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SEAN Annual Report 2017.

A summary of ECT in Scotland for 2016.

Report prepared by
Scottish ECT Accreditation Network

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Summary Hospital Activity Table 2016[1]

Hospital	Patients	Episodes	Treatments for episodes commencing in 2016[10]	Treatments in 2016 for all episodes[11]	Stimulations	Median Treatments per episode	Median Stimulations per episode
Argyll & Bute	*	*	47	82	65	4	7
Carseview	12	16	116	113	126	7	9
Forth Valley Royal	21	27	279	268	345	9	12
Hairmyres[2]	10	12	137	127	163	10	13
Huntlyburn House	*	*	16	60	16	8	8
Inverclyde	21	22	238	296	244	8	9
Leverndale[3]	21	21	194	225	224	10	11
Midpark Hospital	20	21	164	154	176	9	9
Murray Royal	12	15	188	222	201	12	12
New Craigs	*	*	28	35	32	4	4
Queen Margaret[4]	32	42	394	390	434	10	11
Royal Cornhill[5]	50	57	476	494	565	8	9
Royal Edinburgh[6]	45	54	563	755	718	10	12
St John's	14	20	171	200	192	8	9
Stobhill[7]	23	28	282	294	297	10	11
Susan Carnegie	*	10	114	112	126	12	13
Wishaw[8]	16	16	169	193	201	12	13
Woodland View[9]	25	32	223	224	241	6	7
Total	**344**	**408**	**3,799**	**4,244**	**4,366**	**9**	**11**

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. Data entry issues affect information for Royal Cornhill Hospital and activity may be under-recorded.
6. Includes patients from Herdmanflat, Royal Victoria, Rosslynlee and Midlothian Community Hospitals.
7. Includes patients from Vale of Leven, Parkhead and Gartnavel Royal Hospitals.
8. Includes patients from Monklands Hospital, Coathill Hospital, Beckford Lodge and Airbles Road Centre.
9. Ailsa & Crosshouse moved to Woodland view during 2016.
10. Treatments in this column are associated with episodes that commenced in 2016. These treatments may have occurred during 2016 or 2017.
11. 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 (2016). We have included this information as an extra column to recognise these further treatments that occurred during 2016.

Contents

Foreword by Dame Denise Coia

I am delighted to be asked, once again to provide the foreword for the Scottish ECT Accreditation Network's (SEAN) ninth annual report. SEAN plays a significant role in ensuring the high quality and safe delivery of ECT services throughout Scotland.

As Chair of Healthcare Improvement Scotland, an organisation focused on supporting services to deliver better quality care for the people of Scotland and improvement within health and social care services, it is reassuring to see how SEAN works to maintain and develop evidence-based improvements in the quality of ECT services provided.

In doing so, SEAN demonstrates its commitment to supporting the Scottish Government's Health and Social Care Delivery Plan and the Quality Strategy[1] to ensure that ECT services are patient-centred, safe and effective. Their aim to provide quality services in line with these principles is illustrated throughout this report.

SEAN continues to monitor and ensure the provision of a high quality ECT service throughout Scotland through its regular cycle of accreditation visits and it works closely with all disciplines involved in the clinical administration of ECT. A positive example of this work is the SEAN Service User and Carer Reference Group, where person-centred feedback is gathered and used to help drive improvement from a patient and carer perspective.

SEAN continues to grow and safeguard the patient, providing support and reassurance for them in this highly specialised and at times controversial treatment. The growth of SEAN should continue to reassure the public that this is a safe and effective treatment which is closely monitored. Their success is testament to the enthusiasm and commitment of all those within SEAN and I am happy to support the continuing work and wish them ongoing success for the future.

I am sure you will find this report interesting and informative.

D. A. Coia

Dame Denise Coia, DBE FRCPsych
Chair, Healthcare Improvement Scotland
September 2017

Foreword by Dr Alistair Hay

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

The main aim of SEAN continues to be to monitor the practice of ECT throughout the 18 centres in Scotland where the treatment is currently administered. In doing so we aim to maintain, monitor and, where appropriate, improve the already high quality 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. Over the last twelve months every centre delivering ECT in Scotland has been visited and accredited. The standards of care in each centre are measured against recognised, measurable and achievable quality standards. In doing so, SEAN continues to adhere to the principles outlined in the Healthcare Quality Strategy[1] in its vision of healthcare delivery 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 directly 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 its programme of onsite accreditation visits, a second round of which has been completed, with a third round planned to commence in 2018.
- In addition to formal accreditation visits, SEAN plans to carry out unannounced visits to all centres to further monitor and enhance the quality of practice.
- An ongoing evaluation of critical incidents is undertaken.

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 and networking (through the Committee of Nurses at ECT in Scotland, CONECTS).
- The online Ward / Escort Nurse LearnPro modules have been introduced as new Level 2 criteria within the SEAN Standards.
- SEAN continues to run its training course for psychiatrists who prescribe ECT which received excellent feedback from those who participated.

In addition to actively monitoring and improving standards through our accreditation visits, the SEAN network encourages and facilitates 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.

We have facilitated the introduction of computer based technology in all ECT centres to promote better data collection and analysis. In addition we have been able to further our educational outreach through, for example, the LearnPro modules and to encourage communication between professionals of all grades and disciplines. This has led to more informal multidisciplinary contacts through which examples of good practice can be disseminated.

We would welcome any comments and feedback on this report.

Dr Alistair Hay
SEAN Chairman and Clinical Lead
September 2017

Background

In 1996 the Scottish Electroconvulsive Therapy Audit Network initiated 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 just audit of the service to an audit & accreditation network whilst 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

In 2008 SEAN came under the auspices of NHSNSS Information Services Division and a new multidisciplinary Steering Group was formed with representation from clinical 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"** ambition 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[1], 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 regularly using evidence based guidelines and standards from other professional bodies. 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. In addition to these formal visits, a series of more informal, unannounced visits will be ongoing 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.

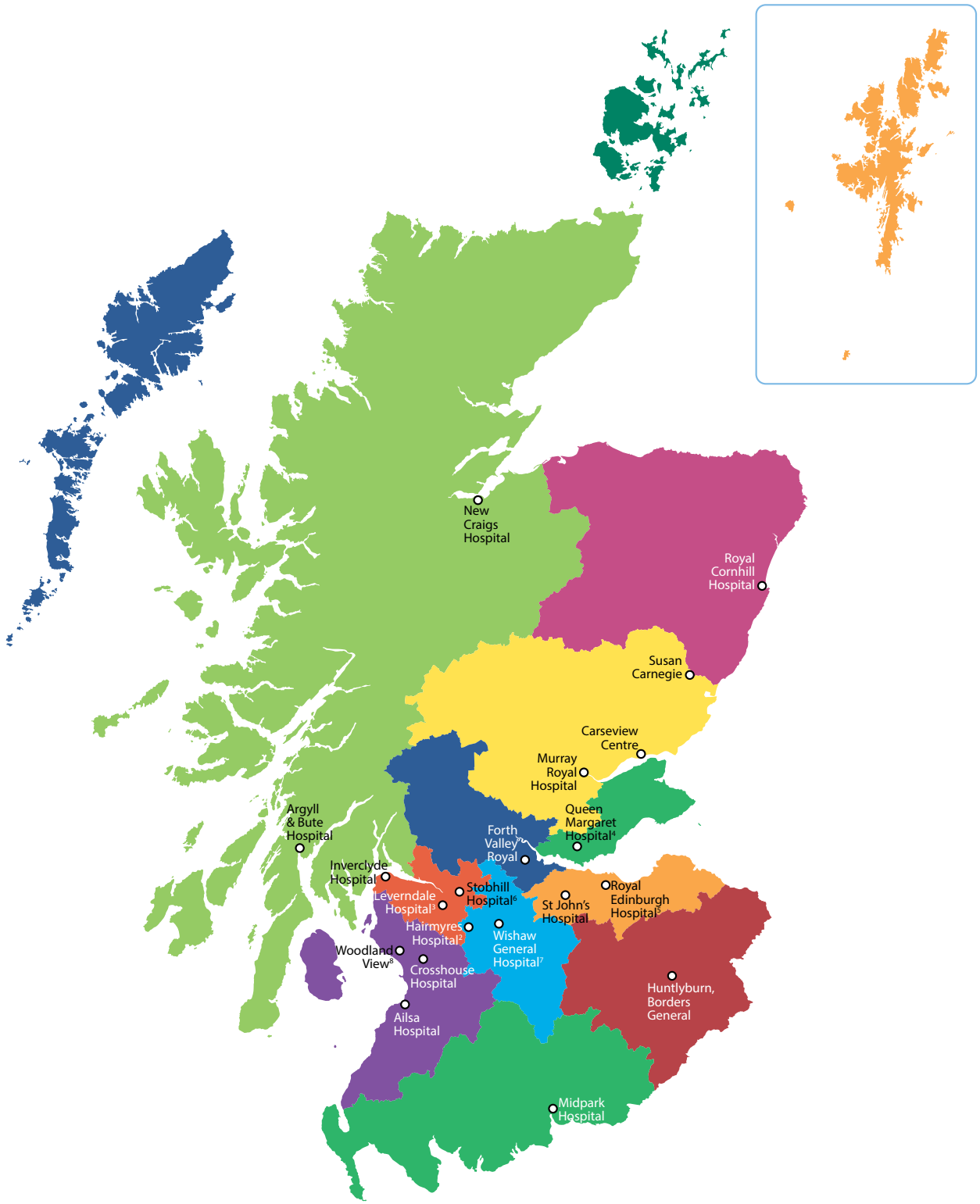
In working towards an improved national service, SEAN is actively involved in promoting and developing educational opportunities to maintain and enhance continuing professional development opportunities for all clinical staff involved with ECT. In 2007 the CONECTS sub-group was formed through SEAN with 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.

Following feedback from the Service Users and Carers Reference Group, the CONECTS group successfully developed and launched a 'LearnPro' e-Learning module for all ward-based and escort nurses across Scotland. The aim of this module is to increase the knowledge and understanding of ECT for all mental health nurses in general and thus improve the quality of care delivered. Since its launch in June 2015 the module has been completed and passed by 2,050 nurses. Considering this is a non-mandatory module the uptake is impressive, however there is always room for improvement and completion of the module will become a level 2 criterion within the new SEAN Standards[5]. NHS Forth Valley is to be highly commended due to the fact that they have made the module mandatory for any nurse escorting a patient to ECT and it is hoped that other NHS Boards follow this good example.

Building on the success of CONECTS, a Medics' sub-group 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 SEAN data, with a view to improving treatment of patients as they proceed through the ECT service.

2015 saw the launch of the SEAN Prescribers' Training Day, an event developed following feedback from psychiatrists that there was a need for more in-depth training in ECT for higher trainees and new consultants who may consider prescribing ECT. This event was a great success and the feedback was excellent. The latest prescribers event was held on 20th September this year. In conjunction with the prescribers training event we have also started producing detailed six-mothly reports for each clinic which include feedback by individual prescriber. Due to the success of the nurses LearnPro module we are currently developing two further modules for ECT consultants and prescribing consultants, we hope to launch these modules by the end of this year.

Location of ECT Clinics in Scotland[1]



Note:

1. Detailed list of hospitals in Appendix B.
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 Herdmanflat, Royal Victoria, Rosslynlee and Midlothian Community Hospitals.
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. Ailsa & Crosshouse ECT services moved to Woodland View during 2016.

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, some of which can be measured against the SEAN standards[5].

The data within this report are presented in sections relating to patient characteristics, consent and legal status, diagnosis, details of the actual treatment administered 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 activities in 2016.

A Report Writing Group was formed with representation from each discipline involved with the delivery of ECT. As a result the report meaningfully reflects clinical issues relevant to the practice of ECT by having input from professionals of all disciplines required for the provision of a high quality clinical service. This provides clinical staff with more precise information on certain aspects of care and treatment relevant to their day to day practice and thereby enables them to evaluate their current practice and 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]. Following the last round of visits 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, we are duty bound to introduce 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

Eighteen centres throughout the whole of Scotland were responsible for the safe delivery of ECT as an effective therapeutic treatment in 2016.

- A total of 344 patients received ECT through 408 treatment episodes with a median number of 9 treatments per episode.
- The most common indication remains treatment resistance to anti-depressant medication (53%) but in 9% of episodes ECT was given as an emergency life saving treatment.
- Other common indications for treatment include previous good response, with 45% of episodes involving patients receiving ECT who had previously responded well to treatment, and patient preference, where 31% of episodes involved patients who expressed a specific preference for ECT treatment.
- The majority of patients who received ECT were suffering from symptoms of depression either in the context of depressive or bipolar disorders and the most prevalent diagnosis was Depression without Psychosis (39%).
- The majority of treatment episodes (67%) involved patients deemed to have capacity and thus capable of giving informed consent.
- In 63% of completed episodes, patients who completed their course of ECT showed significant improvement as evidenced by a 50% or greater reduction in MADRS[2] score over the course of treatment.
- 61% of patients with capacity displayed an improvement following treatment, compared with 68% of patients without capacity, possibly reflecting the more severe nature of the illness in the latter group of patients at the very outset.
- ECT was given to adults of all age groups, with more females to males receiving treatment (69% versus 31% respectively). This reflects the relative incidence of depressive illness in women compared with men.
- The percentage of patients from ethnic minorities receiving ECT remains low (1%).
- The majority of patients (69%) received just one episode of treatment since the SEAN audit began in 2005 whilst a small proportion (4%) received 5 or more episodes of treatment since 2005. This would appear to be suggestive of the relapsing nature of depressive illness in these particular patients.
- 98% of treatments involved bilateral ECT. Most treatments (93%) did not involve a change in treatment modality, with only a single modality used (either bilateral or unilateral).
- As in previous years the most frequently recorded single side effect remains headache (32%).
- There were a total of 8 critical incidents reported (0.2% of all treatments).

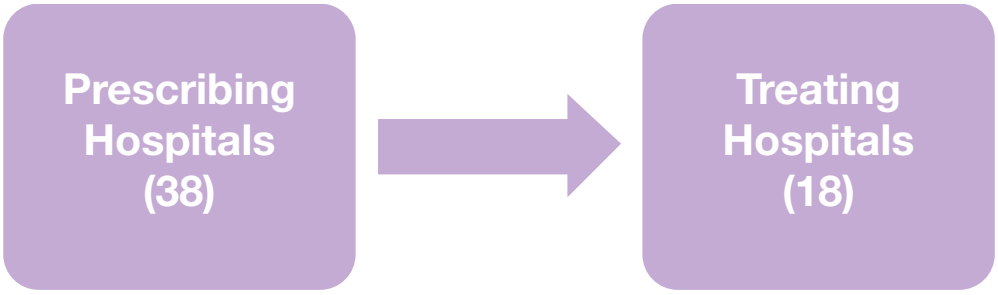
Methods

The SEAN Annual Report uses records submitted to 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 2016 as well as some trend data from 2008 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 2016 was verified with clinical leads as part of a regular validation process. Some minor differences may remain, however, when compared to local reporting sources. The annual report is based on data received by a specific date and any local data changes made after this date will not, therefore, be reflected in the annual report.

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 38 prescribing and 18 treating hospitals represented in this report.



Lists of these hospitals, their locations and descriptions of any relevant data issues are provided in Appendix B and shown on the map preceding the introduction. Data presented throughout this report relate to treating hospitals rather than prescribing hospitals.

Analyses are mainly presented at the level of an ECT episode, an episode being a series of treatments. Sections 1-3 report on patients and episodes while Section 4 focuses 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 that the episode of ECT commenced. Figure 0.1 demonstrates how this data terminology is applied to ECT treatment and to the report itself.

In 2016, seven patients, eight episodes, 35 treatments and 47 stimulations were excluded from the report as duplicate or incomplete records. Following validation, the number of ECT episodes included in this report for 2016 is 408.

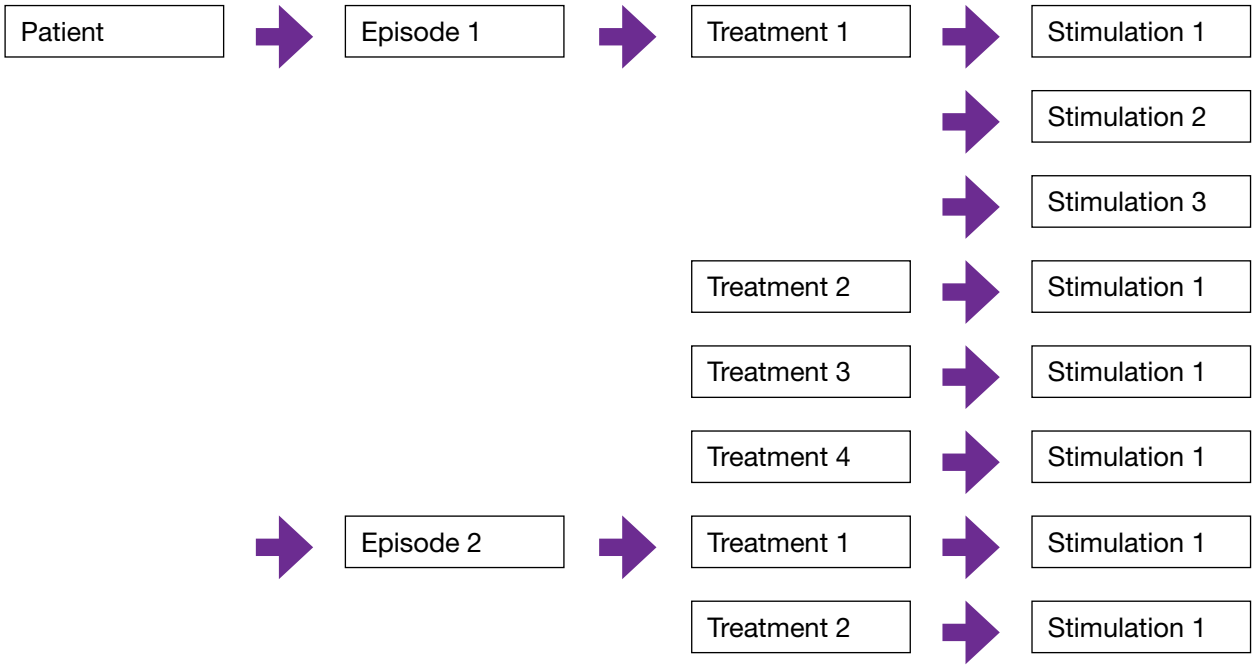
Section 5 reports on outcomes of ECT where an episode is complete (i.e. treatment ended because the episode was completed as planned or discontinued early). When data for this report were finalised (September 2017), 247 (60.5%) episodes of ECT started in 2016 were identified as complete and are reported in Section 5 (the remaining 161 (39.5%) 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].

Figure 0.1: SEAN data structure



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 NHS Board throughout Scotland, is shown in Table 1.1.

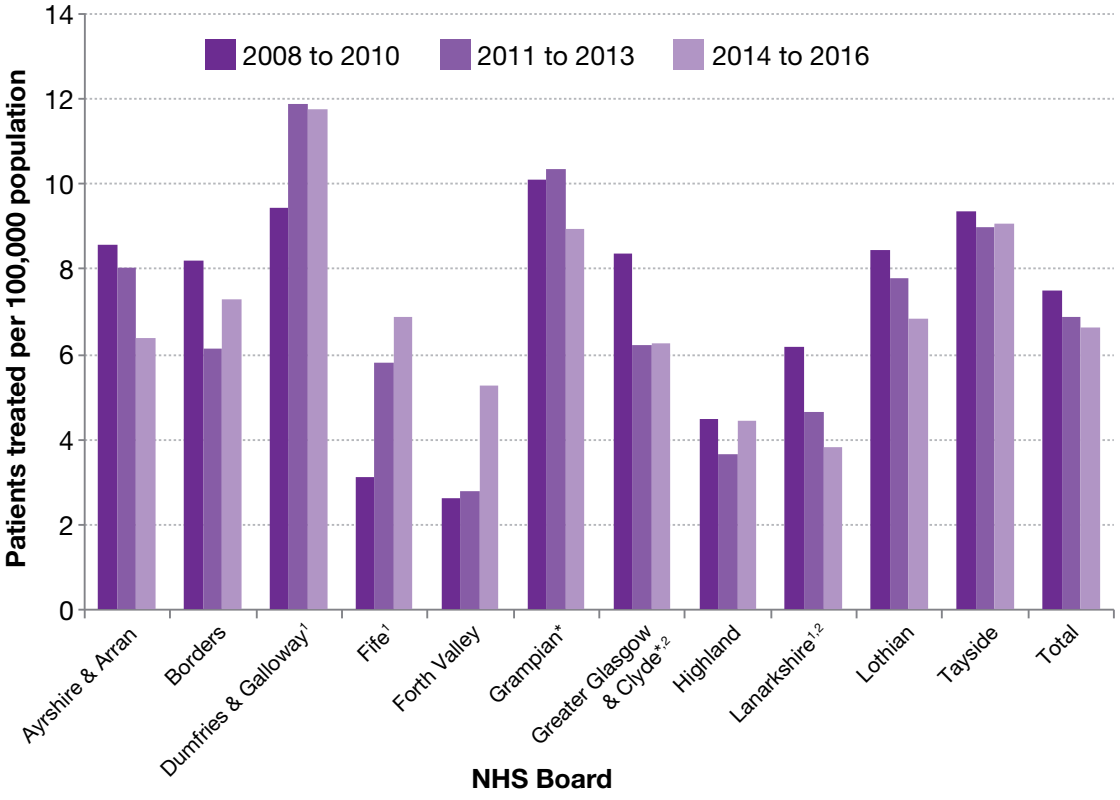
Patients

ECT continues to be a treatment used mostly for people in their middle and late life (Figure 1.2 in this and previous annual reports). Although the number receiving ECT aged under 40 has increased (48 or 13.9%) and the number aged 80 or over has decreased (29 or 8.4%) compared to last year, the trend for relative use of ECT to increase with age persists.

Women account for two thirds of all patients receiving ECT (Figure 1.2), in keeping with the rates of depressive disorder in the general population.

The percentage of patients from an ethnic minority receiving ECT in Scotland remains lower (1%) than the percentage in the general population (4%)[11]. Much of this difference is still explained by their demographic spread: over 75% are aged under 40 years.

Figure 1.1: Number of patients treated by NHS Board, per 100,000 population (2008 - 2010, 2011 - 2013 & 2014 - 2016)

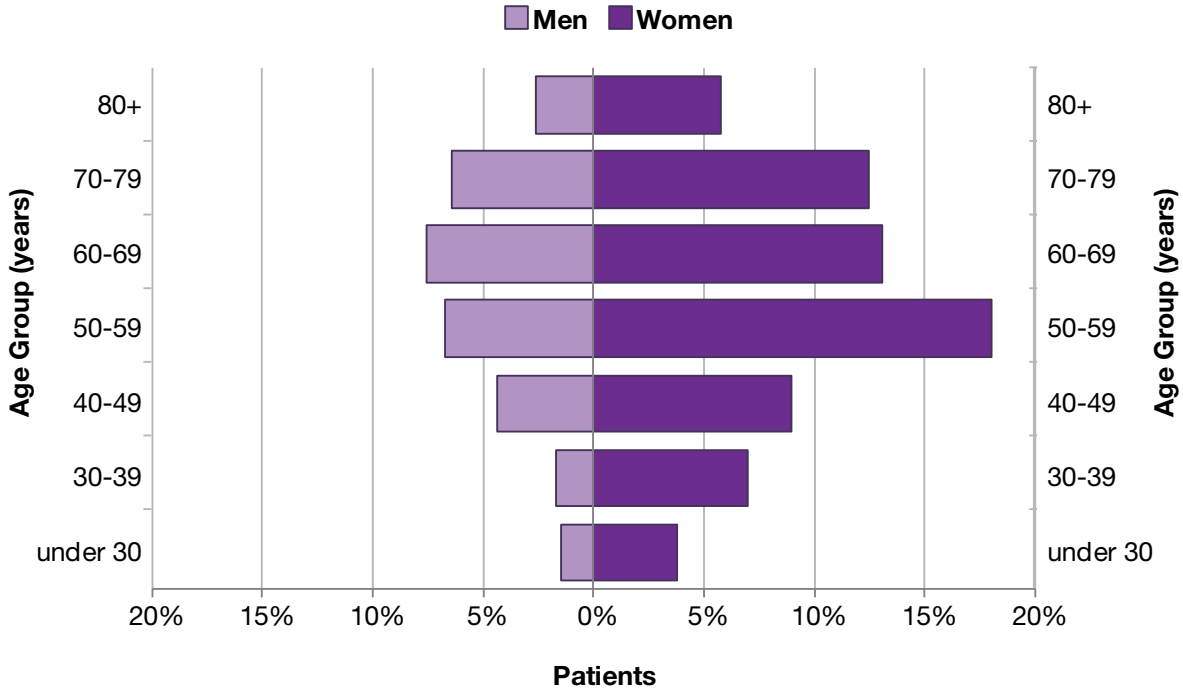


Notes:

* Some NHS boards treat patients from other board areas. Grampian treats patients from Orkney and Shetland. Greater Glasgow & Clyde treats patients from Western Isles.

1. Data for NHS Boards Dumfries & Galloway, Fife and Lanarkshire are incomplete for 2009 because of data collection problems. See Appendix B.
2. NHS 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 (2016)



Episodes

The use of ECT in Scotland has remained at a fairly steady level in recent years, with over 400 treatment episodes per year still being recorded (Figure 1.3).

Activity levels differ between the clinics across Scotland with some clinics in urban centres recording 50 or more treatment episodes per year while other clinics, often in more remote settings, recording smaller numbers of treatment episodes (Table 1.1).

Figure 1.3: Numbers of patients and episodes by year (2008-2016)

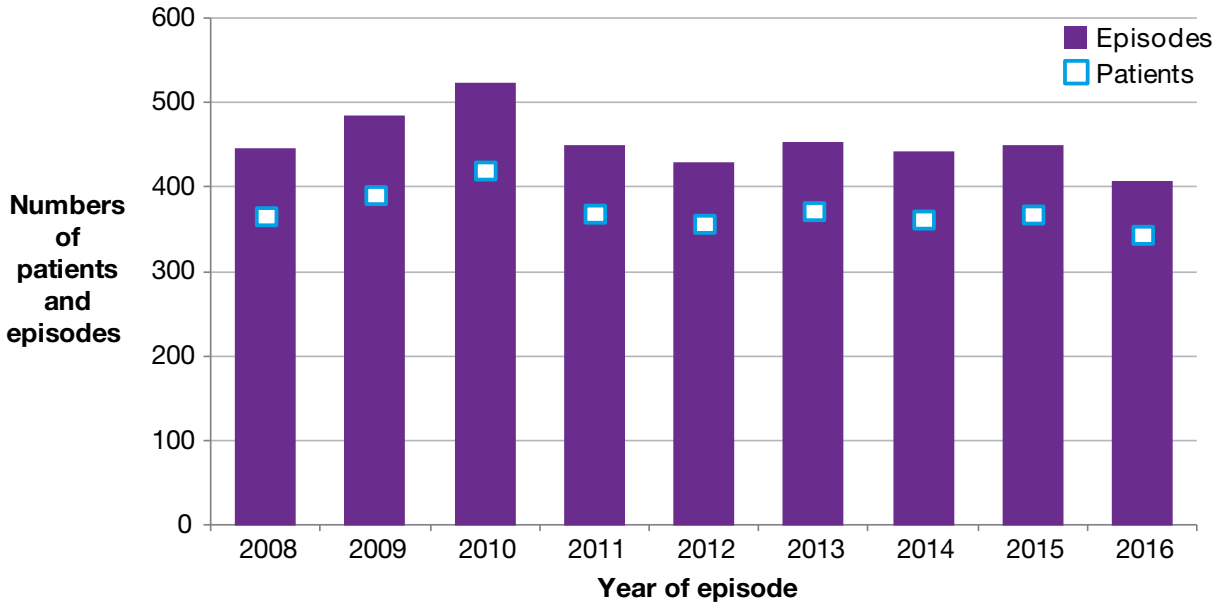


Table 1.1: Number of total episodes and treatments, by hospital (2012-2016)

Hospital	Episodes					Treatments[1]				
	2012	2013	2014[r]	2015	2016	2012	2013	2014[r]	2015	2016
Argyll & Bute	17	10	*	20	*	114	73	41	173	47
Carseview	18	18	16	14	16	193	193	138	118	116
Forth Valley Royal	*	18	15	14	27	33	202	176	120	279
Hairmyres	14	18	18	12	12	99	158	151	101	137
Huntlyburn House	*	*	16	12	*	62	54	128	136	16
Inverclyde	14	19	14	15	22	116	281	187	149	238
Leverndale	38	29	29	30	21	346	316	317	338	194
Midpark Hospital	23	25	27	22	21	199	235	190	173	164
Murray Royal	14	24	26	25	15	116	226	243	280	188
New Craigs	*	*	*	10	*	37	25	51	95	28
Queen Margaret	27	24	25	36	42	327	243	291	333	394
Royal Cornhill	72	87	76	66	57	598	707	583	600	476
Royal Edinburgh	50	51	47	45	54	444	508	694	514	563
St John's	23	24	31	27	20	156	191	245	305	171
Stobhill	34	40	43	47	28	292	345	339	415	282
Susan Carnegie	*	*	*	13	10	90	96	69	129	114
Wishaw	22	15	*	17	16	150	144	59	172	169
Woodland View[2]	40	34	30	25	32	285	283	271	203	223
Total	**429**	**454**	**442**	**450**	**408**	**3,657**	**4,280**	**4,173**	**4,354**	**3,799**

Notes:
* Indicates values that have been suppressed because of the potential risk of disclosure.
r Revised since previous publication in 2015 as a result of more up-to-date data.
1. The number of treatments may vary annually depending on each hospital's use of continuation/ maintenance ECT.
2. ECT services at Ailsa and Crosshouse hospitals moved to Woodland View during 2016.

Treatment frequency has shown a slight change with twice weekly treatment still predominating but reduced from 93% to 88% and a further increase in those having treatment at intervals other than once or twice a week from 4% to 9% (Table 1.2). Once again, this may be explained by the use of continuation/ maintenance ECT (Figure 1.5).

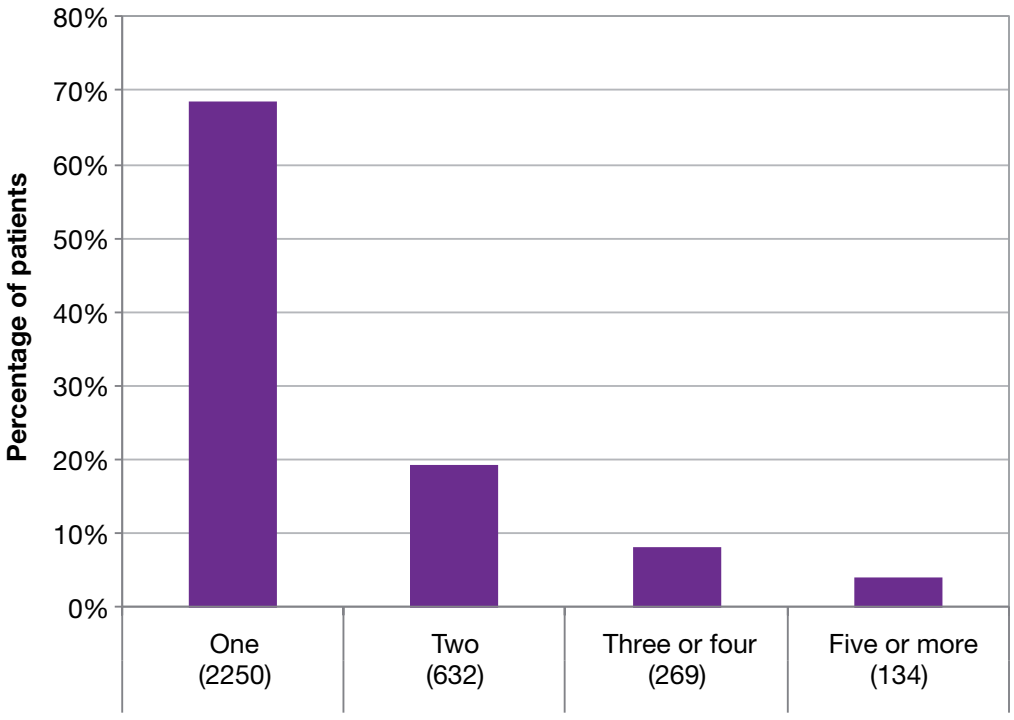
Table 1.2: Number and % of total episodes, by episode treatment frequency (2012-2016)

Treatment frequency	2012		2013		2014		2015		2016	
	No.	%	No.	%	No.	%	No.	%	No.	%
Weekly	9	2.8	12	4.0	6	2.1	9	3.1	8	3.3
Twice weekly	292	92.1	275	91.7	263	90.4	264	92.3	213	87.7
Other[1]	16	5.0	13	4.3	22	7.6	13	4.5	22	9.1
Total	**317**	**100**	**300**	**100**	**291**	**100**	**286**	**100**	**243**	**100**

Note:
1. Other includes maintenance ECT every: 2 weeks; 3 weeks; 4 weeks.

SEAN data collection now extends back for 12 years. In that time, 3,285 individuals have received ECT in Scotland (Figure 1.4). We know that 2,250 (68.6%) individuals have had only one episode of treatment in that time. Of the remainder, 632 have had 2 episodes, 269 had 3 or 4 episodes and 134 individuals have had 5 or more treatment episodes.

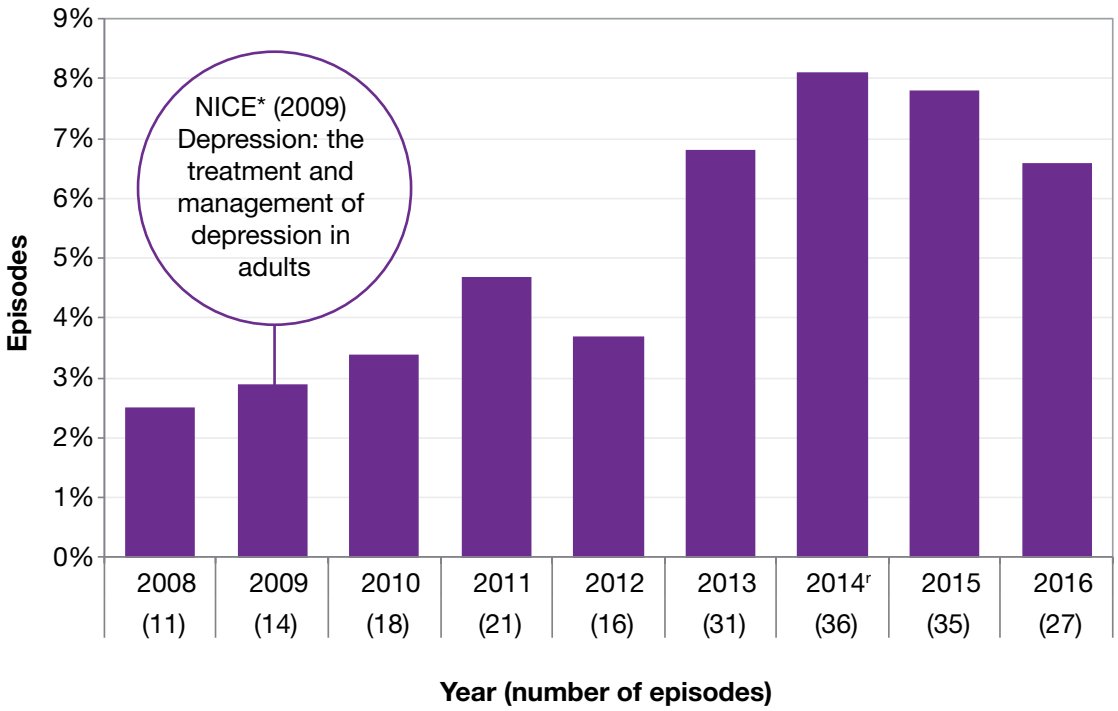
Figure 1.4: Number and % of total patients who had multiple treatment episodes between (2005-2016)[1]



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

Continuation/ maintenance ECT can describe cases where ECT continues beyond the usual acute course of treatment, lasting several weeks, into a longer period of several months. It is a treatment option considered when an individual's clinical recovery cannot be maintained by medication or other therapies and usually involves an increase in the time interval between treatments i.e. to fortnightly or longer.

Figure 1.5: Number and % of continuation/ maintenance episodes, by year (2008-2016)[1]



Notes:

r Revised since previous publication in 2016 as a result of more up-to-date data.

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.

* NICE - National Institute for Health and Clinical Excellence. NICE guidance on treating depression was published in 2009[14].

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 Mental Welfare Commission for Scotland.

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

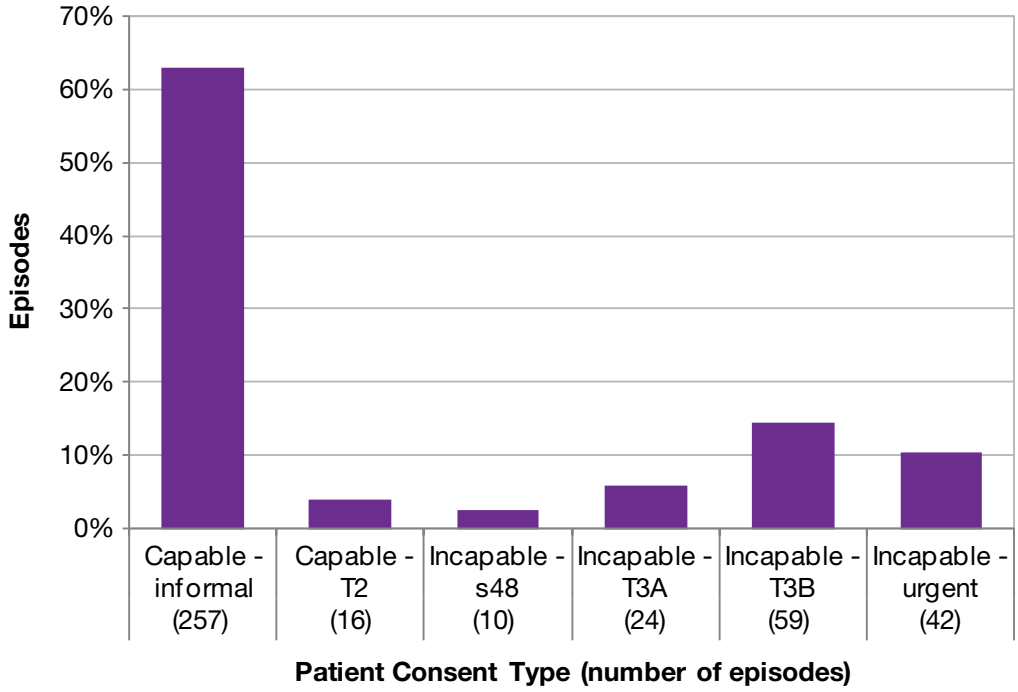
Figure 2.1 shows consent and legal status at the beginning of treatment. Informal (voluntary) patients who give informed consent are the largest group of people receiving ECT. A small percentage of patients detained under the 2003 Act were also considered to have retained the capacity to consent to ECT. In total, the majority (67%) of all episodes of treatment with ECT had the patient’s informed consent.

Of the 135 episodes of ECT where the patient could not consent, 42 (31%) began with urgent treatment. This shows that many people who lack capacity to consent to ECT are seriously unwell.

Overall, there were 135 episodes involving patients incapable of providing informed consent and 59 of these (44%) related to patients who lacked capacity and were also resisting or refusing.

In relation to all patients treated under the 2003 Act with the authority of a T3 form, 71% of these episodes (59 out of 83) involved patients who lacked capacity and were also resisting or refusing.

Figure 2.1: Number and % of total episodes, by patient consent at episode entry (2016)



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

In contrast to previous years there was no gender difference in capacity at the start of treatment.

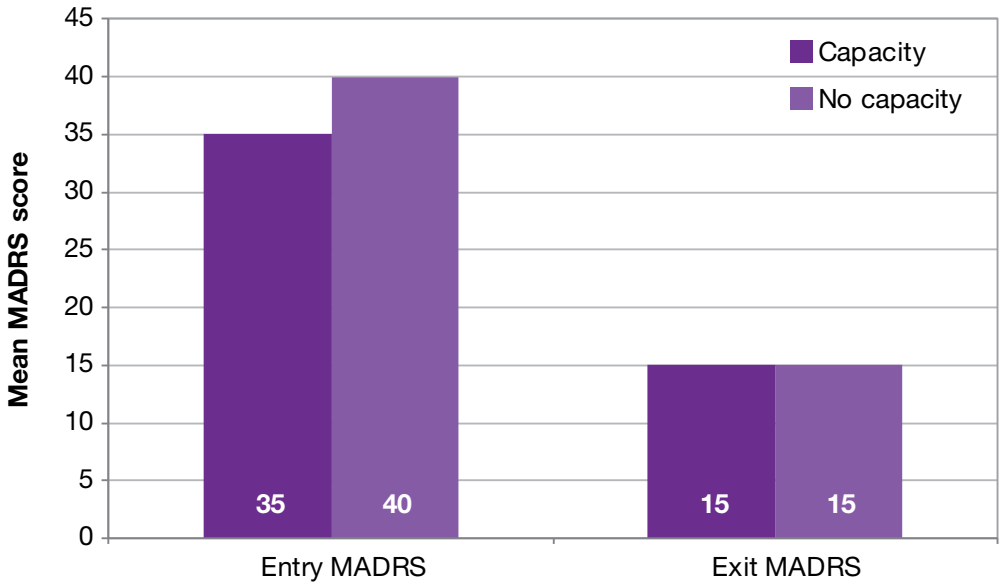
Older patients are more likely to lack capacity to consent to ECT. This may be due to the greater effect of severe depression on cognitive functions such as memory and reasoning ability for older people.

Table 2.2: Percentage of episodes by patient gender and capacity, and age by capacity (2016)

		Capacity	No capacity
Gender	Male (%)	66.7%	33.3%
	Female (%)	67.0%	33.0%
	Both Sexes (%)	66.9%	33.1%
Age	Mean (SD)	55.4 (15.4)	64.9 (15.5)
	Median	56	67

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[2] following ECT. This demonstrates the importance of making ECT available to patients who are too unwell to be able to give fully informed consent.

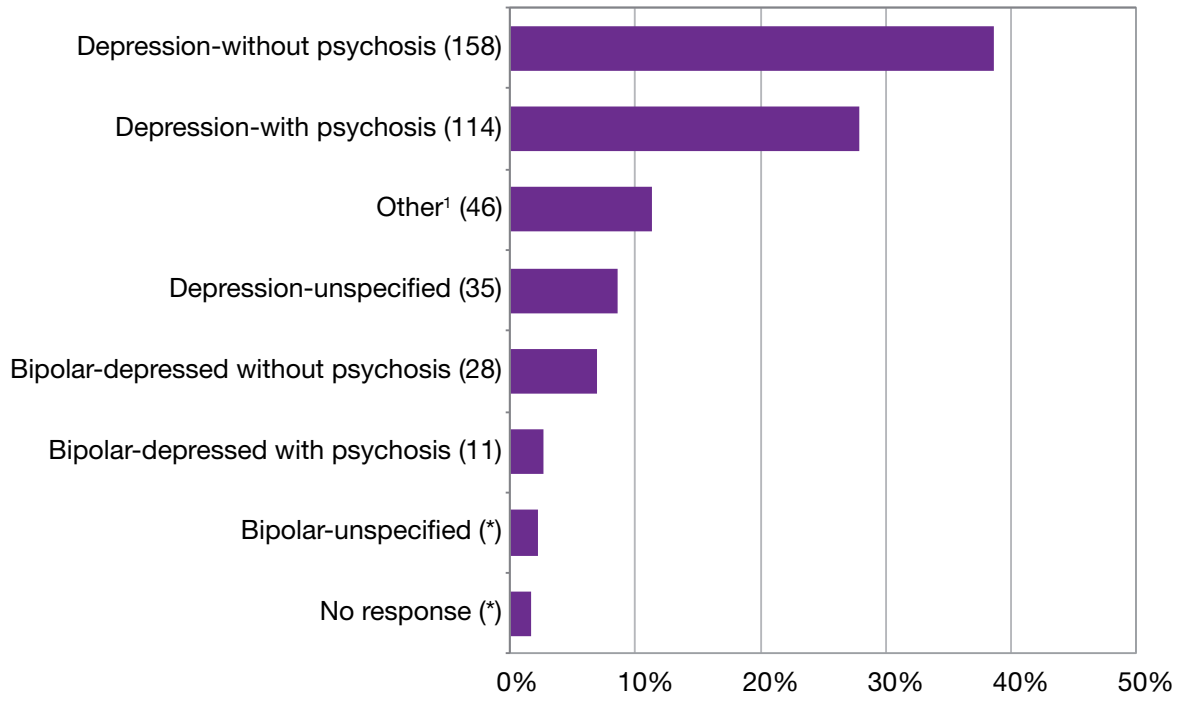
Figure 2.2: Mean MADRS[2] score before and after treatment, by patient capacity (2016)



Section 3 Diagnosis and Indications for Treatment

Figure 3.1 shows the primary diagnosis for each episode in 2016 based on 4-character ICD-10 codes[12]. 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 (38.7%) and depressive episode with psychosis (16.7%). Patients for whom psychosis status was specified were twelve times as 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 (2016)



Notes:

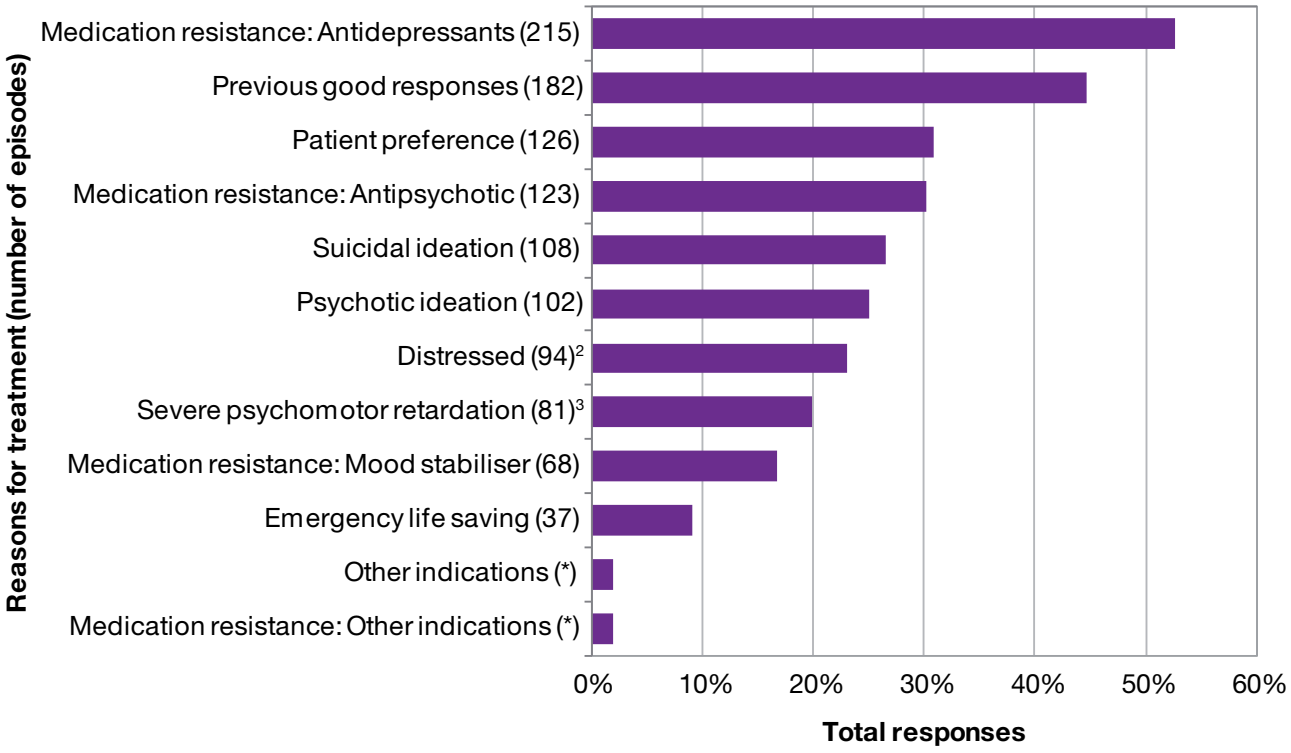
* Indicates values that have been suppressed because of the risk of disclosure.

1. The most common diagnoses in the 'Other' category were: Schizophrenia & Schizoaffective disorders and these diagnoses accounted for almost three quarters of this group. Additional diagnoses included: Other persistent mood [affective] disorders, Somatoform disorders, Dissociative [conversion] disorders, Dysthymia, Mental and behavioural disorders associated with the puerperium, Organic catatonic disorder, Other single mood [affective] disorders, Other specified mood [affective] disorders, and Specific personality disorders.

ECT guidelines and depression guidelines produced by the National Institute of Health & Clinical Excellence (NICE)[13,14] 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. SEAN 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 (52.7%). Similarly, illnesses resistant to antipsychotics (30.1%) or mood stabilizers (16.7%) 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 'suicidal ideation' (26.5%), 'psychotic ideation' (25%), 'too distressed to await response to medication'

(23%), or 'severe psychomotor retardation' (19.9%). 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 9.1% of episodes. Other common reasons for choosing ECT included previous good response (44.6%) and patient preference (30.9%). These frequencies were not substantially different from those reported in last year's SEAN report.

Figure 3.2: Number and % of total episodes, by reason(s) for treatment (2016)[1]



Notes:

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

1. Figures total more than 100% because of the multiple response nature of the variables examined. A single patient may have more than one reason for their treatment.
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 administered to patients during an episode of ECT (Table 4.1). In 2016, the median number of treatments per episode was nine.

Table 4.1: Mean and median treatments per episode and total treatments (2008-2016)

Year	Treatments per episode		Total Treatments
	Mean	Median	
2008	7.8	8	3,497
2009	9.2	8	4,429
2010	8.5	8	4,444
2011	9.7	8	4,364
2012	8.5	8	3,657
2013	9.4	8	4,280
2014	9.4	8	4,173
2015	9.7	9	4,354
2016	9.3	9	3,799
2008-2016	**9.1**	**8**	**36,997**

SEAN data show the great majority of ECT treatments being delivered using a bilateral electrode placement. This was the case for 93% of patients, the figure rising to 98% when patients who had their treatment modality changed (e.g. starting with unilateral but switching to bilateral) were taken into account. Whilst bilateral ECT is recognised to be associated with greater short term cognitive (memory) difficulties than unilateral, patients receiving unilateral ECT usually require a greater number of treatment applications because the unilateral modality has a less potent treatment effect. In consultation with patients, the psychiatrists responsible for prescribing and administering ECT thus have to weigh the relative risks and benefits of both approaches in order to optimise patient treatment outcomes. Current practice in Scotland is consistent with RCPsych guidance[6].

ASA score

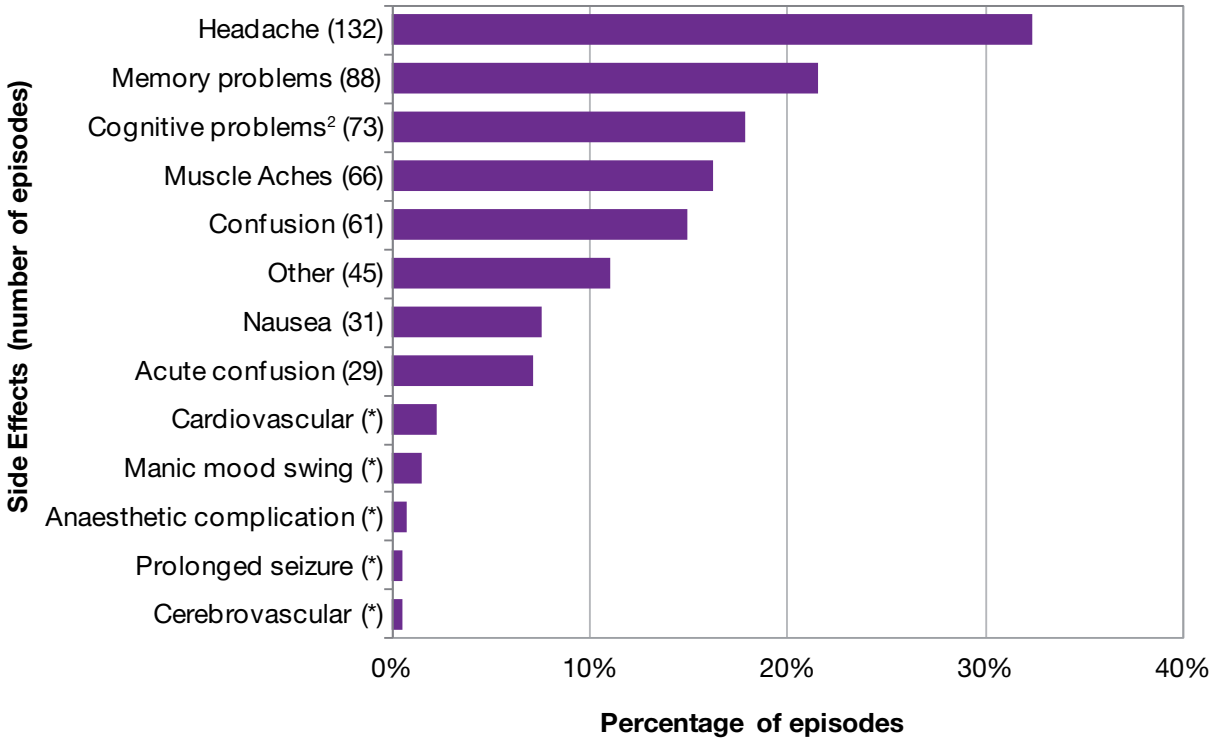
Before each episode of treatment the patient's general health is summarised according to the American Society of Anaesthesiologists' Classification of Physical Status ('ASA score')[15]. In the early years ASA score was recorded infrequently in the database, possibly because the ASA field was missing from the paper version of the care pathway. Recording has improved in recent years and achieved 91% in 2016, the highest observed so far. SEAN data from 2005-2006 indicate 68% of treatments had an ASA score recorded and this proportion fell to around 50% between 2008-2009 before gradually increasing from 2010.

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[1].

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 96% of treatments and showed that in 66% 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 32% of patients with the second most common complaint being memory problems, affecting 21% of patients.

Figure 4.1: Prevalence of specific side effects experienced within episodes (2016)[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. 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 as indicated in previous SEAN reports. An increase in the use of propofol was apparent from 2011, rising from 59% to 77% between 2010 and 2011. This trend has continued and in 2016 88% of treatments took 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 (2008-2016)

Year	Propofol		Thiopentone		Etomidate	
	n	%	n	%	n	%
2008	2,352	67.3	291	8.3	1,011	28.9
2009	2,654	59.9	428	9.7	1,607	36.3
2010	2,606	58.6	448	10.1	1,368	30.8
2011	3,358	76.9	180	4.1	586	13.4
2012	3,028	82.8	198	5.4	249	6.8
2013	3,523	82.3	251	5.9	364	8.5
2014	3,666	87.9	194	4.6	278	6.7
2015	3,820	87.7	178	4.1	315	7.2
2016	3,338	87.9	185	4.9	245	6.4
2008-2016	**28,345**	**76.6**	**2,353**	**6.4**	**6,023**	**16.3**

Muscle relaxants

A recognised side effect of the muscle relaxant 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 for 2016 remains relatively low at 6% (100 out of 1,727 treatments). This may reflect the predominantly older patients receiving ECT and the use of relatively small doses of suxamethonium. In patients receiving ECT in Scotland the incidence of suxamethonium myalgia was, in the years 2009-2013, lower in those patients who had been pre-curarised. In more recent years, 2014-2016, this difference was not observed and this will warrant further investigation with regard to how SEAN data on side effects and review dates are being recorded.

Table 4.3: Number and % of treatments by patient experienced muscle aches and pre-curarisation (2016)[1]

Muscle Aches	Patient Pre-curarised				
	No		Yes		Total
	n	%	n	%	
No	1,533	94.5	94	89.5	1,627
Yes	89	5.5	11	10.5	100
Total	**1,622**	**100**	**105**	**100**	**1,727**

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 patients (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 2016 there were 10 critical incidents reported within the initial data submitted. Subsequent enquiries by members of the SEAN Steering Group determined that only 8 of these fitted the criteria for a critical incident. SEAN reviewed the outcomes of all critical incidents reported in 2016.

Table 4.4: Number and % of total treatments involving a critical incident (2016)

Critical Incident	Number of Treatments	% Treatments
No	3,791	99.8
Yes	8	0.2
Total	**3,799**	**100**

Section 5 Outcomes

This section describes the results of completed ECT treatment episodes using the established and standardised assessment tools. It also reports on ECT treatment episodes which discontinued (ended before completion). Episodes of treatment that were ongoing at the end of 2016 were not included.

247 out of 408 (60.5%) episodes were completed as planned or discontinued. Rating scales were completed for the majority of these: 90% completion for MADRS[2], 95% for CGI[3]. This is an improvement on the average completion during 2010-2015, particularly for CGI[3].

MADRS[2] rates depression severity and measures change associated with treatment. While scores may range from 0 to 60, higher scores indicate more severe depression.

The median MADRS[2] score before and after treatment in the period 2011-2016 was 38 and 10 respectively. As in last year's report, individuals experiencing psychosis as part of their illness before treatment appeared to have a greater illness severity and also showed greater improvement with treatment (Figure 5.1).

Just over 63% of patients showed a 50% or greater reduction in the MADRS[2] score. This remains an impressive response rate within 'real world' clinical settings and is superior to those observed with any other treatment options for depression[16].

Figure 5.1: Median MADRS[2] score before and after treatment, by diagnosis (2011-2016)

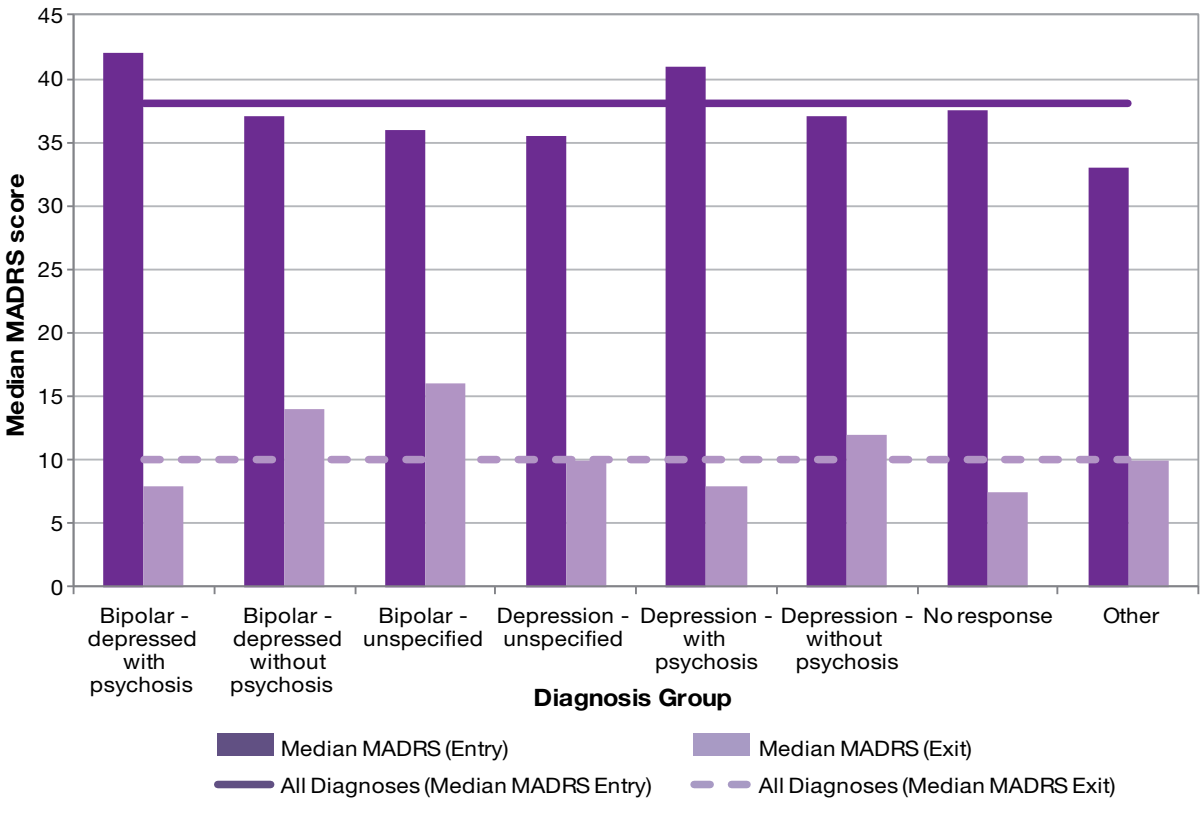
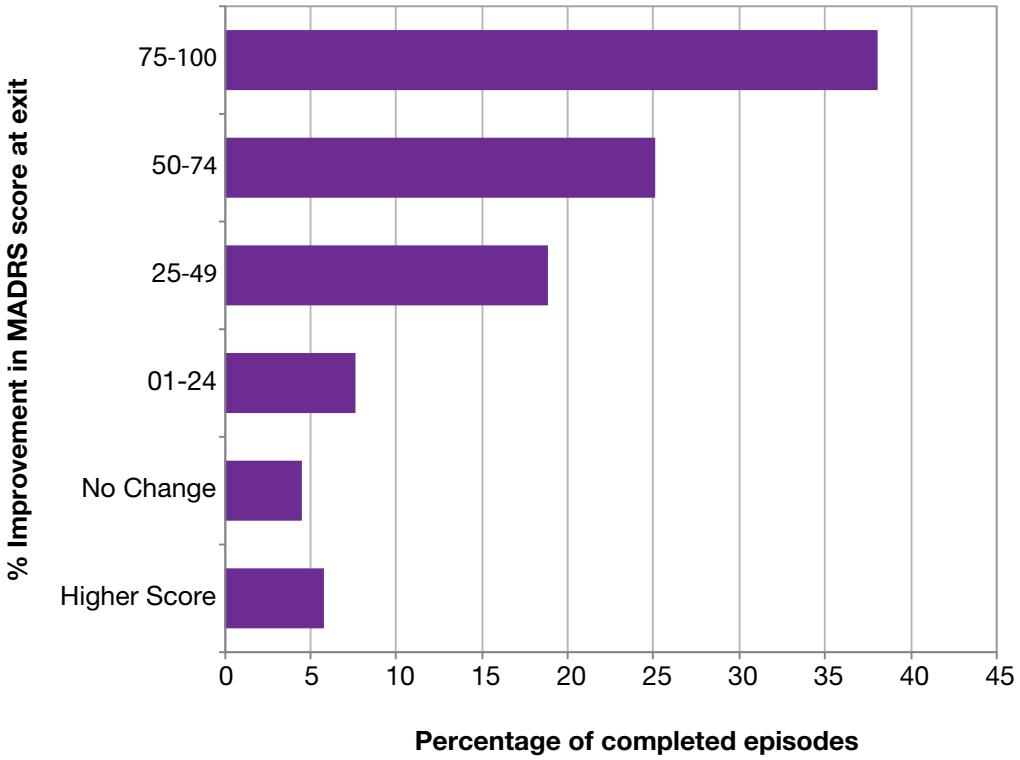


Figure 5.2: Percentage improvement in MADRS[2] score (2016)



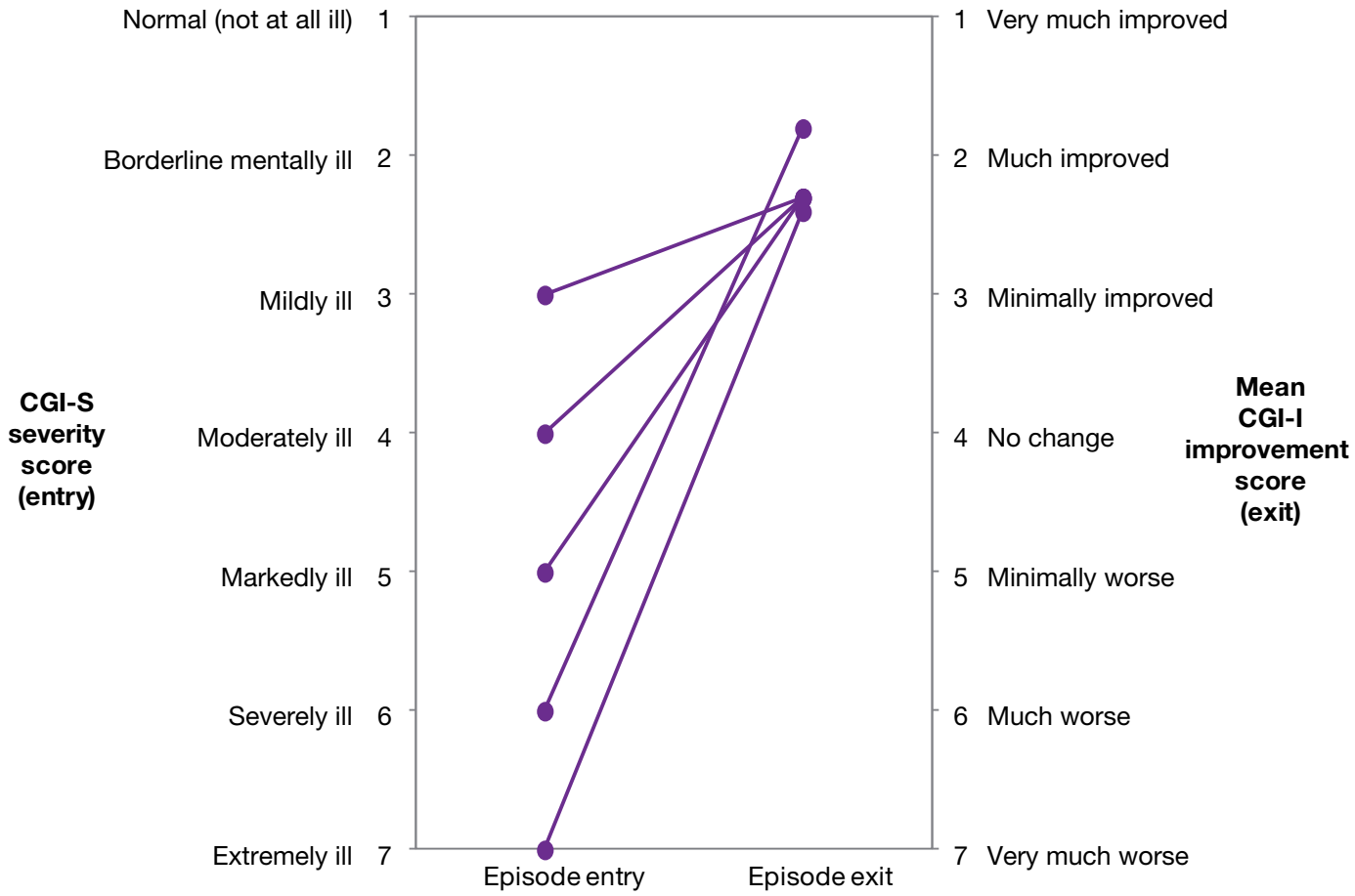
CGI[3] rates severity of illness at entry and degree of improvement on exit. The CGI[3] allows a clinician to rate all patients, irrespective of diagnosis. It can be used to rate illness severity across many different disorders, including depression. CGI[3] has a 7 point rating for severity from "normal" = 1 to "among the most severely ill" = 7. The CGI[3] 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.

In the period 2011-2016, 77% of patients were rated as "markedly, severely or extremely ill" on entry and 76% were rated as "much improved" or "very much improved" on exit. Figure 5.3(a) summarises the general trend for patients' CGI[3] ratings to improve with treatment and for those who are most unwell to experience the greatest improvement. Again, this is a highly encouraging response rate.

Figure 5.3(b) gives greater detail regarding the proportions of patients in each CGI-I (CGI Improvement) category on exit by their respective CGI[3] 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 start of their treatment.

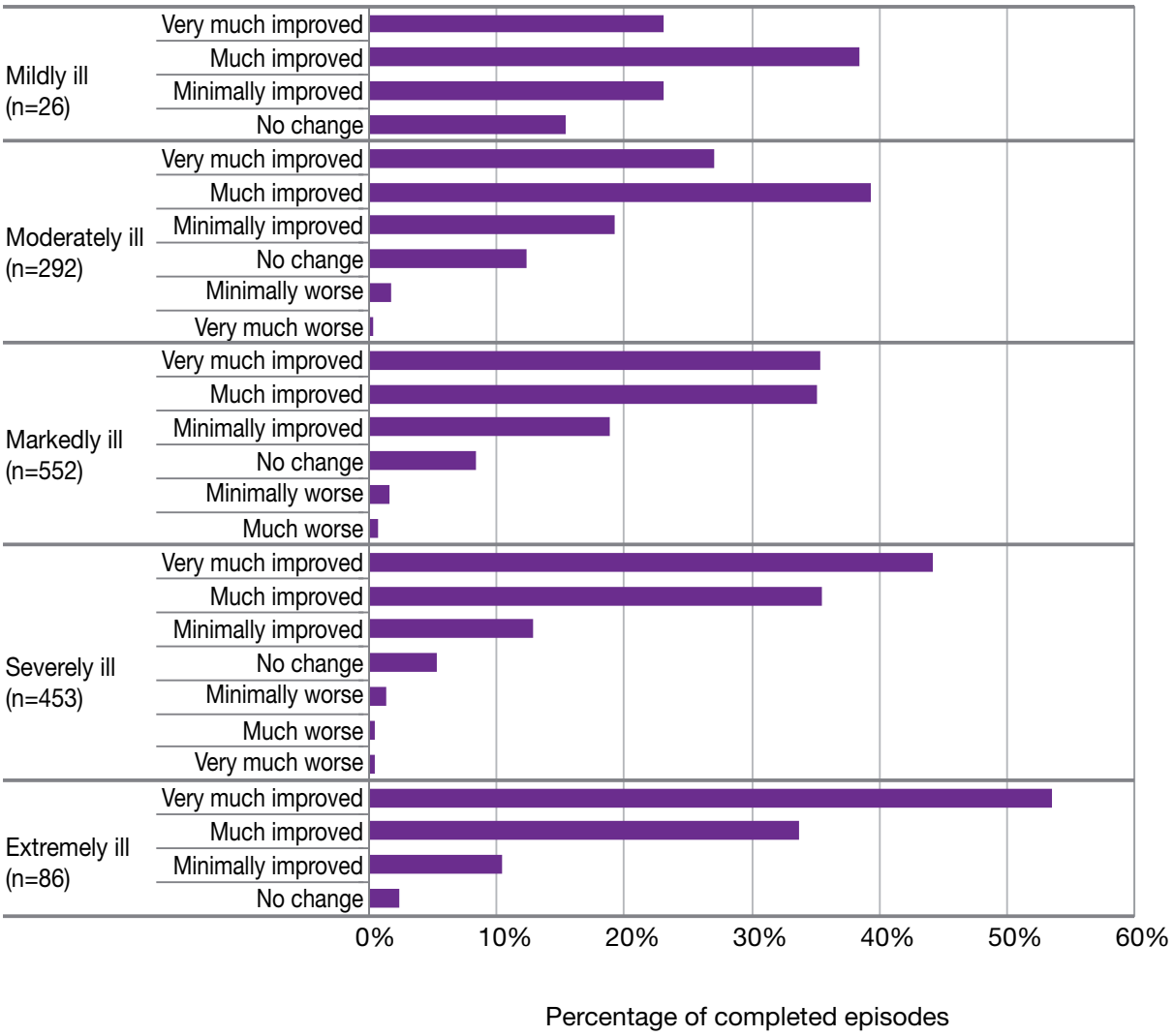
A fifth of episodes, 55 of 247 episodes (22.3%), were not completed as planned. Figure 5.4 shows 11.4% of episodes were stopped due to medical considerations and 7.3% stopped due to the patient's wish to do so. These data suggest that ECT in Scotland remains a well-tolerated treatment.

Figure 5.3a: CGI-S[3] before treatment by mean CGI-I[3] score after treatment (2016)



Notes:
1. Episodes where the patient was receiving continuation treatment are excluded.
2. CGI score categories with fewer than five responses are excluded.
3. CGI-S measures the severity of illness before treatment and CGI-I measure the level of improvement following treatment.

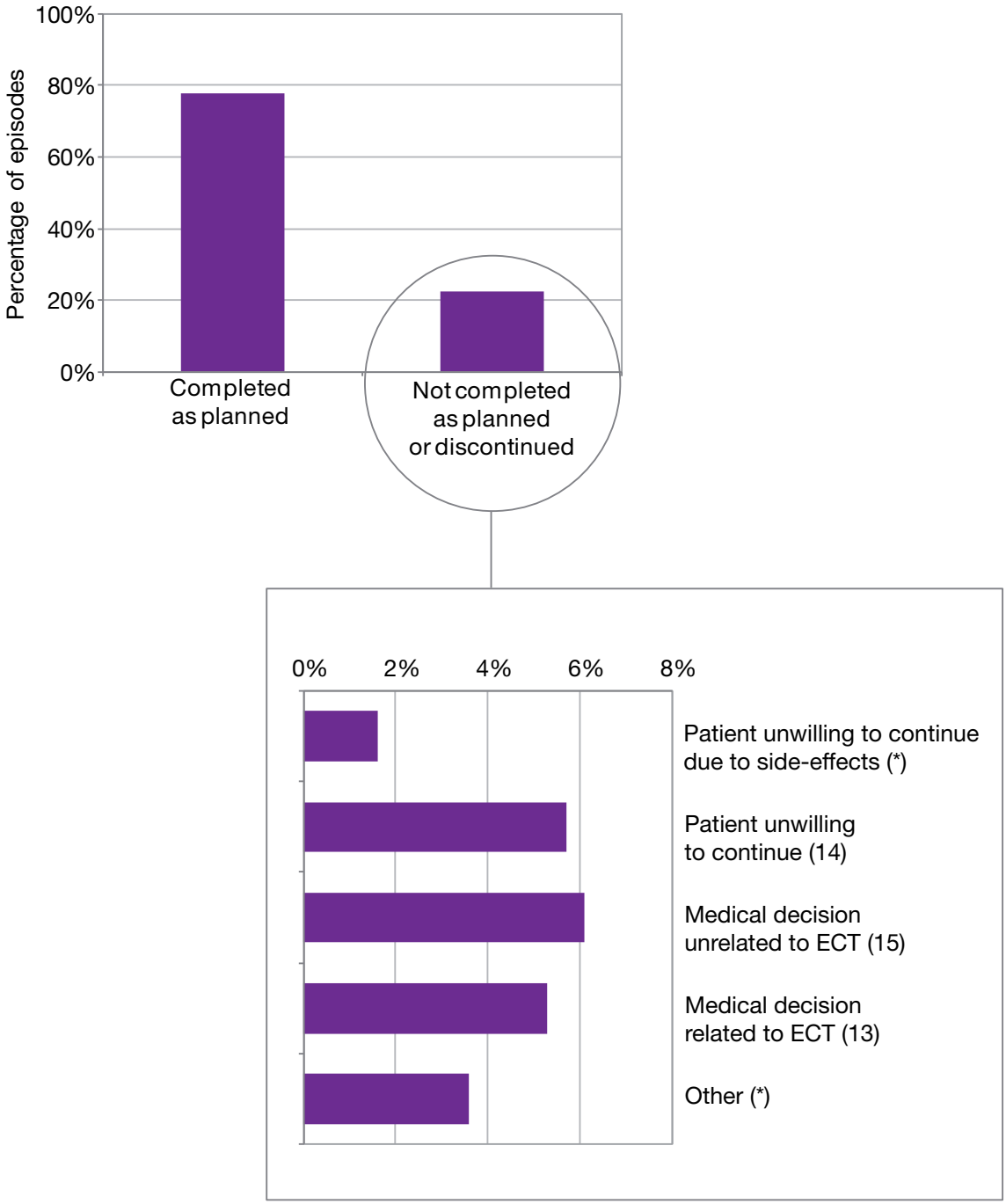
Figure 5.3b: CGI[3] category before treatment by CGI-I category after treatment (2011-2016) for patients who are mildly ill to extremely ill



Notes:

1. Possible CGI-I[3] 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[3] entry and exit scores.

Figure 5.4: Percentage (and number) of episodes completed as planned or discontinued, by reason for discontinuation (2016)



Section 6 Service Users and Carers Reference Group

The Reference Group continues to strive to increase its membership and, although this has proved challenging, a core group of dedicated members maintained their commitment to working closely with clinical staff to drive improvements in ECT services throughout Scotland.

During the past year our focus has been on the review of the SEAN standards to ensure that current standards of care and treatment are not only maintained but that there is continuing improvement based on feedback from patients, carers and clinical staff as well as consideration of national guidelines and the latest evidence base for ECT.

Our review of the standards resulted in recommendations to SEAN that some of the criteria should become more stringent, increasing their criteria level to make them more demanding. These recommendations are being incorporated in to the latest SEAN standards.

Collaborative opportunities were discussed with SEAN, including the potential for a research project between patients and clinical staff about areas of concern expressed both by patients receiving ECT and their carers. The Reference Group also wishes to pursue the use of digital story telling to capture the experience of patients and carers in their own words. This could become a valuable resource for patients considering ECT as a treatment option and as a learning tool for clinical staff to improve the patient journey for ECT.

The LearnPro training module for Ward and Escort Nurses continues to go from strength to strength with the uptake of the module nearing 7,000 participants. We anticipate further improvements in uptake as completion of the module is being incorporated in to the nursing section of the latest SEAN standards as a Level 2 criterion (additional good practice). To build on the success of the nurses' module SEAN is developing two further modules, one for consultants prescribing ECT and the other for consultants delivering ECT, and the Reference Group will be involved in reviewing these modules prior to their launch.

Recognition of the work of the Reference Group, by both the SEAN Steering Group and the wider clinical community, included its nomination, along with the CONECTS Group (Committee of Nurses at ECT in Scotland), for the NSS Excellence Award for "Collaborative Working Across Boundaries" and members of both groups appreciated acknowledgement of their hard work in continuing to drive quality improvement in ECT.

We will continue our endeavours to make sure the voices of both patients and carers are heard and also advise and support clinical staff to better understand the ways in which the care and treatment of those undergoing ECT can be improved.

Chris White
Chair, 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[17].

In November 2013 the SEAN Standards were reviewed and updated according to the latest evidence. The levels of criteria within each standard were also reviewed and some criteria were increased from additional good practice (Level 2) to mandatory practice (Level 1). The benchmark for achieving "Accreditation with Excellence" was also increased from 90% to 95% of Level 2 criteria.

Following another completed round of visits in 2016 the standards have again been reviewed this year. In order to continue to drive improvements several of the criteria within each standard have been increased in the level of criteria required to pass the standard.

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[18]
- The Royal College of Anaesthetists (2011) Anaesthetic Services in Remote sites[19]
- NICE guidelines as endorsed by the Health Technology Board for Scotland[13,14]
- 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.

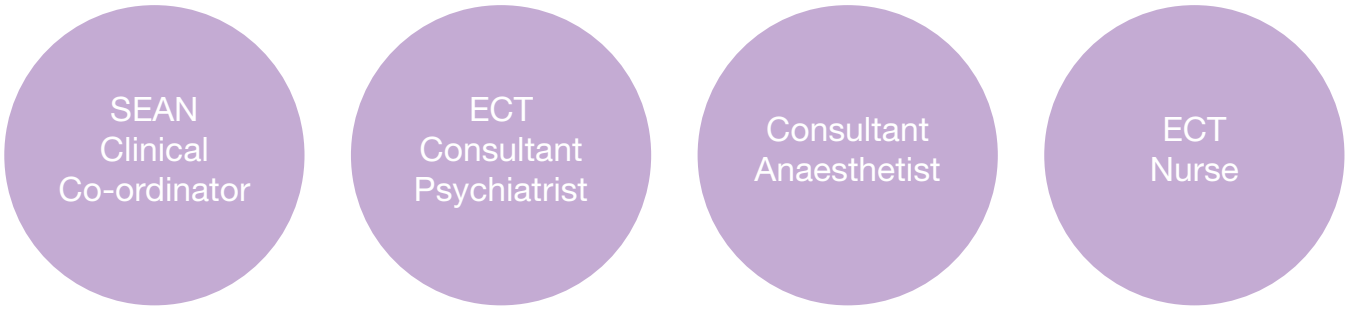
Methodology

Following a review of the Accreditation process it was decided that in future we would not only undertake to carry out the announced visits but we would follow this up with an unannounced visit to concentrate on specific aspects 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 clinical staff time to turn up and not actually observe the practice at the clinic. It is hoped that this new methodology not only enhances the previous 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:



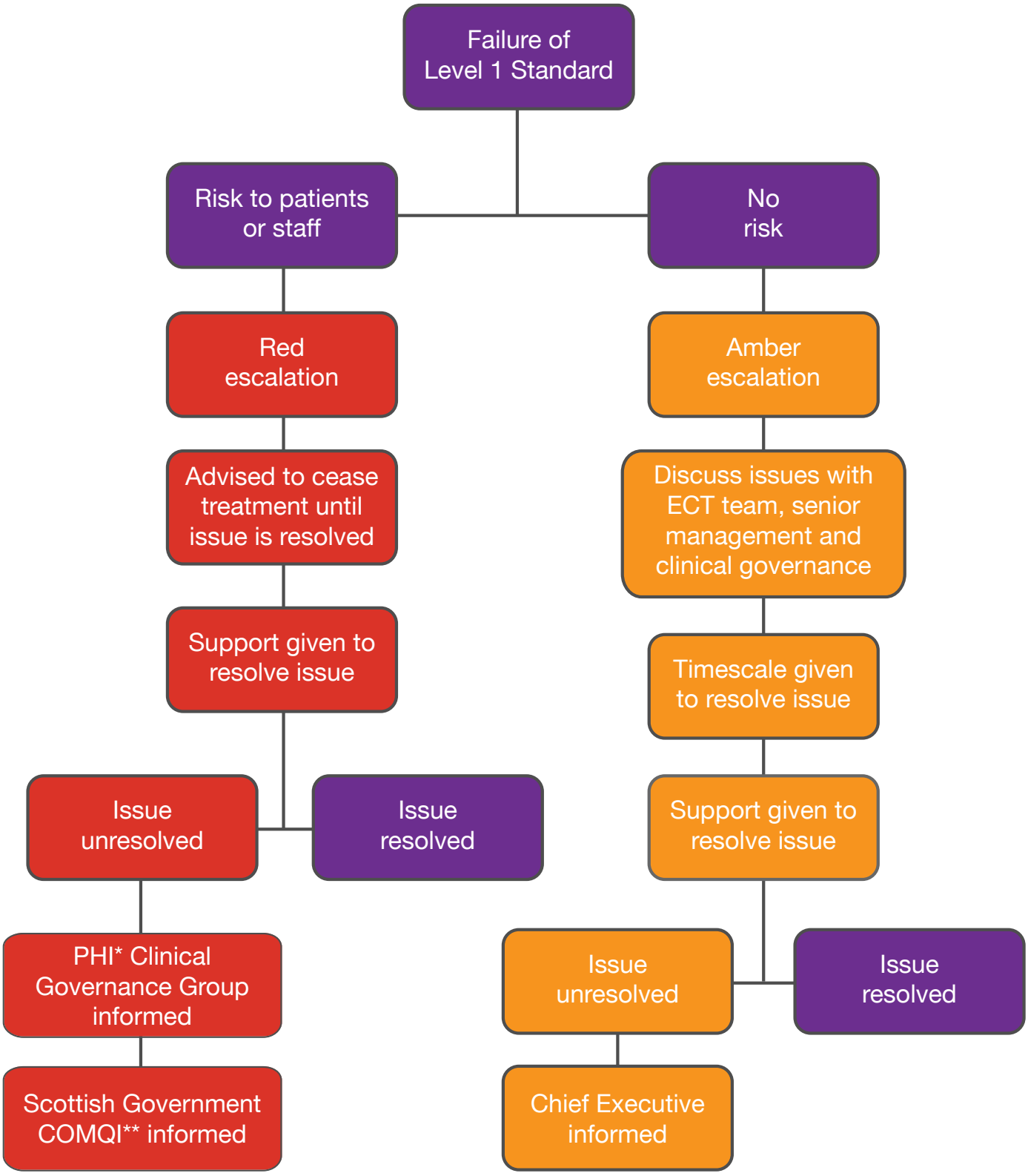
On the day of the announced visit

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 process is followed (Figure 7.1) which complies with the Scottish Healthcare Audits escalation policy.

Figure 7.1: SEAN Accreditation Flow Diagram



* Public Health & Intelligence, NHS National Services Scotland.
** Clinical Outcomes and Measures for Quality Improvement Working Group.

The SEAN team offers support and guidance to the clinical teams and senior management to resolve any issues identified and will also support ECT Teams to explore ways of achieving any recommendations.

The ethos of SEAN 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.

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.

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 have been addressed. These visits have no timescale and are carried out on an ongoing process.

The Accreditation level awarded is based on criteria agreed by the SEAN Steering Group:

Accredited with Excellence	Accredited	Accreditation deferral	Accreditation not achieved

Overall the standard of care and treatment across Scotland is high; however there is always room for improvement and further development. The aim of SEAN 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 each round of visits.

It is important to note that the level of criteria required to achieve "Accreditation with Excellence" is now more demanding and has been increased in two ways:

1. **Eight *Level 2* criteria have been increased to *Level 1***
2. **One *Level 3* criterion has been increased to *Level 1***
3. **One *Level 3* criterion has been increased to *Level 2***
4. **There are 6 new criteria within the standards.**

Conclusions

2016 has been a very successful year for SEAN in that it has successfully undertaken accreditation visits to all ECT centres in Scotland and recommended changes which are in the process of being made. SEAN has continued to prove itself to be a valuable resource for monitoring and 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. We have now completed a third round of accreditation visits to every ECT clinic in Scotland. Through these visits clinical practice is benchmarked against a set of nationally recognised, meaningful and robust standards. Following these visits we continue to try and encourage and support these units in making relevant changes. The fact that so many centres were accredited with excellence against some quite challenging standards is a credit to the units themselves and the role of SEAN in disseminating and encouraging centres to reach and maintain a high quality of treatment delivery.

Once again we are delighted that every centre in Scotland is actively involved with SEAN and recognises its importance. Through our accreditation visiting process we have provided robust data through which all centres have been able to critically review and benchmark their practice. In doing so we have provided a backdrop and driver whereby ECT clinicians have valid data from which to initiate clinically relevant changes within their units. This can only serve to improve the quality of their service and thus patient care. On this basis SEAN can provide support and backing in helping clinicians striving to improve the quality of their service. Equally we have a clear protocol for highlighting failings within a service that, for whatever reason, are not being addressed. The ethos of SEAN, however, has always been and remains one of helping to identify areas for improvement and helping clinicians and managers in taking positive steps to improve practice and service delivery. 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.

SEAN has again demonstrated, through retrospective analysis, that ECT remains a relevant, effective and safe treatment in the management of serious, often treatment resistant, depression. The relatively high profile of the organisation has helped dispel some of the myths and stigma associated with mental health and ECT in particular. Prospective naturalistic data from a purely clinical, as distinct from a research background, has now been collated for ten years and shows clearly how effective a treatment ECT is. This confirms the invaluable position of ECT as an effective treatment in modern day psychiatry. We are now looking towards further disseminating our data through approved research proposals.

In addition to its accreditation programme SEAN remains committed to improving inter-professional and multidisciplinary working amongst professionals involved in the delivery of ECT. Along with 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 continues to run an annual course for prescribers of ECT which has generated considerable interest and positive feedback from

clinicians. Continuing education for nursing staff is available through the LearnPro module for all mental health nurses, which has attracted extremely positive feedback and is currently being utilised in all centres in Scotland. Over the last year we have furthered our education objectives through a positively acclaimed, well attended prescribers training course. Such initiatives will continue throughout 2017

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 and seriously listened to. 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 therefore SEAN remains focused and committed through a patient centred approach to promote the delivery of ECT in a safe environment and to continue to demonstrate 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 NSS 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.

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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

Report Writing Group Membership

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Mrs Linda Cullen	SEAN Clinical Co-ordinator (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
Mr David Murphy	Senior Information Analyst (ISD)
Mr Martin O'Neill	Principal Information Analyst (ISD)
Dr David Semple	Consultant Psychiatrist (Lanarkshire)
Miss Lorraine Smyth	Senior Information Analyst (ISD)

Steering Group Membership

Dr Alistair Hay (Chair)	Consultant Psychiatrist (Highland)
Dr Nasim Rasul (Vice-Chair)	Consultant Psychiatrist (Ayrshire & Arran)
Dr Neill Anderson	Consultant Psychiatrist (Lothian)
Dr Virginica Anderson	Consultant Anaesthetist (Grampian)
Mr Stuart Baird	Service Manager (ISD)
Dr Dallas Brodie	Consultant Psychiatrist (Greater Glasgow & Clyde)
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Mrs Linda Cullen	SEAN Clinical Co-ordinator (ISD)
Dr Grant Forrest	Consultant Anaesthetist (Fife)
Dr Thomas Glen	Consultant Psychiatrist (Tayside)
Mr Stephen Kelly	ECT Nurse (Greater Glasgow & Clyde)
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Mrs Clare McGeoch	Quality Assurance Manager (ISD)
Dr Gary Morrison	Executive Director (Medical), Mental Welfare Commission for Scotland
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Mr David Murphy	Senior Information Analyst (ISD)
Mr Martin O'Neill	Principal Information Analyst (ISD)
Miss Lorraine Smyth	Senior 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 & Clyde	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 & Clyde	All prescribed episodes included in data from Stobhill Hospital.
Hairmyres Hospital	East Kilbride	Lanarkshire	
Huntlyburn, Borders General	Melrose	Borders	
Inverclyde Hospital	Greenock	Greater Glasgow & Clyde	
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 & Clyde	All prescribed episodes included in data from Stobhill Hospital.
Queen Margaret Hospital	Dunfermline	Fife	
Royal Alexandra Hospital	Paisley	Greater Glasgow & Clyde	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 & Clyde	All prescribed episodes included in data from Leverndale Hospital.
St John's Hospital	Livingston	Lothian	
Stobhill Hospital	Glasgow	Greater Glasgow & Clyde	
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 & Clyde	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	
Woodland View	Irvine	Ayrshire & Arran	Opened in 2016.

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	During 2016 Ailsa & Crosshouse clinics moved to Woodland View Hospital, reducing the number of treating hospitals to 18.
Argyll & Bute Hospital	Lochgilphead	Highland	
Carseview Centre (Ninewells Hospital)	Dundee	Tayside	
Forth Valley Royal Hospital	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 & Clyde	
Leverndale Hospital	Glasgow	Greater Glasgow & Clyde	
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 & Clyde	
Susan Carnegie	Montrose	Tayside	
Wishaw General Hospital	Wishaw	Lanarkshire	
Woodland View	Irvine	Ayrshire & Arran	During 2016 Ailsa & Crosshouse clinics moved to Woodland View Hospital, reducing the number of treating hospitals to 18.

Appendix C

Abbreviations

Abbreviation	Expanded text
AAGBI	Association of Anaesthetists of Great Britain & Ireland
ASA	American Society of Anaesthesiologists
CGI-S	Clinical Global Impression - Severity
CGI-I	Clinical Global Impression - Improvement
COMQI	Clinical Outcomes and Measures for Quality Improvement Working Group
CONECTS	Committee of Nurses at ECT in Scotland
CRAG	Clinical Resource Allocation Group
ECT	Electroconvulsive Therapy
HIS	Healthcare Improvement Scotland
ICD10	International Classification of Diseases 10th Revision
ISD	Information Services Division
MADRS	Montgomery Asberg Depression Rating Scale
MWC	Mental Welfare Commission for Scotland
NICE	National Institute for Health and Clinical Excellence
NRS	National Records of Scotland
NSS	NHS National Services Scotland
PHI	Public Health & Intelligence
QIS	Quality Improvement Scotland
RCOA	Royal College of Anaesthetists
RCPsych	Royal College of Psychiatrists
SD	Standard deviation
SEAN	Scottish Electroconvulsive Therapy Accreditation Network

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