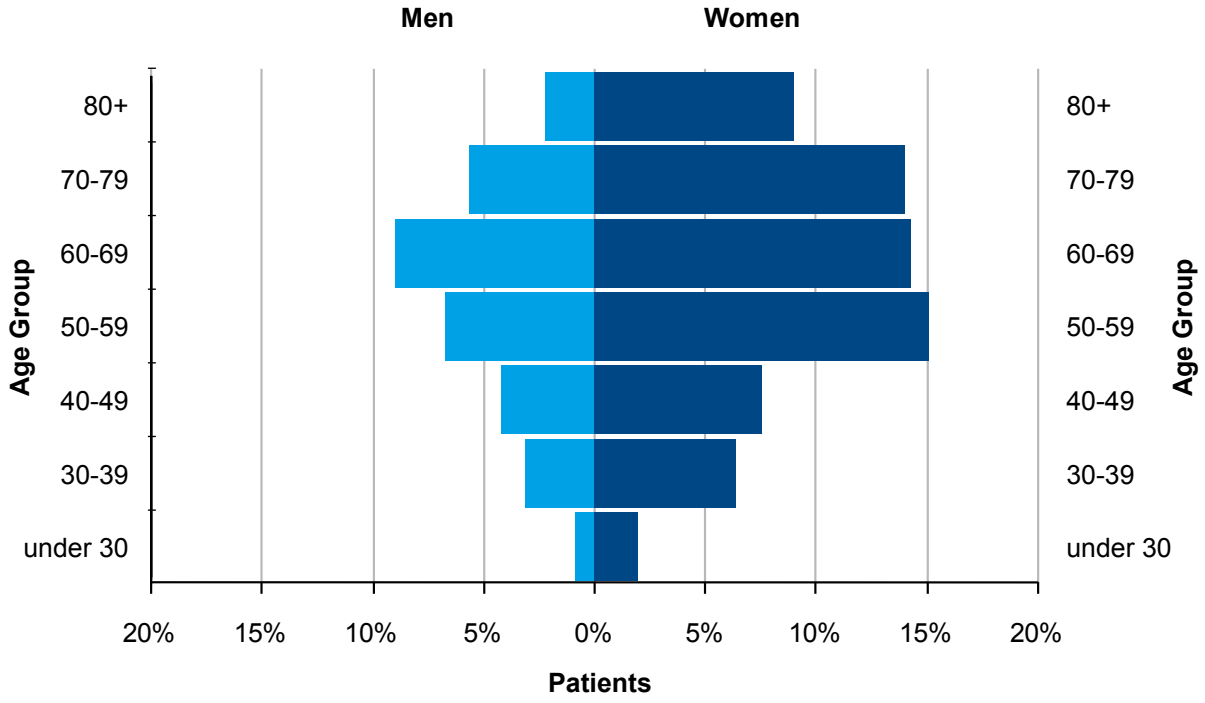


Notes:

1. Data for Dumfries & Galloway, Fife and Lanarkshire are incomplete for 2009 because of data collection problems. See Appendix B.

2. NHS health boards were re-configured from 1st April 2014. The chart uses the 2014 re-configuration throughout. The issue mainly affects Greater Glasgow & Clyde and Lanarkshire. The change in 2014 resulted in an approximate 7% drop in the population estimate for Greater Glasgow & Clyde and an approximate 14% rise in the population estimate for Lanarkshire.

Figure 1.2: Number and % of total patients treated, by age group and gender (2014)



Episodes

A total of 434 episodes of ECT were recorded in Scotland in 2014 involving 357 patients. An episode constitutes a series of individual treatments that were given as part of a course of ECT. As in previous years, the median number of treatments per patient per episode was eight. For the vast majority of patients this involved administration on ECT on a twice weekly basis (93%) as illustrated in Table 1.2.

Figure 1.3: Number of episodes, by year (2006-2014)

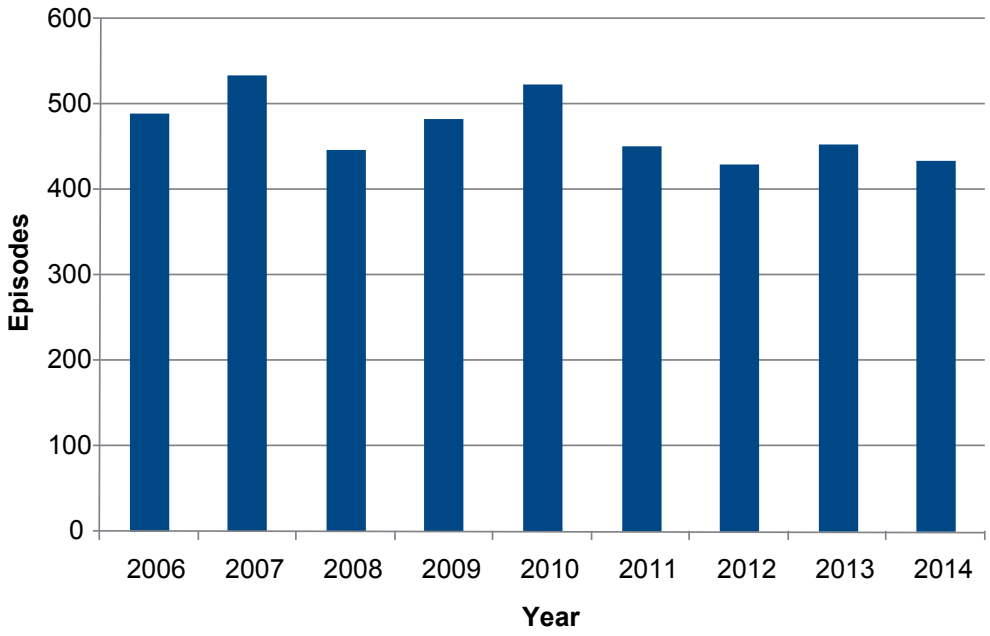


Table 1.1: Number of total episodes and treatments, by hospital (2010-2014)

Hospital	2010		2011		2012		2013		2014	
	Epi	Treat	Epi	Treat	Epi	Treat	Epi	Treat	Epi	Treat
Ailsa & Crosshouse	37	307	48	445	40	285	34	283	30	271
Argyll & Bute	*	15	*	27	17	114	10	73	*	41
Carseview	28	256	20	201	18	193	18	193	16	138
Dr Gray's	12	91	0	0	0	0	0	0	0	0
Dunnikier	11	132	*	68	0	0	0	0	0	0
Forth Valley Royal	*	*	*	47	*	33	18	194	15	160
Hairmyres	26	224	15	111	14	99	18	158	18	151
Huntlyburn House	10	114	12	164	*	62	*	54	16	127
Inverclyde	22	391	13	118	14	116	19	250	14	140
Leverndale	44	361	32	315	38	346	29	316	29	312
Midpark Hospital	22	185	20	151	23	199	25	235	27	190
Murray Royal	29	211	14	107	14	116	24	226	26	233
New Craigs	14	104	*	79	*	37	*	25	*	51
Queen Margaret	*	79	17	231	27	315	24	243	24	255
Royal Alexandra	0	0	0	0	0	0	0	0	0	0
Royal Cornhill	75	545	77	600	72	598	87	698	69	519
Royal Edinburgh	64	498	64	971	50	444	51	506	47	510
St John's	25	202	24	197	23	156	24	186	31	239
Stobhill	61	497	41	301	34	292	40	345	43	329
Susan Carnegie	*	45	*	62	*	90	*	96	*	69
Wishaw	24	155	19	151	22	150	15	144	*	59
Total	**524**	**4,421**	**451**	**4,346**	**429**	**3,645**	**454**	**4,225**	**434**	**3,794**

Notes:
Epi = Episodes
Treat = Treatments
* Indicates values that have been suppressed because of the potential risk of disclosure.

1. The number of treatments may vary annually depending on each hospital's use of continuation/maintenance ECT.

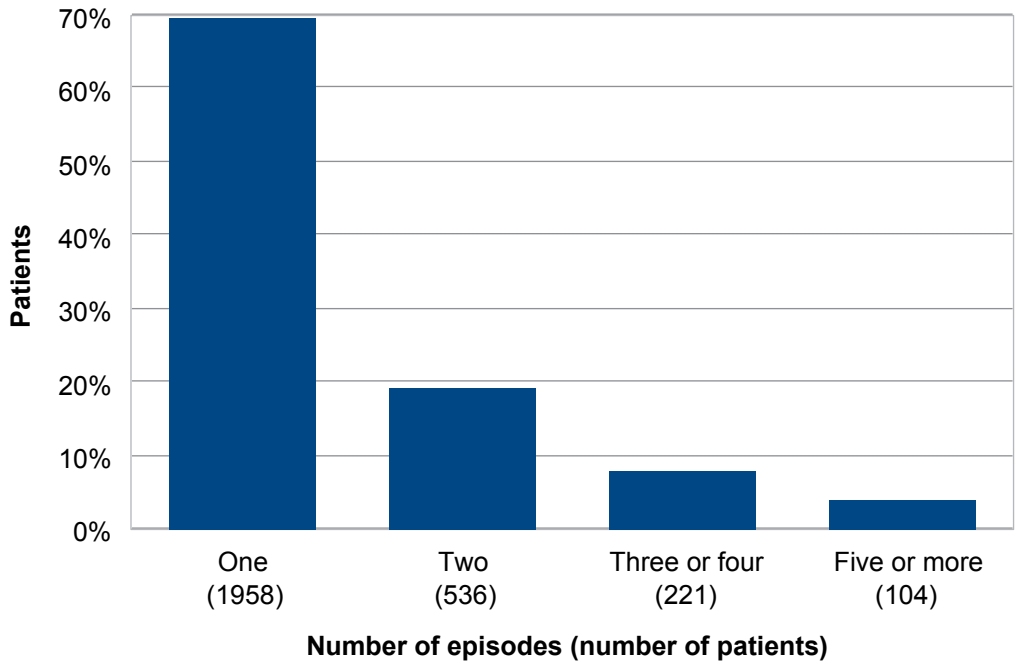
Table 1.2: Number and % of total episodes, by episode treatment frequency (2014)[1]

Treatment frequency	Number of Episodes	% Episodes
Weekly	6	2.3
Twice weekly	241	92.7
Thrice weekly	0	0.0
Other	13	5.0
Total	**260**	**100**

Note:
1. Treatment frequency information was missing for 8 out of 268 completed episodes (3%).

Figure 1.4 shows the number of treatment episodes per individual patient since the database became fully operational in 2005. It can be seen there is a small number of patients who required more than one episode (course of treatment) reflecting the relapsing nature of depressive illness.

Figure 1.4: Number and % of total patients who had multiple treatment episodes between (2005-2014)[1]

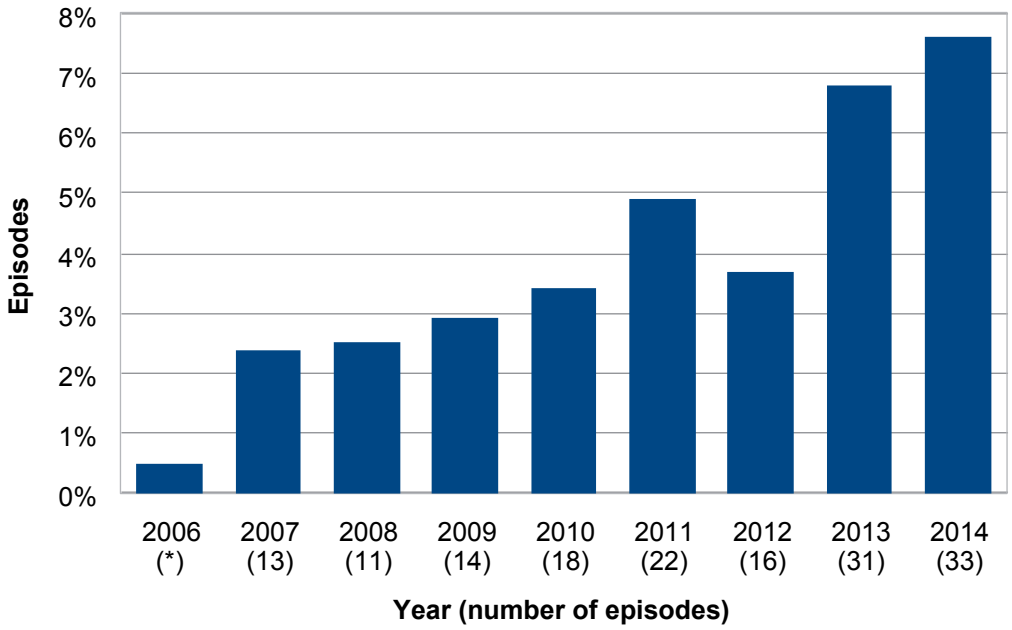


Note:
1 This figure will underestimate the true number of ECT episodes for patients because the database was not operational before 2005.

The effects of ECT may be short lived and, as a result, it is recommended that following a successful episode of ECT patients are commenced on some form of treatment to prevent relapse. On occasions, drug and psychological therapies do not work and these patients appear to benefit from further continuation ECT, to maintain improvement, or maintenance ECT, to prevent relapse. The number of patients undergoing continuation or maintenance ECT in Scotland remains low as

a percentage of total episodes (Figure 1.5) although it can be clearly seen that there has been a significant increase over the years in patients receiving continuation and maintenance ECT. This, in all likelihood, reflects increasing recognition of the use of ECT as a safe and effective treatment in the prevention of relapse of illness in addition to its established role in treating the acute phase of illness. In line with best international practice SEAN are exploring ways to further audit continuation/ maintenance ECT in more detail.

Figure 1.5: Number and % of continuation/ maintenance episodes, by year (2006-2014)[1]



Notes:

* Indicates values that have been suppressed because of the risk of disclosure. Dummy values have been inserted in bar chart categories where information is suppressed.

1. Continuation/maintenance episodes are not recorded consistently throughout Scotland. Continuation/maintenance episodes have therefore been determined methodically based on the number and frequency of treatments in an episode.

Section 2 Consent and Legal Status

All patients who receive ECT must either give informed consent or be protected by the legal safeguards in legislation. Relevant legislation is encompassed within:

- The Mental Health (Care and Treatment) (Scotland) Act 2003 (the 2003 Act)
- The Adults with Incapacity (Scotland) Act 2000 (the 2000 Act)

Consent must be in writing and be based on an understanding of the treatment, the reasons why it is being offered and possible risks and side effects. If the patient is not capable of providing informed consent, treatment must be authorised by an independent psychiatric opinion. In urgent situations, the legislation allows for ECT to be administered before an independent opinion can be obtained. Patients who are capable of providing informed consent but who refuse the treatment cannot be given ECT. The electronic care pathway was designed to ensure that ECT can only be given if the correct legal and consent documentation is provided. The relevant legal and consent options are shown in Table 2.1.

Table 2.1: Legal status and consent for ECT

Capacity to consent	Legal status	Treatment authorisation
Capable	Informal	Written consent
	Detained	Written consent with capacity certified on form **T2**.
Incapable	Informal	Second opinion under section 48 of the 2000 Act ('**s48**'). This is not used if the patient resists or objects.
	Detained – not resisting or objecting	Independent 'best interests' opinion under the 2003 Act recorded on form T3 (referred to as '**T3A**').
	Detained – resisting or objecting	As above but with indications limited to situations of necessity (referred to as '**T3B**').
	Urgent (including patients detained under emergency certificates)	Treatment given in advance of an independent opinion under either the 2003 or 2000 Act (common-law principle of necessity). Signed case note entry from prescribing practitioner that ECT is required as an emergency, preferably with informal local second opinion. **T4** form (record of treatment) subsequently sent to MWC.

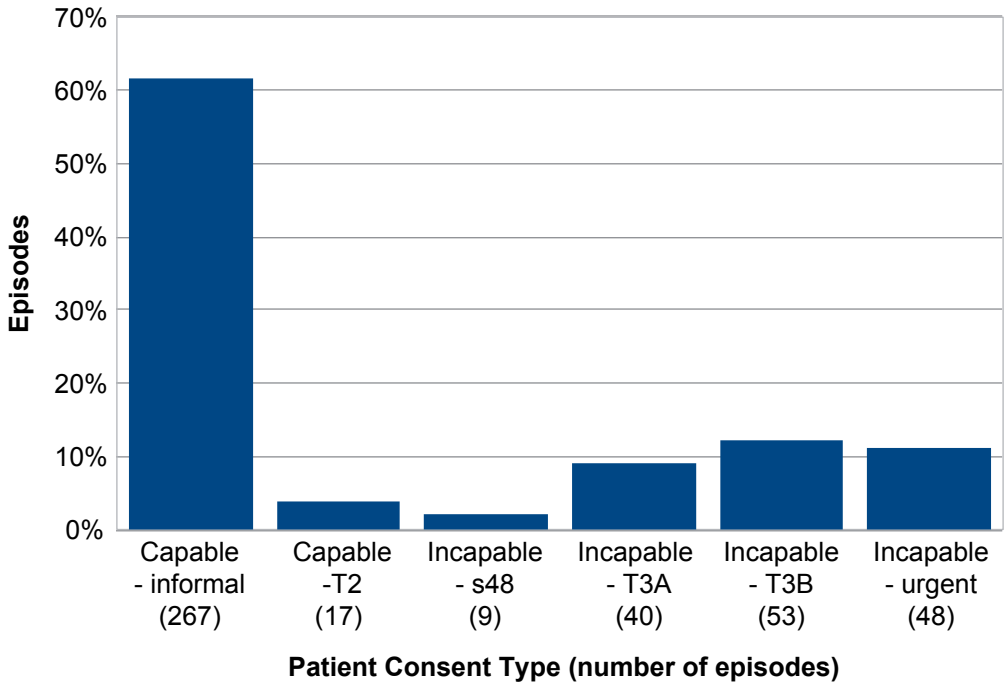
The Mental Welfare Commission for Scotland (MWC) arranges all independent opinions and is informed of treatment given under urgent situations. For more information, see www.mwcscot.org.uk

Figure 2.1 shows consent and legal status at the beginning of treatment. Informal (voluntary) patients who give informed consent are the largest group of people receiving ECT. A small percentage of patients detained under the 2003 Act were also considered to have retained the capacity to consent to ECT. In total, 65% of all episodes of treatment with ECT had the patient's informed consent.

Of the 150 episodes of ECT where the patient could not consent, 48 (32%) began with urgent treatment given to save life, prevent serious deterioration or alleviate serious suffering. This shows that many people who lack capacity to consent to ECT are seriously unwell.

In relation to all patients treated under the 2003 Act with the authority of a T3 form, 57% of patients who lacked capacity were also resisting or refusing.

Figure 2.1: Number and % of total episodes, by patient consent at episode entry (2014)



The gender and age of patients with and without capacity at the start of an episode of ECT is documented in Table 2.2.

For those patients either with capacity or without capacity the proportion of males and females is very similar in each group.

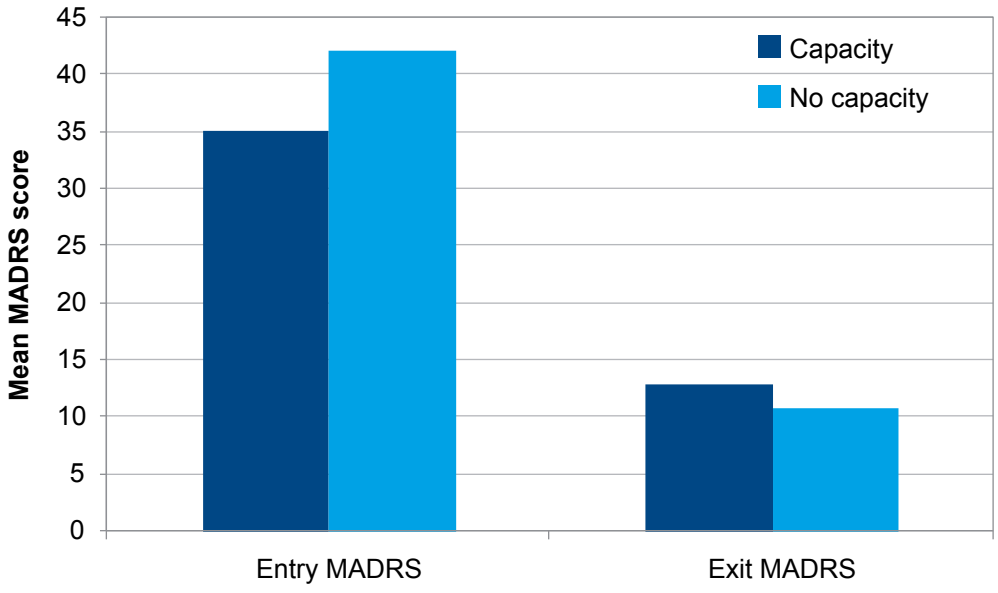
Older patients are more likely to lack capacity to consent to ECT. This may be due to the greater effect of severe depression on cognitive functions such as memory and reasoning ability for older people.

Table 2.2: Percentage of episodes by patient gender and capacity, and age by capacity (2014)

		Capacity	No capacity
Gender	Male (%)	66.9	33.1
	Female (%)	64.8	35.2
	Overall (%)	65.4	34.6
Age	Mean	58.0	67.3
	Median	59	69
	Standard Deviation	15.3	14.4

We have shown data on benefit as measured by the MADRS[2] performed before and at the end of a course of ECT (Figure 2.2). This figure indicates that patients who lack capacity to consent are more severely depressed and have a greater overall improvement in the MADRS following ECT. This demonstrates the importance of making ECT available to patients who are too unwell to be able to give fully informed consent.

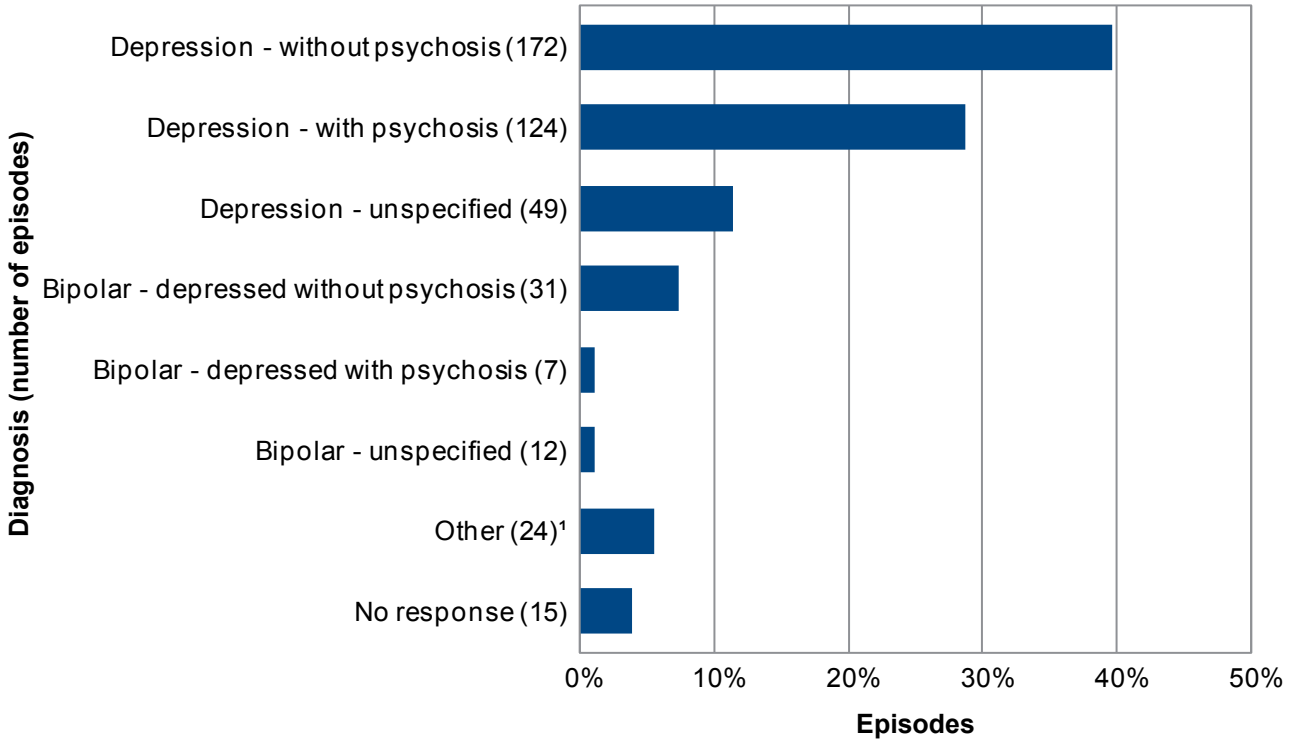
Figure 2.2: Mean MADRS score before and after treatment, by patient capacity (2014)



Section 3 Diagnosis and Indications for Treatment

Figure 3.1 shows the primary diagnosis for each episode in 2014 based on 4-character ICD 10 codes[11]. The majority of patients who received ECT were suffering from symptoms of depression, either in the context of a depressive or bipolar disorder. The two most common diagnoses were depressive episode without psychosis (39.6%) and depressive episode with psychosis (28.6%). Patients for whom psychosis status was specified were 3 times more likely to lack capacity when psychotic symptoms were present. Psychotic symptoms are often taken as a proxy for severity and can lead to significantly impaired decision making abilities.

Figure 3.1: Number and % of total episodes, by primary diagnosis (2014)



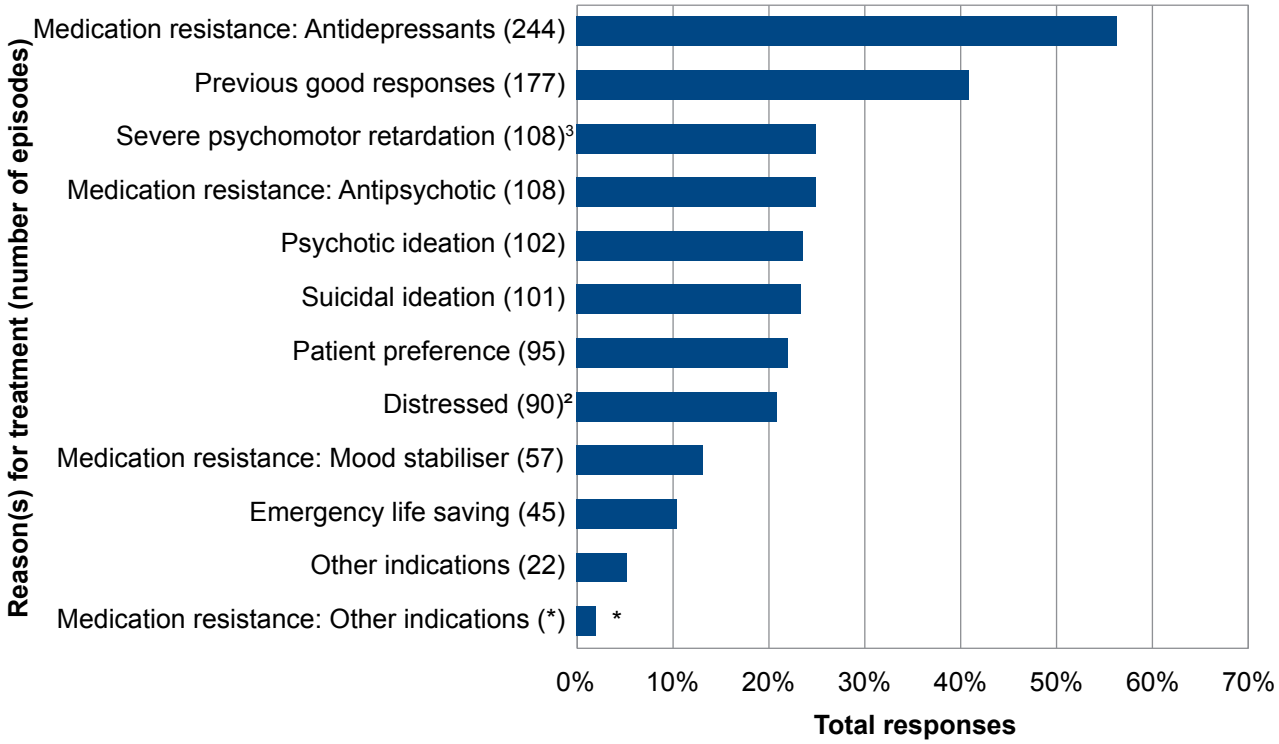
Notes:

1. The most common diagnoses in the 'Other' category were: Schizophrenia & Schizoaffective disorders and these diagnoses accounted for almost two thirds of this group. Additional diagnoses included: Mental and behavioural disorders associated with the puerperium, not elsewhere classified; Dissociative [conversion] disorders; Acute and transient psychotic disorders; Obsessive-Compulsive disorder; Organic mood disorders.. Cases where the patient had a primary diagnosis which would not routinely be treated with ECT were validated with clinical teams using current guidelines from RCPsych and NICE and found to have appropriate indications for treatment.

ECT guidelines and depression guidelines produced by produced by the National Institute of Health & Clinical Excellence (NICE)[12,13] advise that ECT should be used when the illness is severe and life threatening, when a rapid response is required, or when other treatments have failed. The SEAN audit asks clinicians to record as many reasons for treatment as apply to each treatment episode (Figure 3.2). In line with these recommendations, the main reason for prescribing ECT was for antidepressant-resistant illness (56.2%). Similarly, illnesses resistant to antipsychotics (24.9%) or mood stabilizers (13.1%) were also widely reported. Severity of illness was also a deciding factor in many cases, illustrated by the reason for treatment being frequently recorded as

'severe psychomotor retardation' (24.9%), 'psychotic ideation' (23.4%), 'suicidal ideation' (23.3%) or 'too distressed to await response to medication' (20.7%). Use of ECT as an emergency life-saving procedure (e.g. when the patient's physical condition had deteriorated markedly because they refused food and fluids) was recorded in 10.4% of episodes. Other common reasons for choosing ECT included previous good response (40.8%) and patient preference (21.9%).

Figure 3.2: Number and % of total episodes, by reason(s) for treatment (2014)[1]



Notes:
1. Figures total more than 100% because of the multiple response nature of the variables examined.
2. Distressed' is an abbreviation of 'Too distressed to await response to medication'.
3. Refers to the mental and physical slowing that can occur in severe depression.

Section 4 Treatment Details

There continues to be little variation from year to year in the average number of treatments (Table 4.1) administered to patients during an episode of ECT. In 2014 the median number of treatments per episode was eight.

Table 4.1: Mean and median treatments per episode and total treatments (2006-2014)

Year	Mean Treatments per Episode	Median Treatments per Episode	Total Treatments
2006	7.9	8	3,860
2007	7.7	7	4,089
2008	7.8	8	3,497
2009	8.9	8	4,297
2010	8.4	8	4,421
2011	9.6	8	4,346
2012	8.5	8	3,645
2013	9.3	8	4,225
2014	8.7	8	3,794
2006-2014	**8.5**	**8**	**36,174**

Our results show an overwhelming preponderance of ECT being delivered using a bilateral electrode placement. This was the case in 94% of patients, the figure rising to 96% when patients who had their treatment modality changed (e.g. starting on unilateral but changing to bilateral) were taken into account. Whilst bilateral ECT is recognised to cause more cognitive impairment than unilateral, patients receiving unilateral ECT will require a greater number of treatments as this modality is less effective than bilateral. The consultant responsible for administering ECT thus has to make a clinical decision on an individual patient basis taking into account the relative merits of the different electrode placements. Current practice is entirely acceptable within national guidelines[6].

ASA score

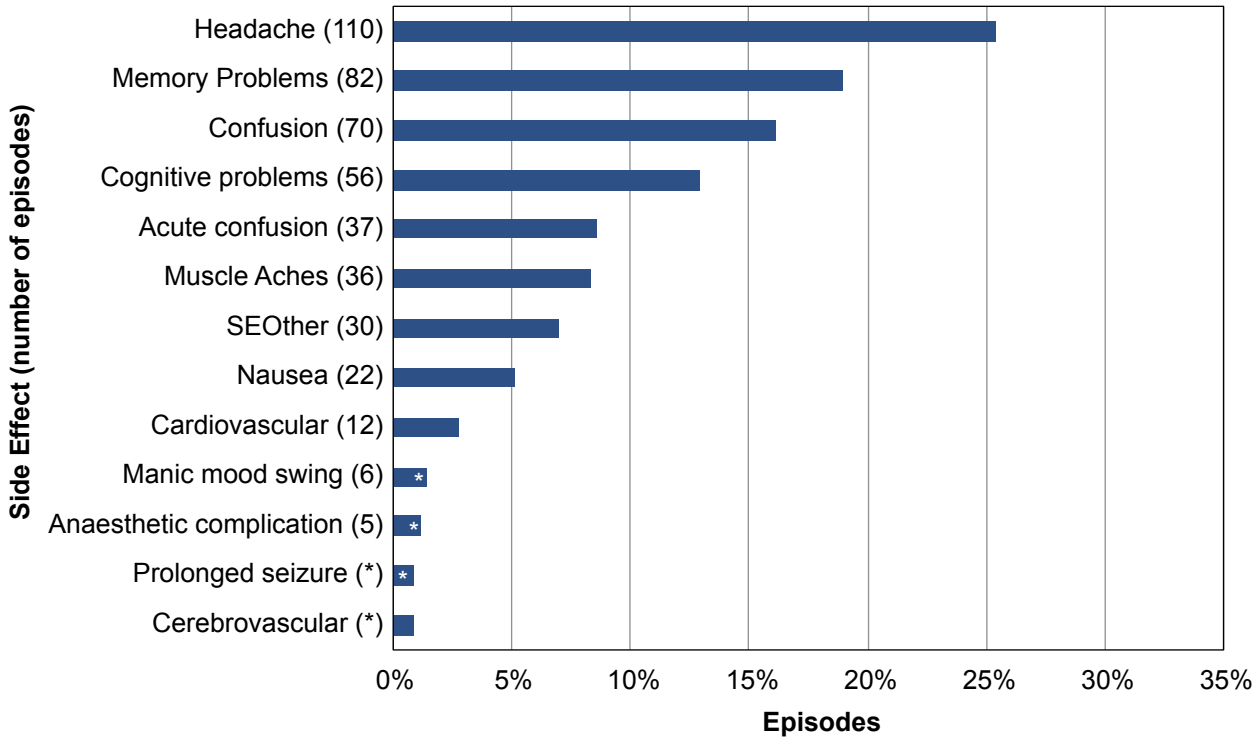
Before each episode the patient's general health is summarised according to the American Society of Anaesthesiologists' Classification of Physical Status ('ASA Score')[14]. In the early years ASA Score was recorded infrequently in the database, possibly because the ASA field was missing from the paper version of the care pathway. Recording continues to improve and in 2014, 87% of records included an ASA score (85% in 2013, 83% in 2012, 81% in 2011, 73% in 2010).

This continual improvement in the provision of evidence that patients have been assessed prior to anaesthesia is an important step relating to the **"Safe"** ambition within the Healthcare Quality Strategy.

Side effects

As part of the Standards[5] recommended by SEAN, patients are reviewed after every second treatment which includes enquiries as to side effects. Data were available for 94% of treatments and showed that in 55% of episodes patients complained of side effects, a figure similar to previous years. The side effects are detailed in Figure 4.1 where it can be seen that the most common side effect complained of was headache, affecting 25% of patients with the second most common complaint being memory problems, affecting 19% of patients.

Figure 4.1: Prevalence of specific side effects experienced within episodes (2014)



Notes:

* Indicates values that have been suppressed because of the risk of disclosure. Dummy values have been inserted in bar chart categories where information is suppressed.

1. Figures total more than 100% because of the multiple response nature of the variables examined.
2. Cognitive side effects are recorded under four headings:
   Acute confusion – defined as treatment emergent delirium, where the patient experiences confusion for a short period of time immediately on wakening after treatment – recorded by ECT staff.
   Confusion – reported by the patients and occurring between treatments (e.g. on return to the ward).
   Memory problems – short lived autobiographical memory impairment (e.g. names, events) reported by the patient.
   Cognitive problems – problems with orientation, attention or concentration that were reported by the patients or noted by staff.

Anaesthetic induction agents

The relative percentage of patients receiving propofol, etomidate and thiopentone for induction of anaesthesia changed little from 2006 to 2010. 2011 saw an increase in the use of propofol and this trend, whilst slowing, has continued in 2014, with 88% treatments taking place after induction of anaesthesia with propofol. Each agent has advantages and disadvantages in the context of ECT. Each may have different effects on seizure threshold or seizure duration, thus consistency within an episode is probably more important than choice of individual agent.

Table 4.2: Use of anaesthetic induction agents for ECT, by year (2006-2014)

Year	Propofol		Thiopentone		Etomidate	
	n	%	n	%	n	%
2006	2,193	56.8	295	7.6	1,480	38.3
2007	2,561	62.6	343	8.4	1,416	34.6
2008	2,352	67.3	291	8.3	1,011	28.9
2009	2,568	59.8	387	9.0	1,603	37.3
2010	2,604	58.9	428	9.7	1,368	30.9
2011	3,346	77.0	180	4.1	586	13.5
2012	3,016	82.7	198	5.4	249	6.8
2013	3,513	83.1	233	5.5	338	8.0
2014	3,347	88.2	157	4.1	259	6.8
2006-2014	**25,500**	**70.5**	**2,512**	**6.9**	**8,310**	**23.0**

Muscle relaxants

A recognised side effect of suxamethonium is muscle aches ('suxamethonium myalgia'). Prior administration of a small dose of non-depolarising muscle relaxant ('pre-curarisation') reduces the incidence. The overall incidence of suxamethonium myalgia reported to SEAN (3% in 2014) is lower than in many published studies[15], presumably reflecting the predominantly elderly patients receiving ECT and the use of relatively small doses of suxamethonium. In patients receiving ECT in Scotland the incidence of suxamethonium myalgia is less in those patients who have been pre-curarised, although this year (unlike previous years) the difference was not statistically significant (that is the difference could have occurred by chance).

Table 4.3: Number and % of treatments by patient experienced muscle aches and pre-curarisation (2014)[1]

Muscle Aches	Patient Precurarised				
	No		Yes		Total
	n	%	n	%	
No	1,584	96.8	58	93.5	1,643
Yes	53	3.2	4	6.5	56
Total	**1,637**	**100**	**62**	**100**	**1,699**

Notes:
1. This analysis excludes treatments where side effects were not assessed.

Critical incidents

A critical incident is an event that could have, or did, result in an adverse outcome. For example, harm to patient (e.g. deterioration in vital signs, prescribing errors), to staff or other people in the vicinity (e.g. assault). Staff are encouraged to report 'critical incidents' both on local systems (e.g. Datix) and in the SEAN database. The emphasis within SEAN is on establishing facts, with a view to preventing similar events, rather than apportioning blame. ECT teams are strongly advised to have a team meeting to discuss the incident, examine if it was preventable and identify actions required to minimise the risk of it occurring again.

In 2014 there were 12 critical incidents reported within the initial data submitted. Subsequent enquiries by members of the SEAN Steering Group determined that only 9 of these fitted the criteria for a critical incident. SEAN reviewed the outcomes of all critical incidents reported in 2014.

Table 4.4: Number and % of total treatments involving a critical incident (2014)

Critical Incident	Number of Treatments	% Treatments
No	3,785	99.8
Yes	9	0.2
Total	**3,794**	**100**

Section 5 Outcomes

This section describes the results of completed ECT treatment using predefined assessment tools. It also reports on ECT treatment episodes which discontinued (ended before completion). It excludes episodes which were ongoing at the end of 2014.

61.8% of episodes (268 out of 434) were completed as planned or discontinued. Rating scales were completed at entry and exit for 93% of these, which is an improvement on data collection in 2013 which is an improvement on data collection in 2013 for MADRS but a slight reduction for CGI.

The Montgomery Asberg Depression Rating Scale (MADRS)[2] rates depression severity and detects change associated with treatment. While scores may range from 0 to 60, higher scores indicate more severe depression.

Entry and exit MADRS scores were available for 93% of completed or discontinued episodes. Figure 5.1 shows the change in median MADRS score by diagnostic category for the time period 2010-2014. The median score for all diagnosis was reduced from 38 to 9 after ECT. Those patients who had psychosis as a symptom of their illness appeared to show the greatest improvement after ECT.

76% of patients showed a 50% or greater reduction in the MADRS score (Figure 5.2).

Figure 5.1: Median MADRS score before and after treatment, by diagnosis (2010-2014)

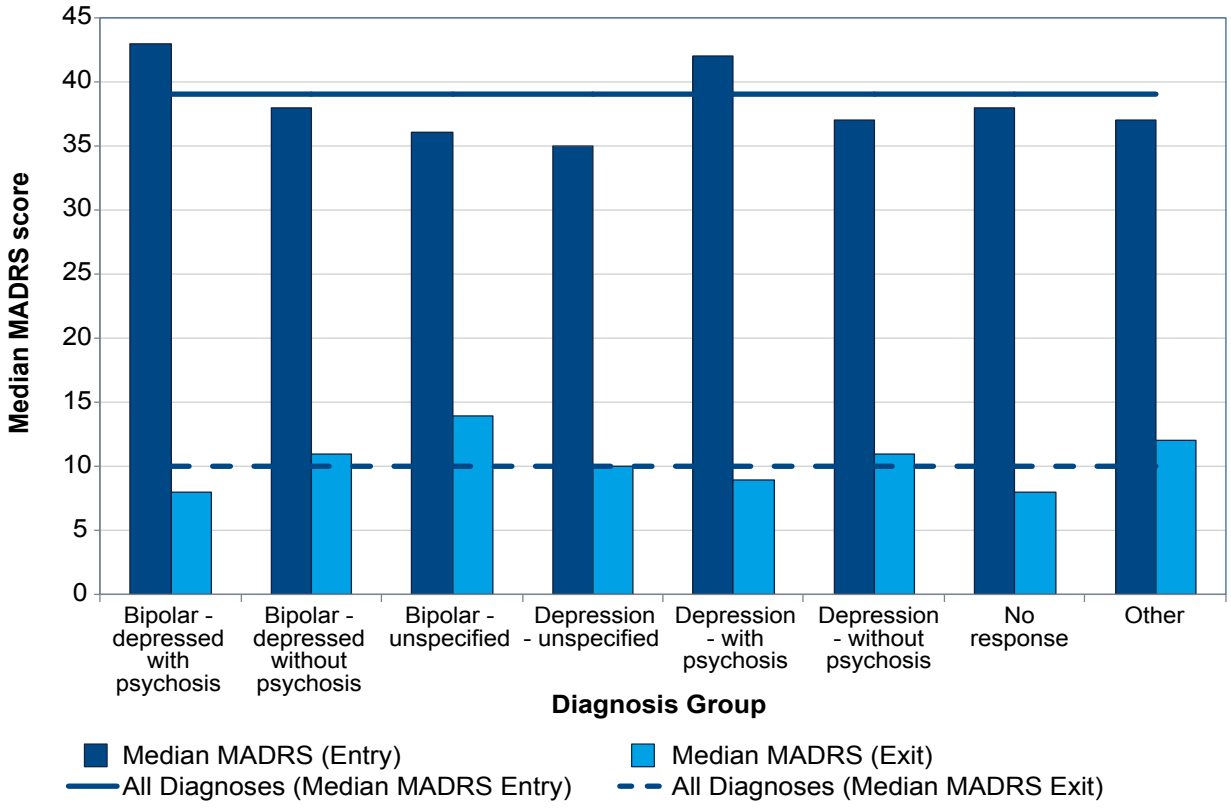
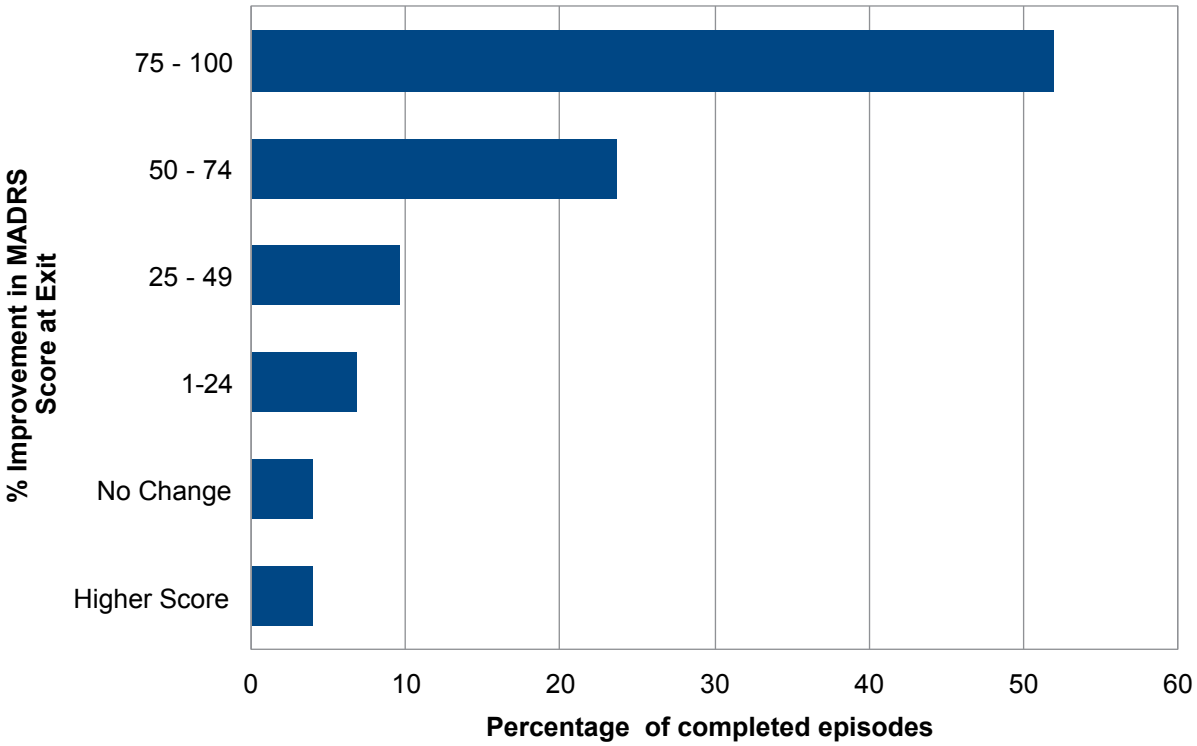


Figure 5.2: Percentage improvement in MADRS score (2014)

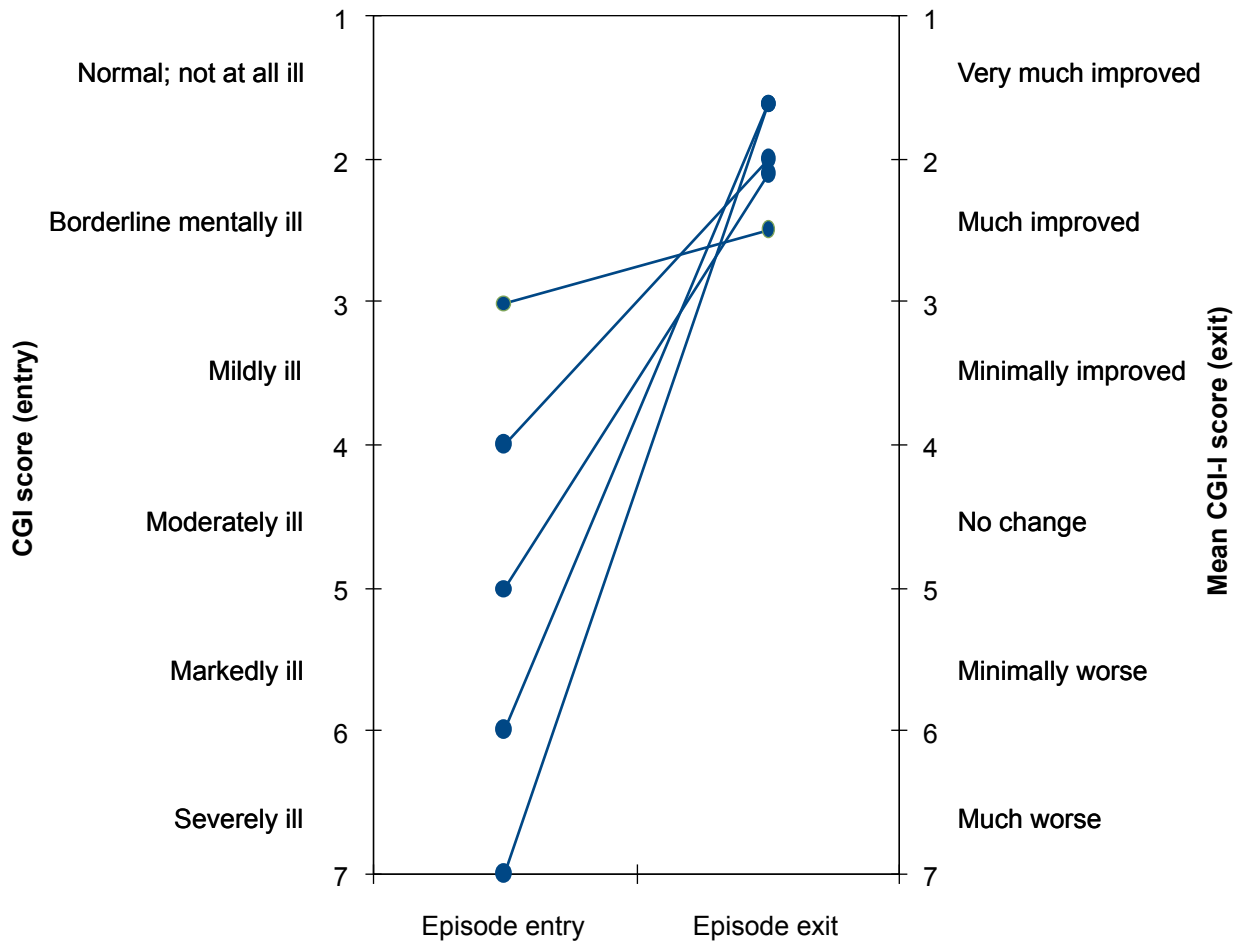


Clinical Global Impression (CGI)[3] rates severity of illness on entry and improvement on exit. It allows a clinician to rate a patient whatever their mental health problem. CGI has a 7 point rating for severity from "normal" = 1 to "among the most severely ill" = 7. The CGI improvement scale rates change on 7 points with "very much improved" at one extreme, "very much worse" at the other extreme and "no change" at the middle point. CGI scores, on entry and exit, were available for 83% of completed or discontinued episodes, excluding those involving continuation/ maintenance treatments.

80% of patients were rated as "markedly, severely or extremely ill" on entry and 78% were rated as "much improved" or "very much improved" on exit. Figure 5.3(a) summarises the general trend for patients' CGI ratings to improve with treatment and for those who are most unwell to experience the greatest improvement.

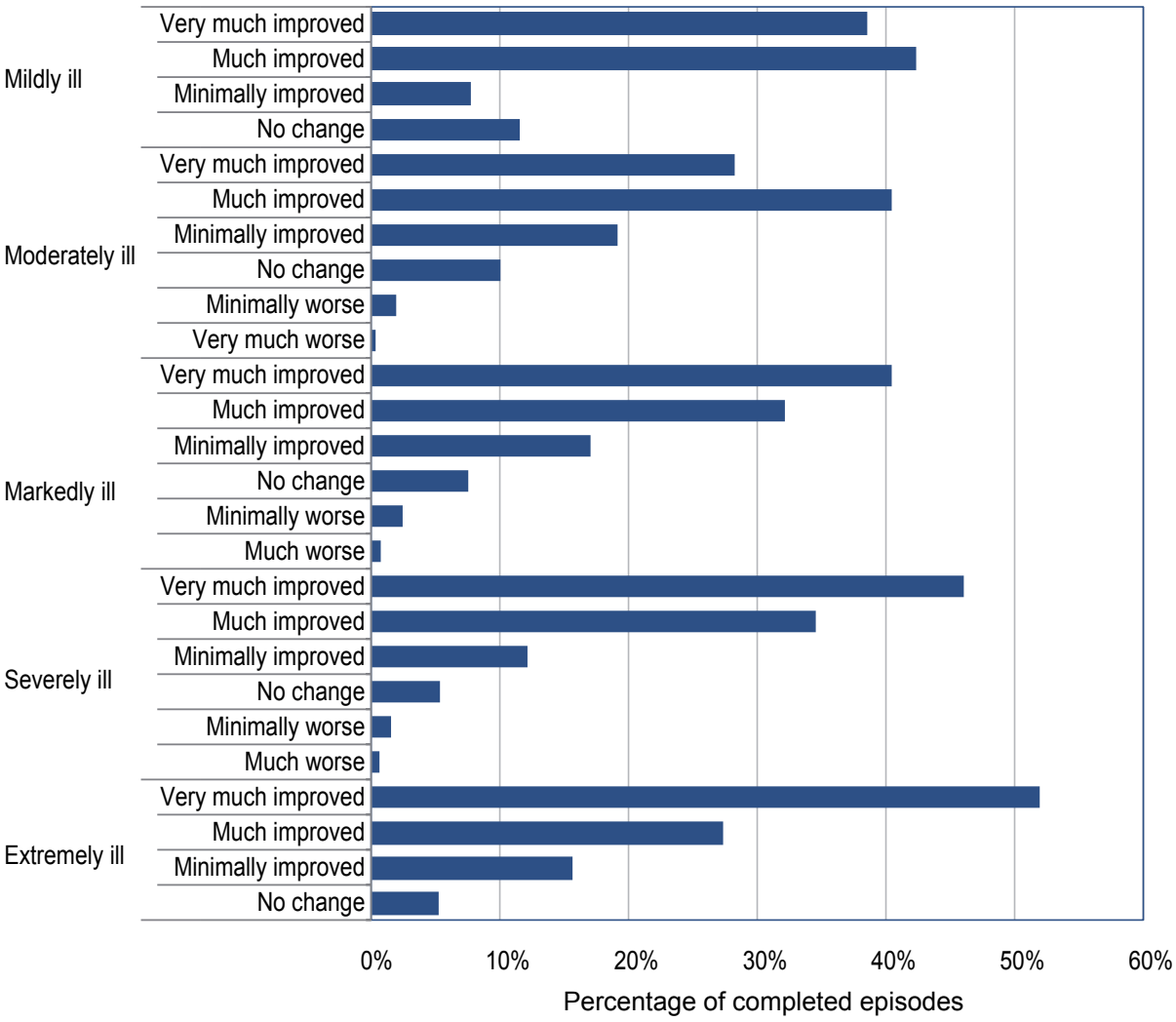
Figure 5.3(b) provides further insight by showing the proportions of patients in each CGI-I category on exit by their respective CGI category on entry. The larger proportions appear in the improvement categories and this is particularly among those patients who are categorised as markedly to severely ill at the beginning of their treatment.

Figure 5.3a: CGI score before treatment by mean CGI-I score after treatment (2014)



Notes:
1. Episodes where the patient was receiving continuation treatment are excluded.
2. CGI score categories with fewer than five responses are excluded.

Figure 5.3b: CGI category before treatment by CGI-I category after treatment (2010-2014) for patients who are mildly ill to extremely ill

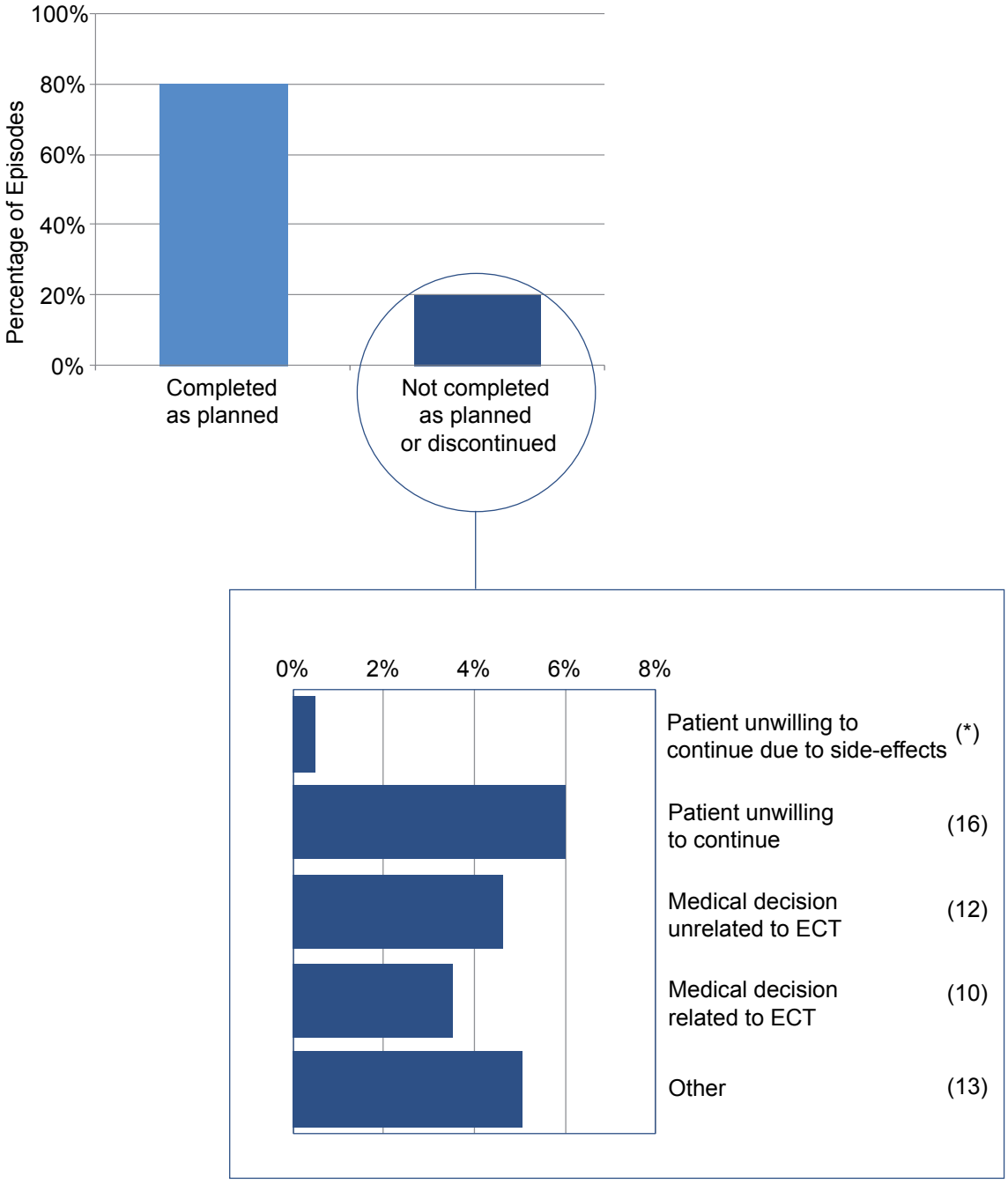


Notes:

1. Possible CGI-I categories are: Very much improved/ Much improved/ Minimally improved/ No change/ Minimally worse/ Much worse/ Very much worse.
2. The absence of a category from the chart indicates there were no patients in that category.
3. Chart based on completed episodes with complete CGI entry and exit scores.

Figure 5.4 shows the reasons for discontinuing as notified to SEAN, with 6.3% of completed episodes stopped due to medical considerations and 7% stopping due to the patient's decision to do so. Approximately 80% of episodes were completed as planned. This suggests that ECT remains a well-tolerated treatment.

Figure 5.4: Percentage (and number) of episodes completed as planned or discontinued, by reason for discontinuation (2014)



Section 6 Service Users and Carers Reference Group

Organising reference Group meetings over the last 12 months has been challenging, mainly because of the many other commitments and demands the people who volunteer their time to the reference group face, but also the many commitments Linda Cullen at SEAN faces in ensuring that ECT treatment in Scotland meets the high standards set by the SEAN.

One of the difficulties is attracting members to this group; however it remains extremely important that the SEAN continues to have a strong service user and carer voice that is able to explore ways to ensure that ECT treatment in Scotland has a caring, patient centred approach. We look to those with direct contact with service users and carers to encourage people to think about joining the reference group and there has been some excellent development work done in this area by ACUMEN this year.

As always ECT remains a sensitive and challenging area of mental health treatment, particularly in terms of perception in the general public, the media and even amongst health care professionals. Misleading information about ECT can be upsetting and distressing for service users and families and we have a duty to ensure that accurate, easy to understand information is made widely available.

ECT is most widely used to treat depression, particularly where the depression is severe and has a serious impact on the person, but we have to remember that the majority of people treated for depression or any other mental health problem are very unlikely to be prescribed ECT treatment. Even when ECT treatment is used, it is with informed consent for the majority of patients. That said there remain concerns that where ECT is used without informed consent, it is done so appropriately and legal under the safeguards provided in legislation. We acknowledge the important role that the Mental Welfare Commission has to play in that, but would welcome greater discussion on some of the issues around informed consent or treatment without consent.

Up to date knowledge and education is crucial to ensure that clinical staff are able to deliver the highest standards of care and we are particularly proud of the pivotal role that the Reference Group played in the SEAN launching the UK's first online national ECT LearnPro module for ward and escort nurses. It is encouraging that since the module went live on 1st April this year to date, more than 874 nurses have completed and passed the module and over 2,726 more are in the process of completing it. Considering this is not a mandatory learning module this is a very impressive uptake. This should ensure that any patient undergoing ECT treatment is able to be properly supported by ward and escort nurses throughout their course of treatment. We also welcome the introduction of an annual prescribers training day, the first of which was in September this year. The aim of the training day was to further educate psychiatrists with the latest evidence on all aspects of ECT to ensure best practice. The training event was attended by over 70 psychiatrists and the feedback on the content was excellent. The plan is to run this course annually and augment it with a further LearnPro module for psychiatrists which the Reference Group will contribute to.

Both the short and long term effects of ECT treatment have frequently been raised as an issue and we feel this is an area that requires significant research. It is particularly important that any research in this area is done in collaboration with people with lived experience. It is encouraging to see that some work has been carried out in Ayrshire looking at the impact of ECT in follow

up appointments, and that SEAN has plans to expand this work as a pilot in several clinics across Scotland. There is also interest from Professor Keith Matthews at Dundee University to explore areas for research, hopefully with significant service user involvement build into any future proposals. The Reference Group welcomes any research proposals that would broaden our understanding of ECT treatment and improve the patient experience and the outcomes that treatment can have on a person's life and that of their family.

As always we look forward to seeking ways in which we can work together with the SEAN to explore ways that we can ensure that service users and carers can have a voice that is heard and understood.

Thomas Byrne & Chris White
(Co-Chairs SEAN Service Users and Carers Reference Group)

Section 7 Accreditation

In May 2009 SEAN commenced accreditation visits to all clinics delivering ECT in Scotland. An initial pilot of the system was carried out over the period of one year. This was then reviewed and adaptations made to improve the efficiency and provide more timely feedback to clinics. The accreditations were carried out against a set of national standards which had been designed to be specific and measurable and as such to provide meaningful information on which to base accreditation assessments. In 2012 the first round of results were published in the SEAN annual report[16].

In November 2013 the SEAN Standards were reviewed and updated according to the latest evidence.

Informing each standard were the elements outlined in various good practice statements:

- The Royal College of Psychiatrists handbook on ECT (3rd Edition)[6]
- NHS Quality Improvement Scotland (2003) Clinical Standards Anaesthesia - Care Before, During and After Anaesthesia[17]
- The Royal College of Anaesthetists (2011) Anaesthetic Services in Remote sites[18]
- NICE guidelines as endorsed by the Health Technology Board for Scotland[12,13]
- Royal College of Anaesthetists (2013) Guidelines For The Provision of Anaesthetic Services[7]
- Association of Anaesthetists of Great Britain and Ireland (2013) Immediate Post-anaesthesia Recovery[8]
- Person centred measures of quality as fed back to SEAN since the national audit of 1997.

Methodology

Following a review of the Accreditation process it was decided that we would not only undertake to carry out the announced visits but we will follow this up with an unannounced visit to concentrate on specific aspect for improvement which had been flagged up at the announced visit. Individuals may question why all the visits are not unannounced, this is because when we carry out the announced visit the accreditation team actually observe ECT being given to a patient; as there are not always patients at each session in some clinics, it would not be a cost effective use of clinicians' time to turn up and not actually observe the practice at the clinic. It is hoped that this new methodology will not only enhance the current system but will also reassure the public that areas for improvement were being addressed.

Announced Visits

Eight weeks before the visit clinics are informed of the date the visit will take place and a training presentation is sent to the clinical team to explain the process of the visit.

The SEAN Clinical Co-ordinator attends every visit to lead the team and ensure continuity and correct interpretation of the criteria within the standards. The accreditation team is made up of a team of individuals drawn from the SEAN clinical network, to ensure that all members are currently practicing ECT:

- SEAN Clinical Co-ordinator
- ECT Consultant Psychiatrist
- Consultant Anaesthetist
- ECT Nurse

On the day of the announced visit

The accreditation team arrive at the clinic one hour before treatment commences in order to inspect the facilities and equipment. Each member of the team is interviewed by their peer on the accreditation team.

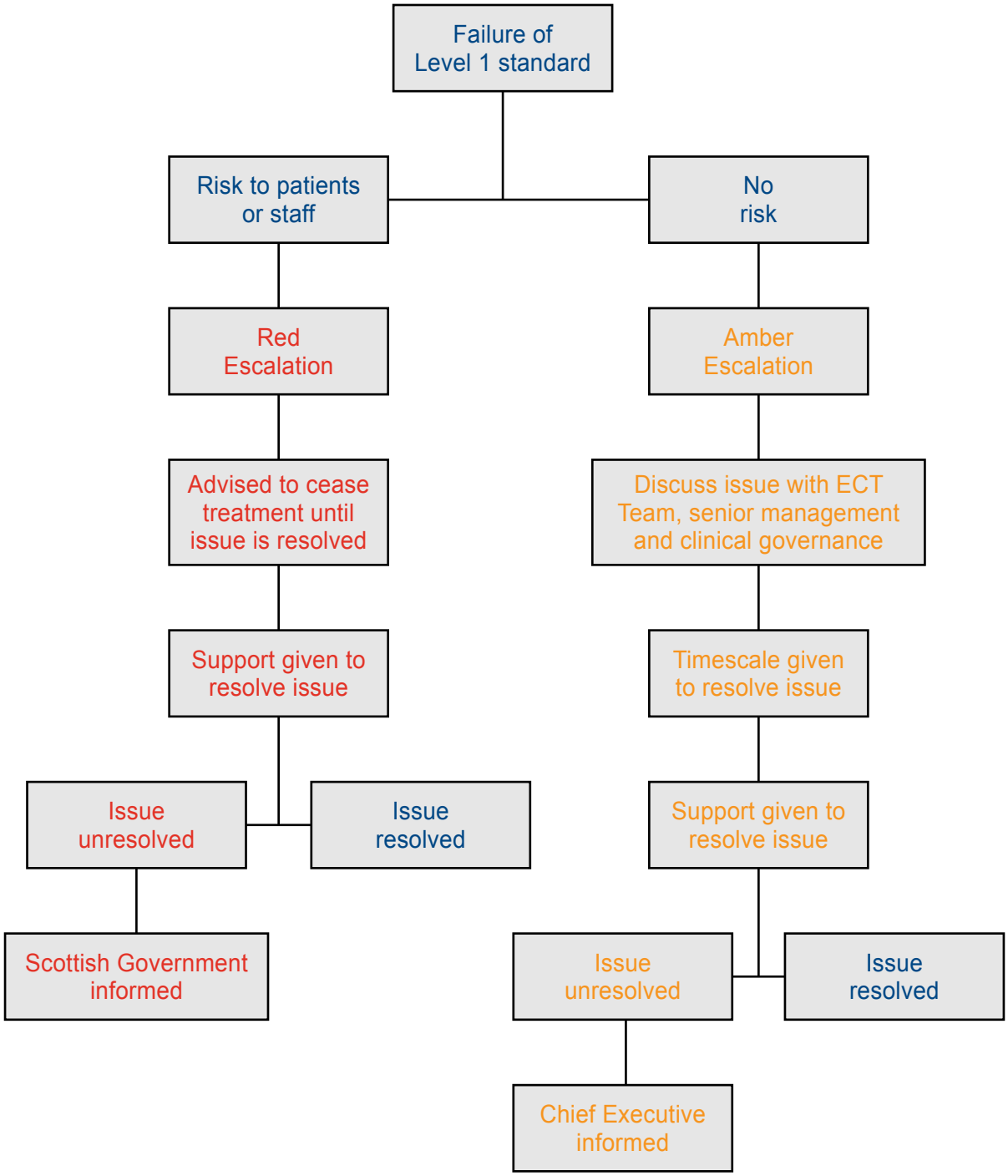
Where possible and appropriate, treatment and recovery are observed by each member of the accreditation team. This is of course at the discretion of the patient and ECT team. When the treatment session is complete the accreditation team retire to discuss their initial findings. Informal verbal feedback is then given to the ECT team to allow them to continue with their normal working day. The accreditation team then write the draft report which contains timescales and recommendations for improvements. At the end of the visit there is a formal feedback session with the ECT team, representatives from senior management and clinical governance.

In the event that a failure of a Level 1 mandatory standard is identified, which is deemed to be a risk to patients or staff, an escalation policy is followed (Figure 7.1).

Unannounced visits

Following the announced visit a follow up unannounced visit will take place. The clinical co-ordinator will arrive without prior notification at a clinic on a treatment day to ensure that any areas for improvement identified at the announced visit had been addressed.

Figure 7.1: SEAN Accreditation Flow Diagram



Draft reports are signed off by the ECT team and a final report is issued. The Accreditation level awarded is based on criteria agreed by the SEAN Steering Group:

- Accredited with Excellence
- Accredited
- Accreditation deferral
- Accreditation not achieved.

SEAN team will offer support and guidance to the clinical teams and senior management to resolve these.

Examples of how these visits achieve **patient centred** improvements in **safety** and **effectiveness** are:

- Securing staff trained to specific national standards
- Increasing the availability of appropriate monitoring and emergency equipment
- Revision of treatment protocols to ensure they reflect the most up to date evidence based practice.

The ethos of the SEAN project is to move away from the 'blame culture' and provide a more supportive approach to identifying areas for improvement, working collaboratively with ECT teams, patients and carers to achieve the optimal care for patients receiving ECT in Scotland.

Overall the standard of care and treatment across Scotland is high; however there is always room for improvement and further development. The aims of the SEAN clinical network is to strive for clinical excellence; with this in mind the Steering Group in conjunction with the Service Users and Carers Reference Group agreed that the standard to achieve Accreditation with Excellence should be set at a higher level for this round of visits. The aim is to work with clinical teams to achieve the optimum care and treatment package for patients receiving ECT in Scotland.

During the last round of accreditations all hospitals achieved accreditation, the majority with excellence, which clearly demonstrates the high standard of delivery of ECT in Scotland. This has been recognised internationally and representatives from Holland, Turkey, Italy and Canada have visited Scotland with a view to replicating the SEAN methodology. SEAN have been nominated for several awards for the quality improvement aspects of their work and most recently were honoured to received an award from "The Italian Association of Somatic Therapies in Psychiatry" at the "Interventional Psychiatry International Conference".

Conclusions

The Scottish ECT Accreditation Network has continued to prove itself to be a valuable resource for improving the clinical delivery of ECT throughout Scotland. This has been achieved through our successful visiting programme whereby a multi-disciplinary team of professionals experienced in the delivery of ECT visit the centres in Scotland where ECT is administered. Through these visits clinical practice is benchmarked against a set of nationally recognised, meaningful and robust standards.

Once again we are delighted that every centre in Scotland is actively involved with SEAN and recognises the importance of the organisation. Through our accreditation visiting process we have been able to provide a driver for ECT clinicians to initiate clinically relevant changes within their units that serve to improve the quality their service and thus patient care. By providing data to individual units, SEAN enables these units to monitor their own activities and performance against all other units in Scotland. We are also able to provide units with individual prescriber based information.

In addition, SEAN has once again demonstrated, through retrospective analysis, that ECT remains a relevant, effective and safe treatment in the management of serious, often treatment resistant, depression.

In addition to its accreditation programme SEAN remains committed to improving inter-professional and multidisciplinary working amongst professionals involved in the delivery of ECT. In addition to formal data collection and the accreditation process, SEAN has promoted the sharing of information and facilitated the development of informal communication networks between centres such that common problems can be discussed and solutions reached.

In striving towards maintaining and improving quality of care SEAN continues to successfully promote educational initiatives for professionals delivering ECT. Our annual meeting, which is open to all disciplines as well as users, remains very well attended, and takes on a true multidisciplinary educational focus. In addition SEAN is running a course for prescribers of ECT which has generated considerable interest from clinicians and has introduced an e-Learning module for all psychiatric nurses.

A critical role of SEAN has always been, and remains as an absolute necessity, the need to involve and consult users. SEAN continues to support and encourage the national users group through which relevant criticism and feedback regarding all issues of ECT treatment are obtained. The importance of a users group and the relationships that have been established between clinicians and users remains core to the very ethos and principles behind SEAN.

Ultimately however SEAN remains focused and committed through a patient centred approach to promote the delivery of ECT in a safe environment and to continue to demonstration that ECT remains an effective treatment available for some of the most seriously ill patients within the mental health service.

We remain grateful to NHS ISD for their continuing invaluable support that has helped SEAN in achieving its goals and we look forward to further increasing the standards of ECT care in the coming years.

Contact Details

Dr Alistair Hay
SEAN Chairman
New Craigs Hospital
01463-253614

Dr Nasim Rasul
SEAN Vice Chairman
Ailsa & Crosshouse Hospital
01292- 513981

Mrs Linda Cullen
SEAN National Clinical Co-ordinator
Information Services Division
NHS National Services Scotland
0131-275-6382

Mr Stuart Baird
Service Manager
Information Services Division
NHS National Services Scotland
0131-275-6043

References

1. Scottish Government (2010) The Healthcare Quality Strategy for NHS Scotland. Scottish Government.
2. Montgomery S.A., Asberg M. (1979) “A new depression scale designed to be sensitive to change”, British Journal of Psychiatry, 134: 382-89.
3. Guy W. (ed.) (1976) ECDEU Assessment Manual for Psychopharmacology. US Department of Health, Education, and Welfare Public Health Service Alcohol, Drug Abuse, and Mental Health Administration.
4. CRAG Working Group on Mental Illness (2000) National Audit of Electroconvulsive Therapy (ECT) in Scotland. Scottish Executive Health Department, Clinical Resources and Audit Group.
5. Scottish ECT Accreditation Network (SEAN) (2013) SEAN Standards, ISD Publications.
6. Royal College of Psychiatrists (2013) The ECT Handbook (3rd ed.) Royal College of Psychiatrists.
7. The Royal College of Anaesthetists (2013) Guidelines for the Provision of Anaesthetic Services. Royal College of Anaesthetists.
8. Association of Anaesthetists of Great Britain and Ireland. Immediate Post-anaesthesia Recovery 2013. Anaesthesia 2013; 68: pages 288-97.
9. ISD Scotland (2012) ISD Statistical Disclosure Protocol [online]. Available from: http://www.isdscotland.org/About-ISD/Confidentiality/Disclosure_Protocol_v2.3_Fullversion.pdf.
10. National Records of Scotland (2015) Mid-year Population Estimates for Scotland [online]. Available from: http://nationalrecordsofscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/mid-2014.
11. World Health Organization (1992) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Volume 1, World Health Organization.
12. National Institute for Clinical Excellence (2003) Guidance on the Use of Electroconvulsive Therapy (Technology Appraisal 59). National Institute for Clinical Excellence.
13. National Institute for Health and Clinical Excellence (2009) Depression: the treatment and management of depression in adults (Clinical Guideline 90). National Institute for Health and Clinical Excellence.
14. The American Society of Anesthesiologists (1963) “New classification of physical status”, Anesthesiology 1963; 24:111.
15. Schreiber, J.U., Lysakowski, C., Fuchs-Buder, T., Tramèr, M.R.(2005) “Prevention of succinylcholine-induced fasciculation and myalgia: a meta-analysis of randomized trials”, Anesthesiology, 103(4); 877-84.
16. Scottish ECT Accreditation Network (SEAN) (2012) Annual Report 2012: A summary of ECT in Scotland for 2012. ISD Publications.
17. NHS Quality Improvement Scotland (2003) Clinical Standards, Anaesthesia – Care Before, During and After Anaesthesia. NHS Quality Improvement Scotland.
18. The Royal College of Anaesthetists (2011) Anaesthetic Services in Remote sites. Royal College of Anaesthetists.

Appendix A

Management Committee Membership

Mr Stuart Baird	Service Manager (ISD)
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Dr Alistair Hay (Chair)	Consultant Psychiatrist (Highland)
Dr Nasim Rasul (Vice Chair)	Consultant Psychiatrist (Ayrshire & Arran)

Service Users and Carers Reference Group Membership

Mr Thomas Byrne (Co-Chair)	Advancing Community Understanding of Mental and Emotional Needs (ACUMEN)
Mr Chris White (Co-Chair)	CJ Mental Health Consultancy
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Representatives from:	Advancing Community Understanding of Mental and Emotional Needs (ACUMEN)
	Bipolar Scotland
	CJ Mental Health Consultancy
	Scottish Association for Mental Health (SAMH)
	Support in Mind Scotland

Report Writing Group Membership

Dr Joan Barber	Consultant Psychiatrist (Ayrshire & Arran)
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Mr Ross Lawrie	Information Analyst (ISD)
Professor Keith Matthews	Professor of Psychiatry & Co-Director of the Division of Neuroscience at the University of Dundee
Mrs Clare McGeoch	Quality Assurance Manager (ISD)
Dr Gary Morrison	Executive Director (Medical) Mental Welfare Commission for Scotland
Dr Charles Morton	Consultant Anaesthetist (Lothian)
Mr David Murphy	Senior Information Analyst (ISD)
Mr Martin O'Neill	Principal Information Analyst (ISD)
Dr David Semple	Consultant Psychiatrist (Lanarkshire)

Steering Group Membership

Dr Virginica Anderson	Consultant Anaesthetist (Grampian)
Mr Stuart Baird	Service Manager (ISD)
Dr Dallas Brodie	Consultant Psychiatrist (Greater Glasgow & Clyde)
Mrs Julie Burnside	ECT Nurse (Highland)
Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Dr Alistair Hay (Chair)	Consultant Psychiatrist (Highland)
Dr Nasim Rasul (Vice-Chair)	Consultant Psychiatrist (Ayrshire & Arran)
Mr Stephen Kelly	ECT Nurse (Greater Glasgow & Clyde)
Mr Ross Lawrie	Information Analyst (ISD)
Dr Johan Leuvennink	Consultant Psychiatrist (Dumfries)
Dr Gary Morrison	Executive Director (Medical), Mental Welfare Commission for Scotland
Dr Grant Forrest	Consultant Anaesthetist (Fife)
Mrs Clare McGeoch	Quality Assurance Manager (ISD)
Dr Charles Morton	Consultant Anaesthetist (Lothian)
Dr Fiona Munro	Consultant Anaesthetist (Greater Glasgow & Clyde)
Mr David Murphy	Senior Information Analyst (ISD)
Mr Martin O'Neill	Principal Information Analyst (ISD)

Appendix B

Prescribing Hospitals

Hospital Name	Location	NHS Board	Data Issue(s)
Ailsa & Crosshouse Hospitals	Ayr and Kilmarnock	Ayrshire & Arran	
Airbles Road Centre	Motherwell	Lanarkshire	Prescribed episodes from 2011 onwards included in data from Wishaw General Hospital.
Argyll & Bute Hospital	Lochgilphead	Highland	
Beckford Lodge	Hamilton	Lanarkshire	All prescribed episodes included in data from Wishaw General Hospital.
Carseview Centre (Ninewells Hospital)	Dundee	Tayside	
Coathill Hospital	Coatbridge	Lanarkshire	All prescribed episodes included in data from Wishaw General Hospital.
Dr Gray's Hospital	Elgin	Grampian	Prescribed episodes from November 2010 onwards included in data from Royal Cornhill Hospital.
Dunnikier Day Hospital (Whyteman's Brae)	Kirkcaldy	Fife	Prescribed episodes from November 2011 onwards included in data from Queen Margaret Hospital.
Dykebar Hospital	Paisley	Greater Glasgow	Prescribed episodes from November 2008 included in data from Leverndale Hospital.
Forth Valley Royal	Larbert	Forth Valley	New facility replacing Falkirk & District Royal Infirmary.
Gartnavel Royal Hospital	Glasgow	Greater Glasgow	All prescribed episodes included in data from Stobhill Hospital.
Hairmyres Hospital	East Kilbride	Lanarkshire	
Huntlyburn, Borders General	Melrose	Borders	
Inverclyde Hospital	Greenock	Greater Glasgow	
Leverndale Hospital	Glasgow	Greater Glasgow	
Midpark Hospital	Dumfries	Dumfries & Galloway	New facility replacing Crichton Royal Hospital.
Midlothian Community Hospital	Bonnyrigg	Lothian	Prescribed episodes from 2011 onwards included in data from Royal Edinburgh Hospital.
Monklands District & General Hospital	Airdrie	Lanarkshire	All prescribed episodes included in data from Wishaw General Hospital.
Murray Royal Hospital	Perth	Tayside	
New Craigs Hospital	Inverness	Highland	

Hospital Name	Location	NHS Board	Data Issue(s)
Parkhead Hospital	Glasgow	Greater Glasgow	All prescribed episodes included in data from Stobhill Hospital.
Queen Margaret Hospital	Dunfermline	Fife	
Royal Alexandra Hospital	Paisley	Greater Glasgow	Prescribed episodes from November 2008 included in data from Leverndale Hospital.
Royal Cornhill Hospital	Aberdeen	Grampian	
Royal Edinburgh Hospital	Edinburgh	Lothian	
Southern General Hospital	Glasgow	Greater Glasgow	All prescribed episodes included in data from Leverndale Hospital.
St John's Hospital	Livingston	Lothian	
Stobhill Hospital	Glasgow	Greater Glasgow	
Stratheden Hospital	Cupar	Fife	Prescribed episodes from November 2011 onwards included in data from Queen Margaret Hospital.
Susan Carnegie	Montrose	Tayside	New facility replacing Sunnyside Royal Hospital.
The State Hospital	Carstairs	Lanarkshire	
Udston Hospital	Hamilton	Lanarkshire	All prescribed episodes included in data from Hairmyres Hospital.
Vale of Leven Hospital*	Alexandria	Greater Glasgow	Prescribed episodes from 2007 included in data from Stobhill Hospital.
Western Isles Hospital*	Stornoway	Western Isles	Prescribed episodes from 2007 included in data from Leverndale Hospital.
Whyteman's Brae	Kirkcaldy	Fife	Included in data for Queen Margaret Hospital.
Wishaw General Hospital	Wishaw	Lanarkshire	

Note:
* Not included as a separate treating hospital in Table 1.1 due to database issues.

Treating Hospitals

Hospital Name	Location	NHS Board	Data Issue(s)
Ailsa & Crosshouse Hospitals	Ayr and Kilmarnock	Ayrshire & Arran	
Argyll & Bute Hospital	Lochgilphead	Highland	
Carseview Centre (Ninewells Hospital)	Dundee	Tayside	
Forth Valley Royal	Larbert	Forth Valley	New facility replacing Falkirk & District Royal Infirmary.
Hairmyres Hospital	East Kilbride	Lanarkshire	Data not available from January to June 2008 because of IT problems.
Huntlyburn, Borders General	Melrose	Borders	
Inverclyde Hospital	Greenock	Greater Glasgow	
Leverndale Hospital	Glasgow	Greater Glasgow	
Midpark Hospital	Dumfries	Dumfries & Galloway	Data not available from November 2006 to September 2008 because of staffing problems. New facility replacing Crichton Royal Hospital.
Murray Royal Hospital	Perth	Tayside	
New Craigs Hospital	Inverness	Highland	
Queen Margaret Hospital	Dunfermline	Fife	Data not available from October 2005 to June 2007 because of IT problems.
Royal Cornhill Hospital	Aberdeen	Grampian	
Royal Edinburgh Hospital	Edinburgh	Lothian	
St John's Hospital	Livingston	Lothian	
Stobhill Hospital	Glasgow	Greater Glasgow	
Susan Carnegie	Montrose	Tayside	New facility replacing Sunnyside Royal Hospital.
Wishaw General Hospital	Wishaw	Lanarkshire	

Scottish ECT Accreditation Network
www.sean.org.uk